Minto Mine

Water Licence QZ14-031

Quartz Mining Licence QML-0001

2021 Annual Report

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Minto Mine
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List of Acronyms

Acronym	Definition
ABA	Acid-Base Accounting
AMP	Adaptive Management Plan
AP	Acid Potential
CWTS	Constructed Wetland Treatment System
DSTSF	Dry Stack Tailings Storage Facility
EEM	Environmental Effects Monitoring
EMR	Department of Energy, Mines & Resources
EMSRP	Environmental Monitoring, Surveillance and Reporting Plan
GCL	Geosynthetic Clay Liner
GPS	Global Positioning System
HDPE	High Density Polyethylene
LTF	Land Treatment Facility
MCDS	Minto Creek Detention Structure
Minto	Minto Explorations Ltd.
MMER	Metal Mining Effluent Regulations
MPTMF	Main Pit Tailings Management Facility
MVF	Mill Valley Fill
MVFE	Mill Valley Fill Extension
MWD	Main Waste Dump
NP	Neutralizing Potential
NPR	Neutralizing Potential Ratio
QA/QC	Quality Assurance and Quality Control
QML	Quartz Mining Licence QZ-0001
ROD	Reclamation Overburden Dump
SAT	Waste material destined for subaqueous long-term storage
SECP	Sediment and Erosion Control Plan
SDD	South Diversion Ditch

SMP	Seepage Monitoring Plan
SOP	Standard Operating Procedure
SWD	Southwest Dump
TDD	Tailings Diversion Ditch
TDS	Total dissolved solids
TSS	Total suspended solids
UG	Underground
UTM	Universal Transverse Mercator
WGS 84	World Geodetic System 1984
WSP	Water Storage Pond
WUL	Water Use Licence QZ14-031
YWB	Yukon Water Board

List of Units

Unit	Definition
BCM	Bank cubic meter
BTU	British Thermal Unit
dmt	Dry metric tonnes
g/t	Gram per tonne
kg	kilogram
L	Litre
m	meter
m^2	Square meter
m^3	Cubic meter
mg/m^2	Milligrams per square meter
Mlb	Million pounds
Mt	Million tonnes
oz	ounce
V	Volt

1 Introduction

In Q4 of 2021 Minto Explorations Ltd. became a publicly traded company on the Toronto Stock Exchange (TSX) Venture Exchange (TSX-V) as Minto Metals Corp. (Minto). The company and the Minto Mine site have rebranded to reflect this change. Minto is in the process of changing the Quartz Mining Licence and Water Use Licence from Minto Exploration Ltd.

The 2021 Annual Report has been prepared by Minto, as required by Type A Water Use Licence (WUL) QZ14-031-01 and Quartz Mining Licence (QML) QML-0001. The specific requirements for the Annual Report, as outlined in the respective licences, are summarized in Table 1-1 below.

This report provides a summary of 2021 activities at the Minto Mine and includes production summaries, construction activities, environmental monitoring studies, physical stability monitoring, water management, and progressive reclamation.

Table 1-1: Reporting Requirements as per WUL and QML (2021)

Licence	Licence Section	Clause	Requirement	Annual Report Section
WUL QZ14-031				
WUL QZ14-031	4.3	16	Summary review of the *Spill Contingency Plan* including any changes needed.	2.5.5 App. B
	4.3	18	Summary list of all spills for 2021.	2.5.3 2.5.4
	4.5	26	The Licensee shall submit Annual Reports to the Board no later than March 31 of the year following the reporting period. The reporting period is January 1 to December 31 of each year.	All
		26, a	Summary of all data collected as per the EMSRP, including analysis and interpretation by a qualified party and a discussion of any variances from baseline conditions, from previous years' data, and from expected performance.	5-8 11-14
		26, b	Summary of actions as per the Operations Adaptive Management Plan, including analysis and interpretation by a qualified party and a discussion of any variances from baseline conditions, from previous years' data, and from expected performance.	10 App. G, H, I
		26, c	A record of any major maintenance carried out on any physical works.	2.2

Licence	Licence Section	Clause	Requirement	Annual Report Section
WUL QZ14-031	4.5	26, d	Detailed data on the volume of water used during the year including water withdrawal from each water source, water routed around and through the site as part of the water conveyance system, water diverted around the site, water routed for storage in the pits, water deposited with mine wastes in waste storage facilities, water routed to the Water Storage Pond, water routed to the treatment plant and water discharged to Minto Creek.	8
		26, e	Detailed data on tailings deposition in each of the tailings management facilities, including volume and tonnage of tailings slurry deposited, cumulative volume of tailings solids stored in the pits, tailings solids surface elevation and pit water elevation.	2.3.4
		26, f	Details of updates to the Water Balance and Water Quality Model.	8.2.4 App. E
		26, g	Results and interpretations of the QA/QC Program.	5.1.2
		26, h	Any other reports that are required to be submitted as part of the Annual Report by this Licence.	See Below
	5.7	70	The Licensee shall monitor, sample, and report on the maintenance and performance of the Mill Water Pond, in accordance with the procedures that are detailed in the Physical Monitoring Program, and include in the Annual Report	9
	5.1.1	86	The Licensee shall include data relating to the Surface Water Surveillance Program in the Monthly and Annual Reports.	5.3
	5.1.2	88	The Licensee shall complete a MMER Biological Monitoring Study including a site characterization, fish population survey, fish tissue sampling and benthic invertebrate sampling.	11.2
	5.1.2	89	The results of these studies and programs in clauses 87 and 88 shall be submitted to the Board as part of the Annual Report along with and any additional studies or revisions to studies required under the MDMER.	11 App. J
	5.1.4	93	The results of the seepage program shall be compared to the source terms used in the Water Balance and Water Quality Model Report and summarized in the Annual Report.	7 App. E
	5.1.5	94	The Licensee shall implement the updated Geochemical Monitoring Program, including the Waste Rock Verification Program, and the results from this program are to be included in the Annual Report.	13 App. L
WUL QZ14-031	5.1.7	97, h	Reporting of all data obtained using physical monitoring instrumentation as a part of the Physical Monitoring Program in Monthly and Annual Reports.	9

Licence	Licence Section	Clause	Requirement	Annual Report Section
		98	The Physical Monitoring Program shall be updated annually to reflect the installation of new instrumentation, replacement of damaged instrumentation, and changes in monitoring methods and procedures. The updated Physical Monitoring Program shall be provided as part of the Annual Report, along with a summary table outlining revisions to the plan from previous versions.	9
		99, b	The Licensee shall submit these Geotechnical Engineer's Inspection and Data Reviews as part of the Annual Report.	9.2 App. P
		100, f	For each operating year, the following information shall be provided as part of the Annual Report for the Physical Monitoring Program: i. interpretation of physical monitoring data, and summary of the stability, integrity, and status of all the inspected structures, works, and installations inspected by the Professional Engineer; ii. a list of each of the Professional Engineer's recommendations for remedial action; iii. an explanation of how and when each recommendation was addressed, including supporting documentation, and iv. a list of outstanding recommendations (including previous inspection reports) and associated approach and timelines to address them.	9.1 9.2
	5.1.8	102	The Licensee shall review and evaluate the Aquatic Environmental Monitoring Program design every three (3) years and submit the findings to the Board, along with any recommendations for further refinements, as part of the Annual Report, starting in 2016.	2020 see 2019 Annual Report
	5.1.9	104	Results and interpretations of the QA/QC program shall be provided in the Annual Report.	5.1.2
		108, a	The Licensee shall submit an updated Water Balance and Water Quality Model as part of the Annual Report. The updated models shall include without limitation all model assumptions.	App. E
		108, b	Updated site data collected as per the EMSRP including: i. water quality results and water levels from all groundwater monitoring wells; ii. the most current climatic, environmental, and operational conditions and data; iii. surface water quality and quantity data; iv. seepage monitoring quality and quantity data, and v. geochemical source terms from tailings and waste rock.	6 12 5.3 7 App. E

Licence	Licence Section	Clause	Requirement	Annual Report Section
WUL QZ14-031	5.1.9	108, c	A comparison of the updated geochemistry for Phase V/VI tailings and waste rock with that of previously produced tailings and waste rock, and a comparison of model source term chemistry with equivalent operation monitoring results.	13 App. L App. E
		108, d	Updated predictions for operations and Permanent Closure water quality, including discussion of any variances identified and associated implications on site water management.	App. E
		109	Specifications for the Annual Report to include but not be limited to: i. activities undertaken in relation to the Adaptive Management Plan, ii. trend analysis and water levels in Minto and McGinty creeks, iii. proposed updates and revisions to the Adaptive Management Plan, and iv. any other revisions necessary to comply with the conditions of this Licence.	10 8.5 App. H, I Through out
	6.2	114, a	Annual reporting on reclamation research activities.	16
QML-0001				
QML-0001	13.5		On or before March 31 of each year of the term of this License, the Licensee must submit an annual report, in writing, containing the information set out in Schedule D, covering the period of January 1 to December 31 of the prior year	This Report
	Schedule D	a	Summary of construction activities associated with the Undertaking	2.2
		b	Summary of mining activities	2.3
		c	Map showing the status of all structures, works, and installations associated with the Undertaking	Fig 1-1
		d	total amount of ore and waste removed from the underground workings and open pits for the year and for the life of the Undertaking	2.3.
		e	Total amount and the average head grade of ore milled	2.3.6
QML-0001	Schedule D – Site Activities	f	Total amount of concentrate produced and removed from the Undertaking	2.3.6
		g	Total amount of tailings deposited in each of the tailings facilities	2.3.4
		h	Total amount of waste rock removed from the mine and the amount deposited into each deposit location	2.3.3
		i	Total amount of waste rock stored in each waste rock storage facility;	2.3.3
		j	Details respecting any action taken as a result of the recommendations made by the engineer in relation to the inspection referred to in 13.2 of QML -0001	9.2

Licence	Licence Section	Clause	Requirement	Annual Report Section
		k	Summary of any updates to estimates of ore reserves and the life of the mine, including reserve category, tonnage, and grade	4
		l	Total amount and the average grade of each ore stockpiled	2.3.5
		m	Remaining reserve life of the mine	4
	Schedule D - As-built Drawings	a	as-built drawings of the open pit and underground mines and of all engineered structures, works, and installations constructed or altered at the Undertaking during the year	2.2 App. A
		b	as-built drawing report of the 220-kW vertical stirred mill rougher/scavenger concentrate regrinding system the year following the installation	N/A
	Schedule D - Environmental Monitoring	a	Summary of the programs undertaken for environmental monitoring and surveillance as outlined in the *Environmental Monitoring, Surveillance and Reporting Plan* and the 2014 Wildlife Protection Plan, including an analysis of these data and any action taken or adaptive management strategies implemented to monitor or address any changes in environmental performance	5-9 11-14 10
		b	any update to the *Site Characterization Report* referred to in 13.1 of QML-0001	15
		c	summary of invasive plants that have been identified on site and measures taken to control or remove invasive plants	14.3 App. Q
		d	summary of spills and accidents that occurred at the site and measures taken respond to any spills or accidents	2.5
		e	summary of the level of traffic, access control issues, wildlife incidents and other accidents, and any upgrade or maintenance work planned for the upcoming year	2.4
QML-0001	Schedule D - Environmental Monitoring	f	summary of any site improvements undertaken to address sediment and erosion control	14.2
	Schedule D – Physical Monitoring	a	summary of any underground stability incidents	2.3.2
		b	summary of data collected to date as part of the Physical Monitoring Program	9
		c	details of results, including data collected, for the physical monitoring program	9
	Schedule D - Reclamation and Closure	a	any temporary closure or permanent closure that has occurred during the year	16
		b	summary of activities related to care and maintenance of the Undertaking, including any temporary closure activities if applicable	16
		c	summary of progressive and ongoing reclamation activities	16
		d	summary of proposed development and production and reclamation activities for the coming year	3 16.3

Licence	Licence Section	Clause	Requirement	Annual Report Section
		e	summary of reclamation research and results	16.2
	Schedule D - Socio-Economic Monitoring	a	summary of action taken by the Licensee with respect to implementation of "Minto Socio-Economic Monitoring Program Framework" (the "Framework')	17 App. O
		b	a copy of the annual report prepared by Minto Explorations Ltd., identified in paragraph 6.1 of the Framework	App. O
		c	a summary of action taken by the Licensee with respect to implementing an approved socio-economic adjustment measures plan, as identified in the Framework	App. O

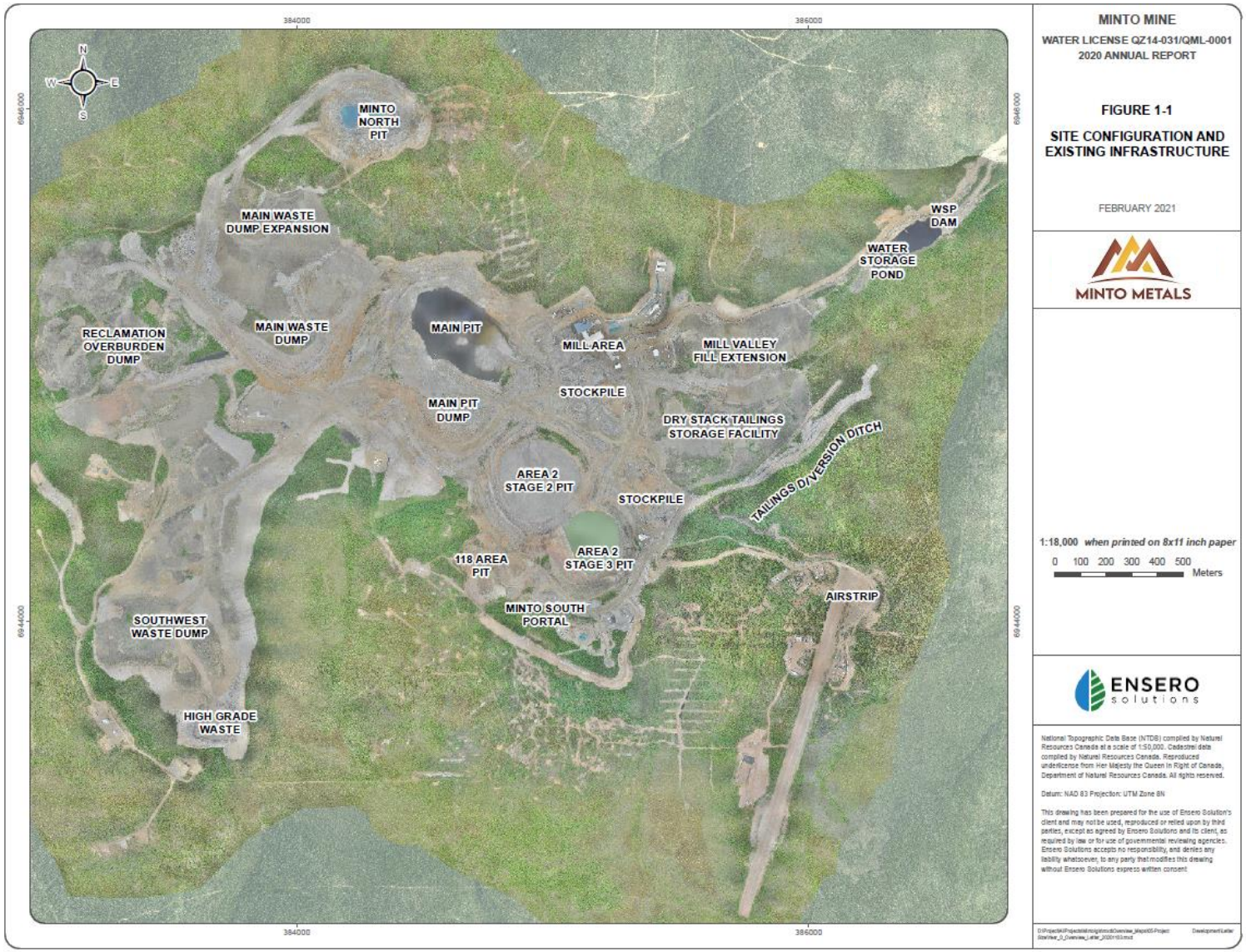

Figure 1-1: Site Layout (2021)

2 Site Activities

During the 2021 production period, operations produced 24.31 million pounds (Mlb) of copper from the milling of 903,498 tonnes (dmt) of ore.

In 2021, underground mining took place in the Minto East zone as well as the Copper Keel ore zone.

Waste rock produced from mining activities was hauled to surface for use as construction grade material and ramp repair. Potentially acid generating waste rock was placed in the Main Pit Buttress dump. Milling included run-of-mine ore from underground operations, as well as ore stockpiled from previous mining.

Tailings produced from the milling process were deposited into the Area 2 Pit Tailings Management Facility as per the licensed Tailings Management Plan.

2.1 Exploration

2.1.1 In-Fill Drilling

During 2021, drilling included six (6) surface NQ diameter diamond drill holes (totaling 2,951.5 meters) to the Minto East orebody and thirty-nine (39) drill holes (totaling 5,309.5 meters) in to the A2 Zone from underground day bays.

The Minto East deposit is located east from the Minto North open pit. The main purpose of the 2021 drill program was to the confidence in the orebody's Indicated level resources by better defining location and grade. Drilling occurred between October and November of 2021. All six (6) drill holes were drilled from one drill pad located immediately east of the warehouse area at Minto Mine (Figure 2-1).

The A2 Zone, Lens 115 is a mineralized lens of the Area 2 beneath the former open pit (Figure 2-1). Confirmatory infill drilling was performed to better define and increase confidence in the location and grade prior to mine planning for this area.

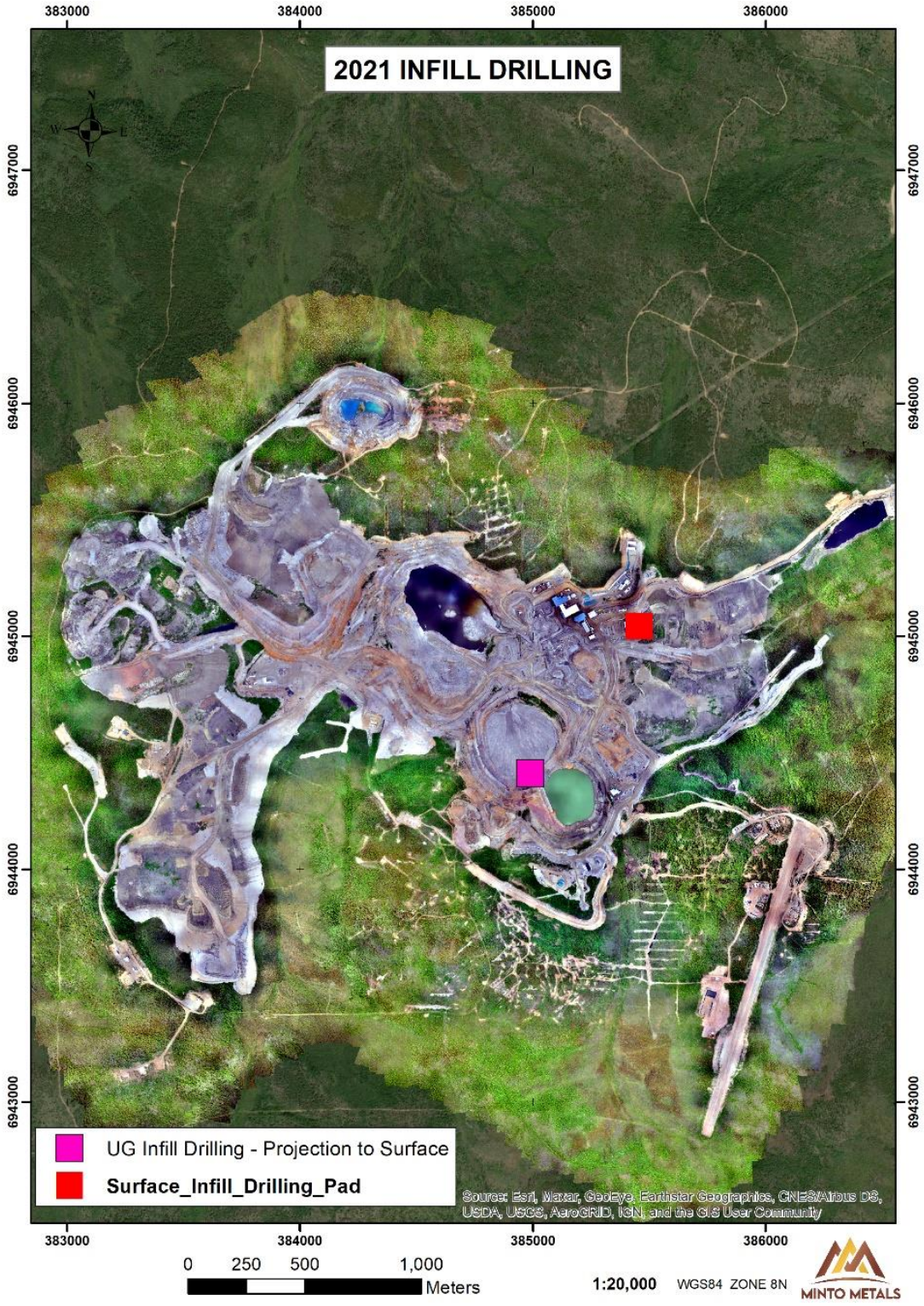

Figure 2-1: 2021 Infill Drilling

***Underground drilling in A2 projected to surface (violet) and surface drill pad location for drilling Minto East**

2.1.2 Delineation drilling

Exploration at the mine focused on extensions of the licensed orebodies of Minto North and Minto East. Sixteen (16) holes were drilled, totaling 8,642 meters (Figure 2-2).

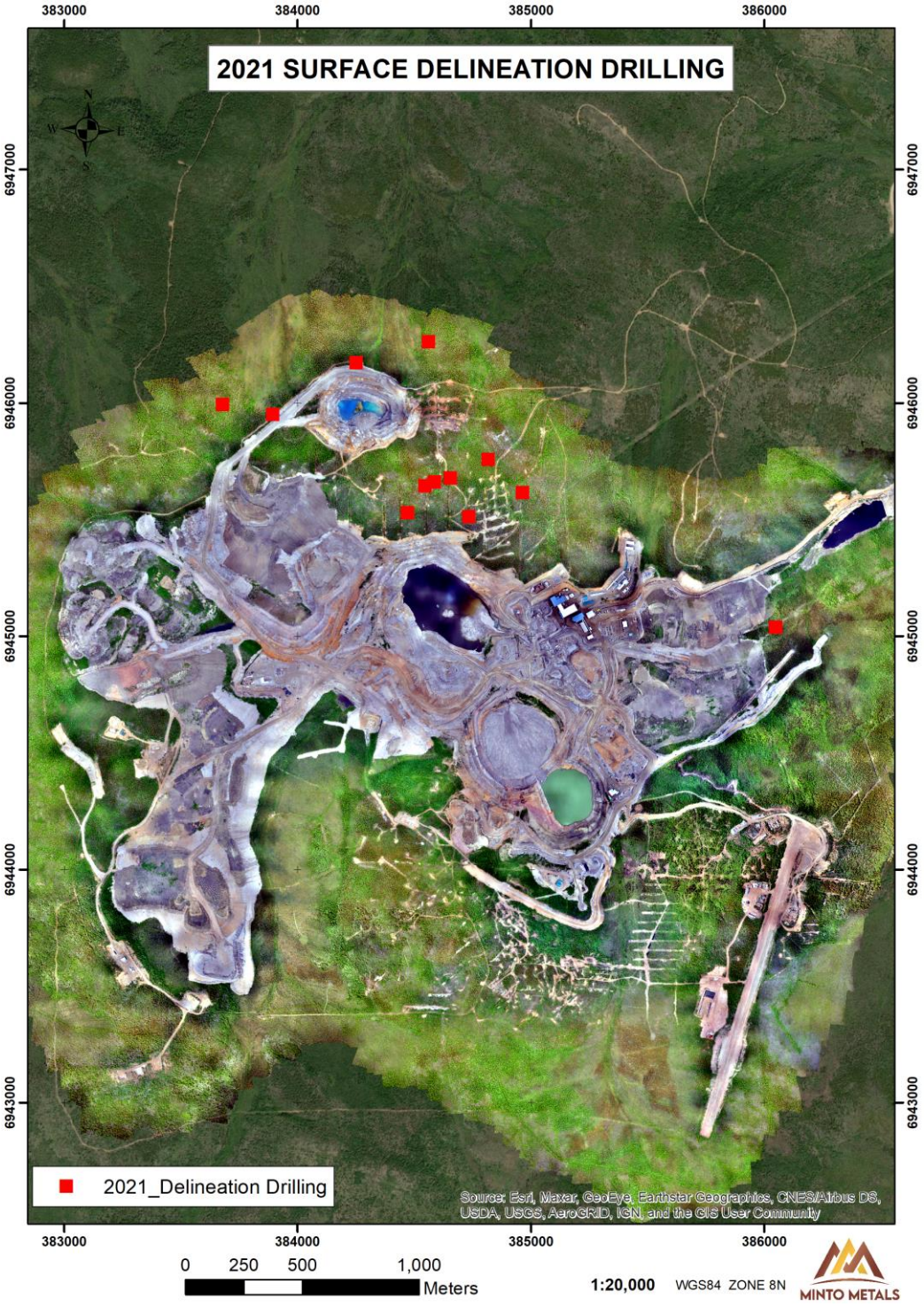

Figure 2-2: 2021 Delineation Drilling – Drillhole & Collar Location

2.2 Maintenance, Infrastructure and Construction Projects

There were no major maintenance activities conducted in 2021 on the physical works.

2.3 Mining Activities

The following sections discuss the mining activities for 2021 including open pit and underground mining, waste rock and tailings management, ore stockpiles, operating results, and concentrate shipments.

2.3.1 Open Pit Mining

There was no Open Pit Mining conducted in 2021.

2.3.2 Underground Mining

Copper Keel was where most of the mining took place in 2021. Development was continuous throughout the year in Copper Keel with ore development continuing in the Main zone and a capital expansion to the West and South zones. Production mining in Copper Keel took place primarily in the main zone of Copper Keel with a couple stopes coming online in the West and South zones in Q4. Production mining was completed in Minto East in Q1 2021.

A total of 3,320 metres of development was completed in Copper Keel. This included the capital development of an underground fuel station and a secondary egress in Copper Keel South to safely bring the area into production.

In 2021 the mine produced 866,805 tonnes of ore (between the Copper Keel and Minto East deposits) and hauled 122,797 tonnes of waste rock to surface. See Appendix A for the underground development maps.

2.3.3 Waste Rock Management

Waste rock dump development continued in 2021, as per the *Minto Mine Waste Rock and Overburden Management Plan*. Table 2-1 summarizes the waste materials and ultimate destinations, and the volumes deposited. Current waste rock inventory in the various waste rock and overburden dumps at the Minto Mine site are summarized in Table 2-2.

Table 2-1: Waste Rock Destination and Volumes – Unreconciled truck counts (2021)

Material Type	Destination	In Situ (m3))
Waste – Construction Grade	Roads/Ramps	0
Waste – Construction Grade	Tailings Diversion Ditch	0
Waste	Main Pit Dump	0
Waste	Main Waste Dump	55,000
Waste Rock – SAT	Main Pit Buttress	6,300
Waste Rock – SAT	A2S2 In Pit	0
Total		61,300

Table 2-2: Waste Dump Location and Storage Volumes (2021)

Dump Location	Quantity Stored as of December 31, 2021 (m^3)
Main Pit Buttress	4,236,300
A2S2 In – Pit	75,320
Main Pit Dump	1, 608,100*
South West Dump	12,120,000
Mill Valley Fill Extension	1,440,000
Reclamation Overburden Dump	4,300,000
Main Waste Dump	8,360,000
Main Waste Dump Expansion	3,810,000
Mill Valley Fill Extension 2	1,360,000
Total Waste Dumped	**37,278,670**

*Main Pit Dump volume updated from 2021 scan compared to baseline

2.3.4 Tailings Management

All tailings produced in 2021 were deposited in the Area 2 Pit Tailings Management Facility (A2PTMF). Table 2-3 lists the deposition schedule.

Table 2-3: Tailings Deposition Schedule in 2021

Tailings Management Facility	Date Range	Quantity Deposited (dry metric tonnes)
A2PTMF	January	82,096
A2PTMF	February	58,394
A2PTMF	March	65,479
A2PTMF	April	70,409

A2PTMF	May	79,527
A2PTMF	June	73,858
A2PTMF	July	67,759
A2PTMF	August	53,856
A2PTMF	September	70,020
A2PTMF	October	75,934
A2PTMF	November	85,262
A2PTMF	December	89,839
Total 2021 Tailings		**872,433**

A total of 872,433 dry metric tonnes (dmt) of tailings were discharged to the A2PTMF in 2021. Since November 2012, the Main Pit Tailings Management Facility (MPTMF) has received 3,346,606 tonnes of tailings. Since March 2015, the Area 2 Pit has received 6,212,691 tonnes of tailings.

From January to August tailings were deposited to the A2PTMF from a point at the northeast corner of the pit. A discharge line runs from the pit crest at the 806m elevation to a point on the highwall past the overburden contact, at 787m: this ensures that the tailings stream runs down solid rock and does not cause erosion. From September to December, sub-aqueous deposition was adopted, moving the discharge point from northeast corner to around center of the stage 3/4 pond at the A2PTMF. This will avoid ice entrainment during winter and is expected to reduce potential seepage from the pond to underground. Since September 2021, all tailings are water covered because the sub-aquatic disposal. This allowed tailings to reach the bottom of the pond while the water level increased. The highest point of the tailings beach before it became submerged was 789.5m. As of December 31st, 2021, the water level in A2PTMF was 792.5m.

Deposition in the MPTMF is possible; however, no tailings were deposited in MPTMF in 2021. The highest point of the tailings beach is at 787.5m elevation. At year-end, the water level was measured at 785.0m.

The pipeline and pump which transfers supernatant water from A2PTMF to MPTMF, where the mill's process water intake is located, was re-established in 2020. This was

done when the Area 2 Stage 3/4 water levels rose to a suitable elevation for the dewatering barge to be safely installed.

As in previous years, tailings were not observed to remain ponded on the ice surface of either tailings management facility during the winter months. The relatively high tailings temperature, combined with the erosive effect of the tailings stream, melts through the ice at the discharge point.

2.3.5 Ore Stockpiles

Seven ore stockpiles exist on the property. Immediate to the milling complex are three stockpiles described below:

1. Mill Pond Pad and Live pile– Blended and crushed material for immediate mill feed
2. ROM Pad hosting the ROM and East Stockpiles –Sulphide and partially oxidized run of mine (ROM) ore stockpiles
3. South Stockpile –Partially oxidized run-of-mine (ROM) ore stockpiles

Further away from the mill complex is Top of the World (TOTW) Stockpile, lying West of the Main Pit, adjacent to the Main Waste Dump. This stockpile consists of partially oxidized run-of-mine (ROM) included in the low-grade POX inventory.

The stockpile areas are displayed in Figure 2-3.

Ore is segregated by copper grade and percentage of acid-soluble copper as shown in Table 2-4.

Table 2-4: Ore Stockpiles

Material Type	Copper Grade Range	Soluble Copper
Blue Sulfide Ore	0.50 – 1.00% Cu	<15.0%
Green Sulfide Ore	1.00 – 2.00% Cu	<15.0%
Yellow Sulfide Ore	>2.00% Cu	<15.0%
Partially Oxidized Ore (POX)	>1.50% Cu	>15.0%
Low-Grade Partially Oxidized Ore (LG POX)	0.80 – 1.50% Cu	>15.0%

The higher-grade ores are fed to the mill as they are mined to maintain the highest possible head grade while mining ore. The lower-grade and partially oxidized stockpiles are depleted gradually and are used to supplement mill feed.

Table 2-5: Stockpile Inventory

	December 31, 2021			
	Mass (tonnes)	**Cu (%)**	**Mass (tonnes)**	**Cu (%)**
Red	0	0	0	0.00
Yellow	0	0	0	0.00
Green	0	0	0	0.00
Blue	0	0	0	0.00
POX	202,908	0.91	202,908	0.91
LG POX	132,737	0.66	132,737	0.66
Portal Ore Pad	41,432	1.2	588	1.90
Live Pile	0	0	6,960	1.01
Total Ore	**377,077**	**0.86**	**343,193**	**0.82**

Table 2-6: Stockpile by Geographic Location

Location	Tonnes	Cu (%)	Dominant Material
ROM A2S3	132,737	0.66	POX
ROM UG ore	7,548	1.08	Green
South SP	181, 106	0.93	POX
TOTW SP	21,802	0.81	POX
SWD*	79,192	0.40	HGW

*The South West Dump contains a pile of High-Grade Waste which is not currently classified as ore.

Figure 2-3: Ore Stockpiles - 2022

2.3.6 Operating Results

Ore processing and metal production results for the 2021 calendar year are summarized in Table 2-7 below.

Table 2-7: Operating Results (2021)

Metal Production	Quantity
Copper (dmt)	11,804.82
Gold (kg)	366.49
Silver (kg)	4,209.99
Ore Milled	
Ore processed (t)	903,498
Copper grade (%)	1.4
Gold grade (g/t)	0.55
Silver grade (g/t)	5.6
Recoveries	
Copper (%)	93.2
Gold (%)	74
Silver (%)	83.1
Concentrates Produced	
Copper concentrate (dmt)	31,064.65
Copper (%)	38
Gold (g/t)	11.8
Silver (g/t)	135.52

2.3.7 Concentrate Shipments

Minto produced and shipped 29,235 wet metric tonnes of concentrate at 8.29% moisture content, which corresponds to 26,810 dmt. The average concentrate grades are listed in Table 2-7 above. 627 truckloads of concentrate were shipped from Minto in 2021: 239 via the winter ice bridge and 388 during the summer barge season.

2.4 Mine Access Road

2.4.1 Traffic

From January 6th to April 15th, 2021, access across the Yukon River was over an ice bridge during which heavy trucks made 319 round trips, medium trucks made 103 round trips and light vehicles made 134.5 round trips to the Minto Mine via the mine access road.

Between April 15th and June 5th, 2021, there was no land access to the mine site. On June 5th, 2021, the summer tug and barge operation started for the season. During the barge operating season, heavy trucks made 986 round trips, medium trucks made 160 round trips, and light vehicles made 552 round trips to the Minto Mine via the mine access road. The barge operating season ended November 12th, 2021, with the barge being removed from the river on that date. Construction of the 2022 ice bridge started in December 2021.

2.4.2 Access Control Issues

No access control issues were experienced in 2021.

2.4.3 Planned Access Road Maintenance for 2022

There are no major projects or upgrades planned for the access road in 2022. Routine maintenance will be completed to maintain road condition and drainage.

2.5 Accidents and Incidents

2.5.1 Incidents

For the calendar year of 2021, the Minto Mine site experienced 147 incidents that required follow-up investigation. Three of these incidents were considered serious and were reported to Yukon Workers Compensation Health and Safety Board as required. A full breakdown of the types of incidents is as follows:

- 1 Lost Time Incidents (LTI)
- 2 Medical aids (MA)
- 15 First Aids (FA)
- 29 Property Damage (PD)
- 13 Near Misses (NM)
- 1 Business Interruptions

Minto maintains a Mine Emergency Response Plan supported by complement emergency response personnel trained and certified in advanced first aid, firefighting, and mine rescue, along with equipment required for all response types. In addition, reporting and investigation of incidents is standard practice at the site.

2.5.2 Wildlife Incidents

No reportable wildlife incidents occurred on site for 2021.

2.5.3 Reportable Spills

There was one reportable spill that occurred at Minto Mine during 2021. The volume and causes of the spill are summarized below in Table 2-8.

Table 2-8: Reportable Spill (2021)

Date	Amount	Substance	Cause and clean up
15-Jun	16 L	Hydrochloric Acid	A faulty pallet did not adequately support the acid contained in bottles. The bottles were punctured as a result of the loader trying to adjust the pallet of acid

			for safe transport. Approximately 2 m3 of acid impacted overburden was excavated from the spill area and contained in plastic totes which were then removed from site for treatment/disposal.

The spill in Table 2-8 was reported as per the Spills Regulations of the Yukon Environment Act (YG Spill Line File # 21-063). The follow up spill report was submitted within 10-days of the occurrence. Additionally, non-reportable spills were tracked internally as per the WUL. A total of twenty-seven (27) non-reportable spills occurred in 2021. Spills on site were cleaned up with a variety of methods including, but not limited to, absorbent spills pads, soil excavation, soil treatment in the LTF, and disposal in the Main Pit dump

2.5.4 Non-reportable Spills

In 2021 there were 27 non-reportable spills reported. These spills are tracked internally, assigned EIR numbers and communicated to site via Spill Flash Reports. Contaminated soil is sampled and if necessary deposited in the Land Treatment Facility for further monitoring and treatment.

The volumes and contents are summarized below in Table 2-9.

Table 2-9: Non-reportable Spills (2021)

Date	Amount	Substance
12-Jan	1000L	Glycerine
21-Jan	<200L	Liquid Hydrocarbons
25-Jan	30L	Gear Oil
30-Jan	<25L	Coolant
8- Apr	75L	Diesel
12-Apr	3kg	Powdered Lime
16-Apr	8L	Hydraulic Oil
10-May	12L	Oil

10-May	3L	Oil
26-May	20L	Glycerin
14-Jun	100L	Diesel
27-Jun	50L	Diesel
28-Jun	1L	Hydraulic Oil
28-Jul	<200L	Hydrocarbon Staining
31-Jul	151L	Hydraulic Oil
10-Aug	20L	Diesel
11-Aug	10L	Hydraulic Oil
23-Sep	20L	Gear Oil
23-Sep	20L	Diesel
29-Sep	55L	Transformer Oil
4-Oct	10L	Diluted HCL Acid
7-Oct	160L	Hydraulic Oil
27-Nov	40L	Oil
28-Nov	<0.5L	Hydraulic Oil
5-Dec	3L	Gear Oil
6-Dec	2L	Coolant
29-Dec	10L	Transmission Oil

2.5.5 Spill Contingency Plan Review

A review and update to the Minto Mine Spill Contingency Plan is required annually as part of the Annual Report and the updated 2022 Minto Mine Spill Contingency Plan is provided in Appendix B.

3 Proposed Mining for 2022

Section 3 discusses the proposed mining for 2022 at the Minto Mine.

3.1 Proposed Open Pit Mining for 2022

There is no Open Pit mining planned for 2022. Open pit planning will occur throughout 2022 for the Ridgetop Open pit with a goal to start mining in 2023.

3.2 Proposed Underground Mining for 2022

Development of the Minto East Exploration drift is planned to commence in Q2 from the bottom of the current Minto East ramp. Minto East extension and Minto East 2 development is expected to start upon permit approval.

Area 2 expansion development is expected to start at the end of Q1. 2022 development activities will include the main ramp development with egress for flow through ventilation as well as a refuge station and truck load out. Once infrastructure is complete, production stoping is expected to start in Q4.

Copper Keel mining continues all year in 2022 with production stopping in the Main (zone 57), West (zone 56), and South (zone 62) lenses.

Development of the Minto North Underground is also planned to start in Q3 of 2022 or as soon as approved. This will occur via establishing a portal into the existing Minto North Open pit. Production in Minto North Underground is scheduled to commence in 2023.

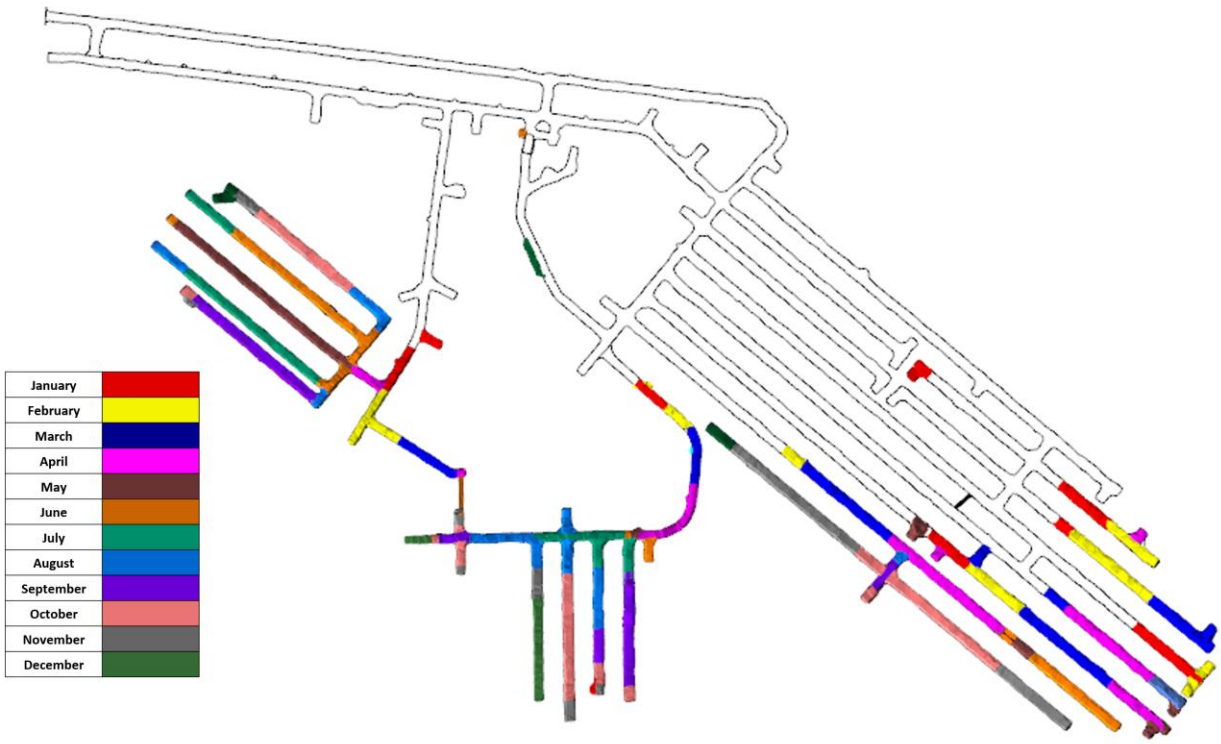

Figure 3-1: 2021 Copper Keel Development Map

4 Mineral Resources and Reserves

Minto Mine's updated Mineral Resources are provided in Tables 4-1 and 4-2 below. The most recent update is from the 43-101 Technical Report published in 2021. Minto did not report Mineral Reserves in this update.

Table 4-1: Minto Mineral Resource Estimate - Indicated

Type	Cut-off	Area	ROM	In situ Grades					Metal		
	(CA$)		tonnes	NSR (CA$/t)	Cu (%)	Au (gpt)	Ag (gpt)	Ox Ratio	Cu (000lbs)	Au (oz)	Ag (oz)
Open Pit	$35	Ridgetop	3,470,507	$79.40	1.16	0.36	3.33	0.27	88,654	40,269	371,559
		118	9,256	$82.66	1.28	0.16	2.38	0.23	262	48	708
		Open Pit	**3,479,763**	**$79.40**	**1.16**	**0.36**	**3.3**	**0.27**	**88,915**	**40,317**	**372,268**
Underground	$70	Minto East	661,607	$126.35	1.44	0.70	5.9	0.09	20,995	14,956	124,826
		Minto North	1,278,414	$123.91	1.51	0.51	4.8	0.04	42,541	21,102	198,933
		Copper Keel/Ridgetop	5,525,394	$137.79	1.65	0.63	5.5	0.06	200,396	112,165	982,380
		118	146,892	$85.49	1.14	0.17	3.0	0.07	3,700	805	14,263
		UG	**7,612,307**	**$133.46**	**1.59**	**0.61**	**5.4**	**0.06**	**267,632**	**149,028**	**1,320,437**

Source: MMTS (2021)

Table 4-2: Minto Mineral Resource Estimate - Inferred

Type	Cut-off	Area	ROM	In situ Grades					Metal		
	(CA$)		tonnes	NSR (CA$)	Cu (%)	Au (gpt)	Ag (gpt)	Ox Ratio	Cu (000lbs)	Au (oz)	Ag (oz)
Open Pit	$35	Ridgetop	1,914,650	70.00	1.03	0.29	3.02	0.30	43,608	17,544	185,903
		118	71,450	81.36	1.24	0.21	2.75	0.26	1,958	486	6,317
		All Open Pit	**1,986,100**	**$70.41**	**1.04**	**0.28**	**3.0**	**0.30**	**45,566**	**18,030**	**191,221**
Underground	$70	Minto East	4,440,833	$115.04	1.33	0.61	5.7	0.09	129,967	86,865	810,968
		Minto North	56,083	$137.03	1.56	0.77	5.6	0.05	1,927	1,385	10,079
		Copper Keel/Ridgetop	6,286,103	$111.88	1.35	0.49	4.3	0.06	186,563	99,839	869,042
		118	243,653	$82.30	1.13	0.11	2.8	0.27	6,082	828	21,542
		Subtotal-UG	**11,026,672**	**$112.63**	**1.34**	**0.53**	**4.8**	**0.08**	**324,539**	**188,917**	**1,711,632**

Source: MMTS (2021)

5 Surface Water Quality Monitoring

Environmental monitoring programs are outlined in the *Environmental Monitoring, Surveillance and Reporting Plan* (EMSRP 2018-01). The results for the surface water quality monitoring conducted in 2021 are provided in this section. Where possible, the 2021 results have been compared to historical results to identify trends and compare 2021 values with previous values.

5.1 Surface Water Quality Program

Details of the Surface Water Surveillance Program, including sampling station locations and monitoring frequency, are outlined in the EMSRP 2018-01 and the results are presented in this section for water quality stations outlined in the Water Use Licence (WUL). Water quality result statistics including the mean, minimum and maximum are presented in summary tables. For the purposes of graphing results, values less than the detection limit were taken to be half of the detection limit.

The WUL Effluent Quality Standards (EQS) were compared to the water quality result statistic summaries at stations W16, W16A, W17, W50 and WTP/RO. The WUL Water Quality Objectives (WQO) were compared to the water quality result statistic summary at station W2, and at W50 when W35 and W15 are frozen.

As water quality stations, may be adjusted from year-to-year because of environmental changes or modifications to infrastructure, an update to the water quality station locations listed in the WUL is provided in Table 5-1 below. All surveillance monitoring sites in use in 2021 are confirmed with a Global Positioning System (GPS) unit to determine current UTM coordinates. Coordinates presented in Table 5-1 are associated with the World Geodetic System 1984 (WGS 84) coordinate system.

Table 5-1: Water Quality Site Descriptions and UTM Coordinates

Station	Description	UTM Coordinates – Zone 8	
		Easting	Northing
W1	Lower Reach of Minto Creek	392445	6948251
W2	Minto Creek, upstream of the Minto Creek/Yukon River confluence where the access road crosses Minto Creek	392584	6948402
W3	Minto Creek, at the federal MMER compliance point	387000	6945778
W4	Yukon River, upstream of the confluence with Minto Creek	394070	6948203
W5	Yukon River, downstream of the confluence with Minto Creek	392583	6949119
W6	Tributary on the North side of Minto Creek	387583	6946392
W7	Mouth of the tributary on the south side of Minto Creek, approximately 0.8 km downstream of W3	387546	6946034
W8	Western collection sump from the DSTSF	385629	6945076
W8A	Eastern collection sump from the DSTSF	385716	6945012
W10	Headwaters of Minto Creek (south-west fork at headwaters)	383855	6943364
W12	Main Pit and Main Pit Tailings Management Facility	384544	6945137
W12A	Discharge from Main pit	*	*
W14	Tailings thickener overflow	385223	6945089
W15	Upper Minto Creek storm water collection sump, downstream of the overburden dump, just upstream of Main Pit	384181	6944708
W16	Water Storage Pond	386402	6945559
W16A	Discharge from the Water Storage Pond	386679	6945664
W17	Water Storage Pond dam seepage	386679	6945664
W30	Headwaters Minto Creek (north-west fork)	383693	6945026
W33	Up-gradient of South Diversion Ditch	385351	6944072
W35	South Diversion Ditch	385223	6944427
W36	Minto Creek detention structure (MCDS) – Decommissioned in 2015	385892	6945191
W37	100 m downstream of MCDS (W36 collection sump) and upstream of Water Storage Pond – Decommissioned in 2015	386180	6945294
W45	Area 2 Pit and Area 2 Pit Tailings Management Facility	384912	6944068
W46	Minto Creek, downstream of W7 and W6 tributaries	387873	6946301
W47	Area 118 Pit water	384775	6944153
W50	Minto Creek, approximately 50 m downstream of the toe of the Water Storage Pond Dam and downstream of the inflow of the treated water	386747	6945682

Station	Description	UTM Coordinates – Zone 8	
		Easting	Northing
MC-1	Minto Creek upstream of Canyon	390967	6947528
WTP	Treated water from water treatment plant when RO not operating	385126	6945154
RO	Treated water from RO	385126	6945154
W51	Area 2 Stage 3 Pit	385160	6944240
W52	Ridgetop North Pit and Ridgetop North Pit Tailings Management Facility	*	*
W53	Ridgetop South Pit	*	*
W54	Main Dam seepage	*	*
W55	Tailings Diversion Ditch	386209	6945007
W62	MVFES2 Collection Sump	386079	6945335
C4	Tributary on the south side of Minto Creek, downstream of W3	388407	6946571
C10	Tributary on the south side of Minto Creek, downstream of W3	391868	6947914
MN	Minto North pit water	384342	6946090
MN-0.2	Upper west arm of McGinty Creek (Reference Station)	382267	6947299
MN-0.5	West arm of McGinty Creek just upstream of the confluence with the east arm	385251	6951262
MN-1.5	Upper east arm of McGinty Creek downstream of the Minto North deposit	384473	6947055
MN-2.5	East arm of McGinty Creek just upstream of confluence with the west arm	385493	6950788
MN-4.5	Lower mainstream McGinty Creek near confluence with Yukon River	386231	6952851
UG 1	Minto South underground mine dewatering	384916	6944098
UG 2	Wildfire underground mine dewatering	*	*
UG 3	Copper Keel underground mine dewatering**	*	*
UG 4	Minto East underground mine dewatering	384961	6945020

*Water quality sites not developed

** Copper keel dewatering is currently co-mingled with Minto South dewatering and reports to surface via UG1 sump

5.1.1 Water Quality Monitoring Conformance

2021 conformance with the external water sampling requirements is summarized in Table 5-2 below. Flow monitoring at water quality surveillance sites is highly variable because of site and seasonal conditions and is not presented in Table 5-2, however, full details were provided in the Monthly Reports submitted to the Yukon Water Board

(YWB). Additionally, the specifics of any non-conformance in relation to external and internal water sampling requirements are included in the Monthly Reports. Quality Assurance and Quality Control (QA/QC) sampling is not included in sampling events described in Table 5-2 but is provided in Section 5.1.2 below.

Table 5-2: Water Quality Sampling Monitoring Conformance Summary (2021)

Site Name	2021 WQ sampling events	2021 Reason(s) for non-conformance events
W1	N/A	N/A
W2	28	Site was frozen during first quarter, intermittently dry from April through August, and frozen as of October 17th.
W3	60	Sampled as per schedule.
W4	10	Site frozen in Q1.
W5	7	Site frozen in Q1.
W6	6	Site frozen for 6 months of the year.
W7	23	Site frozen for 6 months of the year.
W8	0	Site destroyed in 2017.
W8A	0	Site was dry throughout 2021.
W10	6	Site frozen for 6 months of the year.
W12	13	Sampled as per schedule.
W12A	0	No discharge from W12A in 2021.
W14	12	Sampled as per schedule.
W15	32	Site frozen for 5 months of 2021.
W16	41	Sampled as per schedule.
W16A	0	No discharge from W16A in 2021
W17	54	Sampled as per schedule.
W30	7	Site was frozen from January-March and November-December.
W33	0	Site destroyed in 2017, replaced with W33s.
W33s	6	Site was frozen from January-April and November-December.
W35	7	Site frozen from January-April and November-December.
W36	0	Decommissioned in 2015.
W37	0	Decommissioned in 2015.
W45	0	Water in Area 2 Stages 1 and 2 merged with water in Stages 3 and 4 in September 2020. Water quality for the Area 2 Pit Complex will be sampled from W51 going forward.
W46	7	Site frozen from January-March and November-December.
W47	0	Decommissioned and backfilled in 2017.
W50	36	Site frozen from January-April
MC-1	26	Site frozen through first quarter, and November-December.
WTP	0	All water discharged from the Water Treatment Plant in 2021 was run through the RO units, therefore sampling WTP discharge was not required.
RO	4	Sampled as per schedule.
W51	12	Sampled as per schedule.

Site Name	2021 WQ sampling events	2021 Reason(s) for non-conformance events
W52	0	Site not established.
W53	0	Site not established.
W54	0	Site not established.
W55	6	Site frozen through first quarter, and frozen/dry through third and fourth quarters.
W62	12	Sampled as per schedule.
C4	6	Site frozen from January-April and November-December.
C10	2	Site frozen or dry except in April and May 2021.
MN	7	Site frozen from January through April and in December.
MN-0.2	4	Site frozen from January-May and October-December
MN-0.5	5	Site frozen from January-April and October-December
MN-1.5	5	Site frozen from January-April and October-December
MN-2.5	5	Site frozen from January-April and October-December
MN-4.5	5	Site frozen from January-April and October-December
UG1	12	Sampled as per schedule.
UG4	12	Sampled as per schedule.

5.1.2 Quality Assurance and Quality Control Program

As required by Clause 104 of the WUL, Minto is required to submit the results and interpretations of the Quality Assurance and Quality Control Program (QA/QC Program). The QA/QC program is directed through the EMSRP. Implementation of the Minto QA/QC Program occurred since November 2012.

The primary objective of the QA/QC Program is to ensure that data collected, analyzed, and evaluated through the environmental monitoring programs at Minto are representative of the environmental conditions present at the time of sample collection.

The QA/QC Program has been developed using recognized QA/QC protocols. Specific procedures for data collection at the Minto Mine are detailed in Standard Operating Procedures (SOPs). SOPs are internal documents to the Minto Mine that may be updated as required.

The main components of the QA/QC Program presented in the following sections include QA/QC with regards to water quality monitoring, external and on-site laboratory reporting, and environmental programs monitoring.

5.1.2.1 Water Quality QA/QC

Procedures for water quality monitoring at the Minto Mine are described in the EMSRP and further detailed in the Minto Mine Surface Water Quality Monitoring Standard Operating Procedure. The SOP is reviewed at the start of each field season and signed off by Minto Environment department staff to help ensure consistency in sampling procedures.

In 2021, 623 water quality samples (surface and groundwater) were collected for the water quality monitoring programs. At total of 77 duplicate samples were taken, representing 12% of the total number of samples collected in 2021. 12 monthly field blanks and 4 quarterly trip blanks were taken, as per schedule. The Minto Mine Surface Water Quality Monitoring Standard Operating Procedure describes a 1:10 quality control to routine sampling ratio and this ratio was achieved in 2021.

5.1.2.2 External Laboratory QA/QC

The 2021 external laboratory water quality analysis were performed by ALS Environmental in Burnaby, BC. As described in the EMSRP, all results provided by the external laboratory were accompanied by a Quality Control Report. If procedural deviations or exceedances in standard holding time occurred, the details of such nonconformities were included in each report. Additionally, each report contained QC batch numbers to facilitate sample result traceability.

5.1.2.3 On-site Laboratory QA/QC

Procedures for analyzing water samples at the on-site laboratory are detailed in a variety of SOPs such as, but not limited to: The Laboratory QA/QC Guidelines SOP; Preparation of Dissolved and Total Metals (Cu, Al, Cd) SOP; Preparation of Dissolved and Total Selenium SOP; and Total Dissolved Solids SOP. All on-site laboratory equipment was calibrated per the manufacturer's specifications in 2021.

On-site laboratory analysis of water quality samples occurred at W2, W3, W16, W16a and W50 as per the WUL Schedule 1 – Part 2 monitoring requirements, as environmental conditions allowed. No internal samples were provided to the internal

laboratory from W8 as the site was destroyed in 2017. W8A was found dry throughout 2021. Additionally, the on-site laboratory analyzed water from sites W15 and W35 during freshet to determine where best to route the run-off water.

The 2021 QC procedures performed by the on-site laboratory included spiked blanks and calibration checks. If two or more QC failures occurred, the 2021 QC procedures involved re-analyzing the entire batch of samples. Additionally, one replicate sample is analyzed for each batch analysis. In the event the replicate sample results do not match; the entire batch is reanalyzed.

QA/QC results such as duplicates, field splits, trip blanks and field blanks are verified monthly. Results are compared and reported internally to improve on sampling and analysis.

5.2 Compliance

5.2.1 Discharge Compliance – WQ Effluent Standards

5.2.1.1 W16A – EQS Compliance Point

No effluent was discharged from the WSP via W16A in 2021.

5.2.1.2 W50 – EQS Compliance Point

The EQS were applied and met at W50 during active discharge from October 8th to 15th, 2021. The water quality results for this period are presented Table 5-3 below. A detailed summary of all samples collected at W50 during 2021 is presented in Section 5.2.4.2.

Table 5-3: W50 Water Quality Results During Active Discharge Period, 2021

W50	Effluent Quality Standard (WUL Clause 9)	2021 Samples During Active Discharge			
Parameters		**25-May-21**	**31-May-21**	**20-Sep-21**	**23-Sep-21**
pH	6.0-9.0	6.86	6.89	7.28	7.53
TSS (mg/L)	15	1.3	<1.0	<1.0	<1.0
Nutrients (mg/L)					
Ammonia Nitrogen	0.75	0.192	0.123	0.176	0.0128
Nitrite Nitrogen	0.18	<0.0010	0.113	0.0012	0.0022
Nitrate Nitrogen	27.3	0.0275	1.58	0.0084	0.126
Dissolved Metals (mg/L)					
Aluminum	0.3	0.0171	0.0051	0.0092	0.0053
Arsenic	0.015	0.0005	0.00017	0.00049	<0.00010
Cadmium	May -Jun: 0.000315* Sep: 0.00085*	0.0000614	0.0000223	0.0000445	<0.0000050
Chromium	0.003	<0.00050	<0.00050	<0.00050	<0.00050
Copper	May - Jun: 0.06** Sep: 0.039**	0.0112	0.00288	0.00284	0.00118
Iron	3.3	0.107	0.027	0.162	0.01
Lead	0.012	<0.000050	<0.000050	<0.000050	<0.000050
Molybdenum	0.219	0.00547	0.00138	0.00587	0.00039
Nickel	0.33	0.00803	0.00125	0.007	<0.00050
Selenium	0.006	0.00022	0.000096	0.000175	<0.000050
Silver	0.0003	<0.000010	<0.000010	<0.000010	<0.000010
Zinc	0.09	<0.0010	<0.0010	0.0023	<0.0010

***Based on measured hardness at WQO Station (W2)**

****Based on measured DOC at WQO Station (W2)**

5.2.1.3 W17 – EQS Compliance Point

During 2021, there was no water discharged from W17 to Minto Creek, therefore EQS were not applied to this station.

5.2.1.4 WTP – EQS Compliance Point

While the Water Treatment Plant (WTP) did operate in 2021, all water was run through the Reverse Osmosis (RO) units before being discharged to Minto Creek. Therefore, EQS were not applied to this station. RO compliance is discussed in Section 5.2.3, below.

5.2.2 Discharge Compliance – Bioassays

Monthly and quarterly bioassays are conducted at several surface water quality sites, as per WUL requirements. These tests are to ensure the water is not toxic for aquatic organisms.

All quarterly LC50, 72-hour algae growth and Ra226 tests were conducted, and passed, at W3 during 2021. Quarterly lab results were submitted with the monthly reports in which they were received. Annual MDMER sub-lethal tests were conducted in October. Both tests passed and the results were included in the December monthly report. 48- and 96-hour LT50 samples were collected during active discharge in October and both tests passed.

At W2 station, bioassay sampling was not completed in the first quarter of 2021, as the water quality station was frozen until April. CA-72A and CD-7 day were completed and passed for Quarters 2, 3 and 4. CT-30-day tests were completed and passed in Quarters 2 and 3 but could not be completed in Quarter 4 due to the station freezing over on October 17th.

Due to lack of water, monthly bioassay testing at W50 could only be completed in July, August, September, and October. The 48- and 96-hour LT50, and Cd-7d tests all passed during this period.

48- and 96-hour LT50 samples were collected at W3, W16A, and W50 during active discharge in October and all tests passed. Results were included with the November monthly report

5.2.3 Discharge Compliance – RO

Minto discharged directly to Minto Creek from the Water Treatment Plant (WTP) RO train from May 25th to June 1st, September 20-25th and again on September 29th. On all three occasions, discharge was halted due to exceedances of WQO in RO product

water. External and internal water quality results for station RO are presented in Tables 5-4 and 5-5, respectively.

Table 5-4: External RO Water Quality Results During Active Discharge Period, 2021

RO	Effluent Quality Standard (WUL Clause 9)	2021 Samples During Active Discharge		
Parameters		**26-May-21**	**31-May-21**	**22-Sep-21**
pH	6.0-9.0	7.65	7.37	7.24
TSS (mg/L)	15	<1.0	<1.0	<1.0
Nutrients (mg/L)				
Ammonia Nitrogen	0.75	0.103	0.242	0.0164
Nitrite Nitrogen	0.18	0.0467	0.266	0.0021
Nitrate Nitrogen	27.3	1.44	2.72	0.123
Dissolved Metals (mg/L)				
Aluminum	0.3	<0.0010	<0.0010	0.0041
Arsenic	0.015	<0.00010	<0.00010	<0.00010
Cadmium	May -Jun: 0.000315*	<0.0000050	<0.0000050	6.4E-06
	Sep: 0.00085*			
Chromium	0.003	<0.00050	<0.00050	<0.00050
Copper	May - Jun: 0.06**	<0.00020	0.00071	0.00062
	Sep: 0.039**			
Iron	3.3	<0.010	<0.010	<0.010
Lead	0.012	<0.000050	<0.000050	<0.000050
Molybdenum	0.219	<0.000050	<0.000050	<0.000050
Nickel	0.33	<0.00050	<0.00050	<0.00050
Selenium	0.006	<0.000050	<0.000050	<0.000050
Silver	0.0003	<0.000010	<0.000010	<0.000010
Zinc	0.09	0.0015	0.0026	0.002

***Based on measured hardness at WQO Station (W2)**
****Based on measured DOC at WQO Station (W2)**

Table 5-5: Internal RO Water Quality Results During Active Discharge Period, 2021

RO	Water Quality Objective (WUL Clause 9)	2021 Samples During Active Discharge													
Parameters		25-May-21	26-May-21	27-May-21	28-May-21	29-May-21	30-May-21	31-May-21	01-Jun-21	20-Sep-21	21-Sep-21	22-Sep-21	23-Sep-21	24-Sep-21	25-Sep-21	29-Sep-21
Nutrients (mg/L)																
Ammonia Nitrogen	0.25	0.11	0.12	0.11	0.12	0.12	0.07	0.21	0.23	0.09	<0.01	0.04	0.05	0.02	0.03	0.02
Nitrite Nitrogen	0.06	0.02	0.04	0.05	0.06	**0.09**	**0.1**	**0.12**	**0.15**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nitrate Nitrogen	9.1	2.1	1.9	1.8	1.3	2	1.3	1.4	1	1	0.8	<0.01	0.4	1	5.4	1
Dissolved Metals (mg/L)																
Aluminum	0.3	0.01	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0	**0.12**	**0.82**	0.06
Copper	May - Jun: 0.03** Sep: 0.013**	0.004	0.003	0.008	0.003	0.006	0.007	0.002	0.003	0.004	0.002	0.004	<0.001	0.005	0.012	**0.026**
Cadmium	May -Jun: 0.000105* Sep: 0.00028*	<0.000004	<0.000004	<0.000004	<0.000004	<0.000004	<0.000004	<0.000004	<0.000004	0.00004	<0.000004	0.00011	<0.000004	<0.000004	<0.000004	*
Selenium	0.002	*	*	*	*	*	*	*	*	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.0006	*

***Not tested due to miscommunication with internal lab staff**

5.2.4 Water Quality Objectives Compliance – Minto Creek

5.2.4.1 W2 – WQO Compliance Point

Water Quality Objectives (WQO) (Clause 11 of the WUL) were applied at W2 during the period between April 20th and October 17th, 2021. As of April 20th, W15 and W35 were no longer frozen and W2 became the WQO station until the site froze on October 17th. Apart from dissolved aluminum, which exceeded the WQO on May 5th, all other parameters met the WQO's for 2021. Elevated concentrations of both dissolved aluminum and copper are common during freshet; no active discharge was taking place and mine loading was not considered to be a factor. The 2021 water quality statistics for W2 are summarized below in Table 5-6. Dissolved copper and aluminum at W2 are illustrated in Figure 5-1, and dissolved cadmium and selenium in Figure 5-2, below.

Table 5-6: W2 Water Quality Results Summary (2007-2021)

W2	Water Quality Objective	2007 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**(WUL Clause 11)**	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	6.0-9.0	7.97	6.3	9.42	7.63	6.79	8.04
TSS (mg/L)	N/A	51.25	<1.0	2600	25.28	<1.0	99.2
Nutrients (mg/L)							
Ammonia Nitrogen	0.25	0.03169	0.00025	0.83	0.01555	<0.0050	0.211
Nitrite Nitrogen	0.06	0.00821	0.0005	0.25	0.00101	<0.0010	0.0012
Nitrate Nitrogen	9.1	1.22903	0.00025	8.9	0.02744	<0.0050	0.0743
Dissolved Metals (mg/L)							
Aluminum	0.1	0.02071	0.0028	0.39	0.0208	0.0042	0.109
Arsenic	0.005	0.001255	0.0001	<0.2	0.00046	0.00032	0.0007
Cadmium	0.00015*	5.99E-05	<0.0000050	<0.01	8.65E-06	<0.0000050	0.0000297
Chromium	0.001	0.000518	<0.00010	<0.01	0.00049	0.00017	0.00053
Copper	0.013 ([DOC] ≤ 10mg/L) 0.02 ([DOC] > 10mg/L)	0.00333	0.0001	0.0227	0.00417	0.00168	0.0131
Iron	1.1	0.2053	0.018	26.2	0.102	0.019	0.468
Lead	0.004	0.0003497	<0.000050	<0.05	0.00005	<0.000050	<0.000050
Molybdenum	0.073	0.002628	0.00018	<0.03	0.001106	0.000232	0.00157
Nickel	0.11	0.001373	<0.00050	<0.05	0.00109	0.00053	0.00223
Selenium	0.002	0.001312	0.000074	<0.2	0.000151	0.000081	0.000293
Silver	0.0001	0.0000667	<0.000010	<0.01	0.00001	<0.000010	<0.000010
Zinc	0.03	0.0039	0.0005	0.02	0.00127	<0.0010	0.0038

*Based on measured hardness

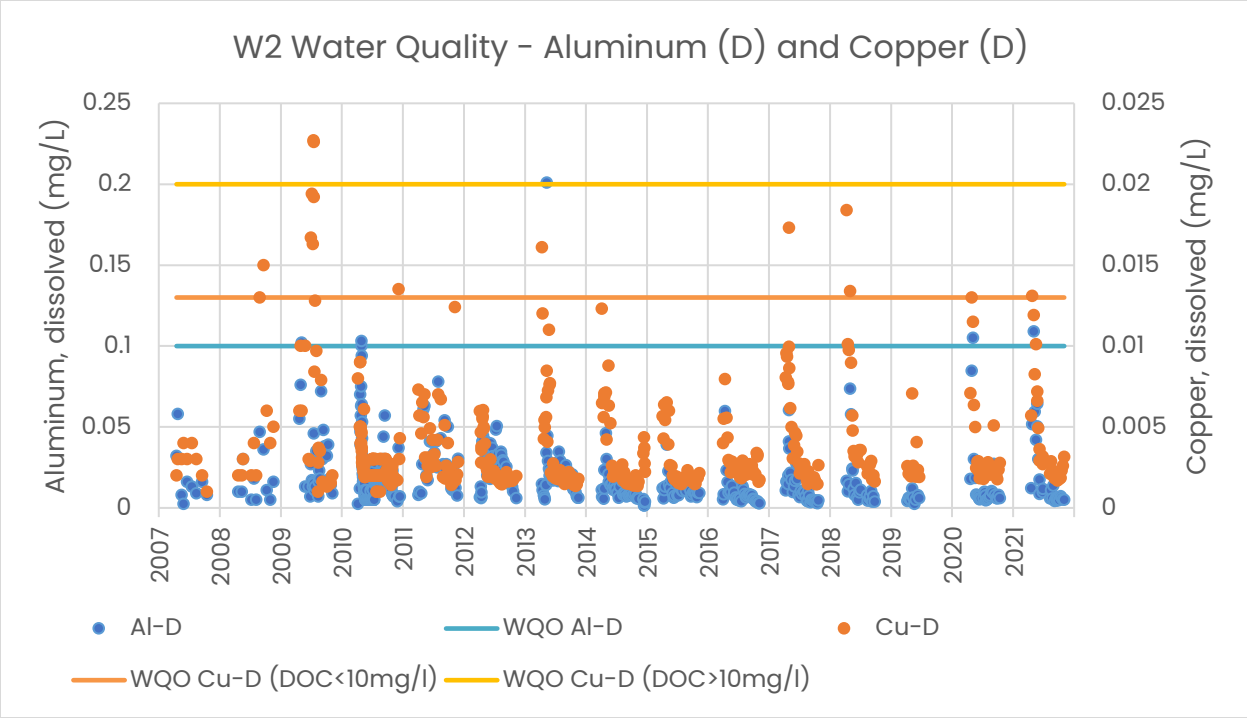

Figure 5-1: W2 Copper and Aluminum Concentrations (2007-2021)

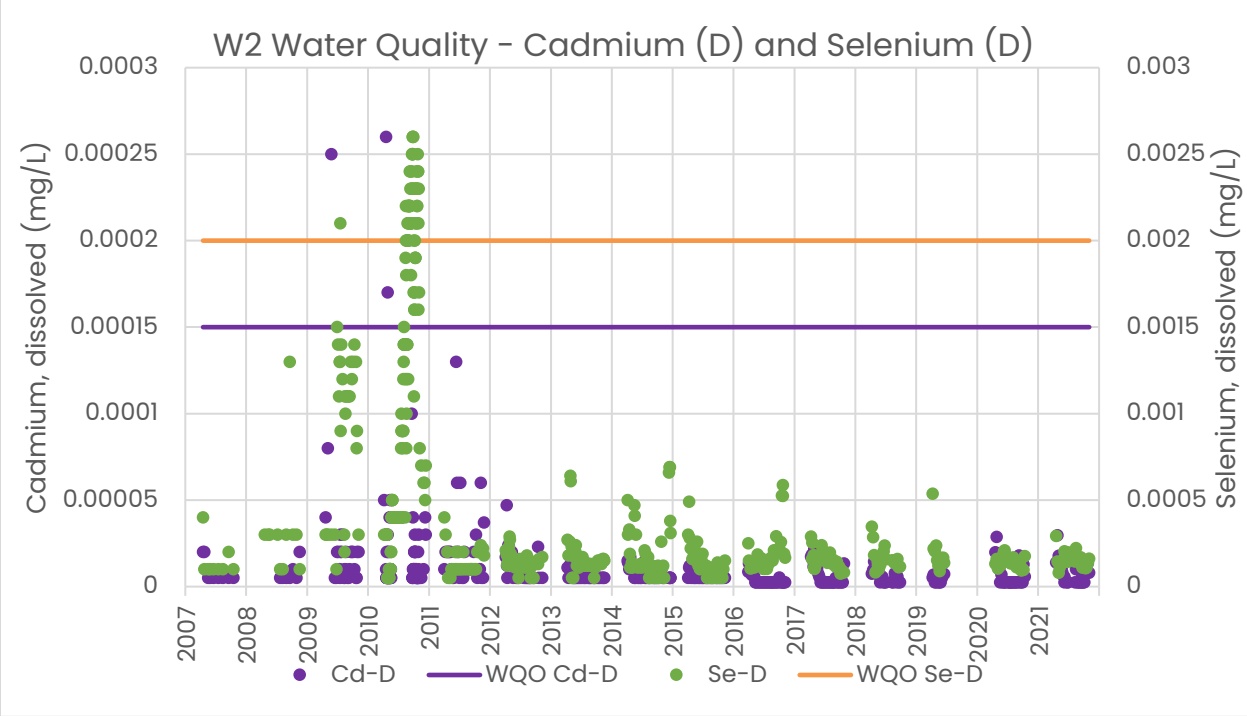

Figure 5-2: W2 Cadmium and Selenium Concentrations (2007-2021)

5.2.4.2 W50 – WQO Compliance Point

As per Clause 5 of the WUL, W50 was the designated WQO station during the first quarter when W15 and W35 were frozen; no samples were taken as W50 was frozen as well. As of April 20th, W15 and W35 were no longer frozen and W2 became the WQO station until W15 and W35 froze again on October 17th, 2021. W50 became the WQO station at this time and was sampled until it was discovered frozen on December 21st, 2021. No exceedances of the WQO occurred when W50 was the designated WQO station.

The 2021 water quality statistics for W50 are summarized below in Table 5-7. Dissolved copper and aluminum at W50 are illustrated in Figure 5-3, and dissolved cadmium and selenium in Figure 5-4 below.

Table 5-7: W50 Water Quality Results Summary (2009-2021)

W50	Water Quality Objective	Effluent Quality Standards	2009 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**(WUL Clause 11)**	**(WUL Clause 9)**	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	6.0-9.0	6.0-9.0	7.69	6.86	9.5	7.24	6.68	7.81
TSS (mg/L)	N/A	15	5.42	<1.0	42	4.87	<1.0	40.4
Nutrients (mg/L)								
Ammonia Nitrogen	0.25	0.75	0.108	<0.005	1	0.1649	0.0128	0.207
Nitrite Nitrogen	0.06	0.18	0.02237	<0.0010	0.158	0.00486	<0.0010	0.113
Nitrate Nitrogen	9.1	27.3	3.17518	<0.0050	16.2	0.0705	0.0055	1.58
Dissolved Metals (mg/L)								
Aluminum	0.1	0.3	0.01566	0.0013	0.12	0.0102	0.0051	0.0224
Arsenic	0.005	0.015	0.00038	0.00012	0.0008	0.000435	<0.00010	0.00053
Cadmium	0.00015*	0.00045	2.27E-05	<0.0000050	0.00028	4.57E-05	<0.0000050	0.0000771
Chromium	0.001	0.003	0.000645	<0.00010	0.0017	0.000505	<0.00050	0.00062

Copper	0.013 ([DOC] ≤ 10mg/L)	0.039 ([DOC] ≤ 10mg/L)	0.01434	<0.001	0.075	0.00413	0.00118	0.0195
	0.02 ([DOC] > 10mg/L)	0.06 ([DOC] > 10mg/L)						
Iron	1.1	3.3	0.0661	<0.0050	0.405	0.156	0.01	0.33
Lead	0.004	0.012	0.0001608	<0.000050	0.0008	0.00005	<0.000050	<0.000050
Molybdenum	0.073	0.219	0.00593	<0.001	0.019	0.005643	0.00039	0.00737
Nickel	0.11	0.33	0.002213	<0.00050	0.0106	0.00648	<0.00050	0.00834
Selenium	0.002	0.006	0.001019	<0.0001	0.0049	0.000184	<0.000050	0.000345
Silver	0.0001	0.0003	0.0000145	<0.000010	0.00002	0.00001	<0.000010	<0.000010
Zinc	0.03	0.09	0.00364	<0.0010	0.018	0.00146	<0.0010	0.0053

***Based on measured hardness at WQO Station**

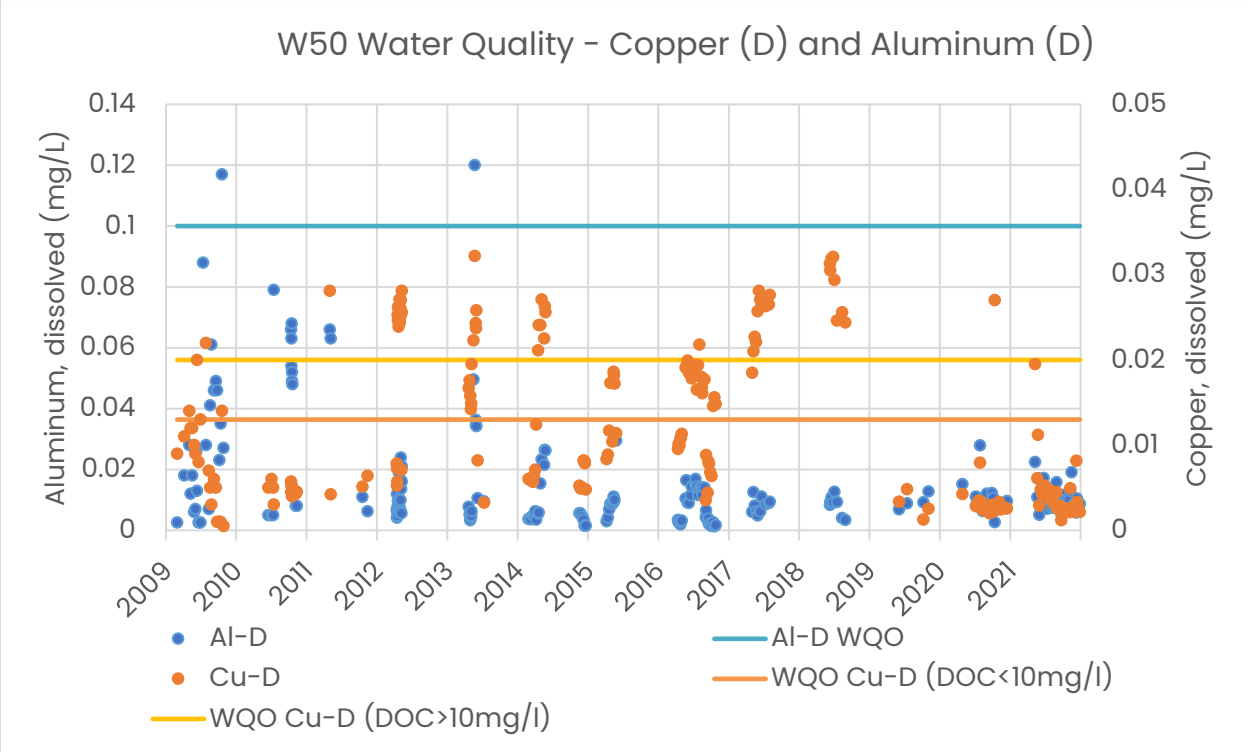

Figure 5-3: W50 Copper and Aluminum Concentrations (2009-2021)

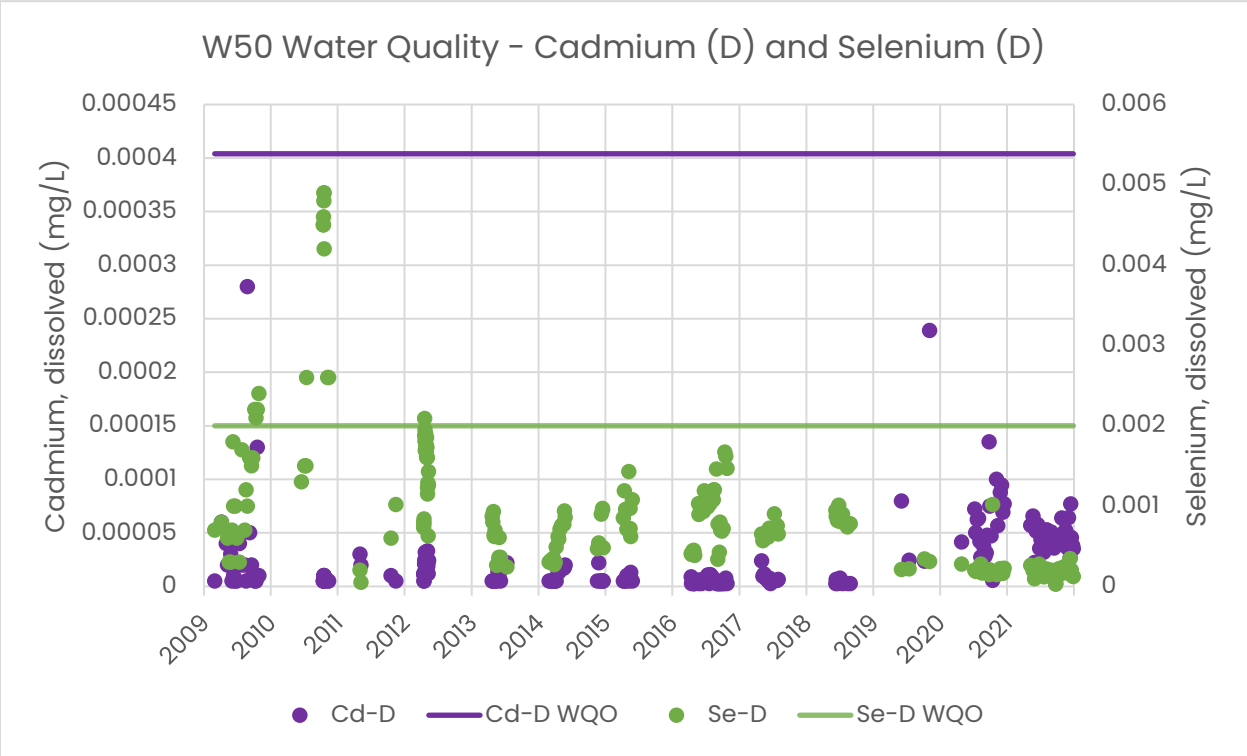

Figure 5-4: W50 Cadmium and Selenium Concentrations (2009-2021)

5.3 Surface Water Quality Surveillance Stations

5.3.1 W2 – Minto Creek at Lower Road Crossing Water Quality

Water quality statistics for W2 from 2017 to 2021 are presented in Section 5.2.3.1 above.

5.3.2 W3 – Minto Creek, at the Federal (MDMER) Compliance Point

Water quality statistics for W3 from 2005 to 2021 are summarized below in Table 5-8. A total of 55 routine samples were collected from station W3 during the 2021 monitoring period. The results for dissolved copper, dissolved aluminum, dissolved cadmium, and dissolved selenium for W3 from 2007 to 2021 are also presented in Figure 5-5 and Figure 5-6 below.

Table 5-8: W3 Water Quality Results Summary (2005-2021)

W3	2005 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.76	6.48	9.06	7.54	6.96	8.28
TSS (mg/L)	6.3	<1.0	985	3.02	<1.0	18.4
Nutrients (mg/L)						
Ammonia Nitrogen	0.04678	<0.002	0.62	0.01183	<0.0050	0.0292
Nitrite Nitrogen	0.02101	<0.0010	0.347	0.00317	<0.0010	0.0577
Nitrate Nitrogen	2.21508	<0.0050	18.7	0.212	0.0388	1.23
Dissolved Metals (mg/L)						
Aluminum	0.01752	<0.0010	0.297	0.01137	0.0014	0.126
Arsenic	0.000328	0.00012	0.00166	0.00026	0.00014	0.00052
Cadmium	7.35E-04	<0.0000050	0.565	9.11E-06	<0.0000050	0.0000666
Chromium	0.000694	<0.00010	0.0039	0.000383	<0.00010	0.00056
Copper	0.00522	<0.001	0.067	0.00575	0.00164	0.0498
Iron	0.0436	<0.005	0.75	0.0416	<0.010	0.183
Lead	0.0002155	0.000009	0.0603	0.00005	<0.000050	<0.000050
Molybdenum	0.005364	0.00032	0.103	0.00444	0.00148	0.00525
Nickel	0.001099	<0.00050	0.006	0.00123	0.0007	0.00283
Selenium	0.000878	<0.000050	0.0348	0.000266	0.000081	0.000528
Silver	1.531E-05	<0.0000050	0.0001	0.00001	<0.000010	<0.000010
Zinc	0.0046	0.00067	0.143	0.00126	<0.0010	0.0045

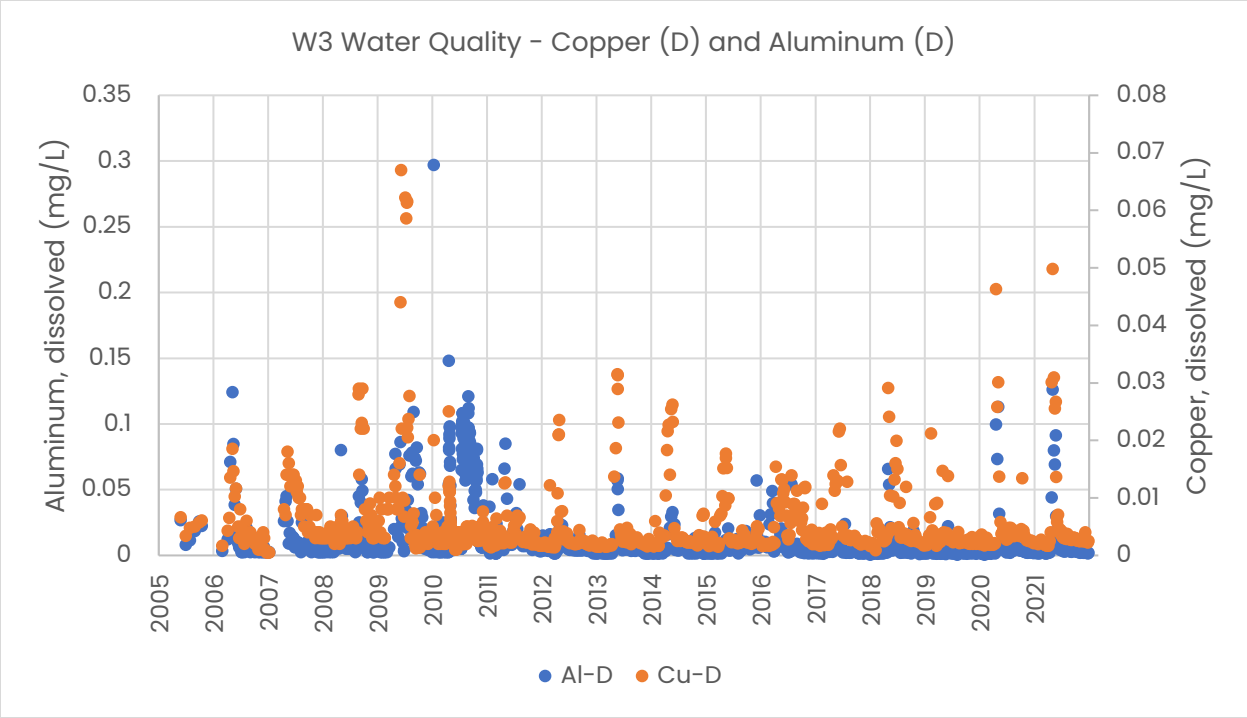

Figure 5-5: W3 Copper and Aluminum Concentrations (2005-2021)

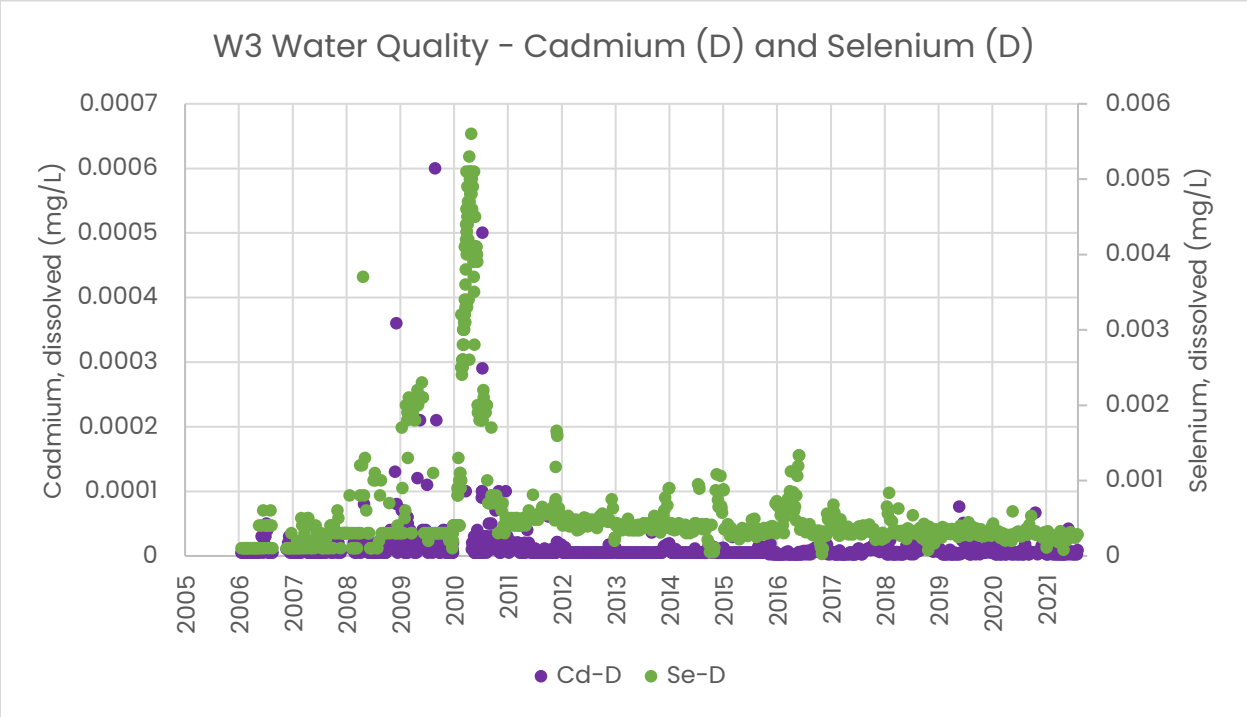

Figure 5-6: W3 Cadmium and Selenium Concentrations (2006-2021)

5.3.3 W4 – Yukon River, upstream of the confluence with Minto Creek

Water quality statistics for W4 from 2011 to 2021 are summarized below in Table 5-9. A total of ten routine samples were collected from station W4 during the 2021 monitoring period.

Table 5-9: W4 Water Quality Results Summary (2011-2021)

W4	2011 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.78	1.28	9.25	7.56	6.96	8.07
TSS (mg/L)	22.61	<1.0	270	54.55	<1.0	303
Nutrients (mg/L)						
Ammonia Nitrogen	0.03795	<0.0050	2.4	0.00767	<0.0050	0.0267
Nitrite Nitrogen	0.006	<0.0010	<0.050	0.001	<0.0010	<0.0010
Nitrate Nitrogen	0.0758	0.0099	0.849	0.0403	0.0075	0.179
Dissolved Metals (mg/L)						
Aluminum	0.01421	<0.0010	0.167	0.0308	0.0012	0.17
Arsenic	0.00046	0.00032	0.00105	0.00055	0.00036	0.00125
Cadmium	1.74E-05	<0.0000050	0.0014	7.57E-06	<0.0000050	0.0000229
Chromium	0.000928	<0.00010	<0.0020	0.000462	0.00012	<0.00050
Copper	0.00111	0.00031	0.00819	0.00126	0.00032	0.00441
Iron	0.0379	0.0052	0.307	0.071	0.014	0.449
Lead	0.0001878	<0.000050	<0.00040	0.000062	<0.000050	0.00017
Molybdenum	0.001082	0.00039	0.0021	0.00103	0.000543	0.00133
Nickel	0.000985	<0.00050	0.002	0.000748	<0.00050	0.00221
Selenium	0.000144	<0.00010	0.00044	0.000176	0.000113	0.000236
Silver	0.0000192	<0.000010	<0.000040	0.00001	<0.000010	<0.000010
Zinc	0.00471	<0.0010	<0.01	0.00106	<0.0010	0.0015

5.3.4 W5 – Yukon River, Downstream of the Confluence with Minto Creek

Water quality statistics for W5 from 2017 to 2021 are summarized below in Table 5-10. A total of 7 routine samples were collected from station W5 during the 2021 monitoring period. The Q1 sample could not be taken due to ice depth greater than the auger length.

Table 5-10: W5 Water Quality Results Summary (2011-2021)

W5	2011 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.93	6.77	8.9	7.73	7.15	8.09
TSS (mg/L)	36.65	<1.0	340	28	5.8	59.3
Nutrients (mg/L)						
Ammonia Nitrogen	0.02415	<0.0050	0.382	0.00764	<0.0050	0.0235
Nitrite Nitrogen	0.00595	<0.0010	<0.050	0.001	<0.0010	<0.0010
Nitrate Nitrogen	0.0564	0.0067	<0.4	0.02326	<0.0050	0.045
Dissolved Metals (mg/L)						
Aluminum	0.01444	<0.0030	0.0637	0.0267	0.0097	0.0949
Arsenic	0.0005	0.00036	0.00086	0.00052	0.0004	0.0008
Cadmium	0.00001	<0.0000050	0.000213	0.00000831	<0.0000050	0.000012
Chromium	0.000917	<0.00010	<0.001	0.000517	<0.00050	0.00062
Copper	0.00139	0.00047	0.00694	0.00205	0.00066	0.00733
Iron	0.0874	0.009	0.712	0.085	0.02	0.419
Lead	0.0001857	<0.000050	<0.0002	0.000051	<0.000050	0.000057
Molybdenum	0.001153	0.000868	0.0018	0.00109	0.000499	0.0013
Nickel	0.00099	<0.00050	0.002	0.000776	<0.00050	0.00225
Selenium	0.00015	<0.00010	0.00029	0.000185	0.000144	0.000243
Silver	0.000019	<0.000010	0.000021	0.00001	<0.000010	<0.000010
Zinc	0.0052	<0.0010	0.0355	0.00111	<0.0010	0.0015

5.3.5 W6 – Tributary on the North side of Minto Creek

Water quality statistics for W6 from 2017 to 2021 are summarized below in Table 5-11. A total of six routine samples were collected from station W6 during the 2021 monitoring period.

Table 5-11: W6 Water Quality Results Summary (2005-2021)

W6	2005 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.65	6.38	8.3	7.55	6.91	7.86
TSS (mg/L)	70.05	<1.0	1160	5.72	<1.0	18.2
Nutrients (mg/L)						
Ammonia Nitrogen	0.02342	<0.0050	0.15	0.00632	<0.0050	0.0114
Nitrite Nitrogen	0.00475	<0.0010	0.07	0.001	<0.0010	<0.0010
Nitrate Nitrogen	0.26575	<0.0050	8.09	0.005	<0.0050	<0.0050
Dissolved Metals (mg/L)						
Aluminum	0.0137	0.004	0.097	0.0158	0.0057	0.0516
Arsenic	0.000454	0.0002	0.00081	0.00041	0.00032	0.00054
Cadmium	0.00002103	<0.0000050	0.00023	0.00000588	<0.0000050	0.0000103
Chromium	0.00039	0.00017	0.0013	0.000505	<0.00050	0.00053
Copper	0.00211	0.0008	0.043	0.0021	0.00097	0.00556
Iron	0.0725	0.01	0.183	0.069	0.034	0.192
Lead	0.0001699	<0.000050	<0.001	0.00005	<0.000050	<0.000050
Molybdenum	0.001121	0.000247	0.015	0.000324	0.000238	0.000356
Nickel	0.00122	0.0006	0.002	0.0014	0.00082	0.00241
Selenium	0.000207	0.000055	0.002	0.0000777	<0.000050	0.000108
Silver	0.0000324	<0.000010	<0.0001	0.00001	<0.000010	<0.000010
Zinc	0.00402	<0.0010	0.049	0.001	<0.0010	<0.0010

5.3.6 W7 – North Flowing Tributary to Minto Creek

Water quality statistics for W7 from 2017 to 2021 are summarized below in Table 5-12. A total of 23 routine samples were collected from station W7 during the 2021 monitoring period. The monitoring schedule was changed from monthly to weekly in August 2020 as part of a QP Adaptive Management Plan recommendation.

Table 5-12: W7 Water Quality Results Summary (2005-2021)

W7	2005 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.72	6.3	8.6	7.63	7.08	7.99
TSS (mg/L)	37.72	<1.0	705	31.83	<1.0	372
Nutrients (mg/L)						
Ammonia Nitrogen	0.02662	<0.0050	0.34	0.0111	0.006	0.0301
Nitrite Nitrogen	0.00663	<0.0010	0.14	0.001	<0.0010	<0.0010
Nitrate Nitrogen	0.10894	<0.0050	0.324	0.09938	<0.0050	0.159
Dissolved Metals (mg/L)						
Aluminum	0.01985	<0.0030	0.407	0.0172	0.0042	0.109
Arsenic	0.000439	<0.0002	0.001	0.0004	0.00031	0.00056
Cadmium	0.00001774	<0.0000050	0.00028	0.00000628	<0.0000050	0.0000253
Chromium	0.000764	0.00012	0.002	0.000508	<0.00050	0.00068
Copper	0.00196	0.00063	0.0154	0.00211	0.00075	0.00859
Iron	0.1776	0.0102	1.06	0.111	0.037	0.609
Lead	0.0001825	<0.000050	0.0017	0.00005	<0.000050	<0.000050
Molybdenum	0.001251	0.00013	0.00244	0.0015	0.000342	0.00179
Nickel	0.0012	<0.0005	0.004	0.00101	0.00063	0.0023
Selenium	0.0002	0.000092	0.0022	0.000176	0.000106	0.000268
Silver	0.0000183	<0.000010	<0.0001	0.00001	<0.000010	<0.000010
Zinc	0.00379	<0.0010	0.0302	0.0011	<0.0010	0.0022

5.3.7 W8A – Eastern Collection Sump from DSTSF

Station W8A has been dry since March 2019. Water quality statistics from 2017 to 2019 are summarized below in Table 5-13.

Table 5-13: Water Quality Result Summary (2017-2019)

W8A	2017 - 2019 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**
pH	7.83	7.19	8.36
TSS (mg/L)	41.6	3.3	200
Nutrients (mg/L)			
Ammonia Nitrogen	0.277	0.0362	0.58
Nitrite Nitrogen	0.3029	0.0125	1.18
Nitrate Nitrogen	3.961	0.058	16.9
Dissolved Metals (mg/L)			
Aluminum	0.01158	0.0044	0.143
Arsenic	0.00064	0.00038	0.00145
Cadmium	0.0002211	0.0000791	0.000518
Chromium	0.000615	0.00021	0.00151
Copper	0.0725	0.0278	0.167
Iron	0.685	0.078	7
Lead	0.0000648	<0.000050	0.00102
Molybdenum	0.01076	0.0041	0.0172
Nickel	0.00167	0.00099	0.00289
Selenium	0.00501	0.00101	0.0104
Zinc	0.2823	0.0467	0.983

5.3.8 W10 – Minto Creek Headwaters (South-West Fork)

Water quality statistics for W10 from 2005 to 2021 are summarized below in Table 5-14. A total of 6 routine samples were collected from station W10 during the 2021 monitoring period.

Table 5-14: W10 Water Quality Results Summary (2005-2021)

W10	2005 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.3	6.13	8.44	7.32	6.71	8.6
TSS (mg/L)	30.75	<1.0	948	54.92	<1.0	293
Nutrients (mg/L)						
Ammonia Nitrogen	0.17213	<0.0050	1.72	0.0397	0.0088	0.102
Nitrite Nitrogen	0.01739	<0.0010	0.248	0.01998	<0.0010	0.0741
Nitrate Nitrogen	3.1713	<0.0050	41.4	7.98667	<0.0050	19.7
Dissolved Metals (mg/L)						
Aluminum	0.0857	0.0017	0.431	0.0969	0.0039	0.334
Arsenic	0.000429	<0.00010	0.00248	0.000337	<0.00010	0.00057
Cadmium	0.00001639	<0.0000050	0.00028	0.00000818	<0.0000050	0.0000177
Chromium	0.000596	<0.00010	0.0014	0.000535	<0.00050	0.00062
Copper	0.02268	0.00023	0.124	0.01786	0.00168	0.051
Iron	2.6359	0.011	41.7	0.365	0.016	0.949
Lead	0.0001234	<0.000050	0.00044	0.00005	<0.000050	<0.000050
Molybdenum	0.000739	0.00003	0.00249	0.000943	0.000214	0.00341
Nickel	0.00129	<0.00050	0.00395	0.000948	<0.00050	0.00194
Selenium	0.0001258	<0.000050	0.00033	0.000235	0.000083	0.000779
Silver	0.0000141	<0.000010	<0.000020	0.00001	<0.000010	<0.000010
Zinc	0.00471	<0.0010	0.0223	0.00177	<0.0010	0.003

5.3.9 W12 – Water in the Main Pit

Water quality statistics for W12 from 2007 to 2021 are summarized below in Table 5-15. A total of twelve routine samples were collected from station W12 during the 2021 monitoring period.

Table 5-15: W12 Water Quality Results Summary (2007-2021)

W12	2007 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.81	6.01	9	7.72	7.12	8.12
TSS (mg/L)	14.83	<1.0	251	3.7	<1.0	8.2
Nutrients (mg/L)						
Ammonia Nitrogen	2.53247	<0.0050	24	1.641	0.18	4.31
Nitrite Nitrogen	1.4878	0.007	8.78	0.8175	0.0325	2.24
Nitrate Nitrogen	18.48	1.85	141	13.02	7.44	24
Dissolved Metals (mg/L)						
Aluminum	0.01726	0.0016	0.124	0.00722	<0.0020	0.0269
Arsenic	0.00061	0.00024	0.003	0.0004	0.00028	0.00049
Cadmium	0.0000588	<0.0000050	0.00049	0.0001422	0.0000653	0.000228
Chromium	0.00063	<0.00010	0.0025	0.0004	0.0001	<0.00050
Copper	0.05692	0.00046	0.476	0.0895	0.0455	0.13
Iron	0.03332	<0.0050	0.386	0.0199	<0.010	0.051
Lead	0.0001537	<0.000050	0.0005	0.0000583	<0.000050	<0.000100
Molybdenum	0.04832	0.003	0.0975	0.0236	0.0144	0.0313
Nickel	0.002016	<0.00050	0.0065	0.001385	<0.00050	0.00244
Selenium	0.00766	<0.0006	0.0207	0.00637	0.00384	0.0119
Silver	0.0000203	<0.000010	0.0002	0.0000118	<0.000010	<0.000020
Zinc	0.00533	<0.0010	0.031	0.0038	0.0011	0.0083

5.3.10 W12A – Discharge from the Main Pit

There was no discharge from the Main Pit in 2021 and no discharge from the Main Pit in previous years.

5.3.11 W14 – Tailings Thickener Overflow

Water quality statistics for W14 from 2007 to 2021 are summarized below in Table 5-16. A total of 12 routine samples were collected from station W14 during the 2021.

Table 5-16: W14 Water Quality Results Summary (2007-2021)

W14	2007 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	8.3	6.8	13.6	7.52	7.03	7.97
TSS (mg/L)	103.9	3.5	1120	46.7	9.1	127
Nutrients (mg/L)						
Ammonia Nitrogen	4.311	<0.05	18.1	10.87	2.43	16.8
Nitrite Nitrogen	1.70054	0.0183	8.42	1.552	0.923	2.81
Nitrate Nitrogen	31.6949	<0.100	86.7	29.4	11.1	44.1
Dissolved Metals (mg/L)	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
Aluminum	0.09861	<0.0020	1.91	0.0301	0.0052	0.0472
Arsenic	0.00056	<0.0002	0.0052	0.000402	0.00031	0.00058
Cadmium	0.00004868	<0.0000050	0.0003	0.00003517	<0.0000100	0.000147
Chromium	0.000695	<0.00010	0.0036	0.000817	<0.00020	<0.00250
Copper	0.014058	0.0002	0.723	0.00836	0.00127	0.0587
Iron	0.33524	<0.0050	21.6	0.0239	<0.010	<0.050
Lead	0.0001753	<0.000050	0.0011	0.0001083	<0.000050	<0.000250
Molybdenum	0.0962	0.0283	0.181	0.0569	0.03	0.0692
Nickel	0.00209	<0.0005	0.0109	0.00439	0.00238	0.0101
Selenium	0.02731	0.00166	0.229	0.00554	0.00422	0.00772
Silver	0.0000232	<0.000010	0.0001	0.0000217	<0.000010	<0.000050
Zinc	0.00441	<0.0010	0.028	0.00453	<0.0020	0.0223

5.3.12 W15 – Upper Minto Creek Stormwater Collection Point

Water quality statistics for W15 from 2007 to 2021 are summarized below in Table 5-17. A total of 32 routine samples were collected from station W15 during the 2021 monitoring period. The results for dissolved copper, dissolved aluminum, dissolved cadmium, and dissolved selenium for W15 from 2017 to 2021 are also presented in Figure 5-7 and Figure 5-8 below.

Table 5-17: W15 Water Quality Results Summary (2007-2021)

W15	2007 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.74	6.06	9.95	7.74	7.31	8.19
TSS (mg/L)	16.73	<1.0	878	3.68	<1.0	24.7
Nutrients (mg/L)						
Ammonia Nitrogen	0.1166	<0.005	5.3	0.02164	<0.0050	0.0714
Nitrite Nitrogen	0.09253	0.0036	3.78	0.03251	<0.0050	0.496
Nitrate Nitrogen	13.507	<0.01	265	7.77	3.21	13
Dissolved Metals (mg/L)						
Aluminum	0.0311	0.0019	0.226	0.0363	0.0058	0.251
Arsenic	0.000506	0.00015	0.0022	0.00035	0.00026	0.00045
Cadmium	0.00002531	<0.0000050	0.0005	0.00002962	<0.0000050	0.000501
Chromium	0.000788	<0.00010	0.0053	0.000501	<0.00050	0.00052
Copper	0.02222	0.0038	0.172	0.01725	0.0039	0.0479
Iron	0.3126	<0.0050	6.48	0.09	0.016	0.528
Lead	0.0001648	0.000031	0.001	0.0000527	<0.000050	0.000133
Molybdenum	0.00424	0.0001	0.113	0.00327	0.00103	0.00872
Nickel	0.001169	<0.00050	0.005	0.000746	<0.00050	0.00128
Selenium	0.003439	0.00015	0.0504	0.004469	0.000858	0.00807
Silver	0.00001767	<0.0000050	0.00018	0.0000103	<0.000010	0.000019
Zinc	0.00478	<0.0010	0.023	0.00548	<0.0010	0.0838

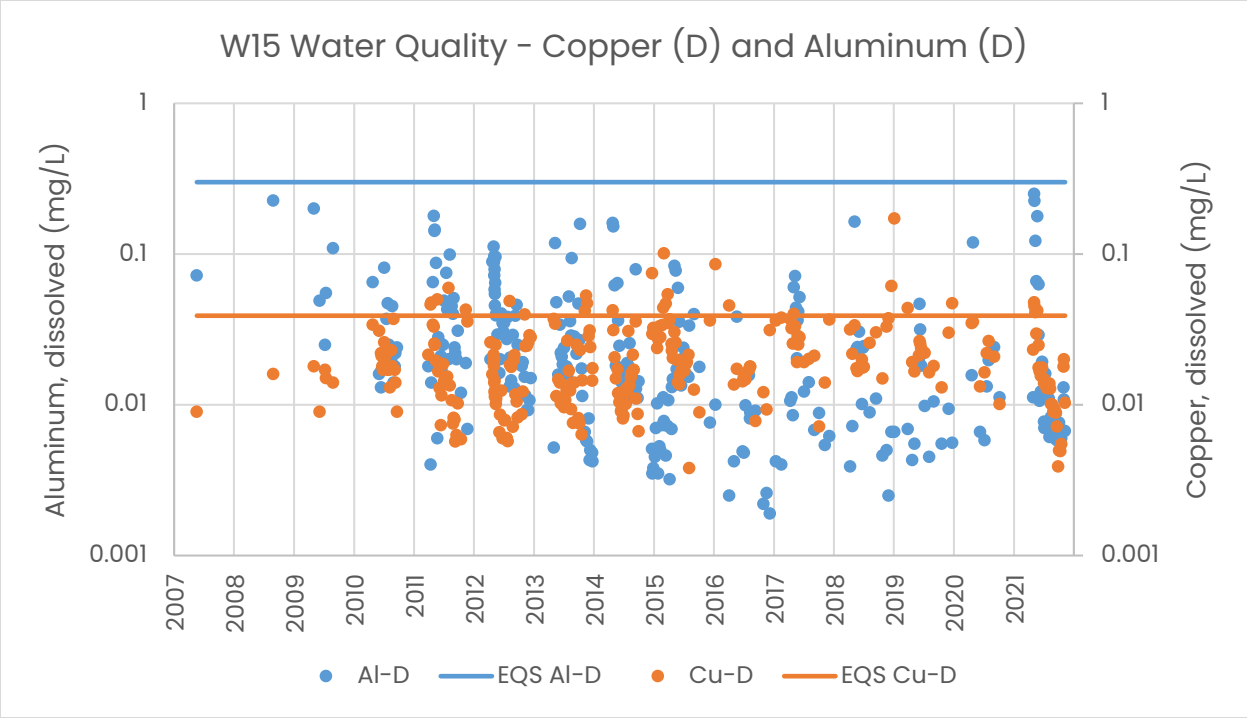

Figure 5-7: W15 Copper and Aluminum Concentrations (2007-2021)

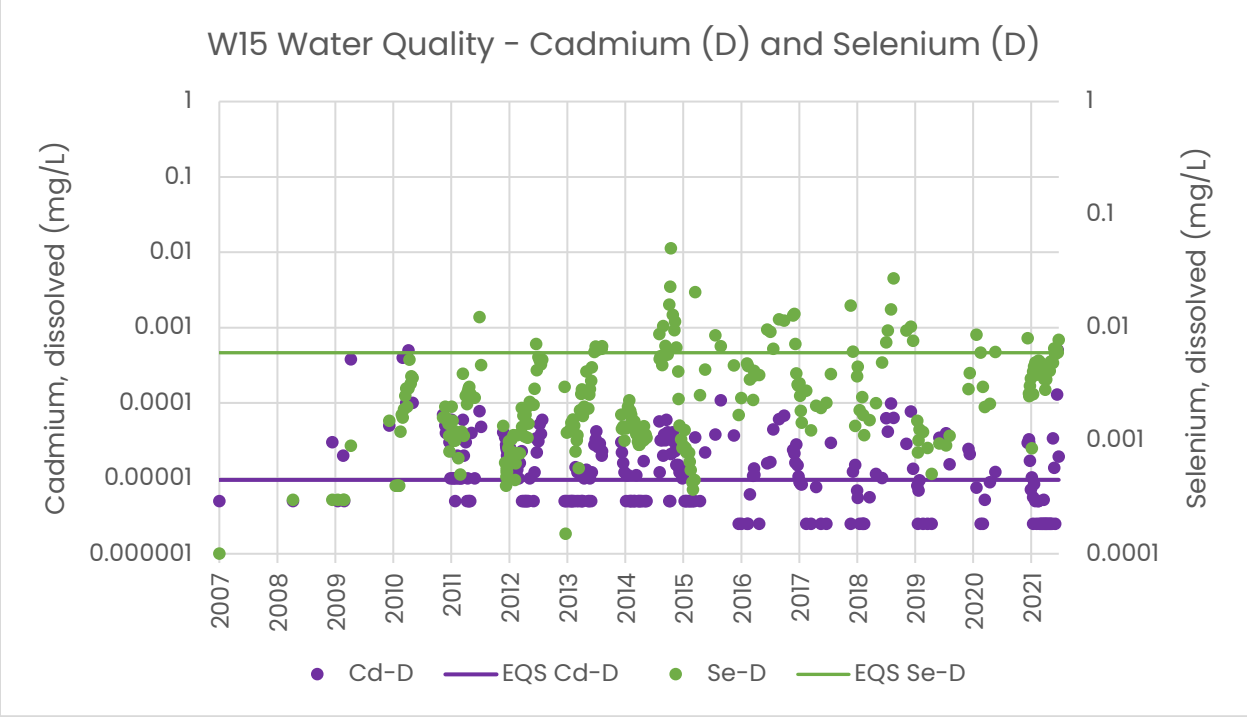

Figure 5-8: W15 Cadmium and Selenium Concentrations (2007-2021)

5.3.13 W16 – Water Storage Pond

External laboratory water quality statistics for W16 from 2006 to 2021 are summarized below in Table 5-18. A total of 41 routine samples were collected from station W16 during the 2021 monitoring period. The external laboratory results for dissolved copper, dissolved aluminum, dissolved cadmium, and dissolved selenium for W16 from 2006 to 2021 are also presented in Figure 5-9 and Figure 5-10 below.

Table 5-18: W16 Water Quality Results Summary (2017-2021)

W16	2006 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.92	5.65	9.43	7.54	6.79	8.28
TSS (mg/L)	7.85	<1.0	181	8.3	<1.0	64.2
Nutrients (mg/L)						
Ammonia Nitrogen	0.1289	0.004	2	0.0332	0.0105	0.12
Nitrite Nitrogen	0.09482	<0.0010	8.62	0.00922	<0.0010	0.0283
Nitrate Nitrogen	3.2721	<0.0050	35	0.5142	<0.0050	1.52
Dissolved Metals (mg/L)						
Aluminum	0.01663	<0.0010	0.234	0.0304	0.0022	0.104
Arsenic	0.000406	<0.00010	0.0015	0.00041	0.0003	0.0005
Cadmium	0.00003456	<0.0000050	0.00557	0.00003088	<0.0000050	0.000318
Chromium	0.000773	<0.00010	0.0172	0.000469	0.00015	<0.00050
Copper	0.02594	0.00158	0.123	0.0574	0.023	0.0995
Iron	0.1172	0.0066	1.36	0.113	0.025	0.227
Lead	0.0001516	0.00002	0.0008	0.00005	<0.000050	<0.000050
Molybdenum	0.005413	0.000653	0.0271	0.0024	0.00111	0.00362
Nickel	0.001199	<0.00050	0.009	0.001067	<0.00050	0.00151
Selenium	0.00111	<0.00010	0.0064	0.000561	0.000419	0.00105
Silver	0.00001699	<0.0000050	0.0003	0.0000101	<0.000010	0.000012
Zinc	0.0054	<0.0010	0.0302	0.00296	<0.0010	0.0135

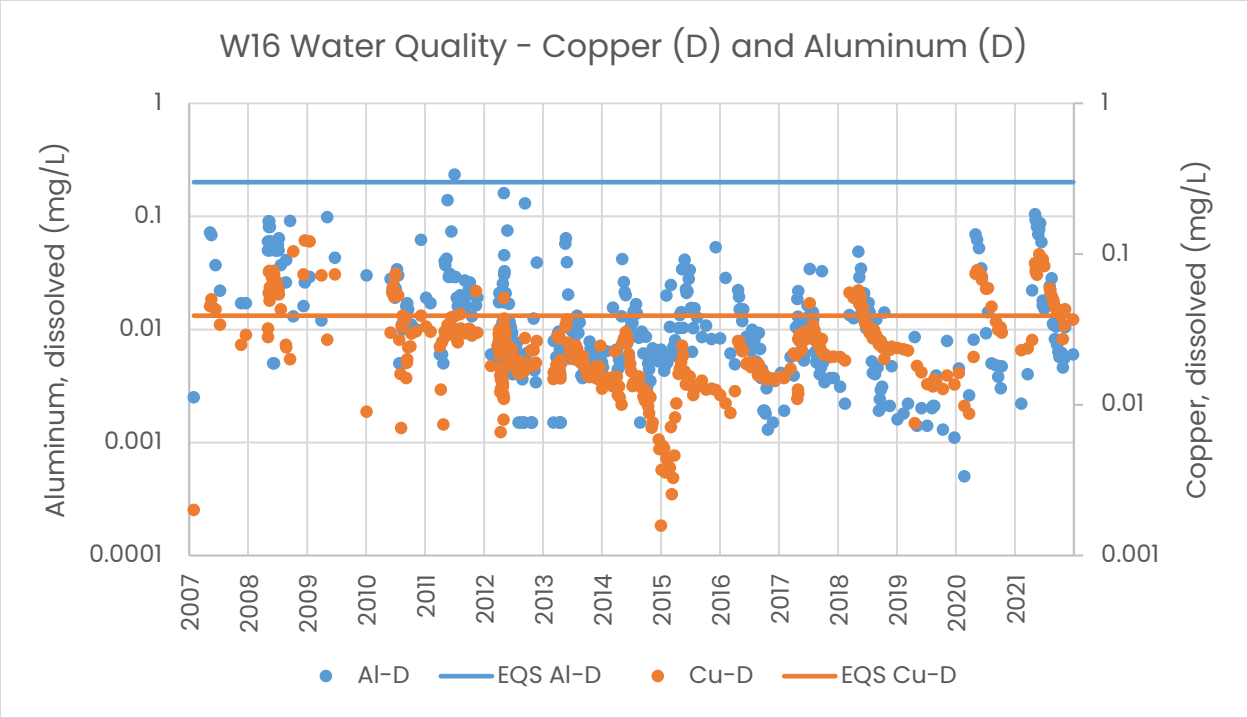

Figure 5-9: W16 Copper and Aluminum Concentrations (2017-2021)

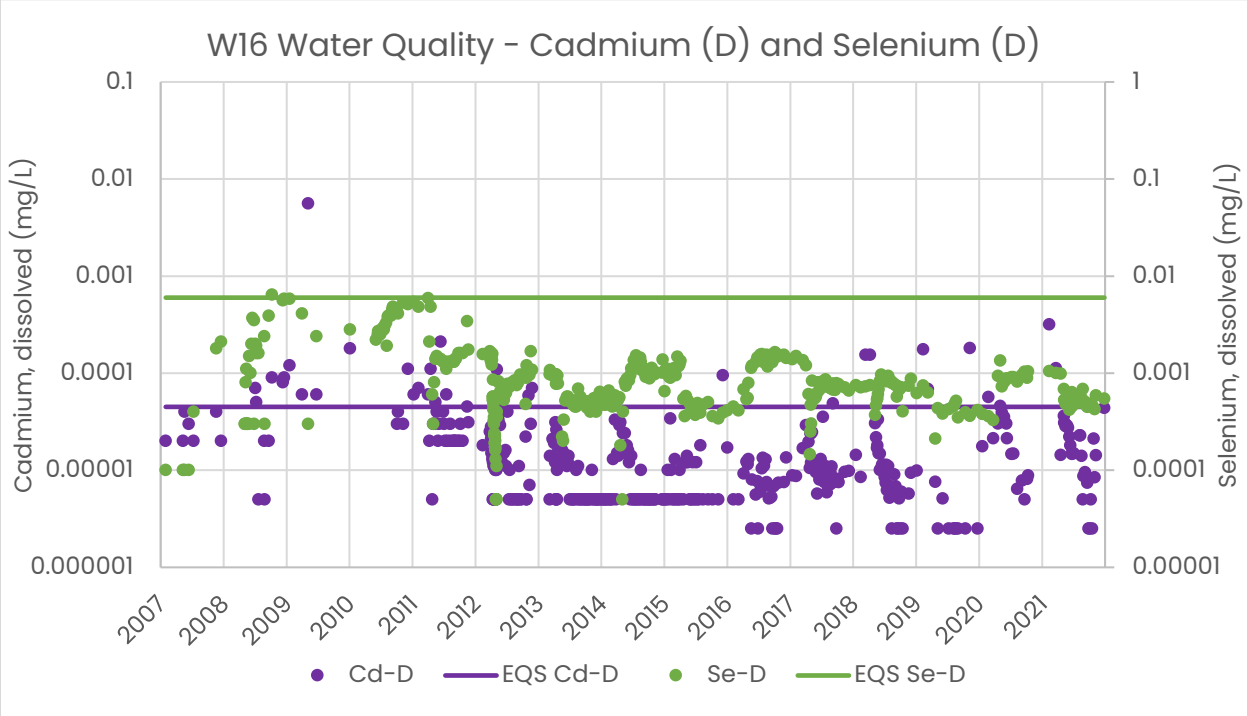

Figure 5-10: W16 Cadmium and Selenium Concentrations (2017-2021)

5.3.14 W17 – Water Storage Pond Dam Seepage

The summary results for this station are presented in the seepage Section 7.11 along with trend analyses for dissolved copper, aluminum, cadmium, and selenium concentrations throughout the years. A total of 54 samples were collected at this station during the 2021 monitoring period. The sample on January 21st could not be taken as the sump was fully frozen.

5.3.15 W30 – Headwaters Minto Creek (northwest fork)

The water quality statistics for W30 from 2010 to 2021 are summarized below in Table 5-19. A total of six routine samples were collected from station W30 during the 2021 monitoring period.

Table 5-19: W30 Water Quality Results Summary (2010-2021)

W30	2010 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.78	2.51	8.9	8.09	7.67	8.51
TSS (mg/L)	6.13	<1.0	45.3	4.87	<1.0	17.8
Nutrients (mg/L)						
Ammonia Nitrogen	0.1027	<0.005	0.85	0.0182	0.0076	0.0501
Nitrite Nitrogen	0.02904	<0.0010	0.579	0.00487	<0.0010	0.0103
Nitrate Nitrogen	3.72303	<0.0050	78.6	0.61713	<0.0050	1.57
Dissolved Metals (mg/L)						
Aluminum	0.0136	0.001	0.116	0.0064	0.0017	0.0179
Arsenic	0.00059	0.00024	0.00132	0.00048	0.00033	0.00066
Cadmium	0.00001591	<0.0000050	0.000091	0.00001047	<0.0000050	0.0000233
Chromium	0.000563	<0.00010	<0.001	0.0005	<0.00050	<0.00050
Copper	0.02397	0.0067	0.129	0.01686	0.00885	0.03
Iron	0.0947	0.0056	0.783	0.04	0.01	0.105
Lead	0.0001345	<0.000050	<0.0002	0.0000584	<0.000050	0.000109
Molybdenum	0.00369	<0.001	0.0116	0.00718	0.0033	0.0129
Nickel	0.000829	<0.00050	0.0018	0.0005	<0.00050	<0.00050
Selenium	0.00253	0.0005	0.0147	0.002726	0.000824	0.00627
Silver	0.0000152	<0.000010	0.000022	0.00001	<0.000010	<0.000010
Zinc	0.00397	<0.0010	0.0164	0.00143	<0.0010	0.0028

5.3.16 W33/W33s – Above Tailings Diversion Ditches

W33 was buried during construction at the end of December 2017. In 2018, the water was found seeping out of the road construction about 50 meters north of the original site and the samples were collected from that site onward. Water quality statistics for W33s from 2018 to 2021 are summarized below in Table 5-20. A total of six routine samples were collected from station W33s during the 2021 monitoring period.

Table 5-20: W33s Water Quality Results Summary (2018-2021)

W33s	2018 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.47	6.95	7.96	6.97	6.44	7.47
TSS (mg/L)	9.34	<3.0	74.7	23.38	<1.0	108
Nutrients (mg/L)						
Ammonia Nitrogen	0.0828	0.0056	0.976	0.0113	0.0075	0.0151
Nitrite Nitrogen	1.11589	<0.0010	15.5	0.001	<0.0010	<0.0010
Nitrate Nitrogen	2.91131	<0.0050	34.9	0.0094	<0.0050	0.0147
Dissolved Metals (mg/L)						
Aluminum	0.0336	0.0073	0.0837	0.0331	0.0192	0.0463
Arsenic	0.00039	0.00029	0.00109	0.00029	0.00023	0.00034
Cadmium	0.0000173	<0.0000050	0.000101	0.00000678	<0.0000050	0.0000094
Chromium	0.00039	0.00019	0.00056	0.0005	<0.00050	<0.00050
Copper	0.01929	0.00665	0.0627	0.01307	0.00687	0.021
Iron	0.108	0.044	0.298	0.116	0.092	0.15
Lead	0.0000507	<0.000050	0.00006	0.00005	<0.000050	<0.000050
Molybdenum	0.001296	0.000494	0.00989	0.000495	0.000381	0.000603
Nickel	0.00139	0.00087	0.00169	0.00138	0.00099	0.00162
Selenium	0.000365	0.000087	0.00316	0.000111	0.000069	0.000137
Silver	0.0000106	<0.000010	0.000019	0.00001	<0.000010	<0.000010
Zinc	0.00221	<0.0010	0.0112	0.00114	<0.0010	0.0015

5.3.17 W35 – Storm Water Collection Point – South Diversion Ditch

The water quality statistics for W35 from 2012 to 2021 are summarized below in Table 5-21. It should be noted that the location of W35 changed in 2017, with the construction of the Tailings Diversion Ditch intake structure. The water reporting to W35 also changed from a primarily unimpacted water to water potentially impacted from blast residues from the new Fresh Air Raise access road, as well as water running off the portal access road.

A total of seven routine samples were collected from station W35 during the 2021 monitoring period. The results for dissolved copper, dissolved aluminum, dissolved cadmium, and dissolved selenium for W35 from 2017 to 2021 are also presented in Figure 5-11 and Figure 5-12 below. Depending on water quality the water is re-routed to the TDD or to the A2 Pit. The elevated TSS values from 2021 were due to re-grading of the haul road allowing run-off to enter the South diversion ditch. The engineering work necessary to keep road run-off and unimpacted water separate is underway.

Table 5-21: W35 Water Quality Results Summary (2012-2021)

W35	2012 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.843	6.56	9.9	7.61	7.07	8
TSS (mg/L)	24.06	<1.0	465	34.31	<1.0	193
Nutrients (mg/L)						
Ammonia Nitrogen	0.1244	0.0059	6.51	0.0162	0.0092	0.0244
Nitrite Nitrogen	0.04608	0.0012	1.39	0.00414	0.0022	0.0071
Nitrate Nitrogen	9.6562	<0.020	90.8	10.563	0.398	25.9
Dissolved Metals (mg/L)						
Aluminum	0.0252	0.0034	0.104	0.035	0.0135	0.0883
Arsenic	0.00036	0.00023	0.00066	0.00031	0.00026	0.00034
Cadmium	0.00001677	<0.0000050	0.0000828	0.00001381	<0.0000050	0.0000198
Chromium	0.000544	<0.00010	<0.0010	0.0005	<0.00050	<0.00050
Copper	0.0446	0.0157	0.156	0.0552	0.0385	0.0823
Iron	0.074	<0.010	0.323	0.062	0.021	0.162
Lead	0.0001055	<0.000050	<0.00020	0.00005	<0.000050	<0.000050
Molybdenum	0.002091	0.000378	0.0231	0.001781	0.000432	0.00366
Nickel	0.001153	<0.00050	0.00178	0.00095	0.00072	0.00115
Selenium	0.000421	<0.00010	0.00278	0.000528	0.000126	0.0016
Silver	0.0000141	<0.000010	<0.000020	0.0000103	<0.000010	0.000012
Zinc	0.0032	<0.0010	0.028	0.00136	<0.0010	0.0021

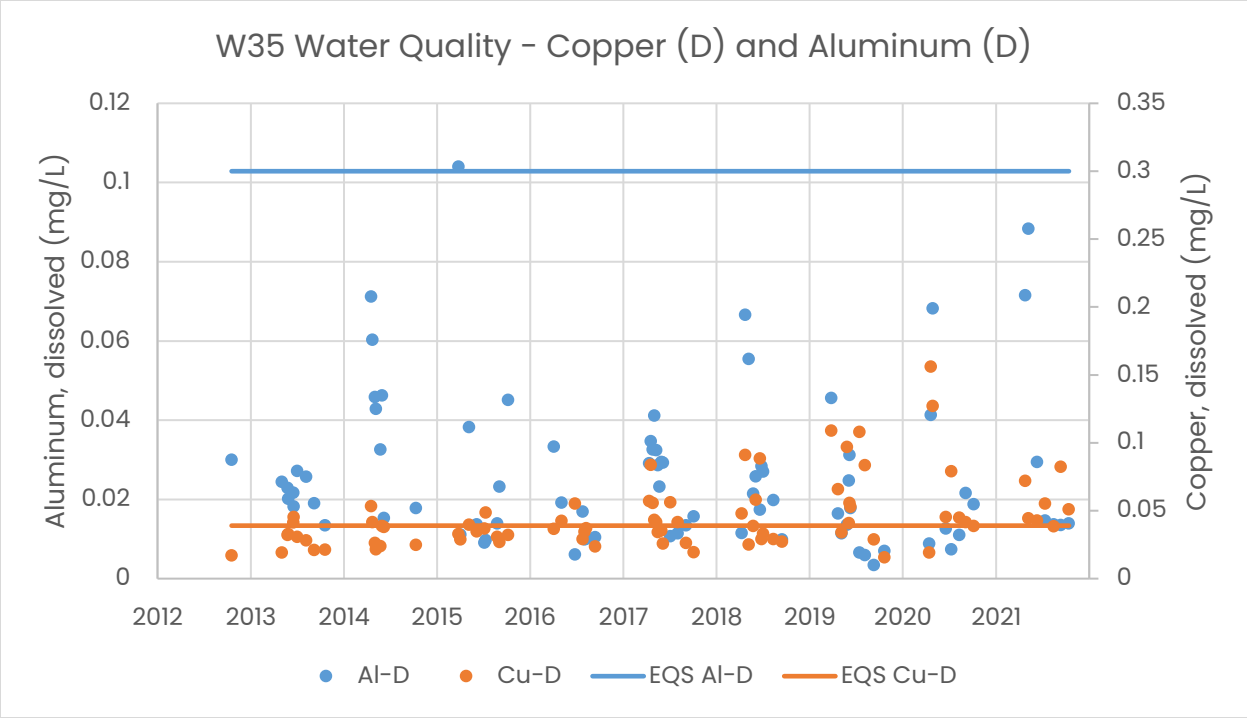

Figure 5-11: W35 Copper and Aluminum Concentrations (2012-2021)

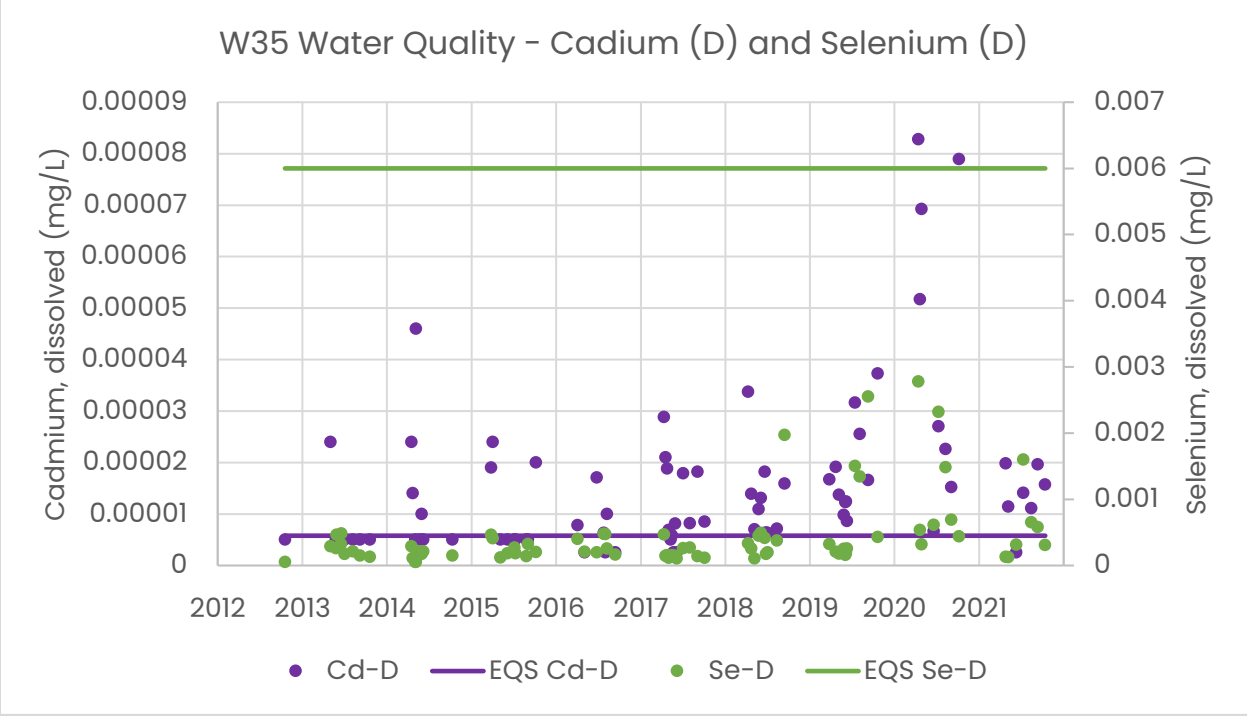

Figure 5-12: W35 Cadmium and Selenium Concentrations (2012-2021)

5.3.18 W36 – Minto Creek Detention Structure Pond

W36 was decommissioned during the construction of the Mill Valley Fill Extension Phase 2 (MVFE2) in 2015. As such, no samples were taken in 2021.

5.3.19 W37 – 100 m downstream of MCDS (W37 Collection Sump) and upstream of Water Storage Pond

W37 was decommissioned during the construction of the Mill Valley Fill Extension Phase 2 (MVFE2) in 2015 and replaced by W62. As such, no samples were taken in 2021.

5.3.20 W45– Area 2 Pit

W45 was the water quality monitoring station for the Stage 1 and 2 reservoirs in the Area 2 Pit complex. In 2020, Area 2 Stage 1 and 2 was filled with tailings. Water quality for the Area 2 Pit complex is now monitored at station W51.

5.3.21 W46 – Minto Creek, Downstream of W7 and W6

The water quality statistics for W46 from 2012 to 2021 are summarized below in Table 5-22. A total of seven routine samples were collected from station W46 during the 2021 monitoring period.

Table 5-22: W46 Water Quality Results Summary (2012-2021)

W46	2012 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.68	7.09	8.32	7.7	7.31	7.93
TSS (mg/L)	40.39	<1.0	693	5.64	<1.0	9.2
Nutrients (mg/L)						
Ammonia Nitrogen	0.02517	<0.0050	0.16	0.0092	0.008	0.0118
Nitrite Nitrogen	0.00363	<0.0010	0.0242	0.001	<0.0010	<0.0010
Nitrate Nitrogen	0.28595	<0.0050	3.28	0.06233	<0.0050	0.102
Dissolved Metals (mg/L)						
Aluminum	0.00868	0.0027	0.0449	0.0146	0.0044	0.0387
Arsenic	0.00046	0.0003	0.00078	0.00042	0.00035	0.00047
Cadmium	0.00000876	<0.0000050	0.0000238	0.00000714	<0.0000050	0.0000137

Chromium	0.00057	<0.00010	<0.0010	0.0005	<0.00050	<0.00050
Copper	0.00264	0.00089	0.0108	0.00452	0.00144	0.0138
Iron	0.1552	0.0183	0.646	0.094	0.068	0.168
Lead	0.0001223	<0.000050	0.00022	0.00005	<0.000050	<0.000050
Molybdenum	0.00205	<0.0010	0.007	0.001732	0.000716	0.00225
Nickel	0.00105	<0.00050	0.0021	0.00095	0.00064	0.0015
Selenium	0.000225	<0.00010	0.000887	0.000163	0.000136	0.000196
Silver	0.000015	<0.000010	0.000035	0.00001	<0.000010	<0.000010
Zinc	0.00329	<0.0010	0.015	0.00126	<0.0010	0.0021

5.3.22 W47 – Area 118 Pit Water

W47 was decommissioned and backfilled during the construction of the Area 2 Stage 3 pit in January 2017. As such, no samples were taken in 2021.

5.3.23 W50 – Minto Creek, 50m Downstream of the Toe of the WSP Dam

The water quality statistics for W50 are presented in Section 5.2.1.2 above.

5.3.24 W51 – Area 2 Stage 3 Pit

The water quality statistics for W51 from 2017 to 2021 are summarized below in Table 5-23. W51 was established in 2017 with the mining activities in the Area 2 Stage 3 pit. A total of twelve routine samples were collected from station W51 during the 2021 monitoring period.

Table 5-23: W51 Water Quality Results Summary (2017-2021)

W51	2017 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.51	6.47	8.26	7.55	7.08	7.95
TSS (mg/L)	45.36	<3.0	505	13.2	3.1	52.9
Nutrients (mg/L)						
Ammonia Nitrogen	4.549	0.627	12.2	5.35	1.81	7.47
Nitrite Nitrogen	2.579	0.126	6.69	4.182	0.656	6.66
Nitrate Nitrogen	9.56	2.85	34.8	7.78	2.62	13.5
Dissolved Metals (mg/L)						
Aluminum	0.0041	0.0012	0.0072	0.0118	0.0063	0.0188
Arsenic	0.00053	0.00028	0.00169	0.0004	0.00028	0.0005
Cadmium	0.00007628	0.0000142	0.00023	0.00005106	<0.0000200	0.00024
Chromium	0.000181	<0.00010	0.00042	0.00067	<0.00010	<0.00100
Copper	0.03673	0.00126	0.161	0.01024	0.0009	0.0459
Iron	0.0407	<0.010	0.279	0.0496	<0.020	0.137
Lead	0.00009	<0.000050	0.00022	0.0000917	<0.000050	<0.000100
Molybdenum	0.03811	0.00436	0.0513	0.0382	0.0257	0.0468
Nickel	0.003063	<0.00050	0.00822	0.00443	0.00075	0.0103
Selenium	0.00408	0.00273	0.00551	0.00448	0.00343	0.00656
Silver	0.0000179	<0.000010	0.000033	0.0000183	<0.000010	<0.000020
Zinc	0.00414	<0.0010	0.0222	0.00221	0.0012	0.0042

5.3.25 W52 – Ridgetop North Pit

The Ridgetop North Pit was not developed in 2021; therefore, water quality results are not available.

5.3.26 W53 – Ridgetop South Pit

The Ridgetop South Pit was not developed in 2021; therefore, water quality results are not available.

5.3.27 W54 – Main Pit Dam Seepage

The Main Pit Dam was not developed in 2021; therefore, water quality results are not available.

5.3.28 W55 – Tailings Diversion Ditch

The water quality statistics for W55 from 2016 to 2021 are summarized below in Table 5-24. Six routine samples were collected from station W55 during the 2021 monitoring period.

Table 5-24: W55 Water Quality Results Summary (2016-2021)

W55	2016 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.73	6.97	9	6.98	6.11	7.54
TSS (mg/L)	9.57	<3.0	43.3	3.6	1.3	6.2
Nutrients (mg/L)						
Ammonia Nitrogen	0.0225	0.0067	0.0819	0.0173	0.0115	0.0226
Nitrite Nitrogen	0.01115	<0.0010	0.144	0.001	<0.0010	<0.0010
Nitrate Nitrogen	4.00827	<0.0050	20.9	0.03594	<0.0050	0.0635
Dissolved Metals (mg/L)						
Aluminum	0.0451	0.0116	0.152	0.1145	0.0867	0.146
Arsenic	0.00063	0.00042	0.00114	0.00048	0.00041	0.00054
Cadmium	0.0000232	0.0000056	0.0000712	0.0000285	0.0000154	0.000051
Chromium	0.00037	0.0002	0.00064	0.00056	0.00052	0.00058
Copper	0.0646	0.0149	0.14	0.136	0.113	0.16
Iron	0.105	0.023	0.338	0.198	0.168	0.249
Lead	0.0001485	<0.000050	0.00247	0.0000578	<0.000050	0.000074
Molybdenum	0.002265	0.000633	0.0093	0.000653	0.000446	0.000832
Nickel	0.00149	0.0008	0.00228	0.00172	0.00112	0.00205
Selenium	0.000804	0.000158	0.00435	0.000279	0.000197	0.000378
Silver	0.0000108	<0.000010	0.000023	0.0000138	<0.000010	0.000018
Zinc	0.00215	<0.0010	0.0052	0.0021	0.0011	0.0044

5.3.29 W62 – Mill Valley Fill Extension Phase 2 Collection Sump

The water quality statistics for W62 from 2016 to 2021 are summarized below in Table 5-25. A total of twelve routine samples were collected from station W62 during the 2021 monitoring period.

Table 5-25: W62 Water Quality Results Summary (2016-2021)

W62	2016 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.62	6.06	8.23	7.56	6.56	8.02
TSS (mg/L)	9.22	<3.0	58	57.7	4.7	370
Nutrients (mg/L)						
Ammonia Nitrogen	0.01737	<0.0050	0.23	0.03161	<0.0050	0.248
Nitrite Nitrogen	0.02614	<0.0010	0.119	0.01802	<0.0050	0.0683
Nitrate Nitrogen	9.2263	0.0084	26.5	17.2	12.6	26.2
Dissolved Metals (mg/L)						
Aluminum	0.0044	0.0017	0.0186	0.00733	0.002	0.032
Arsenic	0.00045	0.00011	0.00072	0.0004	0.00025	0.00054
Cadmium	0.00002838	<0.0000050	0.000115	0.0000432	0.0000189	0.000209
Chromium	0.000188	<0.00010	0.00034	0.000395	0.0001	<0.00050
Copper	0.05026	0.00195	0.0724	0.0452	0.0218	0.0549
Iron	0.0331	<0.010	0.074	0.0333	<0.010	0.079
Lead	0.000051	<0.000050	0.000092	0.00005	<0.000050	<0.000050
Molybdenum	0.007842	0.00042	0.0143	0.00885	0.00574	0.0141
Nickel	0.00107	0.00058	0.00161	0.000997	<0.00050	0.0015
Selenium	0.003984	0.000095	0.0115	0.00538	0.00346	0.00753
Silver	0.0000102	<0.000010	0.000017	0.0000103	<0.000010	0.000014
Zinc	0.1092	0.0018	0.799	0.0273	0.0082	0.0906

5.3.30 MC-1 – Minto Creek Upstream of Canyon near Km 8 on Mine Access Road

The water quality statistics for MC-1 from 2009 to 2021 are summarized below in Table 5-26. A total of 26 routine samples were collected from station MC-1 during the 2021 monitoring period.

Table 5-26: MC-1 Water Quality Results Summary (2009-2021)

MC1	2009 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.9	6.14	9.67	7.78	6.95	8.26
TSS (mg/L)	48.49	<1.0	793	16.16	<1.0	130
Nutrients (mg/L)						
Ammonia Nitrogen	0.02602	<0.0050	0.36	0.00933	<0.0050	0.0461
Nitrite Nitrogen	0.00449	<0.0010	0.0342	0.00128	<0.0010	0.0081
Nitrate Nitrogen	0.34797	<0.0050	7.3	0.0454	<0.0050	0.138
Dissolved Metals (mg/L)						
Aluminum	0.01504	0.0027	0.121	0.0209	0.0042	0.116
Arsenic	0.00057	0.0003	0.00125	0.00055	0.00031	0.00069
Cadmium	0.00001078	<0.0000050	0.0002	0.00000666	<0.0000050	0.0000228
Chromium	0.000234	<0.00010	0.0021	0.000501	<0.00050	0.00052
Copper	0.00288	0.001	0.019	0.00367	0.00138	0.0145
Iron	0.189	0.018	1.11	0.112	0.061	0.399
Lead	0.0001384	<0.000050	0.00048	0.00005	<0.000050	<0.000050
Molybdenum	0.001727	0.000282	0.008	0.001399	0.000232	0.00202
Nickel	0.001188	<0.00050	0.004	0.00111	0.00074	0.00212
Selenium	0.000221	0.000082	0.0022	0.000143	0.000089	0.000276
Silver	0.0000154	<0.000010	0.000024	0.00001	<0.000010	<0.000010
Zinc	0.00353	<0.0010	0.0334	0.00127	<0.0010	0.0034

5.3.31 WTP and RO – Treated Water

The WTP was operational for part of 2021. Minto discharged directly to Minto Creek from the RO train from May 25th to June 1st, September 20th to 25th, and once more on

September 29th. Results from samples taken during these periods are presented in Section 5.2.3 above.

5.3.32 C4 – Tributary on the south side of Minto Creek

The water quality statistics for C4 from 2012 to 2021 are summarized below in Table 5-27. A total of six routine samples were collected from station C4 during the 2021 monitoring period. The July sample was not taken; sampling was deemed unsafe due to high bear activity in the area.

Table 5-27: C4 Water Quality Results Summary (2012-2021)

C4	2012 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.57	6.9	7.99	7.65	7.33	7.85
TSS (mg/L)	51.87	2.3	1260	2.47	<1.0	6
Nutrients (mg/L)						
Ammonia Nitrogen	0.02348	<0.0050	0.127	0.0078	0.0056	0.0101
Nitrite Nitrogen	0.00168	<0.0010	<0.0050	0.001	<0.0010	<0.0010
Nitrate Nitrogen	0.02602	<0.0050	0.0659	0.01123	<0.0050	0.0186
Dissolved Metals (mg/L)						
Aluminum	0.0135	0.0042	0.0622	0.0202	0.0076	0.0701
Arsenic	0.00083	0.00034	0.00256	0.00061	0.00052	0.00065
Cadmium	0.00000792	<0.0000050	0.0000337	0.00000738	<0.0000050	0.0000193
Chromium	0.000444	<0.00010	<0.0010	0.000517	<0.00050	0.0006
Copper	0.0019	0.00082	0.0102	0.00255	0.00116	0.00779
Iron	0.564	0.015	5.16	0.217	0.156	0.303
Lead	0.0000703	<0.000050	<0.00020	0.00005	<0.000050	<0.000050
Molybdenum	0.000758	0.000379	0.00174	0.000632	0.000338	0.000759
Nickel	0.00184	0.0005	0.00309	0.00154	0.00122	0.00216
Selenium	0.000104	0.000056	0.000331	0.000096	0.000066	0.000118
Silver	0.0000114	<0.000010	<0.000020	0.00001	<0.000010	<0.000010
Zinc	0.00143	<0.0010	0.0059	0.00118	<0.0010	0.0021

5.3.33 C10 – Tributary on the south side of Minto Creek

The water quality statistics for C10 from 2012 to 2021 are summarized below in Table 5-28. Though the site was monitored five times during the 2021 monitoring period, C10 was found to be dry after freshet meaning only two samples were collected, one in April and one in May.

Table 5-28: C10 Water Quality Results Summary (2012-2021)

C10	2012 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.92	7.29	8.36	7.58	7.58	7.58
TSS (mg/L)	211.96	<1.0	2210	1.6	1.5	1.7
Nutrients (mg/L)						
Ammonia Nitrogen	0.04358	<0.0050	0.2	0.0116	0.011	0.0123
Nitrite Nitrogen	0.00457	<0.0010	0.0229	0.001	<0.0010	<0.0010
Nitrate Nitrogen	0.07557	<0.0050	0.226	0.0076	<0.0050	0.0102
Dissolved Metals (mg/L)						
Aluminum	0.0177	0.0064	0.0583	0.0224	0.0202	0.0246
Arsenic	0.00078	0.00039	0.00142	0.00052	0.00049	0.00055
Cadmium	0.00000884	<0.0000050	0.0000187	0.0000172	0.000006	0.0000285
Chromium	0.00047	0.00017	<0.0010	0.0005	<0.00050	<0.00050
Copper	0.00207	0.00095	0.00607	0.00262	0.00251	0.00272
Iron	0.518	0.027	1.55	0.159	0.143	0.175
Lead	0.00012	<0.000050	0.00067	0.00005	<0.000050	<0.000050
Molybdenum	0.000911	0.00033	0.00184	0.00037	0.000235	0.000504
Nickel	0.00159	0.0007	0.0023	0.00139	0.00118	0.0016
Selenium	0.000114	0.000052	0.000294	0.000094	0.00009	0.000099
Silver	0.0000125	<0.000010	<0.000020	0.00001	<0.000010	<0.000010
Zinc	0.00227	<0.0010	<0.0050	0.00235	<0.0010	0.0037

5.3.34 MN – Minto North Pit Water

The water quality statistics for MN from 2015 to 2021 are summarized below in Table 5-29. Seven routine samples were collected from station MN during the 2021 monitoring period, once safe access to the pit water could be established. The water was frozen as of November 2021.

Table 5-29: MN Water Quality Results Summary (2015-2021)

MN	2015 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.85	7.03	8.6	8.1	7.55	8.46
TSS (mg/L)	66.92	<3.0	1040	2.46	<1.0	8.8
Nutrients (mg/L)						
Ammonia Nitrogen	5.7824	0.0141	51	0.0141	0.007	0.0276
Nitrite Nitrogen	2.1643	0.0126	14.7	0.0274	0.0077	0.0517
Nitrate Nitrogen	67.85	6.48	342	7.68	5.43	9.95
Dissolved Metals (mg/L)						
Aluminum	0.008	0.0018	0.0266	0.0087	0.003	0.0212
Arsenic	0.00052	0.0002	0.00142	0.00044	0.00035	0.00049
Cadmium	0.00005911	<0.000010	0.000283	0.00002917	0.0000173	<0.0000550
Chromium	0.000118	<0.00010	0.00047	0.0005	<0.00050	<0.00050
Copper	0.07571	0.00772	0.562	0.00815	0.00559	0.0107
Iron	0.049	<0.010	0.449	0.011	<0.010	0.017
Lead	0.0001473	<0.000050	0.00225	0.00005	<0.000050	<0.000050
Molybdenum	0.0203	0.0077	0.0384	0.0191	0.0127	0.0231
Nickel	0.00083	<0.00050	0.0041	0.0005	<0.00050	<0.00050
Selenium	0.01482	0.00385	0.0627	0.01057	0.00752	0.0133
Silver	0.0002076	<0.000010	0.00483	0.00001	<0.000010	<0.000010
Zinc	0.00684	<0.0010	0.0884	0.001	<0.0010	<0.0010

5.3.35 MN-0.2 – Upper West Arm of McGinty Creek

The water quality statistics for MN-0.2 from 2012 to 2021 are summarized below in Table 5-30. A total of four routine samples were collected from station MN-0.2 during the 2021 monitoring period. The site was frozen from January through May, and from October through December.

Table 5-30: MN-0.2 Water Quality Results Summary (2012-2021)

MN-0.2	2012 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.41	6.08	8.57	6.98	6.82	7.16
TSS (mg/L)	7.83	1.2	60	1	<1.0	<1.0
Nutrients (mg/L)						
Ammonia Nitrogen	0.01469	<0.0050	0.11	0.0072	0.0053	0.0106
Nitrite Nitrogen	0.00143	<0.0010	<0.0050	0.001	<0.0010	<0.0010
Nitrate Nitrogen	0.00715	<0.0050	<0.020	0.01085	<0.0050	0.0284
Dissolved Metals (mg/L)						
Aluminum	0.0936	0.0178	0.178	0.0757	0.0475	0.147
Arsenic	0.0006	0.00018	0.00388	0.00037	0.00033	0.0004
Cadmium	0.00000651	<0.0000050	0.0000142	0.000005	<0.0000050	<0.0000050
Chromium	0.000613	0.00021	0.0011	0.00051	<0.00050	0.00054
Copper	0.00298	0.00129	0.0106	0.00233	0.00158	0.00371
Iron	0.775	0.126	10.3	0.277	0.259	0.304
Lead	0.0000744	<0.000050	<0.00020	0.00005	<0.000050	<0.000050
Molybdenum	0.00032	0.000102	<0.0010	0.000177	0.000154	0.000201
Nickel	0.00143	0.00052	0.002	0.00114	0.00088	0.00144
Selenium	0.0000866	<0.000050	0.000123	0.0000595	<0.000050	0.000069
Silver	0.0000115	<0.000010	<0.000020	0.00001	<0.000010	<0.000010
Zinc	0.00208	<0.0010	0.0053	0.00127	<0.0010	0.0021

5.3.36 MN-0.5 – West Arm of McGinty Creek

The water quality statistics for MN-0.5 from 2012 to 2021 are summarized below in Table 5-31. A total of five routine samples were collected from station MN-0.5 during the 2021 monitoring period. The site was frozen January through April, and October through December.

Table 5-31: MN-0.5 Water Quality Results Summary (2012-2021)

MN-0.5	2012 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.72	7.26	8.5	7.41	7.08	7.81
TSS (mg/L)	17.16	<3.0	114	1.66	<1.0	4.1
Nutrients (mg/L)						
Ammonia Nitrogen	0.00911	<0.0050	0.046	0.02004	<0.0050	0.074
Nitrite Nitrogen	0.00264	<0.0010	<0.050	0.001	<0.0010	<0.0010
Nitrate Nitrogen	0.04849	<0.0050	0.159	0.02246	<0.0050	0.0383
Dissolved Metals (mg/L)						
Aluminum	0.0317	0.0032	0.58	0.0393	0.0103	0.119
Arsenic	0.0004	0.00026	0.00089	0.00037	0.00031	0.00041
Cadmium	0.00001079	<0.0000050	0.000186	0.00000506	<0.0000050	0.0000053
Chromium	0.000371	<0.00010	0.00126	0.0005	<0.00050	<0.00050
Copper	0.00245	0.00074	0.0264	0.00237	0.00107	0.00476
Iron	0.1104	<0.010	0.929	0.095	0.029	0.262
Lead	0.0000938	<0.000050	0.000991	0.00005	<0.000050	<0.000050
Molybdenum	0.001011	0.000423	0.00169	0.000854	0.000413	0.00106
Nickel	0.001022	<0.00050	0.00432	0.00115	0.00064	0.002
Selenium	0.000199	<0.00010	0.000372	0.000167	0.000128	0.000221
Silver	0.0000115	<0.000010	<0.000020	0.00001	<0.000010	<0.000010
Zinc	0.0029	<0.0010	0.0459	0.0011	<0.0010	0.0015

5.3.37 MN-1.5 – Upper East Arm of McGinty Creek

The water quality statistics for MN-1.5 from 2012 to 2021 are summarized below in Table 5-32. A total of five routine samples were collected from station MN-1.5 during the 2021 monitoring period. The site was frozen January through April, and October through December.

Table 5-32: MN-1.5 Water Quality Results Summary (2012-2021)

MN-1.5	2012 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.35	6.74	7.98	6.8	5.21	7.58
TSS (mg/L)	22.9	<3.0	157	2.88	<1.0	5.8
Nutrients (mg/L)						
Ammonia Nitrogen	0.01796	<0.0050	0.1	0.01124	<0.0050	0.0252
Nitrite Nitrogen	0.00279	<0.0010	0.05	0.001	<0.0010	<0.0010
Nitrate Nitrogen	0.01267	<0.0050	0.049	0.00545	<0.0050	0.0068
Dissolved Metals (mg/L)						
Aluminum	0.074	0.0232	0.236	0.0884	0.0465	0.21
Arsenic	0.00045	0.00024	0.00113	0.0003	0.00027	0.00036
Cadmium	0.00000691	<0.0000050	0.0000249	0.00000614	<0.0000050	0.0000082
Chromium	0.000517	0.0003	0.00073	0.000522	<0.00050	0.00061
Copper	0.00568	0.00278	0.016	0.00683	0.00385	0.0151
Iron	0.439	0.074	1.2	0.224	0.143	0.41
Lead	0.00005	<0.000050	<0.000050	0.00005	<0.000050	<0.000050
Molybdenum	0.000321	0.000134	0.000484	0.000257	0.00015	0.000311
Nickel	0.00114	0.00054	0.0017	0.00109	0.00082	0.00162
Selenium	0.000078	<0.000050	0.000127	0.0000828	<0.000050	0.000103
Silver	0.00001	<0.000010	<0.000010	0.00001	<0.000010	<0.000010
Zinc	0.00183	<0.0010	<0.0050	0.00124	<0.0010	0.002

5.3.38 MN-2.5 – East Arm of McGinty Creek

The water quality statistics for MN-2.5 from 2012 to 2021 are summarized below in Table 5-33. A total of five routine samples were collected from station MN-2.5 during the 2021 monitoring period. The site was frozen January through April, and October through December.

Table 5-33: MN-2.5 Water Quality Results Summary (2012-2021)

MN-2.5	2012 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.63	7.1	8.6	7.33	6.91	7.79
TSS (mg/L)	39.48	2.3	341	15	3.2	36.5
Nutrients (mg/L)						
Ammonia Nitrogen	0.01302	<0.0050	0.0483	0.0122	0.0055	0.0253
Nitrite Nitrogen	0.00274	<0.0010	<0.050	0.001	<0.0010	<0.0010
Nitrate Nitrogen	0.02578	<0.0050	<0.20	0.0139	<0.0050	0.0243
Dissolved Metals (mg/L)						
Aluminum	0.0149	0.005	0.0518	0.0306	0.0103	0.096
Arsenic	0.00036	0.00016	0.00073	0.00033	0.00029	0.00042
Cadmium	0.00000881	<0.0000050	0.000109	0.0000056	<0.0000050	0.000008
Chromium	0.00037	0.0001	<0.0010	0.00051	<0.00050	0.00055
Copper	0.00225	0.00071	0.0122	0.00265	0.00136	0.00591
Iron	0.1172	0.019	0.733	0.109	0.054	0.258
Lead	0.000081	<0.000050	0.0003	0.00005	<0.000050	<0.000050
Molybdenum	0.00071	0.000289	0.0011	0.000555	0.000266	0.000718
Nickel	0.001164	<0.00050	0.00242	0.00134	0.00096	0.00216
Selenium	0.0000883	<0.000050	0.00019	0.0000866	<0.000050	0.000132
Silver	0.0000119	<0.000010	<0.000020	0.00001	<0.000010	<0.000010
Zinc	0.00209	<0.0010	0.0088	0.00326	<0.0010	0.01

5.3.39 MN-4.5 – McGinty Creek near confluence with Yukon River

The water quality statistics for MN-4.5 from 2012 to 2021 are summarized below in Table 5-34. A total of five routine samples were collected from station MN-4.5 during the 2021 monitoring period. The site was frozen January through April, and October through December.

Table 5-34: MN-4.5 Water Quality Results Summary (2012-2021)

MN-4.5	2012 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.69	6.99	8.15	7.44	7.15	7.94
TSS (mg/L)	13.94	<1.0	201	3.8	<1.0	13.7
Nutrients (mg/L)						
Ammonia Nitrogen	0.0086	<0.0050	0.037	0.00758	<0.0050	0.0106
Nitrite Nitrogen	0.00146	<0.0010	<0.0050	0.001	<0.0010	<0.0010
Nitrate Nitrogen	0.06517	<0.0050	0.323	0.01866	<0.0050	0.0335
Dissolved Metals (mg/L)						
Aluminum	0.0166	0.0041	0.0786	0.0367	0.0073	0.11
Arsenic	0.00037	0.00019	0.0006	0.00036	0.00029	0.00045
Cadmium	0.00000651	<0.0000050	0.0000172	0.00000536	<0.0000050	0.0000068
Chromium	0.00023	<0.00010	0.0005	0.000508	<0.00050	0.00054
Copper	0.00211	0.00105	0.00512	0.00259	0.0012	0.00531
Iron	0.0772	<0.010	0.482	0.091	0.024	0.266
Lead	0.000053	<0.000050	0.000146	0.00005	<0.000050	<0.000050
Molybdenum	0.000878	0.000474	0.00117	0.000737	0.00037	0.0009
Nickel	0.001016	<0.00050	0.00188	0.00118	0.00062	0.00213
Selenium	0.000182	0.00012	0.000444	0.000211	0.000121	0.000426
Silver	0.00001	<0.000010	<0.000010	0.00001	<0.000010	<0.000010
Zinc	0.00135	<0.0010	0.0037	0.00106	<0.0010	0.0013

5.3.40 UG1 – Minto South Underground Mine Dewatering

The water quality statistics for UG1 from 2015 to 2021 are summarized below in Table 5-35. A total of 12 routine samples were collected from station UG1 during the 2021 monitoring period.

Table 5-35: UG1 Water Quality Results Summary (2015-2021)

UG1	2015 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.66	4.72	8.6	7.73	6.73	8.23
TSS (mg/L)	121.9	3	545	248.1	46.2	959
Nutrients (mg/L)						
Ammonia Nitrogen	12.213	0.158	75	6.69	2.53	14
Nitrite Nitrogen	0.8545	0.014	3.18	0.398	0.315	0.51
Nitrate Nitrogen	21.87	1.32	81.9	12.26	5.74	23.1
Dissolved Metals (mg/L)						
Aluminum	0.0205	0.0024	0.51	0.0113	0.0044	0.0167
Arsenic	0.00107	0.00042	0.00319	0.00075	0.00065	0.00087
Cadmium	0.0001693	<0.0000100	0.000732	0.00014137	0.000033	0.000297
Chromium	0.000372	<0.00010	0.00261	0.000741	<0.00020	<0.00100
Copper	0.03011	0.00364	0.178	0.01694	0.00579	0.0318
Iron	0.0323	0.0052	1.16	0.02	<0.020	<0.020
Lead	0.000102	<0.000050	0.00063	0.0001	<0.000100	<0.000100
Molybdenum	0.0189	0.0083	0.0394	0.0192	0.0154	0.0233
Nickel	0.002078	<0.00050	0.007	0.0023	0.0015	0.00391
Selenium	0.001174	0.00022	0.00557	0.001217	0.000699	0.00163
Silver	0.000017	<0.000010	0.000045	0.00002	<0.000020	<0.000020
Zinc	0.01586	0.0011	0.134	0.0092	0.0031	0.0254

5.3.41 UG2 – Wildfire Underground Mine Dewatering

This station was not established in 2021.

5.3.42 UG3 – Copper Keel Underground Mine Dewatering

This station was not established in 2021, and dewatering water from Copper Keel is comingled with Minto South water and pumped to surface via UG1.

5.3.43 UG4 – Minto East Underground Mine Dewatering

This station was established in 2018, and a total of twelve routine samples were collected in 2021. Water quality statistics from 2018 to 2021 are summarized in Table 5-36 below.

Table 5-36: UG4 Water Quality Results Summary (2018-2021)

UG4	2018 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.75	6.69	8.48	7.75	7.51	8.02
TSS (mg/L)	189.61	<3.0	1230	27	6.4	138
Nutrients (mg/L)						
Ammonia Nitrogen	3.2324	0.0556	31.8	3.742	0.778	7.34
Nitrite Nitrogen	0.3266	<0.010	4.6	0.603	0.132	4.69
Nitrate Nitrogen	5.118	0.258	40.2	7.05	2.64	13.3
Dissolved Metals (mg/L)						
Aluminum	0.00687	<0.0010	0.0167	0.0066	0.0025	0.0084
Arsenic	0.00078	0.00033	0.00134	0.00053	0.00034	0.00068
Cadmium	0.00021817	<0.0000350	0.000876	0.00042775	<0.0000150	0.000899
Chromium	0.000173	<0.00010	0.00038	0.000755	<0.00020	0.00126
Copper	0.05518	0.00167	0.243	0.14786	0.00137	0.31
Iron	0.0181	<0.010	0.051	0.0235	<0.020	0.062
Lead	0.0001192	<0.000050	0.000626	0.0001152	<0.000100	0.000222
Molybdenum	0.0196	0.0153	0.0512	0.0203	0.0166	0.0427
Nickel	0.001306	<0.00050	0.0078	0.001646	<0.00100	0.0047
Selenium	0.002488	0.00079	0.00855	0.00212	0.00137	0.00382
Silver	0.0000173	<0.000010	0.000025	0.00002	<0.000020	<0.000020
Zinc	0.0109	0.0018	0.0505	0.0088	0.0029	0.0183

6 Groundwater Monitoring Program

Groundwater monitoring program details are provided in Section 2.2 of the Minto Mine Environmental Monitoring, Surveillance and Reporting Plan. The primary monitoring objective of the groundwater monitoring program is to identify potential impacts on groundwater from Minto Mine.

Mine facilities monitored for groundwater impacts include, but are not limited to, the DSTSF, Mill area, Main Pit, Area 2 Pit, Minto North Pit, waste rock dumps, and the Water Storage Pond (WSP). The Groundwater (GW) Monitoring Program is comprised of operational and baseline monitoring. Water quality samples for the program are collected per standard procedures such as those summarized in the ASTM (2007) *Standard Guide for Sampling Ground-Water Monitoring Wells*. The main components of the groundwater monitoring program include groundwater quality, vibrating wire piezometers, and ground temperature cable monitoring.

6.1 Groundwater Quality Monitoring Conformance

Minto's 2021 conformance with groundwater sampling requirements is summarized in Table 6-1 below. Quality Assurance and Quality Control (QA/QC) sampling is described in Section 6-2.

Wells and drive point sampling was conducted as per the EMSRP and GW Plan 2018-01 requirements and the AMP for groundwater as monthly or quarterly frequency. Groundwater AMP exceedances are discussed in Sections 10.3 and 10.4 of this report.

Table 6-1: Groundwater Quality Monitoring Conformance Summary (2021)

Mine Project Component	Monitoring Installation	Quality	Level	Monitoring Frequency	2020 Groundwater Compliance
Up-gradient of Mine Activities	MW17-08-01	X	X	Quarterly	2 of 4 collected. Site inaccessible in Q1 due to heavy snowfall. Westbay equipment off-site for repair in Q3.
	MW17-08-02	X	X	Quarterly	2 of 4 collected. Site inaccessible in Q1 due to heavy snowfall. Westbay equipment off-site for repair in Q3.
	MW17-08-03	X	X	Quarterly	2 of 4 collected. Site inaccessible in Q1 due to heavy snowfall.

					Westbay equipment off-site for repair in Q3.
	MW17-08-04	X	X	Quarterly	2 of 4 collected. Site inaccessible in Q1 due to heavy snowfall. Westbay equipment off-site for repair in Q3.
Southwest Waste Dump	MW12-DP1	X	X	Quarterly	No samples collected. Destroyed in August 2017.
	MW12-DP2	X	X	Quarterly	No samples collected. DP obsolete.
	MW12-DP3	X	X	Quarterly	No samples collected. DP obsolete.
	MW17-09-01	X	X	Quarterly	No samples collected. Well is damaged and no longer operational. Westbay probe cannot reach ports.
Main Waste Dump	MW09-01-01	X	X	Quarterly	Since MW09-01 has been dry since October 2014, it was replaced by MW17-10.
	MW09-01-02	X	X	Quarterly	Since MW09-01 has been dry since October 2014, it was replaced by MW17-10.
	MW09-01-03	X	X	Quarterly	Since MW09-01 has been dry since October 2014, it was replaced by MW17-10.
	MW17-10-01	X	X	Quarterly	4 of 4 collected. Sampled as per schedule.
	MW17-10-02	X	X	Quarterly	4 of 4 collected. Sampled as per schedule.
	MW17-10-03	X	X	Quarterly	4 of 4 collected. Sampled as per schedule.
	MW17-10-04	X	X	Quarterly	3 of 4 collected. Port was found dry in Q3.
Dry Stack Tailings Storage Facility and Mill Valley Fill Expansion	MW12-06-01		X	Quarterly	2 of 4 collected. Samples contaminated with glycol in Q1, Q3 & Q4.
	MW12-06-02	X	X	Quarterly	4 of 4 collected. Sampled as per schedule.
	MW12-06-03		X	Quarterly	4 of 4 collected. Sampled as per AMP schedule.
	MW12-06-04	X	X	Quarterly	4 of 4 collected. Sampled as per schedule.
	MW12-06-05		X	Quarterly	4 of 4 collected. Sampled as per AMP schedule.
	MW12-06-06	X	X	Quarterly	4 of 4 collected. Sampled as per schedule.

Main Pit	MW12-07-01	X	X	Quarterly	3 of 4 samples collected. Port is likely damaged, as all samples contaminated with glycol. Westbay equipment off-site for repair in Q3.
	MW12-07-02	X	X	Quarterly	3 of 4 samples collected. Westbay equipment off-site for repair in Q3.
	MW12-07-03		X	Quarterly	3 of 4 samples collected. Westbay equipment off-site for repair in Q3.
	MW17-DP01	X	X	Quarterly	0 of 4 collected. Site frozen in Q1 and inaccessible in Q2, Q3, & Q4 due to safety concerns.
	MW17-DP02	X	X	Quarterly	0 of 4 collected. Site frozen in Q1 and inaccessible in Q2, Q3, & Q4 due to safety concerns.
	MW17-DP03	X	X	Quarterly	0 of 4 collected. Site frozen in Q1 and inaccessible in Q2, Q3, & Q4 due to safety concerns caused by high water in Main Pit.
Minto North Pit	MW09-03-01	X	X	Monthly	11 of 12 collected. Westbay equipment off-site for calibration in January.
	MW09-03-02	X	X	Monthly	11 of 12 collected. Westbay equipment off-site for calibration in January.
	MW09-03-03	X	X	Monthly	No samples were collected. Port found dry throughout 2021.
	MW17-11-01	X	X	Quarterly	4 of 4 collected. Sampled as per schedule.
	MW17-11-02	X	X	Quarterly	4 of 4 collected. Sampled as per schedule.
	MW17-11-03	X	X	Quarterly	4 of 4 collected. Sampled as per schedule.
	MW17-11-04	X	X	Quarterly	1 of 4 collected. Port found dry in all quarters except Q3.
	MW17-11-05	X	X	Quarterly	0 of 4 collected. Port found dry in all quarters.
Water Storage Pond	MW12-05-01	X	X	Quarterly	4 of 4 collected. Sampled as per schedule.
	MW12-05-02	X	X	Quarterly	4 of 4 collected. Sampled as per schedule.
	MW12-05-03	X	X	Quarterly	4 of 4 collected. Sampled as per schedule.

	MW12-05-04	X	X	Quarterly	3 of 4 collected. No sample obtained in Q4 due to glycol contamination.
	MW12-05-05	X	X	Quarterly	4 of 4 collected. Sampled as per schedule.
	MW12-05-06	X	X	Quarterly	3 of 4 collected. No sample obtained in Q3 due to equipment malfunction.
	MW12-05-07	X	X	Quarterly	3 of 4 collected. No sample obtained in Q3 due to equipment malfunction.
	MW17-12-01	X	X	Quarterly	4 of 4 collected. Sampled as per schedule.
	MW17-12-02	X	X	Quarterly	4 of 4 collected. Sampled as per schedule.
	MW17-12-03	X	X	Quarterly	4 of 4 collected. Sampled as per schedule.
	MW17-12-04	X	X	Quarterly	4 of 4 collected. Sampled as per schedule.
	MW17-12-05	X	X	Quarterly	4 of 4 collected. Sampled as per schedule.
	MW17-12-06	X	X	Quarterly	4 of 4 collected. Sampled as per schedule.
	MW17-12-07	X	X	Quarterly	4 of 4 collected. Sampled as per schedule.
	MW17-12-08	X	X	Quarterly	4 of 4 collected. Sampled as per schedule.

6.2 Groundwater Quality Control and Assurance

In 2021, 139 groundwater samples were taken at Minto. A total of 34 duplicate QC samples were taken from groundwater sampling sites, representing 24.46% of the total number of samples collected in 2021.

The EMSRP recommends field duplicate sampling be conducted at a frequency of one field duplicate sample per ten groundwater monitoring samples. The recommended rate of field duplicate sampling was achieved in 2021.

6.3 Groundwater Monitoring Stations

The EMSRP details the groundwater wells at the Minto Mine, including operative and inoperative wells. Figure 6-1 shows a location map of the operative wells. Stations collected more than twice in 2021 have results presented as follows: Mean, Minimum and Maximum values and are compared to their historical results from the date of the well installation to 2020

Results for the 2021 Groundwater Monitoring Program groundwater wells were submitted in Monthly Reports.

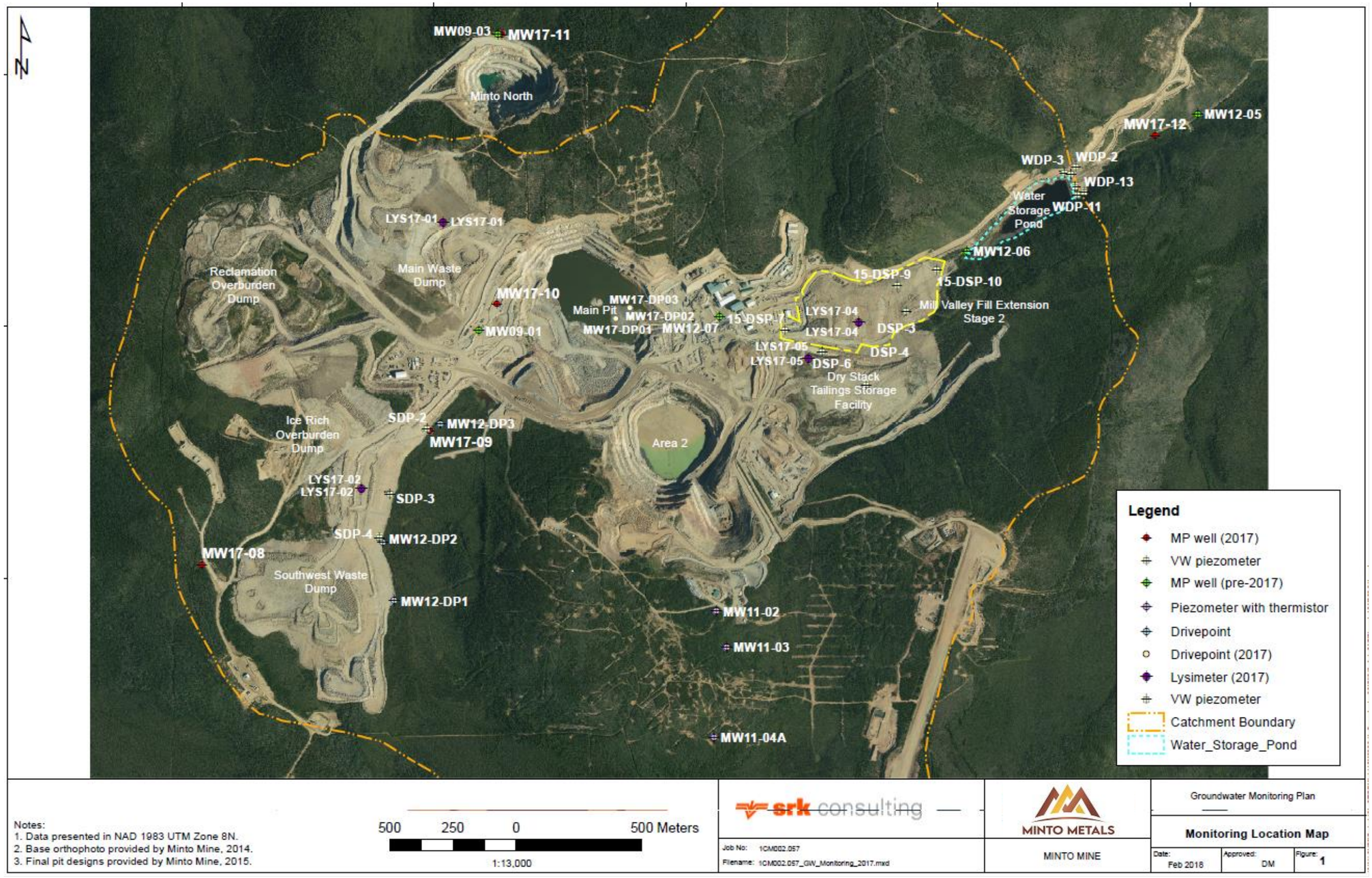

Figure 6-1: Minto Mine Groundwater Well Locations 2021

6.3.1 MW09-03

Groundwater well MW09-03 water quality results from 2021 are summarized in Table 6-2 and Table 6-3 and compared to historical data. MW09-03 produced results from sampling zones 01 and 02, while zone 03 produced no water during 2021. As such, only results for zones 01 and 02 are presented below. Per the AMP, this well is sampled monthly. The well was not sampled in January as the sampling equipment was off-site for calibration and maintenance.

Table 6-2: MW09-03-01 Water Quality Results Summary (2009 - 2021)

MW09-03-01	2009 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	8.08	6.43	9.4	7.53	6.33	8.54
TDS (mg/L)	193	146	652	182	174	200
Sulfate-dissolved (mg/L)	20.72	0.53	117	18.1	17	19.6
Nutrients (mg/L)						
Ammonia Nitrogen	0.0468	0.024	0.17	0.0237	0.016	0.0344
Nitrate Nitrogen	0.44668	<0.0010	9.27	0.04349	<0.0010	0.419
Nitrite Nitrogen	0.03391	<0.0050	0.669	0.02797	<0.0050	0.205
Dissolved Metals (mg/L)						
Silver	0.00001247	<0.0000050	0.00005	0.000011	<0.000010	<0.000020
Aluminum	0.00409	0.0012	0.0198	0.0024	0.0015	0.0058
Arsenic	0.000946	0.000037	0.00933	0.00092	0.00087	0.00101
Cadmium	0.00007366	<0.0000050	0.00104	0.0000669	0.0000123	0.000187
Chromium	0.000299	<0.00010	0.001	0.00046	<0.00010	<0.00050
Copper	0.001139	<0.00020	0.019	0.000475	<0.00020	0.001
Lead	0.0000968	0.000036	0.0011	0.00005	<0.000050	<0.000050
Molybdenum	0.00713	0.0035	0.0806	0.00454	0.0042	0.00491
Nickel	0.00127	<0.00050	0.008	0.000567	<0.00050	0.00068
Selenium	0.0002675	<0.000050	0.008	0.0000768	<0.00005	0.000157
Zinc	0.02389	0.0033	0.183	0.0424	0.0116	0.0958

Table 6-3: MW09-03-02 Water Quality Results Summary (2009 - 2021)

MW09-03-02	2009 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.86	6.88	8.8	7.6	6.95	8.33
TDS (mg/L)	286	145	716	190.8	165	234
Sulfate-dissolved (mg/L)	8.516	<0.50	110	6.73	4.51	10.4
Nutrients (mg/L)						
Ammonia Nitrogen	0.05157	<0.0050	0.33	0.00657	<0.0050	0.0151
Nitrate Nitrogen	0.19552	<0.0010	1.93	0.01	0.0011	0.046
Nitrite Nitrogen	4.48678	<0.0050	19.1	10.41	5.93	19.6
Dissolved Metals (mg/L)						
Silver	0.0000131	<0.000010	0.00004	0.00001	<0.000010	<0.000010
Aluminum	0.00404	<0.0010	0.0198	0.0038	0.0012	0.017
Arsenic	0.000302	<0.00010	0.0014	0.000102	<0.00010	0.00012
Cadmium	0.00007499	<0.0000050	0.00072	0.0001326	0.0000201	0.000429
Chromium	0.000318	<0.00010	0.0013	0.000427	<0.00010	<0.00050
Copper	0.002437	<0.00020	0.022	0.00177	0.00095	0.00328
Lead	0.0000852	<0.000050	0.0003	0.00005	<0.000050	<0.000050
Molybdenum	0.00989	0.00266	0.101	0.00352	0.00311	0.00392
Nickel	0.000764	<0.00050	0.004	0.000508	<0.00050	0.00056
Selenium	0.000435	0.00006	0.0067	0.000540	0.000238	0.00141
Zinc	0.03254	<0.0050	0.164	0.0538	0.0225	0.0984

6.3.2 MW12-DP1

MW12-DP1 was destroyed in August 2017 when the permafrost into which the well had been installed, degraded, compromising the ground integrity and the well. As such, water quality results are not presented.

6.3.3 MW12-DP2

MW12-DP2 was dry or frozen during the 2021 sampling events, thus water quality results are not presented.

6.3.4 MW12-DP3

MW12-DP3 was dry or frozen during the 2021 sampling events, thus water quality results are not presented.

6.3.5 MW12-05

Groundwater well MW12-05 water quality results from 2021 are summarized in Table 6-4 through Table 6-10 and compared to historical data. Zones 01 to 07 were sampled and analyzed during 2021 under the Groundwater Monitoring Plan. Ongoing AMP results are discussed in Sections 10.3 and 10.4.

Table 6-4: MW12-05-01 Water Quality Results Summary (2012 - 2021)

MW12-05-01	2012 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.95	7.16	8.7	7.12	6.43	7.86
TDS (mg/L)	1612	706	2070	2055	2040	2080
Sulfate-dissolved (mg/L)	1026	350	1350	1392.5	1360	1420
Nutrients (mg/L)						
Ammonia Nitrogen	0.08329	<0.0050	0.602	0.0119	0.0073	0.015
Nitrate Nitrogen	0.0623	0.0082	0.427	0.02	<0.0200	<0.0200
Nitrite Nitrogen	0.05788	<0.010	0.368	0.1183	<0.100	0.166
Dissolved Metals (mg/L)						
Silver	0.0000176	<0.000010	<0.000020	0.0000200	<0.000020	<0.000020
Aluminum	0.0065	0.0029	0.0182	0.0163	0.0042	0.0483
Arsenic	0.00095	0.00047	0.00498	0.00052	0.00049	0.00058

Cadmium	0.00003097	<0.0000050	0.000193	0.00001208	<0.0000100	0.0000183
Chromium	0.000529	0.00014	<0.0010	0.00080	<0.00020	<0.00100
Copper	0.000763	<0.00020	0.00836	0.000420	<0.00040	0.00048
Lead	0.0001206	<0.000050	<0.00020	0.0001000	<0.000100	<0.000100
Molybdenum	0.000847	0.000125	0.012	0.000379	0.000227	0.000595
Nickel	0.000982	<0.00050	0.0043	0.001000	<0.00100	<0.00100
Selenium	0.000863	0.000083	0.00951	0.0002748	<0.000100	0.0006
Zinc	0.00616	<0.0010	0.0402	0.0139	0.0067	0.0201

Table 6-5: MW12-05-02 Water Quality Results Summary (2016 – 2021)

MW12-05-02	2016 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	8.01	7.12	8.6	7.08	5.54	7.96
TDS (mg/L)	1715	389	3080	1895	1870	1920
Sulfate-dissolved (mg/L)	1094.5	41.2	2400	1232.5	1220	1260
Nutrients (mg/L)						
Ammonia Nitrogen	0.0565	0.0095	0.642	0.0135	<0.0050	0.0235
Nitrate Nitrogen	0.05083	<0.010	0.377	0.02065	<0.0100	0.0326
Nitrite Nitrogen	0.06	<0.0050	<0.10	0.0875	<0.0500	<0.100
Dissolved Metals (mg/L)						
Silver	0.0000177	<0.000010	<0.000050	0.000035	<0.000020	<0.000050
Aluminum	0.0051	0.0036	0.0088	0.006	0.0036	0.0103
Arsenic	0.000445	<0.00020	0.0019	0.000408	0.00031	<0.00050
Cadmium	0.00000905	<0.0000050	<0.000025	0.0000175	<0.0000100	<0.0000250
Chromium	0.00033	0.00015	0.00093	0.00156	0.00024	<0.00250
Copper	0.000369	<0.00020	<0.0010	0.000700	<0.00040	<0.00100
Lead	0.0000881	<0.000050	<0.00025	0.000175	<0.000100	<0.000250
Molybdenum	0.00039	0.00014	0.00112	0.0002255	0.000201	<0.000250

Nickel	0.000881	<0.00050	<0.0025	0.00175	<0.00100	<0.00250
Selenium	0.0007174	<0.000050	0.00275	0.001107	0.00014	0.00299
Zinc	0.00456	<0.0010	0.0261	0.00353	<0.0020	0.0051

Table 6-6: MW12-05-03 Water Quality Results Summary (2012 - 2021)

MW12-05-03	2012 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.8	7.29	8.4	7.24	5.99	7.79
TDS (mg/L)	1361	880	1570	1402.0	1320	1450
Sulfate-dissolved (mg/L)	776	456	883	835.2	769	863
Nutrients (mg/L)						
Ammonia Nitrogen	0.0291	<0.0050	0.066	0.0164	0.0136	0.019
Nitrate Nitrogen	0.05288	<0.0050	0.372	0.01	<0.0100	<0.0100
Nitrite Nitrogen	0.03621	<0.010	0.105	0.053	<0.0500	0.062
Dissolved Metals (mg/L)						
Silver	0.000015	0.000005	0.000021	0.0000150	<0.000010	<0.000020
Aluminum	0.00545	0.0011	0.0233	0.0049	0.0031	0.0079
Arsenic	0.00034	0.00016	0.0022	0.000175	0.00014	<0.00020
Cadmium	0.00001559	<0.0000050	0.000214	0.0000075	<0.0000050	<0.0000100
Chromium	0.000422	<0.00010	<0.0010	0.00066	0.00014	<0.00100
Copper	0.000608	<0.00020	0.00579	0.000442	<0.00020	0.00097
Lead	0.0001094	<0.000050	<0.00020	0.0000750	<0.000050	<0.000100
Molybdenum	0.001137	0.00017	0.0112	0.000401	0.000284	0.000658
Nickel	0.000823	<0.00050	0.00328	0.000750	<0.00050	<0.00100
Selenium	0.0002664	<0.000050	0.00408	0.000225	<0.000100	0.000368
Zinc	0.00506	<0.0010	0.0312	0.006	0.0017	0.0175

Table 6-7: MW12-05-04 Water Quality Results Summary (2016 - 2021)

MW12-05-04	2016 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.99	7.59	8.6	7.61	7.29	7.79
TDS (mg/L)	293	262	338	333.3	321	343
Sulfate-dissolved (mg/L)	40.8	25.2	54.7	50.5	48.1	53.9
Nutrients (mg/L)						
Ammonia Nitrogen	0.02428	<0.0050	0.144	0.013	0.0058	0.0241
Nitrate Nitrogen	0.04116	<0.0010	0.32	0.0011	<0.0010	0.0013
Nitrite Nitrogen	0.0205	<0.0050	0.068	0.02367	<0.0050	0.0454
Dissolved Metals (mg/L)						
Silver	0.0000100	<0.000010	<0.000010	0.0000100	<0.000010	<0.000010
Aluminum	0.005	0.0021	0.0338	0.0051	0.0024	0.0101
Arsenic	0.000288	<0.00010	0.0033	0.00011	0.00011	0.00012
Cadmium	0.00001852	<0.0000050	0.000251	0.00000520	<0.0000050	0.0000056
Chromium	0.000153	<0.00010	0.00038	0.00038	0.00014	<0.00050
Copper	0.000361	<0.00020	0.00171	0.00032	0.00021	0.00048
Lead	0.0000526	<0.000050	0.000104	0.00005	<0.000050	<0.000050
Molybdenum	0.00335	0.00142	0.00498	0.00316	0.00276	0.00396
Nickel	0.000500	<0.00050	<0.00050	0.000500	<0.00050	<0.00050
Selenium	0.0007258	<0.000050	0.00328	0.001045	0.000382	0.00196
Zinc	0.00263	<0.0010	0.0141	0.0024	<0.0010	0.0047

Table 6-8: MW12-05-05 Water Quality Results Summary (2012 - 2012)

MW12-05-05	2012 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.94	7.41	9	7.34	6.86	7.66
TDS (mg/L)	293	252	339	338	330	351
Sulfate-dissolved (mg/L)	48.6	33.3	62.4	60.1	58	63.5
Nutrients (mg/L)						
Ammonia Nitrogen	0.01634	<0.0050	0.054	0.00575	<0.0050	0.0071
Nitrate Nitrogen	0.06966	<0.0010	0.398	0.0056	<0.0010	0.0178
Nitrite Nitrogen	0.21957	<0.0050	0.817	0.01675	<0.0050	0.0387
Dissolved Metals (mg/L)						
Silver	0.00001265	<0.0000050	<0.000020	0.0000100	<0.000010	<0.000010
Aluminum	0.00393	0.002	0.0106	0.00308	0.0022	<0.0050
Arsenic	0.000272	<0.00010	0.00151	0.00014	0.00012	0.00018
Cadmium	0.00001107	<0.0000050	0.00003	0.0000231	0.0000097	0.0000602
Chromium	0.000333	<0.00010	<0.0010	0.0004	<0.00010	<0.00050
Copper	0.00106	0.00034	0.00360	0.0009	0.00073	0.00110
Lead	0.0000889	<0.000050	<0.00020	0.0000500	<0.000050	<0.000050
Molybdenum	0.00472	0.0035	0.0153	0.00473	0.00455	0.00482
Nickel	0.000728	<0.00050	0.0019	0.00053	<0.00050	0.0006
Selenium	0.0001737	<0.000050	0.00112	0.000123	0.000069	0.000216
Zinc	0.01741	0.0026	0.118	0.0118	0.0089	0.0159

Table 6-9: MW12-05-06 Water Quality Results Summary (2016 – 2021)

MW12-05-06	2016 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.87	7.47	8.90	7.44	7.13	7.81
TDS (mg/L)	295.2	265	340	340.3	326	353
Sulfate-dissolved (mg/L)	50.4	41.9	58.1	60.3	56.8	62.5
Nutrients (mg/L)						
Ammonia Nitrogen	0.00611	<0.0050	0.0181	0.00513	<0.0050	0.0054
Nitrate Nitrogen	0.02168	<0.0010	0.0663	0.0045	0.0020	0.0085
Nitrite Nitrogen	0.17812	<0.0050	0.463	0.1301	0.0744	0.213
Dissolved Metals (mg/L)						
Silver	0.0000100	<0.000010	<0.000010	0.0000100	<0.000010	<0.000010
Aluminum	0.0071	0.0017	0.0808	0.0024	0.0023	0.0024
Arsenic	0.00023	0.00011	0.00092	0.00015	0.00015	0.00016
Cadmium	0.00001874	<0.0000050	0.0000453	0.0000233	0.0000184	0.000029
Chromium	0.000111	<0.00010	0.0003	0.000367	<0.00010	<0.00050
Copper	0.00208	0.00087	0.0148	0.00106	0.00094	0.00117
Lead	0.0000500	<0.000050	<0.000050	0.0000503	<0.000050	0.000051
Molybdenum	0.00426	0.00331	0.00521	0.00444	0.00425	0.00456
Nickel	0.000832	<0.00050	0.00195	0.000650	0.00059	0.00074
Selenium	0.000174	0.000070	0.000600	0.000156	0.000145	0.000169
Zinc	0.0262	0.0054	0.115	0.014	0.0123	0.0156

Table 6-10: MW12-05-07 Water Quality Results Summary (2012 - 2021)

MW12-05-07	2012 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.83	6.1	8.90	7.5	7.15	7.95
TDS (mg/L)	298	252	362	333.7	318	350
Sulfate-dissolved (mg/L)	38.8	11.4	56.6	60.5	57.3	63.6
Nutrients (mg/L)						
Ammonia Nitrogen	0.14204	<0.0050	0.465	0.16100	0.122	0.185
Nitrate Nitrogen	0.12999	<0.0010	2.91	0.001	<0.0010	0.001
Nitrite Nitrogen	0.02186	<0.0050	<0.20	0.00863	<0.0050	0.0123
Dissolved Metals (mg/L)						
Silver	0.0000122	<0.0000050	<0.000020	0.0000100	<0.000010	<0.000010
Aluminum	0.00431	<0.0010	0.016	0.0036	0.0029	0.0046
Arsenic	0.000715	0.00022	0.00165	0.00091	0.00041	0.00123
Cadmium	0.00000804	<0.0000050	0.00003	0.0000064	0.0000054	0.0000078
Chromium	0.000378	<0.00010	<0.0010	0.000367	<0.00010	<0.00050
Copper	0.000342	<0.00020	0.00186	0.000427	<0.00020	0.00054
Lead	0.0000997	0.000039	0.00055	0.0000500	<0.000050	<0.000050
Molybdenum	0.00262	0.00109	0.0038	0.00372	0.00341	0.00425
Nickel	0.000678	<0.00050	0.0015	0.000500	<0.00050	<0.00050
Selenium	0.0003188	<0.000050	0.001680	0.000123	0.000078	0.000186
Zinc	0.00434	<0.0010	0.0136	0.0072	0.0023	0.0144

6.3.6 MW12-06

Groundwater well MW12-06 water quality results from 2021 are summarized in Table 6-11 through Table 6-16 and compared to historical data. Zones 02, 04, and 06 were sampled and analyzed during 2021 under the Groundwater Monitoring Plan, while Zones 01, 03, and 05 were also sampled in response to the Adaptive Management Plan.

Table 6-11: MW12-06-01 Water Quality Results Summary (2016 - 2021)

MW12-06-01	2016 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.39	6.74	8.30	6.86	6.75	6.96
TDS (mg/L)	542	387	1000	1115	1060	1170
Sulfate-dissolved (mg/L)	57.24	0.42	414	539	467	612
Nutrients (mg/L)						
Ammonia Nitrogen	0.3416	0.0067	1.17	0.14000	0.129	0.152
Nitrate Nitrogen	0.4922	0.0379	3.31	0.1003	0.0885	0.112
Nitrite Nitrogen	0.1565	0.0139	0.82	0.0454	0.0321	0.0587
Dissolved Metals (mg/L)						
Silver	0.0000110	<0.000010	0.000027	0.0000150	<0.000010	<0.000020
Aluminum	0.0211	0.0148	0.0326	0.0107	0.0085	0.0129
Arsenic	0.00818	0.00481	0.0178	0.00451	0.00435	0.00466
Cadmium	0.00001357	<0.0000050	0.0000327	0.000018	0.0000143	0.0000216
Chromium	0.00388	0.00234	0.00504	0.002200	0.00179	0.00262
Copper	0.000658	<0.00020	0.00337	0.00032	0.00024	<0.00040
Lead	0.0000533	<0.000050	0.000085	0.0000750	<0.000050	<0.000100
Molybdenum	0.001199	0.000511	0.00265	0.00063	0.00049	0.000769
Nickel	0.000628	<0.00050	0.00086	0.000890	0.00078	<0.00100
Selenium	0.001976	0.000170	0.006320	0.003763	0.000196	0.00733
Zinc	0.00532	0.0022	0.0155	0.0108	0.0066	0.0151

Table 6-12: MW12-06-02 Water Quality Results Summary (2012 - 2021)

MW12-06-02	2012 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.46	6.58	8.60	7.44	6.96	8.04
TDS (mg/L)	650	612	693	675	652	687
Sulfate-dissolved (mg/L)	211	185	227	222.5	218	226
Nutrients (mg/L)						
Ammonia Nitrogen	0.0428	0.0074	0.075	0.02780	0.0188	0.0349
Nitrate Nitrogen	0.4703	0.0401	7.21	0.1474	0.0371	0.373
Nitrite Nitrogen	0.1242	0.0105	1.83	0.07348	<0.0250	0.163
Dissolved Metals (mg/L)						
Silver	0.0000152	<0.000010	<0.000050	0.0000125	<0.000010	<0.000020
Aluminum	0.00287	<0.0010	0.0102	0.0020	0.0012	0.0029
Arsenic	0.00429	0.00286	0.00664	0.00316	0.00236	0.00366
Cadmium	0.00001518	<0.0000050	0.00016	0.00000848	<0.0000050	0.0000139
Chromium	0.000359	<0.00010	<0.0010	0.000525	<0.00010	<0.00100
Copper	0.000975	<0.00020	0.0202	0.00025	<0.00020	<0.00040
Lead	0.0001016	<0.000050	<0.00025	0.0000625	<0.000050	<0.000100
Molybdenum	0.00819	0.0051	0.0164	0.0106	0.0102	0.0109
Nickel	0.000825	<0.00050	<0.0025	0.000625	<0.00050	<0.00100
Selenium	0.0002189	<0.000050	0.000740	0.0002148	<0.000050	0.000587
Zinc	0.00485	0.0016	0.0111	0.0042	0.0024	0.0068

Table 6-13: MW12-06-03 Water Quality Results Summary (2016 - 2021)

MW12-06-03	2016 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.57	6.98	8.10	7.67	7.35	7.96
TDS (mg/L)	640.5	615	671	638.3	637	640
Sulfate-dissolved (mg/L)	202.5	171	221	179	175	184
Nutrients (mg/L)						
Ammonia Nitrogen	0.0554	0.0076	0.0849	0.06240	0.0122	0.0994
Nitrate Nitrogen	0.2385	0.0342	1.07	0.0696	0.0402	0.118
Nitrite Nitrogen	0.0636	0.0094	0.269	0.02617	<0.0250	0.0285
Dissolved Metals (mg/L)						
Silver	0.0000103	<0.000010	0.000016	0.0000100	<0.000010	<0.000010
Aluminum	0.00228	<0.0010	0.0177	0.0084	<0.0010	0.0229
Arsenic	0.00073	0.00048	0.00156	0.00052	0.0004	0.00065
Cadmium	0.00000612	<0.0000050	0.0000247	0.0000165	<0.0000050	0.0000297
Chromium	0.0002	<0.00010	0.00039	0.000500	<0.00050	<0.00050
Copper	0.000368	<0.00020	0.00267	0.000593	<0.00020	0.0013
Lead	0.0000504	<0.000050	0.000058	0.0000500	<0.000050	<0.000050
Molybdenum	0.00202	0.00108	0.004	0.000846	0.000237	0.00178
Nickel	0.0005	<0.00050	<0.00050	0.000500	<0.00050	<0.00050
Selenium	0.0001669	<0.000050	0.000447	0.0012143	<0.000050	0.00314
Zinc	0.00429	<0.0010	0.0096	0.0034	0.0021	0.0059

Table 6-14: MW12-06-04 Water Quality Results Summary (2012 - 2021)

MW12-06-04	2012 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.55	6.4	8.30	7.44	7	7.85
TDS (mg/L)	635	602	735	666.2	653	677
Sulfate-dissolved (mg/L)	179.7	159	197	196.8	193	200
Nutrients (mg/L)						
Ammonia Nitrogen	0.01184	<0.0050	0.028	0.01550	0.0084	0.0277
Nitrate Nitrogen	0.735	0.0473	7.92	0.0735	0.0527	0.0946
Nitrite Nitrogen	0.19029	0.0129	2	0.02508	<0.0250	0.0253
Dissolved Metals (mg/L)						
Silver	0.0000136	<0.0000050	<0.000020	0.0000100	<0.000010	<0.000010
Aluminum	0.00276	<0.0010	0.012	0.0018	0.0013	0.0026
Arsenic	0.0025	0.00163	0.00515	0.00215	0.00173	0.00238
Cadmium	0.00000796	<0.0000050	0.000017	0.000005	<0.0000050	<0.0000050
Chromium	0.000366	<0.00010	<0.0010	0.000400	<0.00010	<0.00050
Copper	0.000254	0.000106	0.00076	0.0002	<0.00020	<0.00020
Lead	0.0000910	0.000031	<0.00020	0.0000500	<0.000050	<0.000050
Molybdenum	0.0084	0.0074	0.0102	0.00873	0.0084	0.00897
Nickel	0.00065	<0.00050	<0.0010	0.000500	<0.00050	<0.00050
Selenium	0.0002026	<0.000050	0.001010	0.0001138	<0.000050	0.000214
Zinc	0.01374	0.0041	0.0686	0.0092	0.0048	0.0117

Table 6-15: MW12-06-05 Water Quality Results Summary (2016 - 2021)

MW12-06-05	2016 - 2021 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.6	7.14	8.30	7.55	7.29	7.82
TDS (mg/L)	633	541	714	661	657	664
Sulfate-dissolved (mg/L)	180.1	98.3	200	195.7	192	199
Nutrients (mg/L)						
Ammonia Nitrogen	0.00731	<0.0050	0.0131	0.00630	0.0059	0.0066
Nitrate Nitrogen	0.1248	0.0328	1	0.068	0.0344	0.106
Nitrite Nitrogen	0.04058	0.0155	0.255	0.0332	<0.0250	0.0484
Dissolved Metals (mg/L)						
Silver	0.0000100	<0.000010	0.00001	0.0000100	<0.000010	<0.000010
Aluminum	0.00172	<0.0010	0.0029	0.0021	0.0018	0.0024
Arsenic	0.00076	0.00044	0.00146	0.00058	0.00048	0.00067
Cadmium	0.00000831	<0.0000050	0.0000187	0.00000727	<0.0000050	0.0000118
Chromium	0.000106	<0.00010	0.00019	0.000500	<0.00050	<0.00050
Copper	0.000228	<0.00020	0.00041	0.000213	<0.00020	0.00024
Lead	0.0000500	<0.000050	<0.000050	0.0000500	<0.000050	<0.000050
Molybdenum	0.00936	0.00833	0.0103	0.0107	0.0104	0.0111
Nickel	0.000616	<0.00050	0.00083	0.000560	<0.00050	0.00064
Selenium	0.0000943	<0.000050	0.000238	0.0000843	<0.000050	0.000126
Zinc	0.0193	0.0055	0.0637	0.0232	0.0199	0.0282

Table 6-16: MW12-06-06 Water Quality Results Summary (2012 - 2021)

MW12-06-06	2012 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.77	7.25	8.40	7.6	7.32	7.88
TDS (mg/L)	520.4	472	545	541	518	566
Sulfate-dissolved (mg/L)	153.4	143	171	156	153	160
Nutrients (mg/L)						
Ammonia Nitrogen	0.01172	<0.0050	0.085	0.00945	<0.0050	0.0138
Nitrate Nitrogen	0.092	0.026	0.499	0.1102	0.0296	0.308
Nitrite Nitrogen	0.943	0.4500	1.31	0.7	0.622	0.766
Dissolved Metals (mg/L)						
Silver	0.0000124	<0.0000050	<0.000020	0.0000100	<0.000010	<0.000010
Aluminum	0.00312	<0.0010	0.0142	0.0045	0.0015	0.0099
Arsenic	0.000151	0.00009	0.00065	0.000178	<0.00010	0.00033
Cadmium	0.00002173	<0.0000050	0.000196	0.00001265	<0.0000100	0.0000153
Chromium	0.000338	<0.00010	<0.0010	0.000400	<0.00010	<0.00050
Copper	0.000435	<0.00020	0.00187	0.000325	<0.00020	0.00043
Lead	0.0000891	<0.000050	<0.00020	0.0000500	<0.000050	<0.000050
Molybdenum	0.00574	0.0048	0.0066	0.00614	0.00569	0.00658
Nickel	0.000629	<0.00050	<0.0010	0.000500	<0.00050	<0.00050
Selenium	0.000308	0.000150	0.000513	0.000506	0.000298	0.00095
Zinc	0.02259	0.00312	0.0827	0.0652	0.0132	0.189

6.3.7 MW12-07

Groundwater obtained from Zone 1 (01) was contaminated with glycol from the Westbay well casing during all sampling sessions in 2021, indicating a possible damaged sampling port. One clean sample was obtained for Zone 1 in 2021 and water quality results were produced for SO_4-D, N-NH_3, N-$N0_2$, AND N-$N0_3$. Historic groundwater

results from 2012 to 2020 for Zone 1 are summarized in Table 6-17 alongside the limited water quality results from 2021.

Groundwater quality results for Zone 2 (02) from 2012 to 2021 are summarized in Table 6-18.

Table 6-17: MW12-07-01 Water Quality Results Summary (2012 - 2021)

MW12-07-01	2012 - 2020 Summary Statistics			2021
Parameters	**Mean**	**Min**	**Max**	**1 sample**
pH	7.63	6.75	8.90	
TDS (mg/L)	943	599	1400	
Sulfate-dissolved (mg/L)	307.7	12.4	646	594.0
Nutrients (mg/L)				
Ammonia Nitrogen	0.49226	<0.0050	1.91	0.142
Nitrate Nitrogen	1.3341	<0.050	7.06	0.882
Nitrite Nitrogen	4.246	0.0440	53.2	0.297
Dissolved Metals (mg/L)				
Silver	0.0000161	<0.000010	0.000037	
Aluminum	0.00884	0.0015	0.0377	
Arsenic	0.00176	0.00034	0.0153	
Cadmium	0.00004392	<0.0000050	0.000403	
Chromium	0.000769	<0.00010	0.00216	
Copper	0.003671	<0.00020	0.077	
Lead	0.0001902	<0.000050	0.00104	
Molybdenum	0.007078	0.000252	0.0246	
Nickel	0.001086	<0.00050	0.0051	
Selenium	0.003744	<0.00010	0.033700	
Zinc	0.06399	<0.0010	1.24	

Table 6-18: MW12-07-02 Water Quality Results Summary (2012 – 2021)

MW12-07-02	2012 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.96	7.35	8.80	7.53	7.45	7.69
TDS (mg/L)	928	551	1180	679	666	690
Sulfate-dissolved (mg/L)	533	283	754	323.7	318	331
Nutrients (mg/L)						
Ammonia Nitrogen	0.07811	<0.0050	0.61	0.01320	0.0073	0.021
Nitrate Nitrogen	0.4036	0.0453	3.37	0.199	0.1400	0.266
Nitrite Nitrogen	0.735	0.0600	21.3	1.075	0.275	1.54
Dissolved Metals (mg/L)						
Silver	0.0000175	<0.000010	0.000217	0.0000100	<0.000010	<0.000010
Aluminum	0.01614	0.0014	0.721	0.0018	0.0017	0.0019
Arsenic	0.0014	0.00022	0.00739	0.00026	0.0002	0.00033
Cadmium	0.00004339	<0.0000050	0.000269	0.00023	0.000174	0.000316
Chromium	0.00046	<0.00010	0.0011	0.000367	<0.00010	<0.00050
Copper	0.002222	<0.00020	0.0217	0.0244	0.0203	0.027
Lead	0.0001204	<0.000050	0.00056	0.0000500	<0.000050	<0.000050
Molybdenum	0.0208	0.0019	0.0373	0.0174	0.0169	0.018
Nickel	0.00076	<0.00050	0.0017	0.000567	<0.00050	0.0007
Selenium	0.000606	0.000055	0.014800	0.000448	0.000393	0.000521
Zinc	0.03538	<0.0010	0.375	0.0827	0.0664	0.1

6.3.8 MW17-08

This well was installed in July 2017 to monitor the background groundwater quality up-gradient of the Southwest Waste Dump and other mine activities. Four zones were sampled and analyzed in 2021, the results are summarized in Table 6-19 to 6-22 below

alongside historical results. The shallowest zone, MW17-08-04, has been found dry in 2019 and 2020; however, two (2) samples were obtained in 2021. Table 6-22 compares 2017-2018 water quality results with 2021 results.

Table 6-19: MW17-08-01 Water Quality Results Summary (2017, 2018 and 2021)

MW17-08-01	2017 - 2018 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.79	6.85	8.70	7.63	7.49	7.77
TDS (mg/L)	265.2	224	285	267.5	267	268
Sulfate-dissolved (mg/L)	35.5	31.2	43.1	29.8	29.3	30.4
Nutrients (mg/L)						
Ammonia Nitrogen	0.02064	<0.0050	0.201	0.00715	<0.0050	0.0093
Nitrate Nitrogen	0.00446	<0.0010	0.0163	0.02395	<0.0010	0.0469
Nitrite Nitrogen	0.3821	0.0160	0.49	0.439	0.354	0.524
Dissolved Metals (mg/L)						
Silver	0.0000114	<0.000010	<0.000020	0.0000100	<0.000010	<0.000010
Aluminum	0.00209	<0.0010	0.0072	0.0017	0.0014	0.0021
Arsenic	0.000572	<0.00010	0.00523	0.00013	0.0001	0.00016
Cadmium	0.0002906	0.0000159	0.00325	0.0000495	0.0000462	0.0000528
Chromium	0.000121	<0.00010	<0.00020	0.000500	<0.00050	<0.00050
Copper	0.00132	0.00023	0.0062	0.00102	0.00087	0.00116
Lead	0.0000567	<0.000050	<0.00010	0.0000500	<0.000050	<0.000050
Molybdenum	0.00876	0.00525	0.00954	0.00941	0.00933	0.00949
Nickel	0.000695	<0.00050	0.00166	0.000500	<0.00050	<0.00050
Selenium	0.000609	0.000399	0.001160	0.000551	0.000518	0.000584
Zinc	0.0411	0.0239	0.0692	0.051	0.0173	0.0847

Table 6-20: MW17-08-02 Water Quality Results Summary (2017, 2018 and 2021)

MW17-08-02	2017 - 2018 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.97	7.43	9.00	7.7	7.57	7.83
TDS (mg/L)	167.7	138	183	174	173	175
Sulfate-dissolved (mg/L)	10.9	9.76	12	9.02	8.79	9.24
Nutrients (mg/L)						
Ammonia Nitrogen	0.00591	<0.0050	0.0133	0.00500	<0.0050	<0.0050
Nitrate Nitrogen	0.00314	<0.0010	0.0148	0.0109	0.0021	0.0197
Nitrite Nitrogen	0.665	0.5630	0.703	0.668	0.625	0.71
Dissolved Metals (mg/L)						
Silver	0.0000100	<0.000010	<0.000010	0.0000100	<0.000010	<0.000010
Aluminum	0.0022	0.0014	0.0038	0.0019	0.0019	0.0019
Arsenic	0.00058	0.00014	0.00479	0.00022	0.00021	0.00023
Cadmium	0.0000541	0.0000099	0.000234	0.0000324	0.0000299	0.0000348
Chromium	0.000157	<0.00010	0.00082	0.000500	<0.00050	<0.00050
Copper	0.00253	0.00175	0.00338	0.00388	0.00373	0.00403
Lead	0.0000500	<0.000050	<0.000050	0.0000500	<0.000050	<0.000050
Molybdenum	0.00307	0.00287	0.00372	0.0027	0.00268	0.00273
Nickel	0.000513	<0.00050	0.0007	0.000500	<0.00050	<0.00050
Selenium	0.000644	0.000470	0.001270	0.000497	0.000496	0.000498
Zinc	0.0186	0.0084	0.036	0.0284	0.0123	0.0445

Table 6-21: MW17-08-03 Water Quality Results Summary (2017, 2018 and 2021)

MW17-08-03	2017 - 2018 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.98	7.62	8.63	7.72	7.67	7.76
TDS (mg/L)	131.3	98.3	160	107	106	108
Sulfate-dissolved (mg/L)	4.1	2.43	5.7	2.34	2.31	2.38
Nutrients (mg/L)						
Ammonia Nitrogen	0.00554	<0.0050	0.0127	0.00505	<0.0050	0.0051
Nitrate Nitrogen	0.0032	<0.0010	0.0206	0.00305	<0.0010	0.0051
Nitrite Nitrogen	0.722	0.6180	0.851	0.64	0.636	0.644
Dissolved Metals (mg/L)						
Silver	0.0000100	<0.000010	<0.000010	0.0000100	<0.000010	<0.000010
Aluminum	0.0044	0.003	0.0094	0.0032	0.0025	0.0039
Arsenic	0.000417	<0.00010	0.00332	0.00012	<0.00010	0.00014
Cadmium	0.00004515	<0.0000050	0.000172	0.0000298	0.0000203	0.0000393
Chromium	0.000125	<0.00010	0.00022	0.000500	<0.00050	<0.00050
Copper	0.00099	0.00033	0.00524	0.00114	0.00066	0.00162
Lead	0.0000500	<0.000050	<0.000050	0.0000500	<0.000050	<0.000050
Molybdenum	0.000905	0.000738	0.00116	0.00077	0.000745	0.000794
Nickel	0.0005	<0.00050	<0.00050	0.000500	<0.00050	<0.00050
Selenium	0.000377	0.000198	0.000682	0.000189	0.000131	0.000246
Zinc	0.018	0.0074	0.0381	0.0192	0.0124	0.026

Table 6-22: MW17-08-04 Water Quality Results Summary (2017, 2018 and 2021)

MW17-08-04	2017 - 2018 Summary Statistics			2021		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	8.14	7.78	8.50	7.82	7.76	7.87
TDS (mg/L)	77.9	71.2	81.6	85.1	78.6	91.6
Sulfate-dissolved (mg/L)	3.18	2.2	<5.0	1.58	1.47	1.68
Nutrients (mg/L)						
Ammonia Nitrogen	0.01393	<0.0050	0.0184	0.01475	<0.0050	0.0245
Nitrate Nitrogen	0.0027	<0.0010	0.0051	0.001	<0.0010	<0.0010
Nitrite Nitrogen	0.605	0.5940	0.618	0.482	0.469	0.495
Dissolved Metals (mg/L)						
Silver	0.0000100	<0.000010	<0.000010	0.0000100	<0.000010	<0.000010
Aluminum	0.0042	0.0035	0.0056	0.0019	<0.0010	0.0027
Arsenic	0.00136	0.00013	0.00489	0.000105	<0.00010	0.00011
Cadmium	0.00003973	<0.0000050	0.000091	0.0000243	0.0000119	0.0000367
Chromium	0.000118	<0.00010	0.00017	0.000500	<0.00050	<0.00050
Copper	0.00056	0.00036	0.00096	0.00098	0.00093	0.00104
Lead	0.0000500	<0.000050	<0.000050	0.0000500	<0.000050	<0.000050

Molybdenum	0.000552	0.000433	0.000714	0.000229	0.000208	0.00025
Nickel	0.000695	<0.00050	0.001	0.000805	<0.00050	0.00111
Selenium	0.000334	0.000158	0.000659	0.000094	0.000091	0.000097
Zinc	0.0467	0.0045	0.137	0.0293	0.0096	0.049

6.3.9 MW17-09

This well was installed in July 2017 to monitor groundwater down-gradient of the Southwest Waste Dump. One zone was identified below an ice-rich layer, it was sampled and analyzed once in 2017. In 2018 the well was frozen in Q1 and Q2 and was found dry during the Q3 and Q4 sampling events. In 2019, 2020 and 2021, the groundwater probe could not reach the sampling port. It is likely that the well has been destroyed.

6.3.10 MW17-10

This well was installed in July 2017 to monitor groundwater down-gradient of the Main Waste Dump. All four ports were sampled in 2021, the results are summarized in Table 6-23 to 6-26 below alongside historical results. The shallowest zone, MW17-10-04 (04), has been found dry since installation; however, results were obtained in Q1, Q2, & Q4 of 2021. Table 6-23 below summarizes water quality results from Zone 4 in 2021.

Table 6-23: MW17-10-01 Water Quality Results Summary (2017 - 2021)

MW17-10-01	2017 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.83	7.4	8.80	7.88	7.83	8.02
TDS (mg/L)	249	191	302	305.2	303	308
Sulfate-dissolved (mg/L)	52	41.8	61.9	48.8	48	49.8
Nutrients (mg/L)						
Ammonia Nitrogen	0.02355	<0.0050	0.0588	0.03300	0.0144	0.0471

Nitrate Nitrogen	0.0468	0.0014	0.476	0.0118	0.0019	0.0342
Nitrite Nitrogen	9.93	1.9600	17.2	19	18.5	19.7
Dissolved Metals (mg/L)						
Silver	0.0000133	<0.000010	0.000028	0.0000115	<0.000010	0.000014
Aluminum	0.0049	0.0035	0.0084	0.0044	0.0037	0.0048
Arsenic	0.00133	0.00014	0.0124	0.0002	0.00014	0.00027
Cadmium	0.000172	<0.000015	0.0015	0.0000617	0.0000276	0.0000886
Chromium	0.0001	<0.00010	<0.00010	0.000408	0.00013	<0.00050
Copper	0.00427	0.00316	0.0089	0.00425	0.00361	0.00469
Lead	0.0000544	<0.000050	0.000116	0.0000500	<0.000050	<0.000050
Molybdenum	0.0209	0.0135	0.0381	0.0128	0.012	0.0134
Nickel	0.01142	0.0089	0.0138	0.013600	0.0129	0.0144
Selenium	0.001385	0.000718	0.002900	0.00238	0.00235	0.0024
Zinc	0.0343	0.0133	0.0748	0.0451	0.016	0.0755

Table 6-24: MW17-10-02 Water Quality Results Summary (2017 - 2021)

MW17-10-02	2017 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.81	7.29	8.70	7.75	7.54	7.96
TDS (mg/L)	297	234	386	364.8	347	376
Sulfate-dissolved (mg/L)	25.7	22.1	31.2	32.6	31.7	33.1
Nutrients (mg/L)						
Ammonia Nitrogen	0.08152	<0.0050	0.62	0.16590	0.013	0.612
Nitrate Nitrogen	0.00744	<0.0010	0.0579	0.0838	0.0085	0.24
Nitrite Nitrogen	25.9	15.6000	37.7	32.3	24.1	36.9
Dissolved Metals (mg/L)						
Silver	0.0000100	<0.000010	<0.000010	0.0000100	<0.000010	<0.000010
Aluminum	0.0026	0.0017	0.0044	0.0035	0.0020	0.0061
Arsenic	0.000614	<0.00010	0.00654	0.000242	<0.00010	0.0006
Cadmium	0.0000663	0.00001	0.000336	0.0000905	0.0000217	0.000204
Chromium	0.0001	<0.00010	<0.00010	0.000400	<0.00010	<0.00050
Copper	0.00207	0.00082	0.00524	0.0011	0.00082	0.00136
Lead	0.0000500	<0.000050	<0.000050	0.0000500	<0.000050	<0.000050
Molybdenum	0.00767	0.00664	0.00931	0.00714	0.00632	0.00868
Nickel	0.00308	0.00104	0.0106	0.002400	0.00126	0.0053
Selenium	0.00253	0.001180	0.004620	0.00787	0.00495	0.0161
Zinc	0.0323	0.0163	0.0629	0.0843	0.0132	0.258

Table 6-25: MW17-10-03 Water Quality Results Summary (2017 - 2021)

MW17-10-03	2017 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.86	7.41	8.80	7.65	7.3	7.94
TDS (mg/L)	301	240	398	369.8	337	393
Sulfate-dissolved (mg/L)	25	21.9	31.7	33.7	33.3	34.2
Nutrients (mg/L)						
Ammonia Nitrogen	0.0503	<0.0050	0.345	0.74130	0.0259	2.73
Nitrate Nitrogen	0.19934	<0.0010	2.68	1.1345	0.0054	4.33
Nitrite Nitrogen	26.4	15.9000	39.8	30.6	18	39.4
Dissolved Metals (mg/L)						
Silver	0.0000104	<0.000010	0.000016	0.0000128	<0.000010	<0.000020
Aluminum	0.0026	0.0014	0.0077	0.0026	0.0019	0.0042
Arsenic	0.000831	<0.00010	0.00502	0.007708	<0.00010	0.0304
Cadmium	0.0000532	0.0000117	0.000166	0.0001684	0.0000389	0.000508
Chromium	0.000102	<0.00010	0.00013	0.000528	0.00011	<0.00100
Copper	0.00167	0.00078	0.00356	0.00133	0.00095	0.00229
Lead	0.0000500	<0.000050	<0.000050	0.0000625	<0.000050	<0.000100
Molybdenum	0.00727	0.0062	0.00966	0.00856	0.00623	0.0152
Nickel	0.00334	0.00136	0.00805	0.005900	0.00165	0.018
Selenium	0.00314	0.001200	0.008020	0.0094	0.00598	0.0185
Zinc	0.048	0.0184	0.131	0.2463	0.0149	0.891

Table 6-26: MW17-10-04 Water Quality Results Summary (2021)

MW17-10-04	2021 Summary Statistics
Parameters	**Mean**
pH	7.64
TDS (mg/L)	418
Sulfate-dissolved (mg/L)	38.5
Nutrients (mg/L)	
Ammonia Nitrogen	0.1146
Nitrate Nitrogen	0.704
Nitrite Nitrogen	38.2
Dissolved Metals (mg/L)	
Silver	0.000018
Aluminum	0.0041
Arsenic	0.000130
Cadmium	0.0002522
Chromium	0.000437
Copper	0.00285
Lead	0.0000500
Molybdenum	0.00932
Nickel	0.00506
Selenium	0.00558
Zinc	0.0726

6.3.11 MW17-11

This well was installed in July 2017 to monitor groundwater down-gradient of the Minto North Pit. Quarterly samples were collected from zones 01, 02, and 03. Port 04 was sampled once in Q3 and found dry in Q1, Q2 and Q4, and port 05 was found dry in all quarters. The results are summarized in Table 6-27 to 6-30 below.

Table 6-27: MW17-11-01 Water Quality Results Summary (2017 - 2021)

MW17-11-01	2017 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.72	6.81	8.80	7.76	7.29	8.21
TDS (mg/L)	197.3	171	230	211.2	203	223
Sulfate-dissolved (mg/L)	38.6	36.2	42	41.3	41.1	41.5
Nutrients (mg/L)						
Ammonia Nitrogen	0.0102	<0.0050	0.0206	0.04800	0.0114	0.0849
Nitrate Nitrogen	0.02255	<0.0010	0.11	0.0039	<0.0010	0.0101
Nitrite Nitrogen	0.03605	<0.0050	0.339	0.0212	0.0057	0.0438
Dissolved Metals (mg/L)						
Silver	0.0000100	<0.000010	<0.000010	0.0000100	<0.000010	<0.000010
Aluminum	0.0067	0.0044	0.0229	0.0059	0.0053	0.0069
Arsenic	0.00338	0.00063	0.0152	0.00241	0.00228	0.00249
Cadmium	0.00007878	<0.0000050	0.000673	0.0002107	0.0000209	0.00071
Chromium	0.000112	<0.00010	0.00021	0.000400	<0.00010	<0.00050
Copper	0.000577	<0.00020	0.00317	0.00031	<0.00020	0.00052
Lead	0.0000500	<0.000050	<0.000050	0.0000500	<0.000050	<0.000050
Molybdenum	0.01524	0.00917	0.0273	0.00894	0.00841	0.0092
Nickel	0.000623	<0.00050	0.0012	0.000500	<0.00050	<0.00050
Selenium	0.0003111	<0.000050	0.001250	0.000059	<0.000050	0.000085
Zinc	0.0166	0.0048	0.0429	0.0229	0.0091	0.0372

Table 6-28: MW17-11-02 Water Quality Results Summary (2017 - 2021)

MW17-11-02	2017 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.78	7.19	8.90	7.68	7.07	8.53
TDS (mg/L)	200.4	178	222	215.8	209	226
Sulfate-dissolved (mg/L)	39	28.7	44.5	43.1	42.6	43.6
Nutrients (mg/L)						
Ammonia Nitrogen	0.00534	<0.0050	0.0087	0.00682	<0.0050	0.0107
Nitrate Nitrogen	0.00501	<0.0010	0.0515	0.0013	<0.0010	0.0016
Nitrite Nitrogen	0.02096	<0.0050	0.0872	0.00763	<0.0050	0.0155
Dissolved Metals (mg/L)						
Silver	0.0000100	<0.000010	<0.000010	0.0000100	<0.000010	<0.000010
Aluminum	0.0043	0.0012	0.0197	0.0030	0.0025	0.0033
Arsenic	0.00115	0.00055	0.00227	0.00268	0.00248	0.00286
Cadmium	0.00003102	0.0000056	0.000128	0.0000857	0.0000482	0.000154
Chromium	0.000105	<0.00010	0.00017	0.000400	<0.00010	<0.00050
Copper	0.000385	<0.00020	0.00138	0.000425	<0.00020	0.00064
Lead	0.0000523	<0.000050	0.000082	0.0000500	<0.000050	<0.000050
Molybdenum	0.0062	0.00572	0.00743	0.006	0.00578	0.00618
Nickel	0.000581	<0.00050	0.00099	0.000500	<0.00050	<0.00050
Selenium	0.000276	<0.000050	0.002610	0.000071	<0.000050	0.000101
Zinc	0.023	0.0121	0.0656	0.0424	0.0132	0.085

Table 6-29: MW17-11-03 Water Quality Results Summary (2017 - 2021)

MW17-11-03	2017 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.84	7.23	8.60	7.64	6.92	8.28
TDS (mg/L)	176.9	160	200	184.3	182	187
Sulfate-dissolved (mg/L)	18.2	15.7	23.8	18.9	18.1	19.4
Nutrients (mg/L)						
Ammonia Nitrogen	0.005	<0.0050	<0.0050	0.00520	<0.0050	0.0056
Nitrate Nitrogen	0.01069	<0.0010	0.103	0.0141	<0.0010	0.0372
Nitrite Nitrogen	0.04934	<0.0050	0.335	0.00863	<0.0050	0.013
Dissolved Metals (mg/L)						
Silver	0.0000100	<0.000010	<0.000010	0.0000100	<0.000010	<0.000010
Aluminum	0.0055	0.0038	0.0097	0.0054	0.0042	0.0075
Arsenic	0.00041	0.00021	0.00068	0.00086	0.00024	0.00259
Cadmium	0.00005259	<0.0000050	0.000347	0.0001504	0.0000098	0.000503
Chromium	0.0001	<0.00010	<0.00010	0.000400	<0.00010	<0.00050
Copper	0.000494	<0.00020	0.00211	0.00103	<0.00020	0.00286
Lead	0.0000504	<0.000050	0.000056	0.0000500	<0.000050	<0.000050
Molybdenum	0.00497	0.00406	0.00789	0.00494	0.0046	0.00595
Nickel	0.000617	<0.00050	0.00154	0.000600	<0.00050	0.00072
Selenium	0.0001171	<0.000050	0.000586	0.0000568	<0.000050	0.000069
Zinc	0.0182	0.0063	0.0416	0.0519	0.014	0.102

Table 6-30: MW17-11-04 Water Quality Results Summary (2017 - 2021)

MW17-11-04	2017 - 2020 Summary Statistics			2021 Summary Statistics
Parameters	**Mean**	**Min**	**Max**	**25-Sep**
pH	7.48	6.88	8.40	7.63
TDS (mg/L)	332	174	557	426
Sulfate-dissolved (mg/L)	16.57	6.3	29	15.5
Nutrients (mg/L)				
Ammonia Nitrogen	0.04157	<0.0050	0.145	0.17100
Nitrate Nitrogen	0.0131	0.002	0.0584	0.0188
Nitrite Nitrogen	5.9451	0.0173	11.1	2.53
Dissolved Metals (mg/L)				
Silver	0.0000166	<0.000010	0.000033	0.0000150
Aluminum	0.0046	0.0029	0.0087	0.0054
Arsenic	0.00032	0.00011	0.00067	0.00033
Cadmium	0.0000744	0.0000062	0.000472	0.0000617
Chromium	0.0001	<0.00010	<0.00010	0.000650
Copper	0.0037	0.0008	0.01	0.00068
Lead	0.0000500	<0.000050	<0.000050	<0.000050
Molybdenum	0.00907	0.00407	0.0198	0.0121
Nickel	0.002855	<0.00050	0.00823	0.003130
Selenium	0.000365	0.000133	0.000929	0.000186
Zinc	0.0383	0.0137	0.0834	0.211

6.3.12 MW17-12

This well was installed in July 2017 to monitor groundwater down-gradient of the Dry Stack Tailing Storage Facility (DSTSF) and all other mine activities. All eight zones were sampled and analyzed in 2021, the results are summarized in Table 6-31 to 6-38 below alongside historical results.

Table 6-31: MW17-12-01 Water Quality Results Summary (2017 - 2021)

MW17-12-01	2017 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.35	6.3	8.30	7.21	6.99	7.44
TDS (mg/L)	2076	1940	2170	2150	2110	2240
Sulfate-dissolved (mg/L)	1305	1210	1410	1350	1340	1380
Nutrients (mg/L)						
Ammonia Nitrogen	0.00581	<0.0050	0.0121	0.00728	<0.0050	0.0139
Nitrate Nitrogen	0.01918	<0.0100	0.044	0.02065	<0.0200	0.0226
Nitrite Nitrogen	0.08571	<0.0500	<0.10	0.1	<0.100	<0.100
Dissolved Metals (mg/L)						
Silver	0.0000207	<0.000010	<0.000050	0.0000200	<0.000020	<0.000020
Aluminum	0.00351	<0.0020	0.0157	0.0034	0.0031	0.0039
Arsenic	0.0024	0.0017	0.00425	0.00168	0.0015	0.00196
Cadmium	0.000064	0.0000087	0.000211	0.0000366	0.0000127	0.0000642
Chromium	0.000213	<0.00010	<0.00050	0.000800	<0.00020	<0.00100
Copper	0.000705	<0.00020	0.0028	0.0004	<0.00040	<0.00040
Lead	0.0001036	<0.000050	<0.00025	0.0001000	<0.000100	<0.000100
Molybdenum	0.00777	0.00689	0.00839	0.00721	0.00704	0.00762
Nickel	0.001058	<0.00050	<0.0025	0.001000	<0.00100	<0.00100
Selenium	0.0001972	0.000060	0.000960	0.0001703	<0.000100	0.000381
Zinc	0.0575	0.0164	0.146	0.0708	0.0416	0.103

Table 6-32: MW17-12-02 Water Quality Results Summary (2017 - 2021)

MW17-12-02	2017 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.51	6.83	8.30	7.25	6.98	7.49
TDS (mg/L)	1779	1670	1850	1735	1330	1890
Sulfate-dissolved (mg/L)	1087	1020	1140	1032	749	1140
Nutrients (mg/L)						
Ammonia Nitrogen	0.00501	<0.0050	0.0052	0.01728	<0.0050	0.0531
Nitrate Nitrogen	0.01464	<0.0050	<0.020	0.01333	<0.0100	0.0233
Nitrite Nitrogen	0.07321	<0.025	<0.10	0.0625	<0.0500	<0.100
Dissolved Metals (mg/L)						
Silver	0.0000221	<0.000010	<0.000050	0.0000187	0.000014	0.000021
Aluminum	0.00372	0.0012	0.0134	0.0890	0.0017	0.349
Arsenic	0.0024	0.00157	0.00405	0.00395	0.00258	0.00744
Cadmium	0.00002215	0.000006	0.0000541	0.0004738	0.0000194	0.00179
Chromium	0.000221	<0.00010	<0.00050	0.005900	<0.00020	0.0219
Copper	0.000606	<0.00020	0.0023	0.005275	<0.00020	0.0201
Lead	0.0001107	<0.000050	<0.00025	0.0009700	<0.000050	0.00363
Molybdenum	0.0078	0.00732	0.0084	0.00789	0.00707	0.01
Nickel	0.001141	<0.00050	<0.0025	0.003275	<0.00050	0.0106
Selenium	0.0001761	<0.000050	0.000930	0.0012285	0.000063	0.00435
Zinc	0.0433	0.0127	0.0893	3.8384	0.0308	15

Table 6-33: MW17-12-03 Water Quality Results Summary (2017 - 2021)

MW17-12-03	2017 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.65	7.27	8.20	7.37	7.2	7.56
TDS (mg/L)	536	513	561	537.5	488	560
Sulfate-dissolved (mg/L)	129.2	112	142	123.2	101	134
Nutrients (mg/L)						
Ammonia Nitrogen	0.00526	<0.0050	0.0068	0.01067	<0.0050	0.0147
Nitrate Nitrogen	0.00546	0.0016	0.0108	0.005	<0.0050	<0.0050
Nitrite Nitrogen	0.04122	0.0060	0.274	0.06473	<0.0250	0.102
Dissolved Metals (mg/L)						
Silver	0.0000100	<0.000010	<0.000010	0.0000100	<0.000010	<0.000010
Aluminum	0.0028	0.0017	0.0106	0.0024	0.0016	0.0031
Arsenic	0.00122	0.00071	0.00165	0.00095	0.00021	0.00186
Cadmium	0.00001618	<0.0000050	0.0000437	0.0000326	0.000015	0.0000566
Chromium	0.000101	<0.00010	0.00012	0.000400	<0.00010	<0.00050
Copper	0.000293	<0.00020	0.00137	0.00039	<0.00020	0.00084
Lead	0.0000556	<0.000050	0.000129	0.0000500	<0.000050	<0.000050
Molybdenum	0.00569	0.00521	0.0062	0.00565	0.00524	0.00615
Nickel	0.000678	<0.00050	0.00186	0.000500	<0.00050	<0.00050
Selenium	0.0001127	<0.000050	0.000647	0.000426	0.000205	0.000837
Zinc	0.0318	0.0103	0.0648	0.0706	0.0358	0.109

Table 6-34: MW17-12-04 Water Quality Results Summary (2017 - 2021)

MW17-12-04	2017 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.83	7.46	8.70	7.37	7.11	7.59
TDS (mg/L)	457.2	423	492	489.8	470	514
Sulfate-dissolved (mg/L)	103.9	93.6	126	109.4	91.4	135
Nutrients (mg/L)						
Ammonia Nitrogen	0.005	<0.0050	0.005	0.01482	<0.0050	0.0402
Nitrate Nitrogen	0.00419	<0.0010	0.0069	0.00708	<0.0050	0.0133
Nitrite Nitrogen	0.203	0.1250	0.335	0.142	0.105	0.178
Dissolved Metals (mg/L)						
Silver	0.0000144	<0.000010	0.000026	0.0000108	<0.000010	0.000012
Aluminum	0.003	0.0018	0.0053	0.0026	0.0021	0.0032
Arsenic	0.00037	0.00012	0.00226	0.0004	0.00016	0.001
Cadmium	0.0000229	0.0000052	0.0000542	0.0001182	0.0000192	0.000378
Chromium	0.000103	<0.00010	0.00014	0.000400	<0.00010	<0.00050
Copper	0.00149	0.00064	0.00374	0.00108	0.00054	0.00227
Lead	0.0000500	<0.000050	<0.000050	0.0000500	<0.000050	<0.000050
Molybdenum	0.00573	0.00491	0.0089	0.00618	0.005	0.00824
Nickel	0.000722	<0.00050	0.00272	0.001098	<0.00050	0.00178
Selenium	0.000645	0.000423	0.000994	0.000757	0.000248	0.00158
Zinc	0.0358	0.0105	0.101	0.5863	0.0398	1.96

Table 6-35: MW17-12-05 Water Quality Results Summary (2017 - 2021)

MW17-12-05	2017 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.76	7.45	8.40	7.36	6.99	7.56
TDS (mg/L)	461.2	441	486	485.8	464	532
Sulfate-dissolved (mg/L)	93	85.7	120	100.7	86	129
Nutrients (mg/L)						
Ammonia Nitrogen	0.00513	<0.0050	0.006	0.04295	<0.0050	0.145
Nitrate Nitrogen	0.00561	<0.0010	0.0165	0.0056	<0.0050	0.0068
Nitrite Nitrogen	0.277	0.1990	0.415	0.208	0.102	0.291
Dissolved Metals (mg/L)						
Silver	0.0000100	<0.000010	<0.000010	0.0000100	<0.000010	<0.000010
Aluminum	0.0045	0.0024	0.0177	0.0032	0.0029	0.0037
Arsenic	0.000167	<0.00010	0.00047	0.00091	<0.00010	0.00325
Cadmium	0.0000289	0.0000151	0.0000505	0.000316	0.0000298	0.00116
Chromium	0.000197	<0.00010	0.00138	0.000400	<0.00010	<0.00050
Copper	0.00244	0.00086	0.00347	0.00222	0.00095	0.00428
Lead	0.0000500	<0.000050	<0.000050	0.0000500	<0.000050	<0.000050
Molybdenum	0.01158	0.00422	0.0207	0.01036	0.00621	0.017
Nickel	0.00236	0.00065	0.0043	0.003060	0.00094	0.00831
Selenium	0.000336	0.000168	0.000643	0.001132	0.000106	0.00375
Zinc	0.0378	0.013	0.0737	2.4752	0.0458	9.54

Table 6-36: MW17-12-06 Water Quality Results Summary (2017 - 2021)

MW17-12-06	2017 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.76	7.3	8.50	7.37	6.94	7.61
TDS (mg/L)	453.8	422	479	560	462	740
Sulfate-dissolved (mg/L)	90.8	84.8	101	156	87.9	301
Nutrients (mg/L)						
Ammonia Nitrogen	0.00676	<0.0050	0.0253	0.07478	<0.0050	0.275
Nitrate Nitrogen	0.00618	<0.0010	0.0152	0.005	<0.0050	<0.0050
Nitrite Nitrogen	0.18975	<0.0050	0.281	0.133	<0.0250	0.242
Dissolved Metals (mg/L)						
Silver	0.0000100	<0.000010	<0.000010	0.0000100	<0.000010	0.00001
Aluminum	0.0036	0.0024	0.0093	0.0028	0.0020	0.0041
Arsenic	0.00018	<0.00010	0.00058	0.00175	0.00011	0.00503
Cadmium	0.00003516	0.0000223	0.0000598	0.0005996	0.0000167	0.00228
Chromium	0.000101	<0.00010	0.00012	0.000400	<0.00010	<0.00050
Copper	0.00262	0.00062	0.00392	0.002065	<0.00020	0.00387
Lead	0.0000504	<0.000050	0.000056	0.0000500	<0.000050	<0.000050
Molybdenum	0.026	0.0171	0.0607	0.01322	0.00579	0.0172
Nickel	0.00301	0.0023	0.00457	0.004958	<0.00050	0.015
Selenium	0.000305	0.000064	0.000850	0.00184	0.000051	0.00683
Zinc	0.0662	0.011	0.524	4.9788	0.0526	19.6

Table 6-37: MW17-12-07 Water Quality Results Summary (2017 - 2021)

MW17-12-07	2017 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.85	7.52	8.31	7.47	7.17	7.71
TDS (mg/L)	334.5	304	367	388	327	526
Sulfate-dissolved (mg/L)	63.2	60.6	67.4	89	54.4	174
Nutrients (mg/L)						
Ammonia Nitrogen	0.005	<0.0050	<0.0050	0.04038	<0.0050	0.14
Nitrate Nitrogen	0.00137	<0.0010	0.0027	0.01052	<0.0010	0.0227
Nitrite Nitrogen	0.684	0.4010	0.997	0.67	0.294	1.08
Dissolved Metals (mg/L)						
Silver	0.0000103	<0.000010	0.000012	0.0000108	<0.000010	0.000013
Aluminum	0.0037	0.0019	0.0135	0.0021	0.0019	0.0023
Arsenic	0.000186	<0.00010	0.00048	0.00075	0.00015	0.00246
Cadmium	0.00001856	<0.0000050	0.0000489	0.0002945	0.0000122	0.00111
Chromium	0.000103	<0.00010	0.00013	0.000400	<0.00010	<0.00050
Copper	0.0009	0.00056	0.00207	0.00058	0.00053	0.00063
Lead	0.0000500	<0.000050	<0.000050	0.0000500	<0.000050	<0.000050
Molybdenum	0.00655	0.00535	0.00966	0.00686	0.0052	0.0102
Nickel	0.000518	<0.00050	0.00068	0.002175	<0.00050	0.0072
Selenium	0.000315	0.000155	0.000809	0.001161	0.000186	0.00376
Zinc	0.052	0.0108	0.281	1.9655	0.042	7.62

Table 6-38: MW17-12-08 Water Quality Results Summary (2017 - 2021)

MW17-12-08	2017 - 2020 Summary Statistics			2021 Summary Statistics		
Parameters	**Mean**	**Min**	**Max**	**Mean**	**Min**	**Max**
pH	7.86	7.53	8.50	7.44	7.12	7.72
TDS (mg/L)	339.3	321	371	442	335	739
Sulfate-dissolved (mg/L)	63	60.8	65.7	121.7	56.3	303
Nutrients (mg/L)						
Ammonia Nitrogen	0.00502	<0.0050	0.0053	0.10210	<0.0050	0.39
Nitrate Nitrogen	0.0019	<0.0010	0.0058	0.00605	<0.0010	0.015
Nitrite Nitrogen	0.682	0.4090	0.963	0.54725	<0.0250	0.96
Dissolved Metals (mg/L)						
Silver	0.0000101	<0.000010	0.000011	0.0000100	<0.000010	<0.000010
Aluminum	0.0035	0.0013	0.0113	0.0020	0.0015	0.0026
Arsenic	0.000177	<0.00010	0.00069	0.0011	0.00013	0.00394
Cadmium	0.00001826	<0.0000050	0.0000471	0.0006881	0.0000126	0.00268
Chromium	0.000111	<0.00010	0.00023	0.000400	<0.00010	<0.00050
Copper	0.0012	0.00061	0.00494	0.00062	0.00053	0.00081
Lead	0.0000500	<0.000050	<0.000050	0.0000500	<0.000050	<0.000050
Molybdenum	0.00825	0.00668	0.0137	0.00905	0.00616	0.0162
Nickel	0.000713	<0.00050	0.00348	0.004050	<0.00050	0.0147
Selenium	0.000278	0.000188	0.000569	0.001586	0.000159	0.00562
Zinc	0.0405	0.0121	0.165	4.1442	0.035	16.4

6.4 Vibrating Wire Piezometers

At the end of 2021, there were 20 operating vibrating wire piezometers installed on site, listed in Table 6-39. SDP-4 became inoperative in late 2019 and DSP-8 became

inoperative in 2020. Summaries of data collected from each piezometer are provided in the following sections.

Table 6-39: Vibrating Wire Piezometer Summary

Vibrating Wire Piezometer	Location	Operational Status
DSP-5	DSTSF	Operational but suspect readings: 5B Inoperative: 5A (2019)
DSP-6	DSTSF	Operational
DSP-7	DSTSF	Operational but suspect readings: 1, 2, 3, 4 Inoperative: 5 and 6 (2020)
DSP-8	DSTSF	Inoperative: 2020
SDP-2	Southwest Dump	Operational: 2A Inoperative: 2B (2018)
SDP-3	Southwest Dump	Operational
SDP-4	Southwest Dump	Inoperative (2019)
WDP-2	Water Storage Pond Dam	Operational
WDP-3A	Water Storage Pond Dam	Operational
WDP-3	Water Storage Pond Dam	Operational
WDP-4	Water Storage Pond Dam	Operational
WDP-5	Water Storage Pond Dam	Operational
WDP-6	Water Storage Pond Dam	Operational
WDP-7	Water Storage Pond Dam	Operational
WDP-8	Water Storage Pond Dam	Operational
WDP-9	Water Storage Pond Dam	Operational
WDP-10	Water Storage Pond Dam	Operational
WDP-11	Water Storage Pond Dam	Operational
WDP-12	Water Storage Pond Dam	Operational
WDP-13	Water Storage Pond Dam	Operational

6.4.1 DSTSF Piezometers

Data collected from DSTSF vibrating wire piezometers are presented in Figure 6-2 to 6-4. Sensor DSP-6A is included since 2021 reading was positive. Prior to 2021 this device was reading negative pressures and has not been included in the figure.

Pore water pressures in DSP-5 and DSP-7 A and DSP-5B have been gradually increasing since installation in 2013. Temperature readings at these locations indicate frozen ground conditions and it is suspected that the sensors are damaged due to the ice formation. Analysis carried out by SRK Consulting in 2015 and 2018 to consider the increasing pressures indicated high FOS values (FOS>2) even without consideration of the constructed MVFE2. The analysis also considered a review of survey hub data in the piezometer locations that indicated no accelerations or stability concerns and as a result, replacement of the damaged piezometers was not recommended. Geotechnical Inspection carried on by SRK during summer 2021 did not have any concerns related to the readings from the DSP piezometers.

DSTSF piezometer readings are collected quarterly.

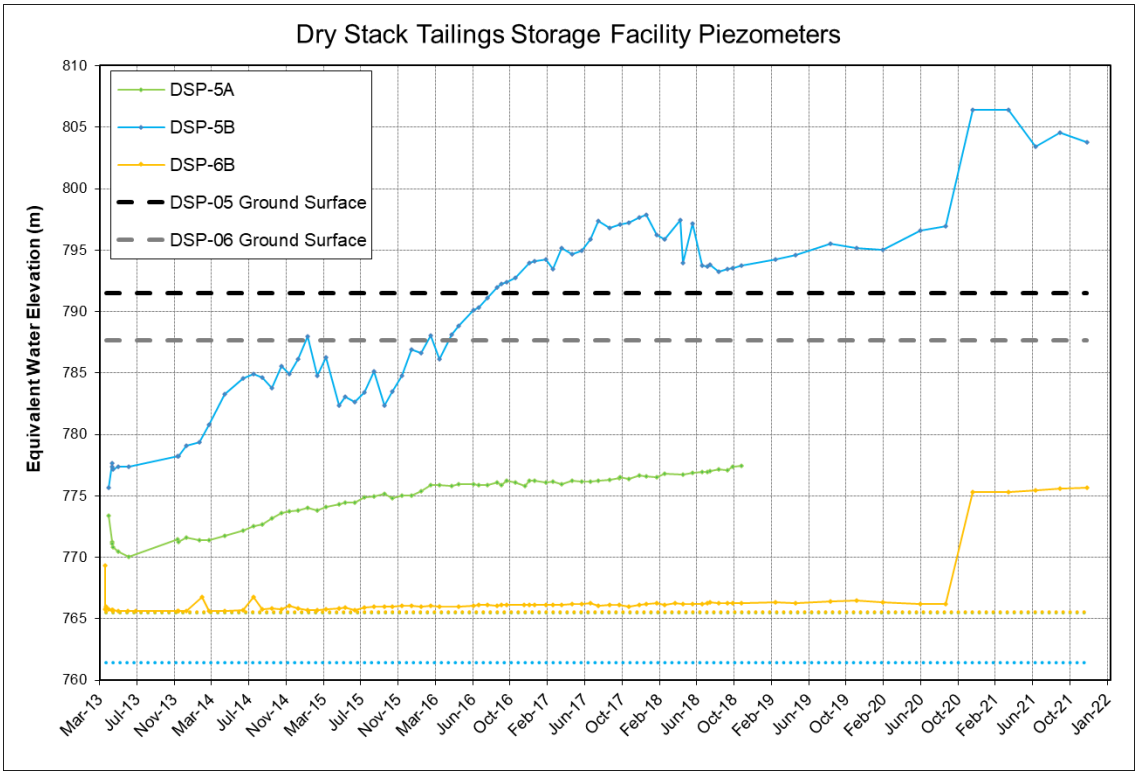

Figure 6-2: DSTSF Piezometer Data – DSP-05 and DSP-06 (2013-2021)

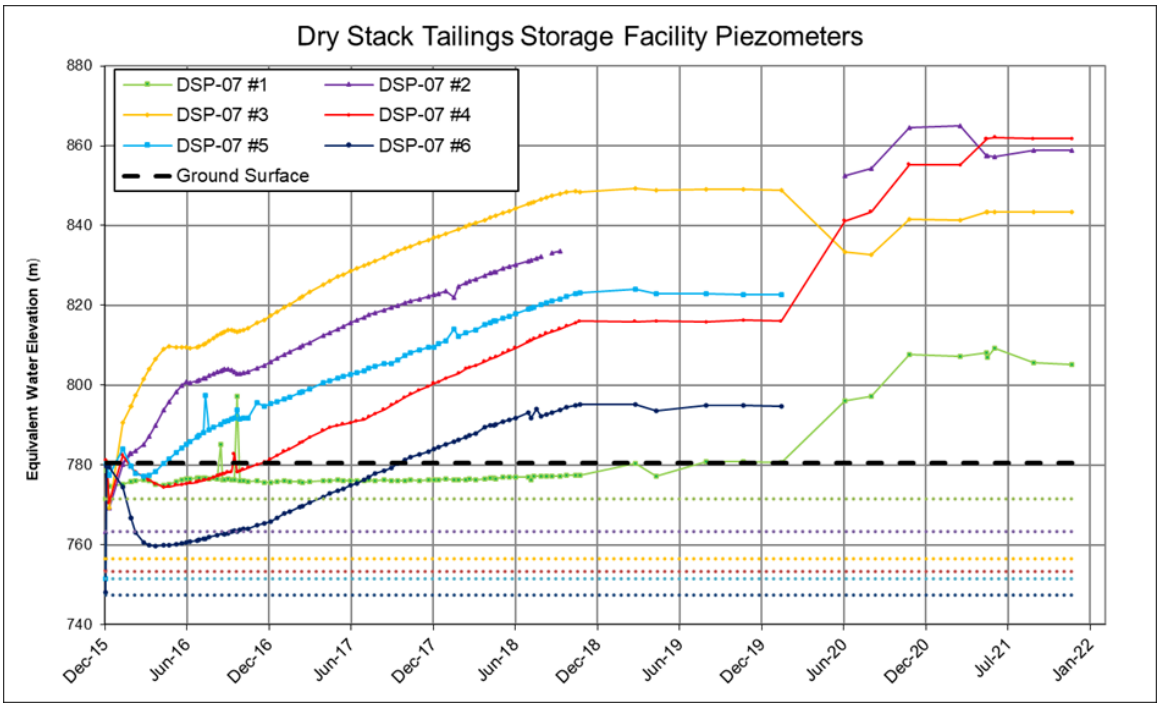

Figure 6-3: DSTSF Piezometer Data – DSP-07 (2015-2021)

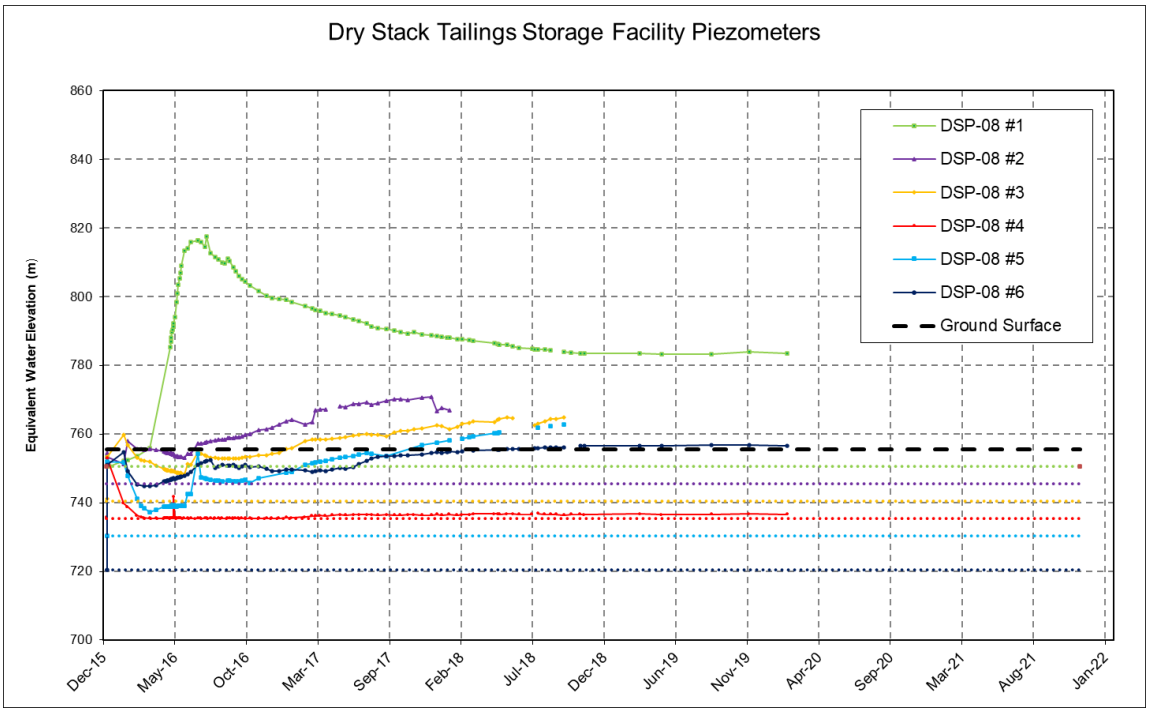

Figure 6-4: DSTSF Piezometer Data – DSP-08 (2015-2021)

6.4.2 Southwest Dump Piezometers

Data collected from Southwest Dump vibrating wire piezometers are presented in Figure 6-5. Sensors SDP-3A and SDP-3B are reading negative pressures and have not been included in the figure. Data are collected quarterly. Data indicates stable conditions with some seasonal changes in pore pressure. Abnormal November 2021 readings from SDP-3B, SDP-4A and SPD-4B, not presented in this figure. SPD-2B non-functional since 2018.

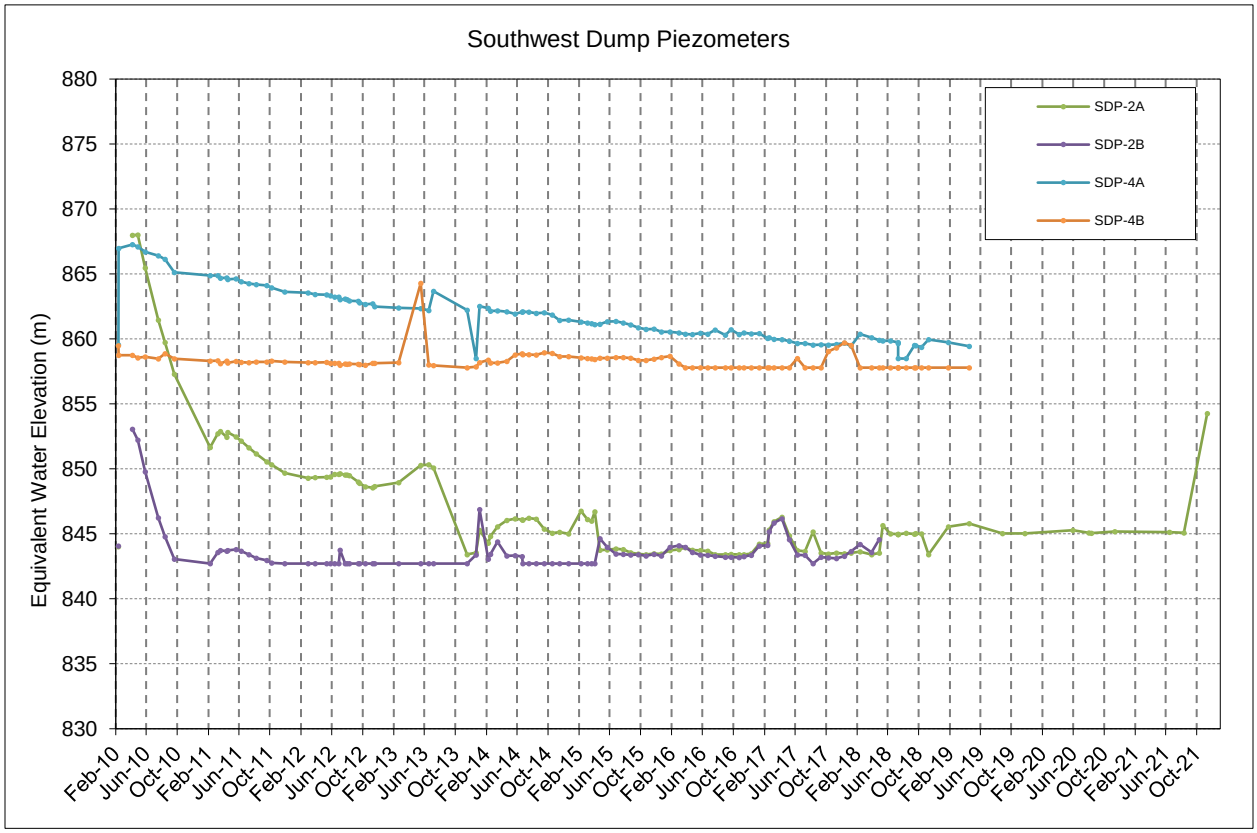

Figure 6-5: Southwest Dump Piezometer Data (2010-2021)

6.4.3 Water Storage Pond Dam Piezometers

Data collected from WSP Dam vibrating wire piezometers are presented in Figure 6-6. WDP-2, WDP-3, WDP-5, and WDP-11 have some readings at negative. Figure 6-6 only represents positive readings. Data are collected monthly. Pressures in 2021 reflect an increase since the pond was filled up to 712.5 m elevation. Water content shows an elevation of 712.9m at the end of 2021.

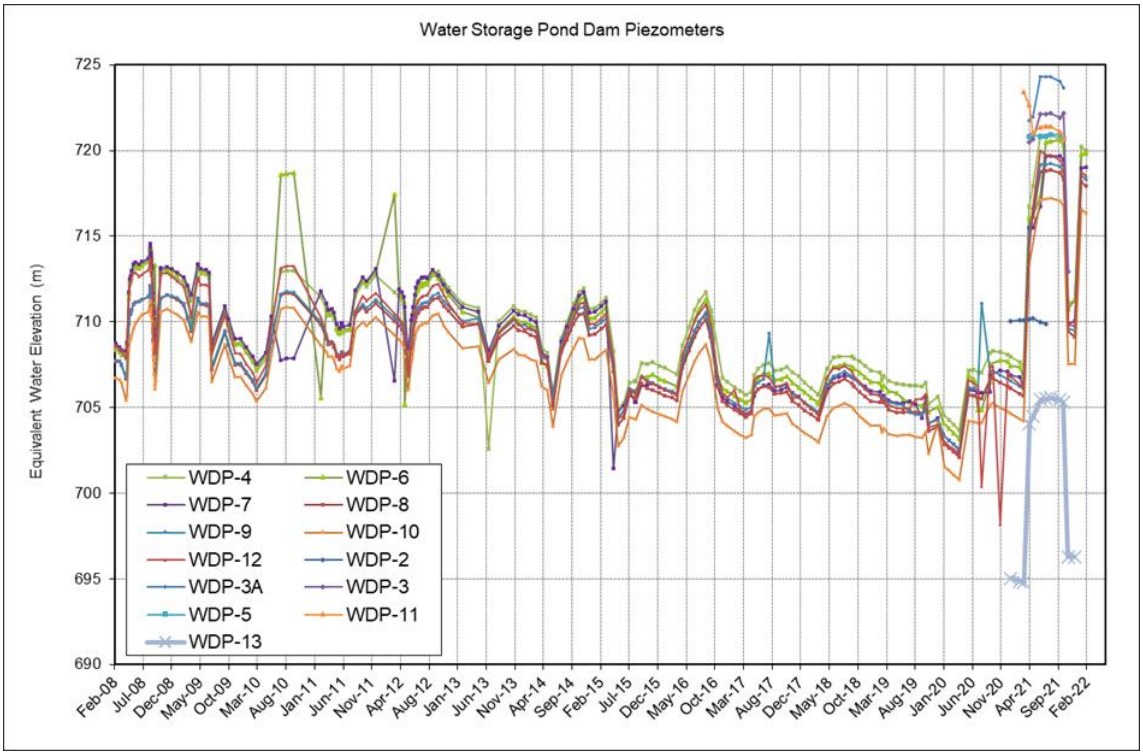

Figure 6-6: WSP Dam Piezometer Data (2008-2021)

6.5 Ground Temperature Cables

There are currently 19 operating thermistors (ground temperature cables) installed on site, listed in Table 6-40. There were no changes to the operational status of any of the existing thermistors in 2021. Summaries of data collected from each thermistor are contained in the following sections.

Table 6-40: Thermistor Summary (2021)

Thermistor	Location	Operational Status
A2T-1	A2PTSF	Operational
DST-10	DSTSF	Operational
DST-11	DSTSF	Operational
DST-13	DSTSF	Operational
DST-14	DSTSF	Operational
DST-15	DSTSF	Operational
MW-11-02	Ridgetop (inoperative since 2018)	Operational
MW-11-03	Ridgetop	Operational
SDT-1	Southwest Dump	Operational
SDT-2	Southwest Dump	Operational
SDT-3	Southwest Dump	Operational
WDT – 1	Water Storage Pond Dam	Operational
WDT – 2	Water Storage Pond Dam	Operational
WDT – 3	Water Storage Pond Dam	Operational
WDT – 4	Water Storage Pond Dam	Operational
WDT – 5	Water Storage Pond Dam	Operational
WDT – 6	Water Storage Pond Dam	Operational
WDT – 7	Water Storage Pond Dam	Operational
WDT – 8	Water Storage Pond Dam	Operational

6.5.1 A2 Pit Thermistor

Data collected from A2TSF thermistor are presented in Figure 6-7. Data are collected quarterly. No major changes to ground temperatures at the A2PTSF were observed in 2021. Nodes 7, 8, 9 and 15 had non reliable readings below –10 C.

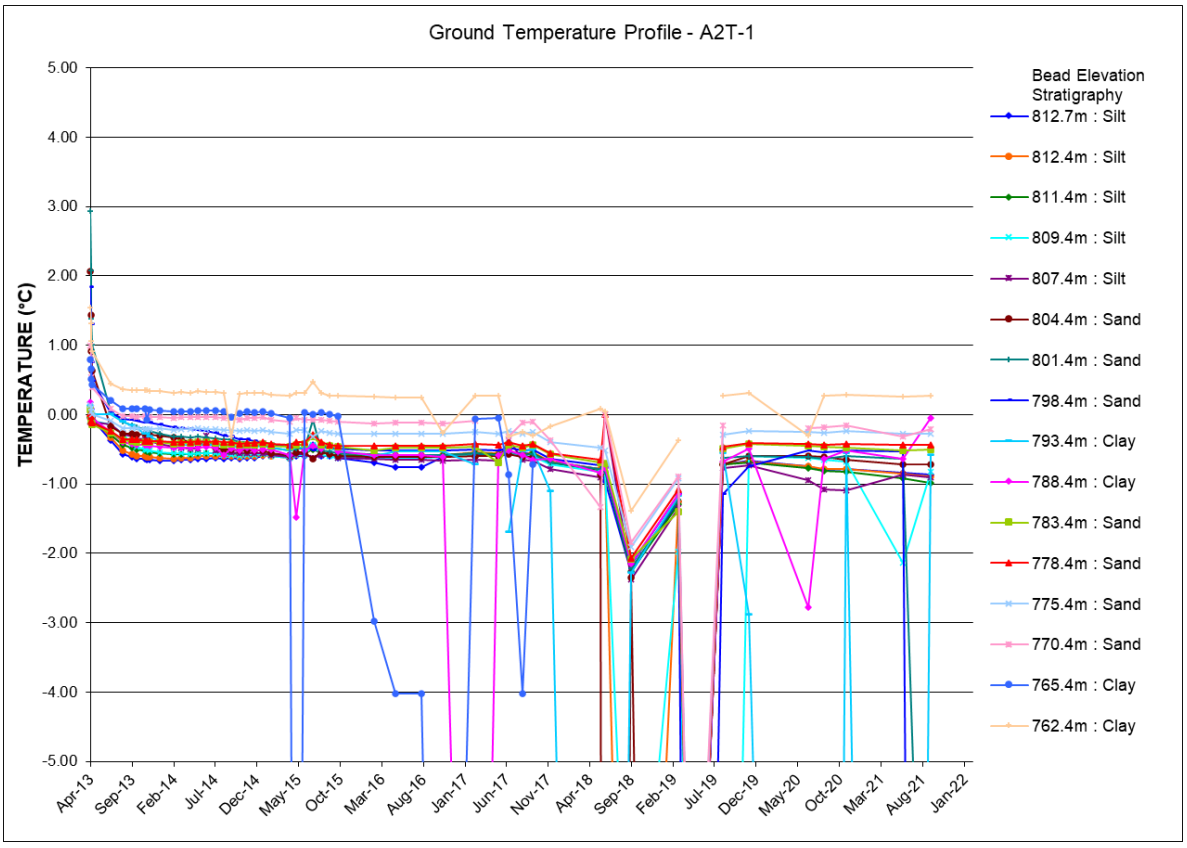

Figure 6-7: Thermistor A2T-1 (2013-2021)

6.5.2 Dry Stack Thermistors

Data collected from DSTSF thermistors are presented in Figures 6-8 through 6-12. Data are collected quarterly. No major changes to ground temperatures at the DSTSF were observed in 2021.

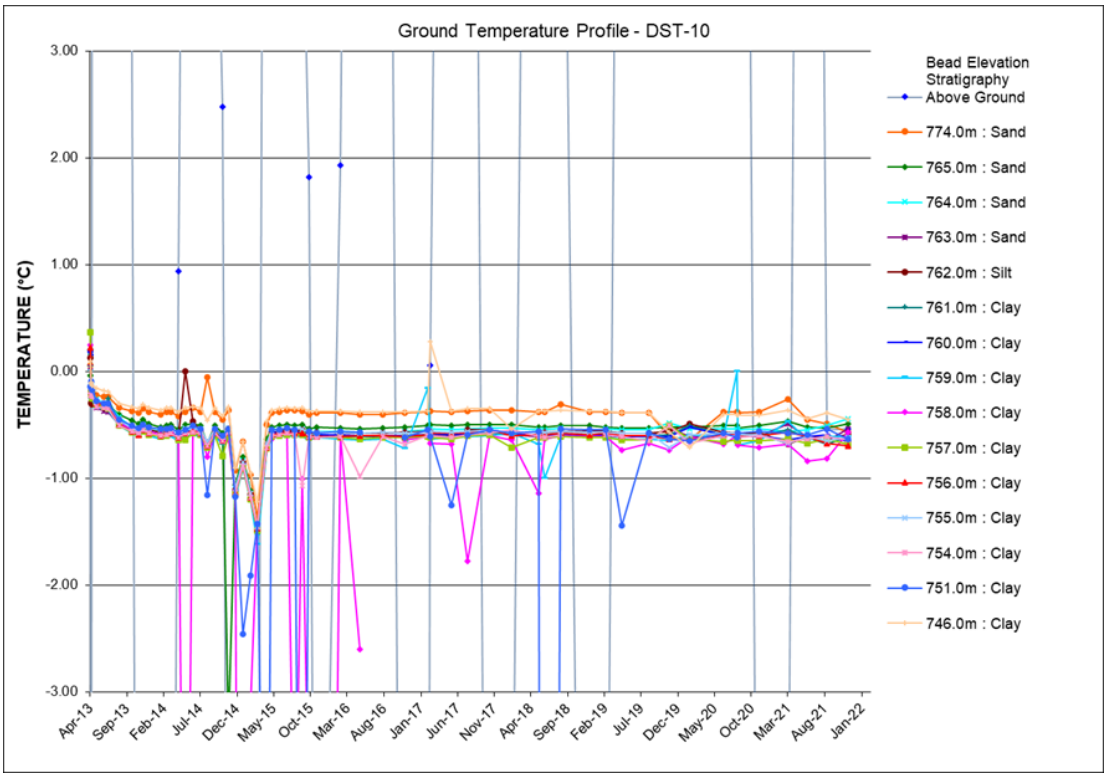

Figure 6-8: Thermistor DST-10 (2013-2021)

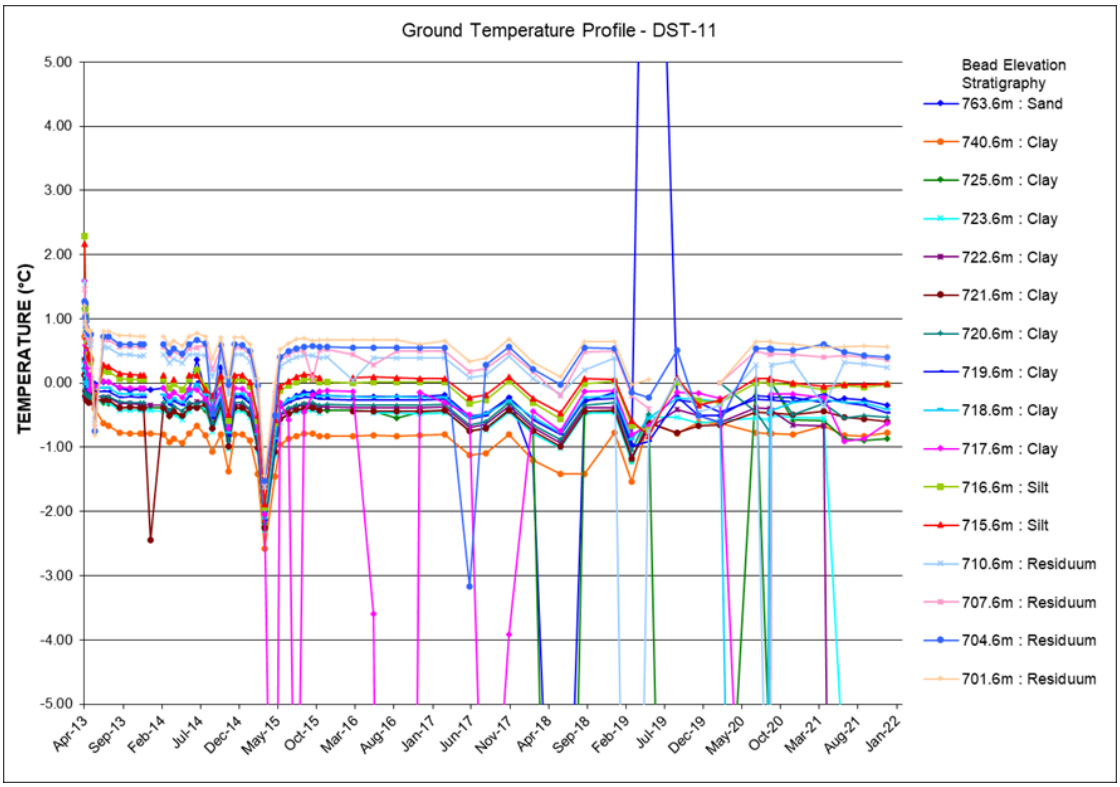

Figure 6-9: Thermistor DST-11 (2013-2021)

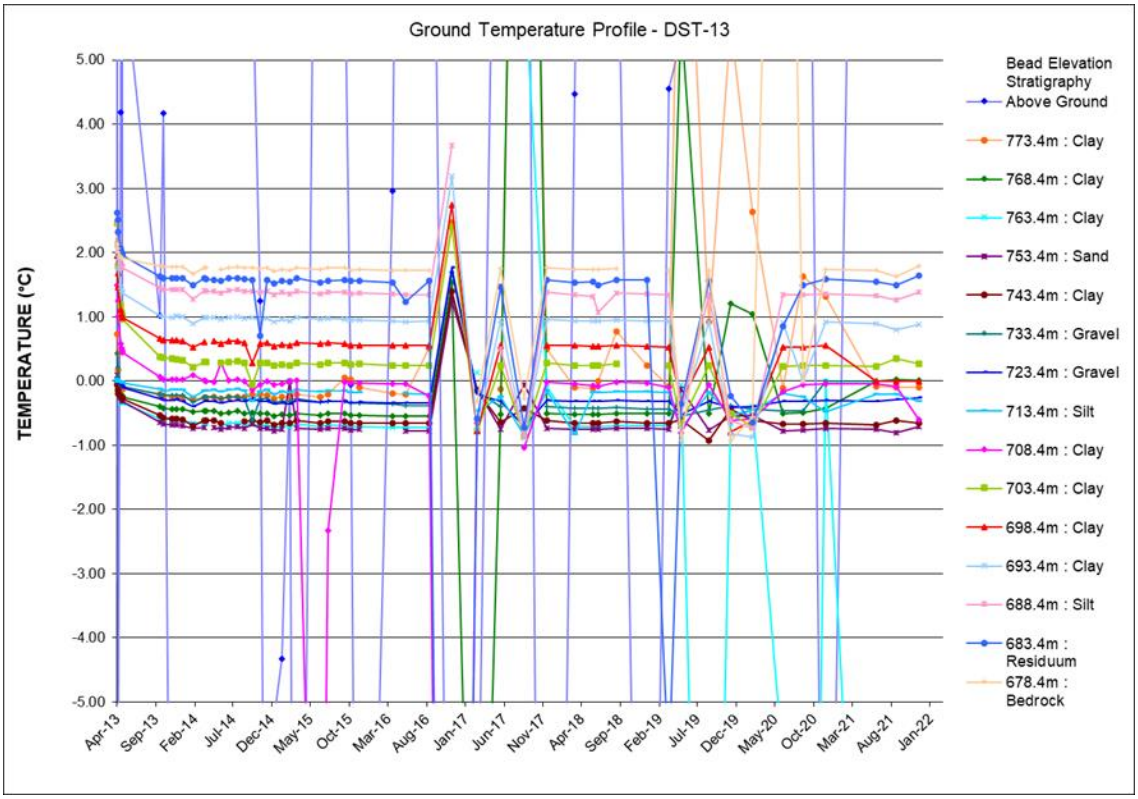

Figure 6-10: Thermistor DST-13 (2013-2021)

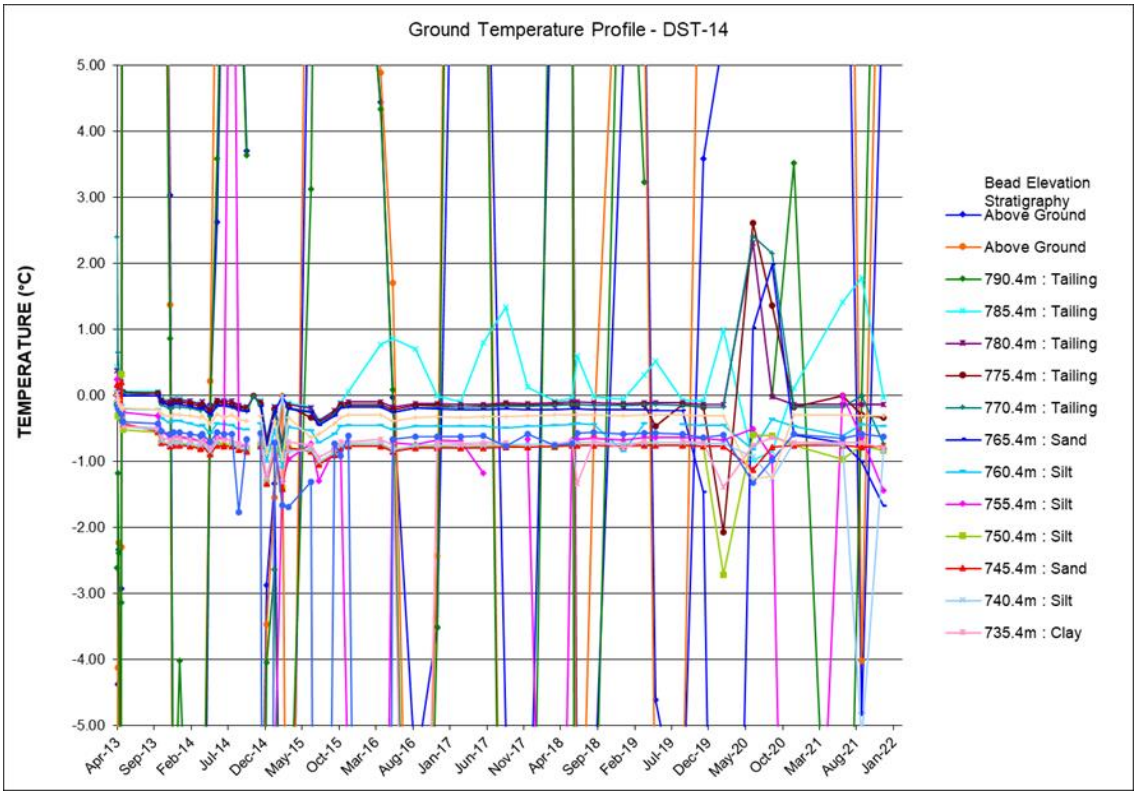

Figure 6-11: Thermistor DST-14 (2013-2021)

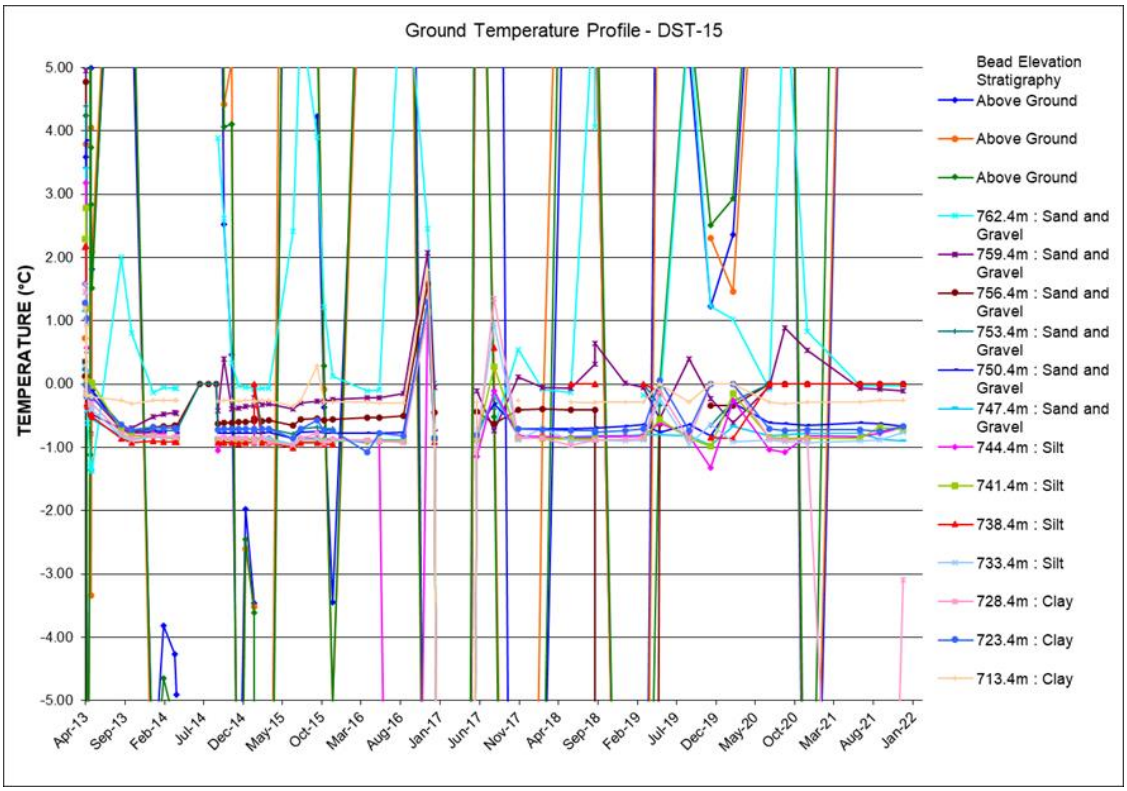

Figure 6-12: Thermistor DST-15 (2013-2021)

6.5.3 Ridgetop Thermistors

Data collection has been reduced to annually for Ridgetop thermistor. No major changes to ground temperatures at the Ridgetop were observed in 2021.

6.5.4 Southwest Dump Thermistors

Data collected from SWD thermistors are presented in Figures 6-13 through 6-15. Data are collected quarterly. No major changes to ground temperatures at the SWD were observed in 2021.

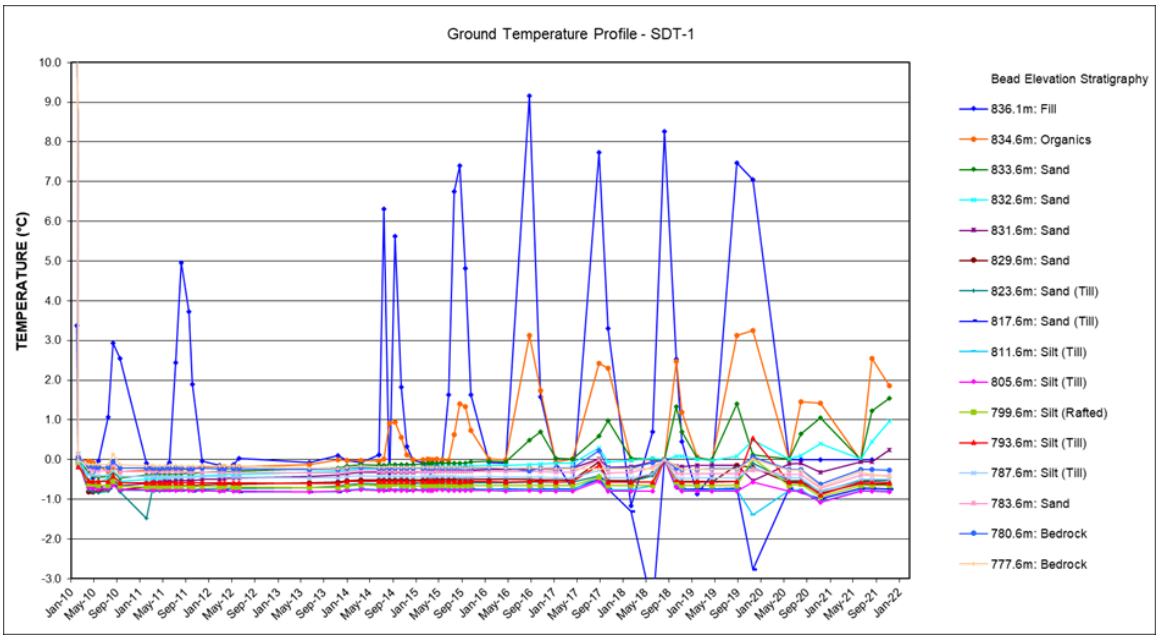

Figure 6-13: Thermistor SDT-1 (2015-2021)

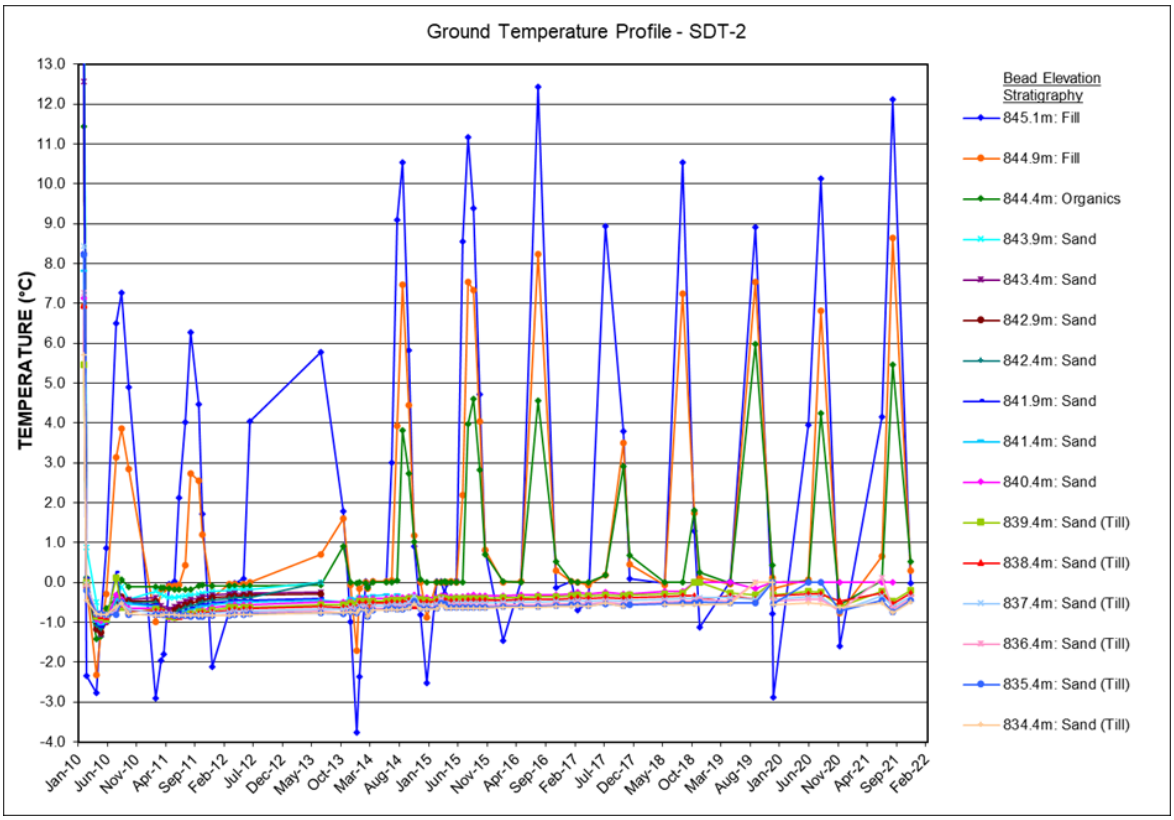

Figure 6-14: Thermistor SDT-2 (2015-2021)

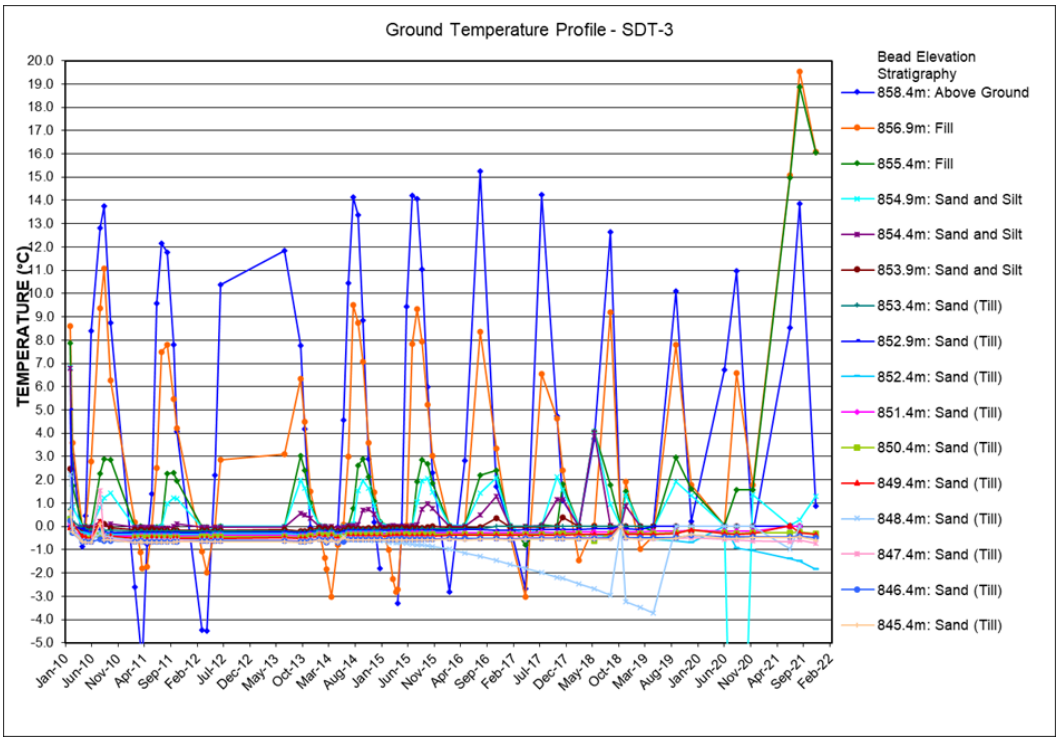

Figure 6-15: Thermistor SDT-3 (2015-2021)

Note: Bead 9 (852.4 m: Silty Sand) appears to be damaged with readings drifting colder in temperature.

6.5.5 Water Storage Pond Dam Thermistors

Data are collected monthly from all water retention dam thermistors. All thermistors continue to show temperatures well above zero since installation.

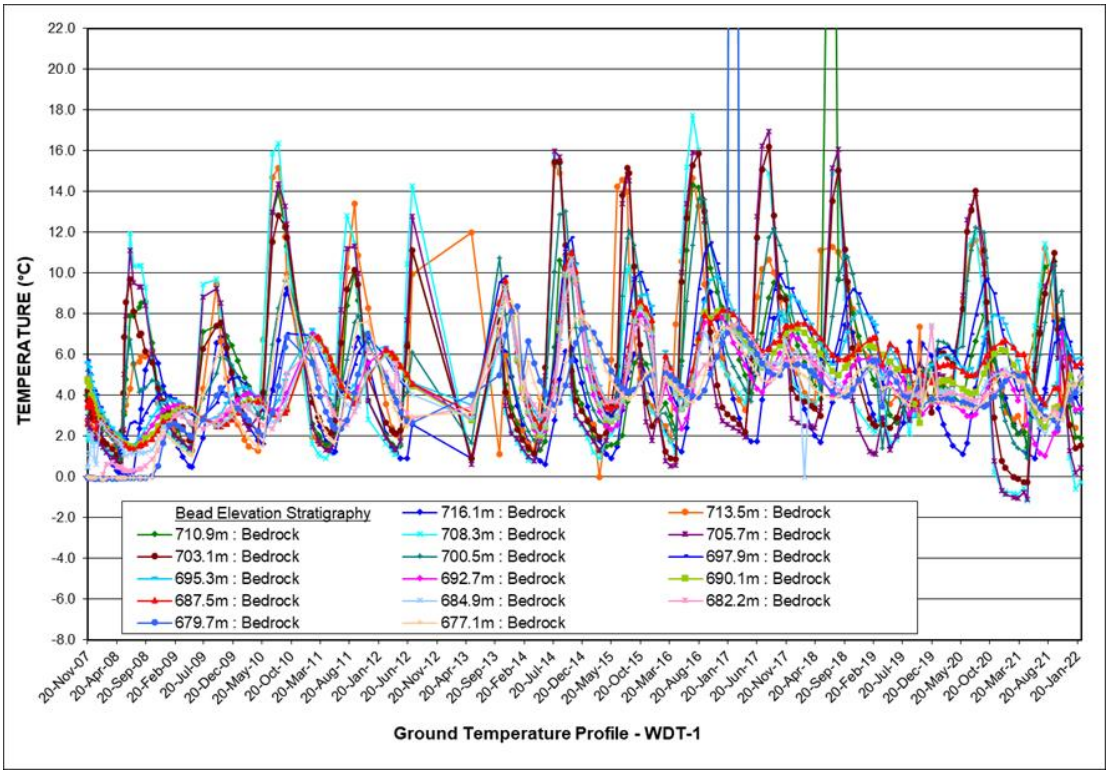

Figure 6-16: Thermistor WDT-1 (2007-2021)

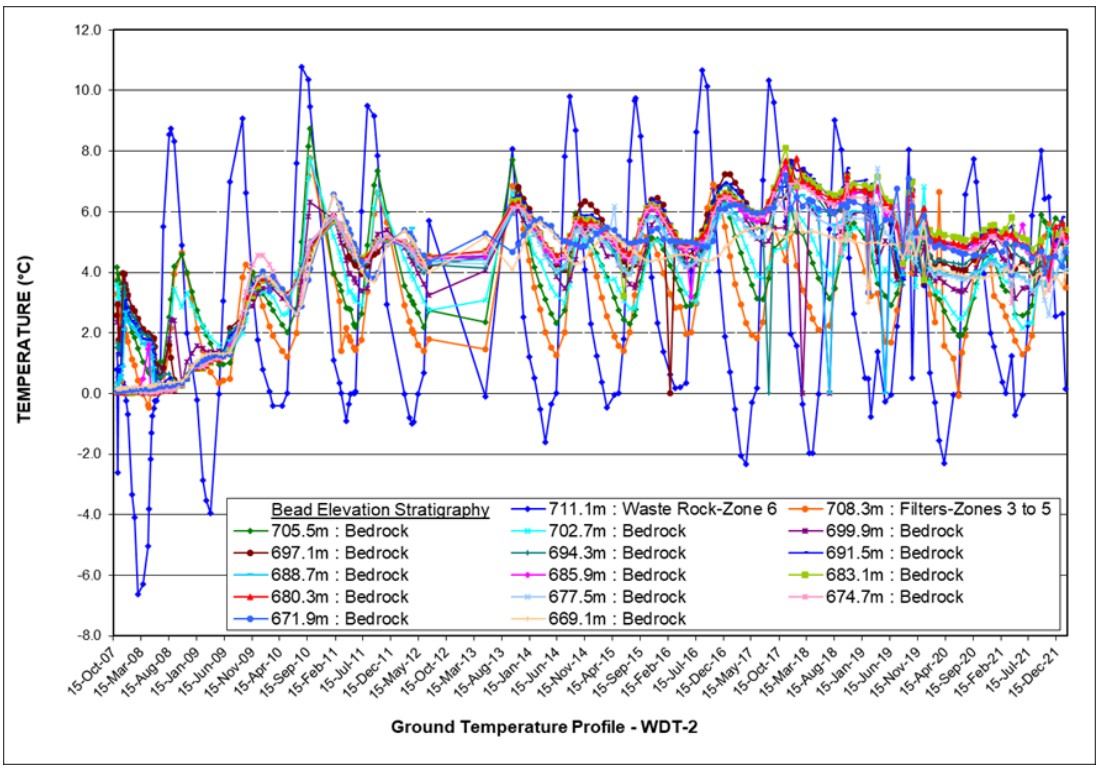

Figure 6-17: Thermistor WDT-2 (2007-2021)

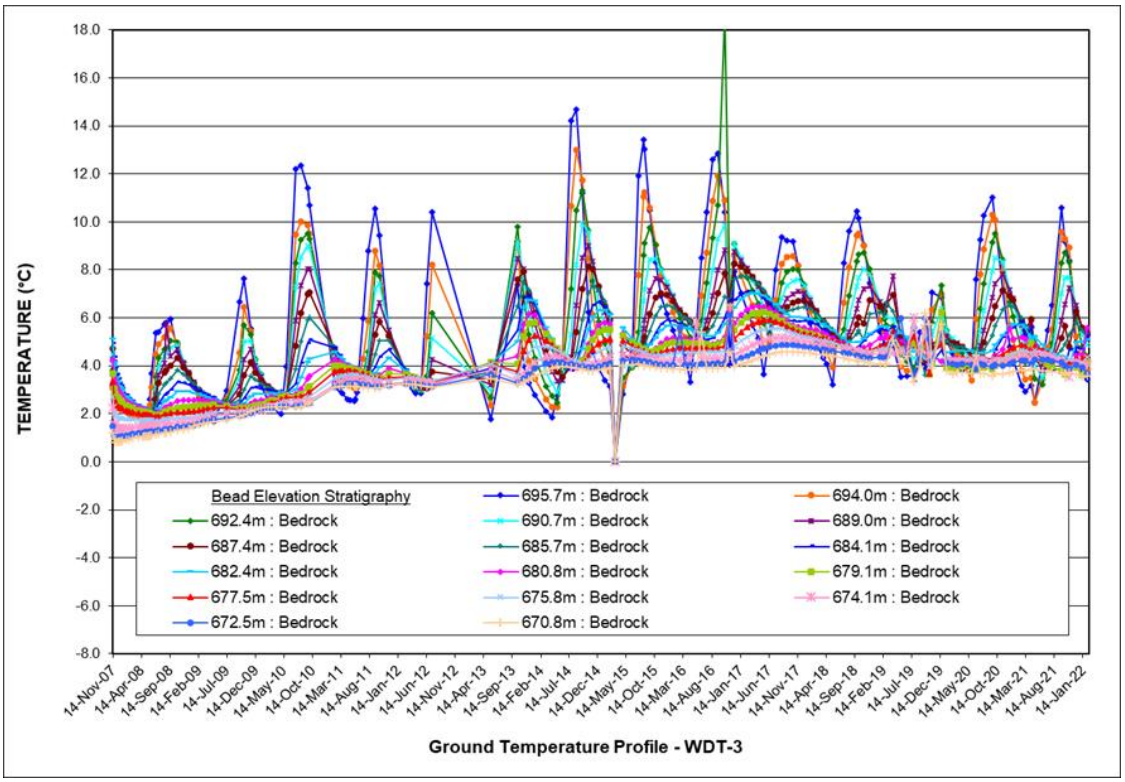

Figure 6-18: Thermistor WDT-3 (2007-2021)

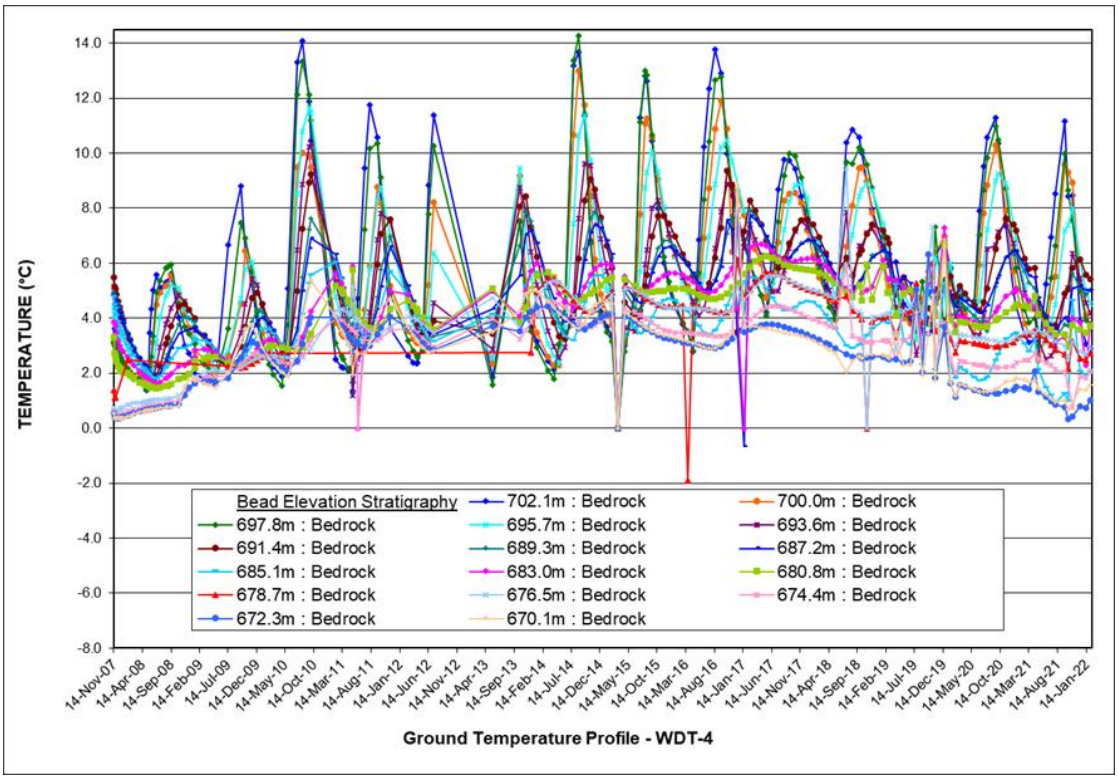

Figure 6-19: Thermistor WDT-4 (2007-2021)

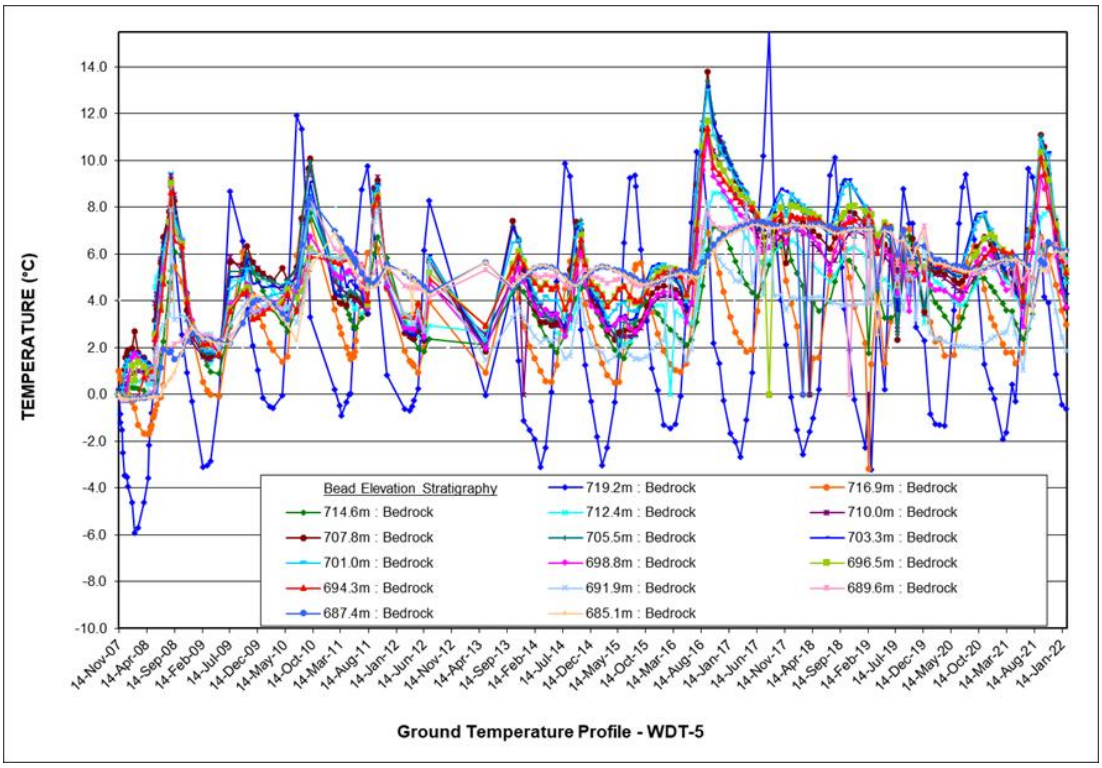

Figure 6-20: Thermistor WDT-5 (2007-2021)

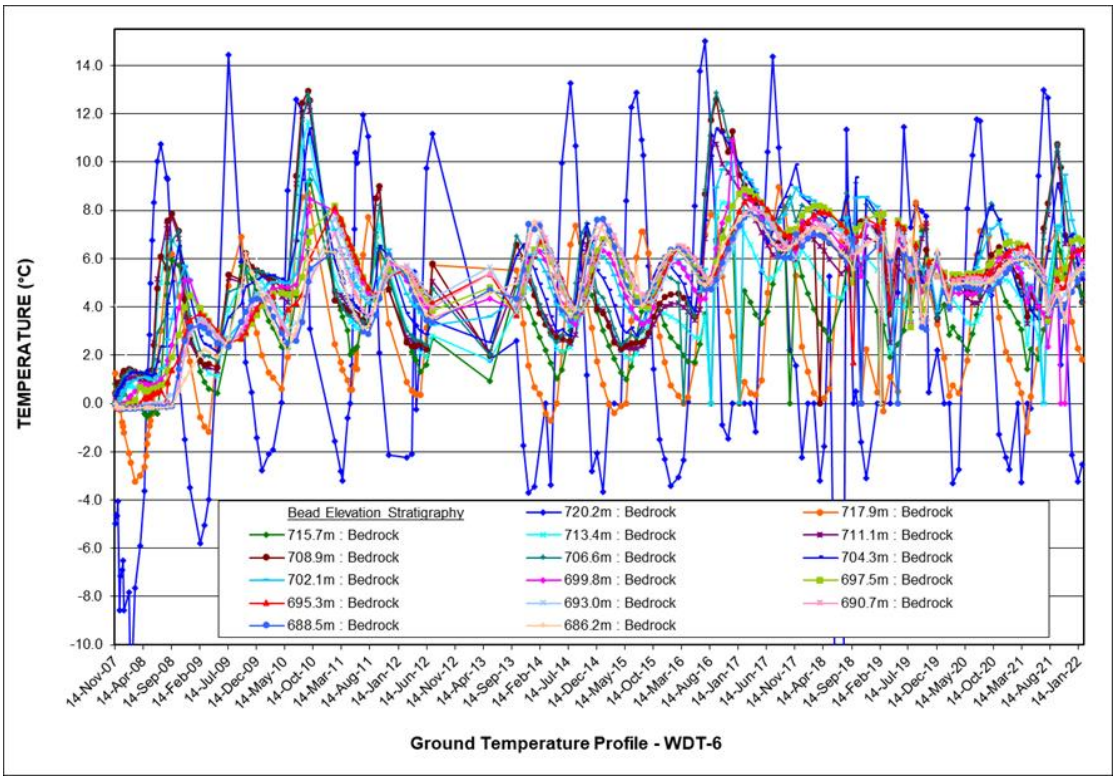

Figure 6-21: Thermistor WDT-6 (2007-2021)

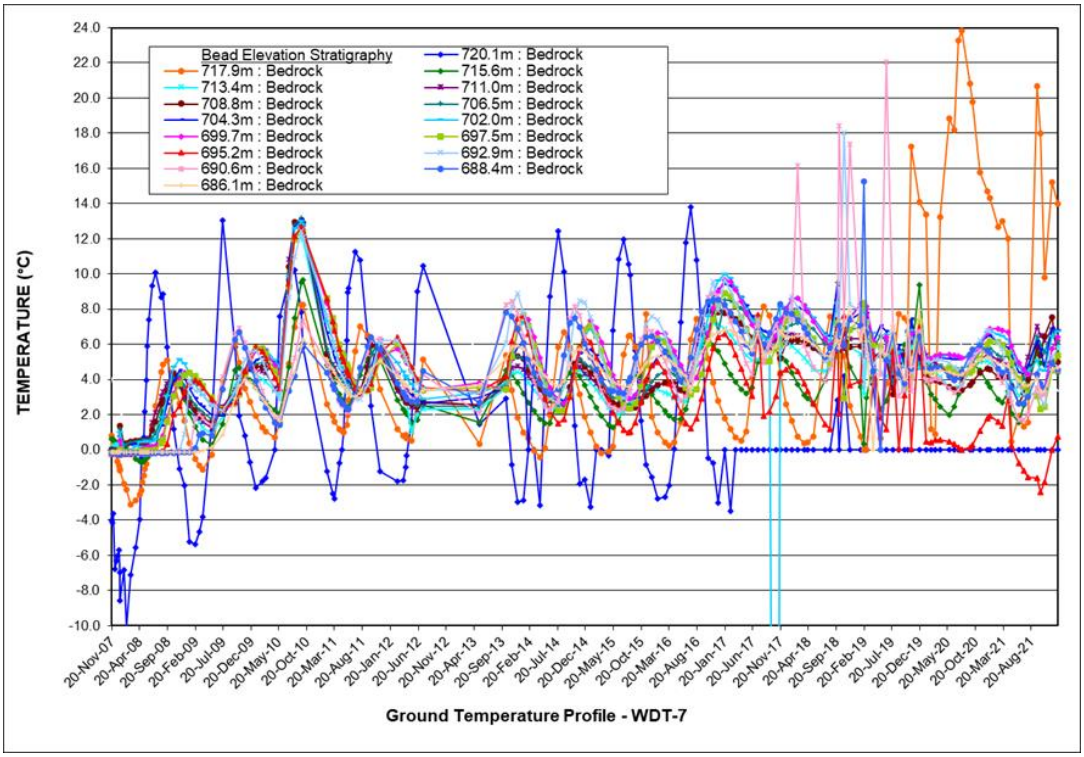

Figure 6-22: Thermistor WDT-7 (2007-2021)

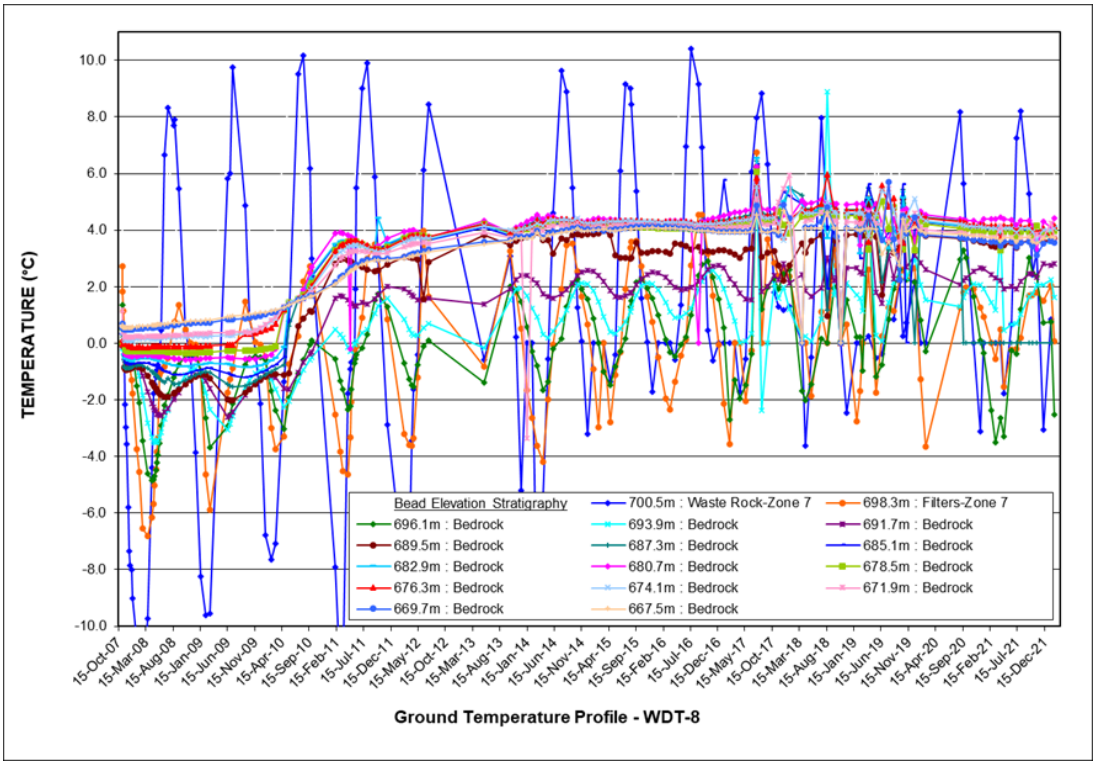

Figure 6-23: Thermistor WDT-8 (2007-2021)

7 Seepage Water Quality Monitoring Program

Minto Mine implements a Seepage Monitoring Plan (SMP) to assess acid rock drainage and metal leaching conditions from several sources, including pit wall seepage, ore stockpile areas, overburden dumps, waste rock dumps, DSTSF, Mill Valley Fill Extension 1 and 2, the mill area and other seepage locations. Analysis of seepage results and water quality analysis assists in improving understanding of water chemistry, load, and water balance issuing from waste dumps, overburden dumps, ore stockpiles, and tailings facilities.

Seepage monitoring conducted in 2021 was carried out in accordance with the EMSRP. The EMSRP states that seepage surveys will be conducted twice a year, during spring runoff and in early fall, by walking the toe of each waste dump, stockpile, or other areas of interest. The survey routes and sampling locations for each seepage monitoring event are recorded using GPS data. Samples are taken within ±5m of the original GPS point. If there is no seepage within the 5m buffer, the site is considered dry during that sampling session. Observations from past seepage surveys indicate that many identified seepage sites are seasonally variable. It has also been observed that weather patterns have an impact, where snow melt or rain contribute to observable flows that are absent during warm, dry weather. A map showing the 2021 survey routes and monitoring locations can be found in Figure 7-1.

WUL QZ14-031 identifies a Surface Water Surveillance Program which requires regular monitoring of seepage at several permanent seepage water quality stations. These stations include: W8 (Destroyed in 2017), W8A, W17, (W36, W37 – destroyed in 2016), and W62. The water quality results for these permanent seepage quality stations are additionally reported to the Yukon Water Board (YWB) monthly. Prior to WUL QZ14-031, Minto operated under WUL QZ96-006 which included seepage monitoring sites W32, W38, W39 and W40 in the Surface Water Surveillance Program.

Constituents of concern, namely dissolved copper, dissolved cadmium, dissolved iron, dissolved selenium, ammonia, nitrate, and nitrite have been graphed below for each site sampled. In the event of results below the detection limit (DL), the limit is plotted, and the results are presented as 0.5*DL. In cases where a graph's trend is skewed due to visual outliers (i.e., data points that are larger than the mean by an order of

magnitude), a second graph with outliers removed is provided. All lab results for 2020 spring and fall seepage monitoring programs are provided in Appendix D.

Per current EMSRP, field data and observations including coordinates, weather, field measurements (pH, conductivity, and temperature), a sketch of the location, water conditions and color of sediment and number of filters used. The original field sheets are presented with the pictures that were obtained at each site in Appendix D.

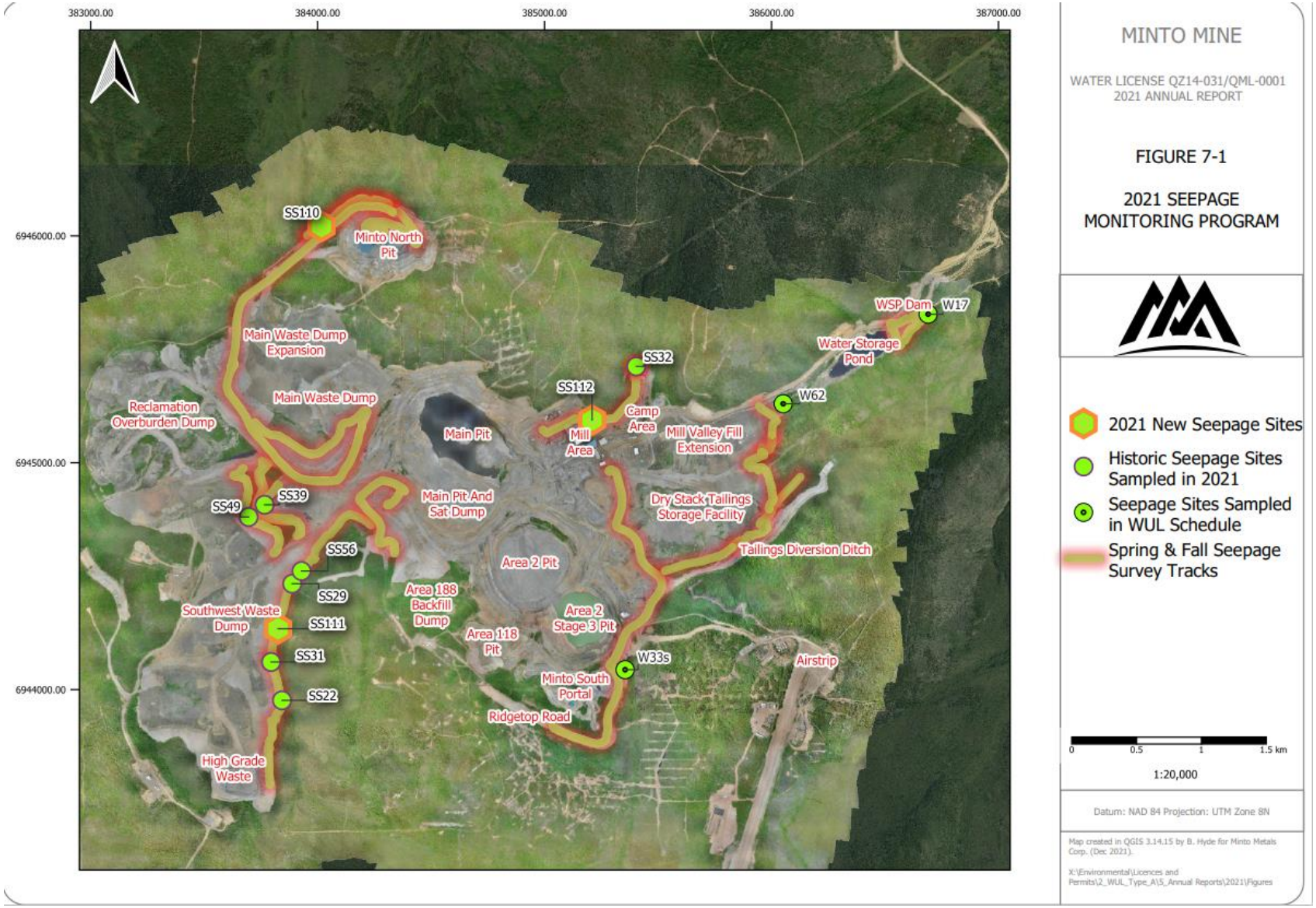

Figure 7-1: 2021 Seepage Monitoring Program

7.1 Southwest Dump

Seepage samples were collected from the Southwest Waste Dump (SWD) area at sites SS29, SS31 and SS56 during the spring survey. A new seep was discovered at SS111, during the spring survey. Sites SS22 and SS31 were sampled in the fall seepage survey. The ice-rich overburden dump (IROD) area of the SWD was also surveyed and historic sites SS39 and SS49 were sampled during the spring survey. SS39 was sampled during the fall survey.

Historical data and 2021 seepage water quality results for the SWD are presented in Figures 7-2 through 7-22. Data has been separated into three locations within the SWD: SWD North (Figures 7-2 to 7-8), SWD South (Figures 7-9 to 7-15) and IROB (Figures 16-22). The figures include water quality results for dissolved copper, dissolved cadmium, dissolved iron, dissolved selenium, and nutrient levels for ammonia, nitrite, and nitrate.

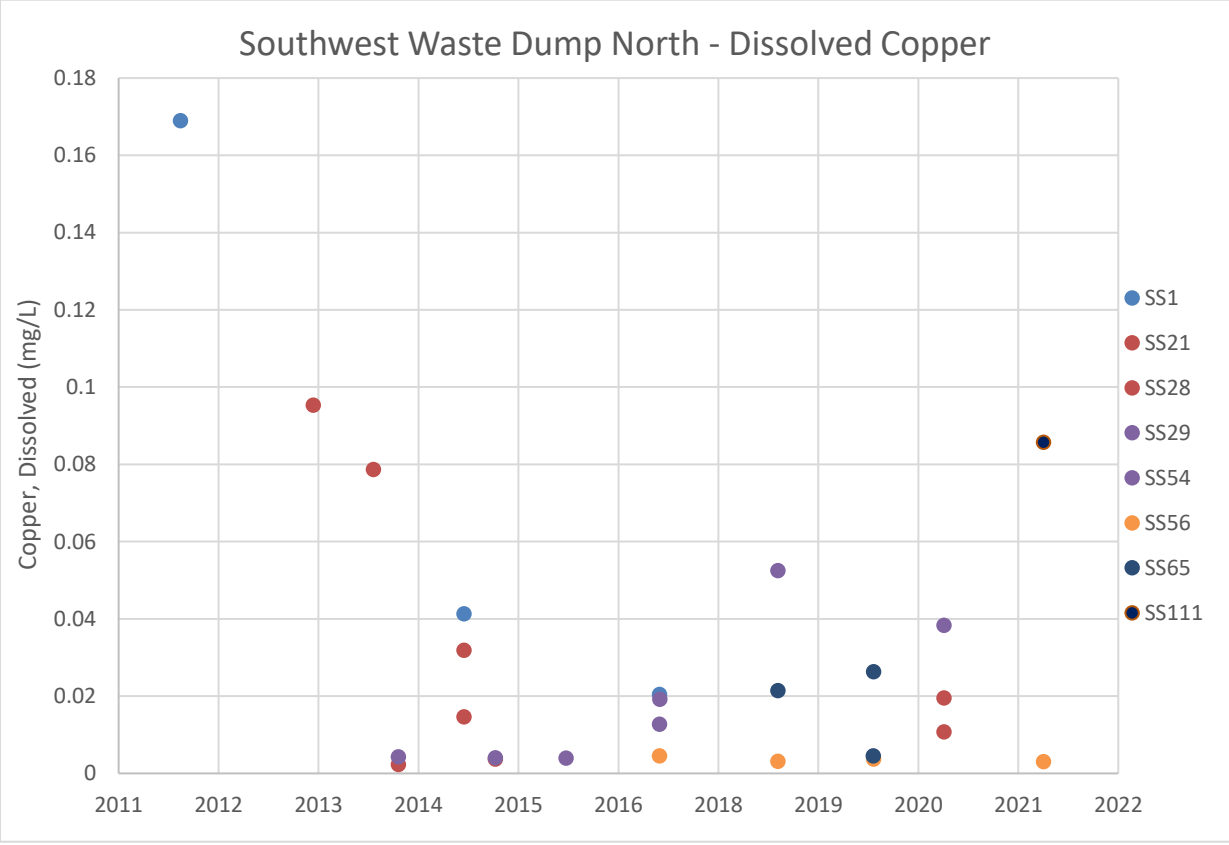

Figure 7-2: Southwest Waste Dump North Dissolved Copper

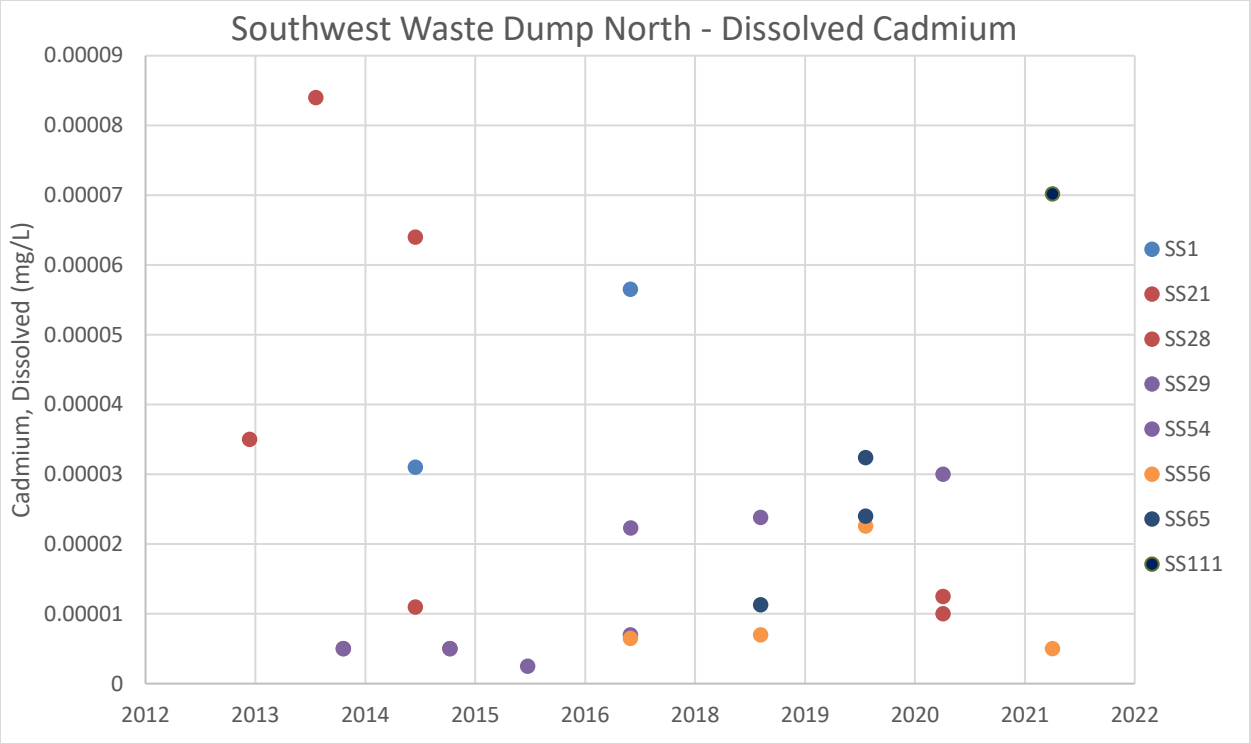

Figure 7-3: Southwest Waste Dump North Dissolved Cadmium, Outliers Removed

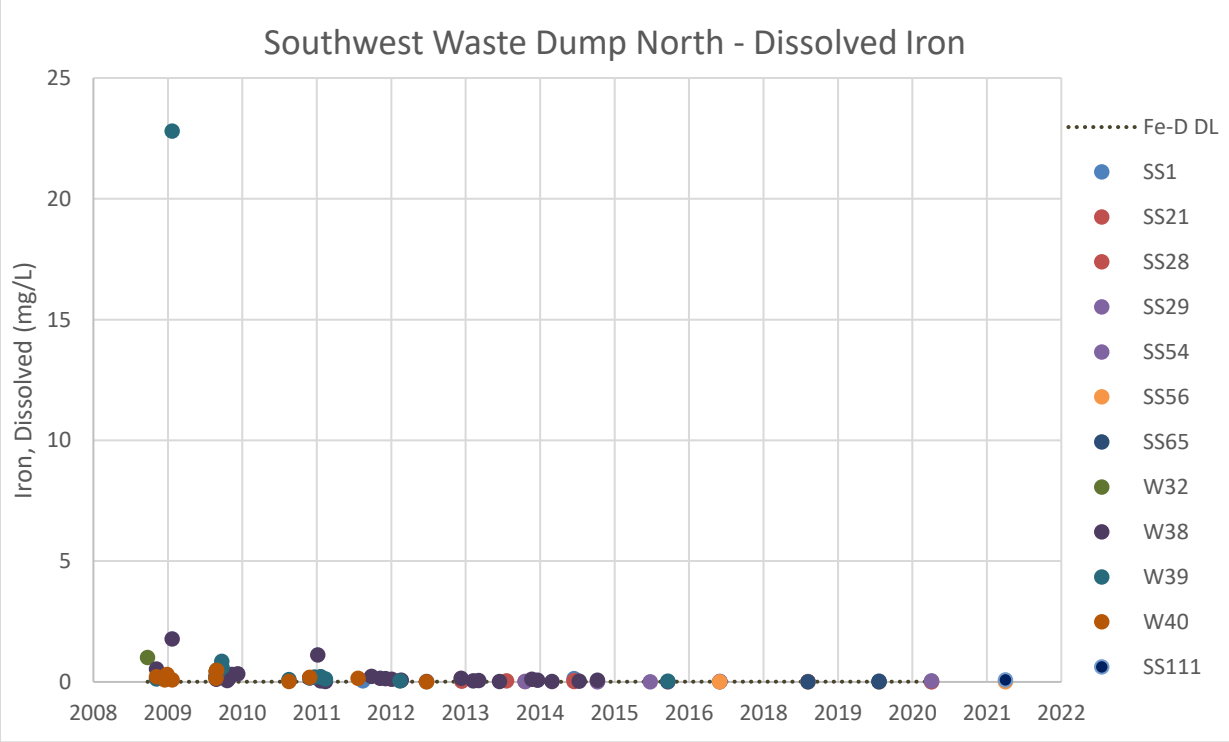

Figure 7-4: Southwest Waste Dump North Dissolved Iron, Outliers Removed

DL is Analytical Detection Limit

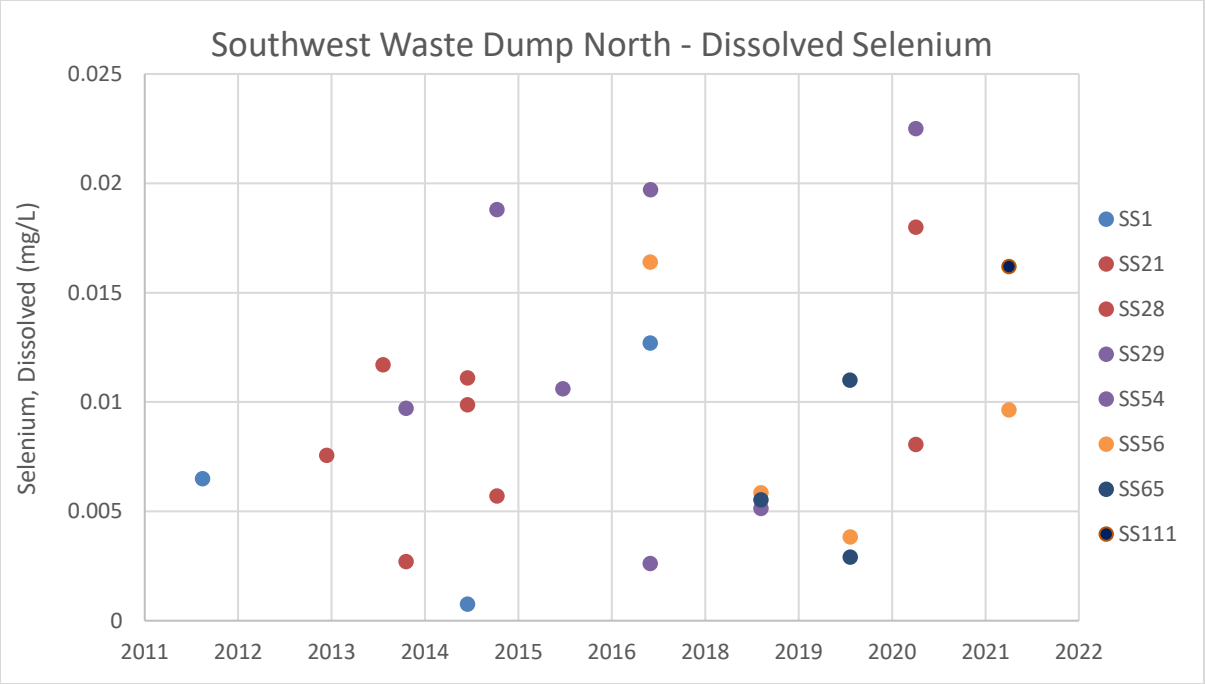

Figure 7-5: Southwest Waste Dump North Dissolved Selenium

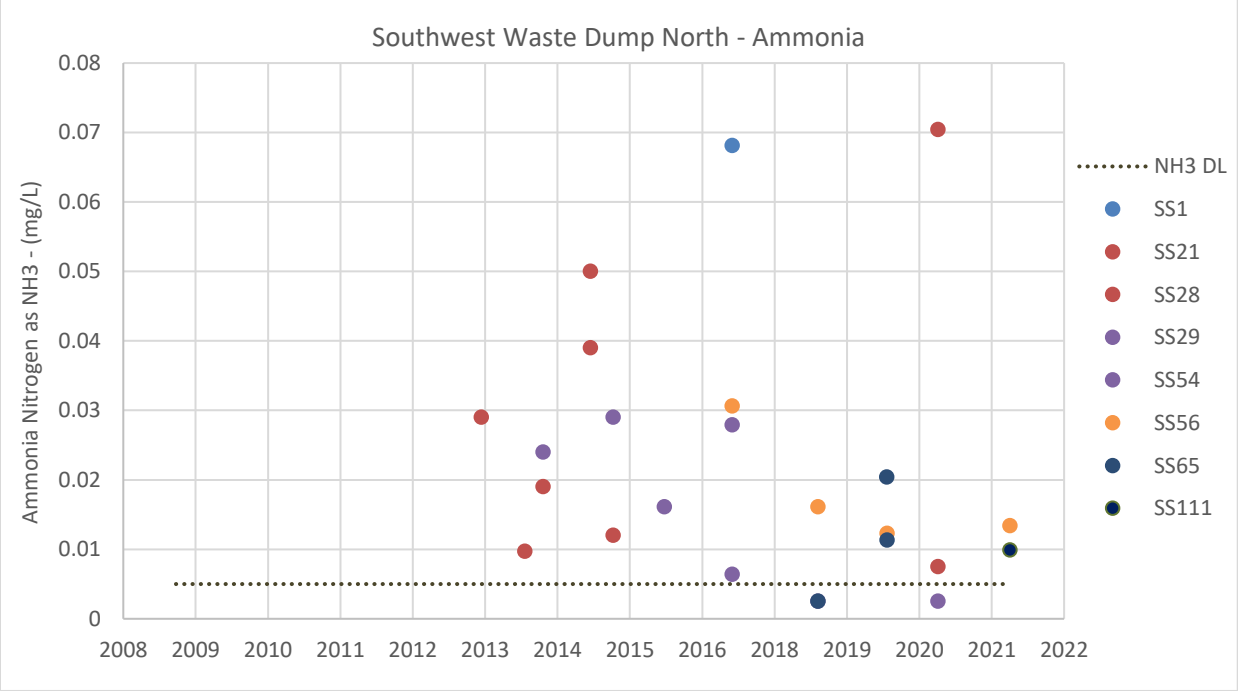

Figure 7-6: Southwest Waste Dump North Ammonia, Outliers Removed

DL is Analytical Detection Limit

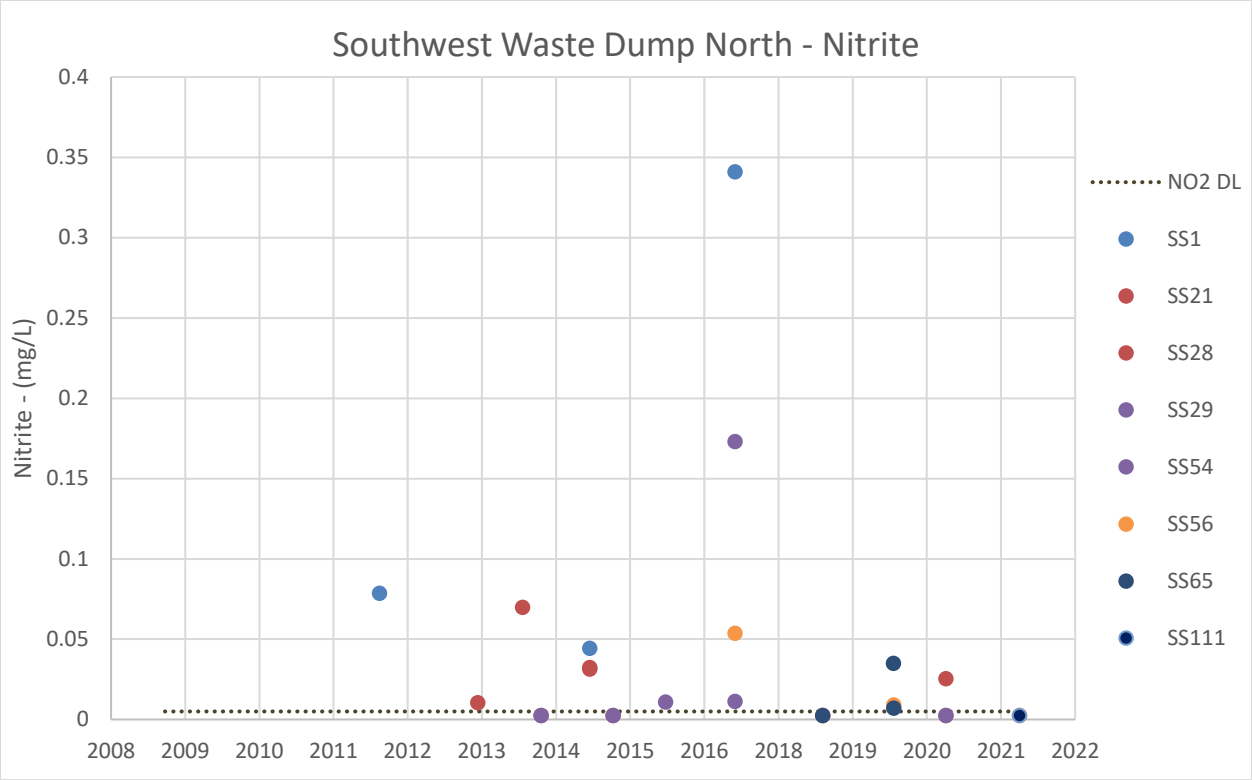

Figure 7-7: Southwest Waste Dump North Nitrite

DL is Analytical Detection Limit

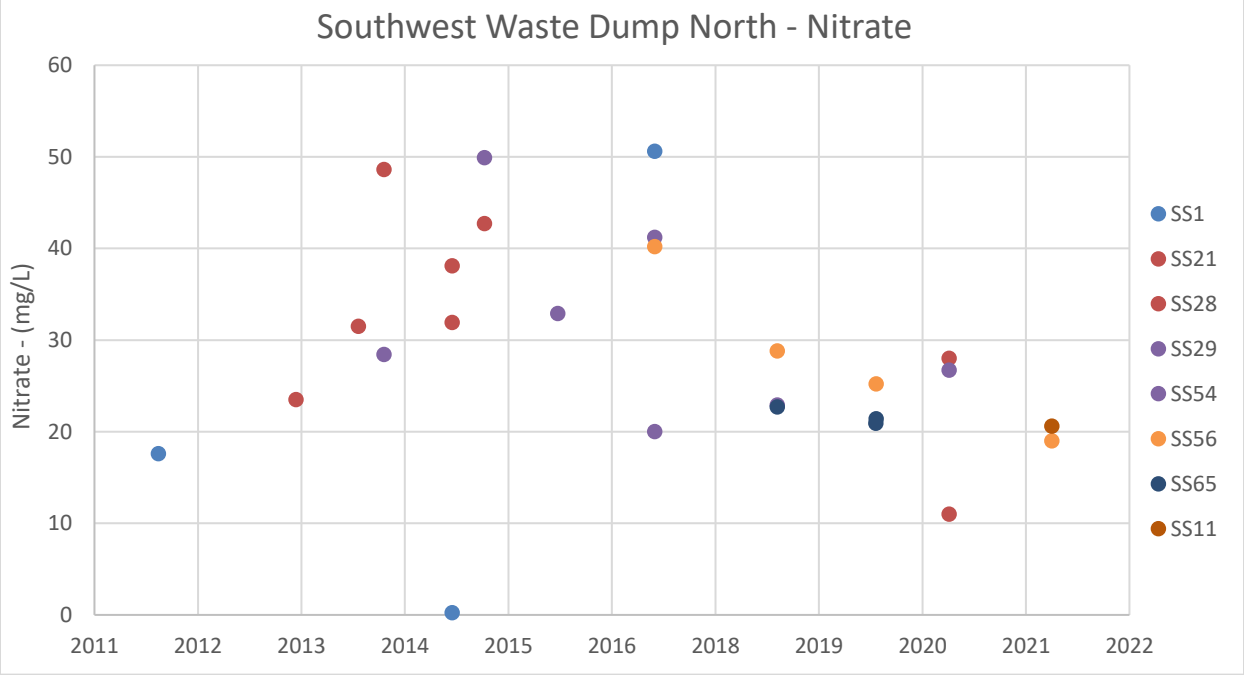

Figure 7-8: Southwest Waste Dump North Nitrate

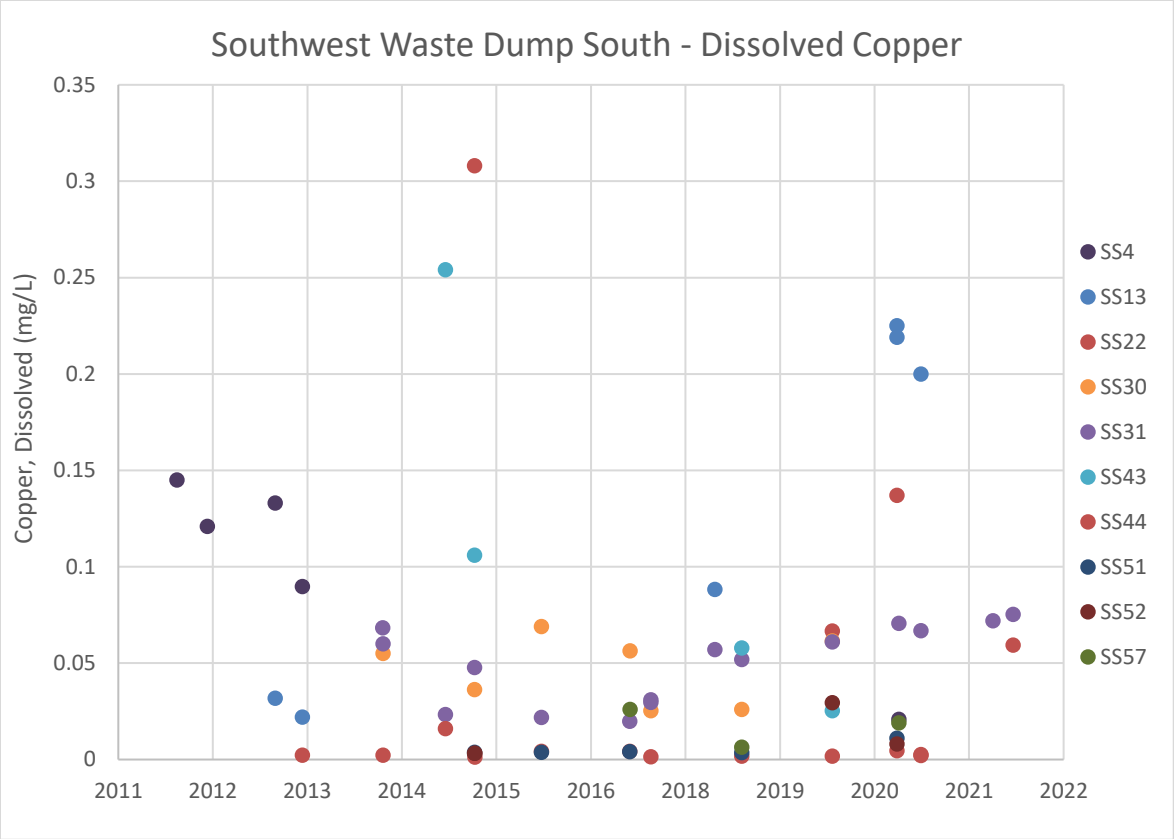

Figure 7-9: Southwest Waste Dump South Dissolved Copper

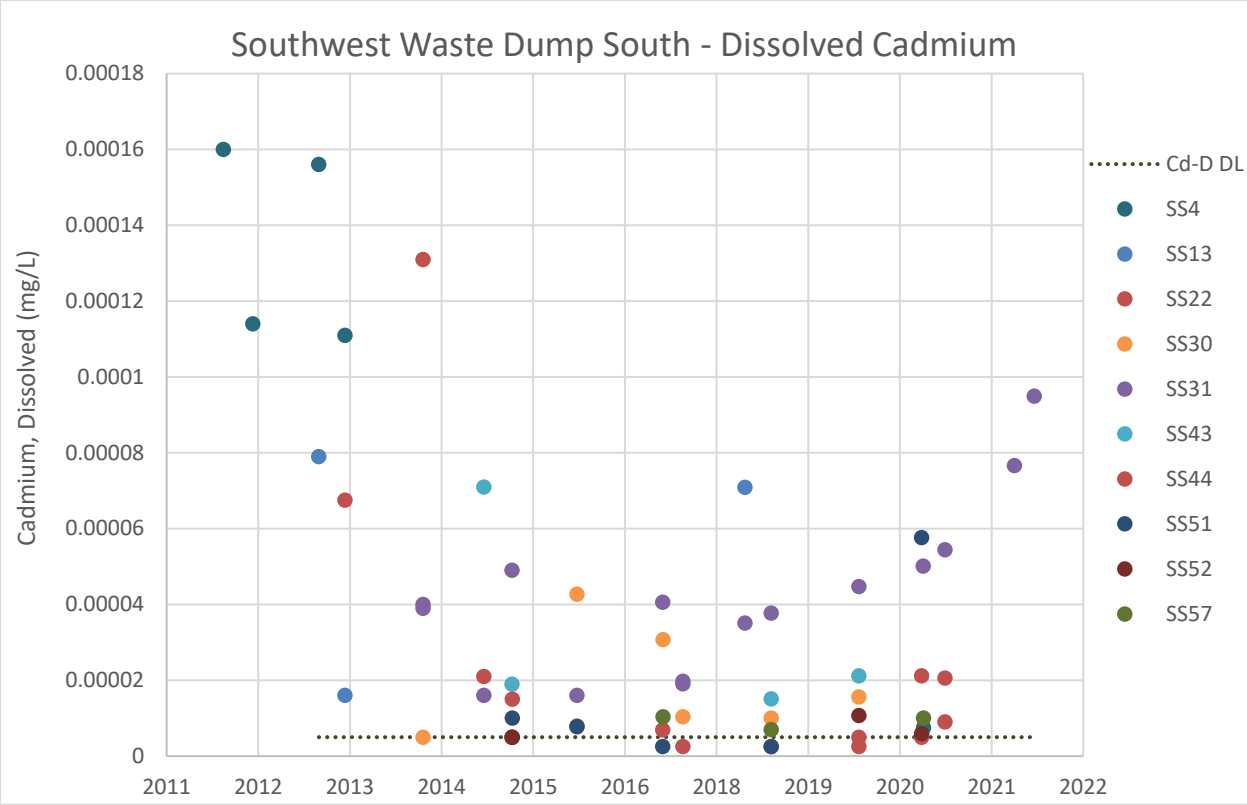

Figure 7-10: Southwest Waste Dump South Dissolved Cadmium, Outliers Removed

DL is Analytical Detection Limit

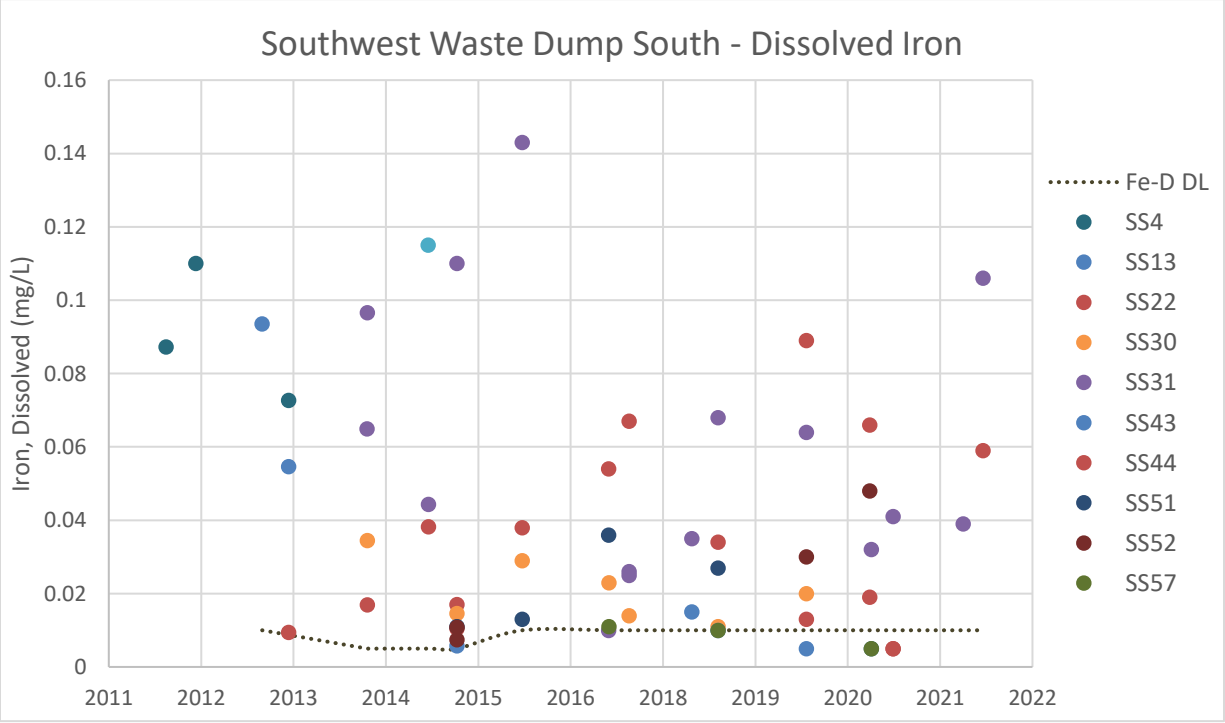

Figure 7-11: Southwest Waste Dump South Dissolved Iron, Outliers Removed

DL is Analytical Detection Limit

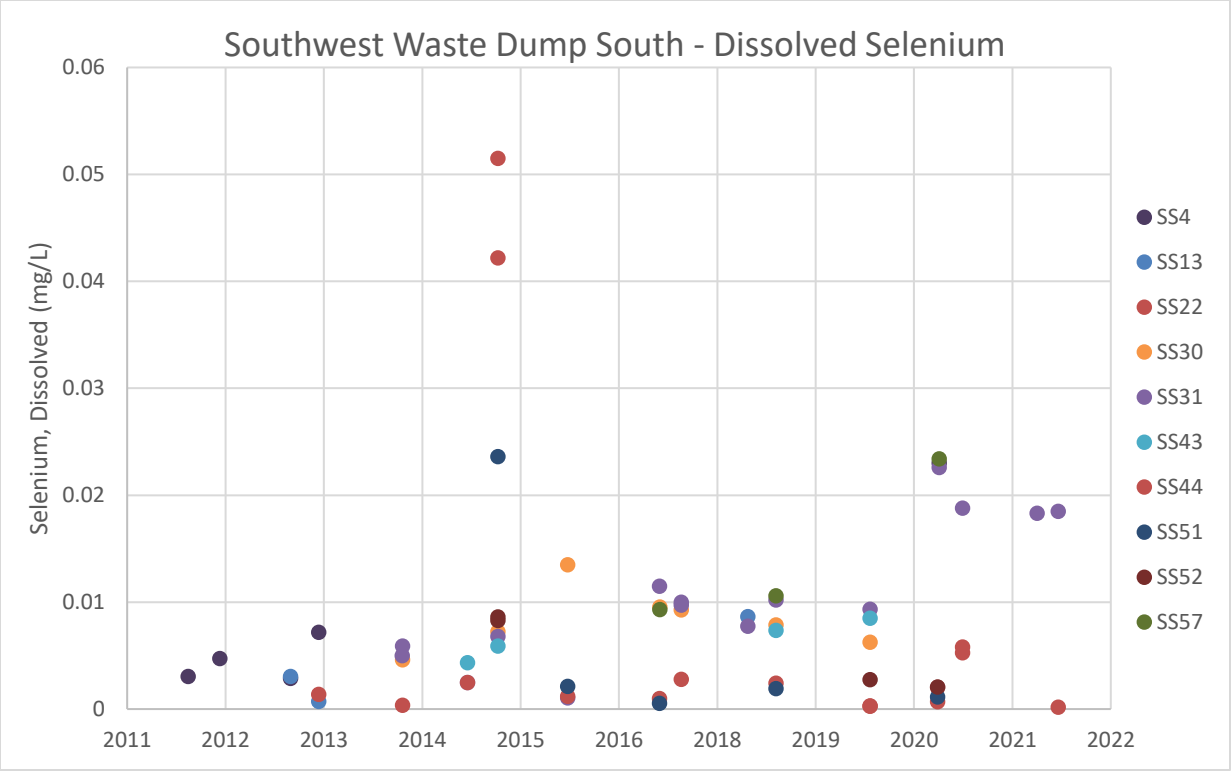

Figure 7-12: Southwest Waste Dump South Dissolved Selenium

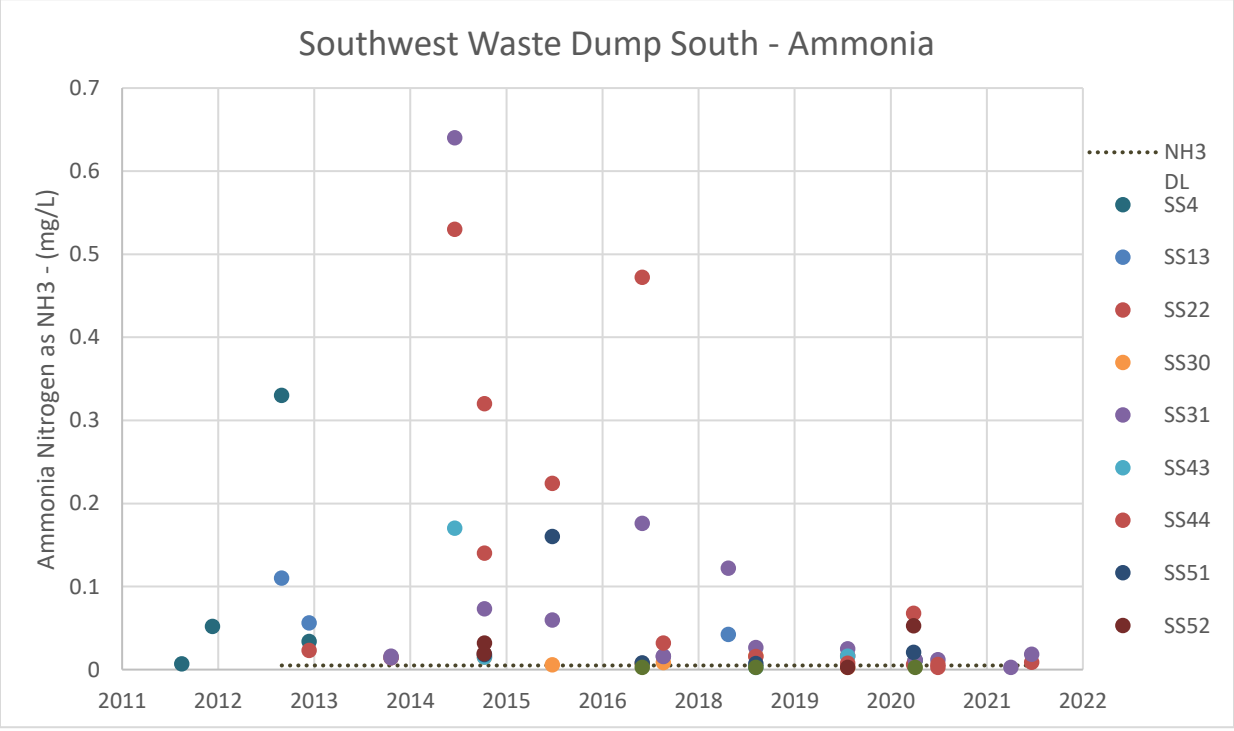

Figure 7-13: Southwest Waste Dump South Ammonia

DL is Analytical Detection Limit

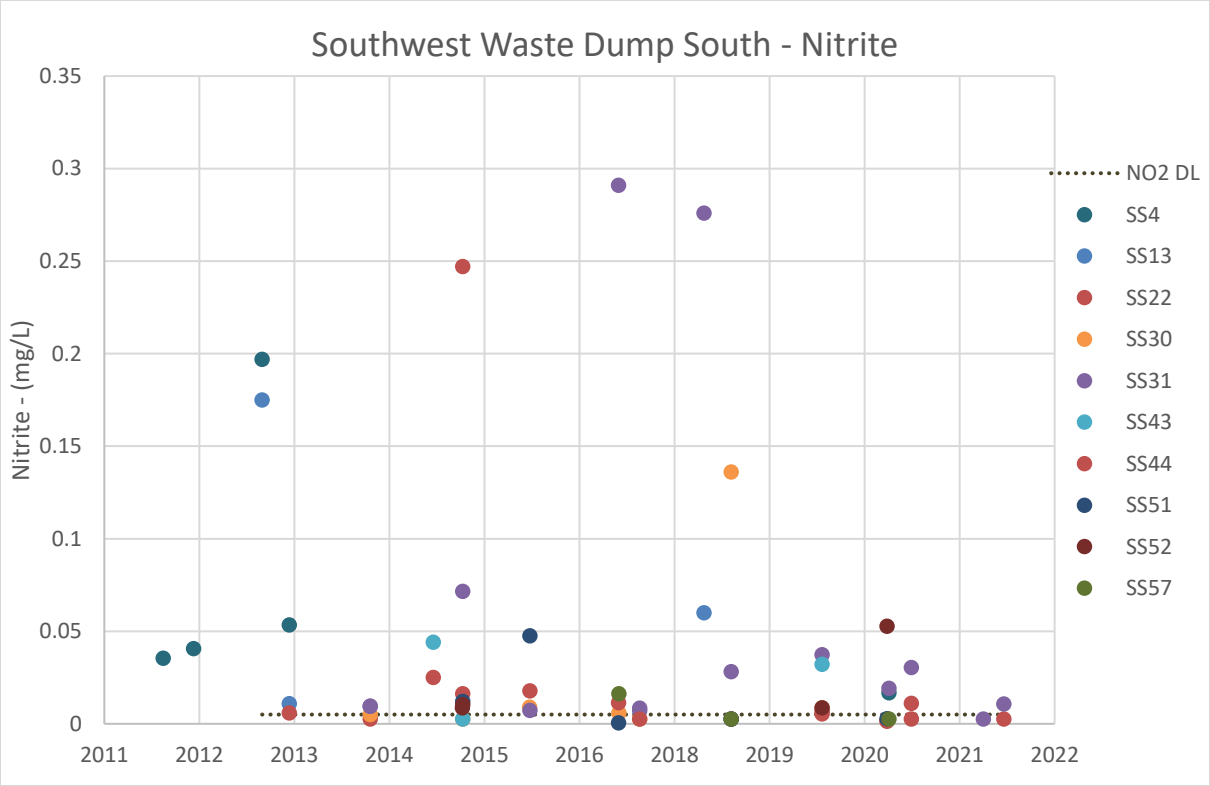

Figure 7-14: Southwest Waste Dump South Nitrite, Outliers Removed

DL is Analytical Detection Limit

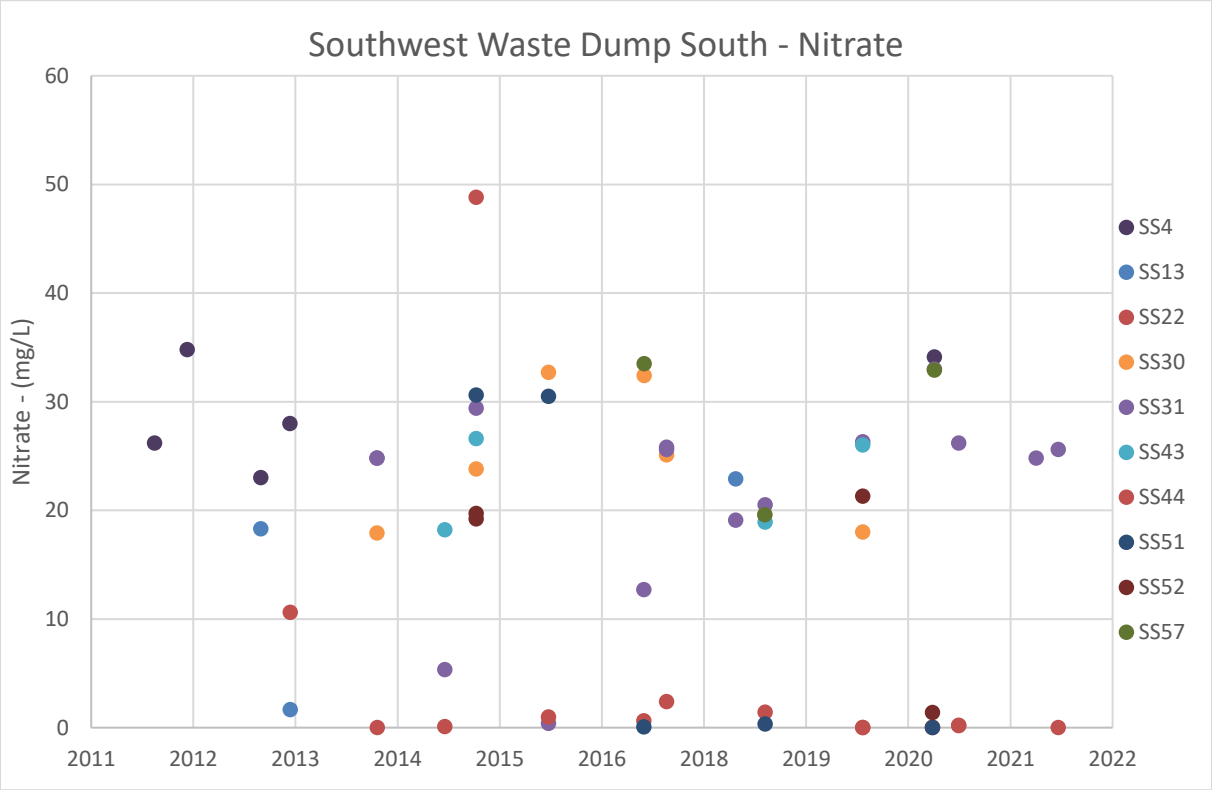

Figure 7-15: Southwest Waste Dump South Nitrate, Outliers Removed

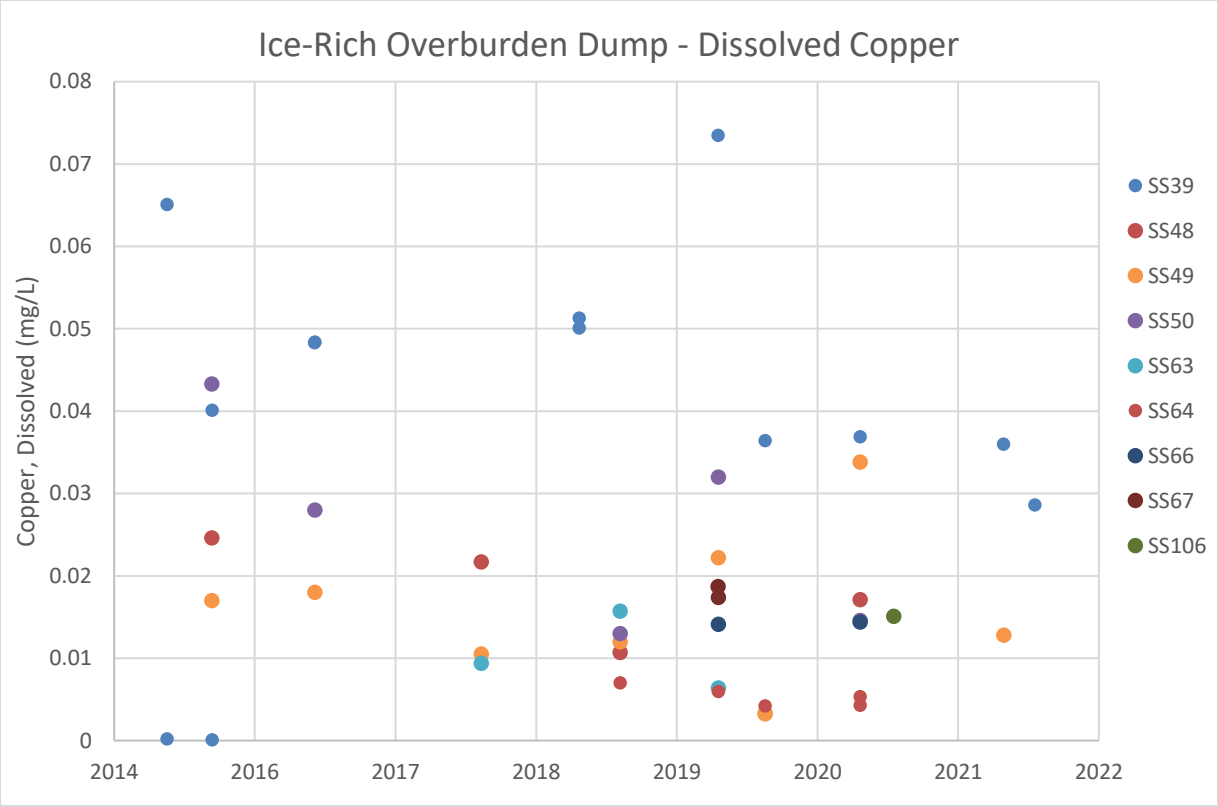

Figure 7-16: Ice-Rich Overburden Dump Dissolved Copper

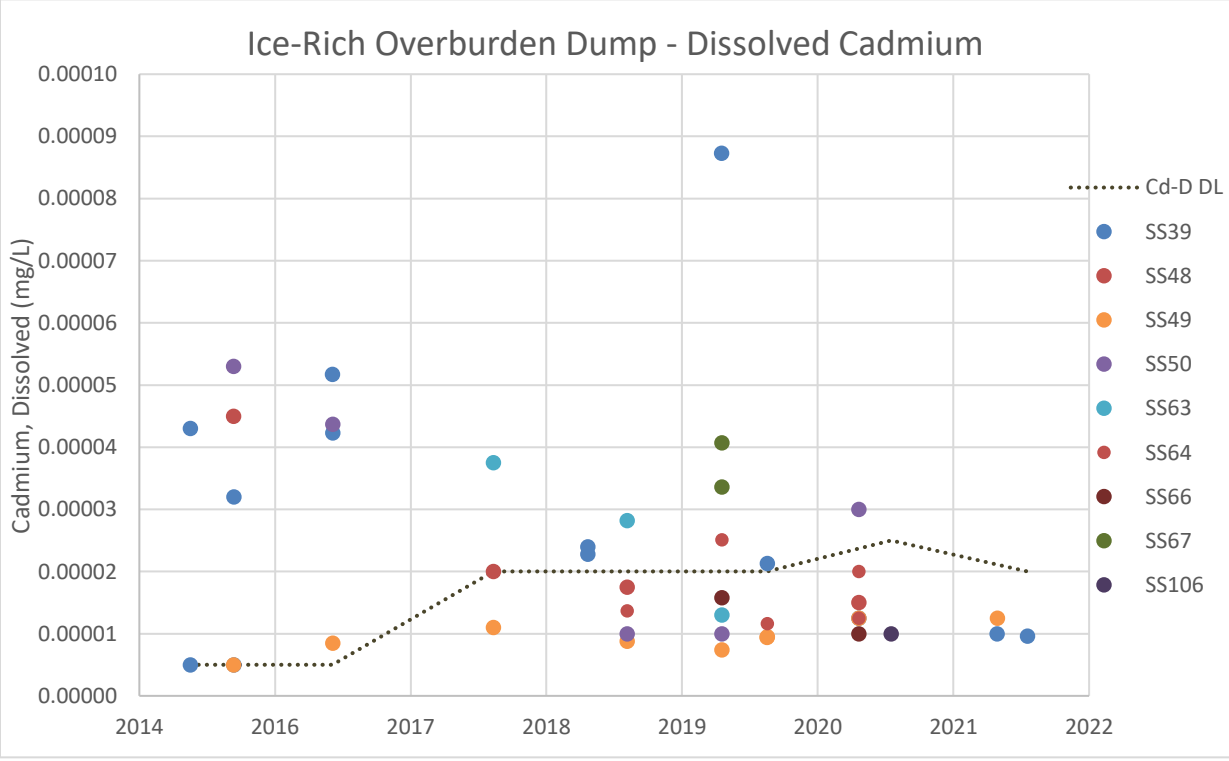

Figure 7-17: Ice-Rich Overburden Dump Dissolved Cadmium

DL is Analytical Detection Limit

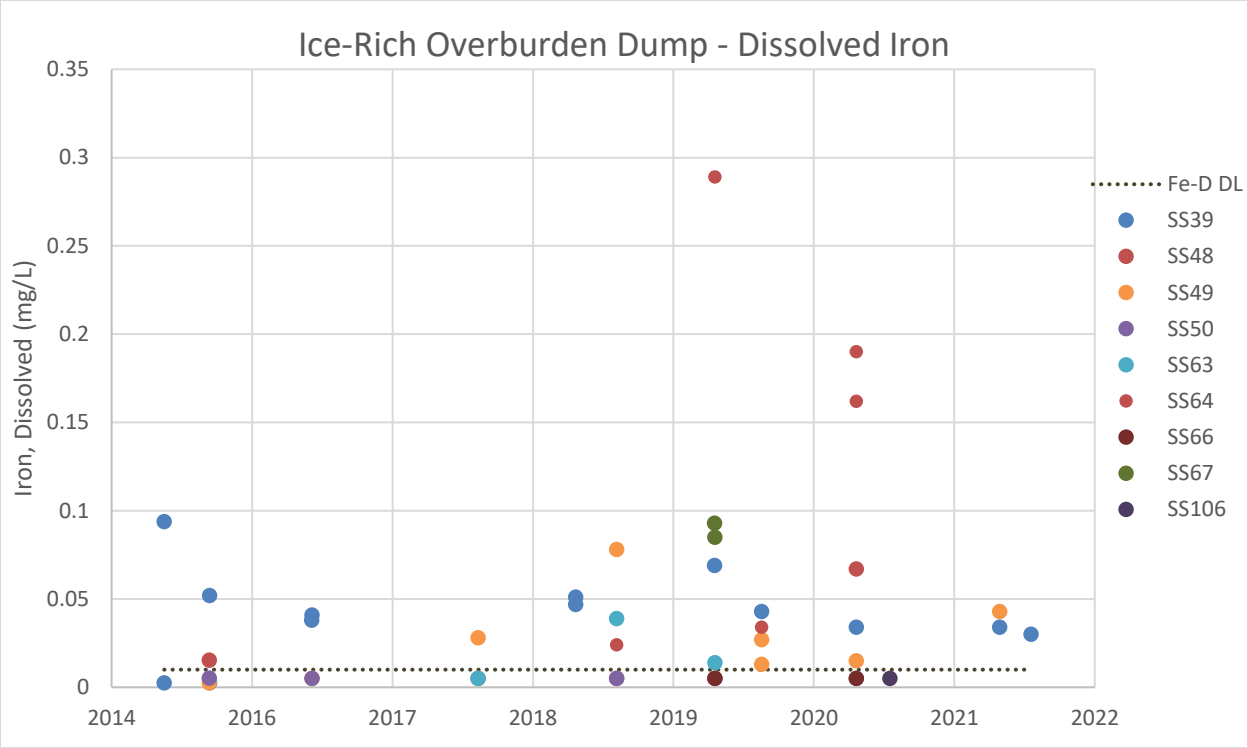

Figure 7-18: Ice-Rich Overburden Dump Dissolved Iron

DL is Analytical Detection Limit

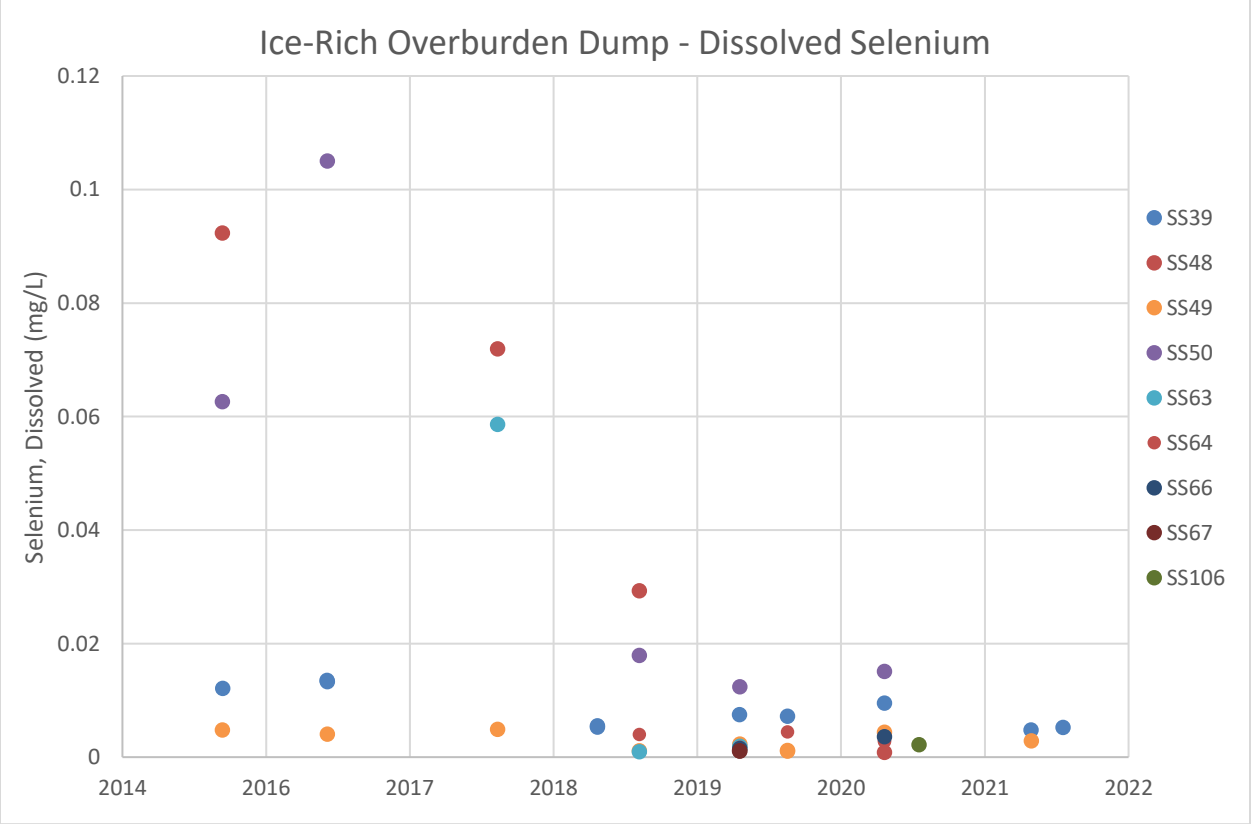

Figure 7-19: Ice-Rich Overburden Dump Dissolved Selenium

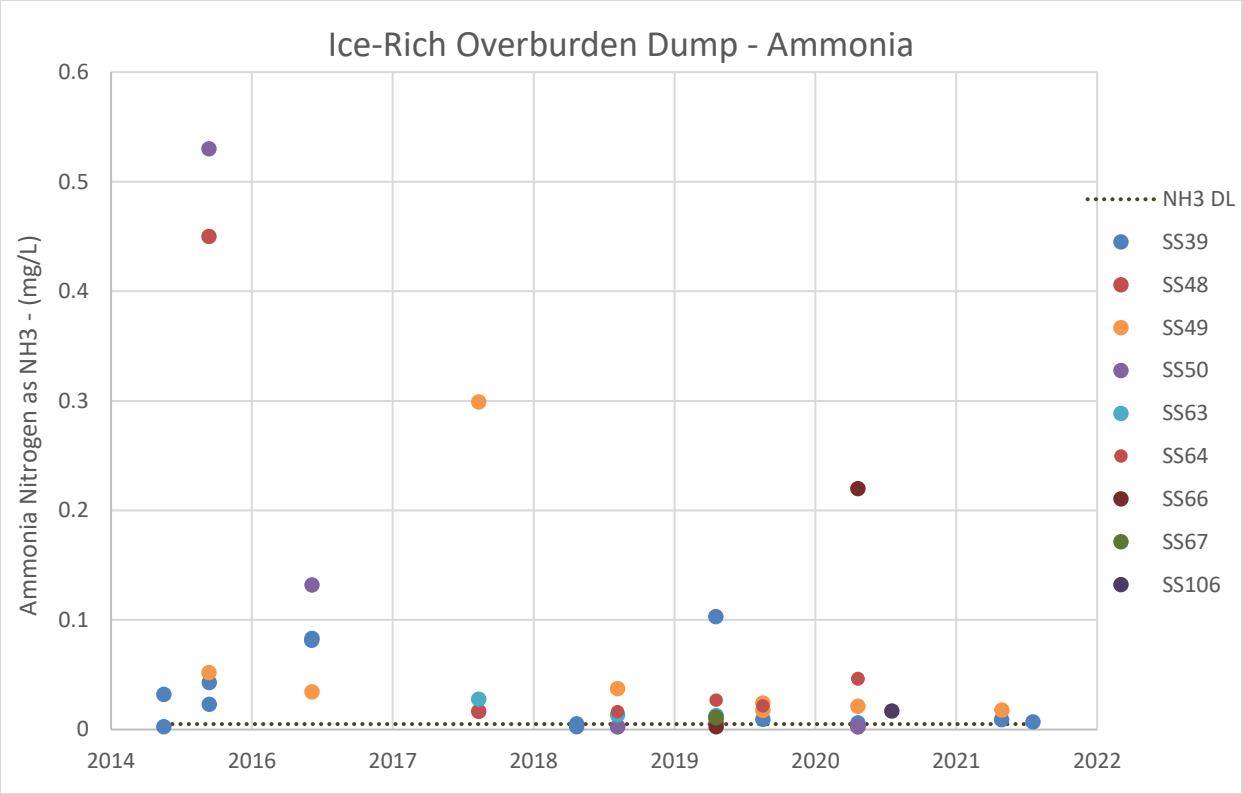

Figure 7-20: Ice-Rich Overburden Dump Dissolved Ammonia

DL is Analytical Detection Limit

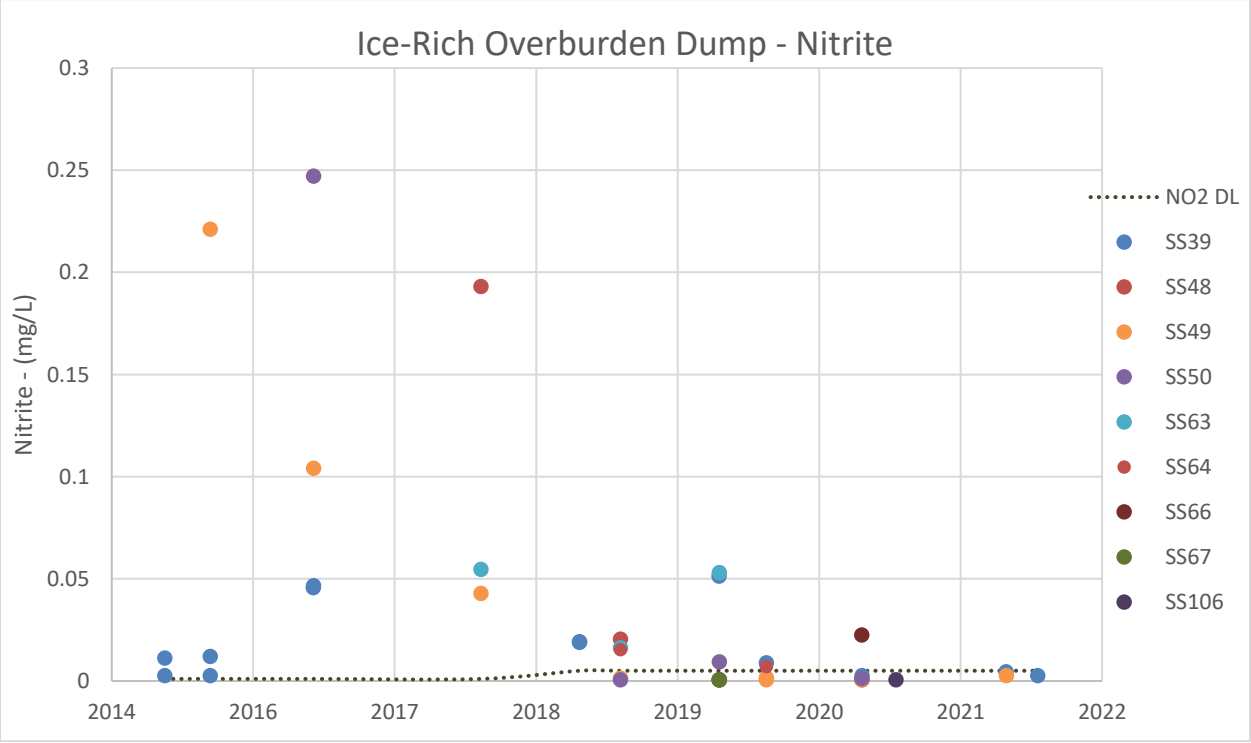

Figure 7-21: Ice-Rich Overburden Dump Dissolved Nitrite, Outliers Removed

DL is Analytical Detection Limit

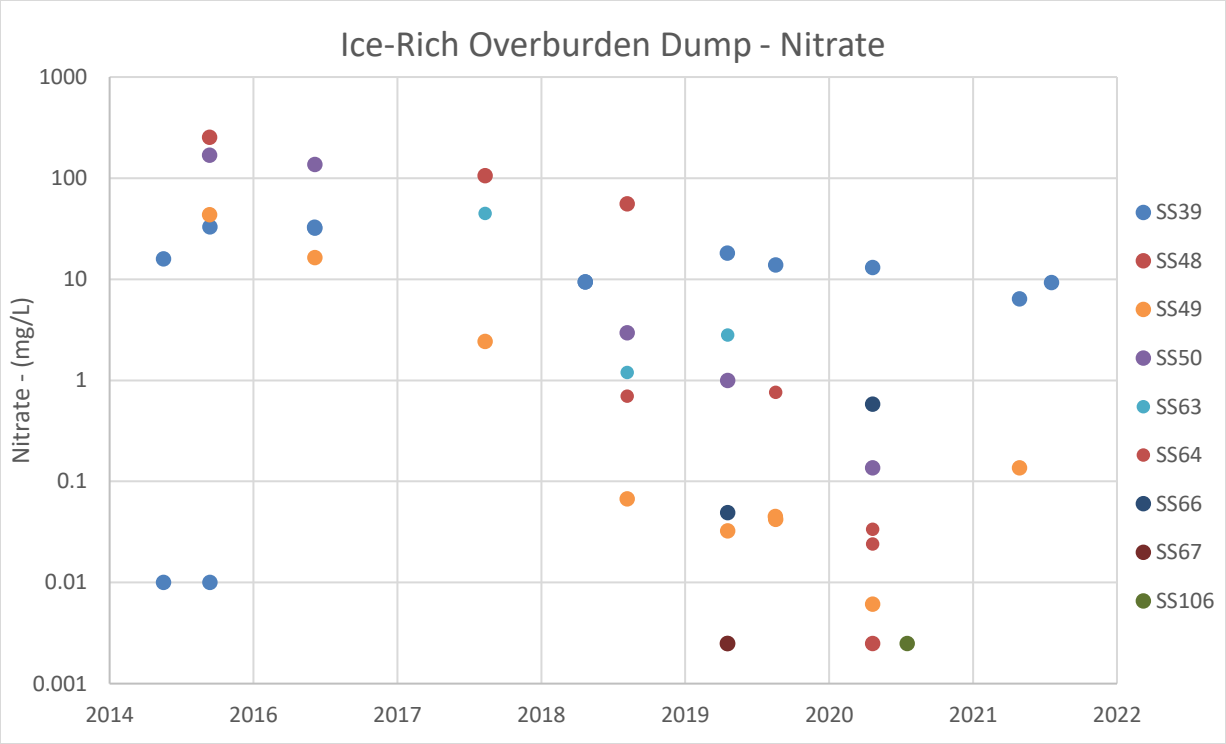

Figure 7-22: Ice-Rich Overburden Dump Dissolved Nitrate

7.2 Reclamation Overburden Dump (ROD)

All sites along the ROD were observed to be dry during the 2014, 2015, 2016 and 2017 surveys. The survey for the ROD was proposed to be canceled and therefore, in 2018 and 2019 the ROD was not surveyed.

The ROD was surveyed in the fall of 2020 to confirm the absence of seeps. No seeps were discovered, and this area will not be surveyed until further reclamation work is completed.

7.3 Main Waste Dump

No recurring seeps in the Main Waste Dump (MWD) area were observed during the 2021 seepage surveys. Only two seeps have been identified in this area since 2013. The first, SS12, was last recorded flowing in 2015 and the second, SS102, was sampled twice during September 2018 and once in September 2019. Due to the limited dataset, and the lack of any new seeps, historical data for the MWD will not be presented in this report. Minto staff will continue to monitor the area for seepage in future surveys.

7.4 Main Pit and SAT Dump

The Main Pit and SAT Dump contained no seepage sites in 2021. SS107, discovered in 2020 was confirmed dry in 2021. As there is no historic data to compare, results for SS107 and SS109 are displayed in Table 7-1, below.

Table 7-1: Main Pit and SAT Dump Seeps, 2020

Station	SS107	SS109
Sample Date	12-Jun-20	8-Sep-20
Dissolved Metals (mg/L)		
Cu-D	0.0317	0.185
Cd-D	<0.000025	0.000248
Fe-D	<0.01	<0.01
Se-D	0.0124	0.0564
Nutrients (mg/L)		
N-NH3	0.0598	0.0312
N-NO2	0.413	0.0075
N-NO3	5.27	22.7

7.5 Minto North

Until 2021, only one recurring seep, SS101, had been observed in the Minto North area. In spring 2021 a new seep, SS110 was sampled ~25m N of SS101 along the northern edge of the Minto North haul road. SS110 was dry during the fall survey. Although it was checked frequently, it was only discovered flowing on one occasion in June 2021. The results of these samples are presented with historic water quality results for dissolved copper, dissolved cadmium, dissolved iron, dissolved selenium, and nutrient levels for ammonia, nitrite, and nitrate in Table 7-2 below.

Table 7-2: Minto North Seepage, 2018-2021

Station	SS101				SS110
Sample Date	19-May-18	24-May-19	24-May-19	25-May-20	21-June-21
Dissolved Metals (mg/L)					
Cu-D	0.00962	0.00674	0.00631	0.00883	0.00291
Cd-D	<0.000005	<0.000005	<0.000005	<0.000005	0.00291
Fe-D	0.047	<0.024	0.005	0.017	<0.01
Se-D	0.000103	0.00025	0.000203	0.000157	0.000155
Nutrients (mg/L)					
N-NH3	0.0128	0.0063	0.0064	0.0056	<0.005
N-NO2	0.0085	0.0361	0.0276	0.04	0.0933
N-NO3	0.205	4.08	4.45	1.88	15.9

7.6 Pit Walls

Seepage monitoring could not be conducted at the pit walls of the Main Pit, Area 2 Pit, and Minto North Pit; all pits were unsafe to access during the 2021 surveys due to geotechnical instability.

7.7 Ridgetop Road

A survey was conducted along the bottom toe of the Ridgetop Road, at the top of which is the ore transfer pad where ore is deposited from underground before being transported to the crusher pad. Seeps in this area are monitored to ensure that leachates from the ore are not impacting a neighbouring stream which flows into a downstream collection point where it is directed to the Water Storage Pond if it meets effluent standards. No new seeps were identified in 2021. The nearby WQS W33s was sampled monthly throughout the open-water season. The results for dissolved copper, dissolved cadmium, dissolved iron, dissolved selenium, and nutrient levels for ammonia, nitrite, and nitrate are displayed in Figure 7-23 through Figure 7-29.

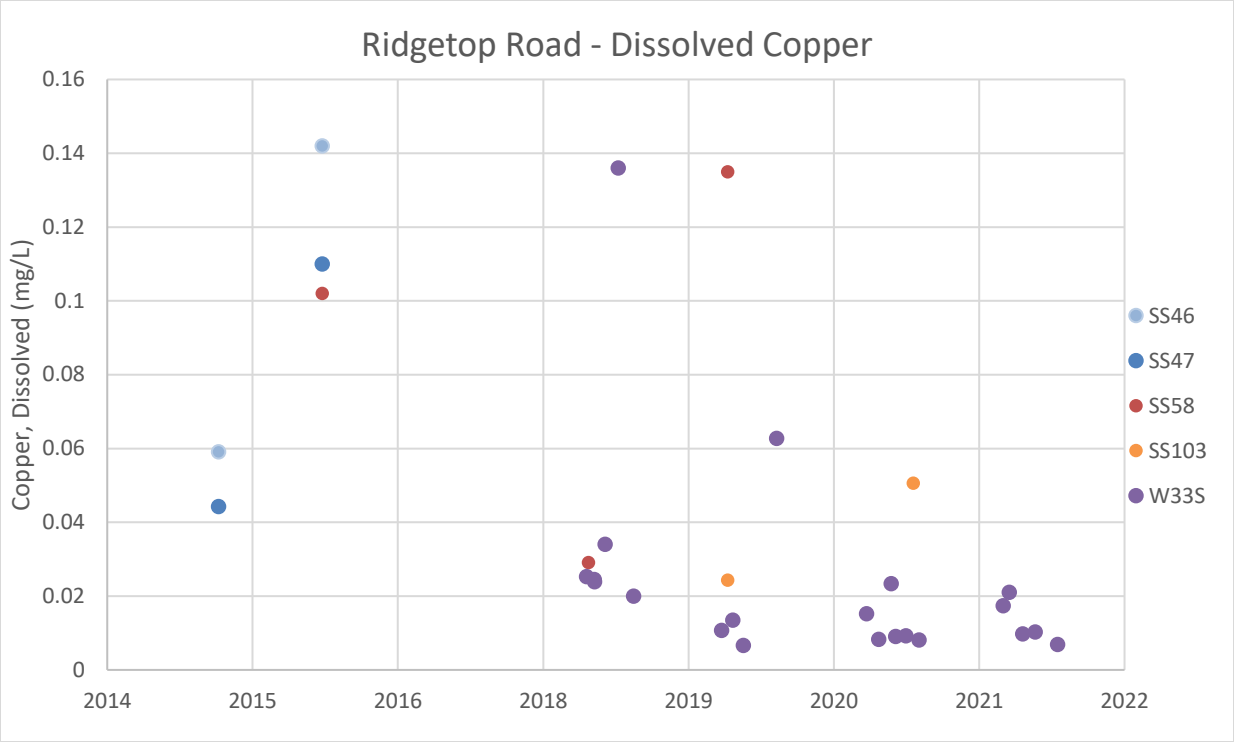

Figure 7-23: Ridgetop Road Sites - Dissolved Copper

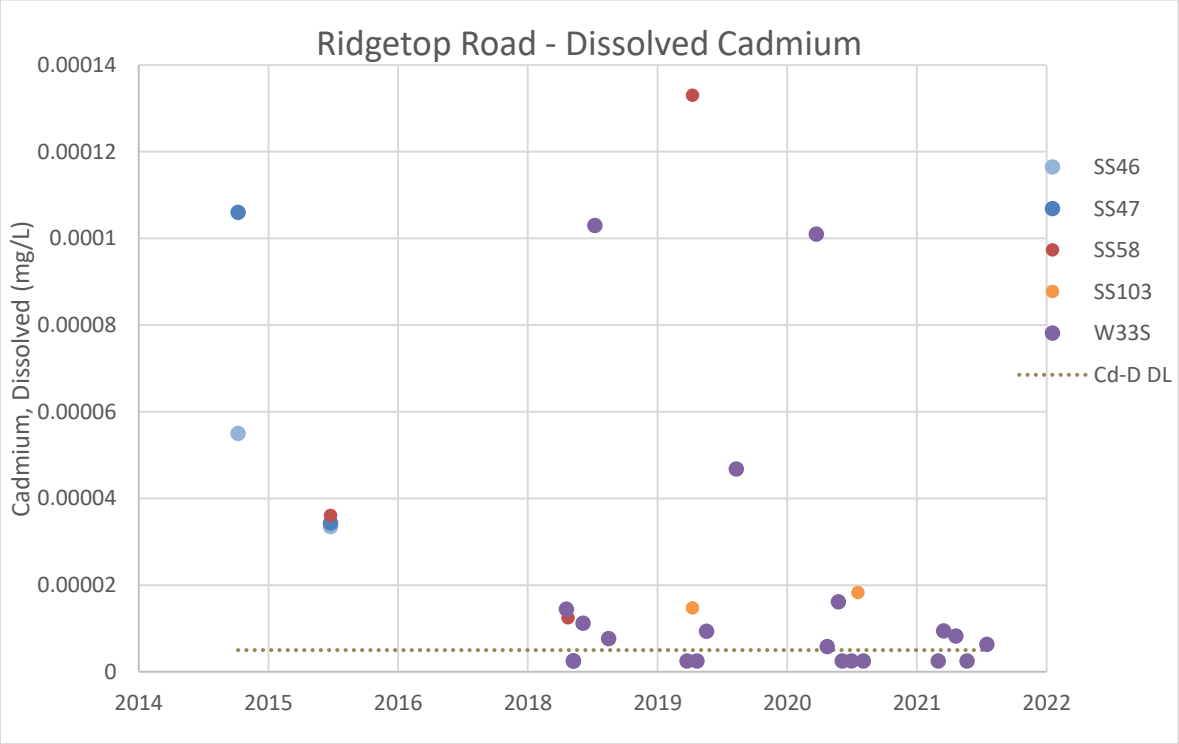

Figure 7-24: Ridgetop Road Sites - Dissolved Cadmium

DL is Analytical Detection Limit

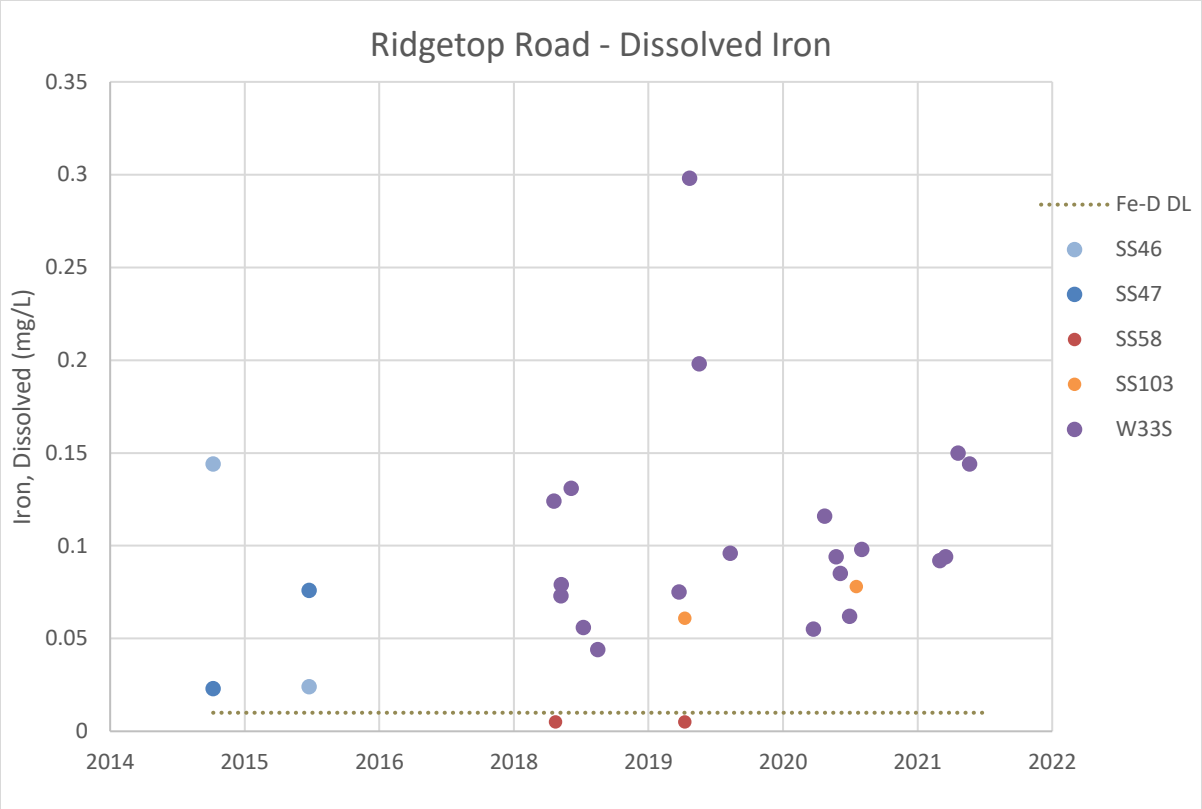

Figure 7-25: Ridgetop Road Sites - Dissolved Iron, Outliers Removed

DL is Analytical Detection Limit

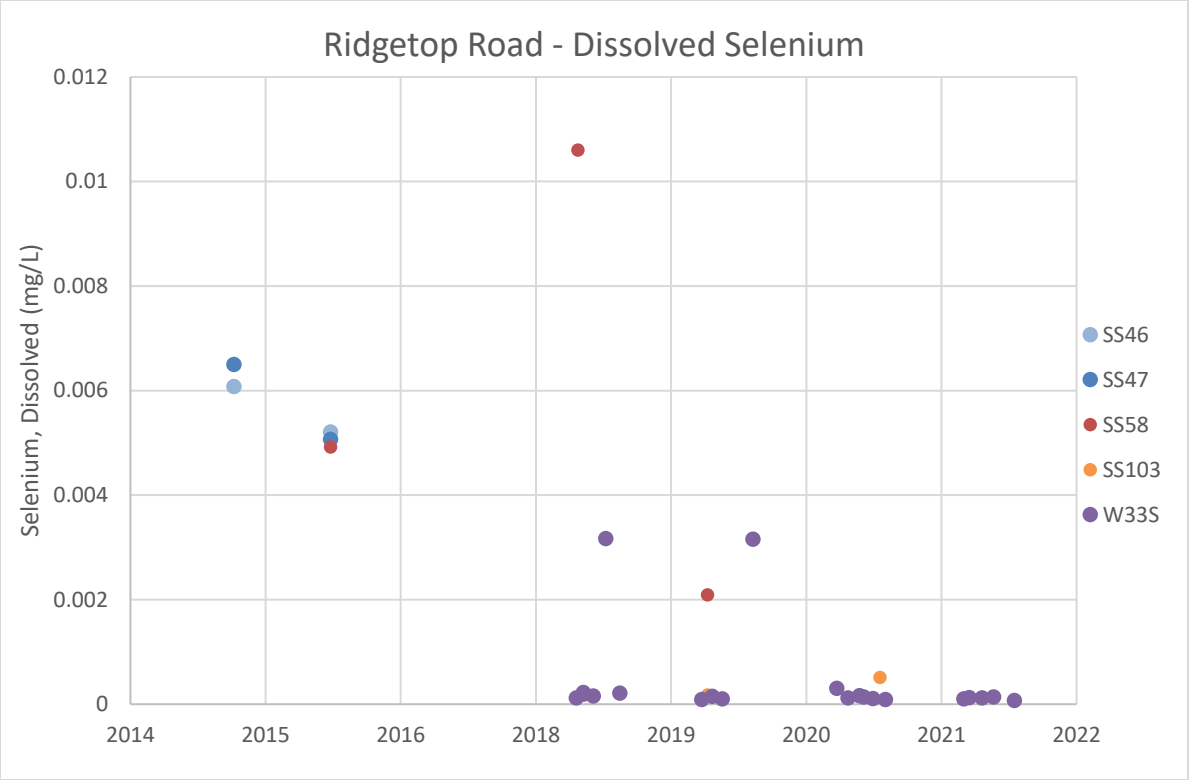

Figure 7-26: Ridgetop Road Sites - Dissolved Selenium

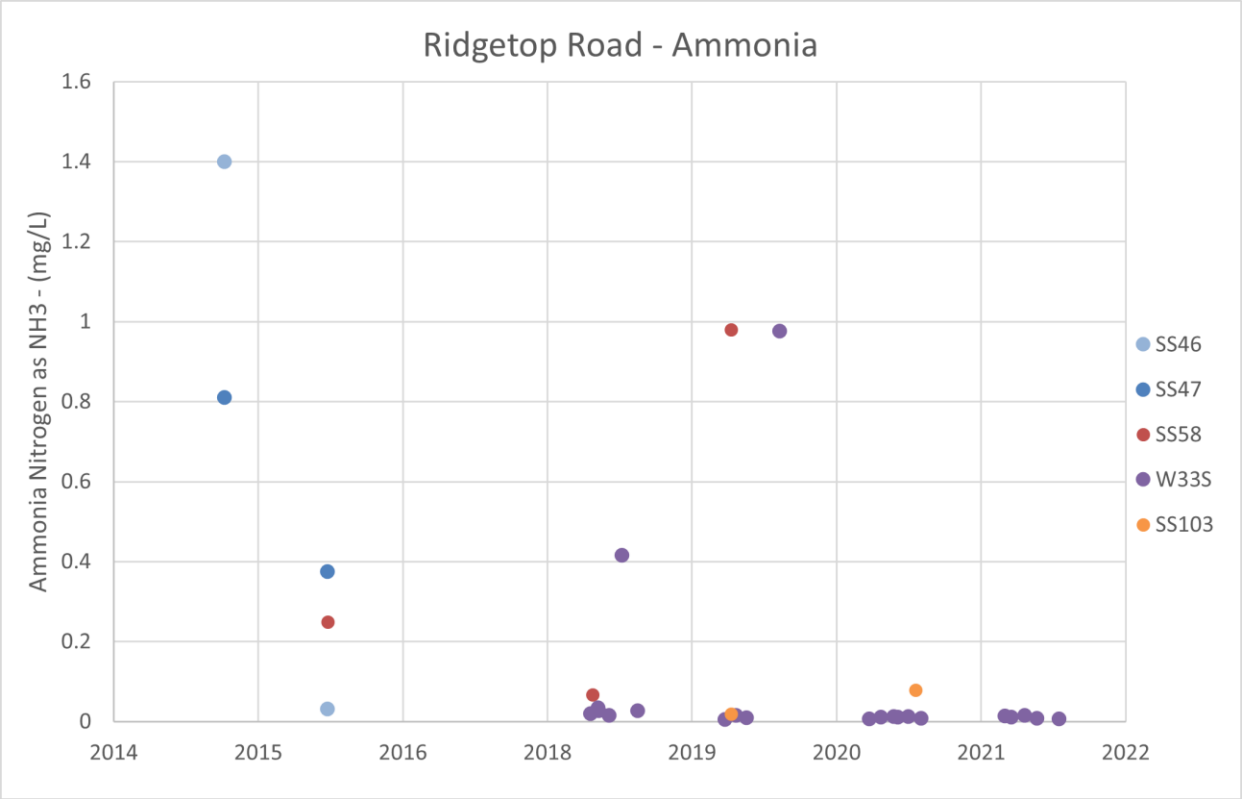

Figure 7-27: Ridgetop Road Sites – Ammonia

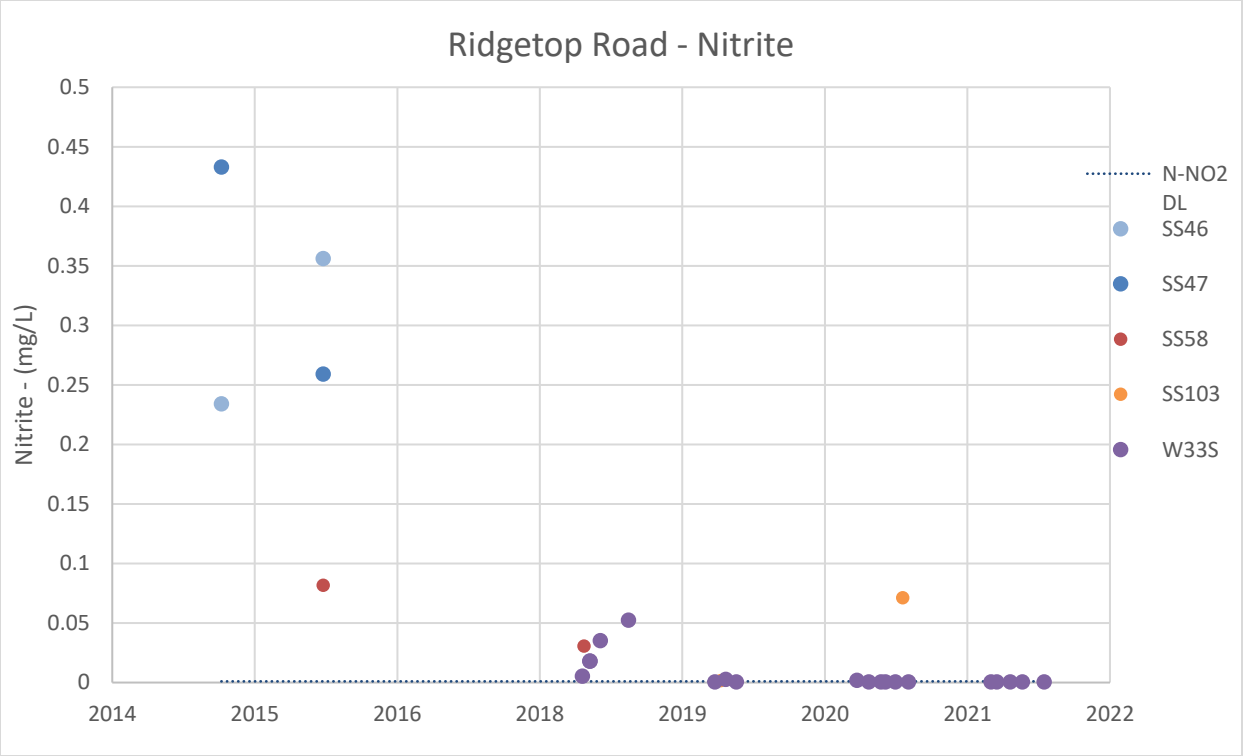

Figure 7-28: Ridgetop Road Site - Nitrite

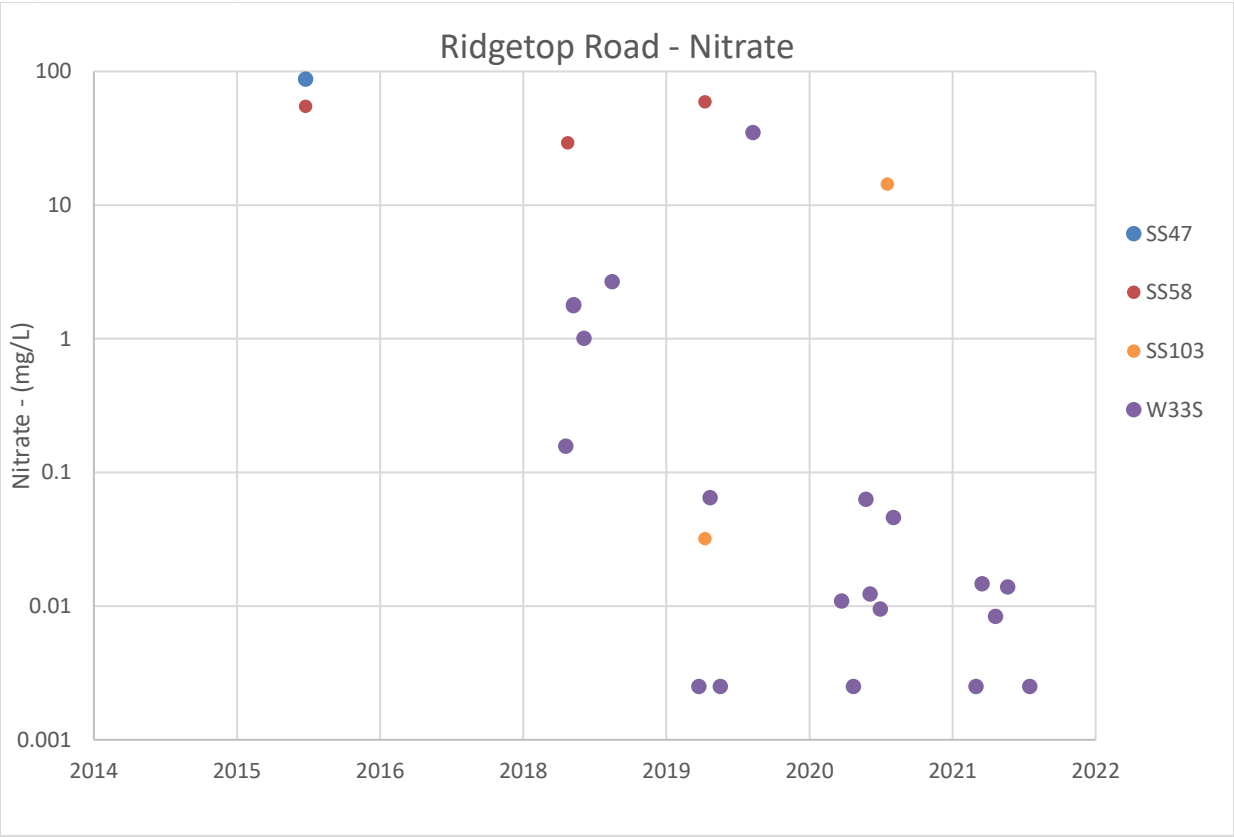

Figure 7-29: Ridgetop Road Sites – Nitrate, Outliers Removed

7.8 Ore Stockpiles

Surface seepage runs along the toe of the west ore stockpile and into the ditch parallel to the heavy vehicle road. All seeps in this area drain into the west ore stockpile sump and are pumped to the Main pit. No seeps were identified in 2021. Ore stockpiles will continue to be monitored for seeps in 2022.

7.9 Dry Stack Tailings Storage Facility (DSTSF)

No seeps were identified on the DSTF during the 2021 survey. Areas where standing water was encountered were determined to not be seeps and likely surface runoff. The DSTF will continued to be monitored for seeps in 2022.

7.10 Mill Valley Fill

7.10.1 Mill Valley Fill Water Quality Monitoring Stations

The first phase of the Mill Valley Fill (MVF) was completed in 2012 and vertical culverts were installed at both W8 and W8A to enable water quality monitoring at these locations. Obtaining water samples at W8 has been sporadic since the installation of the vertical culvert. The last time this station produced water was in late 2013. The second phase of the Mill Valley Fill Extension (MVFE) was completed in early 2016. Additional extensions were added to the vertical culverts of W8 and W8A to preserve the sampling stations. In fall 2017, W8 culvert was covered during reclamation operations and could no longer be accessed. W8A samples were collected until March 2019 and has since been dry ever since.

The Mill Valley Fill Extension Stage 2 (MVFE2) collection sump (W62) was constructed during the period of November 9, 2015, to February 7, 2016, as a replacement for the Minto Creek Detention Structure (W37) used prior to 2016. W37 was decommissioned and buried in February 2016 as part of the MVFE2 construction. W62 is approximately 30m downslope from W37 and collects runoff and seepage from the Dry Stack Tailing Storage Facility and the Mill Valley Fill. W62 is collected on a monthly frequency as part of the WUL. Water collected at W62 is pumped to the Main Pit.

Water quality results for W8, W8A, W37 and W62 are outlined in Figure 7-30 through Figure 7-46 and include results for dissolved copper, dissolved cadmium, dissolved

iron, dissolved selenium, and nutrient levels for ammonia, nitrite, and nitrate. For comparison, results for W62 are presented with the obsolete sites and separately, for trend analysis, as it is the final collection point for MVF seepage and run-off. In general, analyte concentration shows a decreasing trend; concentrations were highest during and after construction of the MVF and gradually decrease over time. Concentrations at W62 are much lower but do show a gradual increasing trend of cadmium, selenium, nitrate and iron, and a decreasing of copper, ammonia, and nitrite.

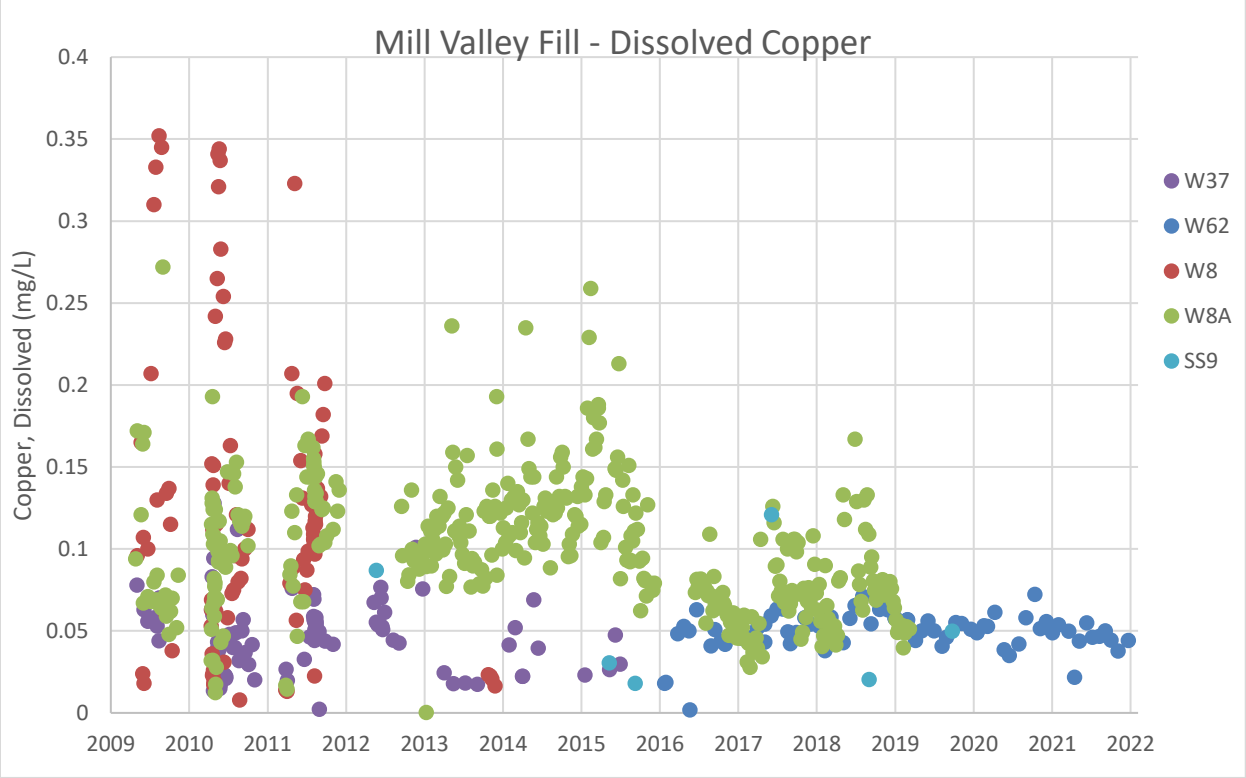

Figure 7-30: Mill Valley Fill WQS Dissolved Copper

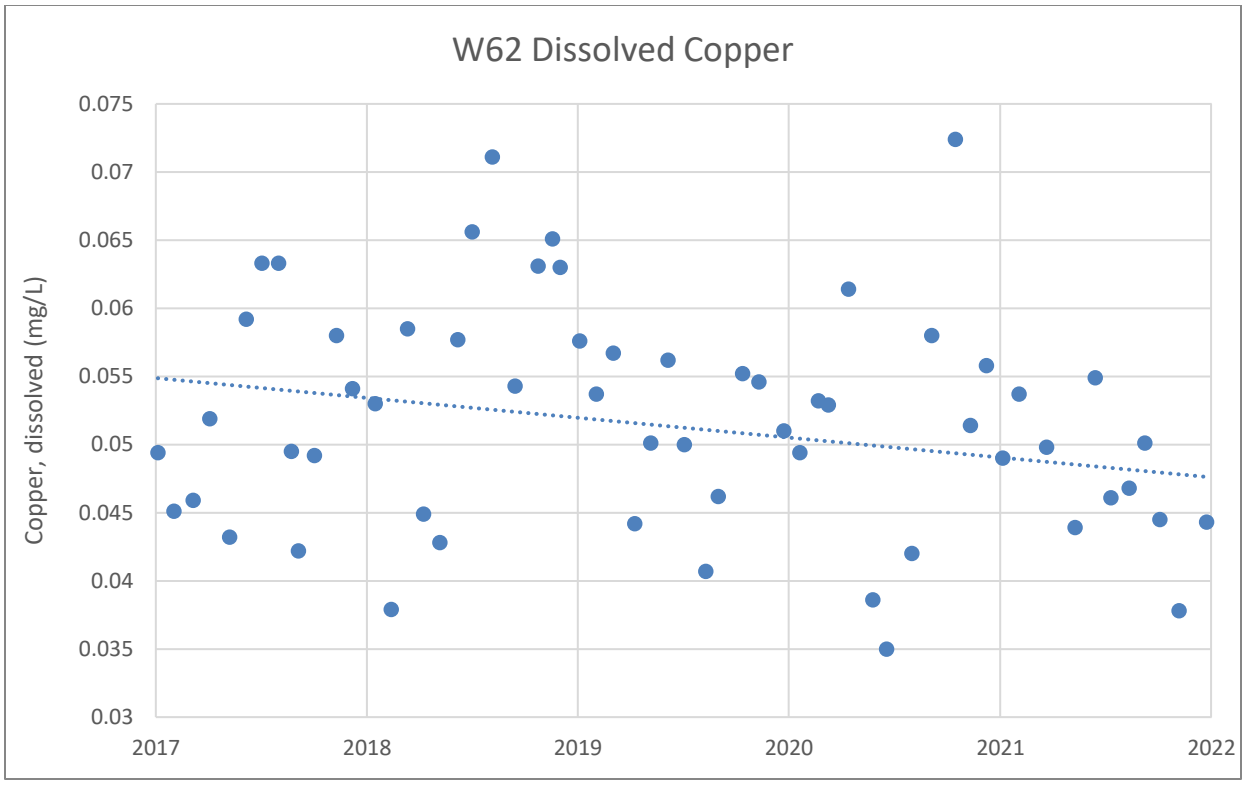

Figure 7-31: W62 Dissolved Copper

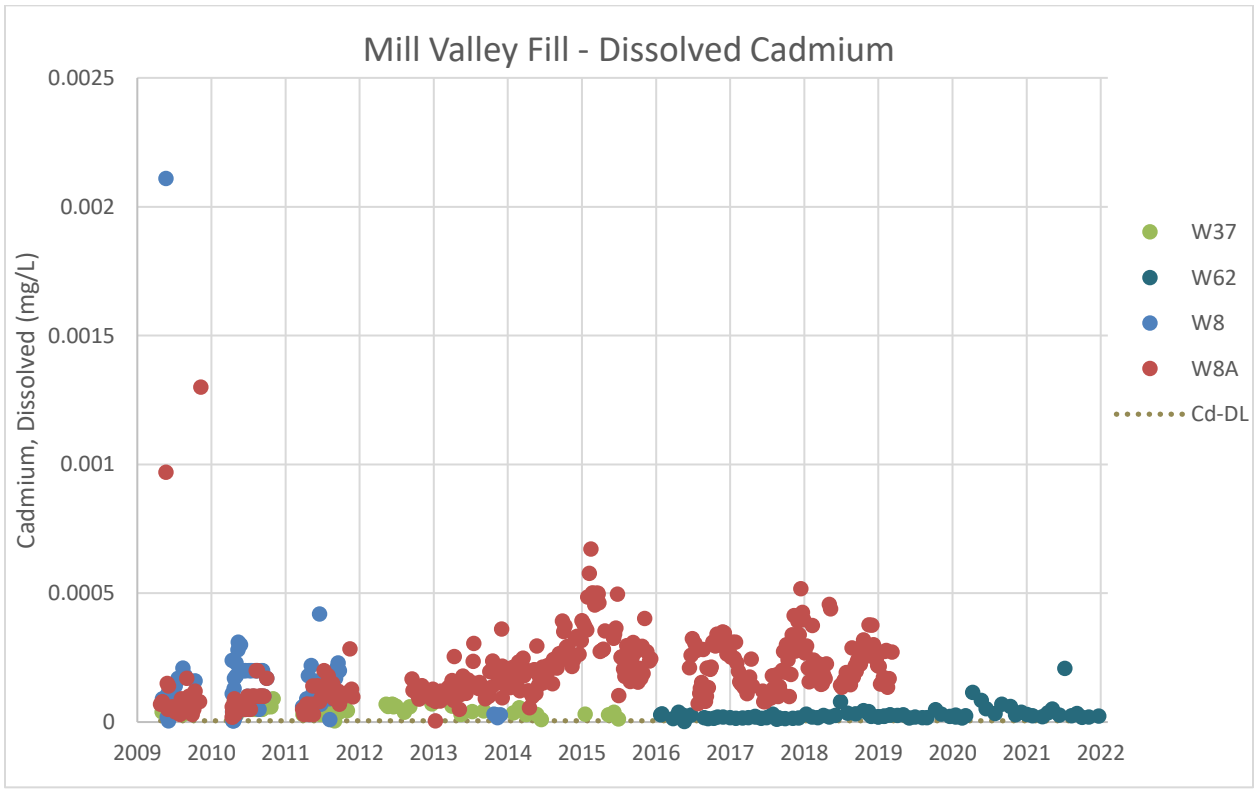

Figure 7-32: Mill Valley Fill WQS Dissolved Cadmium

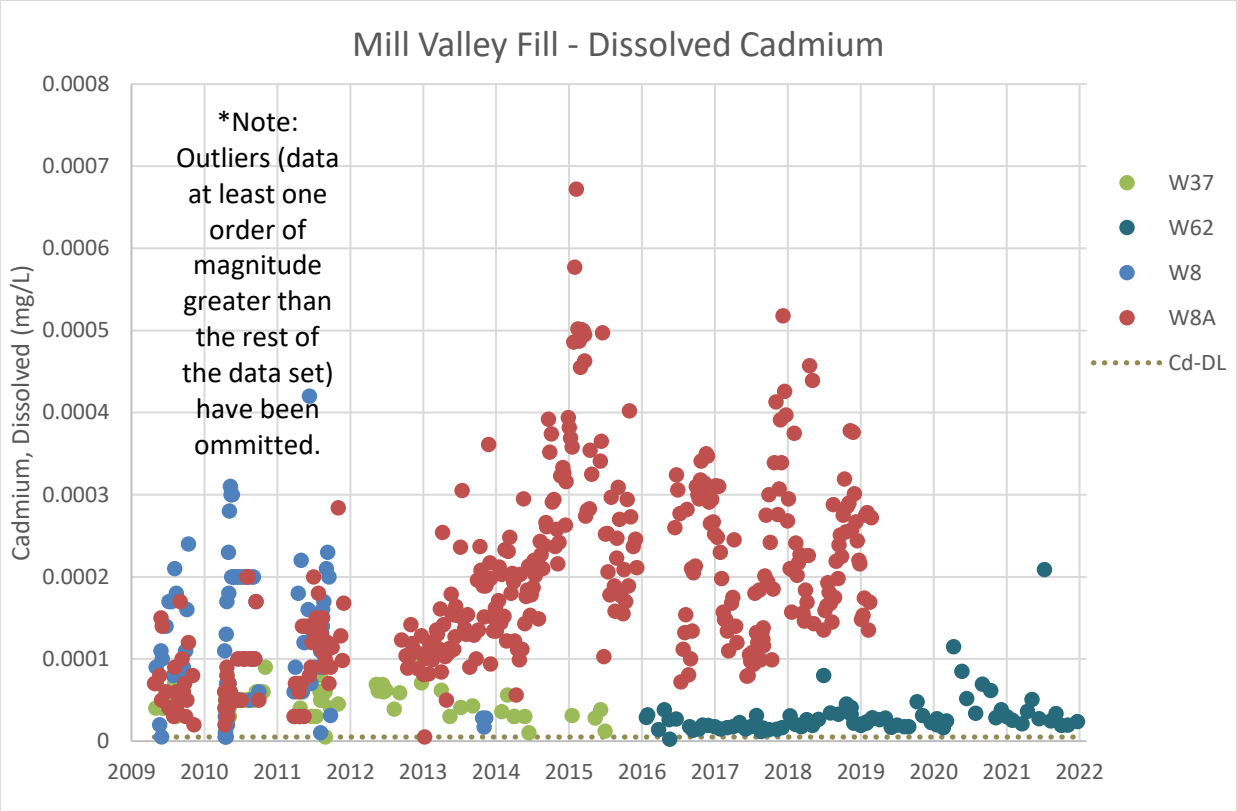

Figure 7-33: Mill Valley Fill WQS Dissolved Cadmium (Outliers Removed)

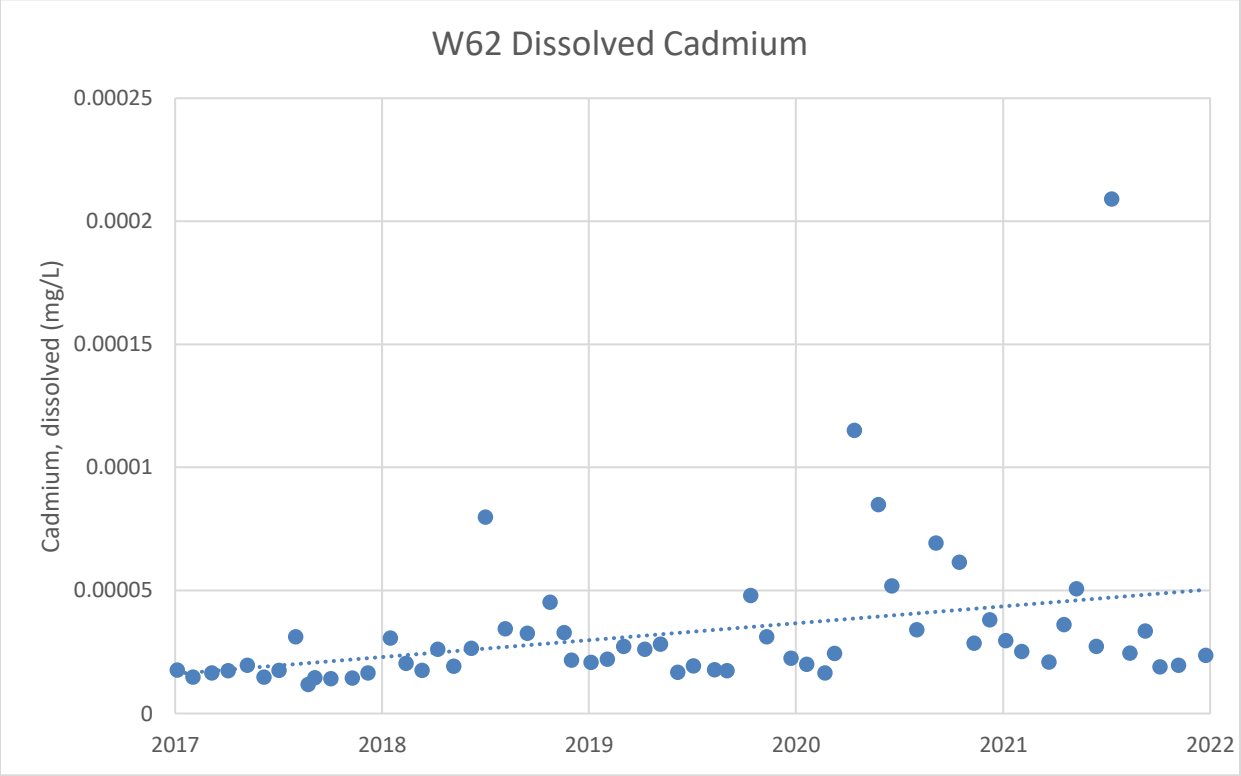

Figure 7-34: W62 Dissolved Cadmium

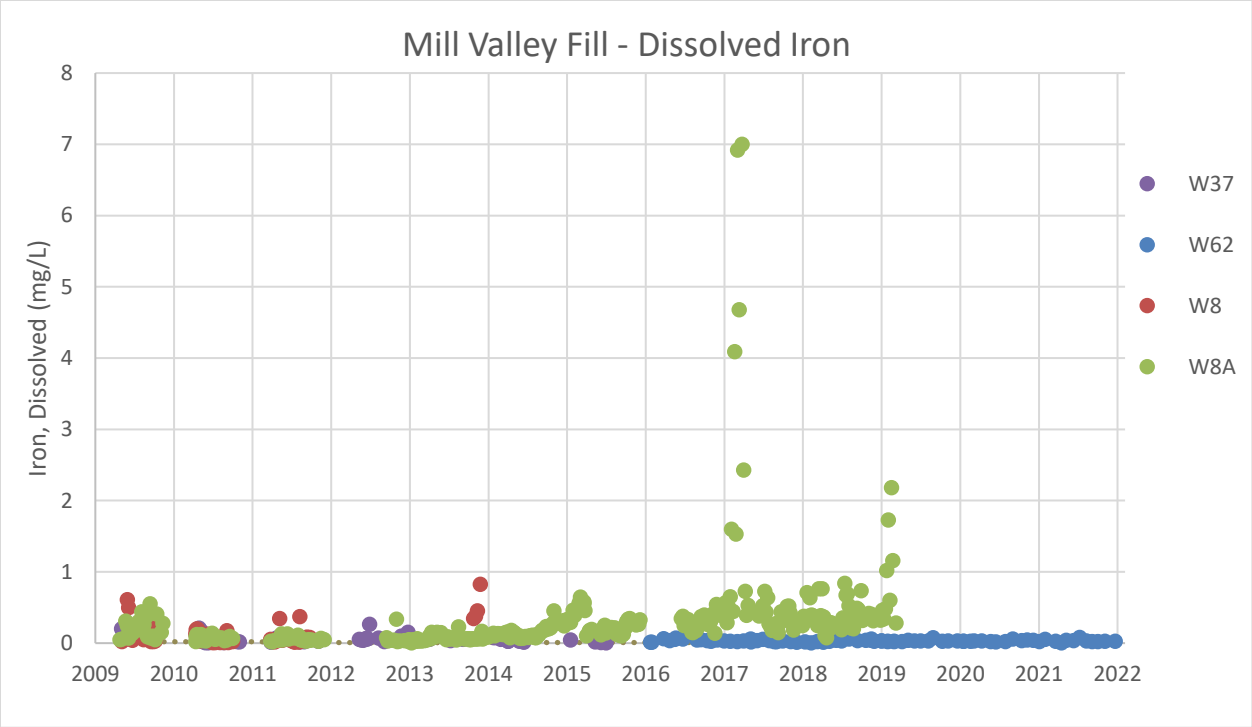

Figure 7-35: Mill Valley Fill WQS Dissolved Iron

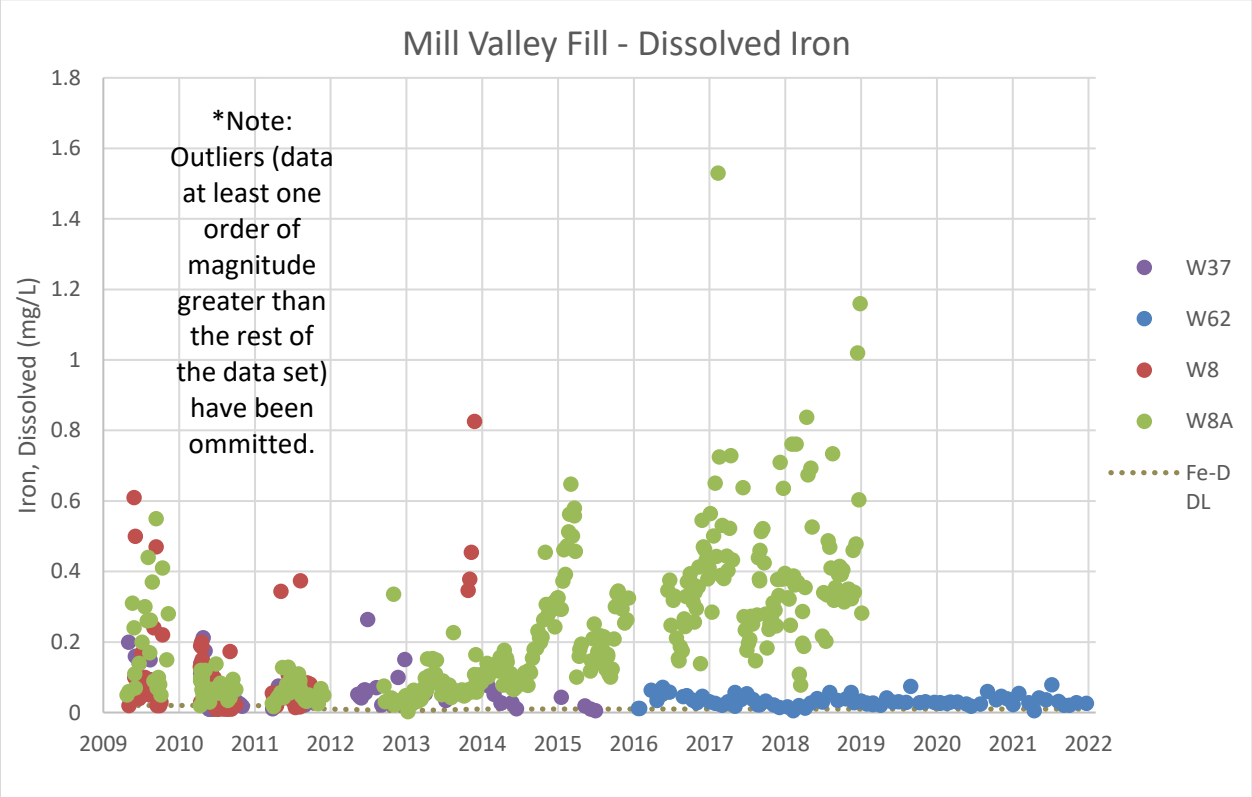

Figure 7-36: Mill Valley Fill WQS Dissolved Iron (Outliers Removed)

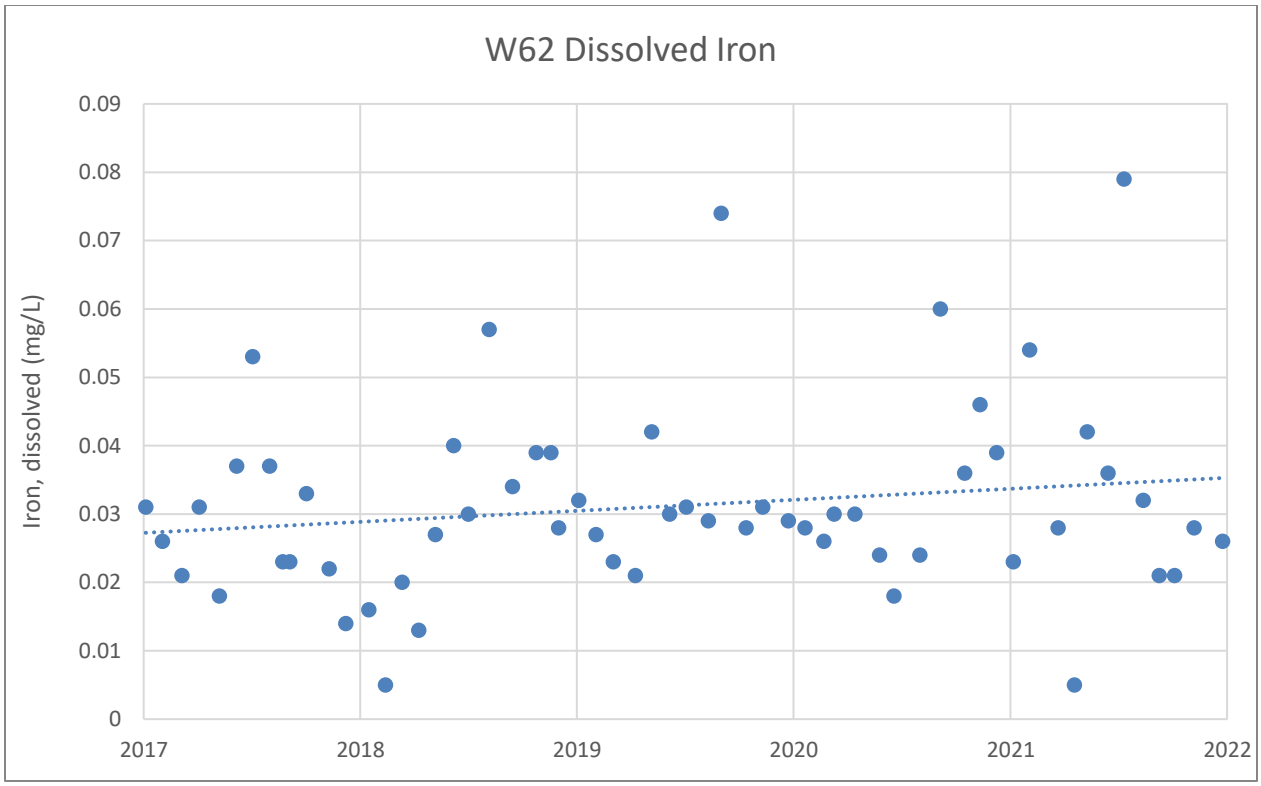

Figure 7-37: W62 Dissolved Iron

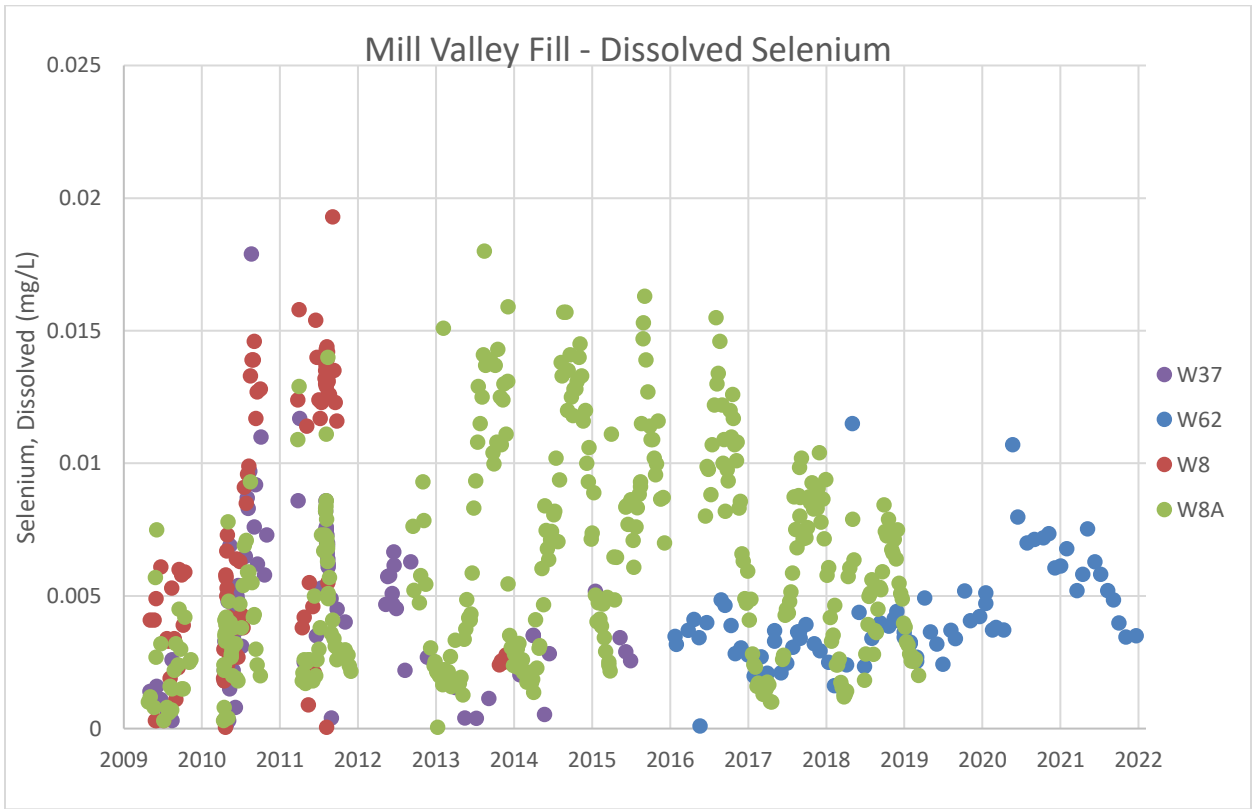

Figure 7-38: Mill Valley Fill WQS Dissolved Selenium

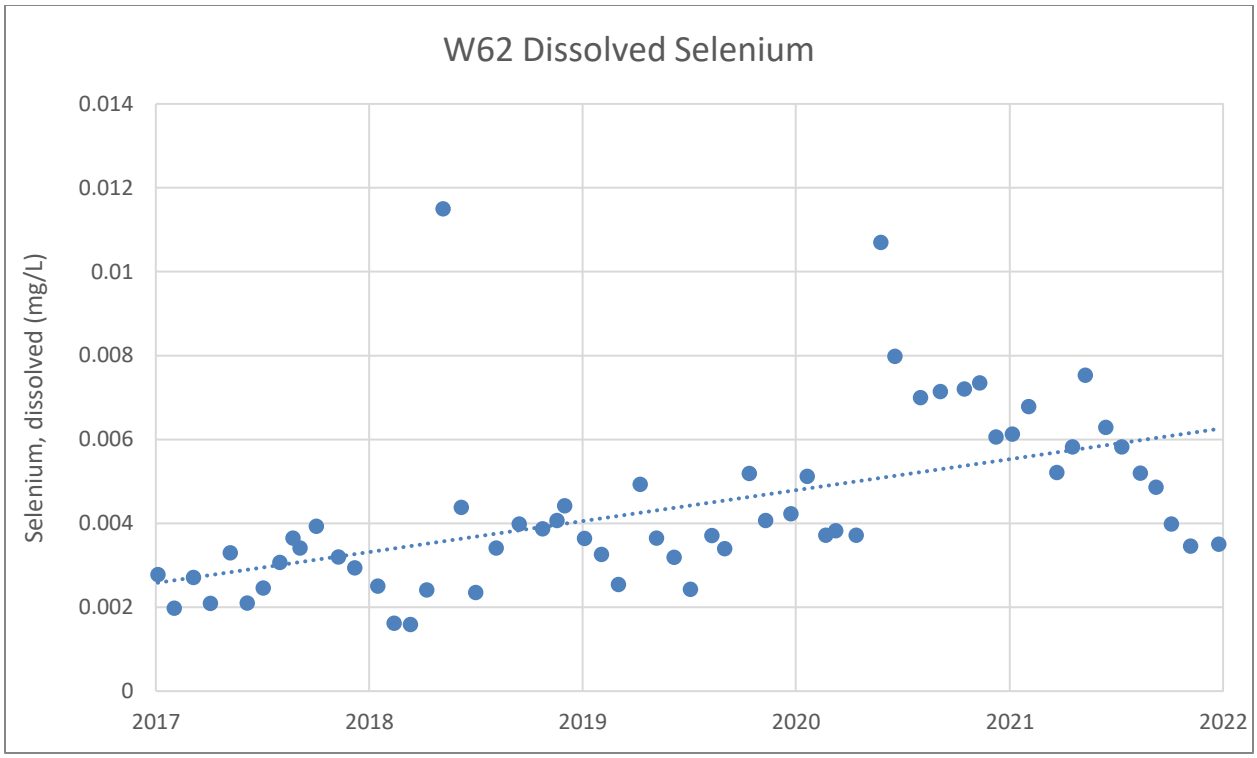

Figure 7-39: W62 Dissolved Selenium

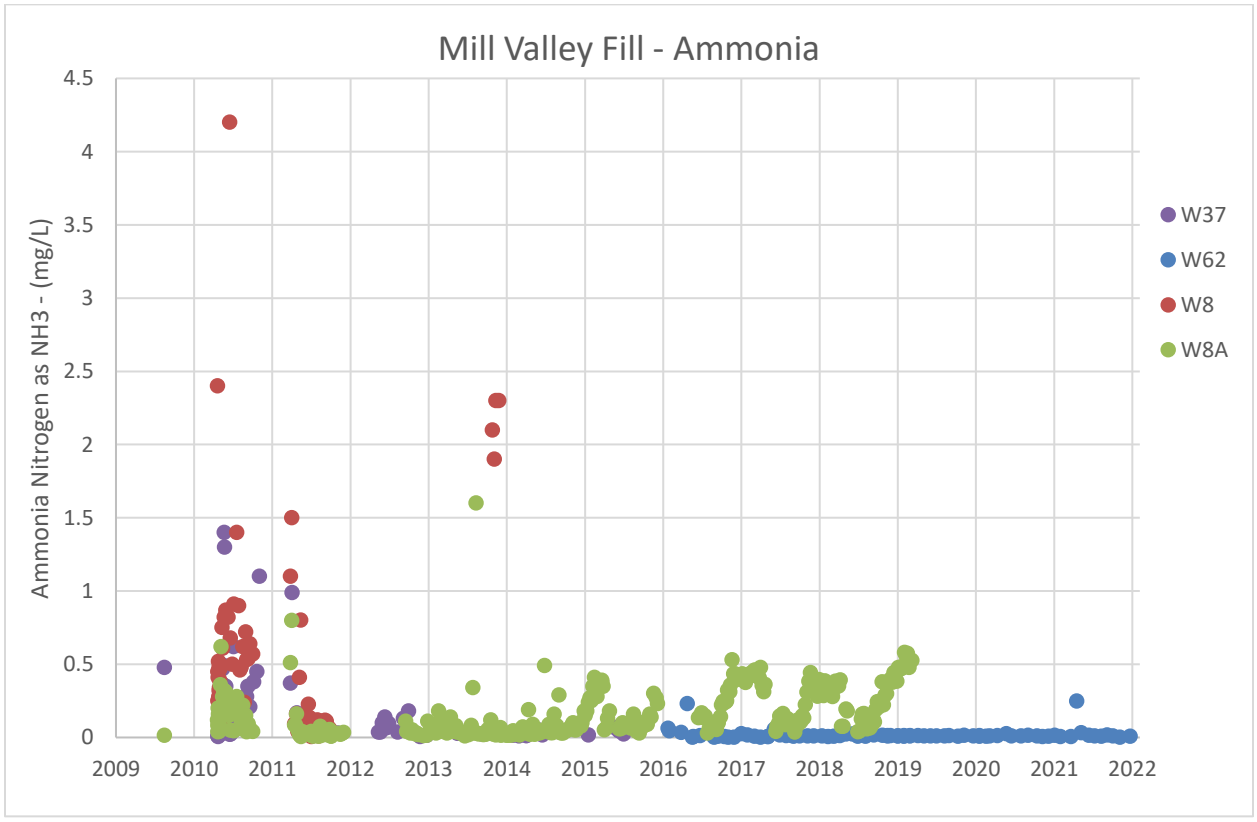

Figure 7-40: Mill Valley Fill Ammonia

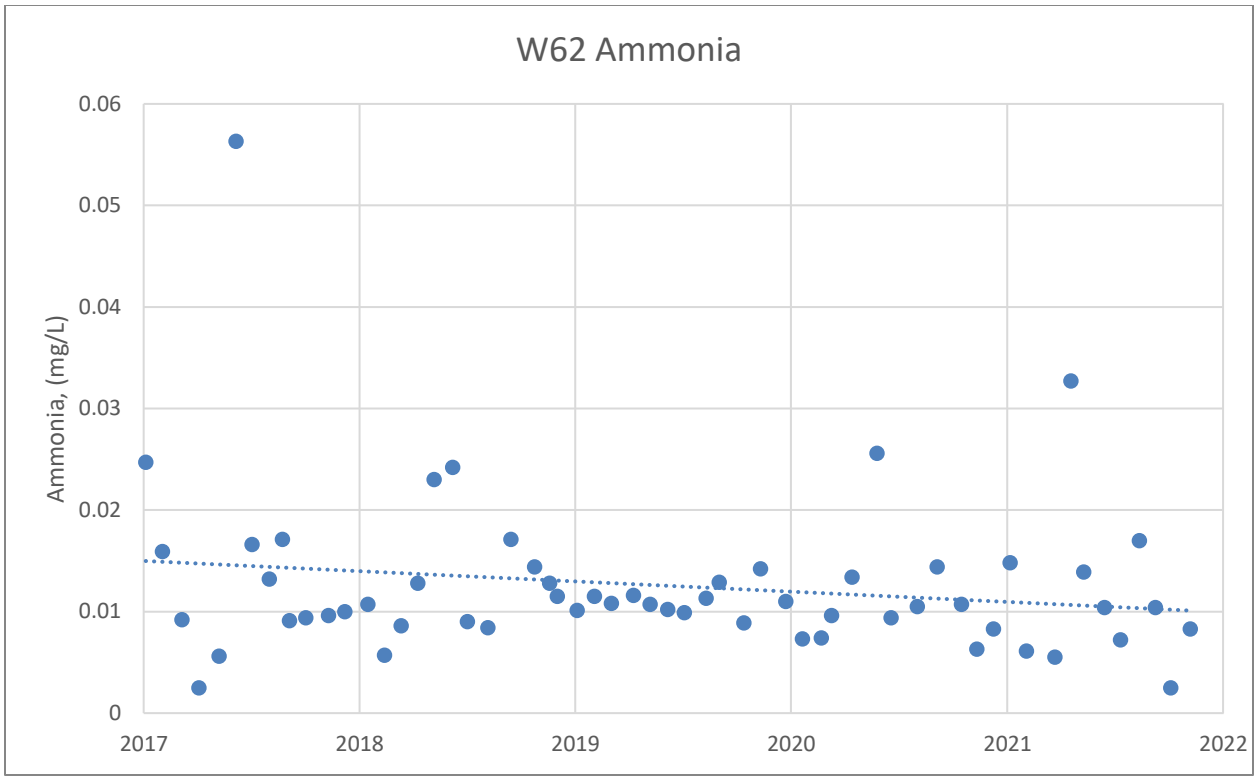

Figure 7-41: W62 Ammonia

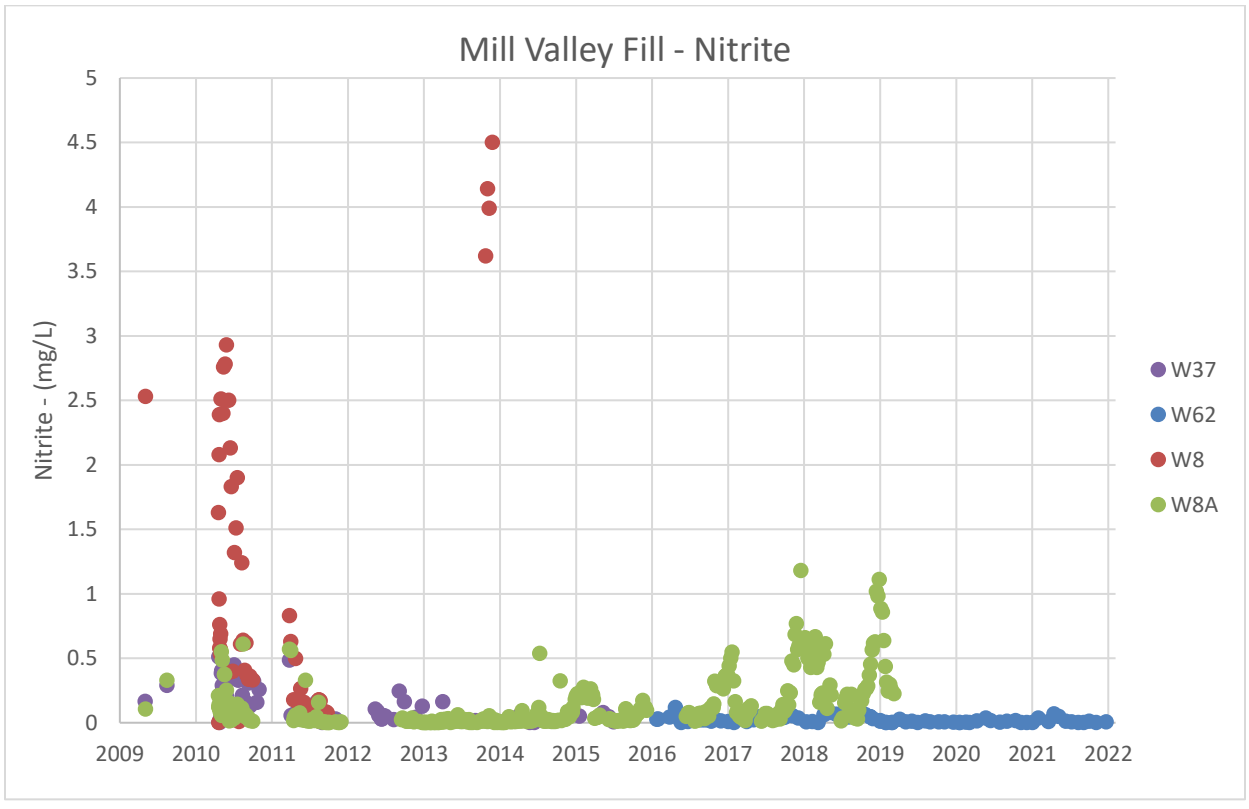

Figure 7-42: Mill Valley Fill WQS Nitrite

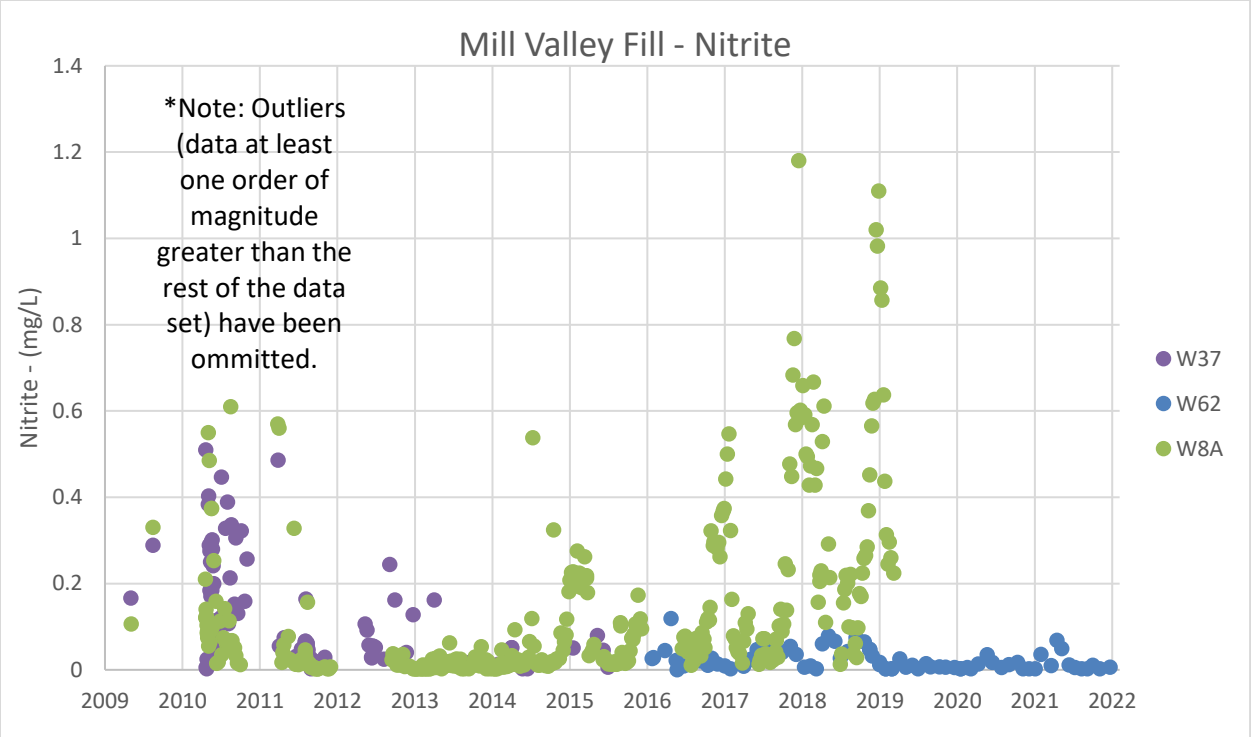

Figure 7-43: Mill Valley Fill WQS Nitrite (Reduced Concentration)

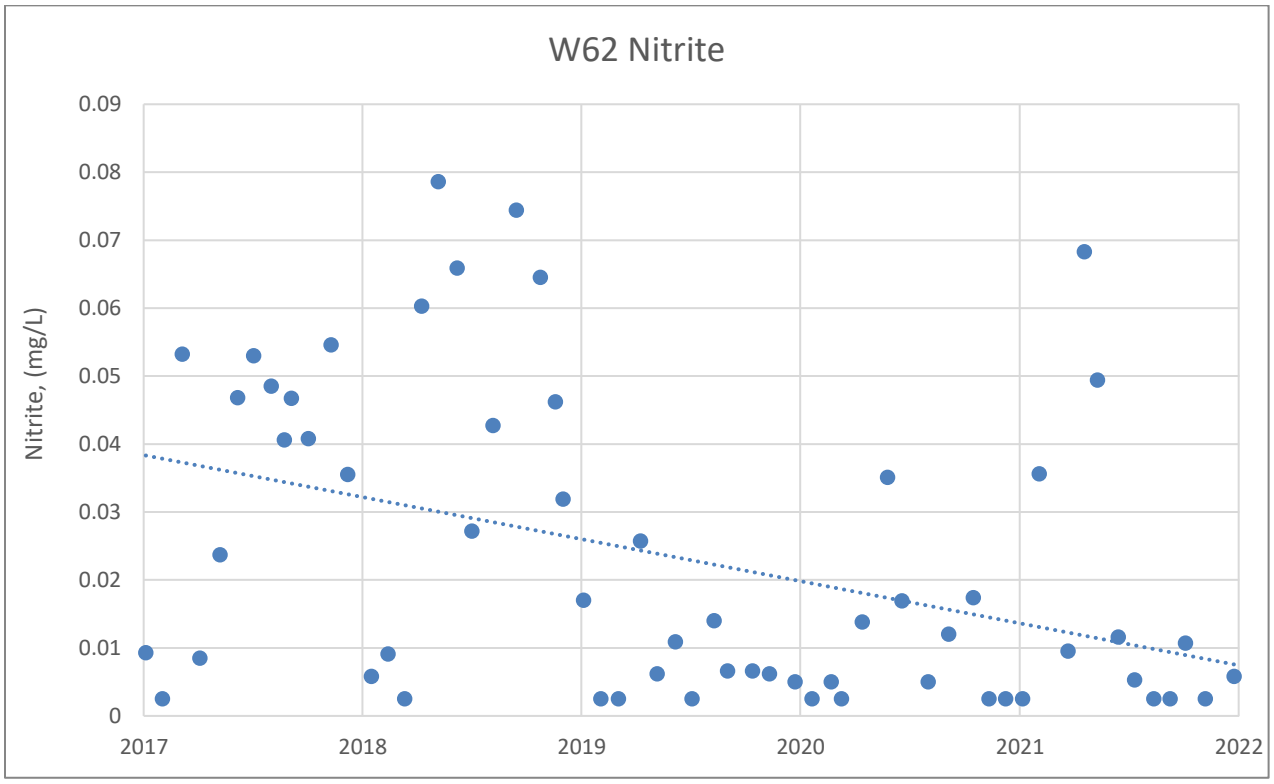

Figure 7-44: W62 Nitrite

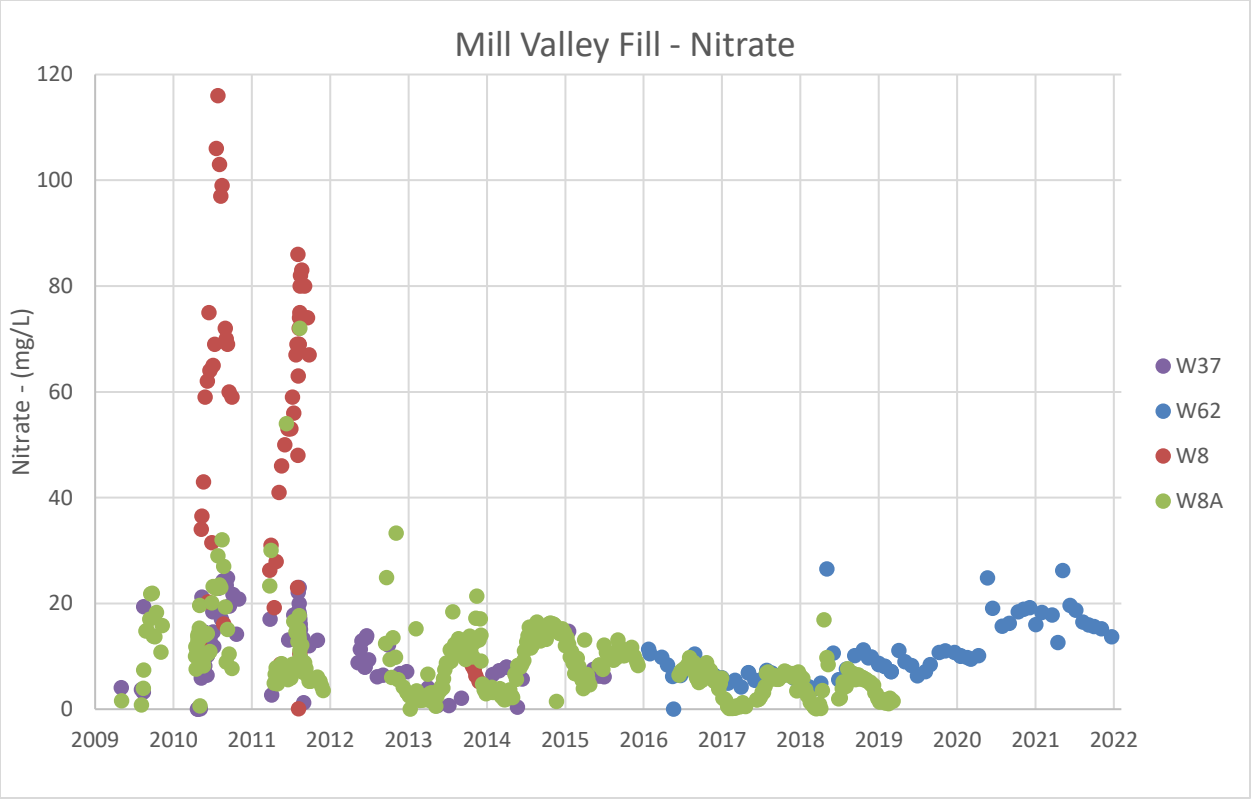

Figure 7-45: Mill Valley Fill WQS Nitrate

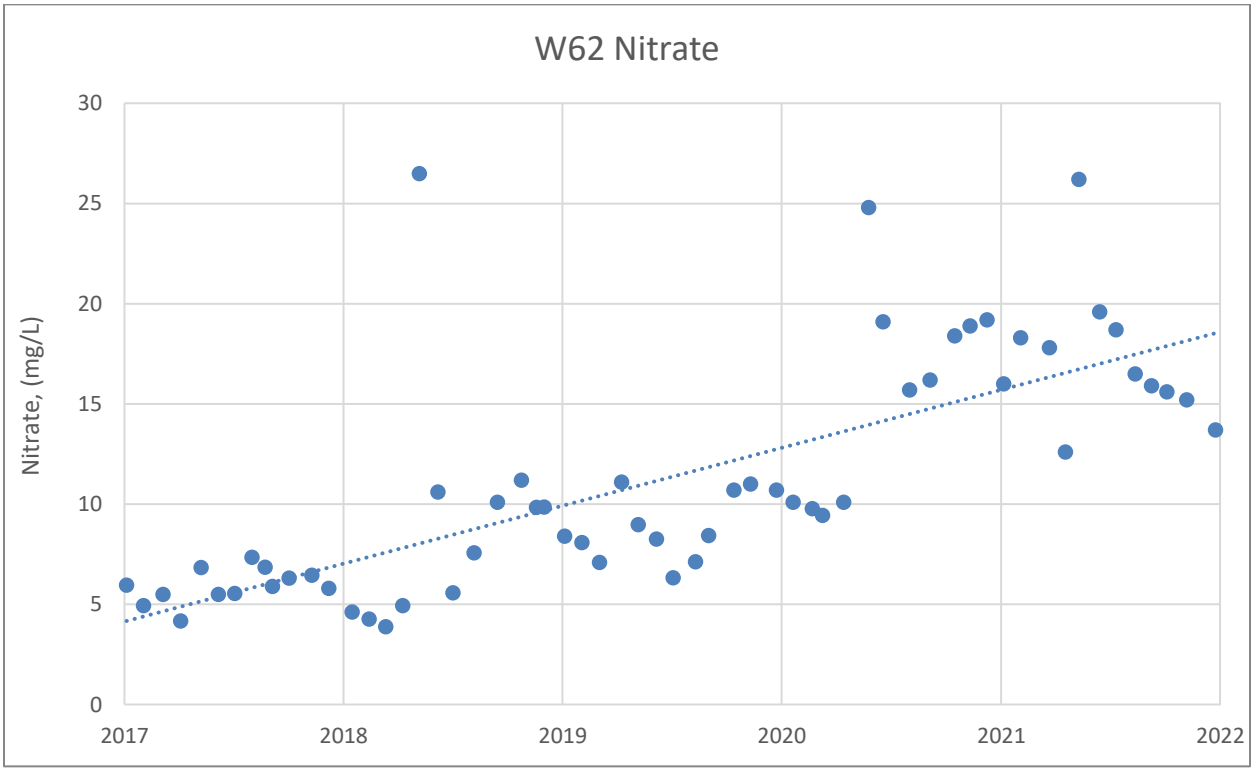

Figure 7-46: W62 Nitrate

7.10.2 Mill Valley Fill Seepage Monitoring Locations

In addition to permanent water quality monitoring stations, the Mill Valley Fill (MVF) is surveyed in the spring and fall of each year for sporadic seeps. Nine recurring seeps have been identified in previous surveys, but no seeps have been discovered or sampled since 2018. There is a possibility that historic samples were not accurately identified as seepage, this area will continue to be monitored in 2022.

7.11 Water Storage Pond Dam Seep

Seepage water quality at the Water Storage Pond Dam is represented by station W17. Water quality at station W17 is relatively consistent due to its being fed at a single source at the WSP (Water Storage Pond). Data shows an increasing trend for analytes except for nitrate. The WSP on the other hand is susceptible to being fed by Mill Valley Fill runoff and freshet water sources. In 2021 the sump around W62 was expanded and improved to collect more seepage and runoff from the Mill Valley Fill.

All dam seepage is collected in a vertical culvert and pumped back to the WSP via a 4" insulated heat traced pipe. A total of 56 W17 samples were collected in the 2021 monitoring period. Water quality results for W17 are further outlined in Figure 7-47 through Figure 7-53 and include historic water quality results for dissolved copper, dissolved cadmium, dissolved iron, dissolved selenium, and nutrient levels for ammonia, nitrite, and nitrate. W17 will continue to be monitored and sampled on a weekly basis in 2022.

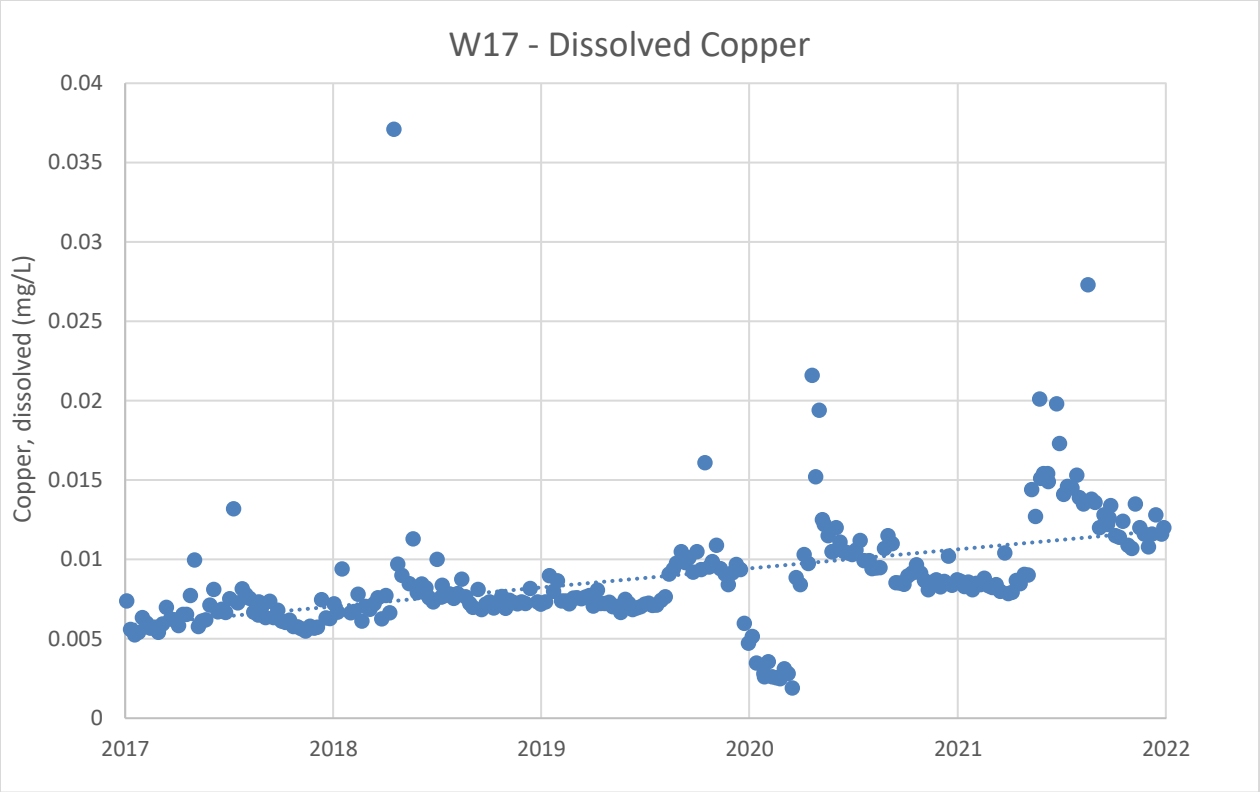

Figure 7-47: W17 Dissolved Copper

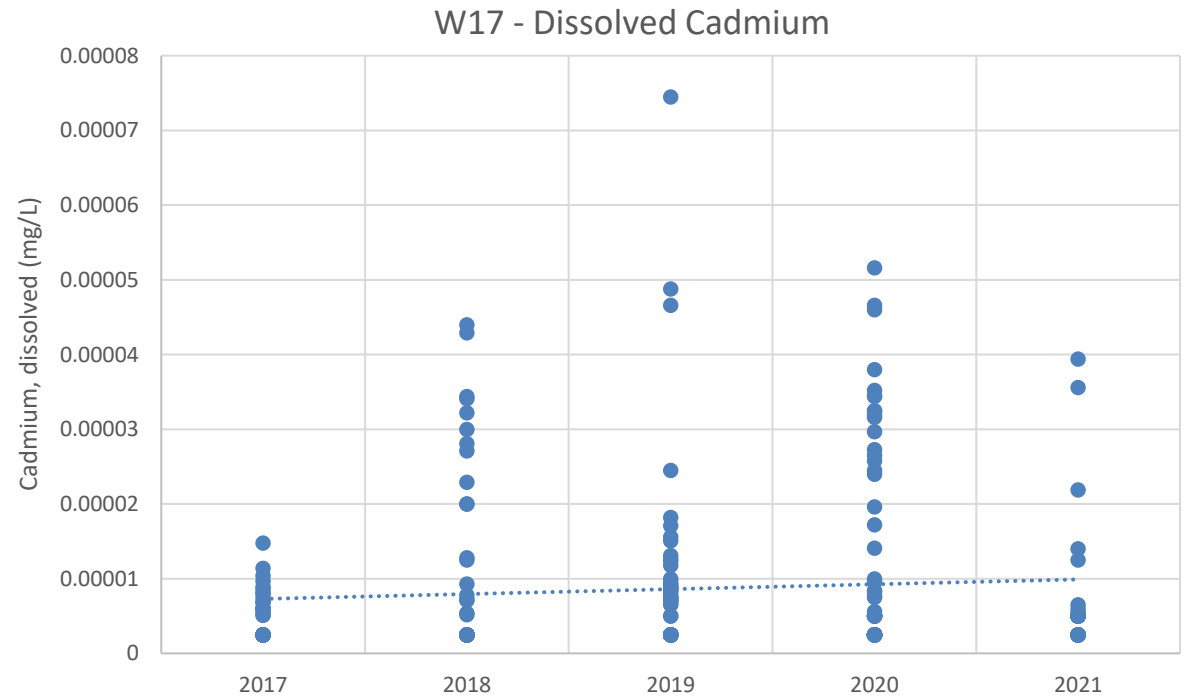

Figure 7-48: W17 Dissolved Cadmium

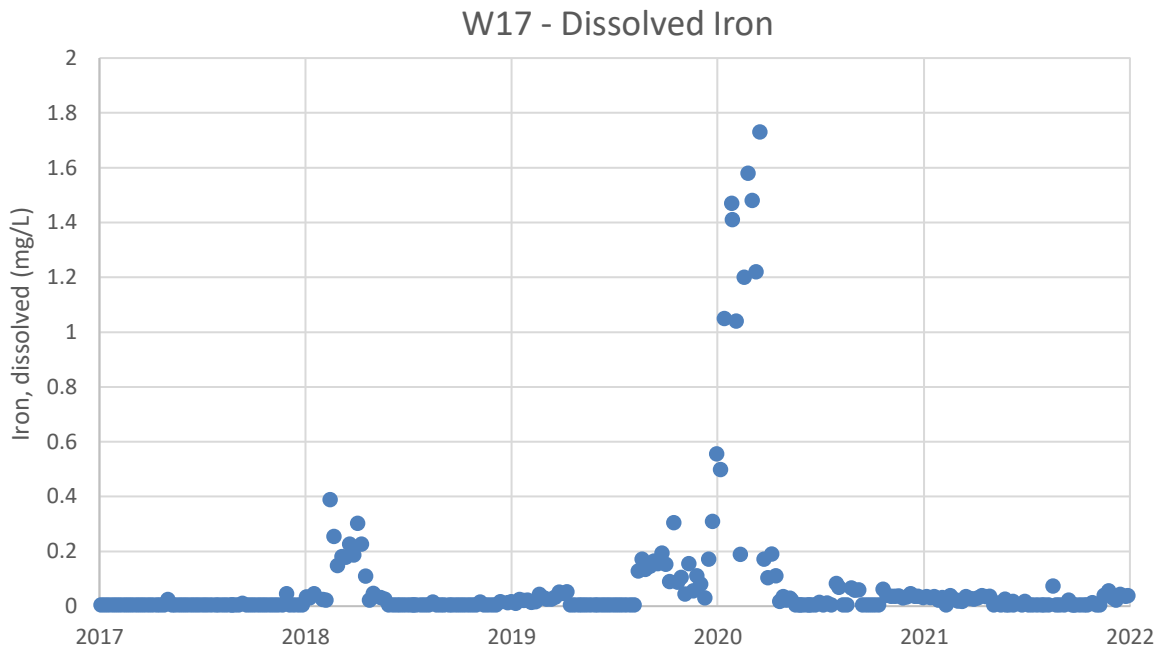

Figure 7-49: W17 Dissolved Iron

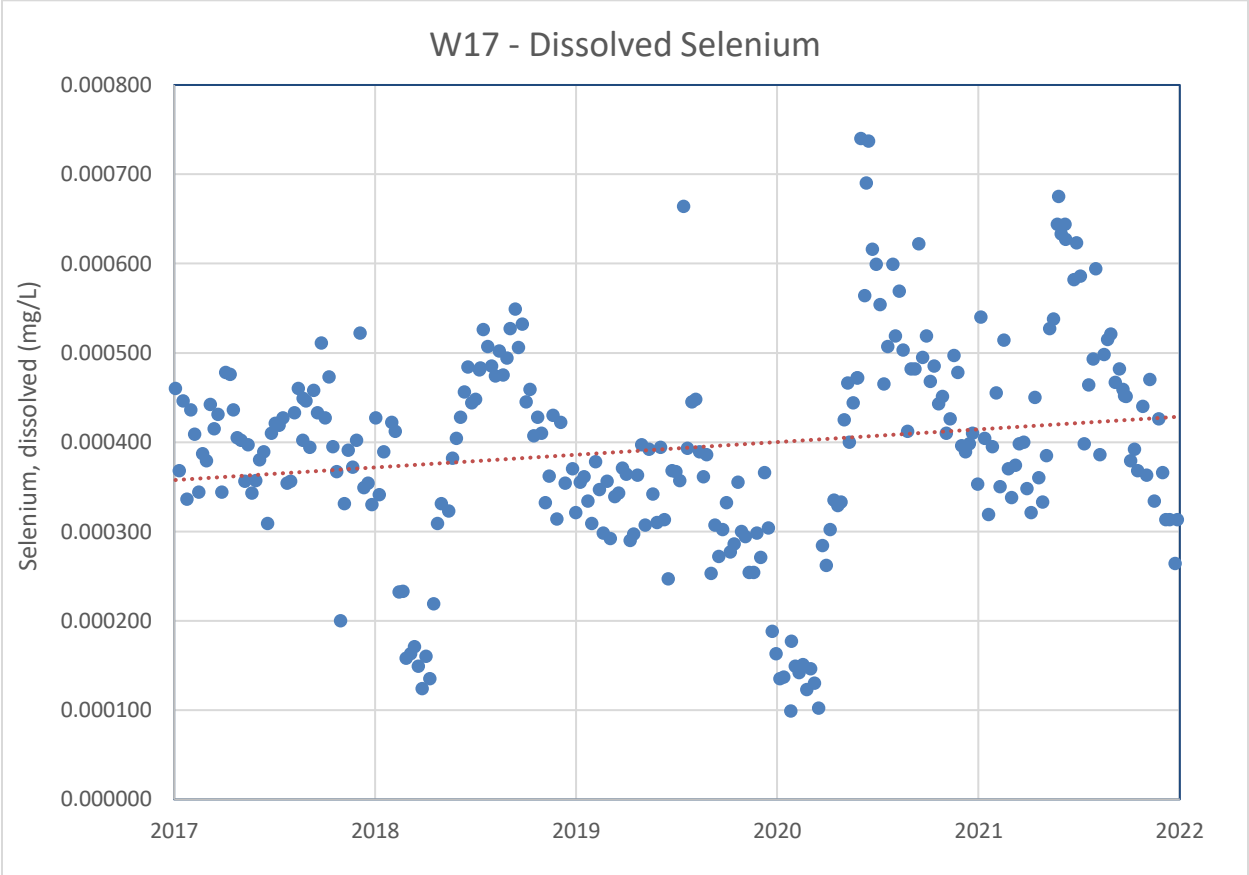

Figure 7-50: W17 Dissolved Selenium

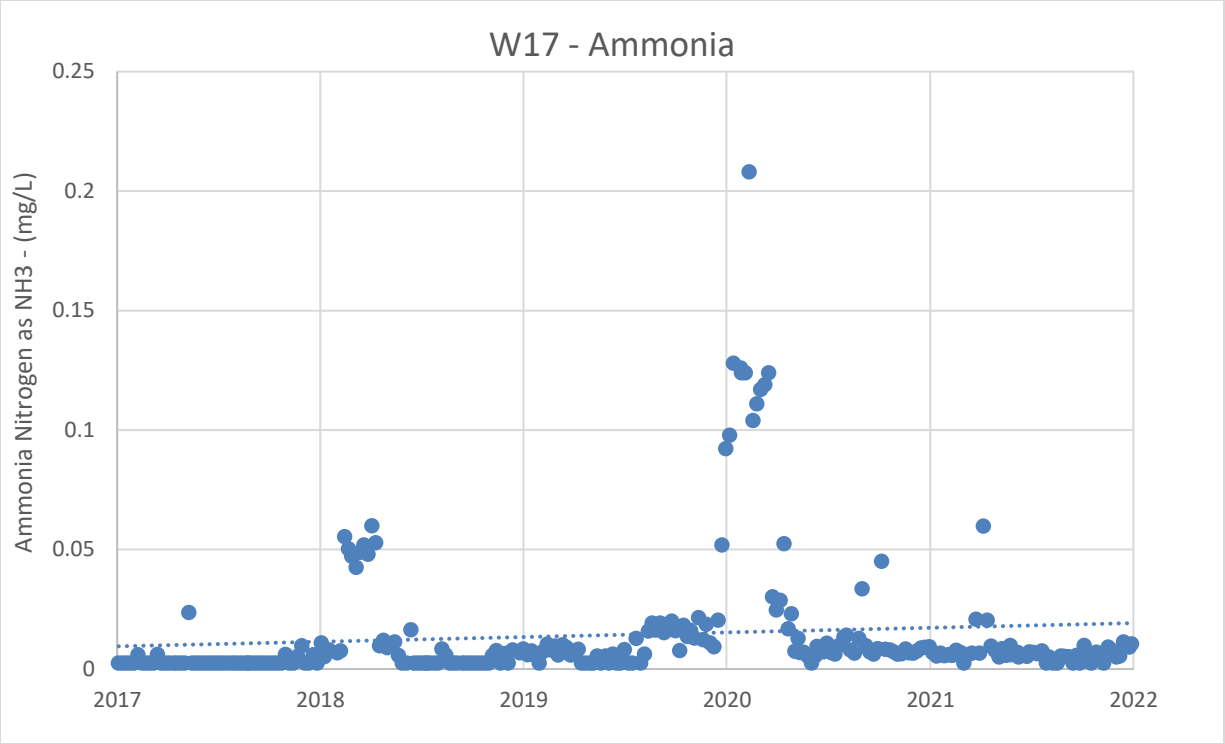

Figure 7-51: W17 Ammonia

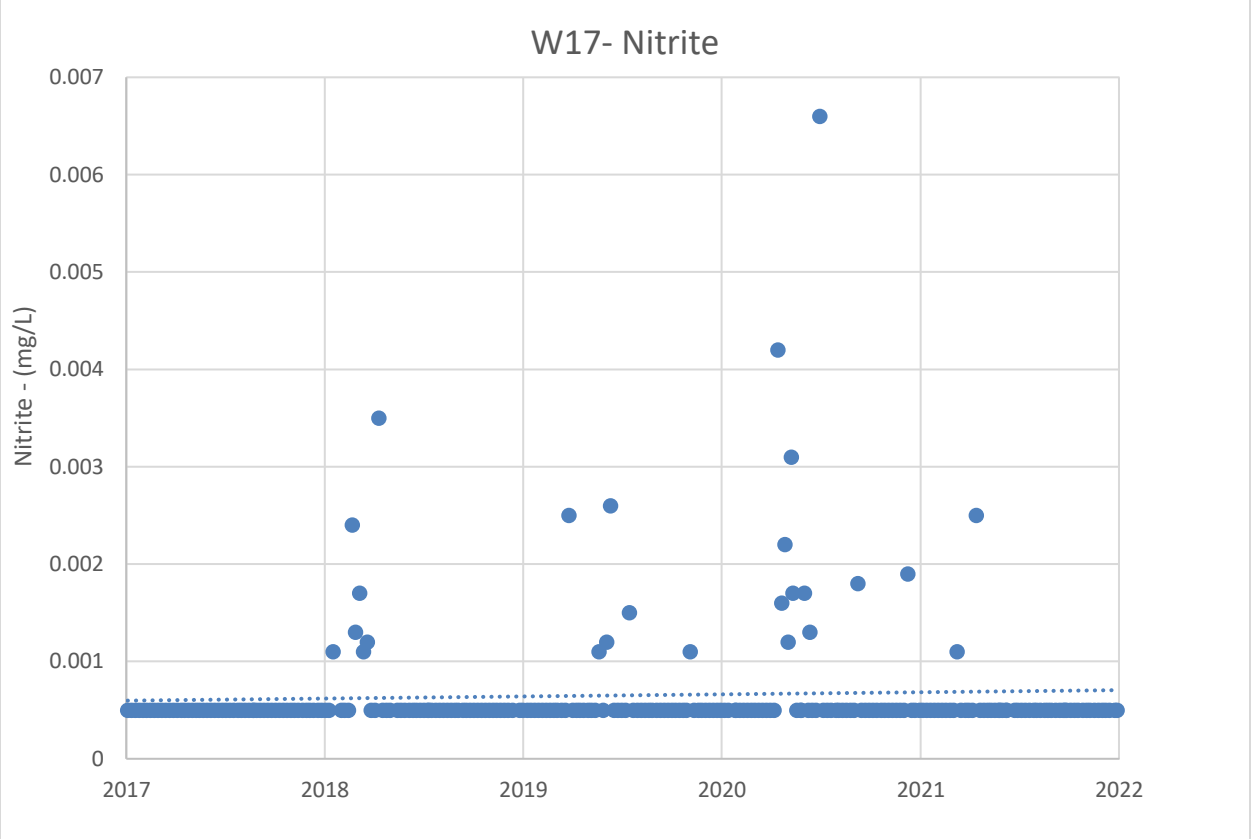

Figure 7-52: W17 Nitrite

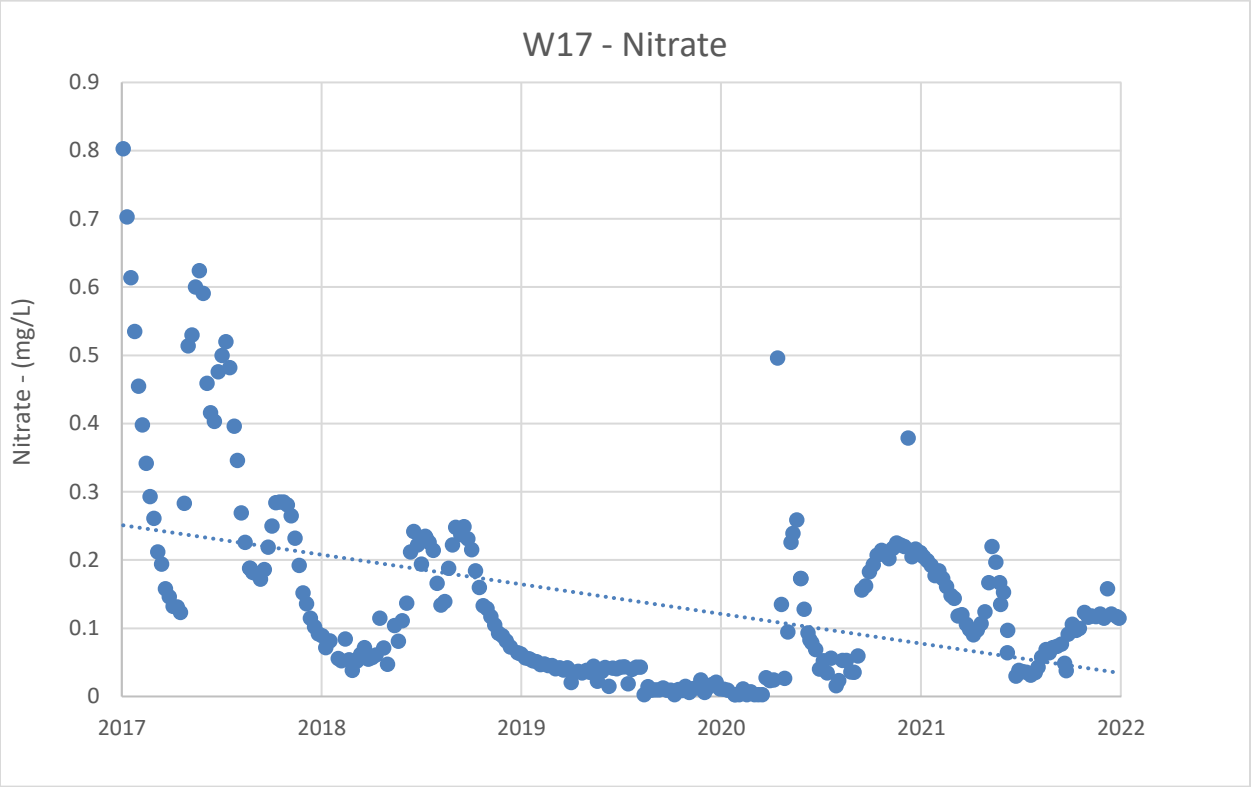

Figure 7-53: W17 Dissolved Nitrate

7.12 Camp Area

There are two seep monitoring seeps behind camp, SS32 and SS112. SS112 was discovered in spring 2021 approximately 200m south of SS32, water was flowing from behind camp and creating small washouts, the water was routed into a culvert and directed away from camp. SS32 was discovered in 2014 behind the camp along the mill area survey route. Results for dissolved copper, dissolved cadmium, dissolved iron, dissolved selenium, and nutrient levels for ammonia, nitrite, and nitrate are displayed in Figure 7-54 through Figure 7-60 along with historical results. SS32 and SS112 may be a useful reference as it originates in an area that is relatively undisturbed by mining activity. No other seeps were identified along the toe of the north ridge behind the camp and mill.

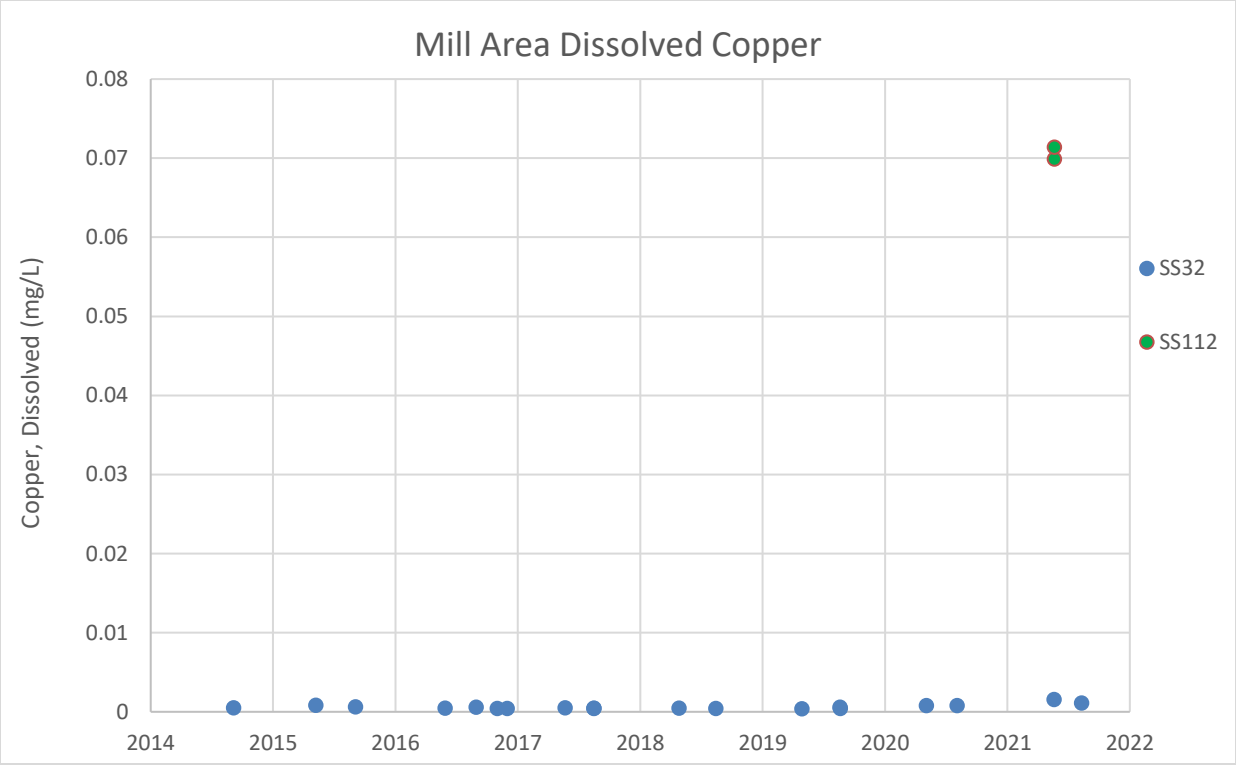

Figure 7-54: Mill Area Dissolved Copper

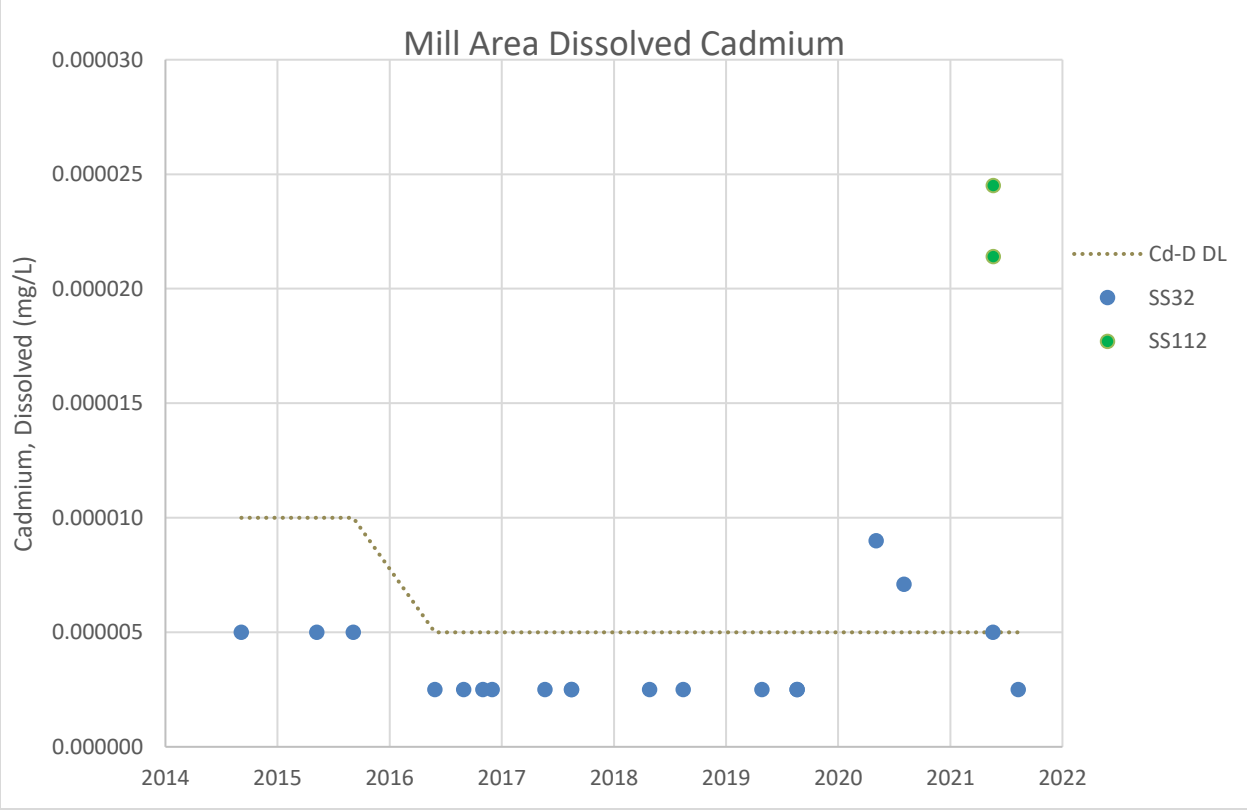

Figure 7-55: Mill Area Dissolved Cadmium

DL is Analytical Detection Limit

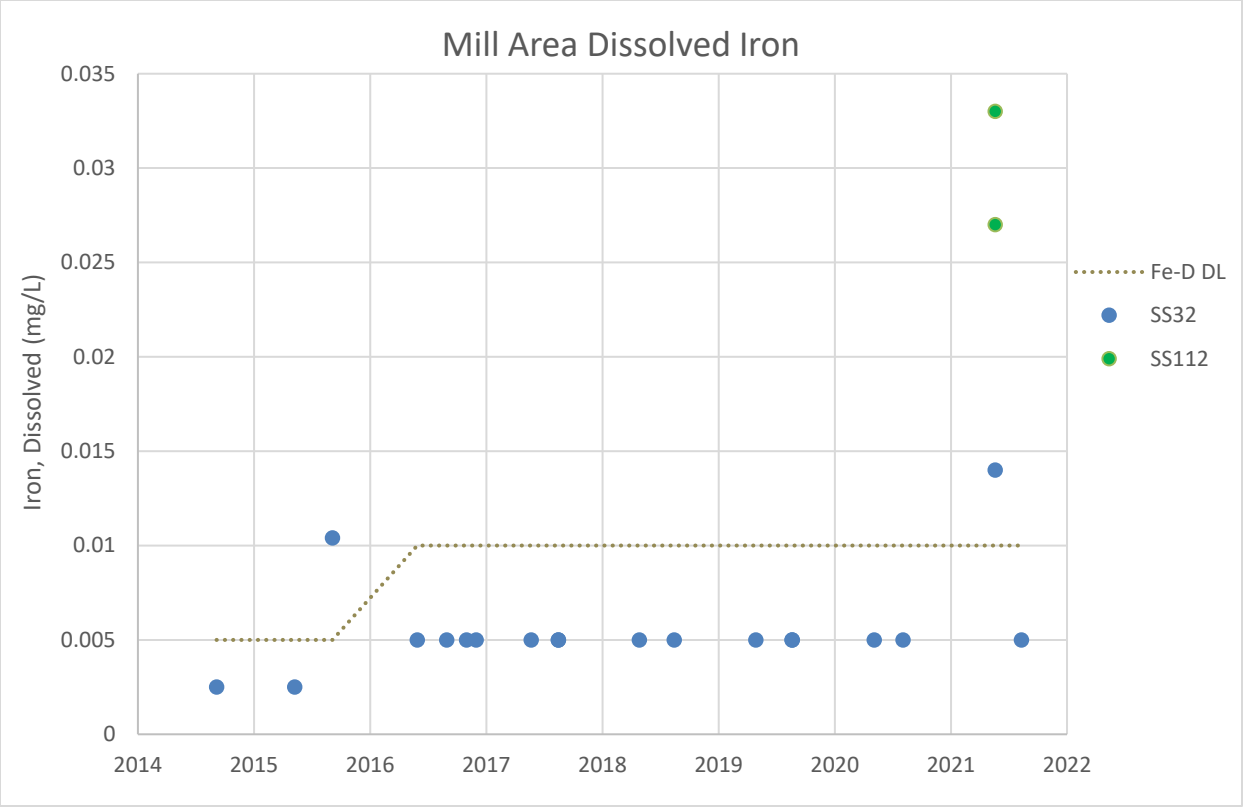

Figure 7-56: Mill Area Dissolved Iron

DL is Analytical Detection Limit

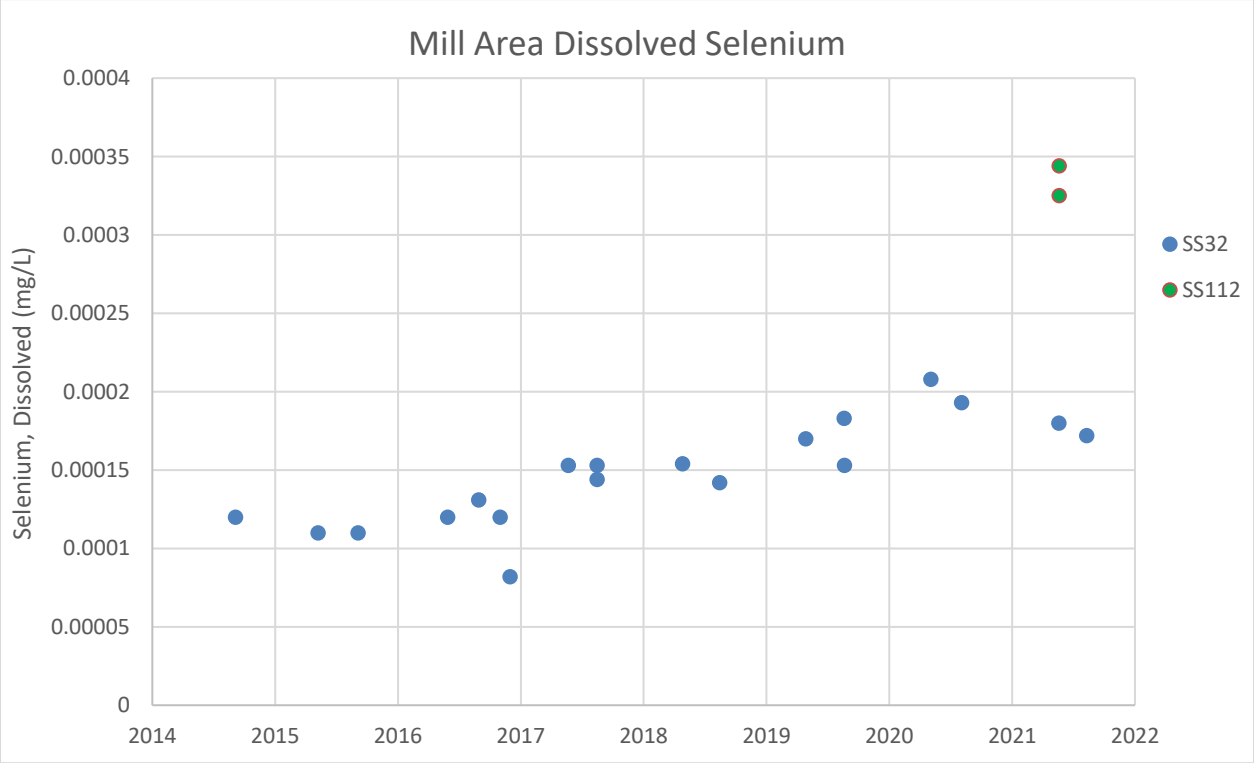

Figure 7-57: Mill Area Dissolved Selenium

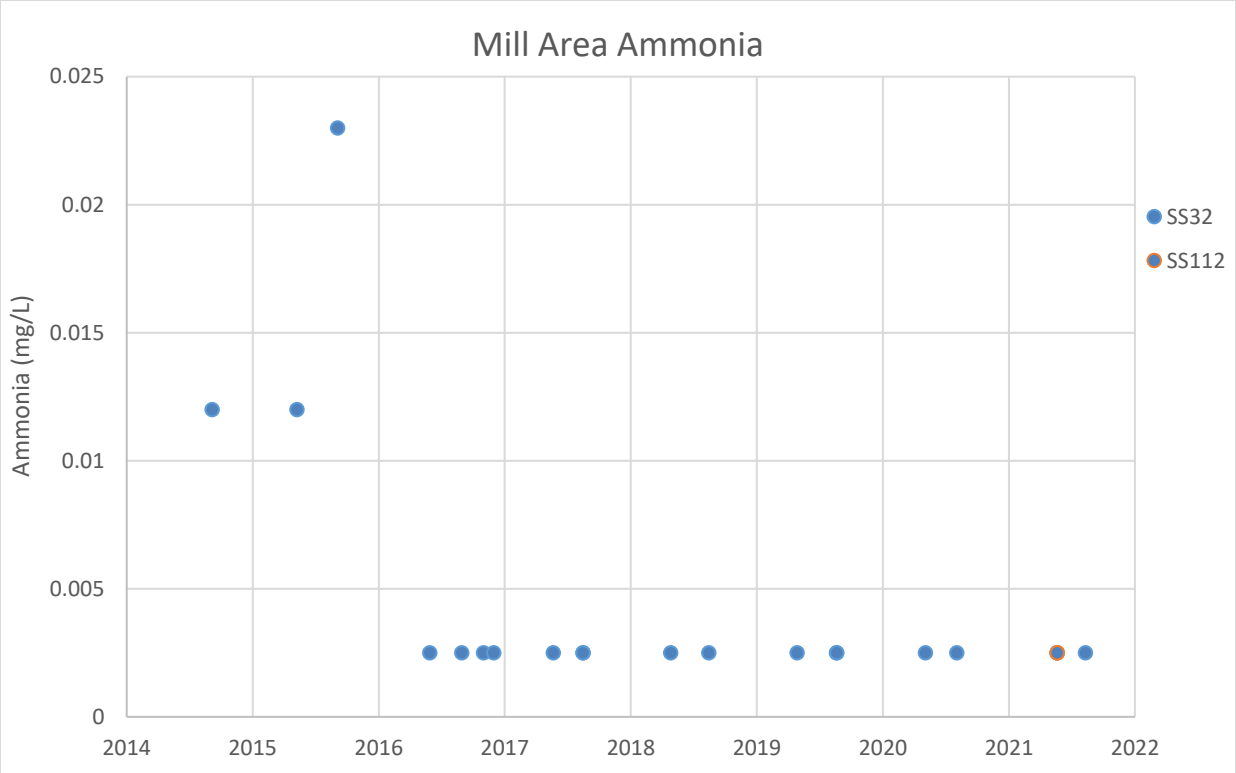

Figure 7-58: Mill Area Ammonia

DL is Analytical Detection Limit

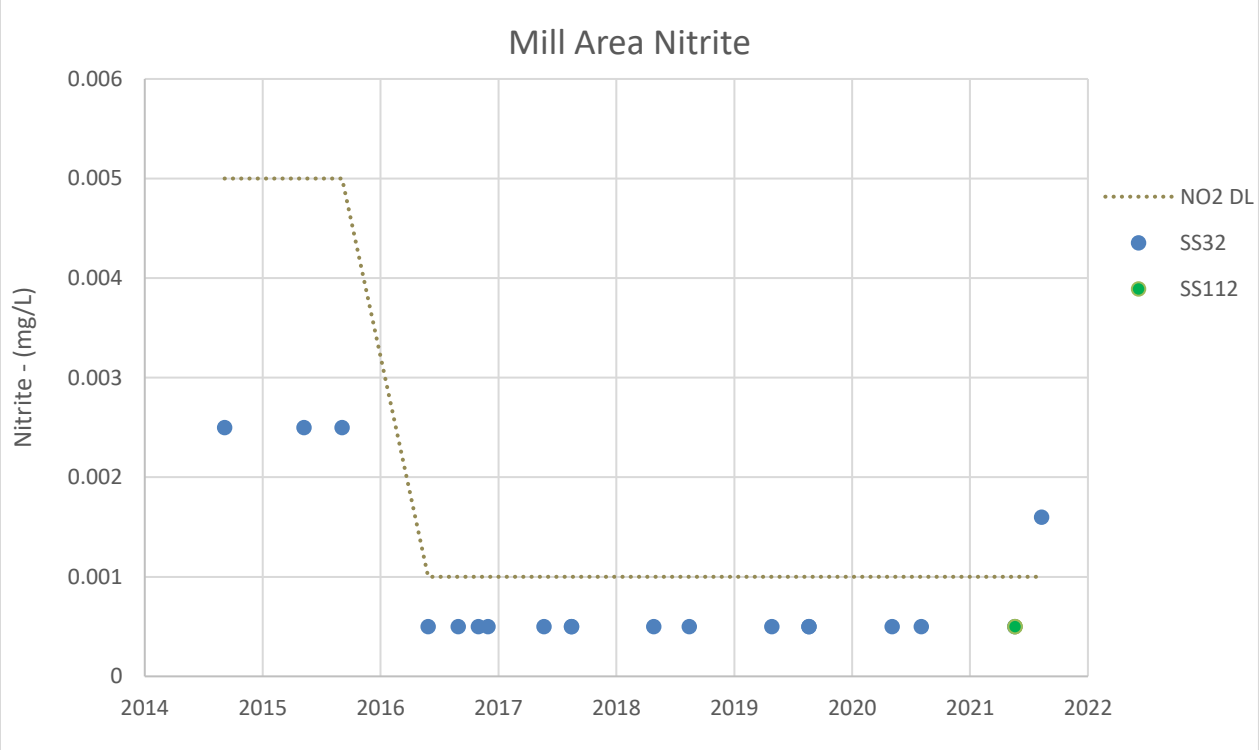

Figure 7-59: Mill Area Nitrite

DL is Analytical Detection Limit

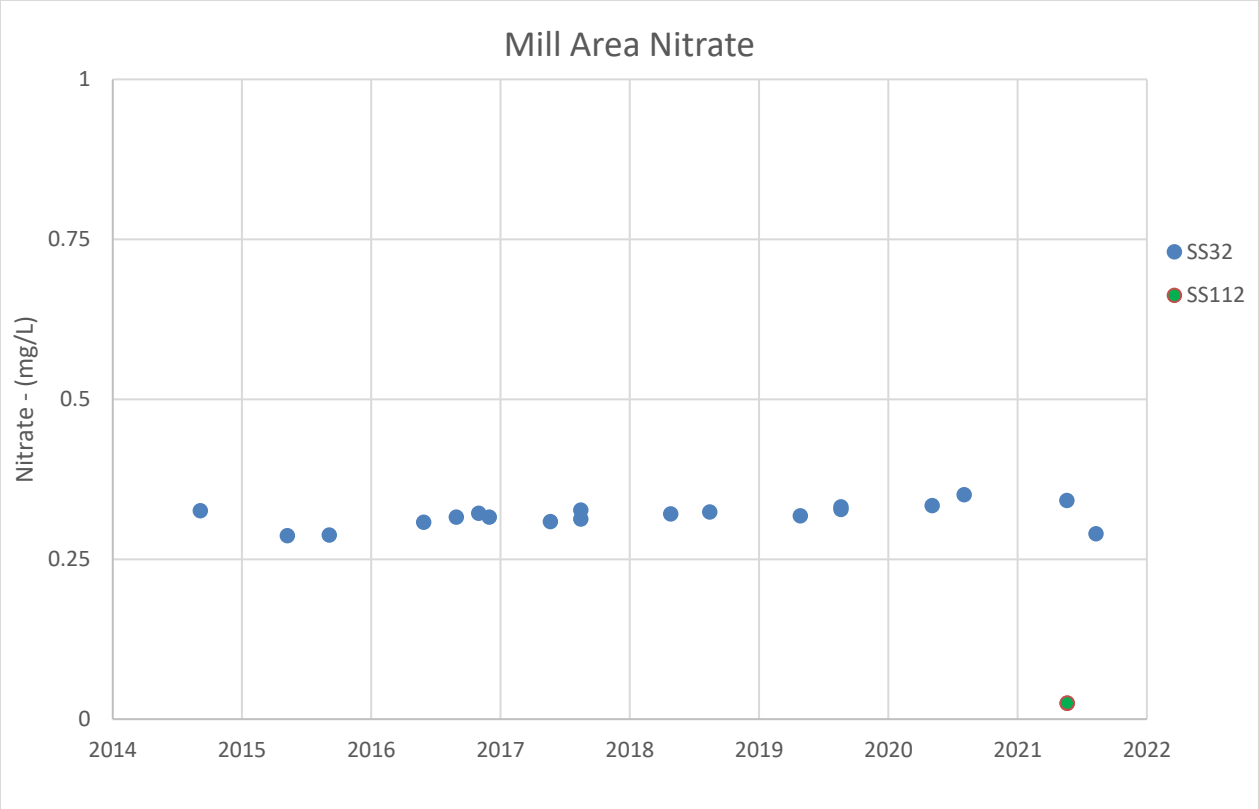

Figure 7-60: Mill Area Nitrate

8 Water Management

The water balance for the Minto Mine forms the basis of the water management strategy at the site. The water management strategy at the site is for conveyance structures to either divert or release clean surface water or direct impacted water to the Main Pit and eventually treatment. The primary objective of Minto's water management strategy is to ensure that sufficient volumes of water can be released from site in a manner that protects the water quality in Minto Creek. The Minto Mine generally has a positive water balance, meaning that the site-wide annual runoff is greater than the volume of water required to operate the mine. Therefore, it is necessary to release water to Minto Creek. In the event surface runoff does not meet the discharge limits stipulated in the WUL, Minto Mine has the ability to treat and release water using a combination of active treatment, conveyance structures and water storage features. In October of 2021 Minto concluded that the Operations Adaptive Management Plan (AMP) 1,000,000 m^3 surge capacity threshold for water storage would be exceeded before the end of the year. Minto provided formal notification of the exceedance to EMR in December, with a summary of the issue and an outline of the short-term water management strategy. An AMP Specific Threshold 2 (SPT2) Action Plan was submitted to Yukon Government, Yukon Water Board and SFN as part of the required follow-up. Minto has submitted a revision to the Water Management Plan (WMP) to the Yukon Government and will be submitted to the Yukon Water Board.

The following sections will summarize water treatment, conveyance, and storage during the reporting period.

8.1 Water Storage and Conveyance Network

There were no major changes to Minto's conveyance structures in 2021. Maintenance and repair work is summarized in Section 8.2.3 Water Conveyance Construction.

The strategy for managing the mine water inventory, pursuant to the Water Management Plan, can be summarized as follows:

- The site water balance is used to define mine water inventory targets and targets for volumes to be released to Minto Creek. Minto's WUL requires at least

1 million cubic meters of available storage capacity as of October 31st each year, and its corresponding Adaptive Management Plan (AMP) will be triggered if capacity drops below this level at any time. Regular tracking of the mine water inventory allows the mine operations to determine if the inventory is on target and if and when water must be released from site.

- Runoff from developed mine areas and water from dewatering underground (mine water) is collected and stored in the Main Pit Tailings Management Facility (MPTMF) and the Area 2 Pit Tailings Management Facility (A2PTMF). Mine water is used for ore processing and slurry tailings production.
- The preferred method for controlling and limiting the inventory of mine water on site is to collect and divert discharge-compliant (clean) runoff to the water storage pond (WSP) and from there to Minto Creek as natural creek flow allows. If collection, diversion, and release of clean water is not sufficient for meeting mine water inventory targets then Minto has the option of treating and releasing mine water.
- Minto has the ability to treat the water from the WSP, Main Pit or Area 2 Pit via the water treatment plant and releasing that water either directly to Minto Creek or to the WSP.

The water and tailings volume summary for 2021 is presented in Section 8.2

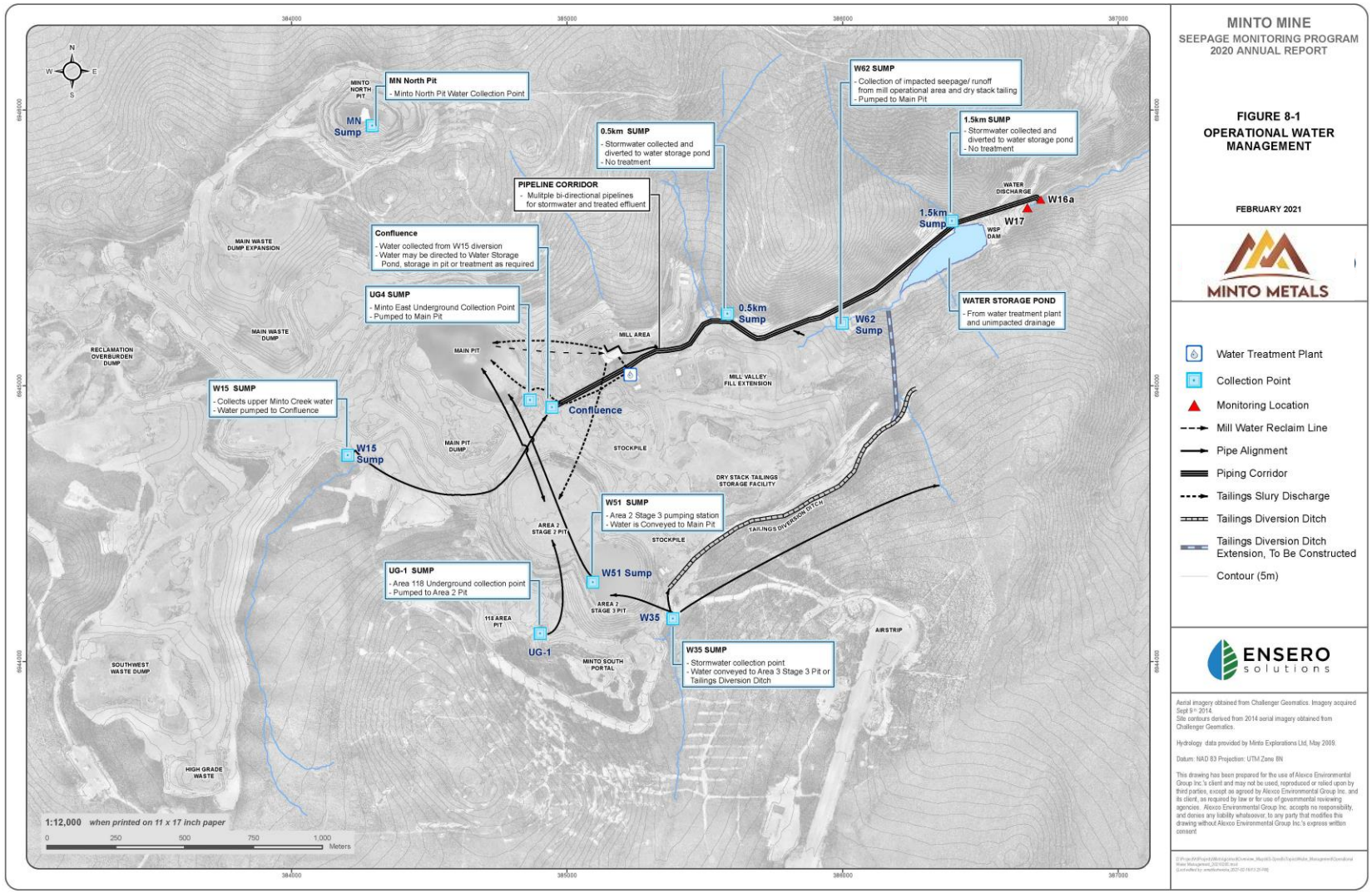

Figure 8-1: Minto Mine Water Conveyance Network (2021)

8.2 Water Storage Volumes Movement and Tracking

Water movement is tracked with flow meters on site, monitored and inspected on a weekly basis. Table 8-1 to 8-5 provide a summary of water volumes moved by conveyance structures around site in 2021. Please note that the total and net volume for each facility (WSP, MPTMF, A2PTMF) in the following tables only account for flow meter totals and do not account for evaporation and other losses/inputs. The Water Treatment Plant was brought back into operation in 2021 with limited periods of discharging water to Minto Creek or WSP.

Table 8-1: Water Storage Pond (WSP) Conveyance for 2021

WSP		
Input Volume (m^3)		**Total**
W15	19,000	117,000
W35	0	
WTP	25,000	
W17	73,000	
Output Volume (m^3)		**Total**
WTP	45,000	118,000
Minto Creek (Environment)	0	
W17 seepage	73,000	
Net		-1,000

Table 8-2: Main Pit Conveyance for 2021

Main Pit		
Input Volume (m^3)		**Total**
W62	133,000	1,406,000
Minto North	0	
Area 2 Pit	654,000	
W15	85,000	
UG4	515,000	
W35	0	
Mill	0	
Yellow Stockpile Sump	19,000	
Output Volume (m^3)		**Total**
Mill	1,512,000	1,526,000
WTP	14,000	
Net		-120,000

Table 8-3: Area 2 Pit Conveyance for 2021

Area 2 Pit		
Input Volume (m³)		**Total**
UG1	231,000	1,767,000
W35	38,000	
Mill	1,498,000	
Output Volume (m³)		**Total**
Main Pit	654,000	654,000
Net		1,113,000

Table 8-4: Water Truck Deliveries on Site for 2021

Water Trucks		Total (m2)
Drills	4,744	4,744

Table 8-5: Well Usage in 2021

Wells		Total (m2)
Camp	12,700	12,700
ERT	13	

8.2.1 Water Conveyance Tracking

Diversion of W35 water (TDD): Water was diverted from the south catchment (collected at station W35) to the Area 2 Stage 3 pit. An estimated total of 38,000 m³ moved through W35 to the A2S3 Pit in 2021 as measured by a Mace FloSeries® 3 open pipe flow measuring device.

Diversion of W15 water: The W15 sump collects surface runoff from adjacent undisturbed catchments, the SWD and part of the MWD. A total of 104,000 m³ was

conveyed through the W15 conveyance structure in 2021. 19,000 m^3 was directed to the WSP from April 29th to May 7th, and 85,000 m^3 was directed to the Main Pit between May 7th and September 29th. W15 flows were measured and recorded using a Seametrics® mag flow meter with digital head relay module.

Pump Back of W62 water (MVFES2 Sump): Water collected downstream of the mill area, ore stockpiles and DSTSF is collected at the MVFES2 Sump (which replaced the MCDS in 2016) and pumped back to the Main Pit for treatment. A total of 133,000 m^3 was conveyed through this structure in 2021. The flow volumes were measured and recorded using a Seametrics® mag flow meter with digital head relay module.

Pump Back of Yellow Stockpile Sump: Surface runoff and groundwater seepage from the ditch between the main road leading from camp to the mine workings and the ore stockpile is collected at the Yellow Stockpile Sump and pumped back to the Main Pit for treatment. A total of 19,000 m^3 was conveyed through this structure in 2021. The flow volumes were measured and recorded using a Siemens® mag flow meter.

Pump Back of WSP Seepage (W17 Sump): Seepage from WSP is collected and pumped back to the WSP via the W17 Sump/pump system. A total of 73,000 m^3 was conveyed through this system in 2021.

Underground De-watering (UG1 and UG4 Sumps): Groundwater in the underground workings is collected and pumped to surface via two main sumps, UG1 and UG4. UG1 collects water from the Area 118 Underground Sump and deposits it in the Area 2 Pit Complex. A total of 231,000 m^3 was conveyed from UG1 in 2021. UG4 collects water from the Minto East Underground Sump and pumps it to the Main Pit. 515,000 m^3 were conveyed through UG4 in 2021.

8.2.2 Water Storage Tracking

Water storage on site is monitored for Minto reservoirs which include the Main Pit, the Area 2 Pit, their respective tailings management facilities, the Water Storage Pond (WSP), and the Minto North Pit. Appendix E provides a more comprehensive analysis of water movement, but presented below, Tables 8-6 provides a summary of the site-wide water yield.

Table 8-6: 2021 Water Inventory Change and Site Yield

Month[A]	Change in MPTMF Water Inventory	Tailings Solids Deposition in MPTMF	Change in A2PTMF Water and Tailings Inventory	Tailings Solids Deposition in A2PTMF	Change in WSP Water Inventory	Discharged to Minto Creek
Year	m^3/month	BCM/month	m^3/month	BCM/month	m^3/month	m^3/month
1-Jan-21	-10,554	0	28,352	30,406	-7,945	0
1-Feb-21	27,070	0	10,610	21,627	-3,886	0
1-Mar-21	8,940	0	26,212	24,252	-1,018	0
1-Apr-21	20,616	0	121,875	26,078	24,577	0
1-May-21	104,173	0	151,915	29,454	95,191	7,762
1-Jun-21	45,016	0	30,216	27,355	3,225	5,397
1-Jul-21	-126,177	0	221,727	25,096	-2,363	178
1-Aug-21	-32,656	0	143,909	19,947	3,342	0
1-Sep-21	2,496	0	106,239	25,933	-18,815	0
1-Oct-21	66,841	0	157	28,124	4,228	0
1-Nov-21	-10,992	0	75,829	31,578	-4,479	0
1-Dec-21	-24,271	0	100,678	33,274	-1,529	0
1-Jan-22						
SUM	70,501		1,017,721	323,123	90,527	13,337
				Total Site Yield	838,962	m^3

Notes: **A** – on the first day of the month.
Source: https://srk-my.sharepoint.com/personal/sjensen_srk_com/Documents/Desktop/Minto 2021 Update/2021 Water Balance Update\2021 Water Balance Update REV01 SRJ.xlsx

Bathymetric surveys of the Main Pit and Area 2 pits were conducted in July 2021. The water storage volumes changed significantly with the new bathymetry survey. Minto completed an investigation to better understand the discrepancies between surveys but has been unable to determine which survey is more accurate. As a result, Minto will re-survey the water storage volumes in 2022 during open water season. In the interim, Minto will continue to utilize the 2021 bathymetry volumes, which are more conservative and indicate less remaining water storage capacity.

Main Pit: The Main Pit was used as a reservoir to support the following: water use for the Mill process; collection of impacted run-off; supply feed water to the water treatment plant; and received water from Area 2 Pit and underground de-watering. A total of 463,000 m^3 of water was stored in the Main Pit as of January 1st, 2022.

Area 2 Pit: The Area 2 Pit was used to support the following: supplemental water supply to the Mill via the Main Pit; collection of impacted site water; receiving water from underground de-watering; receiving water/tailings from the Mill. A total of 1,872,000 m^3 of free water was stored in the Area 2 Pit as of January 1st, 2022.

WSP: As 2021 was a relatively wet year, the WSP saw a significant increase in storage inventory. WSP water quality rose above the effluent quality standard for copper following freshet in May but returned to below EQS concentration by mid-August. A brief active discharge period took place between October 7th and 14th. A total of 196,000 m^3 of water was stored in the Area 2 Pit as of January 1st, 2022.

Table 8-7 summarizes the Minto Mine Site Water Balance for 2021.

Table 8-7: Water Balance Summary of the Minto Mine Site, 2021 (Rounded, Jan to Dec)

	Units	Main Pit TMF	Area 2 Pit TMF	WSP
Volume Change 2021 (water + tailings)	m^3	70,000	1,020,000	90,000
Tailings Deposited, Total Bank Volume[A]	BCM	-	323,000	-
Bulk Volume of Tailings Deposited[B]	m^3		671,000	
Water Volume Change 2021	m^3	70,000	697,000	90,000
Estimated Groundwater Inflow	m^3	30,000		
Total Water Inventory Increase in 2021	**m^3**	857,000		
Total Water Discharged to Minto Creek	m^3	13,000		
Total Site-Wide Yield in 2021	**m^3**	**844,000**		

Notes:
[A] – the bank volume is the volume of competent solids, which equals the water volume displaced when tailings are inundated.
[B] – the bulk volume is the volume occupied by the tailings in the tailings management facilities.

8.2.3 Water Conveyance Construction

Maintenance activities consisted of routine maintenance on water conveyance structures. In 2021 Minto completed maintenance and repair work on the following locations:

- Removed sediment from W35 Sump and the berm upstream of the sump on the haul road (that directs run-off from the road) was replaced with coarse NAG rock material in August of 2021. Further drainage work on the haul road in this area is planned in 2022.

- Sediment cleaned up from an area where an overflow occurred on the north side of W15 catchment in September of 2021. The associated erosion was repaired, the road was graded to direct flow to a catchment point and a spillway was constructed in the location that the overflow occurred previously. Coarse rock was installed in the catchment point and spillway.
- In September 2021 a pre-settling cell was constructed upstream of the W62 coarse rock sump cell. The pre-settling cell will facilitate settling of fine sediment from freshet run-off, mitigating potential sedimentation issues in the coarse rock sump.

8.2.4 Water Balance and Water Quality Predictions Modeling

As per the WUL Clause 108, Minto is required to update the Water Balance and Water Quality Model. Minto retained SRK Consulting to complete a 2021 site water balance and water quality prediction model update. An updated 2021 Water Balance and Water Quality Model Summary for the Minto Mine is provided by SRK Consulting in Appendix E.

8.3 Water Treatment

Water treatment may be required if:

- Water stored in the WSP does not meet water quality limits prescribed in the water licence or
- Mine water stored in the MPTMF or the A2PTMF is to be released to Minto Creek and the water does not meet water quality limits prescribed in the water licence.

Minto's water treatment plant can be operated in three general configurations:

1. **Clarification and filtration:** this process configuration removes TSS. Coagulant and flocculant solutions are added to the feed water, which is pumped to a ballasted lamella clarifier and a filter. The by-product of the process is a sludge that is pumped to the MPTMF or A2PTMF.

2. **Sulphide precipitation, clarification, and filtration:** this process configuration can remove dissolved copper, cadmium, zinc, nickel, cobalt, and lead, in addition to TSS. Dissolved metals are removed by adding an organo-sulphide reagent that binds to dissolved metals and forms precipitates. The by-product of the process is a sludge that is pumped to the MPTMF or A2PTMF.
3. **Reverse Osmosis:** this process removes 95 to 99% of all constituents in the feed water. The feed water for the RO unit is the effluent from the clarification and filtration unit, which is operated as a pre-treatment step. The RO unit produces a clean effluent stream that consists of approximately 65-75% of the feed water (the RO permeate). The by-product of the process is a brine stream, which consists of about 25% of the feed water and 95 to 99% of constituent loadings. The brine stream is pumped to the MPTFM or A2PTMF.

Upgrades to the water treatment plant and a microfiltration unit is being brought to site in 2022.

8.3.1 Operations Overview

The Water Treatment Plant discharged to the Water Storage Pond and to Minto Creek in 2021. A total of 17,000 m^3 was released from the WTP to the WSP as it met EQS specifications.

8.4 Water Discharge

8.4.1 Discharge Volumes at WQO

Minto mine discharged approximately 7900 m^3 of Main Pit water treated via RO units in May and June, and 5600 m^3 of WSP water treated through the clarification/filtration process in September.

8.4.2 Discharge Volumes at EQS (Clause 6)

As per WUL Clause 6 the rate of water discharge to Minto Creek is calculated based on daily creek flow measurements. No volume was discharged pursuant to clause 6 in 2021 as the WSP water quality never met EQS while there was sufficient flow in Minto Creek to release water.

8.5 Hydrology

In 2021, as part of the EMSRP, Minto monitored hydrological conditions at water quality stations including the following: stations within the operational mine area; stations downstream from the mine operational area that are influenced by mine effluent discharge; and reference stations downstream from the mine operational area that are not exposed to effluent. Hydrological monitoring is performed using a variety of methods including manual discrete discharge measurements with combinations of flow meters, continuous stage measurements through the deployment of Solinst Level Loggers and Barometric Loggers and monitoring of an engineered flume.

The 2021 open water season was characterized by above average flows during freshet, a dry spell during July which saw W1 dry up completely, followed by average flows sustained by regular precipitation events in late summer and early fall. A brief period of active mine discharge, from the Water Treatment Plant (RO), occurred from May 25th to June 1st and again from September 20th to September 25th. A single day of discharge occurred on September 29th.

8.5.1 Minto Creek Hydrology

Hydrological monitoring on Minto Creek is conducted in accordance with the requirements outlined in the WUL. During the 2021 monitoring period, Minto Mine maintained and collected data from the following four hydrometric stations along Minto Creek.

- W3: Flume downstream of the Water Storage Pond (WSP)
- MC-1: Located in Minto Canyon – mid-catchment
- W1: Located approximately 1 km upstream of Yukon River – lower catchment
- W7: Tributary on the south side of Minto Creek.

At the hydrometric stations, Solinst Level Loggers and Barometric Loggers were used in conjunction with staff gauge readings and manual flow measurements to produce volumetric flow rates.

For details on the 2021 results of Minto Creek hydrology see the *Summary of Minto and McGinty Creek 2021 Surface Hydrology Memo* in Appendix F.

8.5.2 McGinty Creek Hydrology

In 2021, hydrological monitoring on McGinty Creek was conducted as per the schedule outlined in the EMSRP. In 2018, Minto Mine added a hydrometric station at MN-1.5. During the 2021 monitoring period, Minto Mine maintained and collected data from the following four hydrometric stations along McGinty Creek.

- MN-0.5: West Tributary of McGinty Creek
- MN-1.5: Upper East arm of McGinty Creek
- MN-2.5: East Tributary of McGinty Creek
- MN-4.5: McGinty Creek near the Mouth

At the hydrometric stations, Solinst Level Loggers and Barometric Loggers were used in conjunction with staff gauge readings and manual flow measurements to produce volumetric flow rates.

For details on the 2021 results of McGinty Creek hydrology see the *Summary of Minto and McGinty Creek 2021 Surface Hydrology* in Appendix F.

8.5.3 Hydrology QA/QC

Detailed procedures for hydrology monitoring at the Minto Mine are detailed in the *Minto Mine Surface Water Hydrology* SOP. Few changes were made in the hydrology SOP, to ensure duplicate measurements were done on a 1:10 ratio as well as some changes to staff gauge measurements that would ensure consistency between users.

9 Physical Monitoring Program

Minto's physical monitoring program consists of a combination of instrumentation and visual inspections. Site wide inspections are carried out semi-annually - May/June post thaw and September pre- freeze-up. Normally, the Q2 inspection must be completed by an external geotechnical engineering consultant in accordance with Clause 13.2 of the QML. In 2021, due to COVID travel quarantine requirements in the Yukon in June, the Q2 inspection was completed by Minto and the external geotechnical inspection was completed in September. As specified in the WUL and *Minto Physical Monitoring Plan*, the following additional inspections are also performed:

- Static waste rock and overburden dumps – semi-annually
- Static open pits – semi-annually
- Diversion ditch – semi-annually (daily during water conveyance)
- Dry Stack Tailings Storage Facility, Mill Valley Fill Extension and Mill Valley Fill Extension 2 – quarterly
- Main Pit and Area 2 Pit tailings storage facilities – quarterly
- Water Storage Pond Dam – weekly (seepage), monthly (stability)

Deformation monitoring instrumentation includes survey hubs and borehole inclinometers, described in the following sections. A layout of physical monitoring instrumentation is provided in Figure 9-1, below. There were no changes to the *Physical Monitoring Program* (PMP) in 2021 besides increasing the frequency for certain survey hubs as noted in Table 9-1.

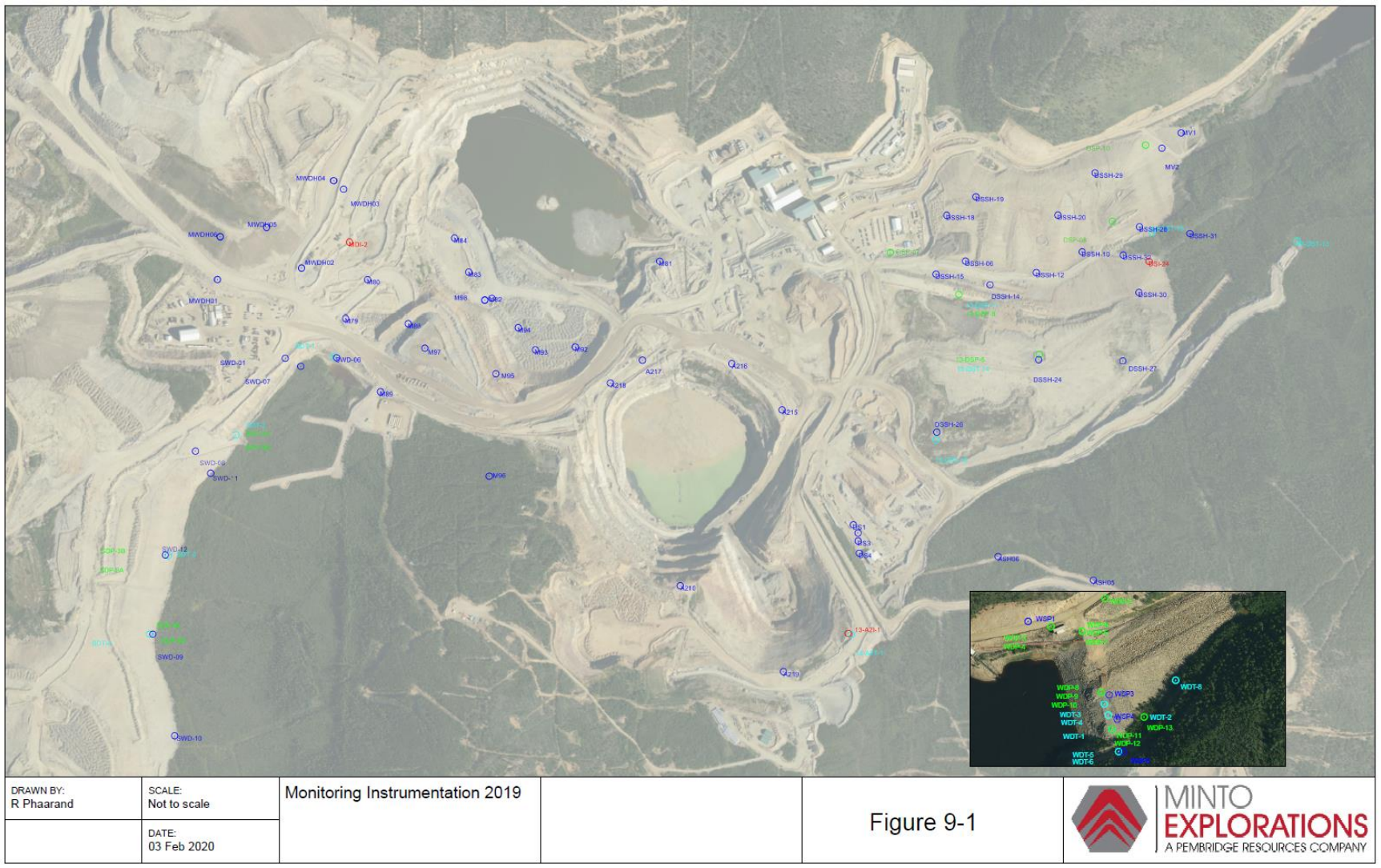

Figure 9-1: Physical Monitoring Program Installations (2021)

9.1 Physical Deformation Monitoring Instrumentation

9.1.1 Survey Hubs

Survey hubs are present at the Main Pit, Area 2 Pit, DSTSF, SWD, MWD Wrap, and WSP Dam to monitor physical deformation. Table 9-1 summarizes the data collection frequencies for each facility. The monitoring results are summarized in the following subsections.

Table 9-1: Survey Hub Data Collection Frequency (2021)

Facility	Reading Frequency	Survey Hub
Main Pit/South Wall Buttress	Monthly	M83, M88, M98, M97
	Quarterly	M82, M84, M93, M94, M95, M79, M80, M92, M96
Area 2 Pit	Weekly (during operations)	DS01, DS02, DS03, DS04
	Quarterly	A210, A215, A216, A217, A218, A219
DSTSF	Monthly	DSSH06, DSSH12, DSSH28
	Quarterly	DSSH19, DSSH20, DSSH24, DSSH26, DSSH27, MV2, DSSH10, DSSH14, DSSH15, DSSH18, DSSH29, DSSH31, DSSH32, MV1
SWD	Quarterly	SWD01, SWD06, SWD07, SWD08, SWD09, SWD10, SWD11, SWD12
MWD Wrap	Quarterly	MWDH01, MWDH02, MWDH03, MWDH04
WSP Dam	Monthly	WSP1, WSP3, WSP4, WSP5

Note: The data collection frequency was updated in 2022 with the annually read hubs now read quarterly.

9.1.1.1 Main Pit/South Wall Buttress Survey Hubs

There are currently 13 operating survey hubs on the Main Pit south wall buttress with the Data collected presented in Figure 9-2.

In February 2017, construction of the Main Pit Dump (MPD) began over areas of the south wall of the Main Pit that do not contain SAT. Placement of waste in the MPD occurred intermittently throughout the 2017 and 2018, with a large volume of material placed in the fall of 2017 and over the winter of 2017-18. MPD construction stopped following the completion of the Area 2 Stage 3 Pit in the Spring of 2018.

Survey hub movement data for the Main Pit Dump are presented in Figures 1 to 14 of Appendix P of the 2021 Geotechnical Annual Review, with the footprints of the MPD are

provided in Figure 1 of Appendix P of the 2021 Geotechnical Annual Review. All hubs show either no significant changes in horizontal movement, or a decelerating movement trend. The highest movement rate of 1.3 mm/day occurs at hub M97, which is located at the top of the MPD, and has decreased from a rate of 1.6 mm/day in July 2020.

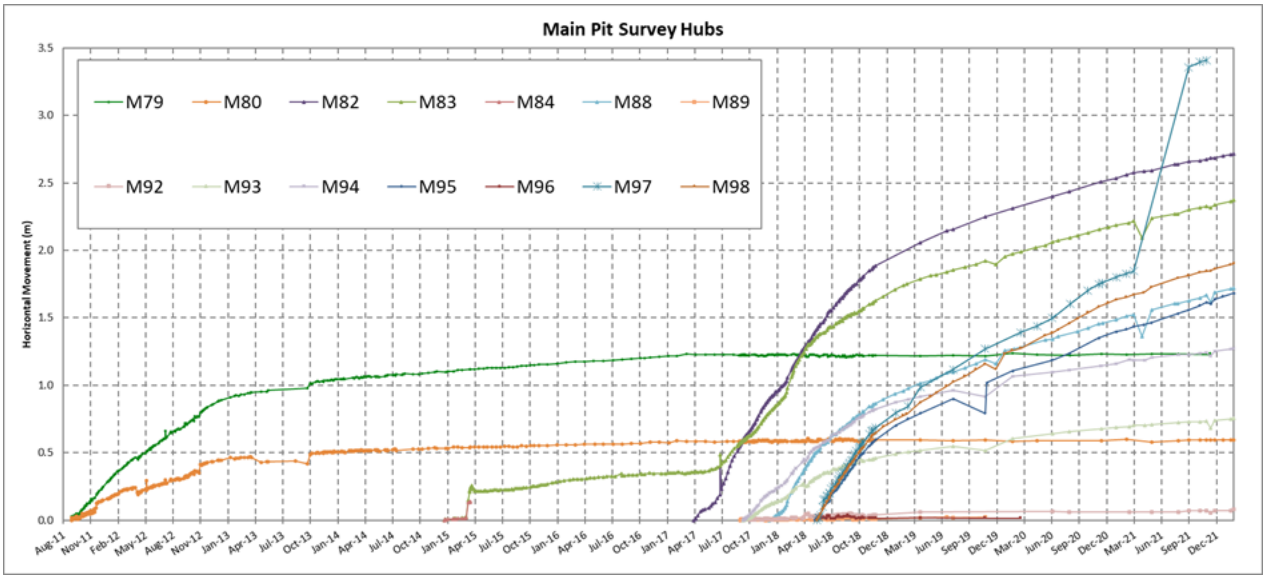

Figure 9-2: Main Pit/South Wall Buttress Survey Hub Data (2011-2021)

9.1.1.2 Area 2 Pit

There are currently 9 operating survey hubs located around the perimeter of the Area 2 Pit.

Four survey hubs (DS01 through DS04) are located near the Underground Shop along the east crest of the pit that are monitored weekly because of their proximity to the Underground Shop (Figure 9-3). Data from these hubs show steady and decreasing movement rates that range between 0.03 and 0.3 mm/day. No signs of additional cracking or deformation were noted in the area. The movement is likely due to mining of the Area 2 Stage 3 Pit and changes to the thermal ground regime resulting in thawing of permafrost soils. The other survey hubs (A210 through A18) on the west and northern portion of the Area 2 Pit also show steady or decreasing movement rates ranging from 0.01 mm/day to 0.11 mm/day (Figure 9-4).

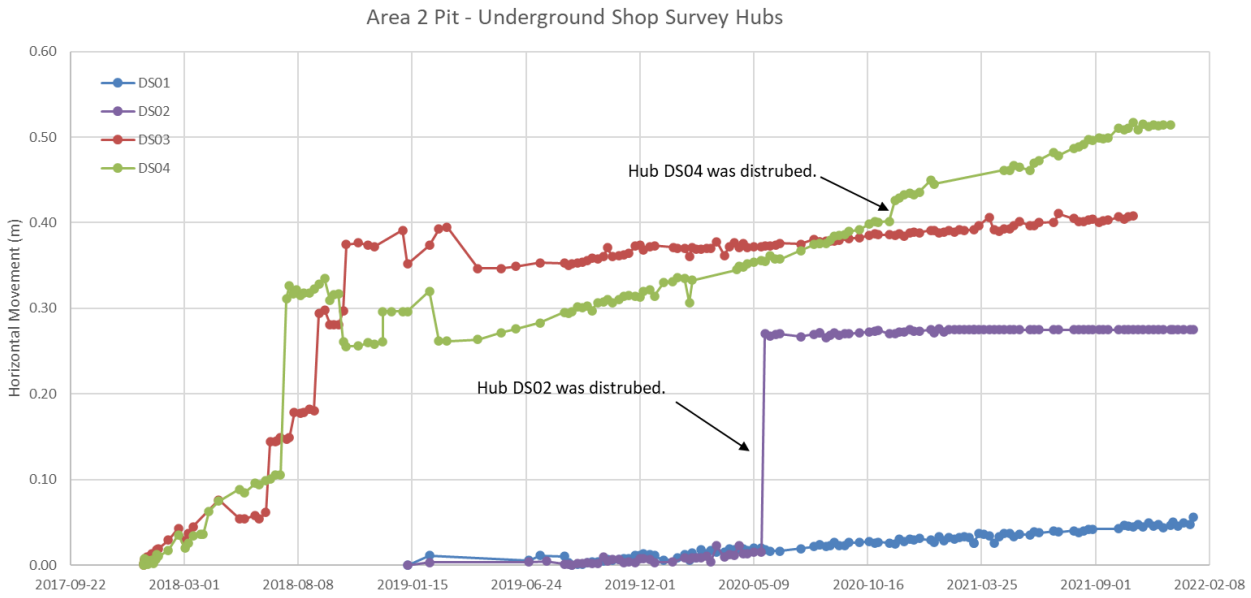

Figure 9-3: Area 2 Pit Survey Hubs associated with the UG shop

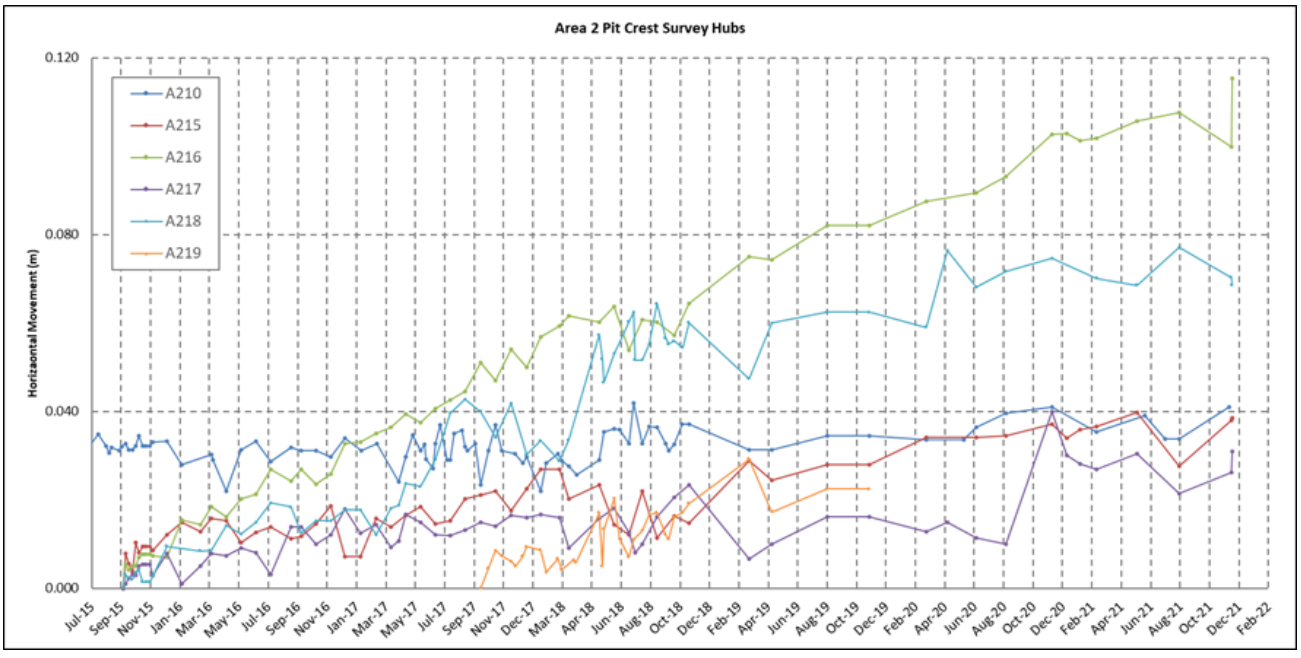

Figure 9-4: Remaining Area 2 Pit Survey Hub Data (2011-2021)

9.1.1.3 Dry Stack Tailings Storage Facility/Mill Valley Fill Survey Hubs

There are currently 17 operating survey hubs on the DSTSF and MVFE2. Following construction of the MVFE Stage 2, the survey hubs were expected to slow with the movement rates asymptotically approaching zero. The timing for when no movement is expected is uncertain. The hubs have generally been performing as expected since the construction of the MVFE Stage 2. Rates of movement within the DSTSF are substantially lower compared to before the construction of the MVFE Stage 2 with most survey hubs continuing to show a decelerating trend with the rate of deceleration decreasing in the past year. Several hubs show steady movement, but additional time is needed to evaluate if deceleration has stopped. Two survey hubs show possible acceleration trends:

DSSH12 shows an apparent acceleration in the last reading on July 31, 2021, with the horizontal movement rate increasing from 0.13 mm/day to 0.4 mm/day. Additional readings are needed to confirm the trend. A seasonal increase in movement was also observed in 2019 with the hub subsequently continuing to decelerate.

DSSH26 shows an apparent acceleration in the last reading on May 31, 2021, with the horizontal movement rate increasing from 0.07 mm/day to 0.25 mm/day. Additional readings are needed to confirm the trend because the hub may have shifted because of the spring thaw and settlement of the cover beneath the hub. This hub has previous shown a deceleration trend since its installation in 2015.

Data collected have been separated into two figures, Figure 9-5 and 9-6, as DSSH14 showed significantly more movement than other hubs prior to the completion of MVFE2 in 2016.

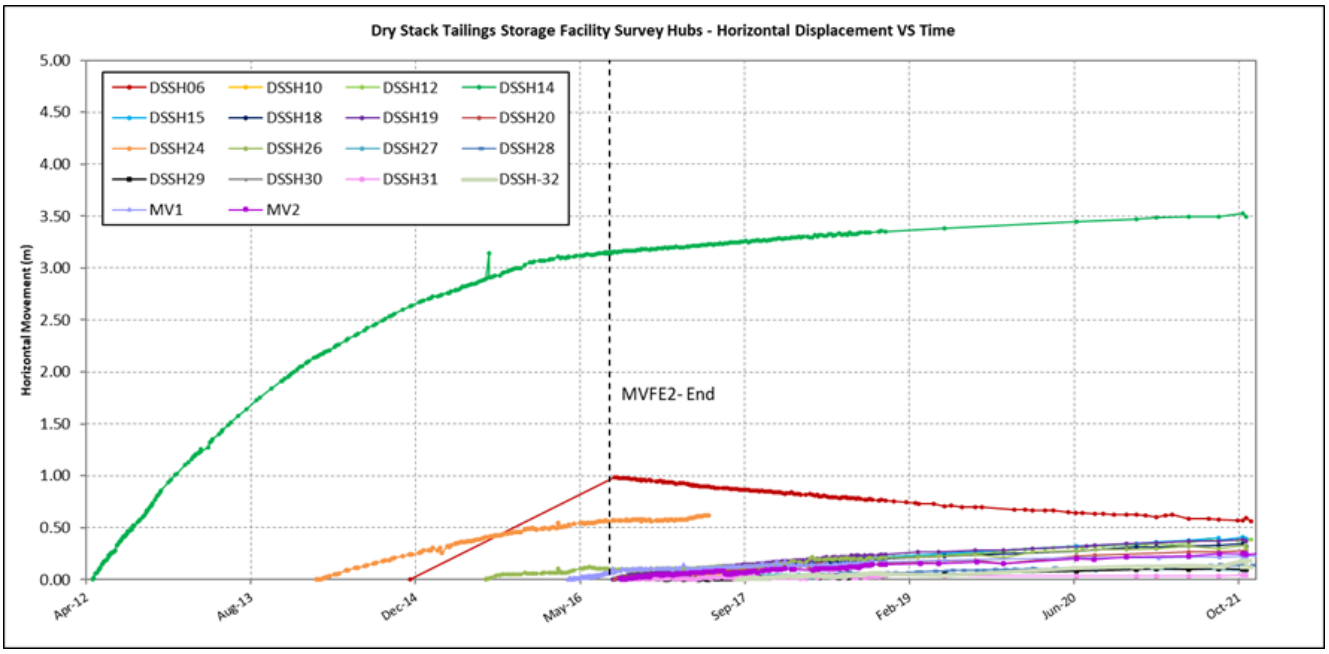

Figure 9-5: DSTSF Survey Hub Data (2012-2021)

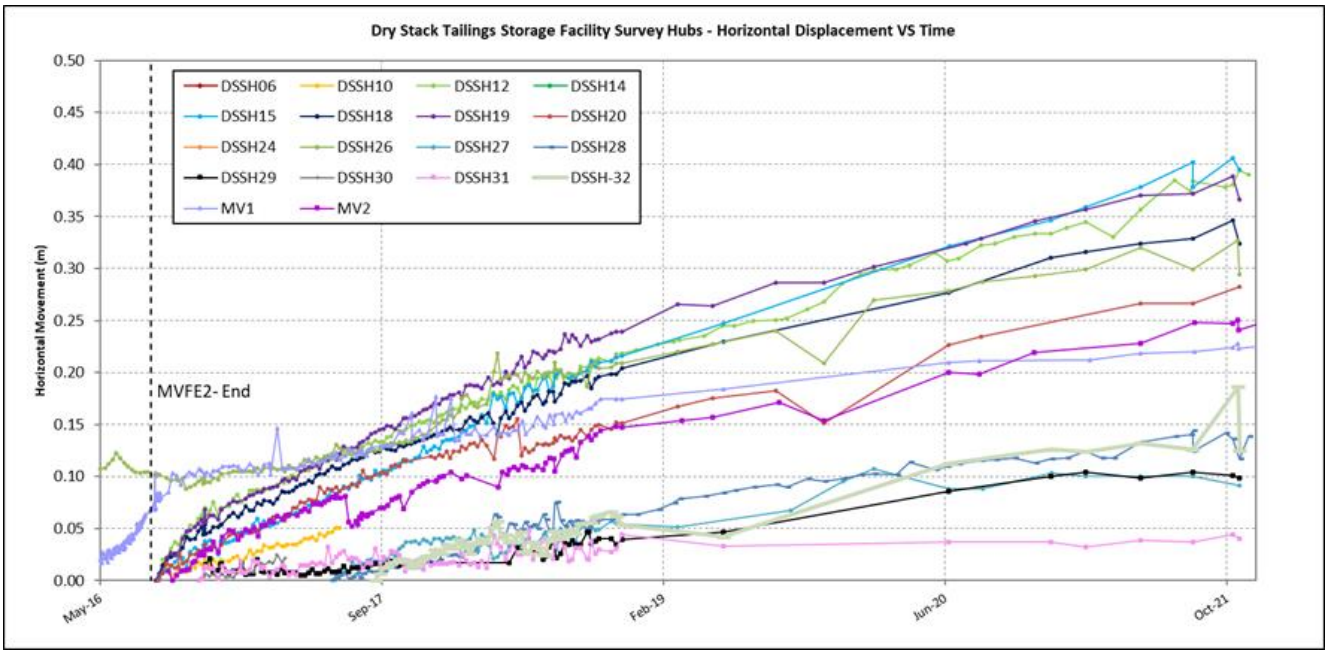

Figure 9-6: DSTSF Survey Hub Data (2016-2021)

9.1.1.4 Southwest Dump Survey Hubs

There are currently 8 operating survey hubs on the SWD. Data collected are presented in Figure 9-7. Survey hubs SWD12 and SWD09 are located downslope of the longitudinal crack observed during site inspection. The movement of these hubs may be due creep or thawing of ice-rich soils present beneath the lower portions of the dump near the valley bottom (east side). In addition, the stockpiled cover material downslope of the crack likely contributes a driving force to the movement. The future spreading of the cover will likely reduce the driving force and movement rate. The foundation soils the upper (western) portion of the dump consists of colluvial soils with low ice content (EBA 2008). The survey hub movement direction is perpendicular to the dump crest with no indication of down valley movement (towards the Main Pit). The crack location was plotted overtop of an interpreted overburden isopach plan. The isopach indicates that the overburden is generally thin in the in the area of the crack and downslope; however, this is based on one drillhole in the vicinity of the crack and the accuracy of that borehole was unable to be confirmed at this time. The survey hubs are recommended to continue to be monitored at a quarterly basis. See Appendix P (2021 Geotechnical Annual Review) for more information.

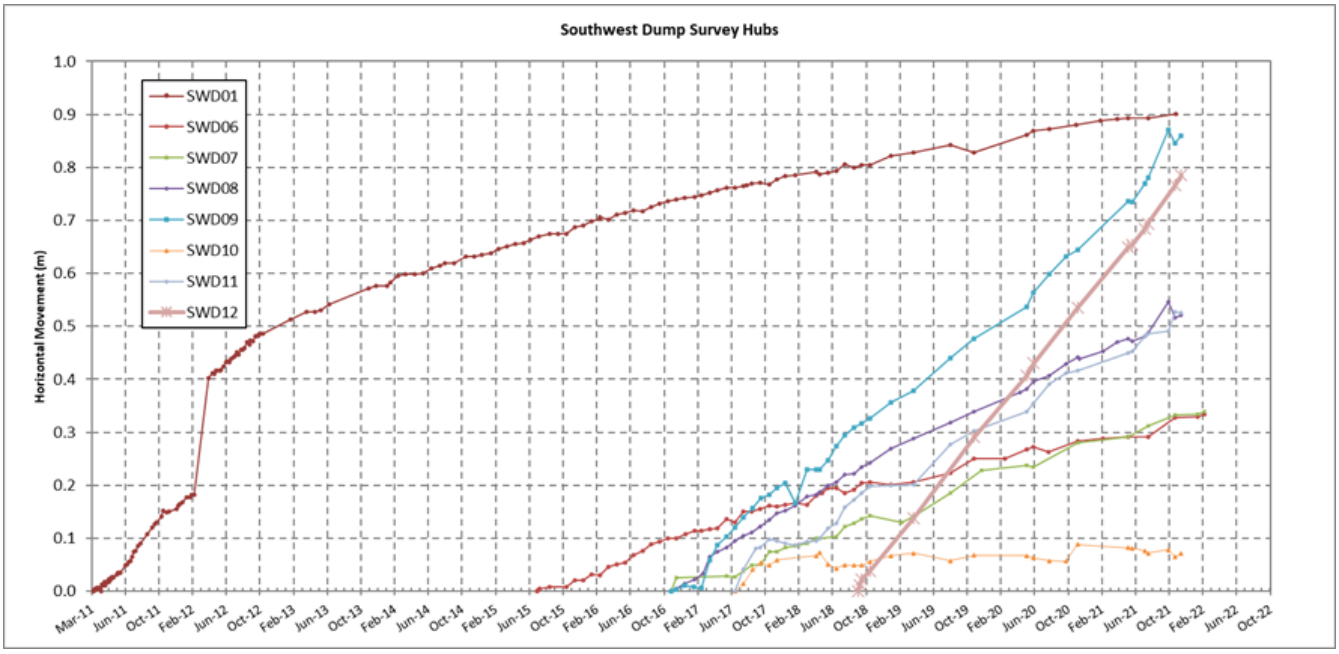

Figure 9-7: SWD Survey Hub Data (2011-2021)

9.1.1.5 Main Waste Dump Wrap Survey Hubs

Six survey hubs were installed on the Main Waste Dump Wrap in August 2018. Data collected are presented in Figure 9-8. Hubs MWDH05 and MWD06 were destroyed in 2020 because of re-sloping of the waste rock dump. The hubs have shown no movement, or a decrease in movement rate since the construction of the dump was completed.

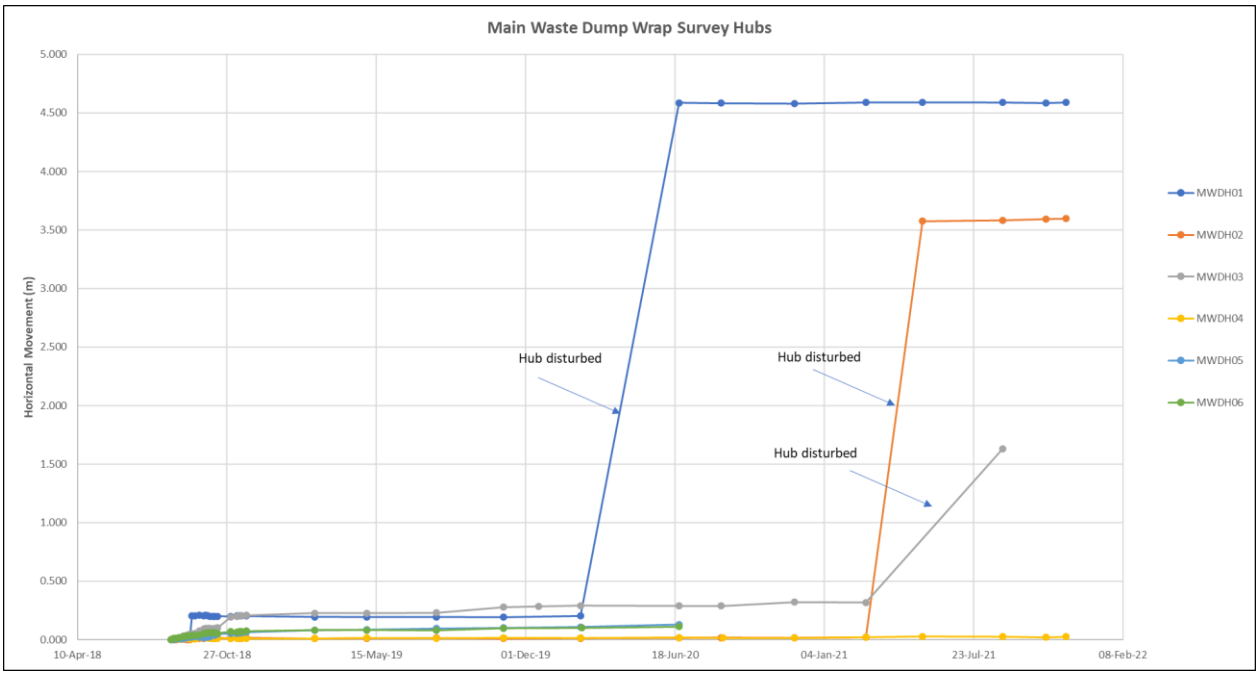

Figure 9-8: Main Waste Dump Survey Hub Data (2018-2021)

9.1.1.6 Water Storage Pond Dam Survey Hubs

There are currently four operating survey hubs on the WSP dam. There was no change to the operational status of any the hubs in 2021. Data collected are presented in Figure 9-9. Data continues to indicate no movement. Some non-reliable readings with extremely high peaks were reported, this is likely due to operator error.

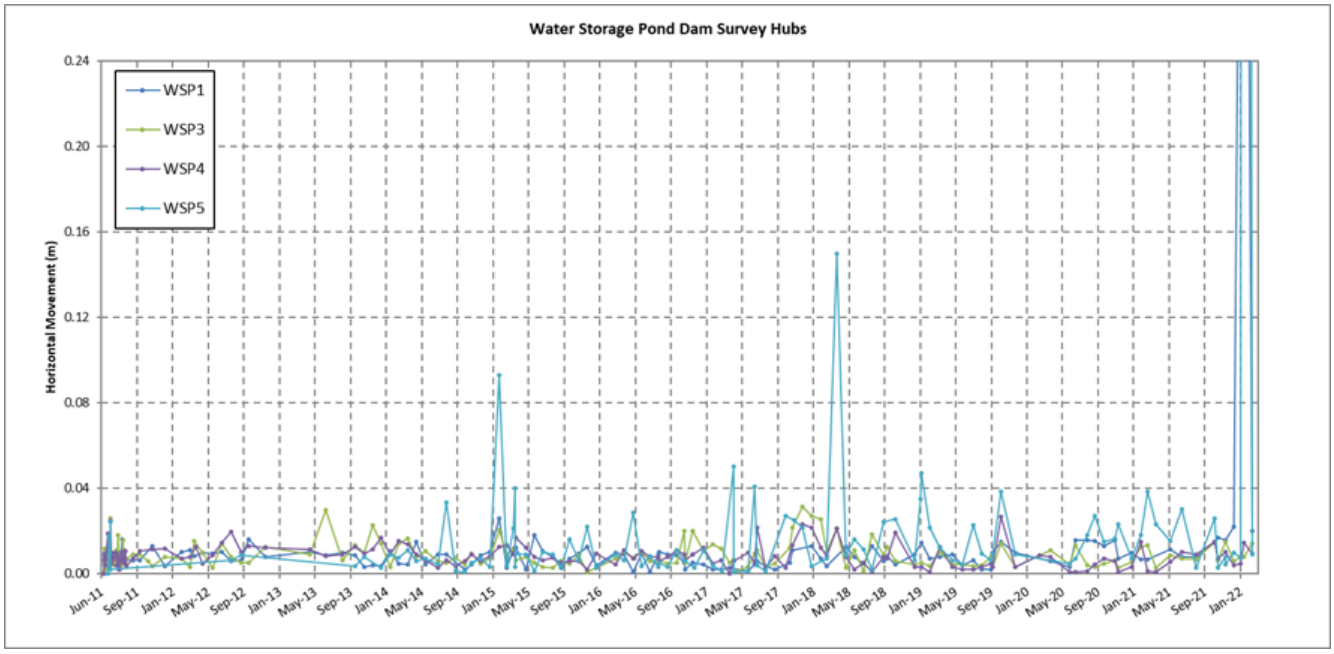

Figure 9-9: Water Storage Pond Dam Survey Hub Data (2011-2021)

9.1.2 Inclinometers

Physical deformation monitoring consists of monitoring of inclinometers at the DSTSF, Area 2 Stage 3 Pit and Main Pit. The monitoring results are summarized below.

9.1.2.1 DSTSF Inclinometer

There is one operating inclinometer (DSI-24) in the DSTSF area. DSI-24 is monitored quarterly, and the cumulative displacement data collected is presented in Figure 9-10. The inclinometer is located between the MVFES2 and the DSTSF. The profile plot indicates a main shear zone at depths of 45 m and 53 m. The last reading collected on June 19, 2021, shows an increase in the movement rate (0.19 mm/day), which had previously shown a deceleration trend with an average movement rate of 0.055 mm/day in 2021. Additional readings are needed to confirm if the acceleration is real, or due to variability, or is an erroneous reading.

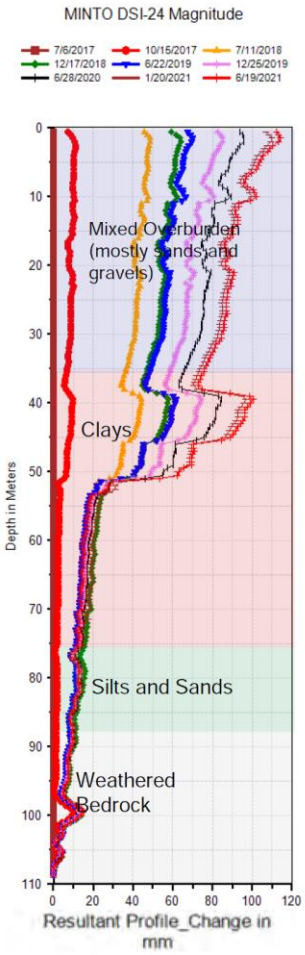

Figure 9-10: DSTSF Inclinometer DSI-24 (2017-2021)

9.1.2.2 Area 2 Stage 3 Inclinometer

There is one inclinometer (A2I-1) in the Area 2 Stage 3 Pit area that was installed in 2013 prior to development of the Area 2 Stage 3 Pit. A2I-1 is monitored quarterly with the cumulative displacement data presented in Figure 9-11. The displacement rate increased during mining of the pit in late 2017 and early 2018. Since completion of the pit, the movement rate has slowed and is not considered to be a stability concern. 2021 data shows a shear zone developing between depths of 36 m and 50 m starting in the fall of 2017, which corresponds to the mining of the Area 2 Stage 3 Pit. The observed shear zone includes multiple discrete zones between 36 and 50 m. The movement rate then slowed, and since 2019 shows a slight acceleration trend that has increased the movement rate from approximately 0.1 mm/day in 2019 to 0.15 mm/day in 2021.

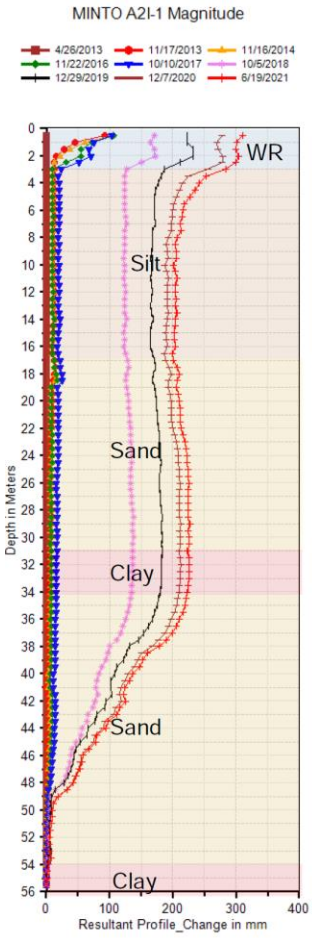

Figure 9-11: Area 2 Stage 3 Pit Inclinometer A2I-1 (2013-2021)

9.1.2.3 Main Pit Inclinometer

There is one operating inclinometer (MDI-2) in the Main Pit west wall area. Readings have been collected since 2010. Data are collected quarterly. Data collected are presented in Figure 9-12. Displacements in MDI-2 increased during the winter of 2017-18, with a movement rate of approximately 0.07 mm/day primarily occurring between the depths of 22 and 28 m below ground surface. The displacement is likely related to the construction of the MWD Wrap which occurred during the same time period. The movement rate has slowed since completion of the dump, with a rate <0.02 mm/day in 2021.

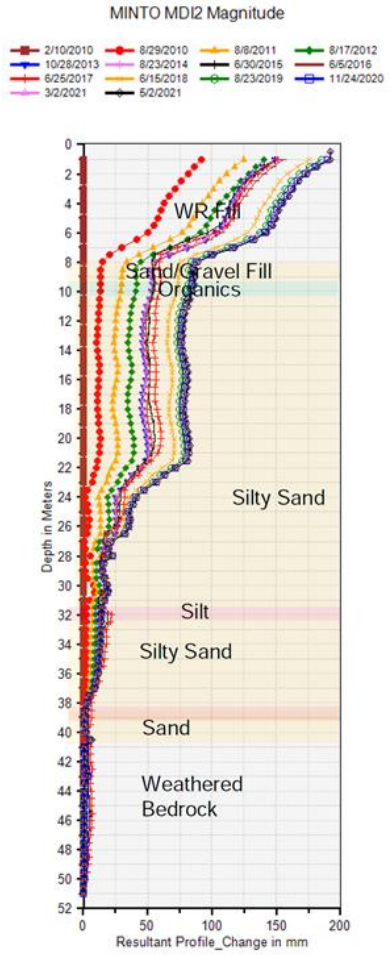

Figure 9-12: Main Pit Inclinometer MDI-2 (2010-2021)

9.2 Engineer's Annual Physical Inspection Reports

As required by the WUL and QML, the following structures are inspected semi-annually by Minto's geotechnical engineer and annually by an external geotechnical engineering consultant:

- Dry Stack Tailings Storage Facility (DSTSF) and Mill Valley Fill Extension (MVFE) (Stage 1 and 2)
- Tailings Diversion Ditch (TDD)
- Main Waste Dump (MWD), including Main Waste Dump Expansion, and Main Waste Dump Wrap
- Southwest Waste Dump (SWD)
- Reclamation Overburden Dump
- Ore stockpiles
- Mill and camp site
- Fuel containment facility
- Water Storage Pond (WSP) Dam
- Big Creek Bridge
- Main Pit Dump
- Main Pit including South Wall Buttress, In-Pit Dump, and SAT Dump
- Area 2 Pit
- Area 118 Pit and Backfill Dump
- Minto North Pit

Table 9-2 summarizes the recommendations from the most recent external inspection conducted September 2-3, 2021, and the associated planned actions.

Table 9-2: Annual Physical Inspection Report Summary (2021)

Area	Recommendation	Action
General	Several instrumentation cables and PVC pipes were observed to be exposed with no protective covers. Minto staff responsible for obtaining readings should be reminded to replace the cover following readings to prevent water ingress and damage due to freeze thaw.	Corrective action taken already.
	The 2020 inspection recommended an InSAR satellite survey study to be completed to increase the understanding of movement of the various waste facilities at site (DSTSF, SWD, and Main Pit Dump). At this time of this inspection, Minto has proceeded with the study that is being undertaken by SRK and 3VGeomatics, but the study results are not yet available for consideration in this report.	Planned to be completed in time for 2022 Report
DSTSF and MVFE	As part of the routine visual inspections, continue to monitor the following for any changes in condition: – the cracking present at the south end of the DSTSF, as well as – erosion gullies observed in the cover material on the northern and eastern slopes.	Ongoing Monitoring
	Implement upgrades to the TDD Intake Structure to prevent future sedimentation accumulation within the channel next freshet. The upgrades should be completed in a manner that meets the design objectives documented in the SRK design memo and should consider the following: – Raising the elevation of the TDD intake pipes to prevent sediments from entering the pipes. – Regrading of the Underground Access Road to prevent sedimentation from entering the intake structure. Runoff from the road should be directed to the opposite side of the road and conveyed into the Area 2 Pit (via a sump/pipeline system, lined channel/slope, or equivalent). – Flows that exceeds the capacity of the TDD Intake Structure will flow down the Underground Access Road to the north. Either a berm should be constructed along the	Construction will be implemented as soon as practical in 2022

Area	Recommendation	Action
	access road to prevent this water from flowing onto the DSTSF cover, or the Underground Access Road should be regraded to direct overtopping flows to the Area 2 Pit.	
MWD Wrap	Complete the regrading of MWD Wrap to grade over the over-steepened slope at the toe of the dump. In its current state, there is a higher risk of surficial slope failures and rockfall. Coarse rock is present at the base of the slope that acts as a small barrier to rockfall, but until the wrap has been regraded, traffic should be restricted near the toe.	Construction will be completed as part of construction of the Main Pit Dam and until construction is complete traffic will be restricted near the toe
SWD	Continue to monitor the cracking upslope of the cover soil stockpiles as part of the routine inspections specified in the PMP.	Ongoing
Fuel Containment Facility	**An investigation is needed to inspect the condition of the geotextile and liner in the area along the new rutting in the facility.** The inspection should be completed using hand shovels to carefully expose the geosynthetics to allow for a thorough assessment of the condition of the geosynthetic materials. All areas of damaged geosynthetics should be repaired by a qualified professional and new sand material should be used to fill in the ruts after the repairs have been made.	Will be completed in 2022
WSP	Continue to monitor the identified potential sinkhole located 5 m NW of WDT-08 as part of the routine visual inspections for any change in condition. Photographs records should be maintained to aid in monitoring. Deadfall/logs should be removed from the upstream face of the dam. Should any extreme precipitation event occur, the deadfall could plug/reduce the conveyance capacity of the spillway resulting in uncontrolled overtopping of the dam.	Ongoing monitoring and removal of deadfall/logs will be done in 2022
Main Pit, SAT Dump & In-Pit Dumps	Waste rock materials being processed for construction material should be excavated from the northern edge of the top bench instead of the south end as observed during the inspection to assist in unloading of the dump in the area currently experiencing movement.	Ongoing

Area	Recommendation	Action
	The sinkhole north of the W15 Sump should be filled and the erosion channel graded to minimize infiltration into the pit in the event of any future overtopping of the sump.	Completed
Area 2 Pit	Continue to monitor the crests and slopes as part of the monthly visual inspection for signs of worsening cracking to determine if any slope stabilization measures are required.	Ongoing

10 Adaptive Management Plan - Operations

The Operations Adaptive Management Plan has been in use since WUL QZ14-031 became active. Adaptive Management Plan 2017-01 (AMP 2017-01) is currently approved by Energy, Mines and Resources (EMR) under the current Quartz Mining License (QML-0001); while the Adaptive Management Plan 2017-02 (AMP 2017-02) is approved under by the Yukon Water Board under the current Water Use Licence (QZ41-031). Minto has submitted version 2020-01; however, neither regulator has approved this version. This section includes the assessment to the AMP of 2017-02 specific thresholds.

The comparative tables and associated trigger levels for the adaptive management stations and the required trend analyses are included in the monthly WUL reports.

A summary of the AMP 2017-02 exceedances is included in the sections below. Not all threshold concentration exceedances result in the triggering of AMP responses, as determined by the AMP2017-02.

10.1 Surface Water Quality – Minto Creek

In 2021, AMP thresholds were triggered between April and September with exceedances either being related to freshet or previously investigated non-mine loading exceedances related to Se or one sampling/lab error.

10.1.1 Minto Creek – W2

A summary of the W2 exceedances of the AMP is discussed below in Table 10-1. Trend analysis, evaluations and data has been presented in the monthly reports.

Table 10-1: Minto Creek Surface Water threshold exceedances, Station W2

Date	Parameter	Exceedance Threshold Triggered	Context
26-Apr-21	Cu-D	SPT1	Cu and Cd are linked to freshet peaks in concentrations
26-Apr-21	Cd-D	SPT1	
4-May-21	Cu-D, Al-D	SPT2/SPT3	Al, Cu, Fe and Ni are all linked to freshet peaks in concentrations as is evidenced by no exceedances in June after freshet.
11- May- 21	Al-D	SPT2	
18-May-21	Cu-D	SPT1	
25-May-21	Al-D, Ni-D, Fe-D	SPT1/SPT3 (Ni/Fe)	
26-May-21	Ni-D	SPT3	
23-Sept-21	NH3	SPT1	Likely sampling or lab error as day before was below detection and several days later it was again below combined with upstream and downstream results not indicative of exceedance.

Ongoing events are addressed specifically as follows:

The exceedances above expected or worst-case maximum predictions for dissolved aluminum, copper, and molybdenum were not mine-related. Instead, exceedances in dissolved aluminum and copper concentrations were more likely associated with elevated concentrations in tributaries that influence water quality at stations W2 and W3.

Dissolved aluminum concentrations exceeded the guideline protective of aquatic life for one sampling event only, and this event was followed by a sharp decline to well below the guideline, however given that the aluminum exceedance was not mine-related, no further action was recommended.

The exceedance observed for dissolved cadmium may have been mine-related, however the exceedance occurred over one sampling event only, and has since decreased. In addition, trend analyses showed that in general, cadmium concentrations at station W2 have been decreasing.

It is recommended that sampling continue as scheduled at stations W2 and W3 since concentrations are not expected to affect aquatic life. Increased monitoring frequency is not required at this time at stations W2 and W3.

10.1.2 Minto Creek – W50

Minto monitored the specific performance thresholds for surface water quality in Minto Creek at WQO station W50 from May 10th to December 28th, 2021; the site was frozen until May 10th and therefore no samples collected before this time. No adaptive management was required.

10.2 Surface Water Quality – McGinty Creek

Minto monitored the specific performance thresholds for surface water quality in McGinty Creek.

A summary of the MN-4.5 exceedances of the AMP is discussed below. Trend analysis and data has been presented in the monthly reports.

Not all threshold concentration exceedances result in the triggering of AMP responses.

Table 10-2: McGinty Creek Surface Water threshold exceedances, MN-4.5

Date	Parameter	Exceedance Threshold Triggered	Context
19-May-21	Al-D, Cu-D, Ni-D, Se-D	SPT1 for Al, SPT2 for Cu, NI, Se	Al, Cu, Fe and Ni are all linked to freshet peaks in concentrations while Se-D loading has been investigated and is not caused by mine loading.
13-June-21	Se-D	SPT2	Se-D loading has been investigated by Minnow in 2019 Annual Report and is not caused by mine loading.
17-Jul-21	Se-D	SPT2	Se-D loading has been investigated by Minnow in 2019 Annual Report and is not caused by mine loading.
22-Aug-21	Se-D	SPT2	Se-D loading has been investigated by Minnow in 2019 Annual Report and is not caused by mine loading.
25-Sept-21	Se-D	SPT2	Se-D loading has been investigated by Minnow in 2019 Annual Report and is not caused by mine loading.

Ongoing events are addressed specifically as follows:

Dissolved aluminum, copper, nickel, and selenium exceeded the ST-2 objectives at MN-4.5, but the source was unrelated to the Minto Mine and consistent with historical concentrations before the Minto North Pit was operational. Dissolved aluminum,

copper, nickel, and selenium were well below Minto's SSWQO, so effects to aquatic life would not be expected.

Three investigations show that dissolved selenium consistently triggers either the ST-2 or the ST-3 objective but that exceedances were unrelated to the mine. These consistent exceedances could be due to the appropriateness of using MN-4.5 as the station which thresholds are based on. Station MN-4.5 receives influence from a mix of the west and the east arms. Station MN-0.5 would be more appropriate to use as the basis for the thresholds as it is influenced by a greater proportion of the west arm (reference arm) and would serve as a good comparison to MN-2.5 which is influenced by most of the east arm. It is recommended that the development of Specific Thresholds using station MN-0.5 should be considered. Accordingly, draft thresholds were developed for MN-0.5 (for all analytes) using the same methodology as current thresholds and based on all available data from 2009 to 2018. Data for MN-0.5 was used to develop ST-1 (0.23 μg/L), ST-2 (0.26 μg/L), and ST-3 (0.21 μg/L) selenium thresholds. Draft selenium thresholds were evaluated against raw data and 12-month rolling average calculations. This interpretation is discussed in greater detail in Appendix F.

It is recommended that sampling continue as scheduled since the exceedance of dissolved aluminum, copper, nickel, and selenium were unrelated to the mine. It is recommended that Minto Mine seek approval to use the draft thresholds. Increased monitoring frequency is not required at this time.

10.3 Groundwater Quality – Minto Creek

Various exceedances of AMP levels triggered a review of the groundwater data by the qualified professional. All groundwater data was forwarded to SRK Consulting for review and recommendations. See Appendix H, *Minto Annual Groundwater Review 2021,* and Appendix I*, Quarterly Groundwater AMP Exceedance Reviews,* for groundwater quality data results.

10.4 Groundwater Quality - McGinty Creek

Minto monitored the specific performance thresholds for McGinty Creek groundwater. Various exceedances of AMP levels triggered a review of the groundwater data by the

qualified professional. All groundwater data was forwarded to SRK Consulting for review and recommendations. See Appendices H and I for details. The Annual Review of AMP Exceedances for 2021 will include a comprehensive water and load balance for McGinty Creek and is expected later in the year and will be submitted separately.

10.5 Water Management AMP

Water storage capacity in the Main Pit Tailings Management Facility and the Area 2 Pit Tailings Management Facility was below 1,000,000 m^3 as of December 2021. As such, Minto notified SFN and YG and initiated a management response plan including bringing additional water treatment capacity to site. The key elements of the plan include:

- Additional capacity via a mobile microfiltration unit that is set up at the WSP to treat non-mine impacted water;
- Snowmakers to slow down the melt and improve water quality by reducing nitrogen loading in the manufactured snow/ice;
- Evaporators for use in the summer months; and
- Upgrades to the WTP to increase certainty of achieving WQOs by adding a polishing stage of ion exchange vessels and increasing capacity in the WTP to at least maximize the use of the RO units.

An amendment to the Water Management Plan to implement the elements of the management response plan has been partially approved by YG and is anticipated to be submitted in March to the Yukon Water Board.

Table 10-3, below, presents site-side water and tailings storage volumes and remaining capacity as of January 1st, 2022.

Table 10-3: Water and Tailings Storage Volumes and Capacity as of January 1st, 2022

Site	Volume Tailings and Water (m^3)	Maximum Volume	Remaining Capacity
Main Pit	463,412	510,446	47,034
WSP	196,200	294,939	98,739
Area 2 Pit Complex	2,212,648	2,985,601	772,953
Total	2,872,260	5,023,345	918,726

10.6 Physical Monitoring Program AMP

The results of the Physical Monitoring Program are compared to the thresholds set out in the 2018 Adaptive Management Plan (AMP). Table 10-4 and 10-5 below, summarize the threshold statuses for the Category 1 and Category 2 facilities. Please note that the table also includes historical context for some Thresholds.

Category 1 facilities are those found in areas of ice-rich periglacial foundations that have previously experienced deep-seated foundation movement and include the Dry Stack Tailings Storage Facility, Mill Valley Fill Extension (Stages 1 and 2), Southwest Waste Dump, and South Wall Buttress/Main Pit Dump. Category 2 facilities are all other waste rock dumps, including the Main Waste Dump and Main Waste Dump Expansion, Reclamation Overburden Dump, and Ice-rich Overburden Dump.

Table 10-4: Category 1 Facilities – Threshold Status, December 2021

Specific Performance Thresholds	Thresholds Exceeded	Response
Specific Threshold 1 • Observation of unusual occurrence including: • tension cracks, settlement, or sloughing; • a seismic event that exceeds the 1:475 return period event[1]; • abnormal seepage from any area of the slopes; • increased turbidity from seepage; • Physical damage.	SWD Cracking	**Sept. 2021:** Increased cracking observed on the former main road of the dump just south of the former IROD. The crack is oriented parallel to the crest, is approximately 200 m long and has a maximum width of 35 cm. The cracking was observed in June 2019. Survey hub data below the cracking was reviewed (Hubs SWD09, 11, and 12) and hubs SWD09 and 11 show a slight acceleration trend, but movement rates are like those observed in 2018. The cracking is believed to be related to the long-term movement of the SWD.

[1] This size of a seismic event would be felt by most people on site. It would shake buildings, and rattle or break dishes, hanging objects, etc. Earthquake information may also be found online at: http://www.earthquakescanada.nrcan.gc.ca/index-eng.php

Specific Performance Thresholds	Thresholds Exceeded	Response
		Area is to continue to be monitored for changes as part of routine inspections. In response to the cracking, the survey hub frequency of hubs SWD 9, 10, 11, and 12 was increased to monthly. **Current Conditions:** Movement rates have since slowed with no indication of instability.
Specific Threshold 2 • One survey hub or inclinometer reading indicating an increase in the movement rate greater than the long-term trend and outside the range of instrumentation error.	DS04	**November 2021**: Apparent acceleration trend with a displacement of 2.3 cm between two weekly readings. The following reading resulted in a movement rate that was like the proceeding readings indicating potential hub disturbance. December 2021: Three readings collected in past month indicate no change in movement following the disturbance. Issue considered **CLOSED**.
	M95	**November 2021**: Apparent acceleration trend increasing from 0.7 mm/day to 1.1 mm/day. Retake reading to confirm trend. **December 2021:** Subsequent reading confirmed the 1.1 mm/day rate and no further acceleration noted. The 1.1mm/day rate is within the typical seasonal range observed in 2019-20 and will continue to be monitored.
Specific Threshold 3 • For DSTSF and MVFE piezometers 13-DSP-05a, 13-DSP-06, 15-DSP-07, and 15-DSP-08, an increase in piezometric pressures under	None	N/A

Specific Performance Thresholds	Thresholds Exceeded	Response
unfrozen or thawing conditions such that Ru[2] exceeds 0.40. • For MVFE2 piezometer 15-DSP-10, an increase in piezometric pressures under unfrozen or thawing conditions such that the equivalent water elevation is 3 m above the original ground surface. Or Temperature greater than zero at a depth of 2 m below original ground *(all SWD ground temperature cables, and DSTSF ground temperature cables DST-10, DST-11, and DST-14 only)*		
Specific Threshold 4 • For DSTSF and MVFE piezometers 13-DSP-05, 13-DSP-06, 15-DSP-07, and 15-DSP-08, an increase in piezometric pressures under unfrozen or thawing conditions such that Ru exceeds 0.6. • For MVFE2 piezometer 15-DSP-10, an increase in piezometric pressures under unfrozen or thawing conditions such that the equivalent water elevation is 10 m above the original ground surface.	None	N/A
Specific Threshold 5 • Three consecutive survey hub or inclinometer readings indicating an increase in the movement rate movement greater than the long-term trend. Or • Three consecutive survey hub readings indicating a change in horizontal direction of movement	None	N/A

[2] Ru is the pore water pressure coefficient which is the ratio of piezometric pressure to the overburden pressure. A pore water pressure ratio of 0.5 would be similar to the effect of a groundwater table at surface. Conversions from Ru to equivalent water elevation are contained in Table 2-15 of the AMP.

Specific Performance Thresholds	Thresholds Exceeded	Response
greater than 15 degrees from the long-term trend.		

Table 10-5: Category 2 Facilities – Threshold Status, December 2021

Specific Performance Thresholds	Thresholds Exceeded	Response
Specific Threshold 1 • Observation of unusual occurrence including: • tension cracks, settlement, or sloughing; • a seismic event that exceeds the 1:475 return period event; • abnormal seepage from any area of the slopes; • increased turbidity from seepage; • physical damage.	None	N/A
Specific Threshold 2 **WSP Dam:** • One survey hub reading indicating an increase of movement outside range of instrumentation error. **All other Category 2 Facilities:** • Survey hub cumulative displacements between 150 mm and 500 mm.	None	N/A
Specific Threshold 3 **WSP Dam:** • One piezometer reading outside of its long-term trend (in comparison to the reservoir pond elevation). **All other Category 2 Facilities:** • Survey hub cumulative displacements greater than 500 mm.	None	N/A

Specific Threshold 4 **WSP Dam:** • Three consecutive survey hub readings indicating increase in movement outside range of instrumentation error.	None	N/A

11 Aquatic Environmental Monitoring Program

The Aquatic Environmental Monitoring Program (AEMP) is composed of Minto's requirements under the MMER and biological monitoring of sediment, benthic invertebrates, fish, and fish habitat. Monitoring under the MMER is presented in Section 11.1 and the biological monitoring of sediment, benthic invertebrates, fish, and fish habitat is presented in Section 11.2.

11.1 Metal and Diamond Mining Effluent Regulations Monitoring Programs

The Metal and Diamond Mining Effluent Regulations (MDMER) outline requirements for monitoring and reporting of discharged effluent volume and quality under the MDMER to Environment Canada. Details of the Metal and Diamond Mining Effluent Program, including sampling station locations and monitoring frequency, are outlined in the EMSRP and the results are submitted on a quarterly and annual basis to Environment Canada.

11.1.1 Effluent Monitoring Program

The MDMER Program requires effluent monitoring and sampling at the final discharge point (FDP) station W3, downstream of the end of pipe discharge. The W3 sampling station is collected when there is a discharge of water at W3; testing occurs weekly for deleterious substances.

Weekly effluent monitoring samples are tested for the deleterious substances as described in the MDMER including total metals (arsenic, copper, lead, nickel, and zinc), total suspended solids (TSS), and pH. Weekly samples are collected at least 24 hours apart and not more than 7 days apart. Minto is striving for consistency and has internally scheduled MDMER sampling to occur on Tuesdays.

Radium 226 and acute lethality tests are conducted quarterly due to the reduced frequency guidelines outlined in the MDMER.

The Effluent Monitoring Program results are submitted to Environment Canada quarterly.

11.1.2 Environmental Effects Monitoring Water Quality Monitoring

The EEM Water Quality Monitoring Program is designed to characterize water quality at the exposure area, the receiving environment and in reference (un-impacted) area. Water quality samples must be collected four times a year, not less than one month apart, while the mine is discharging effluent at the Final Discharge Point (FDP) of W3. Samples are collected at the exposure area (W3), receiving environment station (W2) and reference station (W7). Effluent toxicity testing is required annually using a total of four tests: one each of a fish, invertebrate, algae, and plant species.

The EEM Water Quality Monitoring Program results submitted to Environment Canada annually.

11.1.3 Environmental Effects Monitoring Biological Monitoring

The EEM Biological Monitoring Program outlines fish population, fish tissue and benthic invertebrate tests conducted under Schedule 5, Part 2 of the MDMER. See Appendix J *Minto Creek Sediment, Periphyton and Benthic Invertebrate Community Assessment – 2021 by Minnow,* for details.

11.2 Biological Monitoring Program

Clause 101 of the WUL requires an Annual Biological Monitoring Program (also known as the Aquatic Effects Monitoring Program or AEMP) that includes monitoring of sediment, periphyton, benthic invertebrates, fish, and fish habitat.

The following sections summarize the monitoring program results, and the more detailed primary reports can be found in Appendix J, which contains data and associated analysis and interpretation of sediment, periphyton, and benthic invertebrate monitoring.

11.2.1 Sediment Monitoring Program

Sediment quality results at upper Minto Creek and lower Minto Creek were summarized and compared to upper McGinty Creek and lower Wolverine Creek reference areas, respectively, in order to evaluate any potential mine-related influence.

Sediments collected in 2021 were largely composed of sand at the upper areas (>45%) and fine particles of silt/clay at the lower areas (Figure 11-1). Due to the predominantly erosional habitat in upper Minto Creek, there were relatively few areas of sediment deposition. In areas that did have deposition, sediment deposits were small and likely wash away each year during freshet. Therefore, fine sediment in the upper reaches of Minto Creek may be of limited importance in terms of exposure and potential effects of metals to biota. In lower Minto Creek, fine sediment deposits are somewhat more common and therefore more relevant to aquatic life.

Mean total organic carbon (TOC) content of sediment collected from upper Minto Creek (3.52%) was slightly lower (but not significantly so) than at the upper McGinty Creek reference area (4.71%; Table 11-1). Lower Minto Creek had lower (but not significantly) TOC (2.60%) than the lower Wolverine Creek reference area (5.22%; Table 11-2). Arsenic and copper were the only analytes with mean concentrations greater than Interim Sediment Quality Guidelines (ISQG) for the protection of aquatic life (CCME 1999) in an effluent-exposed area (Tables 11-1 and 11-2). Mean arsenic concentration in upper Minto Creek exceeded the ISQG and was lower, though not significantly so, than at the upper McGinty Creek reference area (Table 11-1). Mean arsenic concentration in lower Minto Creek exceeded the ISQG and was significantly higher than at the lower Wolverine Creek reference area (Table 11-2). Concentrations of arsenic in Minto Creek sediments have been stable since 2013.

Mean copper concentrations in upper Minto Creek and lower Minto Creek remained below the Probable Effect Level (PEL), except for one sample from upper Minto Creek. Mean concentrations of copper at upper McGinty Creek and lower Wolverine Creek reference areas remained below the ISQG (Figure 11-2). Both upper and lower Minto Creek had significantly higher copper concentrations than their respective reference areas, but concentrations have been stable since 2013. With progression from upper to lower Minto Creek, sediment copper concentrations decreased from a mean of 172

to 59 milligrams per kilogram (mg/kg), respectively, indicating improvement with distance downstream. As aforementioned, fine sediment deposits were considered of limited importance as a route for exposure and potential effects of mine-related metals to biota in upper Minto Creek, and more relevant to aquatic life at lower Minto Creek, where sediment deposits were somewhat more common. Sediment deposits in lower Minto Creek were less common than in previous years (as also observed in 2020), potentially due to lower precipitation and low flow conditions.

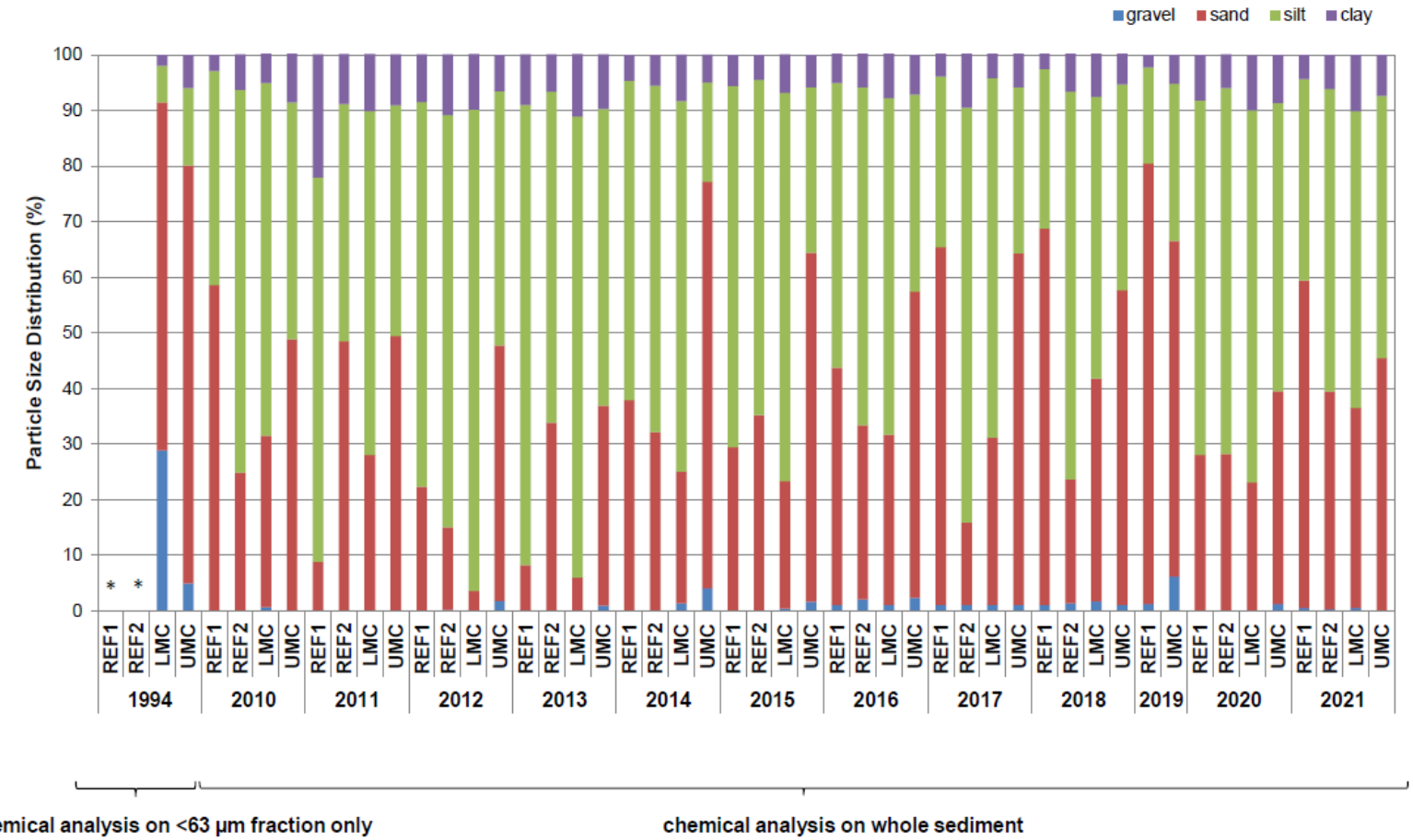

Figure 11-1: Particle Size Distribution of Sediment Collected in Minto Creek and Reference Locations, 1994 to 2021a,b

Notes: Methods used in 1994 were not specified, fine sediment was collected in triplicate in the mainstem of Minto Creek (HKP 1994), * = no data. No sampling was conducted in lower areas in 2019, as lower Minto Creek was dry.

[a] REF1 = Station W6 (south-flowing tributary) in 2006 to 2008 and McGinty Creek in 2010 to 2021; UMC = Upper Minto Creek

[b] REF2 = Station W7 (north-flowing tributary) in 2006 to 2009 and Wolverine Creek in 2010 to 2021; LMC = Lower Minto Creek.

Table 11-1: Statistical Comparisons Between Upper McGinty Creek (Reference) and Upper Minto Creek (Mine-Exposed) Sediment Chemistry, Minto Mine AEMP, 2021

Analyte	CSQG[a]		Upper McGinty Creek (Reference)				Upper Minto Creek (Exposed)				Statistical Test					
														MCT[b]		
	ISQG	PEL	Mean	Standard Deviation	Minimum	Maximum	Mean	Standard Deviation	Minimum	Maximum	Data Transformation	Test	Test P-value	Upper McGinty Creek (Reference)	Upper Minto Creek (Exposed)	MOD[c] (%)
Loss on Ignition	-	-	14.3	5.97	7.50	19.0	9.80	4.00	5.10	15.4	none	tequal	0.201	14.3	9.80	ns
ph 1:2 Soil:Water Ratio	-	-	7.12	0.190	6.91	7.40	7.84	0.310	7.32	8.09	none	tequal	0.002	7.12	7.84	10
Total Inorganic Carbon (%)	-	-	0.130	0.0504	0.0750	0.207	0.154	0.0824	0.0750	0.291	none	tequal	0.600	0.130	0.154	ns
Total Inorganic Carbon, as $CaCO_3$ (%)	-	-	1.09	0.417	0.630	1.72	1.28	0.690	0.620	2.43	none	tequal	0.605	1.09	1.28	ns
Total Organic Carbon (%)	-	-	4.58	1.90	2.52	6.22	3.36	1.80	1.60	6.21	none	tequal	0.330	4.58	3.36	ns
Total Carbon (%)	-	-	4.71	1.94	2.60	6.43	3.52	1.88	1.67	6.50	none	tequal	0.353	4.71	3.52	ns
Organic Matter (%)	-	-	7.88	3.27	4.34	10.7	5.79	3.10	2.76	10.7	none	tequal	0.331	7.88	5.79	ns
Total Kjeldahl Nitrogen (%)	-	-	0.402	0.132	0.251	0.564	0.323	0.121	0.211	0.517	none	tequal	0.353	0.402	0.323	ns
Aluminum (mg/kg)	-	-	9,814	1,642	7,510	11,300	10,868	1,601	8,840	13,100	none	tequal	0.334	9,814	10,868	ns
Antimony (mg/kg)	-	-	0.418	0.0912	0.300	0.520	0.436	0.0764	0.380	0.550	none	tequal	0.744	0.418	0.436	ns
Arsenic (mg/kg)	5.9	17	8.97	1.99	7.74	12.4	5.91	1.30	5.15	8.20	rank	M-W	0.056	7.94	5.34	ns
Barium (mg/kg)	-	-	259	67.4	188	368	429	409	177	1,130	log10	tequal	0.550	253	320	ns
Beryllium (mg/kg)	-	-	0.348	0.0740	0.260	0.460	0.388	0.0661	0.280	0.460	none	tequal	0.394	0.348	0.388	ns
Boron (mg/kg)	-	-	<5	-	<5	<5	5.48	-	<5	7.40	rank	M-W	0.424	5.00	5.00	ns
Cadmium (mg/kg)	0.6	3.5	0.208	0.0562	0.130	0.267	0.309	0.232	0.134	0.702	log10	tequal	0.492	0.201	0.255	ns
Calcium (mg/kg)	-	-	9,820	2,026	6,960	11,700	9,386	3,165	6,170	14,600	none	tequal	0.803	9,820	9,386	ns
Chromium (mg/kg)	37.3	90	21.0	2.89	16.4	23.7	25.3	1.11	23.5	26.4	none	tequal	0.014	21.0	25.3	21
Cobalt (mg/kg)	-	-	8.87	2.14	7.49	12.6	11.0	4.14	8.18	18.1	rank	M-W	0.222	7.80	8.98	ns
Copper (mg/kg)	35.7	197	21.9	4.34	15.2	26.7	172	107	67.5	340	log10	tunequal	0.001	21.5	147	583
Iron (mg/kg)	-	-	24,300	4,865	20,400	32,400	22,880	3,248	19,900	27,900	none	tequal	0.602	24,300	22,880	ns
Lead (mg/kg)	35	91.3	4.32	0.560	3.41	4.83	5.29	0.528	4.59	6.05	none	tequal	0.022	4.32	5.29	23
Lithium (mg/kg)	-	-	6.08	0.887	4.80	7.00	7.22	0.973	5.90	8.60	none	tequal	0.089	6.08	7.22	ns
Magnesium (mg/kg)	-	-	4,160	482	3,370	4,620	6,278	906.1	5,220	7,710	none	tequal	0.002	4,160	6,278	51
Manganese (mg/kg)	-	-	1,248	777	604	2,510	7,595	11,209	495	26,900	log10	tequal	0.248	1,080	2,819	ns
Mercury (mg/kg)	0.17	0.486	0.0370	0.00853	0.0278	0.0482	0.0293	0.0103	0.0163	0.0448	none	tequal	0.234	0.0370	0.0293	ns
Molybdenum (mg/kg)	-	-	1.36	1.36	0.580	3.78	3.91	4.65	0.920	11.9	log10	tequal	0.189	1.03	2.37	ns
Nickel (mg/kg)	-	-	17.2	2.46	13.6	20.4	29.0	8.40	22.1	42.9	none	tequal	0.017	17.2	29.0	69
Phosphorus (mg/kg)	-	-	791	140	664	998	834	35.3	801	882	none	tequal	0.523	791	834	ns
Potassium (mg/kg)	-	-	700	67.5	590	760	1,338	286	1,020	1,760	none	tequal	0.001	700	1,338	91
Selenium (mg/kg)	2	-	1.10	0.703	0.720	2.35	0.670	0.382	0.290	1.30	log10	tequal	0.172	0.975	0.593	ns
Silver (mg/kg)	-	-	<0.1	-	<0.1	<0.1	0.114	0.0286	<0.1	0.160	rank	M-W	0.180	0.100	0.100	ns
Sodium (mg/kg)	-	-	193	27.7	152	222	318	30.5	293	371	none	tequal	0.001	193	318	65
Strontium (mg/kg)	-	-	89.7	18.1	65.6	105	127	79.7	67.2	262	log10	tequal	0.410	88.2	111	ns
Sulphur (mg/kg)	-	-	1,080	-	<1000	1,400	<1000	-	<1000	<1000	rank	M-W	0.424	1,000	1,000	ns
Thallium (mg/kg)	-	-	0.0602	0.00448	<0.05	0.0660	0.0852	0.0211	0.0600	0.117	rank	M-W	0.056	0.0630	0.0840	ns
Titanium (mg/kg)	-	-	594	84.2	508	702	682	80.9	584	808	none	tequal	0.132	594	682	ns
Uranium (mg/kg)	-	-	2.40	0.811	1.75	3.66	0.949	0.345	0.666	1.34	none	tequal	0.006	2.40	0.949	-60
Vanadium (mg/kg)	-	-	46.1	3.45	40.9	50.4	52.4	6.87	43.0	60.3	none	tequal	0.102	46.1	52.4	ns
Zinc (mg/kg)	123	315	42.7	5.69	35.7	50.1	61.1	15.3	46.3	84.9	none	tequal	0.036	42.7	61.1	43
Zirconium (mg/kg)	-	-	2.52	0.634	1.80	3.50	2.42	0.544	1.90	3.00	rank	M-W	1.000	2.30	2.40	ns

P-value < 0.05.
Magnitude of Difference (MOD) > 0.
Magnitude of Difference (MOD) < 0.
Indicates sediment concentration exceeding CSQG ISQG.
Indicates sediment concentration exceeding CSQG PEL.

Notes: ns = non-significant.

[a] Canadian Sediment Quality Guidelines: ISQG = interim sediment quality guideline; PEL = probable effect level (CCME 2014)

[b] Measure of Central Tendency is the mean for parameters where statistics were conducted on the raw scale, the geometric mean when statistics were log_{10} transformed to meet the assumptions of normality, and the median when rank transformed.

[c] MOD = magnitude of difference = $(MCT_{exp}-MCT_{ref})/MCT_{ref}*100\%$.

Table 11-2: Statistical Comparisons Between Lower Wolverine Creek (Reference) and Lower Minto Creek (Mine-Exposed) Sediment Chemistry, Minto Mine AEMP, 2021

Analyte	CSQG[a]		Summary Statistics								Statistical Test					
			Lower Wolverine Creek (Reference)				Lower Minto Creek (Exposed)							MCT[b]		
	ISQG	PEL	Mean	Standard Deviation	Minimum	Maximum	Mean	Standard Deviation	Minimum	Maximum	Data Transformation	Test	Test P-value	Lower Wolverine Creek (Reference)	Lower Minto Creek (Exposed)	MOD[c] (%)
Loss on Ignition	-	-	13.4	7.54	5.40	25.7	6.66	1.51	4.90	8.80	log10	tequal	0.059	11.9	6.53	ns
ph 1:2 Soil:Water Ratio	-	-	6.85	0.0552	6.78	6.89	8.04	0.0840	7.95	8.14	none	tequal	0.001	6.85	8.04	17
Total Inorganic Carbon (%)	-	-	0.123	0.0256	0.0820	0.149	0.163	0.0528	0.110	0.247	none	tequal	0.166	0.123	0.163	ns
Total Inorganic Carbon, as $CaCO_3$ (%)	-	-	1.02	0.213	0.680	1.24	1.36	0.439	0.920	2.06	none	tequal	0.162	1.02	1.36	ns
Total Organic Carbon (%)	-	-	5.22	2.87	1.97	9.62	2.60	0.786	1.57	3.64	none	tequal	0.086	5.22	2.60	ns
Total Carbon (%)	-	-	5.34	2.90	2.05	9.77	2.77	0.827	1.68	3.82	none	tequal	0.093	5.34	2.77	ns
Organic Matter (%)	-	-	8.99	4.96	3.40	16.6	4.49	1.36	2.71	6.28	none	tequal	0.086	8.99	4.49	ns
Total Kjeldahl Nitrogen (%)	-	-	0.238	0.0710	0.119	0.302	0.184	0.0505	0.124	0.245	none	tequal	0.203	0.238	0.184	ns
Aluminum (mg/kg)	-	-	14,380	1,524	11,900	15,800	13,300	2,200	10,700	16,300	none	tequal	0.393	14,380	13,300	ns
Antimony (mg/kg)	-	-	0.420	0.0731	0.310	0.500	0.482	0.0870	0.380	0.610	none	tequal	0.257	0.420	0.482	ns
Arsenic (mg/kg)	5.9	17	5.42	1.27	4.32	7.06	7.54	1.02	6.15	8.90	none	tequal	0.020	5.42	7.54	39
Barium (mg/kg)	-	-	200	34.8	147	238	234	40.6	176	287	none	tequal	0.188	200	234	ns
Beryllium (mg/kg)	-	-	0.688	0.130	0.510	0.850	0.408	0.0614	0.340	0.500	none	tequal	0.002	0.688	0.408	-41
Cadmium (mg/kg)	0.6	3.5	0.193	0.0594	0.105	0.262	0.176	0.0401	0.144	0.230	none	tequal	0.606	0.193	0.176	ns
Calcium (mg/kg)	-	-	9,314	1,724	6,850	11,500	10,218	2,240	7,850	13,700	none	tequal	0.495	9,314	10,218	ns
Chromium (mg/kg)	37.3	90	45.2	3.44	39.1	47.1	31.3	3.69	26.9	36.5	none	tequal	0.001	45.2	31.3	-31
Cobalt (mg/kg)	-	-	12.5	1.22	10.7	13.7	10.3	1.28	8.73	12.0	none	tequal	0.027	12.5	10.3	-17
Copper (mg/kg)	35.7	197	24.7	5.20	16.2	30.0	59.0	21.5	37.5	93.8	none	tequal	0.008	24.7	59.0	139
Iron (mg/kg)	-	-	26,240	1,240	24,700	27,700	26,400	2,637	23,200	29,600	none	tequal	0.905	26,240	26,400	ns
Lead (mg/kg)	35	91.3	5.78	0.644	4.70	6.29	5.66	0.780	4.73	6.72	none	tequal	0.797	5.78	5.66	ns
Lithium (mg/kg)	-	-	9.72	0.996	8.10	10.8	9.96	1.68	8.10	12.4	none	tequal	0.790	9.72	9.96	ns
Magnesium (mg/kg)	-	-	9,110	523	8,230	9,470	6,948	1,061	5,880	8,490	none	tequal	0.004	9,110	6,948	-24
Manganese (mg/kg)	-	-	397	177	243	687	1,064	204	758	1,280	none	tequal	0.001	397	1,064	168
Mercury (mg/kg)	0.17	0.486	0.0325	0.0115	0.0150	0.0446	0.0338	0.0102	0.0206	0.0451	none	tequal	0.853	0.0325	0.0338	ns
Molybdenum (mg/kg)	-	-	0.676	0.199	0.560	1.03	0.722	0.0968	0.630	0.850	rank	M-W	0.151	0.590	0.670	ns
Nickel (mg/kg)	-	-	35.7	2.67	31.0	37.6	25.2	3.28	21.6	29.5	none	tequal	0.001	35.7	25.2	-29
Phosphorus (mg/kg)	-	-	1,035	47.1	986	1,090	859	51.2	794	921	none	tequal	0.001	1,035	859	-17
Potassium (mg/kg)	-	-	1,080	82.2	970	1,180	1,406	284	1,110	1,830	none	tequal	0.039	1,080	1,406	30
Selenium (mg/kg)	2	-	0.312	0.0831	<0.2	0.470	0.420	0.143	0.220	0.620	rank	M-W	0.310	0.300	0.420	ns
Silver (mg/kg)	-	-	0.104	-	<0.1	0.120	0.104	-	<0.1	0.120	rank	M-W	1.000	0.100	0.100	ns
Sodium (mg/kg)	-	-	455	16.2	435	477	324	43.1	278	371	none	tequal	0.001	455	324	-29
Strontium (mg/kg)	-	-	96.0	19.5	71.2	124	95.1	16.8	74.4	118	none	tequal	0.940	96.0	95.1	ns
Sulphur (mg/kg)	-	-	1,040	-	<1000	1,200	<1000	-	<1000	<1000	rank	M-W	0.424	1,000	1,000	ns
Thallium (mg/kg)	-	-	0.0792	0.0125	0.0600	0.0950	0.0962	0.0186	0.0750	0.122	none	tequal	0.129	0.0792	0.0962	ns
Titanium (mg/kg)	-	-	954.8	43.3	885	999	790	98.0	704	911	none	tequal	0.009	955	790	-17
Uranium (mg/kg)	-	-	2.46	0.871	1.22	3.61	0.941	0.139	0.784	1.11	none	tequal	0.005	2.46	0.941	-62
Vanadium (mg/kg)	-	-	68.3	4.18	64.4	73.2	60.4	4.05	55.2	64.8	none	tequal	0.016	68.3	60.4	-12
Zinc (mg/kg)	123	315	59.7	5.00	51.5	64.1	58.3	8.58	49.0	70.8	none	tequal	0.754	59.7	58.3	ns
Zirconium (mg/kg)	-	-	4.68	0.661	3.70	5.40	2.32	0.205	2.10	2.50	none	tequal	0.001	4.68	2.32	-50

P-value < 0.05.
Magnitude of Difference (MOD) > 0.
Magnitude of Difference (MOD) < 0.
Indicates sediment concentration exceeding CSQG ISQG.
Indicates sediment concentration exceeding CSQG PEL.

Note: ns = non-significant.

[a] Canadian Sediment Quality Guidelines: ISQG = interim sediment quality guideline; PEL = probable effect level (CCME 2014).
[a] Measure of Central Tendency is the mean for parameters where statistics were conducted on the raw scale, the geometric mean when statistics were $\log_{10}$ transformed to meet the assumptions of normality, and the median when rank transformed.
[b] MOD = magnitude of difference = $(MCT_{exp}-MCT_{ref})/MCT_{ref}*100\%$.

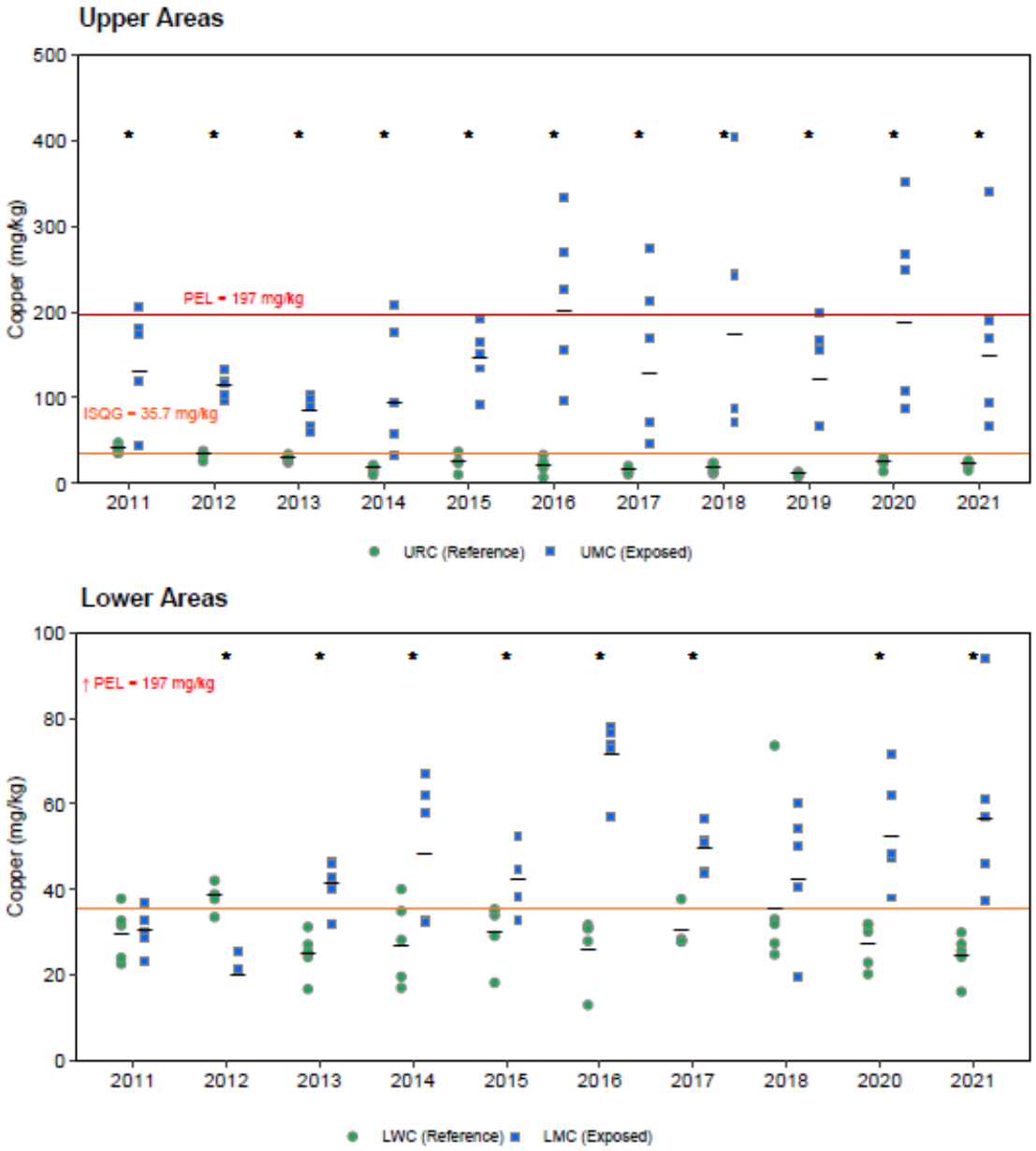

Figure 11-2: Sediment Copper Concentrations Over Time for Upper Areas, 2011 to 2021

Notes: URC = upper McGinty Creek, UMC = upper Minto Creek, LWC = lower Wolverine Creek, LMC = lower Minto Creek. Black horizontal bars indicate the Measure of Central Tendency (MCT). The MCT is the mean for non- transformed data, geometric mean for log10 transformed data and median for rank transformed data. An * indicates stations were significantly different for that year. Interim Sediment Quality Guideline (ISQG) = 35.7 mg/kg is shown in orange and Probable Effect Limit (PEL) = 197 mg/kg is shown in red.

5.7.1 Periphyton Monitoring

Periphyton chlorophyll-a results at lower Minto Creek were summarized and compared to lower Wolverine Creek reference in order to evaluate any potential mine-related effects.

Mean periphyton chlorophyll-a (mg/m^2) was significantly higher at lower Minto Creek (45.8 mg/m^2) compared to the lower Wolverine Creek reference area (20.1 mg/m^2) but was below the British Columbia Water Quality Guideline (BCWQG) of 100 mg/m^2 for the protection of aquatic life (BCMOE 1985) except for one sample at lower Minto Creek (106 mg/m^2 at LMC-5; Figure 11-3). Production was classified as mesotrophic based on the system of Dodds et al. (1998), which sets the oligotrophic-mesotrophic boundary for benthic chlorophyll-a at 20 mg/m^2 and the mesotrophic-eutrophic boundary at 70 mg/m^2. Productivity classification has varied over the years for both areas. For example, both creeks were classified as mesotrophic in 2018 but lower Minto Creek was classified as oligotrophic in 2020.

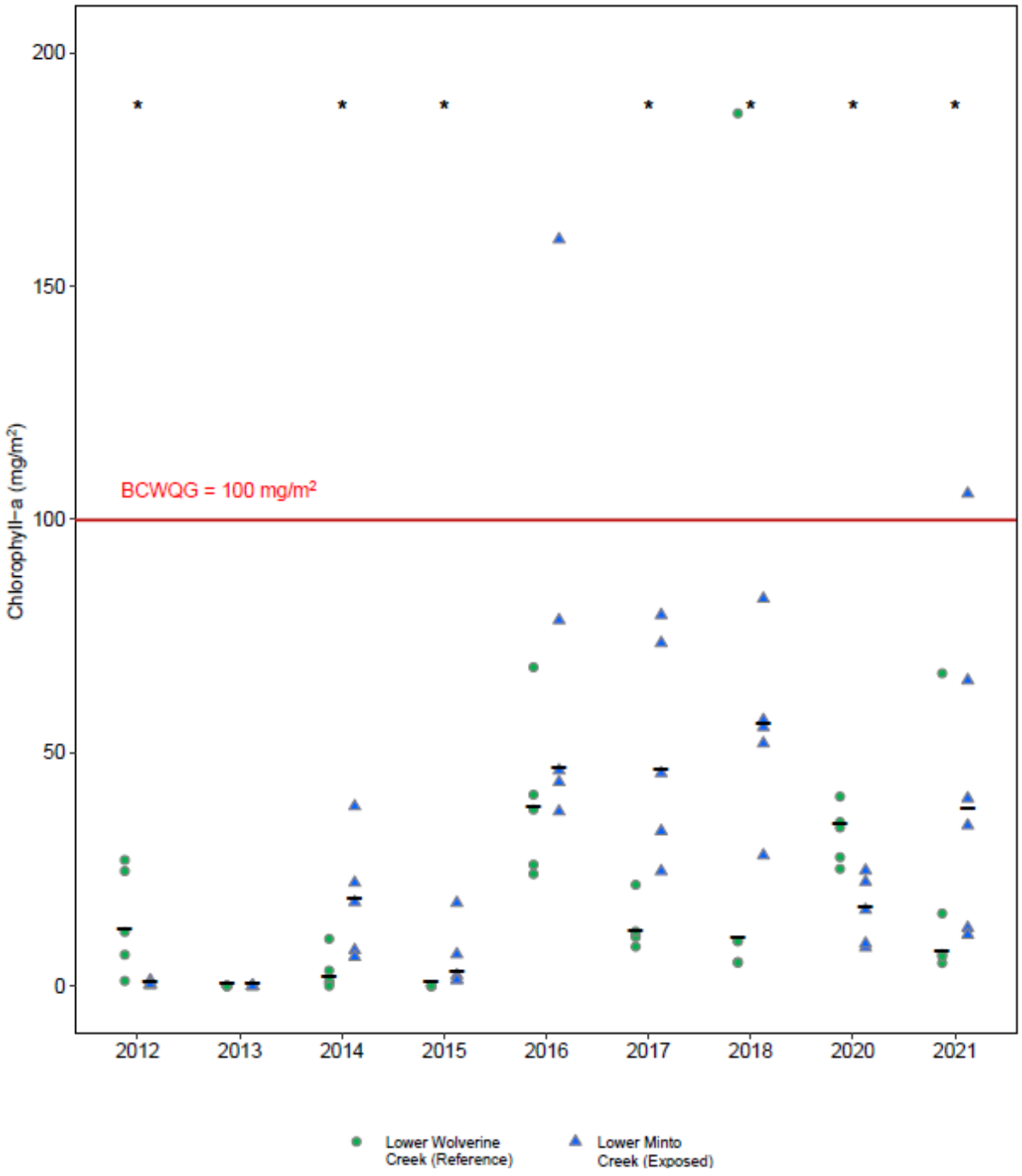

Figure 11-3: Periphyton Chlorophyll-a Measured in Lower Minto Creek and Lower Wolverine Creek (Reference), Minto AEMP, 2012 to 2021a

Notes: Black horizontal bars indicate the Measure of Central Tendency (MCT). The MCT is the mean for non- transformed data, geometric mean for log_{10}-transformed data and median for rank transformed data. An * indicates stations were significantly different for that year[a] Sampling was not completed in 2019 due to dry conditions at lower Minto Creek.

[a] Sampling was not completed in 2019 due to dry conditions at Lower Minto Creek.

5.7.2 Benthic Invertebrate Community Monitoring

Benthic invertebrate communities at erosional areas of lower Minto Creek were summarized and compared to erosional areas of lower Wolverine Creek and lower Big Creek in order to evaluate any potential mine-related effects.

Of the five primary benthic invertebrate community metrics, only the Bray-Curtis index of dissimilarity was significantly different between lower Minto Creek and both reference areas (Table 11-3). There were no significant differences for taxa richness (number of taxa), Simpson's Evenness, or Simpson's Diversity between lower Minto Creek and either lower Wolverine Creek or lower Big Creek reference areas. Density was significantly higher at lower Minto Creek compared to lower Wolverine Creek but there was no significant difference between density at lower Minto Creek and lower Big Creek (Table 11-4). Interpretation of primary metrics alone suggest a limited mine influence. Consideration of specific taxon groups indicated some community composition (expanding on what was detected by the Bray-Curtis index). Specifically, percent chironomids (non-biting midges) were significantly higher at lower Minto Creek compared to both reference areas, while percent EPT (Ephemeroptera [mayflies], Plecoptera [stoneflies], and Trichoptera [caddisflies]) as well as percent Plecoptera alone were significantly lower at lower Minto Creek compared to both reference areas (Table 11-4). The significantly higher proportion of chironomids and lower proportion of EPT is typically indicative of a degraded benthic invertebrate community (Chapman et al. 1982a,b, Rosenberg and Resh 1993, Taylor and Bailey 1997). However, correlation analysis suggested that the observed differences in percent chironomids and percent EPT taxa were likely due to a combination of factors that cannot be fully distinguished, including habitat differences among areas, a limited Minto Mine influence on water quality, and possibly low flow conditions in July (that would have affected lower Minto Creek more than the larger reference creeks; Table 11-5).

Benthic invertebrate community condition has been temporally variable at Minto Creek and reference areas, perhaps in association with winter glaciation and occasional dry conditions. Nonetheless, mean benthic invertebrate density in lower Minto Creek in 2021 was the second highest observed over the 2012 to 2021 period and has not changed significantly since 2017 (Figure 11-4). Mean richness, Simpson's

Evenness, and Simpson's Diversity in lower Minto Creek have not changed significantly over the 2012 to 2021 period (Figure 11-4). Richness has not differed significantly between lower Minto Creek and lower Wolverine Creek since 2012 and Simpson's Evenness and Diversity have not differed significantly from either reference area since 2015 (with the one exception being the difference relative to lower Big Creek in 2018: Figure 11-4).

Table 11-3: Statistical Comparison of Bray-Curtis Index for Lower Minto Creek and Reference Areas, Minto Mine AEMP, 2020

Comparison	Sample Size		Betadisper P-Value	Mantel Test			dbRDA			
	Reference	Exposed		r	R^2	P-Value	F-Value	R^2	R^2_{adj}	P-Value
LMC vs LWC	5	5	0.577	0.932	0.868	0.008	0.566	0.512	10.4	0.008
LMC vs LBC	5	5	0.217	0.918	0.842	0.008	0.532	0.473	9.09	0.002

P-Value < 0.1

Notes: LWC = lower Wolverine Creek (Reference), LMC = lower Minto Creek (Exposed), LBC = lower Big Creek (Reference), dbRDA = distance-based redundancy analysis. See Section 2.5.2 for statistical analysis details.

Table 11-4: Statistical Comparisons of Benthic Invertebrate Community Characteristics Among Areas, Minto Mine AEMP, 2021

Endpoint	Overall 3-group Comparison			Post-hoc comparisons[b]			Magnitude of Difference (Group 1 - Group 2) /Pooled SD
	Data Transformation	Test[a]	Test p-value	Groups		Test P-value	
				Group 1	Group 2		
Density (organisms/m^2)	none	ANOVA	0.028	LMC	LWC	0.023	2.0
					LBC	0.164	ns
				LBC	LWC	0.513	ns
Richness (# of Taxa)	none	ANOVA	0.437	LMC	LWC	-	-
					LBC	-	-
				LBC	LWC	-	-
Simpson's Diversity	rank	K-W	0.613	LMC	LWC	-	-
					LBC	-	-
				LBC	LWC	-	-
Simpson's Evenness	log10	ANOVA	0.174	LMC	LWC	-	-
					LBC	-	-
				LBC	LWC	-	-
EPT (%)	none	ANOVA	<0.001	LMC	LWC	0.066	-1.6
					LBC	<0.001	-3.3
				LBC	LWC	0.050	1.7
Ephemeroptera (%)	none	ANOVA	0.006	LMC	LWC	0.004	-2.6
					LBC	0.108	ns
				LBC	LWC	0.201	ns
Plecoptera (%)	log10	ANOVA	0.002	LMC	LWC	0.094	-1.5
					LBC	0.002	-2.9
				LBC	LWC	0.092	1.5
Trichoptera (%)	log10(x+1)	ANOVA	0.431	LMC	LWC	-	-
					LBC	-	-
				LBC	LWC	-	-
Chironomidae (%)	none	ANOVA	<0.001	LMC	LWC	<0.001	4.4
					LBC	<0.001	3.7
				LBC	LWC	0.464	ns
Oligochaeta (%)	log10	ANOVA	0.014	LMC	LWC	0.055	-1.7
					LBC	0.756	ns
				LBC	LWC	0.015	-2.1
Arachnida (%)	rank	K-W	0.915	LMC	LWC	-	-
					LBC	-	-
				LBC	LWC	-	-
CA1 (40.9%)	none	ANOVA	<0.001	LMC	LWC	<0.001	-12
					LBC	<0.001	-11
				LBC	LWC	0.217	ns
CA2 (18.1%)	none	ANOVA	<0.001	LMC	LWC	0.038	1.8
					LBC	<0.001	-3.3
				LBC	LWC	<0.001	5.1

P-value < 0.1.
P-value < 0.1 and MOD < -2.
P-value < 0.1 and MOD > 2.

Notes: SD = standard deviation, LMC = lower Minto Creek (exposed), LWC = lower Wolverine Creek (reference), LBC = lower Big Creek (reference), EPT = Ephemeroptera, Plecoptera, Trichoptera, ns = non-significant. Magnitude of Difference = (group 1 mean - group 2 mean)/pooled standard deviation. Test p-values and MODs are only displayed for endpoints that had a 3 group comparison p-value < 0.1.

[a] ANOVA= Analysis of Variance, K-W = Kruskal-Wallis.
[b] Pairwise comparisons calculated using Least-squares means with Tukey's adjustment for multiple comparisons for ANOVAs and Dunn's Test with no adjustment for K-W.

Table 11-5: Spearman Rank Correlations Between Benthic Community Endpoints and Physiochemical Parameters, Minto Mine AEMP, 2021

Endpoints	Statistic	Water Depth (m)	% Cobble	% Gravel	*In Situ* Water Quality		
					Temperature (°C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)
Density (# organisms/m²)	r_s	-0.488	-0.338	0.330	-0.271	0.389	0.611
	p-value	0.0650	0.218	0.229	0.327	0.152	0.0179
EPT (%)	r_s	0.284	0.621	-0.158	0.732	-0.782	-0.457
	p-value	0.305	0.0136	0.573	0.00273	0.000902	0.0888
Ephemeroptera (%)	r_s	0.610	0.690	-0.702	0.604	-0.613	-0.602
	p-value	0.0158	0.00442	0.00352	0.0172	0.0152	0.0176
Plecoptera (%)	r_s	0.284	0.621	-0.136	0.725	-0.775	-0.461
	p-value	0.305	0.0136	0.630	0.00313	0.00108	0.0861
Chironomidae (%)	r_s	-0.633	-0.710	0.336	-0.604	0.636	0.589
	p-value	0.0114	0.00301	0.221	0.0195	0.0129	0.0232
Oligochaeta (%)	r_s	0.493	0.00230	-0.107	0.0464	0.0750	-0.211
	p-value	0.0617	0.994	0.705	0.873	0.793	0.450
CA1 (40.9%)	r_s	0.668	0.621	-0.462	0.568	-0.521	-0.496
	p-value	0.00644	0.0136	0.0830	0.0298	0.0488	0.0623
CA2 (18.1%)	rs	-0.347	0.0896	0.433	0.346	-0.471	0.329
	p-value	0.205	0.751	0.107	0.206	0.0783	0.232

P-Value < 0.05.
P-Value < 0.05/48 = 0.00104 (Bonferroni Corrected for 48 independent tests).
abs(r_s) > 0.6.

Note: Correlations only conducted with endpoints and physiochemical parameters that were significantly different among areas.

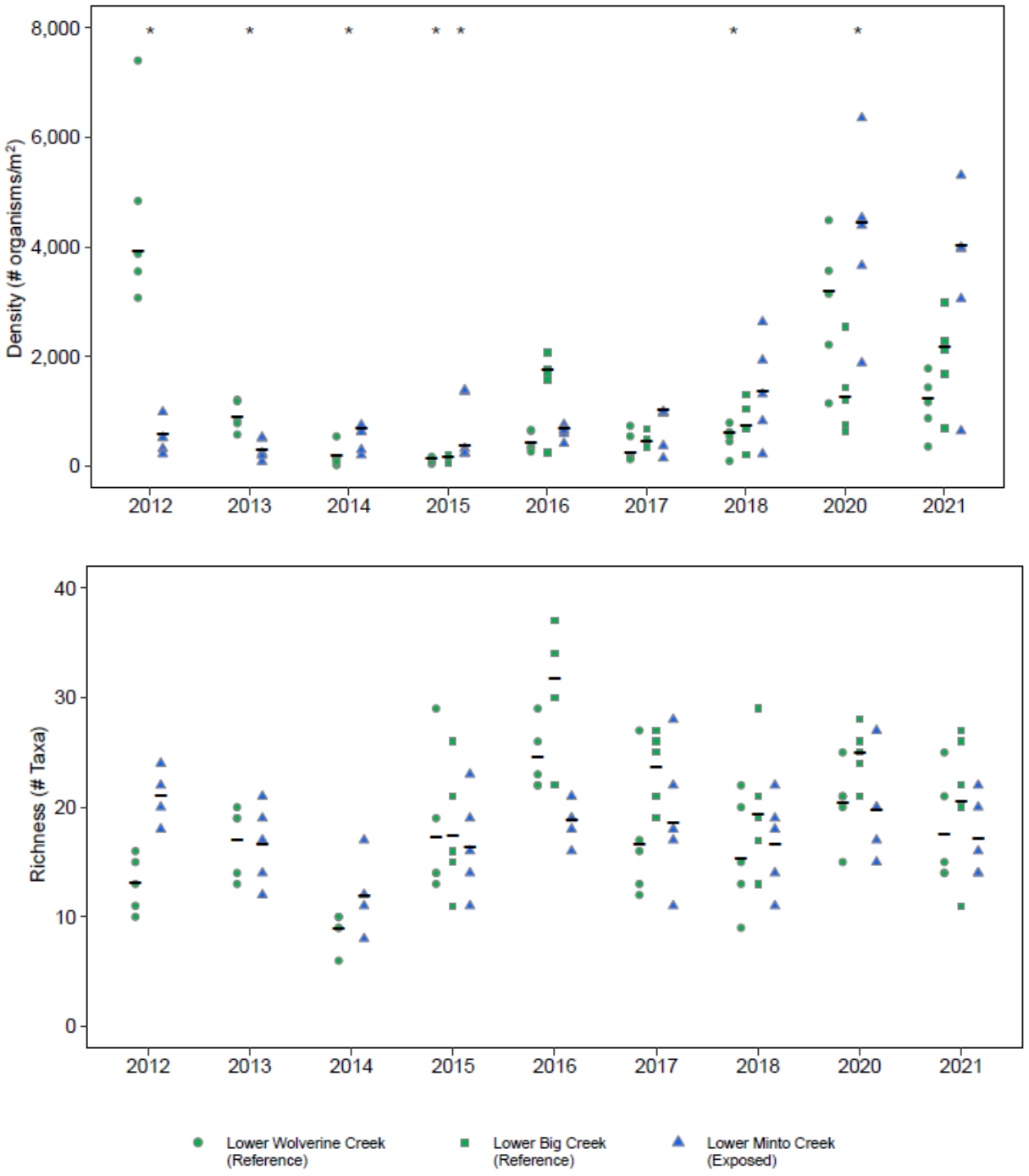

Figure 11-4: Benthic Invertebrate Community Primary Endpoints at Lower Minto Creek and Reference Areas, 2012 to 2021

Notes: Black horizontal bars indicate the Measure of Central Tendency (MCT). The MCT is the mean for non- transformed data, geometric mean for log-10 transformed data and median for rank

transformed data. An * indicates the reference station was significantly different from the exposed station for that year. All endpoints were calculated at the lowest practicable level (LPL).

[a] Sampling not conducted in 2019 due to dry conditions.

11.2.2 Fisheries Monitoring Program

An evaluation of the Fisheries Monitoring Program was conducted by Minnow Environmental Ltd in 2021, which recommended that fisheries monitoring in Minto Creek be conducted once every three years to coincide with Environmental Effects Monitoring, rather than annually, unless flows continuously exceed 0.1 m/s, temperatures exceed 10°C or there is emergency discharge. As none of these conditions occurred in 2021, no fisheries monitoring was conducted. The next EEM cycle study and concurrent fisheries monitoring program is scheduled for 2022.

12 Meteorological Monitoring Program

Meteorological monitoring at the Minto Mine consists of data collection for the following parameters: rainfall, snowfall, temperature, evaporation, wind speed and direction, barometric pressure, relative humidity, and solar radiation (incoming and reflected). The Meteorological Monitoring Program includes the Climate Monitoring Program (EMSRP Section 4.1) and the Snow Survey Program (EMSRP Section 4.2).

Data collected under the Meteorological Monitoring Program, along with baseline climatic data, provides input for the following mine projects:

- Site water management.
- Prediction for yearly water events (e.g., freshet)
- Design of water storage, conveyance, and discharge system
- Design of flood control structures on the road network.

12.1 Climate Monitoring Program

The 2021 Climate Monitoring Program data is presented below in Figure 12-1 through Figure 12-7. During 2021, Minto Mine had one meteorological station located approximately 70 m northeast of the north end of the airstrip, in an area that allows

ample meteorological exposure from all directions. Trees are cleared for a radius of 30 m from the meteorology station and beyond that radius is a sparse growth of 2 m tall conifers.

The meteorology station is a research grade Campbell Scientific station that records the following parameters: maximum wind speed, minimum wind speed, average wind speed, wind direction, precipitation (rain and snow), temperature, relative humidity, pan evaporation, barometric pressure, solar radiation, and calculated evapotranspiration. Data are averaged over the one-hour archiving period and then saved to the datalogger. The Geonor precipitation gauge was installed in November 2014 but stopped working in 2017. Troubleshooting was ongoing from that time, but the gauge did not become operational again until September 2021. To ensure accuracy, results are being compared to Minto's tipping bucket gauge and the Carmacks weather station and will be presented in the 2022 Annual Report.

The evaporation pan was in operation from June 20th through to September 18th.

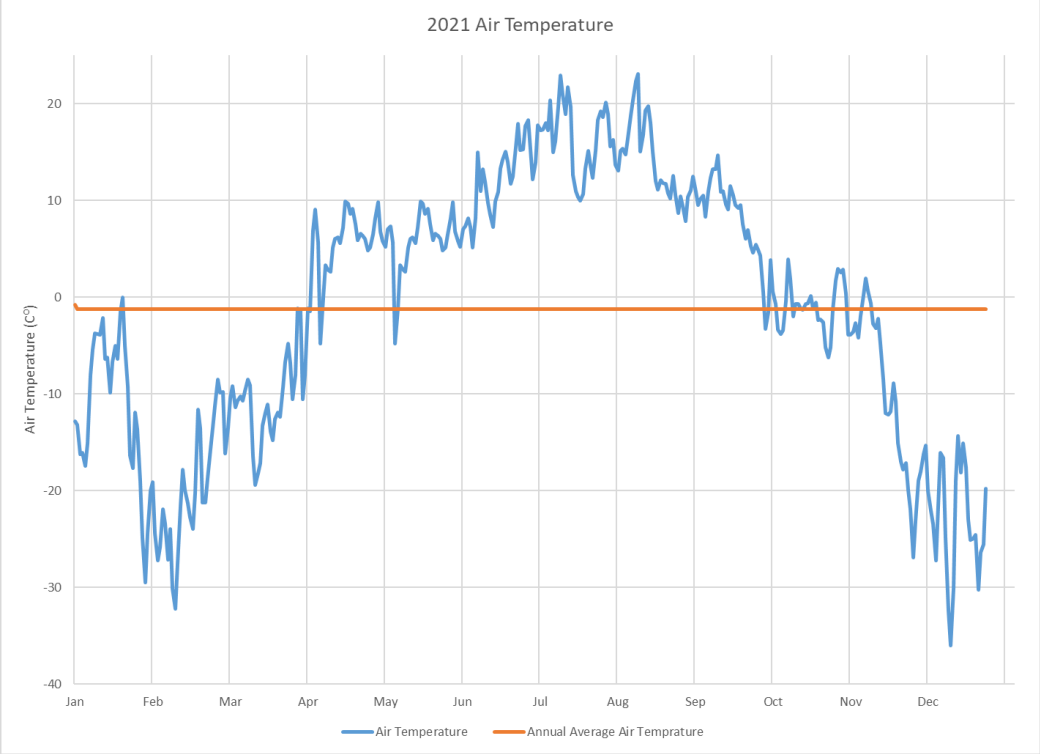

Figure 12-1: Annual Air Temperature (2021)

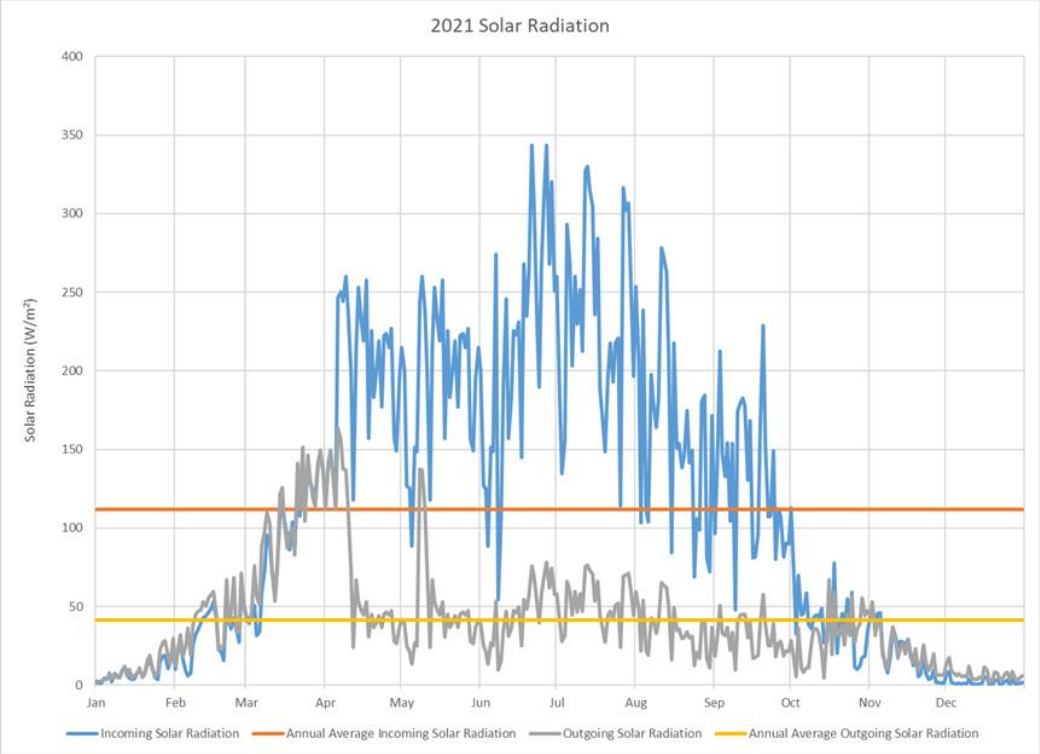

Figure 12-2: Figure 12-2: Annual Solar Radiation (2021)

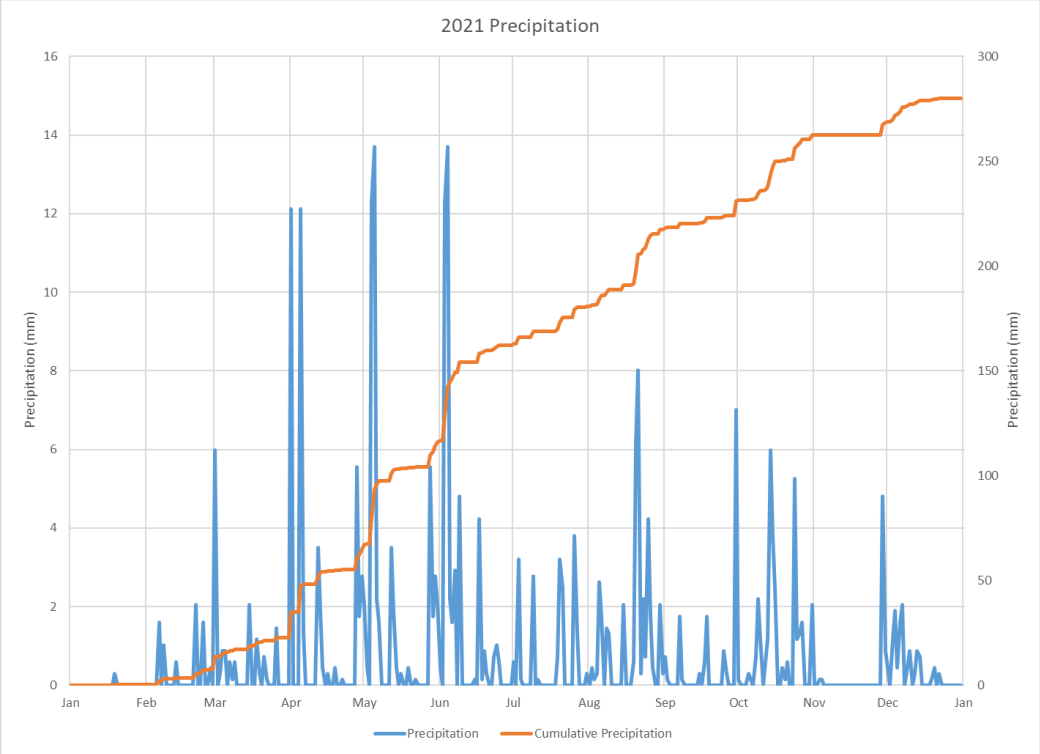

Figure 12-3: Annual Precipitation (2021)

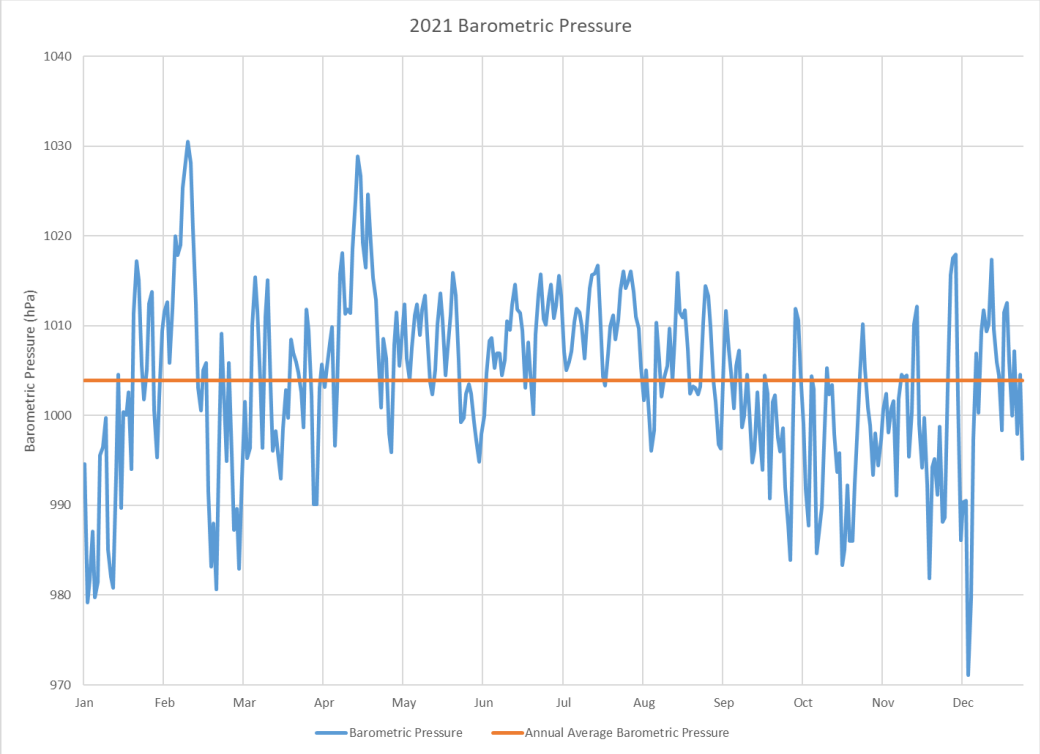

Figure 12-4: Annual Barometric Pressure (2021)

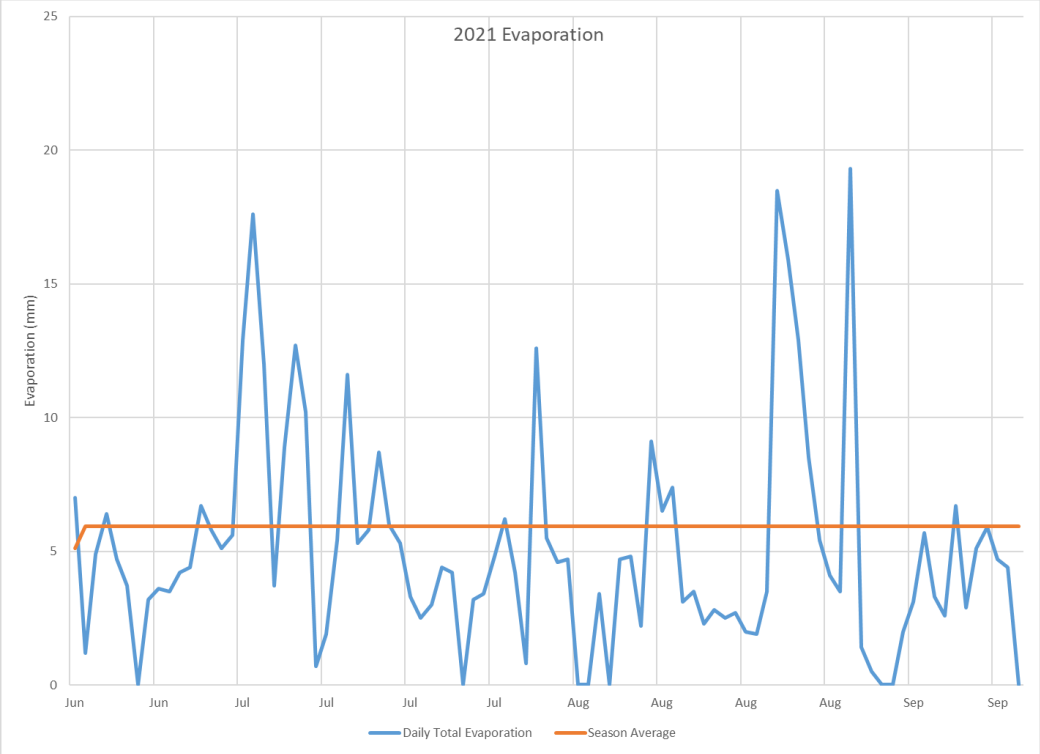

Figure 12-5: Evaporation (May 30th- August 23rd, 2021)

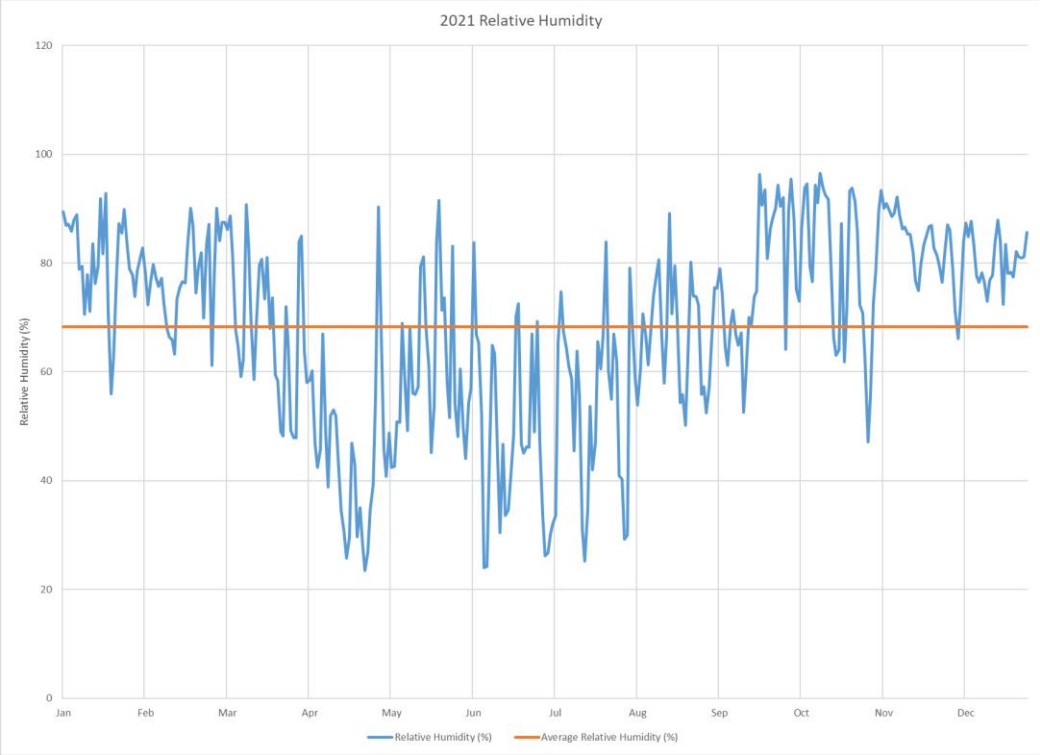

Figure 12-6: Relative Humidity (2021)

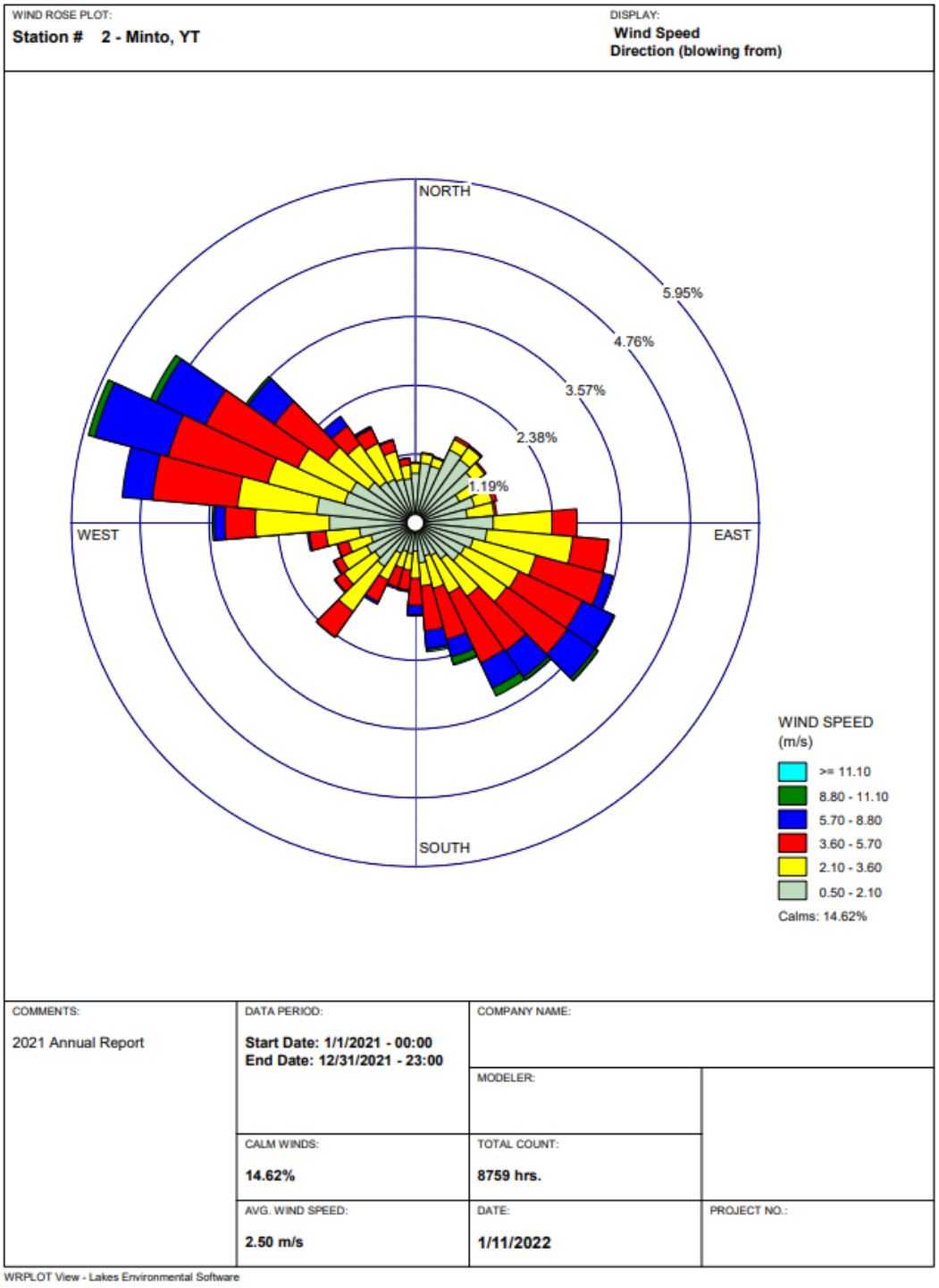

Figure 12-7: Wind Speed and Direction Events (2021)

12.2 Snow Survey Program

As required by the WUL Clause 96 and as part of the EMSRP, Minto collects snow data at the mine. The objective of the Snow Survey Program is to collect data used for

calculating the snow water equivalent at the Minto Mine site. Snow water equivalents are inputs for the Minto Mine Site Water Balance models. Four courses are surveyed during the first week of February, March & April each year. If conditions permit, Minto will additionally survey the snow courses in May. These courses are East-facing (near the Dyno compound), North-facing (near the airstrip), South-facing (above the Tank Farm) and flat (Dry Stack Tailings), as detailed in Table 12-1. Along each course, ten stations are sampled using a machined core tube with cutting end and scale assembly. The parameters collected during the surveys include snow depth, core length, core weight, snow density, weather, site conditions, snowpack conditions, crust layers, and snow temperature. Multi-year results to 2021 (averaged across the four snow courses) are presented in Appendix E – 2021 Water Balance and Water Quality Model Summary for the Minto Mine.

Table 12-1: Snow Survey Course Locations

Course Location	Description	Aspect	UTM	
			Easting	Northing
Dyno	East of the Dyno compound on an east facing slope along a cut line surrounded by moderately densely tree area.	East Facing	8V 383 594	694 3377
Fuel Farm	North of the Minto Mine fuel farm on a south facing slope in a sparse to moderately densely treed area.	South Facing	8V 385 061	694 5318
Airstrip	Northeast of the Minto Mine airstrip on a north facing slope in a sparsely treed area.	North Facing	8V 386 255	694 4284
Dry Stack Tailings Facility	Directly on top of the Dry Stack Tailings Storage Facility.	Flat	8V 385 525	694 4786

12.3 Meteorology QA/QC

Procedures for meteorology monitoring at the Minto Mine are detailed in the Meteorology Station Standard Operating Procedures. Minto has installed a satellite connection to the Met Station 2 to enable real time viewing of the weather station data. The meteorology data is downloaded and reviewed twice monthly by Environmental

Department staff and routine visual inspections of the monitoring stations occur on a weekly basis.

The Geonor precipitation gauge is operational as of September 2021 after not functioning properly since 2017. The Geonor will be monitored throughout 2022 and will be compared to precipitation results generated by the tipping bucket gauge.

13 Geochemistry

13.1 Waste Rock Verification Program

The Waste Rock Verification Program was initiated in 2014 to support and monitor waste rock handling procedures at the Minto Mine. The program was developed to address Clause 95 of the WUL, with the results of the program to be included in the Annual Report. The program consists of detailed record keeping on the type and quantity of waste rock placed at each location and monitoring and verification of the characteristics of the waste rock stored at each location as per the Waste Rock and Overburden Management Plan.

Minto's Technical Services Department tracks all waste dispatched between the source and the destination using the mine's computer database system. The dispatch data are based on load count sheets compiled by the mining contractor.

Samples are taken by Minto geology personnel on dump crests that had been active in the 30 kT stockpile lifts as determined by the production tracking database. The grab sample consists of 5 kg sample collected along a 25 me transect with material being collected at one-meter intervals over the distance of the recently placed waste. Particles greater than a pebble (64-80 mm) in size are manually rejected, the sample is then labelled and delivered to Minto's onsite assay lab.

Each sample is analyzed for total copper (Cu (T)), total sulfur (S (T)), and total carbon (C (T)) content using an Eltra CS-800 induction furnace. S (T) and C (T) values are converted into equivalent Acid Potential (AP-S (T)) and Neutralization Potential (NP-C (T)) values, and NP-C (T): AP-S (T) ratios (NP/AP) are calculated for each sample. The resulting (NP-C (T)): (AP-C (T)) ratios are compared to the segregation criteria and assigned "pass" or "fail" designations, which is a 3:1 ratio at Minto.

Most of the underground mine development occurring in 2021 was in the ore zones. A minimal amount of SAT in the underground development was encountered and this material was deposited in the Main pit. Consequently during 2021; 7 samples were collected from the Main Waste Rock Dump.

Of the seven samples taken from the berm of the Main Pit Waste Dump – two samples failed in isolation. Two of five passing samples contained less than 0.1% Cu, and 0.3% Sulphur, meeting clean construction material classifications and/or NPR NAG waste rock classifications. Resampling is scheduled to occur spring of 2022 when snow has melted away from this area of the Main Pit Waste Dump. See Table 13-1 below.

Table 13-1: Waste Rock Management Verification Program Summary (2021)

Average ABA Parameter Values: Year by Location								
Location	**Tonnes**	**Waste Type**	**Cu%**	**C% (Tot)**	**S% (Tot)**	**NP**	**AP**	**NP/AP**
Berm	147,400	WST	0.02	0.09	0.04	7.48	1.09	6.86

13.2 Acid-Base Accounting Program

The EMSRP commits to the submission of results of the ABA Program that was conducted during the reporting year. The ABA program determines the Neutralizing Potential Ratio ((defined as Neutralizing Potential divided by Acid Potential [NP/AP]) (NPR)) for overburden and waste rock to confirm that the NPR is greater than three. An NPR value of three or greater is generally considered indication of non-acid generating material. A separate, parallel program was initiated to determine the NPR of the tailings solids.

A total of 26 waste rock samples were collected from the Copper Keel Underground (CK UG) and sent to an accredited laboratory (ALS Minerals) during the 2021 monitoring period. The samples were analyzed according to the MEND Modified NP Method as noted in the EMSRP.

The mean NP:AP results for waste rock samples was 16.7 for the duration of the monitoring period. No samples during the 2021 monitoring period were below the NPR threshold of 3 for waste rock. The mean paste pH values for all samples tested in 2021 was 8.36. The mean sulfide sulfur (S(S-2)) content for waste rock samples during the 2021 monitoring period was 0.055%. In 2021, no samples exceeded the S(S-2) content threshold of 0.30% for construction grade waste rock.

A total of 11 composite tailings samples were collected in 2021. The mean NP:AP results for tailings samples was 15.8 for the duration of the monitoring period. The mean paste pH values for all tailings samples tested in 2021 was 8.27. The mean sulfide sulfur (S(S-2)) content for waste rock samples during the 2021 monitoring period was 0.06%.

A full report containing lab results and analyses can be found in Appendix K.

13.3 Leach Pads

In 2017, two field scale leach pads were constructed and filled with Partially Oxidized Ore (POX – Leach Pad #1) and Low-Grade Sulfide Ore (Green sulfide ore – Leach Pad #2), as per the EMSRP. The Pads were constructed in October 2017, and the first leachate samples were collected in May 2018. In 2021, samples were collected monthly when water was available, resulting in 7 sampling events through the non-frozen months of 2021. Results from the leach pad samples are provided in the monthly reports. A summary report is included in Appendix L; sampling methodology and sample results of the 2021 sampling season are included in Appendix M.

14 Terrestrial Monitoring Programs

14.1 Wildlife Monitoring Program

The *Minto Mine Wildlife Protection Plan* (a component of the EMSRP) establishes guidelines for minimizing wildlife disturbance at the Minto Mine site and along the development corridor and includes a monitoring program to yield information about wildlife use in the area. The 2021 activities under the Wildlife Monitoring Program including the area and frequency of monitoring, are summarized in Table 14-1, below. There were no notable Wildlife incidents in 2021 as previously outlined in Section 2.5.2.

Table 14-1: Wildlife Monitoring Activities (2021)

Area Monitored	Monitoring Activities	Frequency
Wildlife Monitoring	Wildlife monitoring consists of maintaining a wildlife observation log onsite and reporting wildlife encounters, as per the Wildlife Act. Environmental personnel on site will monitor project activities and modify operations to address wildlife concerns.	Ongoing
Migratory Birds	Monitoring to determine if waterfowl and shorebirds settle on impacted water bodies, such as the Main or Area 2 Pits. Environmental personnel on site will monitor project activities and modify operations to address wildlife concerns.	Seasonal, Daily during migratory periods
Species at risk/ of concern	Any caribou observations will be reported to the Conservation Officer in Carmacks. Bank swallows have been observed to nest in residuum piles in the summer months, in which case these piles are cordoned off and left undisturbed until after the late summer migration or re-sloped prior to nesting season to deter nesting.	As necessary

In addition to the Wildlife Monitoring Activities listed in Table 14-1, the Minto Environmental Department gathered observations from mine site staff with Wildlife Observation forms. These forms were posted at many accessible locations around site and employees were encouraged to record all wildlife observations. The forms were collected periodically, and the sightings entered in a wildlife tracking sheet, which is included as Appendix N.

In 2021, 80 wildlife sightings were recorded, with 47 sightings involving bears (44 Black Bear and 3 Grizzly), 14 foxes, 8 deer, one lynx, and two wolves. Other animals that have historically been observed on site include but are not limited to, hares, ermine, grouse, ptarmigan, sheep, dunlin, eagles, ducks, porcupine, coyote, cougar, sandhill cranes and geese.

The most active month of the year for wildlife observations was May, with 32 reportable sightings. Active hazing was most frequent in May as well.

Additional activities that took place on site included occasional information broadcasting known as Safety Flashes concerning the prevention of wildlife habituation to all staff working on site.

14.2 Erosion and Sedimentation Monitoring Program

As part of the EMSRP, Minto has developed and implemented a *Sediment and Erosion Control Plan* (SECP). The objective of the SECP is to minimize local site impacts from erosion and prevent sedimentation to the receiving environment of Minto Creek. The 2021 activities associated with the Erosion and Sedimentation Monitoring Program are identified in Table 14-2, below.

Table 14-2: Erosion and Sedimentation Monitoring Activities (2021)

Activity	Location	Frequency
Visual inspections	Bottoms of slopes and depressions of large structures.	As needed following heavy rain events, and during freshet.
	Road routes: ditches and outlets of culverts and pipes.	As needed following heavy rain events, and during freshet.
Water quality monitoring for total suspended solids (TSS)	Water quality monitoring stations W2, W3, W50 and W17	Weekly and during heavy runoff periods.
Physical inspection of surface facilities by a Yukon registered Engineer.	Water Storage Pond Dam, Mill Water Pond, all waste rock and overburden dumps, all water diversion and conveyance structures and the dry stack tailings storage facility.	After the spring thaw period in May/June of each year and again prior to the on-set of winter in September of each year

14.3 Invasive Plant Species Monitoring Program

As part of the EMSRP, Minto developed an Invasive Species Monitoring Standard Operating Procedure (SOP) in 2015. The Invasive Species Monitoring Plan, created in 2014, was the basis for the SOP. The SOP details how the monitoring program will be conducted.

The 2021 Invasive Plant Monitoring Program began on June 27 and was completed on June 30, 2021. The program consisted of surveys and long-term photo documentation in high traffic areas onsite, such as the Waste Management Area, the Dry Stack Tailing Facility (DSTF), the Propane Farm, the Dyno call road, and Pelly Yard. Areas with lower visitor traffic including the Southwest Dump, Minto North, and the W15 wetland area, and the length of the Access Road from the mine site to the barge landing were documented as well.

The survey focused on the high-risk species as listed by the Yukon Invasive Species Council (YISC) (Table 14-3), but also identified lower risk invasive species, such as foxtail barley (*Hordum jubatum*). High-risk species identified during the 2021 survey included narrowleaf hawksbeard, sweet clover (yellow and white) and smooth brome. As per the EMSRP, the observed high-risk species were reported to the YISC Spotter's Network.

Table 14-3: Common and scientific names of Yukon invasive plant species.

Common Name	Latin Name	Common Name	Latin Name
Common tansy	*Tanacetum vulgare*	Smooth brome	*Bromus inermis*
Creeping thistle	*Cirsium arvense*	Spotted knapweed	*Centaurea stoebe*
Dalmatian toadflax	*Linaria dalmatica*	Scentless chamomile	*Tripleurospermum perforata*
Great butter and eggs	*Linaria vulgaris*	Foxtail barley	*Hordeum jubatum*
Hawkweeds	*Crepis tectorum*	Altai wild rye	*Leymus angustus*
Leafy spurge	*Euphorbia esula*	Crested wheat grass	*Agropyron cristatum*
Oxeye daisy	*Leucanthemum vulgare*	Quackgrass	*Elymus repens*
Perennial sow-thistle	*Sonchus arvensis*	Reed canary grass	*Phalaris arundinacea*
Sweetclover	*Melilotus alba (white) officinale (ellow)*	Bird vetch	*Vicia cracca*
		Lucerne	*Medicago falcata*

14.3.1 Survey Methods

The invasive species monitoring program included two types of surveys focused on different areas, including a meander survey for numerous areas on-site and a visual survey of the access road from a vehicle.

14.3.1.1 Meander Survey

Meander surveys were traversed on foot and instances of invasive species were documented. Invasive species were identified, photographed, and located using new

or pre-existing waypoints with a GPS. In addition, the coverage, distribution, and density of invasive species at each survey location was documented and long-term monitoring photos were taken at locations consistent with previous years.

14.3.1.2 Access Road Survey

For this survey, Minto Environment staff drove the length of the Access Road (27 km) at low speed to document any invasive species growing along the roadside. Photos were taken several points, including the barge landing (km 27), the Big Creek bridge (km 19), and the gravel pit (km 12.5) to support long-term monitoring efforts.

14.3.1.3 Long Term Photo Monitoring

Monitoring locations were consistent with previous years' surveys and served to document the change over time occurring at the various sites susceptible to invasive species introduction. Four photos were taken at each location facing different directions, roughly north, east, south, and west. These photos enable staff to track the movement of invasive plant species across the landscape and the rate at which species of concern can advance.

14.3.2 Results

The findings of the meander survey for each area are found in 14-4 below. The results generally found widespread narrowleaf hawksbeard (NLHB), instances of foxtail barley (FTB) and isolated patches of sweet clover (SC). Soil texture was found to be coarse at all locations.

Density is an estimate of plants per square meter on a scale of 1 to 4, where 1 is one or fewer plants per square meter and 4 is more than ten. Distribution (Dist.) refers to how plants are grouped in an area on a scale of 1 (a single plant) to 10 (continuous).

Table 14-4: Meander Survey Results

Area	Way Point	Invasive Species	% Coverage	Dist.	Density	Comments
Minto North	WP1	NLHB	25	6	3	
	WP2	NLHB	10	2	1	
	WP3	FTB	10	2	2	
Camp Area	WP36	FTB	1	8	3	Selkirk Towers
		NLHB	>1	2	2	Sporadic throughout
Propane Farm		NLHB	5	2	1	East side
WMA		NLHB	5	2	1	Along roadside
		FTB	5	1	1	Along roadside
	WP17	NLHB	50	2	1	
	WP15	NLHB	2	1	1	
Active Rec Area	WP33	NLHB	5	2	1	
		FTB	5	1	1	
Dyno Road		NLHB	25	7	2	Along roadside
		FTB	10	5	1	Along roadside
	WP9	NLHB	60	6	2	
Dry Stack Tailing Facility		NLHB	>1	1	1	
		FTB	2	1	1	
	WP21	NLHB	80	7	3	
Mill Valley Fill	WP23	NLHB	80	7	3	
		FTB	25	3	2	
W15 Wetland	WP34	NLHB	5	1	1	
		SC	5	2	1	On hillside near road
Pelly Yard	WP3	SC	5	2	1	
		NLHB	5	2	1	
	WP11	SC	5	2	1	
		NLHB	5	2	1	
IROB	WP7	NLHB	50	8	3	
		FTB	5	1	1	
SWD		NLHB	20	3	3	
		FTB	>1	1	1	Scattered individuals
		SC	5	2	2	Occasional patches

The results of the Access Road survey can be viewed in Table 14-5. The abundance of observed infestations was based on three predefined classes: continuous (plants form a continuous mat along highway), sporadic (scattered patches), or rare (a single occurrence).

Table 14-5: Access Road Survey Results

KM	Invasive Species	Abundance	Comments
Barge	SC	Sporadic	
	FTB	Rare	
	NLHB	Continuous	
25	NLHB	Sporadic	
23	SC	Rare	
18	SC	Sporadic	
	NLHB	Continuous	
	SB	Rare	KM 18 -> KM 19
17.5	SC	Continuous	
17	NLHB	Sporadic	
15	SC	Sporadic	
14	SC	Rare	
	NLHB	Rare	
13	NLHB	Sporadic	
12.5 Gravel Pit	FTB	Sporadic	

Narrowleaf hawksbeard (NLHB) were visible throughout the length of the road in single plants, and instances of smooth brome (SB) were found near Minto Creek and Big Creek. White sweet clover was sporadic from kilometre 14 to 27, with continuous dense patches between kilometres 15 and 18. Foxtail barley was rare, occurring as sparse individual plants from the barge to the kilometre 12.5 gravel pit.

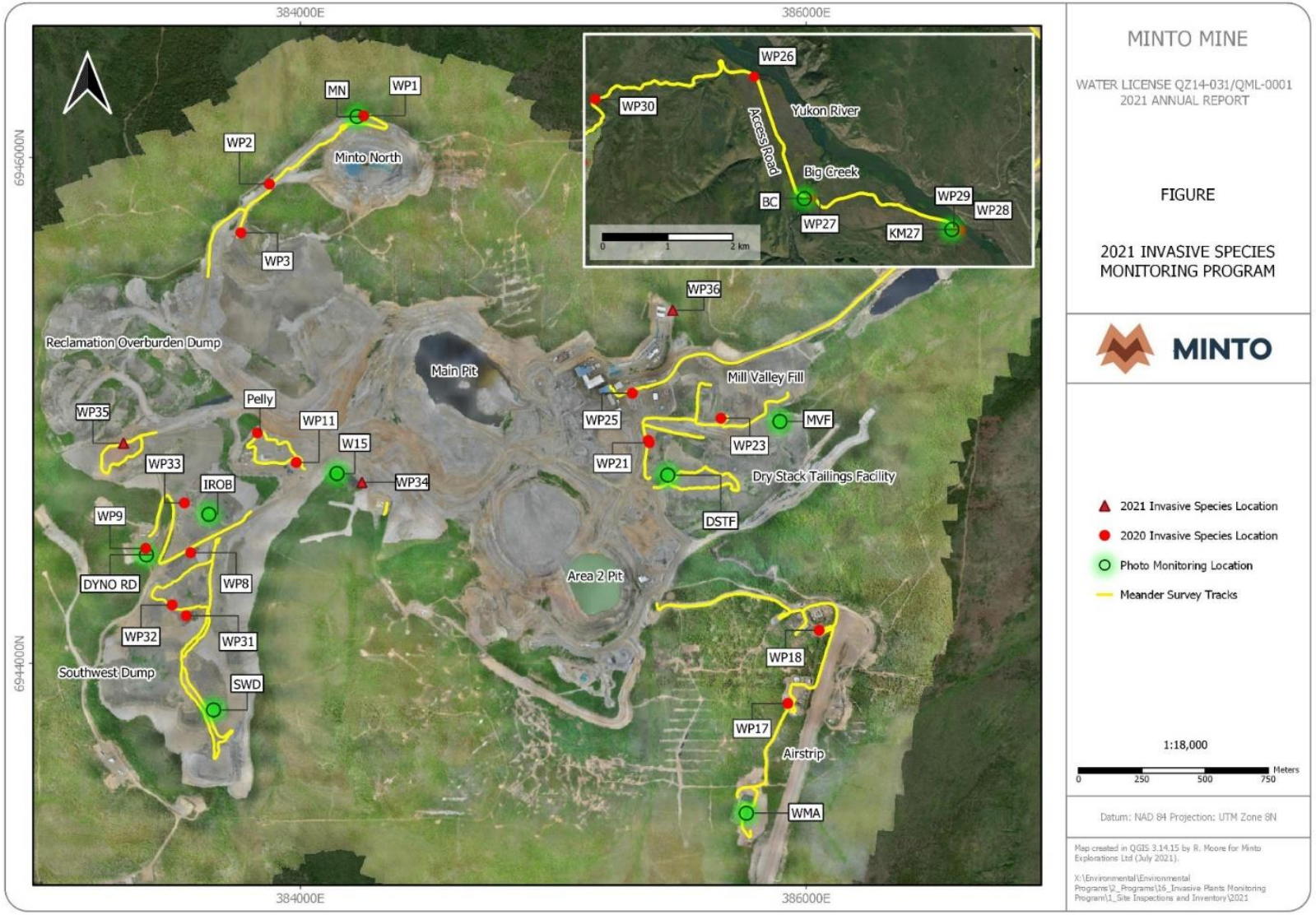

Figure 14-1: Invasive Plant Survey 2021

14.3.3 Actions

The limited occurrence of smooth brome was removed completely from the Big Creek bridge. The patches of sweet clover growing in the Pelly Yard and near the W15 wetland were hand-pulled, while more substantial patches near Selkirk Towers, the warehouse and the Southwest Dump were cut with the brush saw. Photos of removal efforts can be viewed in Appendix Q.

After re-visiting areas where removal efforts were completed (roughly one month later), it was found that most of the patches of sweet clover were able to recover, flower and go to seed, despite being mowed with the brush saw.

14.3.4 Recommendations

In accordance with the EMSRP, invasive plant surveys will continue in 2022, particularly along invasive species pathways such as roads with high visitor traffic, recently exposed areas, and areas that have been recently reclaimed.

It is recommended that the invasive species surveys continue to be conducted earlier in the summer months, as previously, the study had been completed in August-September, which caused difficulty identifying some species after they had gone to seed. Early/mid-July is recommended for identifying sweet clover, as it begins to flower during this time. Environmental staff should track incidental observations of invasive species throughout the growing season.

Control measures should be considered for areas in proximity to active reclamation, such as the Pelly Yard. Manual controls such as hand-pulling can be utilized for small infestations, while mowing can be applied to the larger infestations to slow the spread into more vulnerable areas. Any sweet clover removal efforts should be closely monitored and repeated throughout the growing season due to the plant's ability to regenerate and flower after mowing. Sweet clover has a two-year life cycle and thus will require several years of removal efforts to completely remove a population. If sweet clover becomes established in newly or sparsely revegetated areas, it could have detrimental impacts to reclamation success.

Any vehicles or equipment entering the site should be cleaned and inspected to ensure they are not transporting additional unwanted species to site.

14.4 Vegetation Metal Uptake Program

The Minto VMU (Vegetation Metal Uptake) program was initiated in 2016, when sixteen exposure sites and five control sites were established. Samples were collected from key soil horizons and key plant species that could be vectors to humans or wildlife (blueberry, horsetail, Labrador tea, lichen, and willow). These monitoring sites were sampled again in 2019, and a comprehensive report was included in the 2019 Annual Report. The next iteration of this program will occur in 2022.

15 Site Characterization Report

The previous Site Characterization Report was submitted to EMR and the Yukon Water Board (YWB) in January 2018. As per Clause 13.1 of the QML, the report must be updated every three years from the effective date of the licence. A request for a delay until October 31, 2021, from December 2020 was granted by EMR. Minto submitted an updated Site Characterization Report to EMR on October 31st, 2021.

16 Reclamation

Throughout 2021, Minto has continued to refine terrestrial reclamation practices to meet closure objectives and stakeholder expectations. Key practices include:

1) The continued salvage, stockpiling and replacement of topsoil and woody debris following soil conservation best practices;
2) Using surface preparation techniques and woody debris placement following coversoil and topsoil placement; and
3) Reliance on natural revegetation, supplemented with some seeding on slopes and woody species planting.

Minto plans to use a variety of reclamation best practices to achieve land use objectives established for the Minto Mine through consultation with Selkirk First Nation, regulators, and other stakeholders throughout the mine life. Ongoing engagement and consultation will continue to refine and focus land use objectives.

16.1 Cumulative Land Status

The Minto Mine occupies approximately 426 hectares of land. Facilities in the mine disturbance footprint have been divided into four categories, providing an overview of cumulative land status, described below:

- *Active Operation* - Disturbed land that is currently used to support production and mining activities.
- *Ready for Reclamation* - Areas that are no longer required to support production and mining activities and are available for reclamation but where reclamation activities have not yet commenced.
- *Permanent Reclamation Activities* - Includes activities that support permanent land reclamation such as recontouring, soil placement and revegetation.
- *Reclaimed* - contouring, soil placement and revegetation has taken place.

Table 16-1 presents cumulative land status areas as shown in Figure .

Table 16-1: Cumulative Land Status of the Minto Mine in 2021

Land Status	Area (ha)
Active Operation	287.9
Ready for Reclamation	28.2
Active Reclamation	100.7
Reclaimed	9.4
Total	**426.2**

Note: total does not include the Access Road

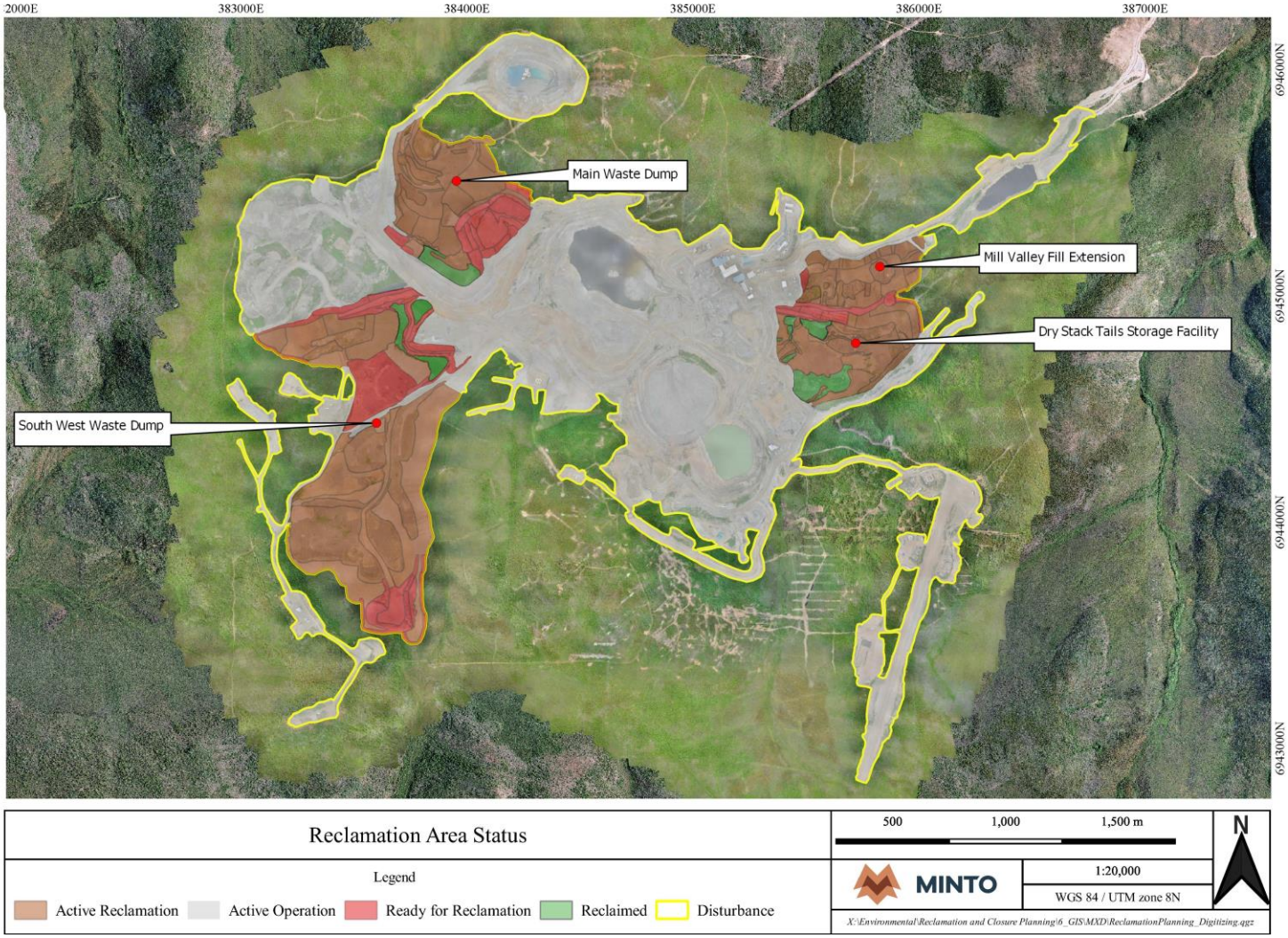

Figure 16-1: Cumulative Land Status of the Minto Mine in 2022

16.2 Current Year Reclamation

In the summer of 2021, reclamation activities continued at Minto Mine. In June, a total of 39,169 trees were planted in areas that were previously contoured and had 50cm of coversoil placed. The following facilities were partially planted:

- Mill Valley Fill Extension;
- Dry Stack Tailings Storage Facility;
- Main Waste Dump; and
- South West Waste Dump.

Lodgepole pine (*Pinus contorta*), white spruce (*Picea glauca*) and aspen (*Populus tremuloides*) were planted at a density of approximately 3,000 stems per hectare (st/ha). Planting composition varied based on planting block aspects, as site characteristic that influences soil moisture. On northern and western aspects having mesic soil moisture regimes, an even density of tree species was planted at 1,000 st/ha. On southern and eastern aspects having submesic to subxeric moisture regimes, a higher density of lodgepole pine were planted at 2,000 st/ha, with lesser amounts of white spruce and aspen planted at 500 st/ha. Figure presents the planting locations.

Figure 16-2 Tree Planting Locations at the Minto Mine in 2021

16.3 Next Reporting Year Reclamation

In 2022, Minto plans to complete reclamation activities on the Dry Stack Tailings Storage Facility (DSTSF) and the Mill Valley Fill Extension (MVFE). Reclamation activities will include completing contouring, placing coversoil in areas that do not meet coversoil capping criteria, constructing drainage channels, creating microtopography using surficial preparation techniques and placing woody debris.

16.4 2021 Reclamation Research and Monitoring

In 2021, Minto facilitated reclamation research, conducted by Yukon University in the northern most lift of the Southwest Waste Dump. The study is looking at how natural and synthetic barriers on the reclaimed landscape influence soil moisture, plant available nitrogen and seed dispersion. In 2021, the study site was prepared with heavy equipment, meteorological equipment deployed, soil probes installed, soil samples taken, green alder planted (natural barrier) and snow fence set up (synthetic barrier). The study will continue for another three years.

Minto has sponsored a MSc student at Yukon University/Centre Eau Terre and Environment to conduct research on semi-passive treatment to remove nitrate from mine-impacted waters. The project will assess biological water treatment technologies to remove nitrogen compounds in cold climate from mine impacted waters at Minto mine, with inoculum from the mine site (sampled in fall 2021).

17 Socio-Economic Monitoring Program

The Minto Mine Socio-Economic Monitoring Program defines the framework for monitoring direct and indirect socio-economic effects from the Minto Mine. The 2016 to 2018 Report was published in 2021. A digital version is being produced for the 2019 and 2020 Annual Reports and will be published in 2022.

In 2021, Minto tracked and collected administrative data and other information relating to the mine's direct employment, training, and procurement; worker safety; and Minto's contributions to cultural well-being and community wellness. This information is presented in Appendix O, *2021 Minto Socio-Economic Report*.

18 Closure

Minto trusts this document fulfills the 2021 annual reporting requirements of Minto Mine's WUL and QML.

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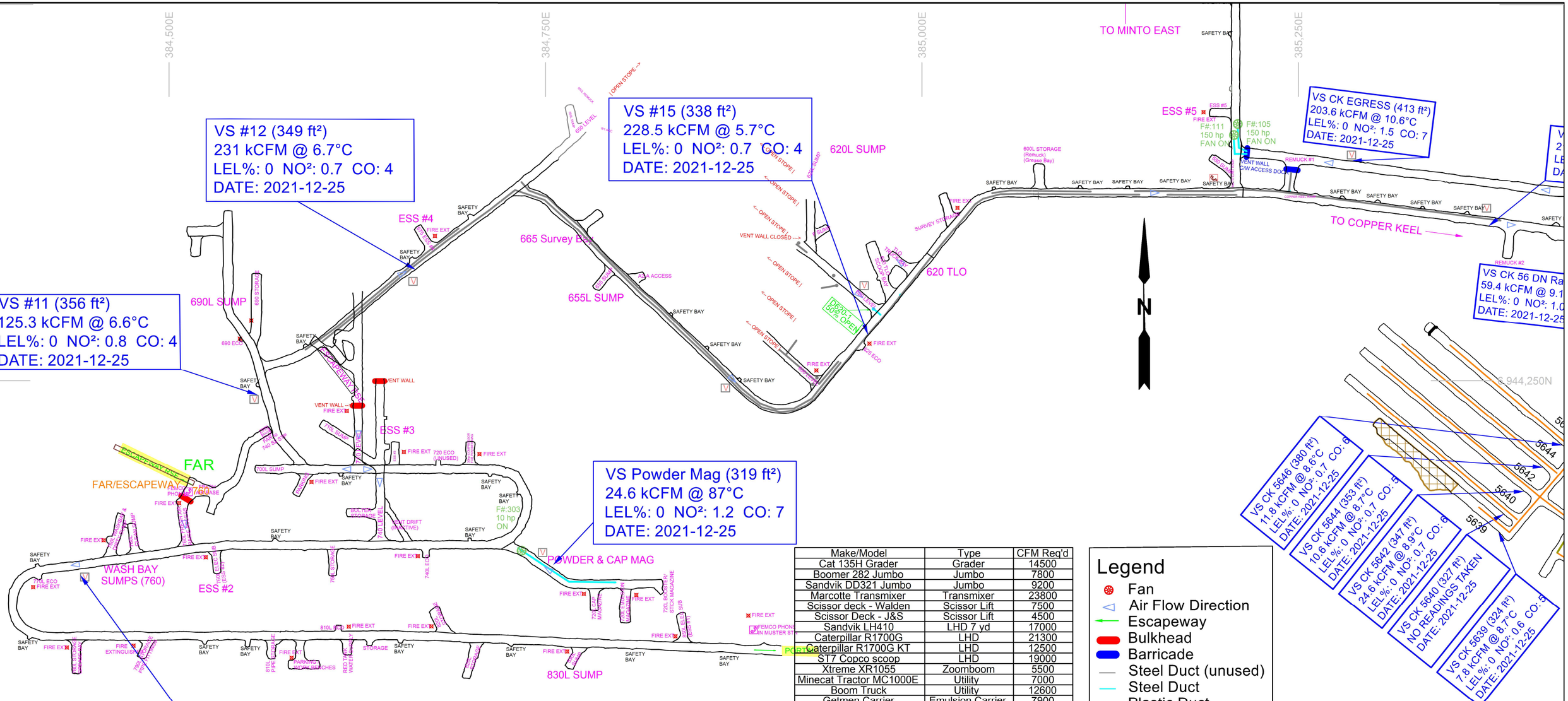
Appendix A – Minto Mine Underground Development Map



Make/Model	Type	CFM Req'd
Cat 135H Grader	Grader	14500
Boomer 282 Jumbo	Jumbo	7800
Sandvik DD321 Jumbo	Jumbo	9200
Marcotte Transmixer	Transmixer	23800
Scissor deck - Walden	Scissor Lift	7500
Scissor Deck - J&S	Scissor Lift	4500
Sandvik LH410	LHD 7 yd	17000
Caterpillar R1700G	LHD	21300
Caterpillar R1700G KT	LHD	12500
ST7 Copco scoop	LHD	19000
Xtreme XR1055	Zoomboom	5500
Minecat Tractor MC1000E	Utility	7000
Boom Truck	Utility	12600
Getmen Carrier	Emulsion Carrier	7900
MineCat	Man Carrier	7000
Caterpillar AD45 Truck	Haul Truck	22000
Caterpillar AD45B Truck	Haul Truck	35500
TES/Maclean Bolter	Bolter	9200
Maclean 928 Bolter	Bolter	14700
Toyota	Man Carrier	7300
MineCat UT99	Man carrier/Utility	6000
Kubota RTV-X1140W	Man Carrier	1800

Legend

- Fan
- Air Flow Direction
- Escapeway
- Bulkhead
- Barricade
- Steel Duct (unused)
- Steel Duct
- Plastic Duct
- Flex Duct
- Damper
- Damper (unused)
- Refuge Station
- Phone
- Safety Box
- Fire Extinguisher
- Vent Board
- Airflow Monitor
- Airflow Sensor
- Call Points

DRAWN BY: Y.Wang	SCALE: 1:2500	VENTILATION & EMERGENCY	SURVEY PERFORMED BY: Y.Wang	VENTILATION INSTRUMENT: Velocicalc 9535
	DATE PLOTTED: 25 Dec 2021		SURVEY DATE: 25 Dec 2021	GAS MONITOR: Q002

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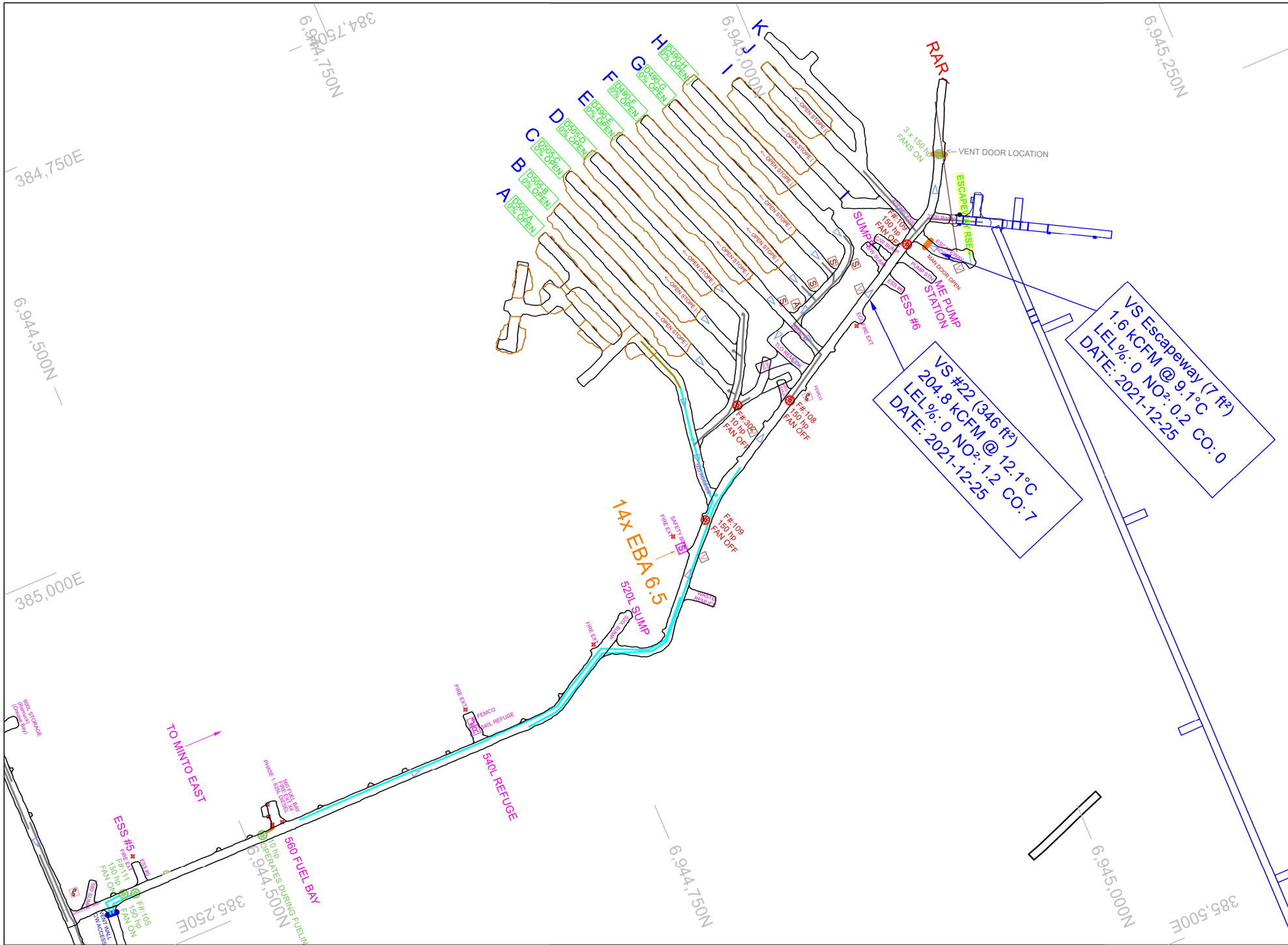

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VENTILATION & EMERGENCY

DRAWN BY: Y.Wang	SCALE: 1:2500	SURVEY PERFORMED BY: Y.Wang	VENTILATION INSTRUMENT: Velocicalc 9535
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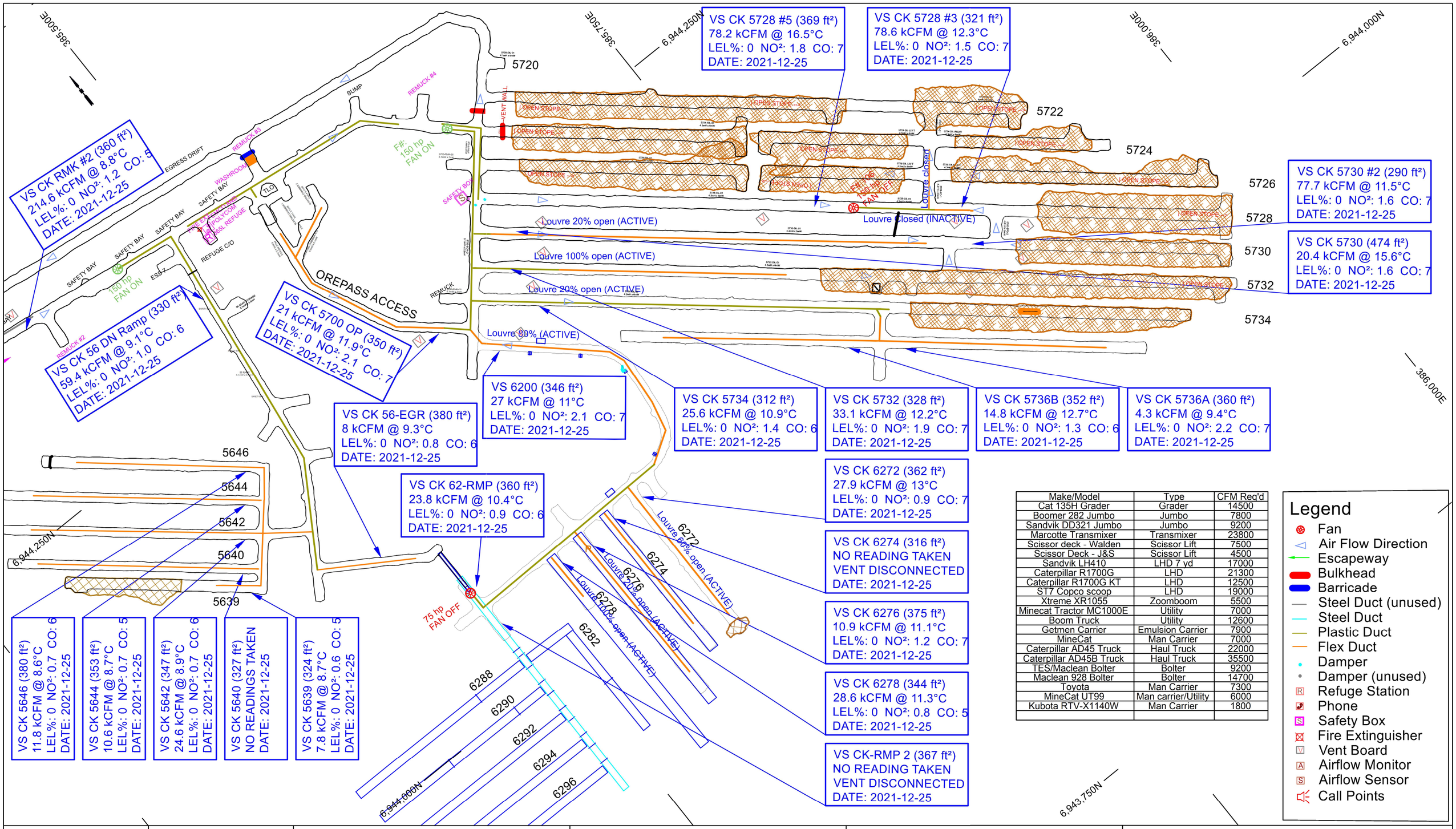

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DRAWN BY: Y.Wang	SCALE: 1:2000	VENTILATION & EMERGENCY	SURVEY PERFORMED BY: Y.Wang	VENTILATION INSTRUMENT: Velocicalc 9535
	DATE PLOTTED: 25 Dec 2021		SURVEY DATE: 25 Dec 2021	GAS MONITOR: Q002

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Appendix B – 2022 Spill Contingency Plan

Minto Mine

2022 Spill Contingency Plan

Prepared by:

Minto Metals Corp.

Minto Mine

December 2022

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1 Introduction

This Spill Contingency Plan (SCP) is an update to the previous SCP, published in January 2021. The content of this SCP is derived from the *Plan Requirement Guidance for Quartz Mining Projects* (Yukon Government, 2013). The SCP has been updated annually and submitted as part of Minto's Water Use Licence and Quartz Mining Licence annual reports.

The purpose of the SCP is to establish guidelines for staff, contractors, and suppliers working at the site with a formal framework of actions to be taken when responding to spills during mine operation. The SCP includes practices and planning of future efforts to further reduce the potential for environmental contamination and other spill-related impacts. The SCP describes the following:

- fuels, chemicals, and other materials used at the Minto Mine;
- reporting thresholds for those materials;
- a spill action plan for responding to unintentional spills of those materials;
- reporting sequences and forms;
- training requirements;
- spill prevention activities;
- routine monitoring and maintenance.

1.1 Project Description

Minto Metals Corp. (Minto), owns and operates the Minto Mine Project located 240 km (150 miles) northwest of Whitehorse, Yukon. Operations started in October 2007. The mineral deposits mined at the site were identified during exploration programs occurring in the area in the 1970's; exploration activities occurred sporadically since that time until construction of the mine and related facilities began in earnest in 2006.

The Project area encompasses the Minto Creek Valley which collects and drains into the Yukon River (Figure 1-1). An overview of major infrastructure at the Minto Mine is shown on Figure 1-2 below.

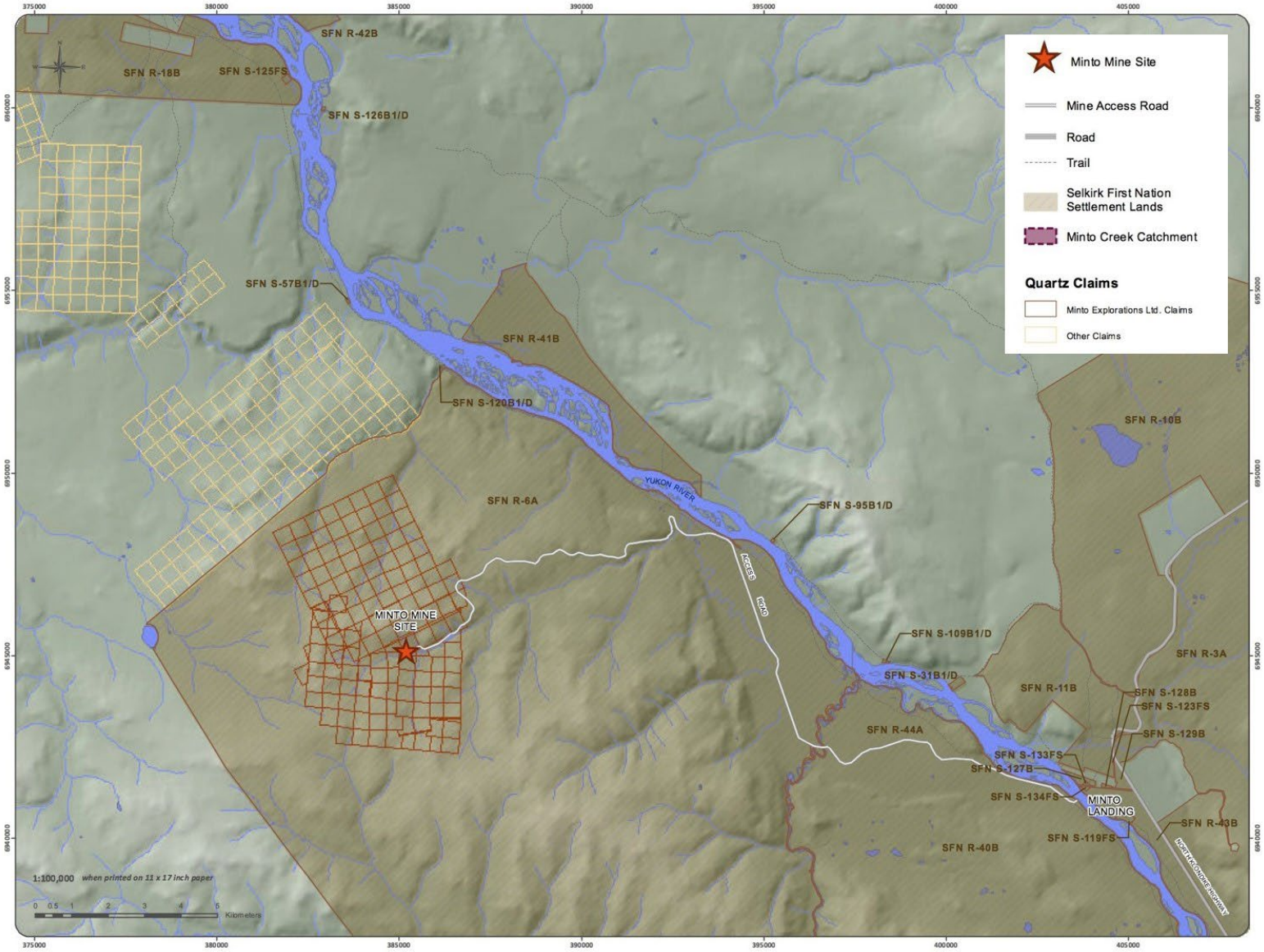

Figure 1-1: Minto Mine Area Overview

Figure 1-2: Minto Mine Area Overview – Existing Infrastructure

2 Definitions

The following definitions apply to the components of the SCP outlined herein.

Dangerous Good - A product, substance, or organism included by its nature or by the regulations in any of the classes listed in the schedule to the act (*Yukon Transportation of Dangerous Goods Act)*.

Deposit out of the normal course of events - A deposit that can reasonably be expected to occur at the mine and that can reasonably be expected to result in damage or danger to fish habitat or fish or the use by man of fish, and the identification of the damage or danger (*Metal Mining Effluent Regulations, Part 3, SOR/2002-222)*.

Discoverer - The person that discovers an incident that could possibly result in a spill or has resulted in a spill.

Spill - A release of a substance into the natural environment that is abnormal in quantity or quality in light of all circumstances of the release; or is in excess of an amount specified in the regulations (*Yukon Environment Act, Part 11*):

> **Emergency Spill -** A release of a hazardous product where there is potential for that product to enter a waterway or cause significant danger to life, health or environment.
>
> **Non-Emergency Spill -** All spills that do not meet criteria of an *emergency spill* and that the responsible party is competent to manage safely and efficiently in terms of assessment, prevention, containment and clean-up.

Substance - A hazardous substance, pesticide, contaminant or special waste often referred to as a "**deleterious substance".**

3 Purpose and Scope

Minto will ensure that all requirements related to Spill Response and reporting within these documents are implemented throughout the property for the life of the mine. If statutory and regulatory responsibilities change over time, the plan will be updated accordingly.

This SCP is prepared in support of:

- Minto's Type "A" Water Use License QZ14-031 (WUL) and Type "B" Water Use License MS15-094, which state that:

  "The Licensee shall apply the relevant procedures in the Spill Contingency Plan. The Licensee shall review the spill contingency plan annually and shall provide a summary of that review, including any revisions to the plan, as a component of the annual report."

- *Part 3 – Unauthorized Deposits*, Section 30 of the *Metal and Diamond Mining Effluent Regulations* (MDMER), which indicates that:

  "The owner or operator of a mine shall prepare an emergency response that describes the measures to be taken in respect of a deleterious substance within the meaning of subsection 34(1) of the Act to prevent any unauthorized deposits of such a substance or to mitigate the effects of such a deposit."

- *Part 7 – Emergency Response Assistance Plans and Security Plans of* the *Transportation of Dangerous Goods Act*:

  "*No person shall import, offer for transport, handle or transport dangerous goods in a quantity or concentration that is specified by regulation — or that is within a range of quantities or concentrations that is specified by regulation — unless the person has an emergency response assistance plan that is approved under this section."*

- Satisfying the requirements of the Quartz Mining License QML-0001 Schedule B, that requires:

  "A *plan that describes the measures designed to minimize the potential impact to the environment following a fuel or chemical spill."*

The SCP will apply to Minto Mine and the main access route for one year, whereby the owner or operator shall update and test the SCP to ensure it continues to meet the requirements of both the WUL, subsection 30(2) of the MDMER, and the QML.

3.1 Purpose

The purpose of the SCP is to outline a general set of procedures to be followed to assess, prevent, contain and clean-up a spill at the Minto Mine. For procedures to be effective, Minto must ensure that employees and contractors, through experience and training, possess the skills necessary to safely assess, prevent,

contain and clean-up a spill or potential spill. These procedures are necessary to ensure continuity and develop the foundation for a robust and effective SCP. The SCP is also designed to establish clear reporting and clean-up procedures as they apply to emergency and non-emergency spills and incidents.

This document also addresses opportunities to improve spill preparedness, response, and mitigation for deposits out of the normal course of events that have the potential to impact the Yukon River and its tributaries within the project site.

All Minto employees and contract staff must be familiar with the general spill reporting procedures outlined in this document and will be introduced to them as part of their site orientation.

3.2 Scope

The objectives of the SCP are to:

- identify potentially hazardous materials located on site;
- identify spill prevention measures;
- establish a high order of preparedness if a spill occurs;
- ensure an orderly and timely decision-making, response and reporting process; and
- describe current and planned protective measures for all areas of the Mine Site

The *Minto Mine Emergency Response Plan* (Minto, 2020) contains other information that relates to Emergency spill procedures. The Emergency Response Team (ERT) and members of the Environmental Department have been trained on responding to Hazmat Spills. It is beyond the scope of this document to define the specific Spill Response Procedures and decision loops involved in an ERT response. Any details pertaining to a response from ERT to assess, prevent, contain and clean-up a spill at a spill incident is the responsibility of the Site Safety Lead. General procedures for spill response procedures to emergency spills will be detailed herein.

3.2.1 Hardcopy Locations

Copies of the SCP are kept on-site in the following locations:

- Site Safety Office/ERT Building;
- Environmental Office
- Site Manager's Office

- Copper Queen Tug.

Contact information is provided in Table 4.2

4 Communication and Spill Reporting

Any spill that occurs at the Minto Mine site must be reported through the internal reporting chain of command and follow the procedures for assessment, prevention, containment and clean-up and reporting. Should a spill exceed the thresholds set by the Yukon Government (Table 4-1) then it must be reported to external authorities.

A spill that is in excess of the thresholds outlined in Table 4-1 or any spill that is abnormal in quality or quantity is considered a "reportable spill" under the *Yukon Spill Regulations* (O.I.C. 1996/193), pursuant to the *Environment Act*.

Table 4-1: Reportable Spill Thresholds

Product	TDG[1.] Code	Threshold Quantity
Explosives	1	Any amount
Flammable gases	2.1	> 100 litres
Non-flammable gases	2.2	> 100 litres
Poisonous gases	2.3	Any amount
Corrosive gases	2.4	Any amount
Flammable liquids	3	> 200 litres
Flammable solids	4	> 25 kg
Spontaneously combustibles	4	> 25 kg
Dangerous when wet	4	> 25 kg
Oxidizers	5.1	> 50 kg or 50 litres
Organic peroxides	5.2	> 1 kg or 1 litre
Poisonous substances	6.1	> 5 kg or 5 litres
Corrosive materials	8	> 5 kg or 5 litres
Miscellaneous Dangerous Goods	9.1	> 50 kg or 50 litres
Special wastes	9.3	> 5 kg or 5 litres

1. TDG = *Transportation of Dangerous Goods Regulations* (Government of Canada, 1985)

4.1 Internal Reporting (All Spills)

All spills (whether externally reportable or not) must be reported by the discoverer to their immediate supervisor and then to the Environmental Department by radio or telephone following assessment of the scene. The supervisor of the responsible department will issue an Environmental Incident Notification, with assistance from the Environment department, to notify the site and its directors, including senior management. This typically occurs concurrently with spill response (prevention, containment, and clean-up) activities.

Following the spill response, responsible department supervisors are required to document the spill on an Environmental Incident Report, available through the Environmental Department, and provided in Appendix A. The report requires inclusion of photos, a description of clean-up activities, subsequent actions, and identifies the root cause and determines any necessary corrective actions.

4.2 External Reporting (Reportable Spills Only)

Under federal and territorial regulations, the environmental lead will call the 24-hour Yukon Spill Report line should a spill of a reportable quantity occur (Table 4-1). Although several government agencies at

the federal, territorial and municipal levels may ultimately be informed, only the Yukon 24-Hour Spill Report line is required for reporting purposes. The environmental lead will ensure that the appropriate information is collected before reporting to the Spill Report line and the report will be filed within 24 hours.

Any spill of an amount greater than those listed in Table 4-1 or a spill of any amount that enters the Yukon River or a tributary of the river is a "reportable spill".

The following information should be provided to the 24-Hour Spill Report line:

- Name
- Phone number
- Product spilled
- Quantity spilled
- Quality of product (thin, viscous etc.)
- Location of spill
- Distance to water
- Distance to drinking water wells
- What happened
- Responsible party
- Actions to contain the spill

When reporting the spill to the Spill Report Line, the environment lead will obtain the Environment Yukon Spill Reporting Number and first/last name of the person whom the report has been made to (in the event of a reporting discrepancy).

Minto will also contact: the Selkirk First Nation Lands Director; and Energy Mines and Resources Client Services and Inspections via email or phone after discovery of a reportable spill. Should the spill enter a waterway or be categorized as a major spill, Minto will also contact Environment Canada. A detailed written report will be submitted to the regulatory authorities within 10 days after the event. The contact information for the various Minto employees, emergency response and external reporting personnel is provided in Table 4-2 below.

Table 4-2: Contact Information for Minto Personnel and External Agencies

Minto Mine Contact List		
Department Heads	**Email**	**Contact Number**
Director, HSE Kevin LeDrew	kevinl@mintomine.com	867-332-5527
Environment Coordinators Todd Swenson/Scott Morrison	todds@mintomine.com scottm@mintomine.com	604-759-4659
General Manager- Sebastien Tolgyesi	sebastient@mintomine.com	604-759-4639
Emergency Phone Contacts		
Yukon 24- Hour Spill Line		867 667-7244
CANUTEC-Dangerous Goods Help (Transport Canada)		1-888-CANUTEC or 613 996-6666
Fire Department – Pelly Crossing (Emergency)		867 537-3000
Police – Pelly Crossing		867 537-5555
Health Centre - Carmacks		867 863-4444
Hospital – Whitehorse		867 667-8700
Fire Department – Whitehorse		867 668-8699 or 668-2462
Police – Whitehorse		867 667-5555
YG Department of Environment, Water Resources Branch		867 667-3227
YG Environmental Protection Branch		867 667-3436
Selkirk First Nation, Betty Baptiste, Lands Manager		867 537-3331
YG EMR, Client Services and Inspections		867 667-3199
External Reporting and Contacts for Submission of Spill Reports		
YG EMR, Brett Isbister, NRO - Mining	Brett.Isbister@gov.yk.ca	867-334-9280
SFN, Betty Baptiste, Lands Manager	landsmgr@selkirkfn.com	867 537-3331 ext. 603
YG EHS, Craig Van Lankveld, Environmental Health Officer	craig.vanlankveld@gov.yk.ca	867 667-8316
Environment Canada, Travis Teel, Enforcement Officer	Travis.Teel@ec.gc.ca	867-393-6705

5 Spill Action Plan

Implementation of the spill action plan requires knowledge of spill response supplies and locations, spill response procedures (Sections 5.1 and 5.2) and clean-up protocols (Section 5.3). In addition to the internal and external reporting requirements, spills must further be categorized as “emergency” or “non-emergency” incidents as the action plans and reporting requirements will differ according to the type of spill.

5.1 Spill Response Procedures: Non-Emergency

The majority of spills that are likely to occur on the Minto Mine Site will include a simple stepwise process initiated by the discoverer. If the safety at the scene is in doubt, then it is imperative that the Site Safety Lead is notified immediately. A “non-emergency” spill is defined as a spill of any product that the discoverer, or other personnel within proximity of the incident can competently, safely, and efficiently manage in terms of assessment, prevention, containment, and clean-up. This typically includes fuels, blasting agents, oils, lubricants or coolants, and many of the reagents involved in mill operations. Once the scene is assessed for safety by the discoverer or supervisor and deemed a non-emergency, they will prevent, contain, and clean-up the spill, while also contacting the environmental team as soon as practical. If assistance is required to deal with the incident, the environmental team is to be notified by radio/telephone immediately. All small spills and drips discovered as part of vehicle pre-operation checks are to be cleaned up and reported for tracking purposes to the environment team. Specialized spill clean-up totes have been distributed around site in parking areas for this purpose. Specific instructions are located on the totes. Full totes are to be brought to the LTF for placement into the contaminated soils staging area.

A complete inventory of Dangerous Goods stored and used at the Minto Mine, including details on material handling and clean-up, reporting thresholds, special precautions, PPE requirements, and disposal methods is provided for reference during spill response activities (Appendix B).

5.2 Spill Response Procedures: Emergency

An “emergency spill” is a release of a hazardous product where there is potential for that product to enter a waterway or cause significant danger to life, health or environment. When a spill is discovered, the first

step is to assess the scene for safety and, **if safe to do so,** immediately control and contain the spill by any means necessary. If the discoverer or other personnel within close proximity of the incident do not have the required training, resources, or equipment to deal with the incident then the individual must report a "Code 1" callout. This protocol will initiate response of the Safety Lead, Environmental Lead, and the Emergency Response Team. The Emergency Spill Response Command Structure and General Spill Procedure are detailed in Figure 5-1 and Figure 5-2, respectively. If the scene is safe and the discoverer and the immediate supervisor have the means necessary to control, contain, and recover the spill then they should proceed as such.

Once called via a "Code 1" the Safety Lead will respond to the scene and conduct an initial assessment and assume command of the scene. If the Safety Lead/Medic is required to treat patients, command is transferred to the Emergency Response Team Captain. Unified Command Structure will be initiated once the Site Manager or Environmental Lead is on scene. The Unified Command Structure is a cooperative effort command between the Site Manager, Health and Safety Lead, and the Environmental Lead. Transfer of command includes a detailed verbal report of the incident and activities conducted and underway.

A "Code 1" Protocol initiated by an emergency spill will trigger the specific spill response procedure based on the product type, quantity and environmental and safety conditions.

Initial spill response will be conducted in accordance to *Transport Canada's 2016 Emergency Response Guidebook* (Transport Canada, 2016). This Guidebook will assist Incident Command with information to identify the material, use the guide to reference potential hazards, public safety and emergency response information. The *Table of Initial Isolation and Protective Action Distances* will be used to dictate isolation and protection for both large and small spills. However, this is not a comprehensive spill mitigation and response document and will only assist responders in making initial decisions upon arriving at the scene of a dangerous goods incident. It should not be considered as a substitute for emergency response training, knowledge, or sound judgment. The *Emergency Response Guidebook* does not address all possible circumstances that may be associated with a dangerous goods incident. The 2019 *Minto Mine Emergency Response Plan* has additional specific procedures for responding to the most commonly transported and hazardous materials including Nitric Acid, Gasoline, Diesel, Ammonium Nitrate, Sodium Sulfide, and Propane.

In addition to on-site response Minto, through its carriers of dangerous goods, has contracts in place with spill responders. These are full-service response agencies that have commitments to mobilize fully trained emergency response teams and equipment 24 hours a day, 7 days a week.

5.2.1 CANUTEC Transport Canada

In the event that a spill requires additional technical resources Minto is registered with CANUTEC, a division of Transport Canada, for 24-hour Spill Response support and information to deal with emergency situations. If a spill occurs beyond the boundaries of the Minto property, the owner of the transportation firm and the owner or consignor of the dangerous goods will communicate with the regulators. For incidents that occur on the Minto property, the Environmental Department will ensure reporting to regulators is performed accordingly.

5.2.2 Surrounding and Downstream Communities

Notification of downstream water users of a spill, if required, is the responsibility of the Yukon Government Environmental Protection Branch. Minto will additionally notify the authorities including police and fire departments and the Selkirk First Nation community of Pelly Crossing.

5.2.3 Public Relations

The Site Manager is the designated spokesperson for Minto. The Site Manager may delegate their responsibility for public relations if required to do so by the scale of the incident.

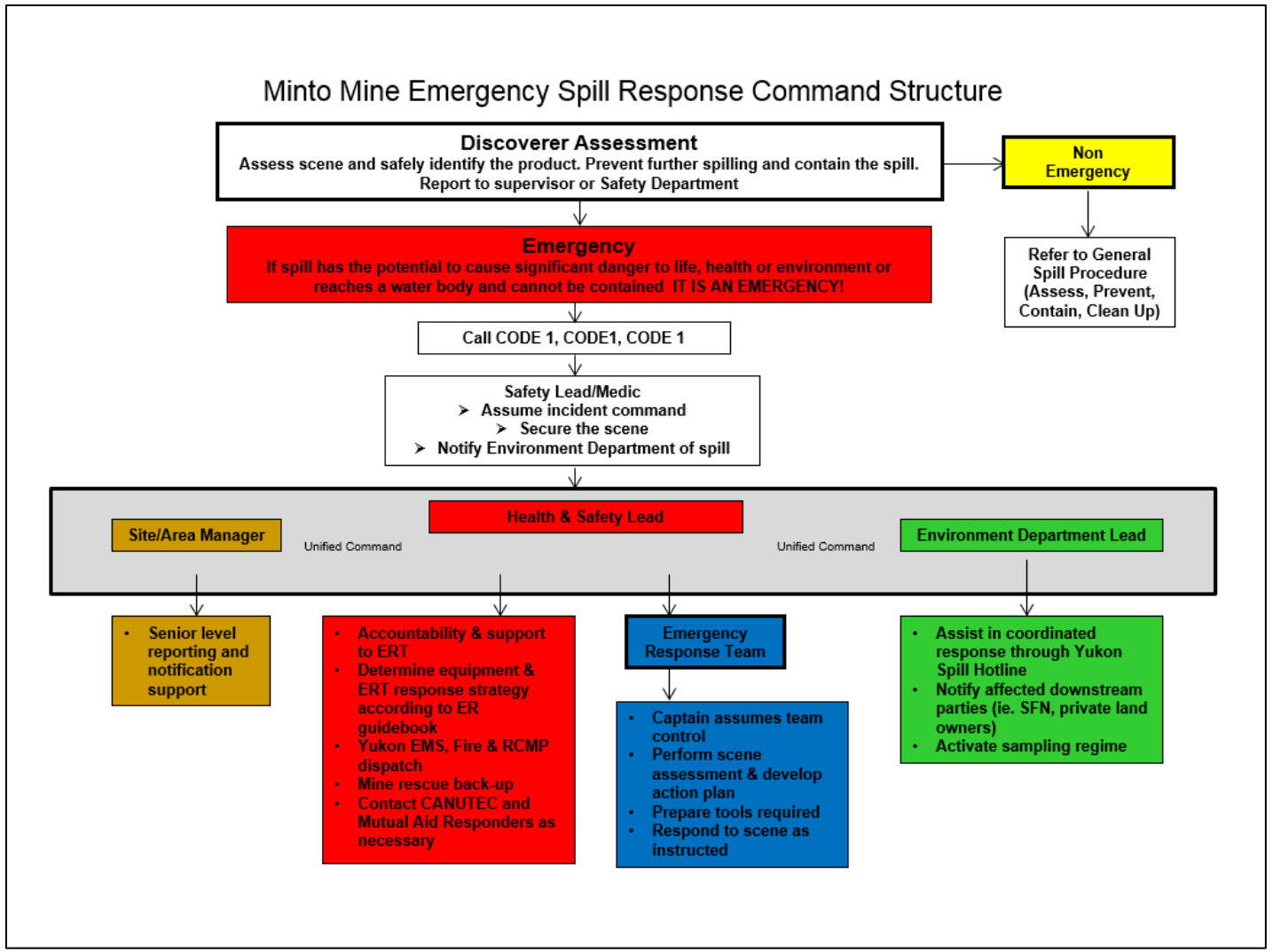

Figure 5-1: Minto Mine Emergency Spill Response Command Structure

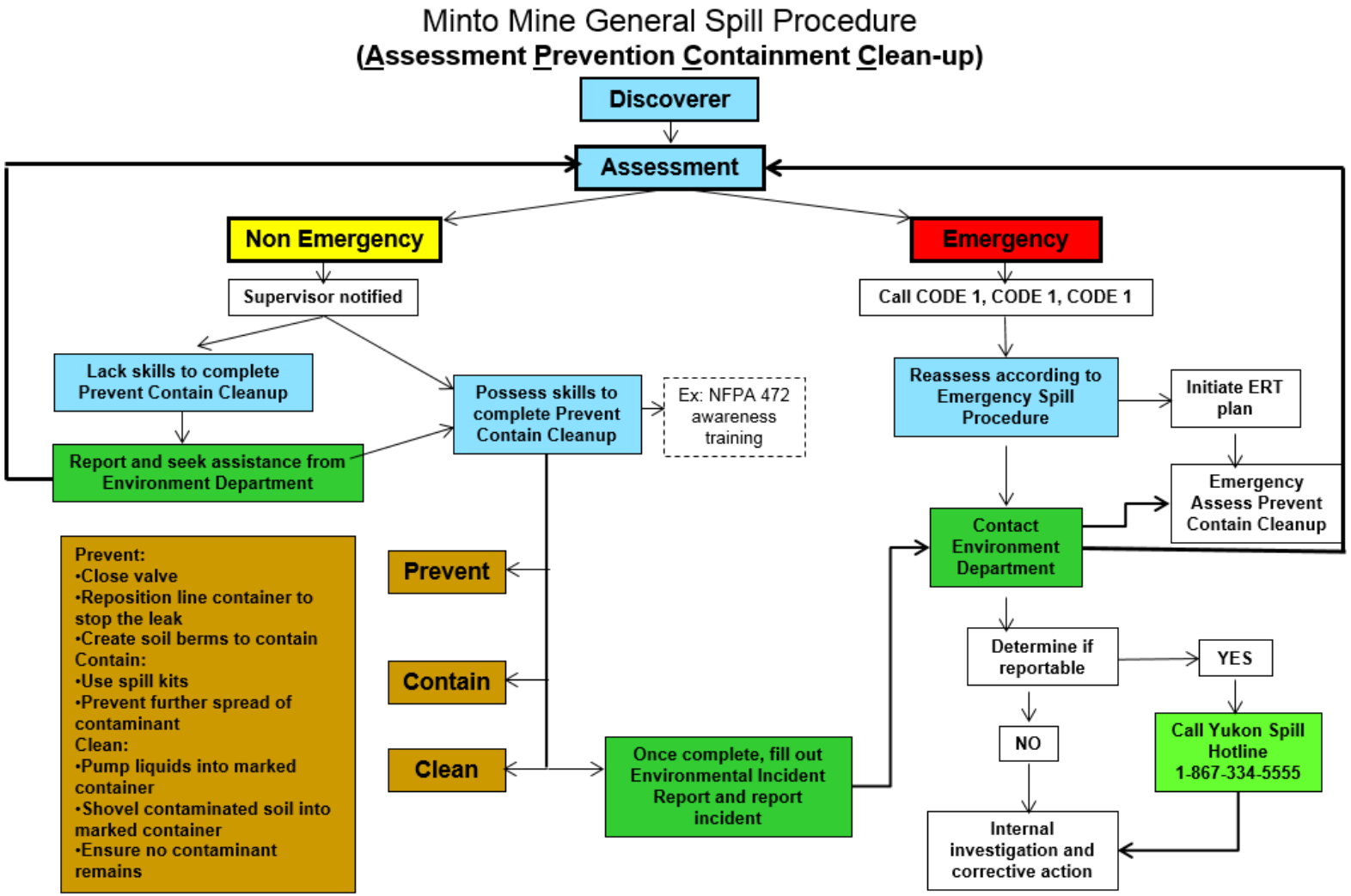

Figure 5-2: Minto Mine General Spill Procedure

5.3 Disposal and clean-up

Disposal and treatment methods of contaminated material are outlined below and are further detailed in the *Minto Mine Spill Response Procedure: Non-emergency spills on soil* and the *Minto Mine Land Treatment Facility Standard Operating Procedure* documents. The Minto Mine Site has a Land Treatment Facility to accept incoming contaminated material from petroleum hydrocarbon and ethylene glycol spills. Depending on the state and substrate of the surface material, the clean-up and disposal location will differ. Brief practical descriptions of the clean-up procedures are summarized in Table 5-1.

Table 5-1: Disposal and Movement of Contaminated Material from Spill Sites

WASTE TYPE	DESCRIPTION	MOVEMENT OF MATERIAL FROM SPILLS
Oil or Glycol Contaminated Soil	Soil, Organics, and granular material (avoid coarse rock) contaminated as a result of a hydrocarbon or glycol spill	Contaminated soil will be transferred to the Land Treatment Facility. Contaminated soil will first be placed in the staging cell and labelled to be later categorized and treated. Contact Environment dept. before dropping off material in the Land Treatment Facility. Small spills will be stored in a composite pile in the staging area. Larger spills will be stored separately in staging while waiting for lab results.
Oil or Glycol Contaminated Rock	Blasted rock and coarse material and/or bedrock, contaminated as result of a hydrocarbon spill or glycol spill	If blasted rock contains ore and has been cleared by Mill operations ore will be processed through the mill. Non-ore containing rock will be placed in the main pit and in-situ bioremediation will be applied to the pile.
Oil or Glycol Contaminated Snow/ Ice/Water	Snow, Ice, and/or Water that has been contaminated as a result of a hydrocarbon spill or glycol spill	Contaminated snow/water will be transferred to the Land Treatment Facility. The contaminated product will be placed in a separate pile in the cell.

**** Any amount of material that has more than 30,000 ppm oil or glycol is considered special waste and must be disposed of off-site to a Special Waste Facility**

6 Spill Response Supplies

Spill kits (yellow Enpac-95 and Enpac-20 drums) are located throughout the Minto Mine Property at locations indicated in Figure 6-1. Additionally, there are two blue 55 gallon drums located at the km 12 gravel pit, Big Creek and at the east and west terminals of Minto Landing. The contents of the spill kits are summarized in Table 6-1. Spill kits are also supplied for each heavy and light truck at the Minto Mine. Contractor supervisor trucks have spill kits permanently affixed to the truck body. All contract trucking agencies travelling to the mine are required to carry spill kits within or affixed to the truck. Spill kits are loaned to short term visitors if required.

Table 6-1: Spill Kit Contents

Spill Kit Item	Enpac-95	Poly-55	Enpac-20	Yellow Truck Bag	Loaner Spill Kit (20 L Pail)
Tyvek splash suits	2	2			
Chemical master gloves	2	2	2	1	2
Splash Goggles	2	2			
Garbage bags with ties	10	10	5	3	1
Oil only booms (5” x 10’)	4	8		1	
Oil only mats (16” x 20”)	100	100	20		10
Universal sorbent mats	50	50	15	10	5
Universal Pillows	4	4	2		
Sorbent socks	4	4	2		1
Tarp	1	1			
Duct tape	1	1			
Utility knife	1	1	1		
Absorb-all Pellet Bags	2	1	1	1	1
Shovel	1	1			
Rake	1	1			

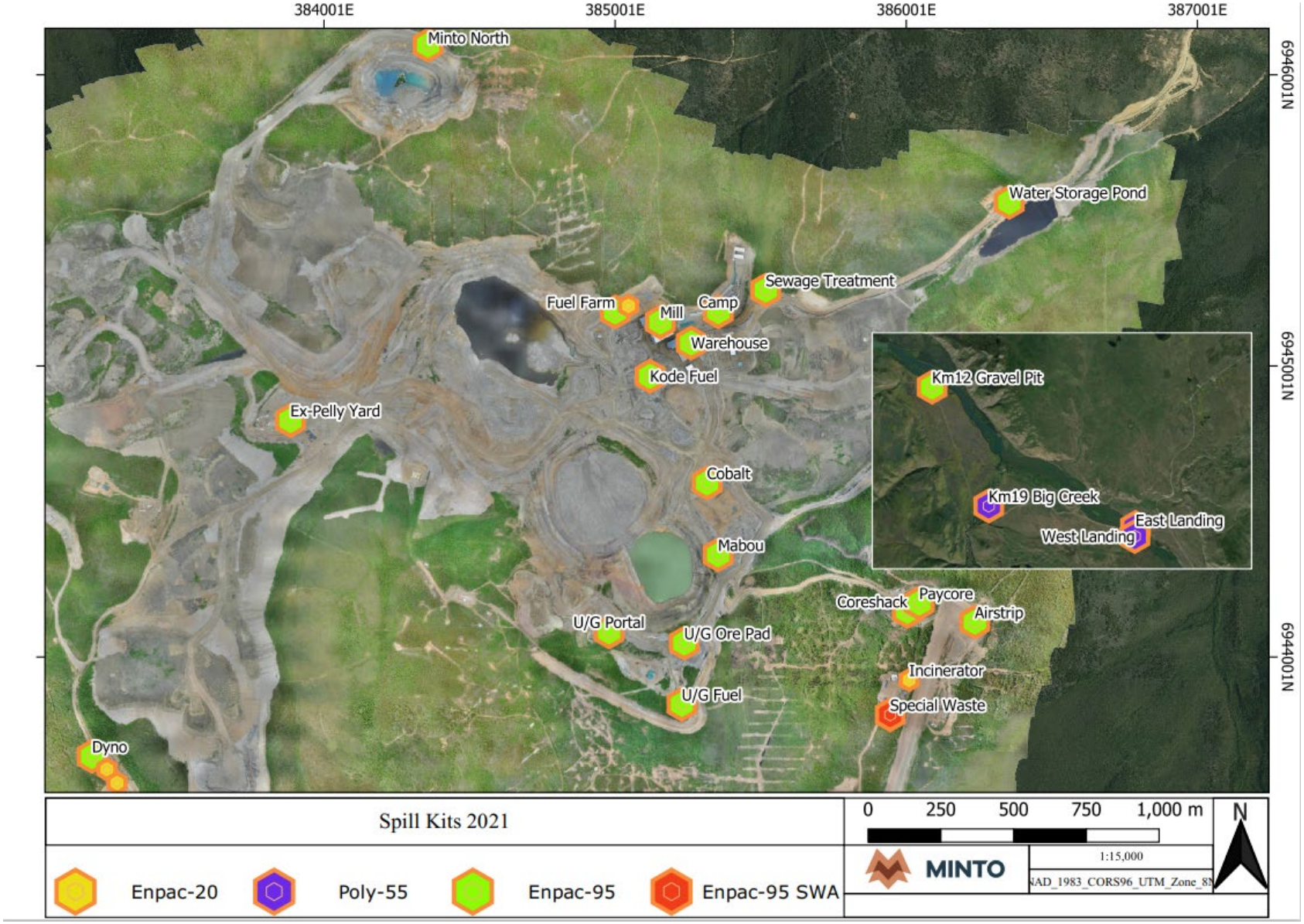

Figure 6-1: Minto Mine Area Overview – Spill Supplies

Heavy machinery at the mine site is available for use in spill response and clean-up, as required under contract. Additionally, Minto has a 1991 Chevrolet Top Kick Fire truck with a 3200 litre/minute pump with a 3800-litre supply tank and a 3000-litre drop tank. This truck can support all spill response activities with SCBA, Class A and B foam capabilities, decontamination needs, as well as fire suppression/protection tools and equipment common to a truck of this nature. All ERT members are competent with the operation of this fire truck and related equipment in accordance with NFPA standards.

In 2013, Minto, on advice from Emergency Response Action Plan providers, procured a 20-foot Hazmat trailer and a helicopter-portable In-Viro-Drum vacuum unit (Figure 6-2) capable of being transported to locations not reachable with a vacuum truck. It has a liquid cooled three-cylinder Kubota diesel engine and 250 CFM non-sparking blower, which makes it safe to vacuum flammable liquids and solids from water or dry land. It comes with a Double Port Vac Drum that allows for transfer of product from the drum to one of our 9500 litre bladders, while the drum continues to be filled. This system allows for quick, efficient and effective clean-up of hazardous products from hard to reach locations.

In 2016, Minto purchased a S.S. Alpha Adjustable Folding Weir Skimmer. Weir skimmers float on the surface of water and are designed to remove pollutants from the surface of calm or sheltered waters and shoreline areas. Connected to a shore-based portable pump (e.g. Honda), contaminants can be removed from the water surface and transferred to a drum or another container for proper disposal.

Figure 6-2: In-Viro Drum and vacuum unit, 24' Packman vessel, and Alpha Skimmer for spill response operations.

Minto Mine also acquired a 24-foot Packman man boat, which is described, further in the "Barge Emergency Contingency Plan" (Appendix D).

Spill contingency equipment and earth moving equipment located at Minto Mine are listed in Table 6-2. Contractor Reclamation and Revegetation equipment is available for use in spills and clean-up operations.

Table 6-2: Spill contingency equipment located at Minto Mine

Quantity of Units	Equipment		Quantity of Units	Equipment
1	430 Backhoe		1	Assorted Wooden Plugs
1	3800 Litre Vacuum Truck		1	Large Haul Truck
Various	Dozers, Excavator, Loaders		1	Hazmat trailer 20'
1	In-Viro Drum Portable Vacuum unit		1	Top Kick fire truck
2	9500 Litre bladders		500'	Sorbent Boom (various sizes)
1	24' Packman Response Vessel		1	Storage Sea Can at Landing
1	Roll Over Kit		3	Trash pumps
1	Pipe Plug kit		1	S.S. Alpha Adjustable Folding Weir Skimmer Pump

7 Spill Prevention and Response Training

Education and training are critical to the success of any site-wide initiative, and the most important tool to ensuring the success of the SCP. Minto has comprehensive training initiatives that ensures all workers and supervisors are aware of their responsibilities and the practices that personnel and contractors must adhere to. Records are kept of the names of all employees or contractors that receive training, tracked though a centralized training matrix. Annual re-training will be scheduled for all Minto employees.

7.1 Existing Spill Prevention and Response Training

Employees are trained to understand the potentially hazardous situations that spills can create with respect to the health and safety of workers and the environment. They are trained to understand responsibilities as employees to Assess, Prevent, Contain, Clean-up, and Report any spills. The SCP is made available to all employees and employees will be advised of revisions or changes to the SCP.

7.1.1 Orientation

Employees and visitors are required to sign off on the environmental policy as part of the employee, contractor, and visitor orientations that include a summary of the response required when a spill has occurred. The orientation has a strong focus on ensuring proper reporting of spills, so that the appropriate response and clean-up can occur.

7.1.2 "Big 7" Training

As part of the orientation, all Minto employees and major contractors receive training that is a computer-based PowerPoint presentation, followed by a written test. The "Big 7" package focuses on some of the most common safety training required for site, which includes WHMIS (Workplace Hazardous Material Information System), fall protection, confined spaces, lock out, hot work, Explosives awareness training, and Environmental Awareness. The Environmental Awareness portion of the training is comprised of four modules, with one module dedicated specifically to Spill Response, covering the reporting and basic steps for assessing, preventing, containing, and cleaning up of spills.

7.1.3 Targeted Practical Training

Training sessions are put on by the Environmental Department, and efforts are made to tailor the training to the attending group (i.e. underground miners, surface contractors, site services, etc.). Smaller groups are identified and targeted for specialised spill prevention training that is more job specific. These include but are not be limited to; maintenance personnel (mechanics), waste and water truck operators, fuelling personnel, and warehouse workers. Training in smaller groups focusses on specific spill prevention techniques.

7.1.4 Training for Fuel Handling Employees

Currently there are Safe Work Practices (SWP) designed for bulk fueling at the fuel farm and for fueling of equipment in the field. These SWPs include descriptions of the stepwise procedure for safely performing the task and includes steps to take for emergency shut-off. Both the procedure and the equipment are audited during Workplace Inspections and Planned Job Observations by immediate supervisors and the Environmental Department.

7.1.5 ERT Training

An Emergency Response Team (ERT) has been established to, among other duties, respond to emergency spills. The Emergency Response Team periodically receives training to the National Fire Protection Association (NFPA) 472 Hazardous Material awareness level, and are required to thoroughly understand this document in order to respond to spills or incidents of a specific nature. This training is required as a foundation to develop site specific contingency planning for response tactics in areas specific to the Minto Mine associated activities that present a risk to the Yukon River and its tributaries.

7.1.6 Emergency Spill Response Drills

Tabletop exercises and/or field drills will help to prepare the ERT and other mine staff to respond to a major spill safely by identifying any deficiencies in the equipment or processes in place.

On November 7, 2018, a tabletop exercise was conducted to assess the SCP's response to a large propane leak.

The scenario was as follows:

- A cloud of vapour was seen by employee conducting daily propane checks at the underground mine-heater propane farm.

The table-top exercise identified ready-made responses in keeping with the information from the Canutec Emergency Response Guidebook. Items for discussion and follow-up included:

- While the SCP/E2 plan calls for ground monitor water fog to dissipate a vapour cloud, there is insufficient water volume on the truck to effectively do so.
- There is an LEL alarm and nitrogen switch that will shut off gas supply in the event of a large gas leak, therefore it is important to ensure this switch is maintained and tested regularly (confirmed with propane supplier).

On October 26th, 2014, a combined field and tabletop exercise took place with the following objectives:

- Help individuals become more knowledgeable with the ERP and SCP;
- Identify gaps in the plan;
- Improve communication between stakeholders and departments; and
- Learn new ways and better ways to execute the plan.

The announced exercise was initiated to test part of the Emergency Response Plan as it applies to Spills and the SCP. It focused on the crisis, interaction and escalation of problems within:

- Administrative;
- Operational;
- Managerial; and
- Facilities.

The scenario was as follows:

- A tanker truck with pup and trailer of diesel overturns on Oct 26th on icy roads at 3:20pm at south end of Big Creek. It is still dark, and it is a Sunday and roads are icy and snowing lightly.

The exercise lasted approximately 2 hours and involved management staff onsite and offsite, the ERT, major contractors, The Yukon Spill Hotline, CANUTEC, Transnorth Helicopters, WCB, Parkland Fuel, and

Quantum Murray. A post–incident debrief revealed both opportunities and successes at the field operations and management level.

8 Routine Maintenance and Monitoring

The Fuel Farm is visually inspected weekly for any leakages. An overfill protection system is installed on the two main diesel tanks using a visual indicator and a relay to the control room that will alarm on the HMI to alert maintenance personnel. The area also receives inspections by a qualified engineer and recommendations are recorded and deficiencies corrected as per the *CCME Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products* (Canadian Council of Ministers of the Environment, 2003).

The tug and barge receive frequent inventory inspections for spill equipment and have had major overhauls in the last few years to ensure that the operation is continually improving. Maintenance activities are also carried out regularly and systems are inspected as per Transport Canada Regulations. The daily start-up procedure includes checking for leaks and ensuring all systems are performing to specifications. Annual maintenance activities have included the following: propeller repairs, controls work, system checks and repairs. Substantive refits have included: cylinder heads, exhaust manifold seals, motor mounts, transmission mounts and replacement of water pumps. A new transmission, propulsion seals and propellers have been installed and aligned. Other improvements have included welding reinforcements on the bow of the barge for landings, electrical upgrades, and the installation of an anchor with hawser.

All fuel trucks receive a daily walk-around inspection to ensure emergency shutoffs and hatches and tank valves are operating properly and are free of leaks. These are recorded daily.

The Environment Department is directly responsible for the administration, compliance, and procedures associated with the management of waste. They are also responsible for providing education, support, and any necessary assistance required to prepare shipments for backhauling, and to ensure the Waste Management Area (WMA) is maintained in accordance with the Commercial Dump Permit (# 81-005).

The WMA is inspected weekly by Environment staff to ensure employees and contractors are following the site protocols for waste segregation, incineration, special waste handling, and landfilling. Any issues regarding these protocols are brought to the attention of all involved staff and/or contractors and the Environment Department has the right and ability to limit all access to the WMA if issues persist after they have been discussed.

9 References

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Appendix A: Spill Report and Environmental Incident Report Forms

MINTO

Environmental Incident Investigation Report		EIR-20-0XX	
Date of Incident:		Time of Incident:	
Date reported:		Time reported:	
Contaminant Type:		Volume of Spill (L):	
Location of Incident:		Equipment (Type/#)	
Responsible Dept.		Supervisor	

Incident Type

Non-Reportable Spill	**X**	Reportable Spill	
Non-Reportable Wildlife		Reportable Wildlife	
Non-Reportable Incident		Reportable Incident	

Detailed but brief description of *What, Where, When, Why*

What were they doing? **What was the cause?**

What was the initial response? **What is the current status?**

Make sure you have defined the "Direct Cause" of the incident in the statement below.

Photos

Photo 1:	***Photo 2:***

Non-Reportable Spill Report Form

MINTO

Spill Name:	

General Report Information: (To be completed by the supervisor of responsible department or company)

EIR #:		**Location of Incident:**	
Date of Incident:		**Time of Incident:**	
Contaminant Type:		**Volume of Spill (L):**	
Equipment (Type):		**Equipment (#):**	
Company or Department:		**Supervisor**	
Hours since last PM:		**Proximity to nearest waterbody:**	
Previous indication of leak (i.e. Prior Drip) (Yes/No):		**Estimated cost of spill:**	

Failure of Mechanism: (Check one box below)

Blown Hose		Failed Hose Connection		Human Error	
Unforseen		Blown or Leaking Seal		Unknown	
Other					

Brief Description of Cause: (conditions at time of spill, what was happening at the time, specific direct cause of spill, etc.)

Clean Up Actions Undertaken:

Land Treatment Facility Information: (To be filled out by Environment Department)

Material Moved to LTF (Yes/No):		Material Sampled (Yes/No):		Quantity (m^3):	

Notes:	

Corrective Actions: (Must fill out for all reportable and preventable spills)

Action Item #	Responsible Department	Corrective Action	Due Date

Reporting Sequence:			
First Observer:			
Reported To:			
Reported To Environmental:			
Reported To General Manager:			
	Name	**Company**	**Date/Time**

Photos:	
Photo 1:	**Photo 2:**
Photo 3:	**Photo 4:**

Appendix B: Reporting Threshold, Special Precautions, PPE Requirements, and Cleanup and Disposal Methods

Minto Mine - Inventory of Dangerous Goods

Reporting Threshold, Special Precautions, PPE Requirements, and Cleanup and Disposal Methods

Common Name (Synonyms)	Chemical Name	Manufacture / Supplier	Phase	TDG Class	WHMIS Class	NFPA Rating	Reporting Threshold	Use	Special Precautions	PPE Required	Special Cleanup and Disposal Info
Acetone	2-Propanone	Anachemia	Liquid	3	B-2, D-2B	1, 3, 0	200 L	Solvent	Extremely Flammable	Goggles, gloves. SCBA if in confined space	Eliminate all sources of ignition. Ventilate area if required. Use absorbent. In case of fire, use dry chemical, CO_2, Alcohol-resistant foam. Do not allow into waterway or drains. Contain spread of spill and soak up with absorb all, absorbant pads. Clear up using non-sparking tools. Place liquid and absorbents into tighly sealed container, label clearly and dispose of as hazardous waste offsite.
Acetylene	C_2H_2	AIRGAS INC	Pressurized gas dissolved	2.1	A, B-1, F	1, 4, 3	any if container larger than 100 L	Welding/cutting gas	Extremely flammable, pressurized gas dissolved in an extremely flammable liquid (Acetone)	Goggles, gloves. Respirator or SCBA if in confined space	Eliminate all sources of ignition, if possible without risk, shut off bottles. If bottle is ruptured after the gas has been expelled, the bottle will release the Acetone. At that point treat as an Acetone spill.
AERO 6493 Promoter	Alkyl hydroxamate	Cytec Canada	Liquid above 15C	9		2, 1, 2	5 L	Metal flotation in mill			Soak up with absorbent (do NOT use sawdust. Use PLASTIC tools). In case of fire, use dry chemical, CO_2, Alcohol-resistant Foam or water spray. Place recovered spilt liquid in labelled drums for disposal as Special waste. Incinerate used absorbent pads.
AERO MX-5149	Modified Thionocarbamate 15-40%Xanthate esther 40-70%	Cytec Canada	Liquid	3	B3, D-1B, D-2B	3,2,0	200 L	Metal flotation in mill	Flammable	Closed system, safety glasses, gloves	Remove sources of ignition. Cover spills with some inert absorbent material; sweep up and place in a waste disposal container. Flush spill area with water.
Aerodri 100 Dewatering Agent		Cytec Canada	Liquid	3	B3, B-2, D-2A	2, 3, 0	200 L		Avoid contact with strong oxidizers or acids.	Safety Glasses, Gloves	Eliminate all sources of ignition. Ventilate area if required. Use absorbent. In case of fire, use dry chemical, CO_2, Alcohol-resistant Foam or water spray. Incinerate waste. Soak up with absorbent materials and dispose of offsite in clearly labeled containers
Alconox		Anachemia	solid	not regulated	D-2B	1, 0, 0	50 kg			Safety Glasses, Gloves	Clean up uncontaminated material for reuse. Incinerate waste.
ALIQUAT 336	Methytrioctyl-ammonium Chloride	Sigma-Aldrich Canada	Liquid	6	D-2B	2, 1, 1	5 kg		Toxic if swallowed. Very corrosive. Will burn skin and eyes. Avoid contact with strong oxidizers. Hygroscopic: avoid contact with moist air.	Safety Glasses, Gloves	Eliminate all sources of ignition. Ventilate area if required. Use absorbent. In case of fire, use dry chemical, CO_2, Alcohol-resistant Foam or water spray. Incinerate waste.
AlphaSolve II	>50% Sodium Hydroxide <50% Silicate	Alpha Resources	Solid						Avoid contact with strong oxidizers.	Safety Glasses, Impervious Gloves.	Highly caustic. Will produce heat and steam on contact with water. May boil and spatter. May generate hydrogen gas on contact with metals. Sweep or vaccum and, if not re-useable, send offsite as hazardous waste, in tightly closed, well labeled containers.
Aluminex 5	Aluminum Chloride Hydroxide Sulphate 15%	NALCO	Liquid	8	E		5 L	Coagulant		Safety Glasses, Gloves	Soak up with absorbent materials. These can be incinerated. Any remaining spilt liquid should be stored in closed container, labelled and disposed of off-site as Special Waste.
Aluminum Standard - AA		Anachemia	Liquid	8	E	4, 0, 0	5 L		Dilute Nitric Acid <5%	Safety Glasses, Gloves	Neutralize with soda ash or lime. Contain spill, **do not** allow un-neutralized acid to enter water systems. Neutralized spill can be pumped to the pit or tailings system.
AM28 Flotation Reagent	Mixture of Potassium Hydroxide Alkyl hydroxamate	Axis House (Pty) Ltd.	Liquid	not regulated	D-2B	2,1,0		Floatation Reagent	corrosive solid.	Safety Glasses, Gloves	Soak up with absorbent (do NOT use sawdust. Use PLASTIC tools). In case of fire, use dry chemical, CO_2, Alcohol-resistant Foam or water spray. Place recovered spilt liquid in labelled drums for disposal as Special waste. Incinerate used absorbent pads.
Amco Clear Turbidity Standard		GFS Chemicals	Liquid	not regulated	not regulated					Safety Glasses, Gloves	Contain spill. Incinerate waste or place in landfill
Ammonia, Refrigerant	Ammonia, Anhydrous	GT&S, INC	Liquefied Gas	2.3, 8	does not appear classified??	3, 0, 0	any amount		Liquefied gas, will produce extreme cold when released. Death has occurred at 5000ppm exposure for 5 minutes. Evacuate release area upwind and avoid low areas.	Goggles, gloves. SCBA.	Toxic gas and will react with a large number of substances, many in a violent manner, Gas will dissipate quickly in air. Small spills can be dissolved in water at ratio of 1:10 Not very flammable. Do not attempt to neutralise.

Minto Mine - Inventory of Dangerous Goods

Reporting Threshold, Special Precautions, PPE Requirements, and Cleanup and Disposal Methods

Common Name (Synonyms)	Chemical Name	Manufacture / Supplier	Phase	TDG Class	WHMIS Class	NFPA Rating	Reporting Threshold	Use	Special Precautions	PPE Required	Special Cleanup and Disposal Info
Ammonium Nitrate prill	Ammonium Nitrate	Agrium	solid	5.1	C, D-2B	1.0.3	50 kg		Oxidizing material, does not burn but may contribute to combustion of materials that can burn	Safety Glasses, Gloves	In case of fire, cool containing vessels with water jet in order to prevent pressure build-up/explosion. Use flooding quantities of water. Evacuate surrounding area. If fumes or gases present, fire fighters should wear self-contained breathing apparatus. In event of spill, prevent from entering waterways. Will dissolve and disperse in water.
Ammonium Nitrate Emulsion	Ammonium Nitrate Emulsion	on-site	Liquid	5.1		2,0,3	50 kg	Explosive	Oxidizing material, does not burn but may contribute to combustion of materials that can burn	Safety Glasses, Gloves, chemical suits, SCBA may be required	In case of fire, cool containing vessels with water jet in order to prevent pressure build-up/explosion. Use flooding quantities of water. Evacuate surrounding area. If fumes or gases present, fire fighters should wear self-contained breathing apparatus. In event of spill, prevent from entering waterways. Use non-combustible material to soak up.
Arsenic Standard - AA		Anachemia	Liquid	8	D-2A, E	4, 0, 0	5 L		Dilute Nitric Acid <5%	Safety Glasses, Gloves	Neutralize with soda ash or lime. Contain spill, **do not** allow un-neutralized acid to enter water systems. Neutralized spill can be pumped to the pit or tailings system.
Ascorbic Acid	L-Ascorbic Acid (Vitamin C)	Anachemia	solid	not regulated	not regulated	1, 1, 1	5 kg		also known as Vitamin C	Safety Glasses, Gloves	Contain spill. Incinerate waste or place in landfill
Brake & Electrical Parts Kleen	CO_2 aerosol of Heptane and Isopropyl alcohol	Kleen-Flo Tumbler Industries	aerosol	Limited quantity	Consumer commodity; A, B5, D2-B	1, 3, 0			Highly flammable	Safety Glasses, Gloves	Eliminate all sources of ignition. Ventilate area if required. Use absorbent. In case of fire, use dry chemical, CO2, Alcohol-resistant Foam or water spray. Incinerate waste.
Buffer Solution pH 10		Anachemia	Liquid	not regulated	D-2A	1, 0, 0		Analytical Lab use	Dilute Sodium Hydroxide	Safety Glasses, Gloves	Contain spill. Absorb with sand, vermiculite or sorbal. Incinerate waste.
Buffer Solution pH 4		Anachemia	Liquid	not regulated	not regulated	1, 0, 0		Analytical Lab use		Safety Glasses, Gloves	Contain spill. Absorb with sand, vermiculite or sorbal. Incinerate waste.
Buffer Solution pH 7		Anachemia	Liquid	not regulated	not regulated	1, 0, 0		Analytical Lab use		Safety Glasses, Gloves	Contain spill. Absorb with sand, vermiculite or sorbal. Incinerate waste.
Cadmium Standard - AA		Anachemia	Liquid	8	D-2A, E	4, 0, 0	5 L		Dilute Nitric Acid <5%	Safety Glasses, Gloves	Eliminate all sources of ignition. Ventilate area if required. Use absorbent. In case of fire, use flooding quantities of water. Contributes to combustion of other materials. Neutralize with soda ash or lime. Contain spill, keep from entering ground water. Neutralized spill can be pumped to the pit or tailings system.
Calcium Chloride		J.T. Baker	solid	not regulated	D-2B	1, 0, 2, 3	any amount		Road Salt, will corrode metals	Safety Glasses, Gloves	Sweep up spilled material and it my be deposed of in dilute form to the pit or tailings system. In case of fire use appropriate measures for surrounding fire.
Carbon Dioxide in Argon		Mittler Supply Inc.	Pressurized gas	2.2	A, D-2B	1, 0, 0	any if container larger then 100 L		Non-Flammable but will replace the O_2 in confined space	Goggles, gloves. SCBA if in confined space	close valve if possible without risk, or allow the vent. In case of fire use any media suitable for surrounding fire. Use water spray to cool fire exposed containers.
Caustic Soda (solid)	Sodium Hydroxide	Fisher Scientific	solid	8	E	3, 0, 1	5 kg		very corrosive solid	Safety Glasses, Gloves	Sweep up spilled material for reuse. In case of fire use appropriate measures for the surrounding fire. Minimise direct water spray on material. This material melts and 318°C and when molten reacts violently with water. Neutralize the residue with a dilute solution of acetic acid. Neutralized solution can be disposed of in the pit or tailings system.
Caustic Soda (solution)		DOW	Liquid	8	E	3, 0, 1	5 L		very corrosive liquid	Safety Glasses, Gloves	Contain spill and pump to plastic barrel for re-use. In case of fire use appropriate measures for the surrounding fire. Neutralize the residue with a dilute solution of acetic acid. Neutralized solution can be disposed of in the pit or tailings system.
Caustic Potash	Potassium Hydroxide	Brenntag Canada	Solid	8	D-1B, E	3,0,1	5 kg		water reactive, contact with metals may evolve flammable hydrogen gas.	Safety Glasses, Gloves, fume hood	Sweep up or vacuum spillage, collect in suitable container for disposal. Avoid dust formation.
Chevron 2-Cycle Oil		Chevron Lubricants Canada	Liquid	not regulated	B-3	1, 2, 0	100 L		flammable oil for 2-storke fuel	Safety Glasses, Gloves	contain spill and use absorbent and incinerate waste
Chevron ATF+3 Automatic Transmission Fluid		Chevron Lubricants Canada	Liquid	not regulated	not regulated	1, 1, 0	100 L			Safety Glasses, Gloves	contain spill. Small amounts can use absorbent and incinerate waste. Larger material pumped into plastic drums and used in a waste oil heating system.
Chevron Automatic Transmission Fluid MD-3		Chevron Lubricants Canada	Liquid	not regulated	not regulated	1, 1, 0	100 L			Safety Glasses, Gloves	contain spill. Small amounts can use absorbent and incinerate waste. Larger material pumped into plastic drums and used in a waste oil heating system.

Minto Mine - Inventory of Dangerous Goods

Reporting Threshold, Special Precautions, PPE Requirements, and Cleanup and Disposal Methods

Common Name (Synonyms)	Chemical Name	Manufacture / Supplier	Phase	TDG Class	WHMIS Class	NFPA Rating	Reporting Threshold	Use	Special Precautions	PPE Required	Special Cleanup and Disposal Info
Chevron Clarity Synthetic Machine Oil		Chevron Lubricants Canada	Liquid	not regulated	not regulated	1, 1, 0	100 L			Safety Glasses, Gloves	contain spill. Small amounts can use absorbent and incinerate waste. Larger material pumped into plastic drums and used in a waste oil heating system.
Chevron Compressor Oil 260		Chevron Lubricants Canada	Liquid	not regulated	not regulated	1, 1, 0	100 L			Safety Glasses, Gloves	contain spill. Small amounts can use absorbent and incinerate waste. Larger material pumped into plastic drums and used in a waste oil heating system.
Chevron Coupling Grease	Grease	Chevron Lubricants Canada	Semi-Solid	not regulated	not regulated	1, 1, 0	100 L or 100 kg			Safety Glasses, Gloves	contain spill. Small amounts can use absorbent and incinerate waste. Larger absorbent material in plastic drums and shipped off site for disposal.
Chevron Delo 300 Motor Oil		Chevron Lubricants Canada	Liquid	not regulated	not regulated	1, 1, 0	100 L			Safety Glasses, Gloves	contain spill. Small amounts can use absorbent and incinerate waste. Larger material pumped into plastic drums and used in a waste oil heating system.
Chevron Delo Grease EP	Grease	Chevron Lubricants Canada	Semi-Solid	not regulated	not regulated	1, 1, 0	100 L or 100 kg			Safety Glasses, Gloves	contain spill. Small amounts can use absorbent and incinerate waste. Larger absorbent material in plastic drums and shipped off site for disposal.
Chevron Diesel Engine Oil Delo 6170 CFO		Chevron Lubricants Canada	Liquid	not regulated	not regulated	1, 1, 0	100 L			Safety Glasses, Gloves	contain spill. Small amounts can use absorbent and incinerate waste. Larger material pumped into plastic drums and used in a waste oil heating system.
Chevron Drive Train Fluid HD		Chevron Lubricants Canada	Liquid	not regulated	not regulated	1, 1, 0	100 L			Safety Glasses, Gloves	contain spill. Small amounts can use absorbent and incinerate waste. Larger material pumped into plastic drums and used in a waste oil heating system.
Chevron ECO Hydraulic Oil AW		Chevron Lubricants Canada	Liquid	not regulated	not regulated	0, 1, 0	100 L			Safety Glasses, Gloves	contain spill. Small amounts can use absorbent and incinerate waste. Larger material pumped into plastic drums and used in a waste oil heating system.
Chevron Gas Engine Oil 930 and 940		Chevron Lubricants Canada	Liquid	not regulated	not regulated	0, 1, 0	100 L			Safety Glasses, Gloves	contain spill. Small amounts can use absorbent and incinerate waste. Larger material pumped into plastic drums and used in a waste oil heating system.
Chevron Mid-grade unleaded gasoline		Chevron Products	Liquid	3	B-2, D-2A, D-2B	2, 3, 0	200 L		Extremely Flammable, Vapours are harmful and they may be explosive. Non-sparking tools required. Vapours will collect in low areas and travel along the ground to an ignition source.	Goggles, gloves. Respirator or SCBA if in confined space	Eliminate all sources of ignition. Ventilate area if required. Dike the spill and pump to containers for recycling. Use absorbent. In case of fire, use dry chemical, CO2, Alcohol-resistant Foam or water spray. Allow waste absorbent to evaporate and then Incinerate waste.
Chevron NWS Manual Transmission Fluid 6044GR		Chevron Lubricants Canada	Liquid	not regulated	not regulated	1, 1, 0	100 L			Safety Glasses, Gloves	contain spill. Small amounts can use absorbent and incinerate waste. Larger material pumped into plastic drums and used in a waste oil heating system.
Chevron RPM Universal Gear Lubricant		Chevron Lubricants Canada	Liquid	not regulated	not regulated	1, 1, 0	100 L			Safety Glasses, Gloves	contain spill. Small amounts can use absorbent and incinerate waste. Larger material pumped into plastic drums and used in a waste oil heating system.
Chevron Supreme Antifreeze/Coolant	Ethylene Glycol	Chevron Lubricants Canada	Liquid	not regulated under 5000 lb.	D-2A	1, 1, 0	25 L		may be fatal by ingestion	Safety Glasses, Gloves	contain spill. Can be pumped, filtered and reused. Small amounts can use absorbent and incinerate waste. Larger absorbent material in plastic drums and shipped off site for disposal.
Chevron Ulti-Plex® Grease EP		Chevron Lubricants Canada	Semi-Solid	not regulated	not regulated	1, 1, 0	100 L			Safety Glasses, Gloves	contain spill. Small amounts can use absorbent and incinerate waste. Larger absorbent material in plastic drums and shipped off site for disposal.
Chloramine T	Chloramine-T trihydrate	Fisher	solid	8	D-2A, E	3, 1, 1	5 kg		Container may explode under fire conditions. Will release toxic fumes with fire or when mixed with strong oxidizers or acids	Goggles, gloves. SCBA if in confined space	Eliminate all sources of ignition. Ventilate area if required. In case of fire. Material by itself is non-flammable, may decompose violently >100°C, use dry chemical, CO_2 foam or water spray. DISPOSAL mix with flammable solvent and incinerate.
Chromium Standard - AA		Anachemia	Liquid	8	D-2A, E	3, 0, 0	5 L		Dilute Nitric Acid <5%	Safety Glasses, Gloves	Neutralize with soda ash or lime. Contain spill, **do not** allow un-neutralized acid to enter water systems. Neutralized spill can be pumped to the pit or tailings system.
Citric Acid	Citric Acid, Monohydrate	Anachemia	solid	not regulated	E	2, 1, 0	5 L		Will cause severe eye damage. Avoid oxidizers, acids, bases and bleach.	Safety Glasses, Gloves	Eliminate all sources of ignition. Ventilate area if required. In case of fire, use flooding quantities of water. Will decompose at high temperatures and emit acrid smoke and fumes.
Copper Standard - AA		Anachemia	Liquid	8	E	4, 0, 0	5 L		Dilute Nitric Acid <5%	Safety Glasses, Gloves	Neutralize with soda ash or lime. Contain spill, **do not** allow un-neutralized acid to enter water systems. Neutralized spill can be pumped to the pit or tailings system.

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Crystal 78	Sodium Silicate	Quadra Chemicals	Liquid	not regulated	D-2B		25 L		Caustic solution. Avoid mixing with strong acids. Contact with metals such as aluminum, tin, lead and zinc generates hydrogen gas.	Goggles, gloves. Respirator	solution can be pumped into plastic drum and possibly recycled in mill circuit, or shipped off site. In case of fire use appropriate measures for surrounding fire.
Cyquest DP-6	Sodium polyacrylate in water	Cytec Canada	Liquid	not regulated	not regulated	1,1,0		Mill reagent	Slippery	Goggles, Impervious gloves	Soak up with absorbent materials. These can be incinerated. Any remaining spilt liquid should be stored in closed container, labelled and disposed of off-site as Special Waste.
Delo Diesel Fuel System Cleaner		Chevron Lubricants Canada	Liquid	3	B-3, D-2A, D-2B		200 L			Safety Glasses, Gloves	Eliminate all sources of ignition. Ventilate area if required. Use absorbent. In case of fire, use dry chemical, CO2, Alcohol-resistant Foam or water spray. Incinerate waste.
Diesel Fuel No. 2		Chevron Products Company	Liquid	3	B-3, D-2A, D-2B	0, 2, 0	200 L			Safety Glasses, Gloves	contain spill. Small amounts can use absorbent and incinerate waste. Larger material pumped into plastic drums and used in a waste oil heating system.
DIISOBUTYL KETONE	2,6-Dimethyl-4-heptanone	J.T. Baker	Liquid	3	B-2, D-2A	2, 2, 0	200 L		Avoid contact with strong oxidizers or acids.	Safety Glasses, Gloves	Eliminate all sources of ignition. Ventilate area if required. Use absorbent. In case of fire, use dry chemical, CO2, Alcohol-resistant Foam or water spray. Incinerate waste.
Drierite, indicating		Anachemia	solid	not regulated	D-2A	1, 0, 1				Safety Glasses, Gloves	Eliminate all sources of ignition. In case of fire use measures dictated by surrounding fire. Will decompose at 1450°C liberating Cl_2 and SO_2. This product can be dried and reused, recycled.
Envirobind KFZ		Power Chemicals Ltd.	Liquid	not regulated	not regulated	1, 0, 0		Dust Suppression	Avoid contact with oxidizing agents or strong acids.	Goggles, Gloves	Do not use absorbents. Contain spill using noncombustible materials such as vermiculite, earth or sand.
Envirobind KTF		Power Chemicals Ltd.	Liquid	not regulated	not regulated	1, 0, 0		Dust Suppression	Avoid contact with oxidizing agents or strong acids.	Goggles/Glasses, Gloves	Do not use absorbents. Contain spill using noncombustible materials such as vermiculite, earth or sand.
Envirobind PCW		Power Chemicals Ltd.	Liquid	not regulated	not regulated	1, 0, 0		Dust Suppression	Avoid contact with strong oxidizing materials.	Goggles/Glasses, Gloves	Dike or contain. Absorb irrecoverable material onto inert oil absorbent medium, package, and label for legal disposal. Wash hard surfaces with water. Contaminated absorbent material may be disposed of in an approved landfill
FLEET CHARGE 50/50 Antifreeze	Ethylene Glycol	OLD WORLD INDUSTRIES	Liquid	9	D-2A	1, 1, 0	25 L		may be fatal by ingestion	Safety Glasses, Gloves	contain spill. Can be pumped, filtered and reused. Small amounts can use absorbent and incinerate waste. Larger absorbent material in plastic drums and shipped off site for disposal.
Fleet Charge PG Antifreeze/Coolant	Propylene Glycol	OLD WORLD INDUSTRIES	Liquid	not regulated	not regulated	0, 1, 0	25 L			Safety Glasses, Gloves	contain spill. Can be pumped, filtered and reused. Small amounts can use absorbent and incinerate waste. Larger absorbent material in plastic drums and shipped off site for disposal.
Flomin C 3505 Collector	Potassium amyl xanthate (PAX)	Flomin Inc.	solid	4	not regulated	2, 2, 1	25 kg		Product is spontaneously combustible. Avoid contact with heat, moist air, and water.	Safety Glasses, Gloves	Sweep up spilled material and place in closed container for reuse. Solutions of product my be deposed of on the pit or tailings system. In case of fire use appropriate measures for surrounding fire.
Flomin F 500 Frother	4-METHYL-2-PENTANOL (Methyl isobutyl carbinol - MIBC)	Flomin Inc.	Liquid	3	B-2, D-2B	2, 2, 0	200 L		Acids, acid chlorides, alkalis, oxidizing agents. Will attack some forms of plastics, rubber and coatings	Goggles, gloves. Respirator or SCBA if in confined space	Eliminate all sources of ignition. Ventilate area if required. Use absorbent. In case of fire, use dry chemical, CO2, Alcohol-resistant Foam or water spray. Incinerate waste.
Floran Catalyst	Proprietary Inorganic Peroxide Blend	Floran Technologies	Liquid	5	C, D-2B	2, 0, 1, OX	50 L		Non-Flammable but will aid combustion of other materials	Safety Glasses, Gloves	Eliminate all sources of ignition. Ventilate area if required. Use absorbent. In case of fire, use flooding quantities of water. Contributes to combustion of other materials. Contain spill, keep from entering ground water. Absorbed pill can be disposed in the pit or tailings system.
Frost Killer (Tannergas)	Methyl alcohol	TANNER SYSTEMS, INC.	Liquid	3, 6.1	B-2, D-1B, D-2A,D-2B	1, 3, 0	200 L		Extremely Flammable, Vapours are harmful and solution is poisonous	Goggles, gloves. Respirator or SCBA if in confined space	Eliminate all sources of ignition. Ventilate area if required. Use absorbent. In case of fire, use dry chemical, CO2, Alcohol-resistant Foam or water spray. Incinerate waste.
FUEL INJECTOR CLEANER		Radiator Specialty Co	Liquid	3	B-3, D-2A, D-2B		200 L			Safety Glasses, Gloves	Eliminate all sources of ignition. Ventilate area if required. Use absorbent. In case of fire, use dry chemical, CO2, Alcohol-resistant Foam or water spray. Incinerate waste.
Gasoline, Unleaded		Petro-Canada	Liquid	3	B-2, D-2A, D-2B	2, 3, 0	200 L		Extremely Flammable, Vapours are harmful and they may be explosive. Non-sparking tools required. Vapours will collect in low areas and travel along the ground to an ignition source.	Goggles, gloves. Respirator or SCBA if in confined space	Eliminate all sources of ignition. Ventilate area if required. Dike the spill and pump to containers for recycling. Use absorbent. In case of fire, use dry chemical, CO2, Alcohol-resistant Foam or water spray. Allow waste absorbent to evaporate and then Incinerate waste.

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Glycerin	IPAC	Power Chemicals Ltd.	Liquid	Not regulated	Not regulated				Avoid contact with reducing agents and oxidizing agents.	Goggles, gloves.	Dike spilled product to prevent runoff
Havoline DEX-COOL Extended Life 50/50 Anti-Freeze/Coolant	Ethylene Glycol	Chevron Lubricants Canada	Liquid	not regulated	D-1b, D-2A	2, 0, 0	25 L		may be fatal by ingestion	Safety Glasses, Gloves	contain spill. Can be pumped, filtered and reused. Small amounts can use absorbent and incinerate waste. Larger absorbent material in plastic drums and shipped off site for disposal.
HAVOLINE DEX-COOL extended life anti-freeze/coolant-B	Ethylene Glycol	Chevron Lubricants Canada	Liquid	not regulated	D-1b, D-2A	2, 1, 0	25 L		may be fatal by ingestion	Safety Glasses, Gloves	contain spill. Can be pumped, filtered and reused. Small amounts can use absorbent and incinerate waste. Larger absorbent material in plastic drums and shipped off site for disposal.
Havoline Power Steering Fluid		Chevron Products	Liquid	not regulated	not regulated	0, 1, 0				Safety Glasses, Gloves	contain spill. Small amounts can use absorbent and incinerate waste. Larger material pumped into plastic drums and used in a waste oil heating system.
Hot 4-in-1 Heating Oil Treatment	Proprietary Blend	FPPF Chemical Company, Inc.	Liquid	3	B-3, D-1A, D-2A, D-2B	3, 2, 0	200 L		Fuel Additive, fumes will collect in low area's.	Safety Glasses, Gloves	Eliminate all sources of ignition. Ventilate area if required. Use absorbent. In case of fire, use dry chemical, CO2, Alcohol-resistant Foam or water spray. Incinerate waste.
Hydrated Lime	$Ca(OH)_2$	Chemical Lime Company of Canada Inc.	Solid	not regulated	D-2A, E				Will cause severe caustic burns. Avoid strong acids, and aluminum	Safety Glasses, Gloves	sweep up uncontaminated material for reuse. Neutralize with dilute acid and may be disposed of in pit or tailings system.
Hydraulic Oil SAE 10W		EXXON MOBIL	Liquid	not regulated	not regulated	0, 1, 0	200 L			Safety Glasses, Gloves	Eliminate all sources of ignition. Ventilate area if required. Use absorbent. In case of fire, use dry chemical, CO2, Alcohol-resistant Foam or water spray. Incinerate waste.
Hydrex 3223		Veolia	Liquid	8	E	1, 0, 0	5kg or 5L	Coagulant in the WTP		Safety glasses with side shields or goggles, face shield, chemical resistant gloves. Suitable respiratory equipment in poorly ventilated areas.	Contain spill. Ventilate area if required. Use absorbent. Place contaminated materials in sealed container for disposal and dispose of via a licensed waste disposal contractor.
Hydrex 6186		Veolia	Solid	not regulated	not regulated	0, 1, 0		Flocculant in the WTP		Safety glasses with side shields or goggles.	Sweep or vacuum spilled material. Do not get water on spilled material. Flush area with water after product recovery. Place recovered material in sealed container and dispose of via a licensed waste disposal contractor.
Hydrochloric Acid		Anachemia	Liquid	8	D-1A, E	3, 0, 1	5 L		Concentrated acid, Extremely corrosive. Ventilate or stay upwind	Goggles, gloves. Respirator or SCBA if in confined space	Neutralize with soda ash or lime. Contain spill, **do not** allow un-neutralized acid to enter water systems. Neutralized spill can be pumped to the pit or tailings system.
Hydrofluoric acid, 47 - 51%		Fisher	Liquid	8, 6.1	D-1A, D-2A, E	4, 0, 1	5 L		**Extremely corrosive and Toxic acid. Causes very severe acid burns with symptoms being delayed. Skin contact of <10% can be fatal from cardio-pulmonary problems. IMMEDIATE medical attention is required for all exposures.**	**Goggles, gloves. Respirator or SCBA if in confined space (Actually SCBA should be used anywhere unless spill is in a fumehood)**	Neutralize with soda ash. Contain spill, **do not** allow un-neutralized acid to enter water systems. Neutralized spill can be pumped to a plastic barrel and then disposed of in the pit or tailings system.
IPAC 6832		Quadra Chemicals	Liquid	not regulated	not regulated				water soluble	Safety Glasses, Gloves	No special clean up procedures,
Iron Standard - AA		Anachemia	Liquid	8	E	1, 0, 0	5 L		Dilute Nitric Acid <5%	Safety Glasses, Gloves	Neutralize with soda ash or lime. Contain spill, **do not** allow un-neutralized acid to enter water systems. Neutralized spill can be pumped to the pit or tailings system.
Isopropylxanthic acid sodium salt (SIPX)		Quadra Chemicals Ltd.	Solid	4.2	B-6, D-1B, D-2B		25 kg	Collector in Mill	Keep away from water - contact with water liberates extremely flammable gases. Keep away from heat, sparks and flame - fine dust clouds may form explosive mixtures with air. Use only with adequate ventilation.	Goggles, Gloves, Respirator (air-purifying or air-fed)	Move containers from spill area. Avoid allowing the spilled material to get wet or using water to clean up spillages or residues, unless the quantity remaining is very small. Vacuum or sweep up material and place in a designated, labeled waste container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.
Javex Liquid Bleach	NaOCl	Colgate Palmolive	Liquid	not regulated	E, D-2B, C				Self heating and may catch fire.	Safety Glasses, Gloves, SCBA	Ventilate area and allow qualified personnel to stop/control spill. Small spills: flush area with plenty of water and mop up. Large spills: dike the ingredient and transfer to appropiate containers. Consult Federal, Provincial and Municipal regulations for disposal. May be neutralized with sodium bisulphite or dilute hydrogen preoxide.

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KAX 51	Proprietary Blend (mix of isoamyl alohol, potassium amyl xanthate, and potassium hydroxide)	Prospec Chemicals	Solid	4.2	B-6, D-1B, E		25 kg	Collector in Mill		Safety Glasses. Face Shield, Gloves, SCBA	If in the liquid state: Stop spill at source. Contain any spilled material to prevent discharge into the environment. Eliminate all sources of ignition. Persons not wearing protective equipment should be excluded from the area. Absorb with inert dry material. Put into an approved metal salvage drum for disposal. If in the solid state: Eliminate all sources of ignition. Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. Do not touch spilled material. Do not use water on spilled material as heat will be generated. Put spilled material into approved salvage drums for disposal. Flush cleaned area with water, making sure no water enters xanthate containers.
KOPR-KOTE	Graphite, Cu & MoS_2 mixture	Jet-Lube of Canada	paste	not regulated	not regulated	1,1,1				Safety Glasses, Gloves	Wipe up spill with rages and incinerate waste.
Lead Standard - AA		Anachemia	Liquid	8	D-2A, E	4, 0, 0	5 L		Dilute Nitric Acid <5%	Safety Glasses, Gloves	Neutralize with soda ash or lime. Contain spill, **do not** allow un-neutralized acid to enter water systems. Neutralized spill can be pumped to the pit or tailings system.
Lime		Chemical Lime Company of Canada Inc.	powder	not regulated	E	3, 0, 1			Will cause severe caustic burns. Avoid strong acids, and aluminum	Safety Glasses, Gloves	sweep up uncontaminated material for reuse. Neutralize with dilute acid and may be disposed of in pit or tailings system.
Liquid Nitrogen	Nitrogen	Praxair Canada Inc.	Liquefied Gas	2.2 Non-flammable gas	A	3, 0, 2	any if container larger then 100 L		Use air supplied respirator when working in confined space, Loose-fitting cryogenic gloves, Metatarsal shoes for cylinder handling. Protective clothing where needed. Cuff less trousers should be worn outside of shoes	Extremely cold liquefied gas, Will cause severe frost bite Use SCBA when working in confined space,	Evacuate all personnel from danger area. Allow spilled liquid to evaporate. Use self-contained breathing apparatus where needed. Shut off flow if you can do so without risk. Ventilate area or move cylinder to a well-ventilated area. Test for sufficient oxygen, especially in confined spaces, before allowing re-entry
LIQUID WRENCH SUPER LUBRICANT (AEROSOL)	Proprietary Blend	Radiator Specialty Co	aerosol	2.1	A, B5, D-1A, D2-B		any if container larger then 100 L		containers may rupture if exposed to high temperatures.	Safety Glasses, Gloves	Allow container to completely discharge while eliminating ignitions sources. Wipe up spill with rages and incinerate waste.
Loctite Belt Dressing	Proprietary Blend t	Henkel Canada, Inc.	aerosol	2.2	A, D-2A, D-2B		any if container larger then 100 L		containers may rupture if exposed to high temperatures.	Safety Glasses, Gloves	Allow container to completely discharge Wipe up spill with rags and incinerate waste.
LPS 2 Spray Lubricant	Proprietary Blend	LPS Laboratories	aerosol	2.2	A, D-2A, D-2B		any if container larger then 100 L		containers may rupture if exposed to high temperatures.	Safety Glasses, Gloves	Allow container to completely discharge Wipe up spill with rages and incinerate waste.
Magnesium Nitrate Matrix Modifier		Spex CertiPrep	Liquid	8	D-2A, E	3, 0, 0	5 L		Dilute Nitric Acid <5%	Safety Glasses, Gloves	Neutralize with soda ash or lime. Contain spill, **do not** allow un-neutralized acid to enter water systems. Neutralized spill can be pumped to the pit or tailings system.
MAXGOLD™ 900 Promoter	Proprietary Blend	Cytec Canada	Liquid	3	B-3, D-2A	3, 2, 0	200 L		slightly yellow liquid that has a slight sulphur smell. In confined space use respirator with organic vapour cartridges	Goggles, gloves. Respirator or SCBA if in confined space	eliminate ignition sources, use absorbent on small spills, for large spill pump to plastic drum for shipment off site. In case of fire use dry chemical extinguisher, CO_2 or foam. Water likely not effective.
MERCSORB Mercury Amalgamation Powder		NPS Corporation	solid	4		0, 1, 1	25 kg		Dry zinc dust will not ignite spontaneously, but once ignited, it may burn readily in air	Safety Glasses, Gloves	Sweep up spilled material and place in closed container for reuse. In case of fire use appropriate measures for surrounding fire.
Mercury Indicator Powder	Proprietary Blend	NPS Corporation	solid	not regulated		2, 1, 0			Odorless, yellowish-tan to gray powder. Dust may form a flammable or explosive mixture in air. When heated to decomposition, toxic fumes of sulfur oxides are produced	Safety Glasses, Gloves	Sweep up spilled material and place in closed container for reuse. In case of fire use appropriate measures for surrounding fire. This product in itself is considered to be non-hazardous.
Mercury Standard - AA		Anachemia	Liquid	8	D-2A, E	3, 0, 0	5 L		Dilute Nitric Acid <5%	Safety Glasses, Gloves	Neutralize with soda ash or lime. Contain spill, **do not** allow un-neutralized acid to enter water systems. Neutralized spill can be pumped to the pit or tailings system.
Mercury Vapor Suppressor	Proprietary Blend	NPS Corporation	solid	not regulated		2, 1, 0			Odorless, black, irregular, dry granular solid. Wet activated carbon removes oxygen from the air causing a severe hazard to workers in confined space.	Safety Glasses, Gloves	Sweep up spilled material and place in closed container for reuse. Contaminated waste can be incinerated. In case of fire use appropriate measures for surrounding fire. This product in itself is considered to be non-hazardous.
Methanol		Anachemia	Liquid	3, 6.1	B-2, D-1B, D-2A,D-2B	1, 3, 0	200 L		Extremely Flammable, Vapours are harmful and solution is poisonous	Goggles, gloves. Respirator or SCBA if in confined space	Eliminate all sources of ignition. Ventilate area if required. Use absorbent. In case of fire, use dry chemical, CO2, Alcohol-resistant Foam or water spray. Incinerate waste.

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MIBC	Methyl Isobutyl Carbinol	Flomin Inc.	Liquid	3		2, 2, 0	200 L	Frother in Mill	Product liquid and vapor are flammable. Keep away from heat and sources of ignition. Product vapors or mist may be irritating to eyes and respiratory system. Product liquid may cause eye and skin burns. Harmful if swallowed.	Googles or Face Shield, Gloves, Respirator (NIOSH/MSA)	Dike spill and collect for disposal or reuse. Use adsorbents on residual material. Flush spill area with water. Keep flush material out of waterways. Dispose of cleanup material in an approved manner.
MIBK	4-Methyl-2-pentanone	Fisher Scientific	Liquid	3	B-2	2, 3, 0	200 L		clear liquid that has a slightly sweet smell. In confined space use respirator with organic vapour cartridges	Safety Glasses, Gloves	Clear liquid that is immiscible with water. Use absorbent for small spills and incinerate waste. Large spills, eliminate ignitions sources and pump to plastic drum for shipment off site.
Molybdenum Standard - AA		Anachemia	Liquid	not regulated	not regulated	0, 0, 0				Safety Glasses, Gloves	Contain spill. Incinerate waste or place in landfill
Mucasol universal detergent		Sigma-Aldrich Canada	Liquid	not regulated	D-2B	2, 0, 0				Safety Glasses, Gloves	
Nickel Standard - AA		Anachemia	Liquid	8	D-2A, E	1, 0, 0	5 L		Dilute Nitric Acid <5%	Safety Glasses, Gloves	Neutralize with soda ash or lime. Contain spill, **do not** allow un-neutralized acid to enter water systems. Neutralized spill can be pumped to the pit or tailings system.
Nitric Acid		Anachemia	Liquid	8	C, D-1A, E	4, 0, 0, OX	5 L		Concentrated acid, Extremely corrosive. Ventilate or stay upwind. **Strong Oxidizer**	Goggles, gloves. Respirator or SCBA if in confined space	Neutralize with soda ash or lime. Contain spill, **do not** allow un-neutralized acid to enter water systems. Neutralized spill can be pumped to the pit or tailings system.
Nitric Acid 40%		Quadra Chemicals	Liquid	8	C, D-1A, E	4, 0, 0, OX	5 L		Concentrated acid, Extremely corrosive. Ventilate or stay upwind. **Strong Oxidizer**	Goggles, gloves. Respirator or SCBA if in confined space	Neutralize with soda ash or lime. Contain spill, **do not** allow un-neutralized acid to enter water systems. Neutralized spill can be pumped to the pit or tailings system.
Oxygen		BOC Canada Limited (Linde)	Pressurized gas	2.2	A, C	0, 3, 0, OX	any if container larger then 100 L		Strong Oxidizer will Contribute to combustion of other materials.	Safety Glasses, Gloves	close valve if possible without risk, or allow the vent. In case of fire use any media suitable for surrounding fire. Use water spray to cool fire exposed containers.
Oxygen Refrigerant		Air Liquide Canada	Liquefied Gas	2.2	A, C	0, 3, 0, OX	any if container larger then 100 L		Strong Oxidizer will Contribute to combustion of other materials. Liquefied gas, will produce extreme cold when released.	Safety Glasses, Gloves	close valve if possible without risk, or allow the vent. In case of fire use any media suitable for surrounding fire. Use water spray to cool fire exposed containers.
Palladium Nitrate Matrix Modifier		Spex CertiPrep	Liquid	8	D-2A, E	3, 0, 0	5 L		Dilute Nitric Acid <5%	Safety Glasses, Gloves	Neutralize with soda ash or lime. Contain spill, **do not** allow un-neutralized acid to enter water systems. Neutralized spill can be pumped to the pit or tailings system.
Phosphoric acid		Sigma-Aldrich Canada	Liquid	8	D-1A, D-2B, E		5 L		Concentrated acid, Extremely corrosive. Ventilate or stay upwind.	Goggles, gloves. Respirator	Neutralize with soda ash or lime. Contain spill, **do not** allow un-neutralized acid to enter water systems. Neutralized spill can be pumped to the pit or tailings system.
Pine Oil (Terpene SW Blend)		Quadra Chemicals Ltd.	Liquid	not regulated	B-3, D-2B			Frother in Mill	Combustible liquid and vapor. Causes respiratory tract, eye and skin irritation. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling. Avoid oxidizing materials.	Goggles, Gloves, Respirator (air-purifying or air-fed)	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.
PAX	Potassium Amyl Xanthate	Quadra Chemicals Ltd.	Solid	4.2	B-6, D-2B		25 kg	Collector in Mill	Keep away from water - contact with water liberates extremely flammable gases. Keep away from heat, sparks and flame - fine dust clouds may form explosive mixtures with air. Use only with adequate ventilation.	Goggles, Gloves, Respirator (air-purifying or air-fed)	Move containers from spill area. Avoid allowing the spilled material to get wet or using water to clean up spillages or residues, unless the quantity remaining is very small. Vacuum or sweep up material and place in a designated, labeled waste container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.
Polyclear A2501		Quadra Chemicals Ltd.	Solid	not regulated	not regulated			Tailings thickener flocculant	Keep away from heat, sparks and flame - fine dust clouds may form explosive mixtures with air. Take precautionary measures against electrostatic discharges.Use only with adequate ventilation. Avoid oxidizing materials.	Safety Glasses, Gloves	Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Use spark-proof tools and explosion-proof equipment. In case of fire use appropriate measures for surrounding fire. Place in sealed container and dispose of via a licensed waste disposal contractor.
Polyclear 2528	Polyclear Floc	Quadra Chemicals Ltd.	solid	not regulated	not regulated				concentrated solution is extremely slippery, use caution	Safety Glasses, Gloves, respiratory equipment if risk assesment deems necesarry	Sweep up spilled material and it my be deposed of in dilute form to the pit or tailings system. In case of fire use appropriate measures for surrounding fire.
Polyclear 31080C		Quadra Chemicals Ltd.	Liquid	9	D-2B			Dewatering Aid in Mill	Use only with adequate ventilation. Avoid contact with strong oxidizers or halogens	Goggles, Gloves, Respirator (air-purifying or air-fed)	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Minto Mine - Inventory of Dangerous Goods

Reporting Threshold, Special Precautions, PPE Requirements, and Cleanup and Disposal Methods

Common Name (Synonyms)	Chemical Name	Manufacture / Supplier	Phase	TDG Class	WHMIS Class	NFPA Rating	Reporting Threshold	Use	Special Precautions	PPE Required	Special Cleanup and Disposal Info
Polyfroth W31		Quadra Chemicals Ltd.	Liquid	not regulated	not regulated			Frother in Mill	Harmful or fatal if swallowed. Can enter lungs and cause damage. May cause target organ damage	Goggles, Gloves, Respirator (air-purifying or air-fed)	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Potassium hydroxide	KOH	Science lab	Solid	8	D-1B	3, 0, 1	5 kg		very corrosive solid	Safety Glasses, Gloves	Use appropriate tools to put the spilled solid in a convenient waste disposal container. If necessary: Neutralize the residue with a dilute solution of acetic acid.
Potassium Iodide		Anachemia	solid	not regulated	D-2A	1, 1, 1			light and water exposure will cause breakdown	Safety Glasses, Gloves	Eliminate all sources of ignition. In case of fire use measures dictated by surrounding fire. Will decompose at high temperatures and emit toxic I_2 fumes. Use appropriate SCBA.
Potassium permanganate		CAIROX	Solid	5.1	C, E	1, 0, 0, OX	50 kg		corrosive solid. Oxidizing solid	Safety Glasses, Gloves	Sweep up solid spill for possible reuse. If necessary reduce material in aqueous solution with sodium thiosulfate (hypo), In case of fire use flooding quantities of water, material will contribute to combustion.
Propane		Superior Propane	Liquefied Gas	2.1	A, B-1		any if container larger then 100 L		Extremely flammable. Liquefied gas, will produce extreme cold when released.	Goggles, gloves. SCBA if in confined space	close valve if possible without risk, or allow the vent. In case of fire use any media suitable for surrounding fire. Use water spray to cool fire exposed containers.
Selenium Standard - AA		Anachemia	Liquid	8	E	1, 0, 0	5 L		Dilute Nitric Acid <5%	Safety Glasses, Gloves	Neutralize with soda ash or lime. Contain spill, **do not** allow un-neutralized acid to enter water systems. Neutralized spill can be pumped to the pit or tailings system.
Sodium Borohydride		Anachemia	solid	4.3	B-6, B-4, D-1B, E	3, 1, 2	25 kg		Flammable solid. Reacts violently with water and acids to produce flammable H_2 gas. Strong reducing agent.	Safety Glasses, Gloves	Eliminate ignition sources, sweep up dry material. In case of fire use only dry chemical extinguisher, DO NOT USE WATER OR CO_2
Sodium Hydroxide Solutions (various strengths)	NaOH (The Anachemia MSDS is current, treat all solutions in the same manner regardless of strength.)	Various Suppliers	Liquid	8	E	3, 0, 1	5 L		Caustic solution. Avoid mixing with strong acids. Contact with metals such as aluminum, tin, lead and zinc generates hydrogen gas.	Safety Glasses, Gloves	Neutralize the residue with a dilute solution of acetic acid. Neutralized solution can be disposed of in the pit or tailings system.
Sodium Nitrite		Anachemia	solid	5.1, 6.1	C, D-1B, D-2A	3, 0, 2, OX	50 kg		**Strong Oxidizer** will Contribute to combustion of other materials.	Safety Glasses, Gloves	Eliminate all sources of ignition. In case of fire, use flooding quantities of water. Will decompose at high temperatures and emit acrid smoke. Strong oxidizer, may form compound that are sensitive to shock, friction. Sweep up solid spill for disposal. Dispose of contaminated solution in the pit or tailings system.
sodium sulphide Flakes	Sodium sulphide Hydrated	Quadra Chemicals	solid	8	D-1B, E		5 kg		caustic, very corrosive solid	Goggles, gloves. And a respirator, avoid creating dust and avoid any acids. Contact with acids liberate toxic H_2S	Sweep up spilled material an place in plastic sealed container for shipment off site.
TMT 15%	trisodium salt	Quadra Chemicals	Liquid	not regulated (treated as Cl. 9 Miscellaneous)	D-2B		25 L		water soluble	Safety Glasses, Gloves	No special clean up procedures, treated as Class 9 Miscellaneous as product does not meet Class 6 Toxicity standards but is an environmental hazard.
Urea	Carbamide	Anachemia	solid	not regulated	not regulated	1, 0, 0			Avoid contact with strong oxidizers. In fire conditions it can produce oxides of nitrogen. Also ammonia, and HCN	Safety Glasses, Gloves	Sweep up spilled material and it my be deposed of in dilute form to the pit or tailings system. In case of fire use appropriate measures for surrounding fire.
Vitec 7000		Avista Technologies	Liquid	not regulated	2A	1, 0, 0		Antiscalant in WTP	Avoid mixing with strong bases, strong oxidizers, very strong acids, water reactive materials	SCBA or SABA in confined space, Safety goggles/glasses, Chemical impervious gloves	Soak up or wet vacuum spilled liquid. Neutralize residue with sodium bicarbonate or other neutralizing agent for very dilute acids.Decontaminate the area thoroughly. Place all spill residues in suitable container and dispose of via a licensed waste disposal contractor.
VARSOL 3139 SOLVENT	Petroleum Hydrocarbons	Imperial Oil Chemicals	Liquid	3	B-3, D-2B	1, 2, 0	200 L		Flammable solvent	Safety Glasses, Gloves	Clean up uncontaminated material for reuse. Incinerate waste.
VoltEsso 35		Imperial Oil Chemicals	Liquid	not regulated	not regulated	1, 1, 0			electrical insulating oil	Safety Glasses, Gloves	Clean up uncontaminated material for reuse. Incinerate waste.
Zinc Standard - AA		Anachemia	Liquid	8	E	1, 0, 0	5 L		Dilute Nitric Acid <5%	Safety Glasses, Gloves	Neutralize with soda ash or lime. Contain spill, **do not** allow un-neutralized acid to enter water systems. Neutralized spill can be pumped to the pit or tailings system.

Appendix C: ERT Response to HazMat Spills

ERT Response to Hazmat Spill

Spill Contact: Yukon Territory Spill Line 1-867-667-7244

Canutec: 1-613-996-6666 Cell: *666

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1.0 Overall HAZMAT Response Procedures

1.1 Site Management and Control

Initial responders will :

- Approach the scene from uphill and upwind.
- Establish command uphill and upwind of spill at an appropriate distance.
- Establish 2 isolation perimeters: one that separates the hot zone from the warm zone and another that separates the warm zone from the cold zone. Emergency Response Guide or Canutec shall be referenced for perimeter size.
- Evacuate affected area or 'protect in place', as req'd. Emergency Response Guide or Canutec shall be referenced for evacuation zone.
- Identify contaminated persons and ensure they remain isolated until they can be decontaminated.
- Establish a staging area.
- Designate an information officer.
- Possible unification of command.

1.2 Identification of the problem

I/C will identify the:

- Spilled product, as per witness testimony, placards, labels, bill of lading, type of container, etc. If product cannot be identified from command position, then a recon team will be tasked with identification.
- Size of container.
- Size and nature of release.
- Conditions and # of victims at accident site.
- Topography of area, and exposures threatened.

1.3 Hazard &Risk Evaluation

A risk evaluation will be conducted, taking into consideration:

- Product hazards
- Access & Egress
- Size of Spill
- Condition of container
- Proximity of exposures
- Personnel available to perform operations, and their level of training/experience
- Information from MSDS, ERG, Canutec, etc., minimum 3 sources

1.4 Personal Protective Equipment

PPE will be selected for Ops, RIT, and Decon teams, considering:

- Flammability/explosiveness of product
- Toxicity of product
- Route of entry of product
- Permeation rate of PPE
- Breakthrough time of PPE
- Availability of PPE
- Visibility and workability while wearing PPE

1.5 Information Management and Resource Coordination

The information officer will begin to gather information about the product once it has been identified. The information officer can use the MSDS, ERG, Canutec, or many other resources to gather information, such as:

- Properties of the product
- Hazards of the product
- Expected travel of product released
- Populations/ environment in jeopardy
- PPE req'd by responders
- Decontamination requirements

Command will prioritize the information and ensure that the correct people receive the correct information.

1.6 Implementing Response Objectives

Command will develop an overall strategy, which may be offensive (entry of hot zone to gain quick control), defensive (contain from the cold zone to prevent spread), or passive (isolate only, and wait for incident to run its course), considering:

- Life safety
- Incident stabilization
- Environmental protection
- Property salvage

Command will delegate tactics to operations teams, such as:

- Reconnaissance for unknown product
- Evacuation for toxic gas leak, fire, or explosive hazard
- Fire control for flammable gas, flammable liquid, or oxidizer
- Search and rescue
- Leak control
- Neutralization of corrosives
- Deployment of boom, drain covers, etc.
- Building of dams, dykes, etc.

To follow: specific tactic options will be discussed in more detail, pertaining to hazardous materials that are commonly found in large quantities at the Minto Mine.

Entry teams will enter with a clear objective, but must assess for the next team's objective. For example, the 1st entry team may be tasked with rescuing the driver of a fuel truck that rolled down a bank and is spilling fuel. Although their objective is to rescue, while they are on scene they should observe where the leak is, consider what could be used to stop it, where the fuel is going, and what is needed to contain it. They should bring a camera, so that pictures can be brought back to command. This will give command crucial information and better prepare the next team for their task.

1.7 Decontamination

Considerations for decontamination should begin at the outset of the incident. A decontamination construct will exist in the warm zone prior to any team entering the hot zone. It will typically consist of a large berm fashioned out of a large chemical resistant tarp, wrapped over a charged 2 ½" hose-line. There will be a charged 1 ½" hose-line nearby for emergency decontamination. Within the berm, there will be a series of smaller berms, in which, personnel will stand while being decontaminated. Personnel conducting the decontamination will be wearing the appropriate PPE (typically 1 class below ops) and will use detergent and water to gently scrub and rinse ops personnel and rescuees as they exit the hot zone. Tools and anything else exiting the hot zone will be decontaminated as well.

Once decontamination is complete, all product collected by the berms, will be handled as per the MSDS.

1.8 Termination

Once emergency operations are complete, the scene will be handed over to clean-up & recovery operations. Command will ensure that the hand-off includes all pertinent information about the spilled product:

- Properties
- Hazards
- Location
- Safe-handling
- Exposure signs and symptoms
- Req'd PPE
- Disposal procedures

Command will conduct an on-site debrief. As well, a more formal debrief will be conducted, with all parties involved, at a later time. The incident will be documented, including exposure records for all personnel that entered the warm and/or hot zones.

2.0 Specific Chemical Responses

2.1 Emulsion

Site management and control

- Consider initial perimeter of 800m.
- Command, staging, & decon shall be positioned upwind.
- Eliminate sources of ignition.
- Unify command with Safety Superintendent, Mine Manager, Environmental Dept, Dyno Nobel, product carrier (if spill occurs during delivery to mine).

Identification

- UN# 0332.
- Viscous liquid.
- Pink, opaque.
- Slight fuel oil odour.
- Shipped in bulk by tanker truck.

Hazard & risk evaluation

- Emulsion explosives.
- Stable under normal conditions.
- May explode under fire conditions.
- Eye & skin irritant.
- Slight ingestion & inhalation hazard.
- Avoid contact with corrosives.
- Is there threat to a stream?

PPE

- Class C suit with long sleeves.
- Standard PPE

Information management and resource coordination

- See MSDS for product information.
- Work closely with Dyno.

- Standard decon set-up will be constructed.
- Have tools cribbed for entry teams.
- Ensure there is enough PPE at the site to complete the task.
- Ensure there is drinking water for responders.
- Have hazmat trailer, ambulance & fire truck in staging area, as req'd
- Have Site Services staged for digging, damming, product extraction, as req'd.

Implementing Response Objectives

- Rescue injured personnel.
- Fire-fighting: If fire reaches cargo, DO NOT ATTEMPT TO FIGHT FIRE. Cargo may explode. Evacuate in all directions for 1600m.
- Prevent from entering streams.
- If possible, stop anymore product from being spilled.
- Follow Dyno's recommendations for recovery and clean-up of product.

Decontamination

Standard decon set-up will be utilized in warm zone:

- Large berm fashioned out of large chemical resistant tarp, wrapped over charged 2 ½" hose-line, 2 small berms, will be in series, within the large berm.
- Decon personnel shall don class C suits without need for respiratory or splash protection, other than safety glasses.
- Ensure all personnel that entered hot zone are properly decontaminated.
- Ensure that all tools that entered the hot zone are properly decontaminated.

Termination

- Once operation complete, clean out berms under direction of Dyno.
- Safe and proper disposal of all spent PPE.
- Transition of command.
- Debrief.

2.2 Diesel, Kerosene, CFE 150

Note: LEL sensor will not detect presence of long-chain hydrocarbon vapour. Photo-ionization detector (PID) should be used, if available.

Site management and control

- Set up perimeter with at least 50m radius.
- Command, staging, & decon shall be positioned uphill and upwind.
- Eliminate sources of ignition.
- Unify command with Safety Superintendent, Mine Manager, Environmental Dept, Dyno Nobel (if spilled product is CFE 150), product carrier (if spill occurs during delivery to mine).

Identification

- UN# 1202.
- Liquid state.
- Colour varies.
- Petroleum odour.
- Transported by B-train, tidy-tanks.
- Stored in 5 large tanks at fuel farm (total volume of 3,282,000 L), one 70,000 l Tank by UG portal, and one tank at Dyno (45,000 L).
- What is downhill from spill??
- Is there threat to life?
- Is there threat to a stream?

Hazard & risk evaluation

- Combustible liquid.
- Vapour could be ignited by any source of ignition.
- Extraction methods could create static if not bonded/grounded, and serve as an ignition source.
- Ambient temperature relevant.
- Irritant to eyes and skin
- Ingestion and inhalation hazard
- Toxic to aquatic life.

PPE

- If there is a fire situation, PPE will consist of full turn-out gear with SCBA.
  Otherwise
- For offensive strategies, such as rescue or plugging, full turn-out gear with SCBA
- For defensive strategies, such as diverting, damming, booming, diking, class B suit.

- Respirator with OV cartridges.
- Oil resistant gloves & boots

Information management and resource coordination

- See MSDS for product information.
- Know the product's route of travel.
- Standard decon set-up will be constructed.
- Ensure tools are cribbed for entry teams.
- Ensure there is enough PPE at the site to complete the task.
- Ensure there is drinking water for responders.
- Have hazmat trailer, ambulance & fire truck in staging area, as req'd.
- Have Site Services staged for digging, damming, product extraction, as req'd.

Implementing Response Objectives

- Rescue injured personnel.
- Consider using fog stream to protect rescuers.
- Fire-fighting: Use dry chemical, CO2, Class B foam, or water with fog pattern.
- If using fog, considering increased run-off hazard
- Prevent from entering streams.
- If possible, stop the leak: close valves, use plugs, plug n' dyke, gaskets, straps, jacks, cribbing, etc.
- Containment berm at source, 'Surrey Condom'.
- If possible, contain by covering drains/culverts, diking, diverting to a berm, absorbing, etc.
- If product has entered a stream, use booms, hydrocarbon-only absorbent socks and pads, under-flow dams, diversion-booms, skimmers to contain and extract, as per instructions found later in this document.
- If transfer of product req'd, ensure entire system is bonded/grounded.
- Use non-sparking tools, such as pneumatics.
- Site Services Vac-truck is an option for cleaning up product.

Decontamination

Standard decon set-up will be utilized in warm zone:

- Large berm fashioned out of large chemical resistant tarp, wrapped over charged 2 ½" hose-line, 2 small berms, will be in series, within the large berm.
- Decon personnel shall don class C suits without need for respiratory or splash protection, other than safety glasses.
- Ensure all personnel that entered hot zone are properly decontaminated.
- Ensure that all tools that entered the hot zone are properly decontaminated.

Termination

- Once operation complete, vac-truck can be utilized to clean up solution contained with the decon berms.
- Safe and proper disposal of all spent PPE.
- Transition of command.
- Debrief

2.3 Gasoline

Note: Minto gas detectors are calibrated to pentane and are suitable for use during gasoline spill mitigation

Site management and control

- Set up perimeter. Consider radius up to 800m depending on amount of product and level of explosion hazard.
- Command, staging, & decon shall be positioned uphill and upwind.
- Eliminate sources of ignition.
- Unify command with Safety Superintendent, Mine Manager, Environmental Dept., product carrier (if spill occurs during delivery to mine).

Identification

- UN# 1203.
- Liquid state.
- Colourless to slightly yellow.
- Recognizable odour.
- Transported by B-train, tidy-tanks.
- Stored in 2 tank at fuel farm (34,150 L combined).
- What is downhill from spill??
- Is there threat to life?
- Is there threat to a stream?

Hazard & risk evaluation

- Flammable liquid. Extremely flammable in presence of ignition source, at nearly any temperature.
- Vapour could be ignited by any source of ignition.
- Vapour is heavier than air and may travel considerable distance to an ignition source, and flash back.
- Product extraction methods could create static if not bonded/grounded, and serve as an ignition source.
- Explosion hazard where flame impingement on tank.
- Irritant to eyes.
- Ingestion and inhalation hazard
- Toxic to aquatic life.

PPE

- If there is a fire situation, PPE will consist of full turn-out gear with SCBA.
  Otherwise
- For offensive strategies, such as rescue or plugging, full turn-out gear with SCBA
- For defensive strategies, such as diverting, damming, booming, diking, fire resistant class B suit.
- Respirator with OV cartridges, only if LEL's are being monitored, otherwise, do not dampen sense of smell. Rather, move upwind of product vapour.

Information management and resource coordination

- See MSDS for product information.
- Know the product's route of travel.
- Standard decon set-up will be constructed.
- Ensure tools are cribbed for entry teams.
- Ensure there is enough PPE at the site to complete the task.
- Ensure there is drinking water for responders.
- Have hazmat trailer, ambulance & fire truck in staging area, as req'd
- Have Site Services staged for digging, damming, product extraction, as req'd.

Implementing Response Objectives

- Offensive tactics for rescue of injured personnel only.
- Consider blanketing affected area with class B foam, prior to rescuers entering hot zone.
- Use fog stream to suppress vapours and protect rescuers.
- Rescuers will carry intrinsically-safe radios and gas-detector.
- Prevent from entering streams
- If possible, stop the leak.
- If possible, contain by covering drains/culverts, diking, diverting to a berm, absorbing, etc.
- If product can or has has entered a stream, use booms, hydrocarbon-only absorbent socks and pads, under-flow dams, diversion-booms, as per instructions found later in this document.
- Safe handling and disposal of all waste product.

Decontamination

Standard decon set-up will be utilized in warm zone:

- Large berm fashioned out of large chemical resistant tarp, wrapped over charged 2 ½" hose-line, 2 small berms, will be in series, within the large berm.
- Decon personnel shall don class C suits without need for respiratory or splash protection, other than safety glasses.
- Ensure all personnel that entered hot zone are properly decontaminated.
- Ensure that all tools that entered the hot zone are properly decontaminated.

Termination

- Once operation complete, safe disposal of decon berm contents
- Safe and proper disposal of all spent PPE
- Hand-over command of operation to Environmental Dept.
- Debrief

2.4 LPG (Propane)

Note: Minto gas detectors are calibrated to pentane, and require no correction prior to use during propane leak mitigation.

Site management and control

- Set up initial perimeter of at least 100m. For large tank where there is fire, set up perimeter of at least 1600m.
- Command, staging, & decon shall be positioned uphill and upwind.
- Eliminate sources of ignition.
- Unify command with Safety Superintendent, Mine Manager, Environmental Dept., product carrier (if spill occurs during delivery to mine).

Identification

- UN# 1075
- Colourless liquid and vapour while stored under pressure.
- Colourless and odourless gas in natural state at any concentration.
- Commercial propane has an odorant added which is commonly ethyl.
- Transported by tanker truck.
- Stored in 6 113,000L tanks West of the Main Pit, One 12,000L tank at the refill station near the airport, twin 3,000L tanks at Pelly, and twin 18,000L tanks at Km 0 of the access road.
- What is downhill from spill?
- Is there threat to life?
- Is there threat to a stream?

Hazard & risk evaluation

- Extremely flammable gas.
- Vapour could be ignited by any source of ignition.
- Vapour is heavier than air and may travel considerable distance to an ignition source, and flash back.
- Stored under pressure, as a liquid.
- Product extraction methods could create static if not bonded/grounded, and serve as an ignition source.
- Massive explosion hazard where flame impingement on tank.

PPE

- Full turn-out gear with SCBA.

Information management and resource coordination

- See SDS for product information.
- Consider contacting Canutec.
- Know the product's route of travel.
- Ensure tools are cribbed for entry teams.
- Have fire truck at scene and ambulance in staging area, as req'd

Implementing Response Objectives Leak in an enclosed space

- Evacuate structure.
- Close supply valve remotely if possible.
- Eliminate any source of ignition.
- Use positive pressure to ventilate space, ensure that it is exhausting to safe location.

If no remote isolation valve:

- Entry team (2 ERT members) & RIT team (2 ERT members) will don full turn-out gear & SCBA.
- Any electronic equipment being carried, such as radio or gas detector, must be intrinsically safe.
- Entry team will enter with charged 1 ½" hose-line and gas detector equipped with LEL sensor, while RIT stages in the cold zone .
- Once entry team is at 'reach of stream' distance from the leak, the nozzleman (Entry member 1) will set-up, with nozzle fixed on Entry member 2. Entry member 2 will continue toward valve, with gas detector.

If LEL sensor rises above 20%, entry team will retreat until ventilation can be made adequate.

- Once Entry member 2 reaches the valve, he will close the valve, then back away until he reaches entry member 1.
- Entry team will exit the structure, until it has been adequately ventilated.
- Once adequately ventilated, ERT members, wearing appropriate PPE, will sweep the structure with gas detector(s), to ensure there are no pockets of gas, before deeming the structure 'safe to enter'.

****** If no remote shut-off is available or accessible, the main propane lines can be shut off by cutting the Underground Power feed in the Tailings Building.***

2.5.1 LPG line on fire, with no impingement

Note: a propane leak that is burning is safer than one that is not burning, as long as there is no impingement on a tank or structure. Therefore, in this scenario, gas will be allowed to burn until the valve can be shut off.

- Evacuate immediate area.
- If possible, close isolation valve from remote location.

If no remote isolation valve:

- Eliminate any further source of ignition.
- 2 or more ERT members in full turn-out gear & SCBA will be on 1 ½" hose-line.
- Nozzle will be turned to full fog, which will create a water-curtain between the fire and the fire fighters.
- The fire team will approach the isolation valve, keeping the water-curtain between themselves and the fire at all times, being careful not to put the fire out with the stream
- When the valve is reached by the team, the 2nd member on the line will let go of the hose and approach the valve, while the nozzleman maintains the water-curtain between the fire and the valve/fire team.
- The 2nd member will close the valve then back away from the fire until he regains his position on the hose.
- The team will maintain the water-curtain while they back away from the damaged gas-line.
- Once the team is at a safe distance, a 45 degree pattern can be fixed on the broken gas-line to cool it, and disperse any residual gases.

2.5.2 LPG leak, not enclosed, not on fire

Note: LPG has a very high vapour pressure (1013 kPa) so it wants to be a gas, a high vapour density (1.52) so it's heavier than air, and a low flash point (-103.4 C). This combination means that it can form an explosive gas cloud that will stay close to the ground, may linger in incident area, or migrate downwind and/or downhill, possibly settling in low lying areas.

- Evacuate immediate area as well as areas downwind/downhill as per ERG recommendations.
- If possible, close isolation valve from remote location.
- From 'reach of stream', set up ground monitor and fix a 45 degree fog pattern on area of concern. This will push gas cloud away from area and disperse it. Be sure to push it to a safe location.

If no remote isolation valve:

- Entry team (2 ERT members) & RIT team (2 ERT members) will don full turn-out gear & SCBA.
- Any electronic equipment being carried, such as radio or gas detector, must be intrinsically safe.
- Entry team will enter with charged 1 ½" hose-line and gas detector equipped with LEL sensor, while RIT stages in the cold zone.
- While ground monitor continues to 'make it rain' in the hot zone, nozzleman (entry member 1) will fix nozzle on entry member 2, as entry member 2 approaches the isolation valve, with gas detector.

If LEL sensor rises above 20%, entry team will retreat until water stream can be made more effective

- Once Entry member 2 reaches the valve, he will close the valve, then back away until he reaches entry member 1.
- Entry team will retreat to the cold zone until gases are adequately dispersed
- Once the gas is adequately dispersed, ERT members, wearing appropriate PPE, will sweep the area with gas detector(s), including low-lying areas where gas may have migrated to, before deeming the area 'safe to enter'.

2.5.3 Fire where there is flame impingement on LPG tank

- Evacuate all non-ERT members for at least 1,800 m where there is flame impingement on either the 12,000 L tank or the tandem 18,000 L tanks.
- Command will know and understand the signs of imminent BLEVE.
- If Command witnesses signs of imminent BLEVE from an upright tank, there shall be no attempt made to cool tanks, rather, all focus shall be on a rapid evacuation of all personnel, at least 1,800m.
- If tank has been knocked over, there may be little or no warning signs of BLEVE, therefore no attempt shall be made to cool, rather, all focus shall be on a rapid evacuation of all personnel, at least 1,800m.
- If a BLEVE is not imminent, an attempt will be made to connect a ground monitor to the stand-pipe at the Tailings bldg.
- A narrow fog stream will be fixed on the tank at the area of flame impingement.
- The monitor will be left unmanned and the remaining ERT will evacuate at least 1,800m.

Where a tanker truck carrying propane has over-turned on the access road, causing damage to the tank trailer and subsequent rapid release of propane, the strategy for the hazmat portion of the incident response, will be passive and conducted from an upwind/uphill location, at a safe distance, as per the ERG. Transfer of residual product for the scenario, will be conducted by outside resource.

Decontamination

- 1 ½" charged hose-line, as emergency decon

Termination

- Debrief

BW GasAlert Micro 5 is intrinsically safe, as per: *http://directories.csa-international.org/xml_transform.asp?xml=certxml%5C080259_0_000-4828-82.xml&xsl=xsl/certrec.xsl*

- GasAlert Micro 5 Portable Gas Detector, Model M5-xwt1t2-r-p-d-a-b-cc & M5PID-xwt1t2-r-p-d-a-b-cc; utilizing electrochemical, catalytic bead and photo-ionization sensors; Intrinsically Safe when powered by one of the following AA Size Batteries / Battery Pack
  - Duracell MN1500; T-Code T4; Ambient -20 to +40°C; T-Code 139.8°C (T3C); Ambient -20 to +50°C
  - Energizer E91; T-Code 153°C(T3C); Ambient -20 to +40°C; T-Code 163°C (T3B); Ambient -20 to +50°C
  - NiMH Rechargeable Battery Pack "M5-BAT01"; T-code T4; Ambient -20 to +50°C
  - Lithium Polymer Rechargeable Battery pack "M5-BAT07B"; T-Code T4; Ambient -20 to +50°C

2.5 Nitric Acid 40%

Note: when it comes to corrosives such as Nitric Acid, the solution to pollution is NOT dilution. For a spill of 1 45 gal drum, it would take over 450,000 gal of pure water to make the solution habitable for fish. It would take over 45,000,000 gal of pure water to neutralize it.

Site management and control

- Set up perimeter with at least 50m radius.
- Command, staging, & decon shall be positioned uphill.
- Unify command with Safety Superintendent, Mine Manager, Environmental Dept., product Carrier (if spill occurs during delivery to mine).

Identification

- UN# 2031
- Liquid state
- Colourless to yellow
- Transported in 45 gallon drums
- # of 45 gal drums possibly damaged will help estimate size of spill.
- What is downhill from spill? Could acid reach a stream?

Hazard & risk evaluation

- Strong acid, very corrosive.
- Severely hazardous to eyes and skin
- Ingestion could cause death
- Inhalation hazard, although low vapour pressure 1.3kPa (wants to be a liquid).
- Could be devastating to stream life.
- Strong oxidizer, could have explosive reaction with organic or combustible materials

PPE

- If there is a fire situation, PPE will consist of full turn-out gear and SCBA.
  Otherwise
- Know and heed permeability rate and breakthrough times of all PPE.
- Acid resistant, class B suit with hood.
- Full-face respirator with appropriate chemical cartridges.
- Chemical resistant gloves & boots
- Chemical resistant tape used to seal between boots/suit, gloves/suit, and mask/hood.

Information management and resource coordination

- See MSDS for product information.
- Know the product's route of travel.
- Was anyone exposed?
- Will non-human life be exposed?
- Standard decon set-up will be constructed.
- Have tools cribbed for entry teams.
- Ensure there is enough PPE at the site to complete the task.
- Ensure there is enough neutralizing agent at the site to complete the task. ***See below for chart***
- Ensure there is drinking water for responders.
- Have hazmat trailer, ambulance & fire truck in staging area, as req'd
- Have Site Services staged for digging, damming, product extraction, as req'd.

Implementing Response Objectives

- Rescue injured/exposed personnel.
- Prevent from entering streams
- Prevent from contacting combustibles and organics.
- If possible, stop the leak.
- If possible, contain by covering drains/culverts, damming, diverting to a berm, etc.
- Use over-pack to contain leaking drums that still contain product.
- Neutralize spilled product with weak caustic – primary neutralizing agent is Ansul Spill X-A, alternatively hydrated lime or baking soda (if available). Be cautious of chemical reaction.
- Use Litmus paper to test for pH when neutralizing with lime or baking soda.
- Site Services Vac-truck is an option for cleaning up product before or after neutralized, as necessary.

Decontamination

Standard decon set-up will be utilized in warm zone:

- Large berm fashioned out of large chemical resistant tarp, wrapped over charged 2 ½" hose-line, 2 small berms, will be in series, within the large berm.
- Decon personnel shall don class C suits without need for respiratory or splash protection, other than safety glasses.
- Ensure all personnel that entered hot zone are properly decontaminated.
- Ensure that all tools that entered the hot zone are properly decontaminated.

Termination

- Once operation complete, vac-truck can be utilized to clean up solution contained with the decon berms.
- Safe and proper disposal of all spent PPE.
- Transition of command.
- Debrief

2.5.1 Chart for Estimating Caustic Req'd to Neutralize 40% Nitric Acid

For **Spill X-A**, use 1:1 ratio by volume, or 10lbs Spill X-A per 1 gal Nitric Acid.

Amount of Nitric Acid Spilled (in Gal.)	Amount of Baking Soda Req'd (in Lbs.)
1	5.6
2	11
5	28
10	56
20	110
45	252
90	504
135	756
180	1,008

Amount of Nitric Acid Spilled (in Gal.)	Amount of Lime Req'd (in Lbs.)
1	2.4
2	4.8
5	12
10	24
20	48
45	108
90	216
135	324
180	432

Charts derived from formulas below

Specific Gravity Nitric Acid: 1.2455

Concentration: 40%

1 gal HNO_3 x 1.24 x 8.34 lbs/gal x 0.40 = 4.14 lbs HNO_3

$HNO_3 + NaHCO_3 \rightarrow NaNO_3 + H_2O + CO_2$ Therefore 1 mol Nitric Acid per 1 mol Sodium Bicarb (Baking Soda)

$2HNO_3 + Ca(OH)_2 \rightarrow Ca(NO_3)_2 + 2H_2O$ Therefore 2 mol Nitric Acid per 1 mol Calcium Hydroxide (Lime)

HNO_3 = 63 amu

$NaHCO_3$ = 85 amu

$Ca(NO_3)_2$ = 74 amu

(4.14 lbs HNO_3/63 amu-HNO_3) x 85 amu-$NaHCO_3$ = 5.6 lbs $NaHCO_3$

Therefore 1 gallon of Nitric Acid req's 5.6 lbs of baking soda

(4.14 lbs HNO_3/2(63) amu-HNO_3) x 74 amu-$Ca(OH)_2$ = 2.4lbs $Ca(NO_3)_2$

Neutralization Formulas and Quick Access Charts Formulas

The key to effective and efficient neutralization, is knowing how to use the following formulas.

1. The first formula indicates how much acid is spilled in weight.

Step #1- Determine the quantity of acid spilled, usually in gallons.
Step #2- Determine the specific gravity of the acid usually provided in MSDS.
Step #3- Determine the concentration of the acid spilled usually in %.
Step #4- The weight of water is 8.34 pounds per gallon.

After the above figures are known plug them into the following formula:

Quantity of spill X specific gravity X weight of water X concentration
= weight of the spill

Example:
One gallon of sulfuric X 1.84 X 8.34 X 98% = 15.04 pounds of sulfuric

2. The second formula will determine the quantity of the neutralizer needed. The type of neutralizer needs to be selected based on costs and availability. Plug numbers into the following formula:

Weight of the acid spilled X number in the chart for the selected neutralizer.

Example :

15.04 pounds of sulfuric X 1.06 for Soda Ash = 15.94 pounds of Soda Ash

Determination through Chemistry

To calculate the amount of neutralization agent needed the balanced chemical reaction must be written and the equivalent weights of acid and base determined.

Example: 1,000 gallons of 38% hydrochloric acid will be neutralized with lime.

Step #1 – Write the complete balanced neutralization reaction:
$2HCl + CaO \rightarrow CaCl_2 + H_2O$
This equation shows that 2 moles of HCl are required in the reaction with one mole of calcium oxide (lime).

Step #2 – Calculate the molecular weight of each compound:
HCl – H = 1, Cl = 35.5, Total = 36.5 amu
CaO – Ca = 40, O = 16, Total = 56

Step #3 – Calculate the weight of the HCl spill:
1,000 gallons X 1.20 X 8.34 X 0.38 = 3,803.04 pounds of HCl
Step #4 – Calculate the amount of neutralizer needed:
From Step #1 it was found that 2 moles of HCl are needed to react with 1 mole of CaO. From Step #2 it was found that 1 mole of HCl weighs 36.5 amu's so 2 moles weigh 73.0 amu's. The formula is**; weight of acid/formula weight of acid X formula weight of base = pounds of the neutralizer needed.**
3,803.04/73 X 56 = 2,917.4 pounds of lime

Finer Points
The final amount is an approximation and in actual practice more neutralizing agent should be obtained. The neutralization process needs to be checked at several spots to assure pH levels are acceptable and uniform.

Neutralization Precautions
Remember, the neutralization process is exothermic and it may involve splashing of product. Safety is paramount and proper protective equipment is very important. Also, the neutralizer is hazardous in its own right and needs to be handled with care. Consider expense and availability in selecting neutralizer. Other weak bases that may be used and their molecular weights are; sodium bicarbonate ($NaHCO_3$)- 85, and magnesium hydroxide ($Mg(OH)_2$)-58.

Neutralization Chart Information
Acids

Hydrochloric Acid, HCl, MW = 36.5, density/specific gravity is 1.19, weight of a gallon is 3.77 pounds at 38% concentration. Synonyms are chlorohydric acid and muriatic acid.

Nitric Acid, HNO_3, MW = 63, density/specific gravity is 1.41, weight of a gallon is 8.23 pounds at 70% concentration. Synonyms are Aqua Fortis and Azotic Acid. (Aqua Regia is a mixture of nitric and hydrochloric acids).

Phosphoric Acid, H_3PO_4, MW = 98, density/specific gravity is 1.69, weight of a gallon is 11.98 pounds at 85% concentration. Synonyms are orthophosphoric acid.

Sulfuric Acid, H_2SO_4, MW = 98, density/specific gravity is 1.84, weight of a gallon is 15.04 pounds at 98% concentration. Synonyms are Oil of vitriol and "oleum" is fuming sulfuric acid.

Bases

Ammonium hydroxide, NH_4OH, MW = 35, clear solution, synonyms are ammonia solution and aqua ammonia. Strong ammonia odor evolves from liquid. High vapor pressure.
Calcium carbonate, $CaCO_3$, MW = 100, white powder, synonyms are crushed limestone and dolomite. Low heat of reaction that gives off carbon dioxide gas.
Calcium hydroxide, $Ca(OH)_2$, MW = 74, white powder, synonyms are slaked lime, hydrated lime, and calcium hydrate.
Calcium oxide, CaO, MW = 56, white powder, synonyms are quicklime, lime, and unslaked lime. Most economical, lowest cost, neutralizer. **Best choice!** Maximum pH is 12.45 at 25C.
Magnesium carbonate, $MgCO_3$, MW = 84, synonyms are magnesia alba and carbonate magnesium.
Magnesium hydroxide, $Mg(OH)_2$, MW = 58, white powder, synonyms are milk of magnesia and magnesia hydrate. Good neutralization agent. Maximum pH is 10.6 at 25C.
Potassium hydroxide, KOH, MW = 56, white flakes, synonyms are caustic potash. High heat of reaction with toxic fumes. Maximum pH is 14 at 25C.
Sodium bicarbonate, $NaHCO_3$, MW = 85, white powder, synonyms are baking soda and sodium acid carbonate. Low heat of reaction with carbon dioxide gas evolution.
Sodium Carbonate, Na_2CO_3, MW = 106, white powder, synonyms are soda ash. **Second most economical neutralization agent next to lime.** Maximum pH is approximately 11 at 25C.
Sodium hydroxide, NaOH, MW = 40, white powder, synonyms are caustic soda, soda lye, caustic, and lye. High heat of reaction with toxic fumes. Maximum pH is 14 at 25C.

2.5.2 Quick Access Charts for Neutralizing Various Acids with Baking Soda

2.5.2.1 Sulfuric Acid neutralization using Baking Soda (Sodium Bicarbonate)

Amount of Sulfuric Acid spilled	Amount of Baking Soda needed in pounds
1 gallon	25.6
2 gallons	51.2
3 gallons	76.8
4 gallons	102.4
5 gallons	128.0
10 gallons	256.0
50 gallons	1280.0
55 gallons	1408.0
100 gallons	2560.0

2.5.2.2 Hydrochloric Acid neutralization using Baking Soda

Amount of Hydrochloric Acid spilled	Amount of Baking Soda needed in pounds
1 gallon	5.5
2 gallons	11.0
3 gallons	16.5
4 gallons	22.0
5 gallons	27.5
10 gallons	55.0
50 gallons	275.0
55 gallons	302.5
100 gallons	550.0

2.5.2.3 Nitric Acid neutralization using Baking Soda

Amount of Nitric Acid spilled	Amount of Baking Soda needed in pounds
1 gallon	7.4
2 gallons	14.8
3 gallons	22.2
4 gallons	29.6
5 gallons	37.0
10 gallons	74.0
50 gallons	370.0
55 gallons	407.0
100 gallons	740.0

2.6 Sodium Sulphide

Site management and control

- Set up perimeter with at least 50m radius if water introduced, or 25m if solid.
- Command, staging, & decon shall be position upwind and uphill.
- Unify command with Safety Superintendent, Mine Manager, Environmental Dept., product carrier (if spill occurs during delivery to mine).

Identification

- UN# 1849
- Solid state
- Yellow
- Smell sulfurous or like rotten eggs with introduction of moisture.
- Transported in 1000 Kg 'Super-Sacks'.
- # of super-sacks possibly damaged, will help estimate size of spill.
- Is water being introduced to the spill? If so, what is downhill form the spill? Could run-off reach a stream?
- Are corrosives being introduced to spill? If so, what is downwind?

Hazard & risk evaluation

- Strong caustic.
- Severely corrosive to digestive tract, respiratory system, eyes, and skin.
- Dust is powerful systemic poison. Inhalation could cause headache, dizziness, unconsciousness, pulmonary edema, asphyxiation, death.
- Contact with acid releases toxic and flammable Hydrogen Sulfide.
- Routes of entry include absorption, inhalation, and ingestion.
- Keep spilled product dry
- If water introduced, avoid run-off, contact with soil, waterways.

PPE

- If there is a fire situation, PPE will consist of full turn-out gear and SCBA.
  Otherwise
- Know and heed permeability rate and breakthrough times of all PPE.
- SCBA if significant H2S release, otherwise, full-face respirator & OV cartridges with pre-filter.
- Corrosive resistant, class B suit with hood.
- Chemical resistant gloves & boots
- Chemical resistant tape used to seal between boots/suit, gloves/suit, and mask/suit.

Information management and resource coordination

- See MSDS for product information.
- Was anyone exposed?
- Will non-human life be exposed?
- Standard decon set-up will be constructed.
- Have tools cribbed for entry team.
- Ensure there is enough PPE at the site to complete the task.
- Ensure there is drinking water for responders.
- Have hazmat trailer, ambulance & fire truck in staging area, as req'd
- Have Site Services staged for digging, damming, product extraction, as req'd.

Implementing Response Objectives

- Rescue injured/exposed personnel.
- Keep product dry.
- Monitor atmosphere for H2S and SO2.
- If water introduced, contain run-off by covering drains/culverts, damming, diverting to a berm, etc. Solution collected can be mixed with oxidizing agent, such as hydrogen peroxide or sodium hypochlorite to prevent evolution of H2S.
- If product has entered a stream, consider using over-flow dams to contain product, for extraction.
- Vacuum or sweep up dry product
- Disposal as per Environmental Dept. recommendations

Decontamination

Standard decon set-up will be utilized in warm zone:

- Large berm fashioned out of large chemical resistant tarp, wrapped over charged 2 ½" hose-line, 2 small berms, will be in series, within the large berm.
- Decon personnel shall don class C suits without need for respiratory or splash protection, other than safety glasses.
- Ensure all personnel that entered hot zone are properly decontaminated.
- Ensure that all tools that entered the hot zone are properly decontaminated.

Termination

- Once operation complete, solution in decon berms to be disposed of, as per Environmental recommendations.
- Safe and proper disposal of all spent PPE.
- Transition of command.
- Debrief

Appendix D: Tug and Barge Emergency Contingency Plan

Minto Mine

Tug and Barge Emergency Contingency Plan

2022-01

Prepared by:

Minto Metals Corp.

Minto Mine

January 2022

First Issue: January 15, 2013

Revision History

Revision Number	Issue Date	Description and Revisions Made
2013-01	January 2013	First Issue
2017-01	February 2017	Review, revision of document and update of information: • Revised format of document (added revision history and table of contents); • Section 2.0 and 3.1 - Removed references to JDS and mutual aid agreement (not in place); • Section 4.0 - updated level of NFPA training for ERT (472 HazMat awareness level); • Section 4.0 - updated reference to 2014 field and table top exercise.
2019-09	September 2019	Changed ownership from Capstone to Pembridge Resources.
2021-01	January 2021	Removed References to Pembridge Resources.
2022-01	January 2022	Updated Branding to Minto Metals Corp

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List of Appendices

Appendix A: Man Boat Specifications

Appendix B: Safe Job Procedure for Loading and Unloading the Barge.

1 Introduction

Minto Mine (Minto), is pleased to submit the following contingency plan (plan) as per requirements of the Selkirk First Nation Access and Land Use Permit "Minto Landing Ice Bridge and Marshalling Area and West Side Barge Landing and Marshalling Area" (the permit). It is Minto's intention that this plan will fulfill the requirement as stated in Schedule 2, Section 9.0 Contingency Plan of the permit. It is not Minto's objective for this plan to mitigate all possible accidents or malfunction in regards to the in-stream operation of the Copper Queen tug and barge.

The plan, as prepared, is adaptive and will be amended as is practicable. This plan is intended to deliver the best possible means of mitigating an accident or malfunction of the loading/unloading or in-stream operation of the tug and barge with the resources available at Minto. Preventing such an occurrence requires a combination of procedural and engineering controls, based on an awareness of at risk conditions. These documents exist in the form of the Spill Contingency Plan, Emergency Response Plan, and any procedures or plans on the tug or barge from Site Services. This document serves as a contingency plan in the event that an accident or malfunction occurs when loading, unloading, and during in-stream operations of the Copper Queen tug and barge (CQTB).

2 General Procedures

Any response to an emergency condition will be based on a priority sequence of Life, Environment, and Property. Every event will be regarded with these priorities in mind. Initial on scene assessment of the accident or malfunction will be called out on channel one as a "Code 1". The Emergency Response Team (ERT) will be dispatched, communication established, and the barge operator and deckhand will respond to control the scene.

Deckhands will mitigate all emergencies on the barge to the best of their ability given the resources available. The general procedure in the event of an emergency would have the barge move to the west landing if possible or practical, unless otherwise communicated to the barge captain. To mitigate an emergency in offloading or loading vehicles onto the barge the deckhand will utilize the anchor points on both landings. Slack will be left in the rope to ensure the barge captain can maneuver when docked at the

landing. Tying off to the anchor points will mitigate complete catastrophe if the barge loses power during loading and offloading and will be discussed further under the specific procedures section of this plan.

3 Specific Procedures

Below is a list of the current on-site procedures for dealing with various emergencies in regards to the CQTB at Minto Mine.

- Emergency Response to Sinking
- Emergency Response to Loss of Power or Control
- Emergency Response to Fire Onboard
- Emergency Response to Man Overboard
- Emergency Response to Freight or Vehicle Overboard
- Emergency Response to Medical Emergency on Board of the Barge
- Emergency Response to Spill Response

3.1 Emergency Response to Sinking of CQTB

1. The activation of Emergency Protocols onboard the CQTB, starting with calling “Code 1” to initiate an ERT response.
2. The Captain and deckhand will deploy Canadian Coast Guard approved life rafts.
3. As per the Emergency Response Plan, Incident Command (IC) will communicate with the deckhand by radio to determine any further details of events, number of injured or trapped people, and any risks to property and environment.
4. IC will respond to the scene in an emergency vehicle ahead of remaining ERT members. IC will, upon arrival, provide initial scene assessment and gather any additional information available. A minimum ERT response will include; a full ERT member compliment, an environmental lead, the hazardous materials response trailer, the fire truck, the ambulance, and all associated equipment. All ERT operations will be under the control of the ERT Captain. Additional response needs based on initial assessment and evaluation by IC will be communicated to the Emergency Communications Center (ECC), as per the Emergency Response Plan.

5. Incident Accountability will be established and adhered to throughout the operation.
6. IC will determine the need for necessary rescue of people downstream. The option to deploy rescue ropes via launcher will be considered for KM 12.
7. Alternate access to river will be determined by the nature of the incident (KM 20 provides a second potential access point). All other access would require trail cutting, which is possible, but would take more time.
8. The IC, ERT Captain, and Environmental Lead (Unified Incident Command Support) will assess the ongoing situation and potential need for additional resources.
9. The alternate Man-boat (see Appendix A for details on Man-boat) will be deployed from the landing as needed to support rescue and/or to gain more information regarding the location of the sunken vessel and determine a possible plan for retrieval/securing of the vessel. The Man-boat operator will work under the direction of IC.
10. Once rescued, all patients will be treated as per OFA3/EMR protocols, transported as per Yukon EMS dispatch, and confirmation will be aligned with the Minto Emergency Response Plan.

3.2 Emergency Response to Loss of Power or Control of CQTB

The tug operates on two engines so a total loss of power is unlikely; however, it is still possible and below is the emergency procedure that would be activated in the event that the total loss of control of the CQTB was to occur.

1. The activation of Emergency Protocols on board the CQTB, starting with calling a “Code 1” to initiate an ERT response. The Captain will also communicate freight details and passenger numbers on board.
2. Passengers and crew will follow instructions from the Captain and will remain on board if deemed safe to do so. The Captain and deckhand will follow MED protocol in decision making, in regards to passenger safety.
3. The Captain and deckhand will deploy Canadian Coast Guard approved life rafts if the Captain deems it unsafe to stay on board.

4. IC will respond to the scene (or as close to it as possible) in an emergency vehicle ahead of the remaining ERT members. IC will, upon arrival to scene, provide initial scene assessment and gather any additional information available. A minimum ERT response will include a full ERT member compliment, an Environmental Lead, the Hazardous materials response trailer, the fire truck, the ambulance, and all associated equipment. The ERT operations will be under the control of the ERT Captain. Any additional response needs, necessary downstream communications, and reporting requirements will be based on the initial assessment and evaluation by the IC and will be communicated to the Emergency Communications Center (ECC), as per the Emergency Response Plan.
5. Incident Accountability will be established and adhered to throughout the operation.
6. The Captain will navigate, to the best of their ability, to the safest downstream location possible.
7. The Captain will communicate the location and condition of the vessel and people, and will assist in determining plans for further action.
8. Once the vessel is secured to shore (or where landed in river), the Man boat will be deployed to assist with additional securing and the removal of non-essential people to a location where they can be transferred back to site or to an alternate safe location.
9. A plan for retrieval will be based on the conditions and location of the vessel. The plan will be developed cooperatively between the Barge Captain, Minto ECC, and Mutual Aid resources. Equipment and additional resources will be sourced through the ECC, as per the Minto Emergency Response Plan.

3.3 Emergency Response to Fire on the CQTB

1. The activation of Emergency Protocols onboard CQTB, starting with calling a “Code 1” to initiate an ERT response.
2. If safe to do so, the deckhand will attempt to supress the fire using equipment on board following the Marine Emergency Duty (MED) protocol.

3. The Captain and deckhand will deploy Canadian Coast Guard approved life rafts if vessel in immediate danger. If possible and practical, the Captain will position barge so that the wind is blowing port to starboard, attempting to keep smoke/flames away from the life raft.
4. If possible, the Barge will cross to the West Bank of crossing and continue to use barge supplied fire suppression equipment. All passengers will disembark under direction of the deckhand.
5. The IC will respond to the scene in an emergency vehicle ahead of the remaining ERT members. IC will, upon arrival to scene, provide initial scene assessment and gather any additional information available. A minimum ERT response will include a full ERT member compliment, an Environmental Lead, the Hazardous materials response trailer, the fire truck, the ambulance, and all associated equipment. ERT operations are to be under the control of the ERT Captain. Additional response needs based on the initial assessment and evaluation by the IC will be communicated to the Emergency Communications Center (ECC), as per the Emergency Response Plan.
6. Incident Accountability will be established and adhered to throughout the operation.
7. Once IC is on scene and the vessel is safely secured, fire suppression will be conducted under the direction of the IC, following NFPA 1081 standards (Industrial Fire Brigade).
8. The consideration of environmental sensitivity will be considered by IC in cooperation with the Environmental Lead (unified incident command support).
9. Defensive spill containment methods will be utilized to control run off and any releases from firefighting operations. This may include (but are not limited to) tactics such as extinguishing agent selection, damming and/or berming on the barge, the placement of a boom around the vessel, and the removal of burning equipment once the fire is controlled, etc.

3.4 Emergency Response to Man Overboard

1. The activation of the Emergency Protocol onboard CQTB, beginning with calling “Code 1” to initiate an ERT response.

2. The Captain and deckhand will throw out provided Canadian Coast Guard approved life-rings to all personnel overboard. The response from the barge crew will conducted as per their MED training.
3. If able to successfully rescue person overboard, the deckhand will treat person(s) based on marine first aid protocols, awaiting response by the ERT and site Medic.
4. If unable to successfully achieve a rescue, the vessel will continue to the West landing and the Man boat will be deployed for a downstream rescue (Communication to IC on Radio Channel 1 must be available at all times). The Man boat operation will be conducted under the direction of the IC, once in place.
5. The Captain will communicate to IC of any possible downstream rescue requirement.
6. IC will instruct the ERT to stage at KM 12, with the option to deploy rescue ropes via launcher considered.
7. Incident Accountability will be established and adhered to throughout the operation.
8. IC will stage the ambulance for patient pick up.
9. IC will communicate the need for mutual aid to ECC, who will follow the Minto ERP by contacting local agencies for assistance on the East side of the river.
10. Once rescued, all patients will be treated as per OFA3/EMR protocols and transported, as per Yukon EMS dispatch confirmation, aligning with the Minto Emergency Response Plan.

3.5 Emergency Response to Freight or Vehicle Overboard of the CQTB

1. The activation of Emergency Protocols onboard CQTB, starting with calling a “Code 1” to initiate an ERT response. The Captain will also communicate freight details and passenger numbers on board.
2. Passengers and crew will follow instructions from the Captain (the Captain will respond as per MED training) and will remain on board, if deemed safe to do so.
3. The Captain and deckhand will deploy Canadian Coast Guard approved life rafts if it is deemed unsafe to stay on board, and passengers will be offloaded to a safe location on shore.

4. IC will respond to the scene (or as close to it as possible) in an emergency vehicle, ahead of the remaining ERT members. IC will, upon arrival, provide initial scene assessment and gather any additional information available. A minimum ERT response will include a full ERT member compliment, an environmental lead, the hazardous materials response trailer, the fire truck, the ambulance, and all associated equipment. Any ERT operations will be under the control of the ERT Captain. Additional response needs, downstream communications, and reporting requirements based on the initial assessment and evaluation by the IC will be communicated to the Emergency Communications Center (ECC), as per the Emergency Response Plan.
5. Incident Accountability will be established and adhered to throughout the operation.
6. The captain will navigate, to the best of their ability, to the landing (preferably the west landing).
7. Once the vessel is secured to shore, the man boat will be deployed by the deckhand or ERT members to assist with any additional securing of the vessel/freight and for the deployment of containment booms, which are located at the landing and on the vessel itself. All Man boat operation will be under the direction of the IC, once in place.
8. A plan for retrieval of freight will be determined appropriate to the condition and location of freight. The plan will be developed cooperatively by the Barge Captain, Minto ECC, and Mutual Aid resources.
9. Equipment and additional resources will be sourced through the ECC, as per the Minto Emergency Response Plan, including (but not limited to) manpower, expertise, and heavy equipment.
10. Additional external support in the event of an incident occurring on the East side of the river will include (but is not limited to) Yukon Emergency Measures Organization, local first responders, and alternate equipment operation contractors.

3.6 Emergency Response to Medical Emergency on board CQTB

1. The activation of the Emergency Protocols onboard the CQTB, starting with calling a “Code 1” to initiate an ERT response.
2. For a serious injury, as defined in the ERP, Yukon EMS will be notified immediately.
3. The deckhand will treat the patient per Marine Emergency First Aid protocols.

4. The Captain will navigate the barge to the west bank of the Yukon River (if possible) and all vehicles will offload on west bank, giving clear passage for Ambulance.
5. An ERT response will include the medic, ambulance, fire truck and a full compliment of team members to assist with any necessary patient transfer and packaging.
6. Incident Accountability will be established and adhered to throughout the operation.
7. Yukon EMS dispatch will be updated of situation once history and assessment is confirmed.
8. Upon arrival, the Minto Medic will take control of the scene and advise the ERT Captain of resources needed on scene.
9. Upon assessment, the patient will be treated, packaged, and transported, as per Yukon EMS dispatch confirmation, aligned with the Minto Emergency Response Plan.

3.7 Emergency Response to a Spill

1. The activation of the Emergency Protocol onboard the CQTB, starting with calling a “Code 1” to initiate an ERT response.
2. The deckhand will attempt to contain the spill using the onboard spill kit to prevent the spill from entering the Yukon River.
3. IC will respond to the scene in an emergency vehicle, ahead of the remaining ERT members. IC will, upon arrival, provide initial scene assessment and gather any additional information available. A minimum ERT response will include a full ERT member compliment, an Environmental Lead, the Hazardous materials response trailer, the fire truck, the ambulance, and all associated equipment. All ERT operations will be under the control of the ERT Captain. Additional response needs, downstream communication, communication with CANUTEC, and reporting requirements based on initial assessment and evaluation by IC will be communicated to the ECC, as per the Emergency Response Plan and Spill Contingency Plan.
4. Incident Accountability will be established and adhered to throughout the operation.
5. If practical, the barge captain will navigate the barge to the west landing.
6. All passengers will disembark vessel.

7. All vehicles and machinery that are not in the spill zone will also disembark.
8. The deckhand and ERT members, under the direction of IC, will use the Man boat to deploy the containment booms around the barge.
9. IC, with advice from the Environment Lead, will develop and implement the SCP for stopping the spill if possible.
10. If the spill cannot be stopped, a plan to mitigate the quantity of contaminant that reaches the environment will be developed and implemented.
11. If safe and practical to do so, the Environment Lead will deploy environment staff to sample downstream of spill to measure the contamination.
12. IC, with advice from the Environment Lead, will oversee cleanup of the spill.

Appendix A: Man Boat Specifications

Brand/Model: Munson Packman Landing Craft

- **Hull Length:** 24 feet (7.3 meters)
- **Beam:** 8 feet 6 inches (2.6 meters)
- **Hull Type:** Packman mono hull
- **Power:** Twin Yamaha 150hp
- **Propulsion:** Outboard (25” shaft)
- **Outfitting:** 52” bow door

Appendix B: Safe Work Procedure for Loading and Unloading the Barge.

MINTO

CONTROLLED DOCUMENT

Standard Operating Procedure (SOP)
Moving the Barge In and Out of Water

Document No:	MNTO-SOP-05-013
Version No:	V.0
Date of first issue:	2021-11-07
Last Revision:	2021-11-07
Originating Department:	Site Services -05

Department Approval	**Director / Designate**	
Name & position: Martin Mann – Maintenance Superintendent	*Signature:*	*Date (yymmdd):* 21/11/09
HST Approval	**Director / Designate**	
Name & position: Nadine Trodel – HST Director	*Signature:*	*Date (yymmdd):* 21 NOV 09
JOHSC Review	**JOHSC Worker Co-chair / Designate**	
Name and position: Brian Hyde – Env. Officer/ JOHSC Co-Chair	*Signature:*	*Date (yymmdd):* 21/11/09
Reviewed By		
Name & position: Todd Epps – Site Services Supervisor	*Signature:*	*Date (yymmdd):* 21/11/09

***Printed copies are uncontrolled. Ensure you are reviewing the most up-to-date copy of this procedure.*

REVISION LOG

VER #	DATE	DESCRIPTION OF CHANGE

GENERAL INFORMATION	
Purpose:	Provide a safe procedure for move the Copper Transporter (Barge) in and out of the water.
Scope:	Pertains to all Minto employees and Contractors that are involved with putting the tug in or taking it out of the water.
Responsibilities:	**Senior Director of Operations:** • Ensures that all operational areas of the Mine site have assigned managers who are responsible, competent and capable of overseeing the work scope and activities within their area. • Provide adequate resources for the effective operation and management of each area of the mine. **Director HST:** • Monitor conformance with all company procedures. • Monitor and report all conformance, compliance and performance regulations in relation to the scope of activities taking place at the Mine site to the Senior Director of Operations and various Department Directors. **Department Directors & Superintendents:** • Ensure operational areas and activities are managed in conformance to all company procedures. • Manage their areas of responsibility to ensure compliance with all regulatory and other requirements as defined by Federal, Territorial, and Regional regulations. • Appoint competent, skilled, and qualified Supervisors and/or Leads to provide direction and guidance to employees in their tasks and scope of work. • Ensure this SOP is in alignment with Yukon Occupational Health and Safety regulations as well as all site policies and procedures. **Supervisors:** • Plan and assign day to day operational tasks to subordinates. • Ensure workers who have been assigned tasks are adequately trained and competent.

Responsibilities:	• Evaluate the performance of team members and determine training needs. • Provide additional equipment such as slings, rigging and Personal Flotation Devices (PFDs) required to perform this task safely.
Responsibilities:	**Workers:** • Understand and follow all procedures and policies. • Perform field level risk assessments using the 5-Point Safety Card and address hazards that pose a risk to themselves and/or their fellow workers. • Communicate to Safety and Supervision when a hazard cannot be immediately addressed and mitigated in a safe manner.

PERSONAL PROTECTIVE EQUIPMENT – REQUIREMENTS FOR THIS PROCEDURE

Review the Personal Protection Equipment Procedure. Ensure you have the following:

☒ Hard Hat ☒ Safety Glasses ☒ High Visibility clothing ☒ Hearing Protection ☒ Safety Footwear ☒ Work Gloves ☐ Self-rescuer

Additional task-specific PPE requirements:

Respirator Type:	☐ ½ Face Respirator ☐ Full Face Respirator ☐ Powered Air Purifying Respirator ☐ Other:
	Cartridge Type:
Fall Protection:	☐ Fall Arrest ☐ Fall Restraint
Dermal Protection:	☐ Chemical Resistant Gloves Type: _____ ☐ Chemical Suit Type: _____
Eye and Face:	☐ Face Shield ☐ Googles ☐ Welding Helmet ☐ Other
Notes or Additional:	Personal Flotation Devices (PDFs) for workers.

RELATED DOCUMENTS

- Yukon Occupational Health and Safety Regulations – Part 1 – section 1.34
- MNTO-SOP-02-016 **Working Near or Over Open Water**
- WUL Type B MS15-094 – Part C – Operating Conditions
- 5 Point Card

EQUIPMENT AND MATERIALS

- 330 excavator
- 990 loader
- D-9 dozer
- Slings and rigging equipment
- Man Boat or Life Boat
- Life Ring

DEFINITION

PDF: Personal Flotation Device

SFN: Selkirk First Nations

PROCEDURE

1. Permitting and Authorization

1.1 Supervisors, contractors and the Environment Team and Healthy and Safety will arrange for a planning meeting a couple of days prior to either the removal or entry of the Barge into the river.

1.2 Once the date is agreed upon, the Environment team will notify SFN.

2. Mobilize equipment to the River

2.1 Be sure all equipment has been cleaned and is free of grease, oils, etc. as well as verifying all machinery are free of leaks (hoses, fittings, etc.).

2.2 Follow all road protocols when moving equipment to the river.

3. 5 Point Card Completed before starting task of both pulling the Barge in and out of water when reviewing this SOP with workers.

3.1 Cobalt and Site Services Supervisor to review the SOP with all workers associated with the task before starting.

4. Move Barge into Water

4.1 Cobalt supervisor will direct this operation.

4.2 Both Cobalt and Site Service supervisors or designate will remain present for the entire operation.

4.3 PFDs will be worn by workers and operators when working near or over the water. Refer to MNTO-SOP-02-016 Working Near or Over Open Water.

4.4 Use the 330 excavator to adjust the shoreline to the appropriate angle for pushing the barge in the water.

4.5 All steel slings and rigging must have appropriate rating for pulling the barge. Attach steel slings to the pulling points on the front corners of the barge.

4.6 Pull the stern of the barge using the 330 excavator and 990 loader (one on each corner lifting together and walking the bow towards the water). This may require more than one setup. Connect equipment to appropriate pulling points on Barge.

4.7 Once the barge is lined up and headed for the river, attach slings to the lifting points located on both sides at the bow of the barge.

4.8 Connect the sling on one side to the D-9 dozer and either the 990 loader or 330 excavator to the sling on the other side. They will then pull simultaneously towards the water until the machines reach the water's edge.

4.9 Disconnect from the barge and attach a rope or sling from the front of the barge to the bucket of the 330 excavator.

4.10 Position the D-9 and the 330 excavator (one on each corner) at the bow of the barge and push it in the water, should it be required.

4.11 Use the 330-excavator attached to the barge to guide the barge out past the landing and tie it off along the rip-rap in the main stream. This will leave room at the landing for launching the tug. Be sure to use the permanent tie off cable at the landing.

5. Moving the Barge out of the Water

5.1 Cobalt supervisor will direct this operation.

5.2 Both Cobalt and Site Services supervisors or designate will remain present for the entire operation.

5.3 PFDs must be worn by workers and operators when working near or over the water. Refer to MNTO-SOP-02-016 **Working Near or Over Open Water**.

5.4 Use the 330 excavator to adjust the shoreline to the appropriate angle for pulling the barge out of the water.

5.5 The tracks of heavy equipment are prohibited from entering the "Wetted Perimeter" or water level present while the work is taking place.

5.5.1 Environment Team will monitor silt levels in the water when adjusting the shoreline as per the WUL Permit.

5.6 Attach a rope to the bucket of the 330 excavator and the bow of the barge.

5.7 Use the 330 excavator to push the barge off from the landing and guide the barge to the shore with the rope, where it will be pulled out. If the tug is still in the water, the tug will be used to direct the barge to where it will be pulled out.

5.8 Attach slings to the two lifting points on the bow of the barge (one on each side).

5.9 Attach the D-9 Dozer to one sling and either the 990 loader or 330 excavator to the other sling and simultaneously pull the barge from the water, up the landing to the tree line where it will be stored.

5.10 All slings and rigging must have appropriate rating for the lifting and pulling. Attach steel slings to the corners of the barge.

5.11 Lift the stern of the barge using both the 330 excavator and 990 dozer (one on each corner lifting together and walking the stern towards the tree line). This may require more than one setup.

5.12 Once positioned where it will be stored for the season, Cobalt supervisor will direct the appropriate piece(s) of equipment to required locations to lift the barge and install blocking for leveling and ensuring the barge is not on the ground.

5.13 Under the direction of Cobalt and Site Services supervisors, blocking will be placed under the barge. Use extreme caution when placing blocking and at no time place your hand(s) between the barge and the blocking or the blocking and the ground.

Keep hands on the sides of the blocking and use a bar or piece of 2X4 wood to slide blocking in when possible.

5.13 Clean up site and reshape the shoreline.

Appendix A

- Yukon Occupational Health and Safety Regulations – Part 1 – Section 1.34:

  Each worker shall be provided with and be required to use an appropriate personal flotation device with the required buoyancy where a worker is employed in a situation where there is a risk of drowning.

Acknowledgement and Sign-Off

SIGN-OFF
Has the worker received a copy of this procedure? ❑YES ❑NO Worker: By signing below I am acknowledging that I have read and understand this procedure. Worker: _____Sign: _____Date: _____ Department: _____ Trainer: _____Sign: _____Date: _____ Supervisor: _____Sign: _____Date: _____

Appendix C – Seepage Monitoring Program Laboratory Results

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2100698**	Page	: 1 of 5
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 24-Jun-2021 14:30
PO	: 2857 - 108103-07050	Date Analysis Commenced	: 27-Jun-2021
C-O-C number	: 2021-06-24 B	Issue Date	: 07-Jul-2021 15:52
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Gloria Chan	Lab Analyst	Metals, Burnaby, British Columbia
Jay Jang	Lab Assistant	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
%	percent
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
DLM	*Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	SS110	SS39	SS32	----	----
					Client sampling date / time	21-Jun-2021 14:00	23-Jun-2021 16:40	23-Jun-2021 17:20	----	----
						WR2100698-001	WR2100698-002	WR2100698-003	--------	--------
						Result	Result	Result	----	----
Physical Tests										
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L		41.7	198	96.6	----	----
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L		<1.0	9.4	<1.0	----	----
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	----	----
alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L		<1.0	4.7	<1.0	----	----
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		41.7	207	96.6	----	----
conductivity	----	E100	2.0	µS/cm		259	687	204	----	----
hardness (as CaCO3), dissolved	----	EC100	0.60	mg/L		96.2	331	97.1	----	----
pH	----	E108	0.10	pH units		7.82	8.35	8.10	----	----
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L		166	439	123	----	----
solids, total suspended [TSS]	----	E160-L	1.0	mg/L		25.4	1.2	<1.0	----	----
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		<0.0050	0.0089	<0.0050	----	----
chloride	16887-00-6	E235.Cl-L	0.10	mg/L		2.84	1.50	0.34	----	----
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L		15.9	6.41	0.342	----	----
nitrate + nitrite (as N)	----	EC235.N+N	0.0050	mg/L		16.0	6.41	0.342	----	----
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L		0.0933	0.0045	<0.0010	----	----
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		11.2	138	5.68	----	----
Ion Balance										
anion sum	----	EC101	0.10	meq/L		2.29	7.51	2.08	----	----
cation sum	----	EC101	0.10	meq/L		2.23	7.36	2.14	----	----
ion balance (cation-anion difference)	----	EC101	0.010	%		1.33	1.01	1.42	----	----
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0059	0.0054	0.0083	----	----
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00013	0.00032	0.00012	----	----
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.0495	0.117	0.0189	----	----
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	<0.000020	<0.000020	----	----
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
boron, dissolved	7440-42-8	E421	0.010	mg/L		<0.010	0.016	<0.010	----	----
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		0.0000056	<0.0000200 DLM	<0.0000100 DLM	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	SS110	SS39	SS32	----	----
					Client sampling date / time	21-Jun-2021 14:00	23-Jun-2021 16:40	23-Jun-2021 17:20	----	----
						WR2100698-001	WR2100698-002	WR2100698-003	--------	--------
						Result	Result	Result	----	----
Dissolved Metals										
calcium, dissolved	7440-70-2	E421	0.050	mg/L		29.0	90.9	29.8	----	----
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.00291	0.0360	0.00156	----	----
iron, dissolved	7439-89-6	E421	0.010	mg/L		<0.010	0.034	0.014	----	----
lead, dissolved	7439-92-1	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		<0.0010	0.0020	<0.0010	----	----
magnesium, dissolved	7439-95-4	E421	0.100	mg/L		5.79	25.3	5.52	----	----
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.00221	0.0218	0.00050	----	----
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	----	----
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		0.00102	0.00668	0.00342	----	----
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	----	----
potassium, dissolved	7440-09-7	E421	0.100	mg/L		2.54	3.99	1.36	----	----
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.000155	0.00476	0.000180	----	----
silicon, dissolved	7440-21-3	E421	0.050	mg/L		4.87	4.44	6.42	----	----
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
sodium, dissolved	17341-25-2	E421	0.050	mg/L		5.57	14.7	3.78	----	----
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.177	1.37	0.161	----	----
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		3.92	46.8	2.00	----	----
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		0.00033	0.00030	0.00062	----	----
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.000083	0.00273	0.000408	----	----
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	<0.00050	0.00073	----	----
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		<0.0010	0.0010	<0.0010	----	----
zirconium, dissolved	7440-67-7	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----
dissolved mercury filtration location	----	EP509	-	-		Field	Field	Field	----	----
dissolved metals filtration location	----	EP421	-	-		Field	Field	Field	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2100698**	Page	: 1 of 9
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 24-Jun-2021 14:30
PO	: 2857 - 108103-07050	Issue Date	: 07-Jul-2021 15:52
C-O-C number	: 2021-06-24 B		
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SS32	E298	23-Jun-2021	05-Jul-2021	----	----		06-Jul-2021	28 days	13 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SS39	E298	23-Jun-2021	05-Jul-2021	----	----		06-Jul-2021	28 days	13 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
SS110	E298	21-Jun-2021	05-Jul-2021	----	----		06-Jul-2021	28 days	15 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE										
SS32	E235.Cl-L	23-Jun-2021	----	----	----		27-Jun-2021	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE										
SS39	E235.Cl-L	23-Jun-2021	----	----	----		27-Jun-2021	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE										
SS110	E235.Cl-L	21-Jun-2021	----	----	----		27-Jun-2021	28 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
SS39	E235.NO3-L	23-Jun-2021	----	----	----		27-Jun-2021	3 days	4 days	× EHT

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SS32	E235.NO3-L	23-Jun-2021	----	----	----		27-Jun-2021	3 days	4 days	×
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SS110	E235.NO3-L	21-Jun-2021	----	----	----		27-Jun-2021	3 days	6 days	× EHTL
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SS39	E235.NO2-L	23-Jun-2021	----	----	----		27-Jun-2021	3 days	4 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SS32	E235.NO2-L	23-Jun-2021	----	----	----		27-Jun-2021	3 days	4 days	×
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SS110	E235.NO2-L	21-Jun-2021	----	----	----		27-Jun-2021	3 days	6 days	× EHTL
Anions and Nutrients : Sulfate in Water by IC										
HDPE SS32	E235.SO4	23-Jun-2021	----	----	----		27-Jun-2021	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE SS39	E235.SO4	23-Jun-2021	----	----	----		27-Jun-2021	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE SS110	E235.SO4	21-Jun-2021	----	----	----		27-Jun-2021	28 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) SS32	E509	23-Jun-2021	28-Jun-2021	----	----		28-Jun-2021	28 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SS39	E509	23-Jun-2021	28-Jun-2021	----	----		28-Jun-2021	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SS110	E509	21-Jun-2021	28-Jun-2021	----	----		28-Jun-2021	28 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
SS32	E421	23-Jun-2021	29-Jun-2021	----	----		30-Jun-2021	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
SS39	E421	23-Jun-2021	29-Jun-2021	----	----		30-Jun-2021	180 days	7 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
SS110	E421	21-Jun-2021	29-Jun-2021	----	----		30-Jun-2021	180 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
SS32	E290	23-Jun-2021	----	----	----		28-Jun-2021	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
SS39	E290	23-Jun-2021	----	----	----		28-Jun-2021	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
SS110	E290	21-Jun-2021	----	----	----		28-Jun-2021	14 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE										
SS32	E100	23-Jun-2021	----	----	----		28-Jun-2021	28 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE SS39	E100	23-Jun-2021	----	----	----		28-Jun-2021	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE SS110	E100	21-Jun-2021	----	----	----		28-Jun-2021	28 days	7 days	✓
Physical Tests : pH by Meter										
HDPE SS32	E108	23-Jun-2021	----	----	----		28-Jun-2021	0.25 hrs	109 hrs	× EHTL
Physical Tests : pH by Meter										
HDPE SS39	E108	23-Jun-2021	----	----	----		28-Jun-2021	0.25 hrs	109 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE SS110	E108	21-Jun-2021	----	----	----		28-Jun-2021	0.25 hrs	160 hrs	× EHTR-FM
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SS32	E160-L	23-Jun-2021	----	----	----		28-Jun-2021	7 days	5 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SS39	E160-L	23-Jun-2021	----	----	----		28-Jun-2021	7 days	5 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SS110	E160-L	21-Jun-2021	----	----	----		28-Jun-2021	7 days	7 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	231350	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	236578	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	231358	1	9	11.1	5.0	✓
Conductivity in Water	E100	231349	1	17	5.8	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	231998	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	232709	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	231354	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	231355	1	18	5.5	5.0	✓
pH by Meter	E108	231348	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	231352	1	18	5.5	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	231350	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	236578	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	231358	1	9	11.1	5.0	✓
Conductivity in Water	E100	231349	1	17	5.8	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	231998	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	232709	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	231354	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	231355	1	18	5.5	5.0	✓
pH by Meter	E108	231348	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	231352	1	18	5.5	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	231535	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	231350	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	236578	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	231358	1	9	11.1	5.0	✓
Conductivity in Water	E100	231349	1	17	5.8	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	231998	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	232709	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	231354	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	231355	1	18	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	231352	1	18	5.5	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	231535	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	236578	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	231358	1	9	11.1	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	231998	1	20	5.0	5.0	✓

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Dissolved Metals in Water by CRC ICPMS	E421	232709	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	231354	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	231355	1	18	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	231352	1	18	5.5	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Vancouver - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Vancouver - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry (Low Level)	E160-L Vancouver - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
Chloride in Water by IC (Low Level)	E235.Cl-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 Vancouver - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Vancouver - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Vancouver - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).
TDS in Water (Calculation)	EC103 Vancouver - Environmental	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N Vancouver - Environmental	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Vancouver - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **WR2100698**	Page	: 1 of 10
Client	: Minto Explorations Ltd.	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 24-Jun-2021 14:30
PO	: 2857 - 108103-07050	Date Analysis Commenced	: 27-Jun-2021
C-O-C number	: 2021-06-24 B	Issue Date	: 07-Jul-2021 15:52
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Gloria Chan	Lab Analyst	Metals, Burnaby, British Columbia
Jay Jang	Lab Assistant	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 231348)											
KS2102019-001	Anonymous	pH	----	E108	0.10	pH units	8.16	8.18	0.245%	4%	----
Physical Tests (QC Lot: 231349)											
KS2102019-001	Anonymous	conductivity	----	E100	2.0	µS/cm	1300	1300	0.230%	10%	----
Physical Tests (QC Lot: 231350)											
KS2102019-001	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	626	625	0.192%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	626	625	0.192%	20%	----
Anions and Nutrients (QC Lot: 231352)											
KS2102030-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	187	188	0.766%	20%	----
Anions and Nutrients (QC Lot: 231354)											
KS2102030-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	<0.0250	<0.0250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 231355)											
KS2102030-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 231358)											
WR2100698-001	SS110	chloride	16887-00-6	E235.Cl-L	0.10	mg/L	2.84	2.84	0.0939%	20%	----
Anions and Nutrients (QC Lot: 236578)											
WR2100694-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0200	0.0198	0.0003	Diff <2x LOR	----
Dissolved Metals (QC Lot: 231998)											
VA21B3026-013	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 232709)											
FJ2100472-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0030	mg/L	0.0123	0.0136	0.0014	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0280	0.0284	1.51%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000065	0.0000095	0.0000030	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	22.0	22.0	0.297%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 232709) - continued											
FJ2100472-001	Anonymous	chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00022	<0.00020	0.00002	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	0.016	0.016	0.00004	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0011	0.0011	0.00002	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E421	0.100	mg/L	5.88	5.96	1.24%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00184	0.00169	8.36%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000410	0.000399	0.000011	Diff <2x LOR	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.223	0.219	0.005	Diff <2x LOR	----
		selenium, dissolved	7782-49-2	E421	0.050	mg/L	0.141 µg/L	0.000134	0.000007	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	0.821	0.817	0.540%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	17341-25-2	E421	0.050	mg/L	0.409	0.414	0.005	Diff <2x LOR	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0486	0.0457	6.05%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	1.62	1.58	0.04	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.0100	mg/L	<0.0100	<0.0100	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000120	0.000114	4.91%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 231349)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 231350)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 231535)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Anions and Nutrients (QCLot: 231352)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 231354)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 231355)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 231358)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 236578)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Dissolved Metals (QCLot: 231998)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 232709)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 232709) - continued						
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	17341-25-2	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 231348)									
pH	----	E108	----	pH units	7 pH units	99.8	98.0	102	----
Physical Tests (QCLot: 231349)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	100	90.0	110	----
Physical Tests (QCLot: 231350)									
alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	98.0	75.0	125	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	97.1	85.0	115	----
Physical Tests (QCLot: 231535)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	97.5	85.0	115	----
Anions and Nutrients (QCLot: 231352)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 231354)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 231355)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 231358)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 236578)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	95.9	85.0	115	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	100.0	80.0	120	----
Dissolved Metals (QCLot: 232709)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	95.4	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	99.6	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	97.5	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	89.8	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	101	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	94.2	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	95.2	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	90.3	80.0	120	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	97.5	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	95.4	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	95.8	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 232709) - continued									
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	98.6	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	101	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	90.0	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	95.9	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	93.2	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	97.8	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	94.8	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	104	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	99.2	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	98.2	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	98.4	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	96.8	80.0	120	----
sodium, dissolved	17341-25-2	E421	0.05	mg/L	50 mg/L	95.8	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	95.9	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	96.7	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	102	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	97.0	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	93.5	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	102	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	96.5	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	94.8	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	95.3	80.0	120	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 231352)										
KS2102030-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	496 mg/L	500 mg/L	99.2	75.0	125	----
Anions and Nutrients (QCLot: 231354)										
KS2102030-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	12.5 mg/L	12.5 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 231355)										
KS2102030-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	2.50 mg/L	2.5 mg/L	99.9	75.0	125	----
Anions and Nutrients (QCLot: 231358)										
WR2100698-002	SS39	chloride	16887-00-6	E235.Cl-L	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 236578)										
WR2100698-001	SS110	ammonia, total (as N)	7664-41-7	E298	0.104 mg/L	0.1 mg/L	104	75.0	125	----
Dissolved Metals (QCLot: 231998)										
VA21B3026-014	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000997 mg/L	0.0001 mg/L	99.7	70.0	130	----
Dissolved Metals (QCLot: 232709)										
FJ2100472-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0212 mg/L	0.02 mg/L	106	70.0	130	----
		barium, dissolved	7440-39-3	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0376 mg/L	0.04 mg/L	94.0	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00933 mg/L	0.01 mg/L	93.3	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.095 mg/L	0.1 mg/L	94.9	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00409 mg/L	0.004 mg/L	102	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		chromium, dissolved	7440-47-3	E421	0.0412 mg/L	0.04 mg/L	103	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0200 mg/L	0.02 mg/L	99.8	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		iron, dissolved	7439-89-6	E421	1.98 mg/L	2 mg/L	99.2	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0938 mg/L	0.1 mg/L	93.8	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.0199 mg/L	0.02 mg/L	99.4	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0197 mg/L	0.02 mg/L	98.4	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 232709) - continued										
FJ2100472-001	Anonymous	nickel, dissolved	7440-02-0	E421	0.0404 mg/L	0.04 mg/L	101	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	11.2 mg/L	10 mg/L	112	70.0	130	----
		potassium, dissolved	7440-09-7	E421	4.28 mg/L	4 mg/L	107	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0433 mg/L	0.04 mg/L	108	70.0	130	----
		silicon, dissolved	7440-21-3	E421	9.44 mg/L	10 mg/L	94.4	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00409 mg/L	0.004 mg/L	102	70.0	130	----
		sodium, dissolved	17341-25-2	E421	2.16 mg/L	2 mg/L	108	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	20.9 mg/L	20 mg/L	104	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00386 mg/L	0.004 mg/L	96.6	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0195 mg/L	0.02 mg/L	97.5	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0391 mg/L	0.04 mg/L	97.7	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.00405 mg/L	0.004 mg/L	101	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.104 mg/L	0.1 mg/L	104	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.416 mg/L	0.4 mg/L	104	70.0	130	----
		zirconium, dissolved	7440-67-7	E421	0.0389 mg/L	0.04 mg/L	97.2	70.0	130	----

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
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Affix ALS barcode label here (lab use only)

COC Number: 2021-06-24 B

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Minto Explorations Ltd.
Contact:	Minto Environment - Coordinator
Phone:	1-604-759-4659
	Company address below will appear on the final report
Street:	61 Wasson Place
City/Province:	Whitehorse
Postal Code:	Y1A 0H7
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Minto Explorations Ltd.
Contact:	Katie Androsoff

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Email 1 or Fax mintoenvironment@mintomine.com
Email 2
Email 3

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax ap@mintomine.com
Email 2

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:

Project Information

ALS Account # / Quote #:
Job #:
PO / AFE: PO2857 (Seepage) - 10-8103-07050
LSD:

ALS Lab Work Order # (lab use only): WR2100698

ALS Contact: Sampler:

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4] ☐ | 3 day [P3] ☐ | 2 day [P2] ☐

EMERGENCY: 1 Business day [E1] ☐ | Same Day, Weekend or Statutory holiday [E0] ☐

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total Metals(TM) P	Disolved Metals (DM) F/P	Total Mercury, Hardness P	Dissolved Mercury F/P	Ammonia (Total Nutrients) P	Dissolved Organic Carbon (DOC) F/P	pH, Cond., TSS, TDS, Alkalinity, Anions	Number of Containers
	SS110	21-Jun-21	14:00	Water		R		R	R		R	4
	SS39	23-Jun-21	16:40	Water		R		R	R		R	4
	SS32	23-Jun-21	17:20	Water		R		R	R		R	4

Environmental Division
Whitehorse
Work Order Reference
WR2100698

Telephone : +1 867 668 6689

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO
Are samples for human drinking water use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Reanna Moore	Date: 2021-06-24	Time:	Received by:	Date: 24-Jun-21	Time: 14:30	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2100743**	Page	: 1 of 6
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 02-Jul-2021 11:58
PO	: PO2857(Seepage)- 10-8103-07050	Date Analysis Commenced	: 05-Jul-2021
C-O-C number	: 2021-06-30 A	Issue Date	: 09-Jul-2021 16:38
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 7		
No. of samples analysed	: 7		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Annabelle Prasad	Analyst	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Sristika Chand	Lab Analyst	Metals, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
µS/cm	Microsiemens per centimetre
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
DLDS	*Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.*
DLM	*Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	SS111	SS31	SS56	SS29	SS49
					Client sampling date / time	24-Jun-2021 15:20	24-Jun-2021 15:35	24-Jun-2021 14:45	24-Jun-2021 15:00	24-Jun-2021 09:10
						WR2100743-001	WR2100743-002	WR2100743-003	WR2100743-004	WR2100743-005
						Result	Result	Result	Result	Result
Physical Tests										
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		330	293	272	305	159
conductivity	----	E100	2.0	µS/cm		1130	1100	1150	1160	459
hardness (as CaCO3), dissolved	----	EC100	0.60	mg/L		640	620	644	646	201
pH	----	E108	0.10	pH units		7.94	7.82	7.89	8.03	8.00
solids, total dissolved [TDS]	----	E162	10	mg/L		815	798	846	814	256
solids, total suspended [TSS]	----	E160-H	3.0	mg/L		5.2	20.6	7.2	<3.0	3.2
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.0099	<0.0050	0.0134	0.0198	0.0178
bromide	24959-67-9	E235.Br-L	0.050	mg/L		<0.250 DLDS	<0.250 DLDS	<0.250 DLDS	<0.250 DLDS	<0.050
chloride	16887-00-6	E235.Cl	0.50	mg/L		2.78	<2.50 DLDS	<2.50 DLDS	3.01	1.22
fluoride	16984-48-8	E235.F	0.020	mg/L		0.265	0.194	0.403	0.511	1.34
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L		20.6	24.8	19.0	15.2	0.136
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L		<0.0050 DLDS	<0.0050 DLDS	<0.0050 DLDS	<0.0050 DLDS	0.0025
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		243	236	309	304	78.7
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0074	0.0056	0.0040	0.0372	0.0075
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00021	0.00019	0.00018	0.00024	0.00051
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.0689	0.0760	0.0530	0.0740	0.103
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, dissolved	7440-42-8	E421	0.010	mg/L		0.023	0.018	0.040	0.049	0.131
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		0.0000702	0.0000766	<0.0000100 DLM	0.0000445	<0.0000250 DLM
calcium, dissolved	7440-70-2	E421	0.050	mg/L		186	184	182	182	55.1
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	0.00010	<0.00010	<0.00010	<0.00010
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.0857	0.0720	0.00301	0.0402	0.0128
iron, dissolved	7439-89-6	E421	0.010	mg/L		0.072	0.039	<0.010	0.111	0.043
lead, dissolved	7439-92-1	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		0.0026	0.0022	0.0030	0.0036	0.0046

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	SS111	SS31	SS56	SS29	SS49
					Client sampling date / time	24-Jun-2021 15:20	24-Jun-2021 15:35	24-Jun-2021 14:45	24-Jun-2021 15:00	24-Jun-2021 09:10
						WR2100743-001	WR2100743-002	WR2100743-003	WR2100743-004	WR2100743-005
						Result	Result	Result	Result	Result
Dissolved Metals										
magnesium, dissolved	7439-95-4	E421	0.100	mg/L		42.6	39.1	46.1	46.6	15.4
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.126	0.145	0.00421	0.0108	0.0464
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		0.00618	0.00390	0.00914	0.0138	0.0298
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, dissolved	7440-09-7	E421	0.100	mg/L		5.68	5.41	5.25	6.15	7.23
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.0162	0.0183	0.00964	0.0141	0.00287
silicon, dissolved	7440-21-3	E421	0.050	mg/L		7.63	7.26	6.96	6.33	4.14
silver, dissolved	7440-22-4	E421	0.000010	mg/L		0.000018	<0.000010	<0.000010	<0.000010	<0.000010
sodium, dissolved	17341-25-2	E421	0.050	mg/L		15.8	14.4	25.7	31.9	18.6
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		1.54	1.07	2.40	2.64	1.38
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		89.1	88.9	112	110	27.8
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		0.00066	0.00038	<0.00030	0.00761	0.00040
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.00538	0.00564	0.00409	0.00456	0.00284
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	0.00065	0.00055
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		0.0021	0.0033	<0.0010	0.0025	0.0013
zirconium, dissolved	7440-67-7	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
dissolved mercury filtration location	----	EP509	-	-		Field	Field	Field	Field	Field
dissolved metals filtration location	----	EP421	-	-		Field	Field	Field	Field	Field

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	SS112	DUP	----	----	----
					Client sampling date / time	24-Jun-2021 14:15	24-Jun-2021	----	----	----
						WR2100743-006	WR2100743-007	--------	--------	--------
						Result	Result	----	----	----
Physical Tests										
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		32.8	32.8	----	----	----
conductivity	----	E100	2.0	µS/cm		78.5	77.9	----	----	----
hardness (as CaCO3), dissolved	----	EC100	0.60	mg/L		32.0	32.8	----	----	----
pH	----	E108	0.10	pH units		7.43	7.50	----	----	----
solids, total dissolved [TDS]	----	E162	10	mg/L		76	69	----	----	----
solids, total suspended [TSS]	----	E160-H	3.0	mg/L		<3.0	<3.0	----	----	----
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		<0.0050	<0.0050	----	----	----
bromide	24959-67-9	E235.Br-L	0.050	mg/L		<0.050	<0.050	----	----	----
chloride	16887-00-6	E235.Cl	0.50	mg/L		<0.50	<0.50	----	----	----
fluoride	16984-48-8	E235.F	0.020	mg/L		0.111	0.110	----	----	----
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L		0.0248	0.0254	----	----	----
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L		<0.0010	<0.0010	----	----	----
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		4.82	4.82	----	----	----
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0401	0.0354	----	----	----
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	<0.00010	----	----	----
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00041	0.00041	----	----	----
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.0419	0.0434	----	----	----
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	<0.000020	----	----	----
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	----	----	----
boron, dissolved	7440-42-8	E421	0.010	mg/L		<0.010	<0.010	----	----	----
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		0.0000214	0.0000245	----	----	----
calcium, dissolved	7440-70-2	E421	0.050	mg/L		9.66	9.87	----	----	----
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	<0.00050	----	----	----
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	<0.00010	----	----	----
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.0699	0.0714	----	----	----
iron, dissolved	7439-89-6	E421	0.010	mg/L		0.027	0.033	----	----	----
lead, dissolved	7439-92-1	E421	0.000050	mg/L		<0.000050	<0.000050	----	----	----
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		<0.0010	<0.0010	----	----	----
magnesium, dissolved	7439-95-4	E421	0.100	mg/L		1.91	1.97	----	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	SS112	DUP	----	----	----
					Client sampling date / time	24-Jun-2021 14:15	24-Jun-2021	----	----	----
						WR2100743-006	WR2100743-007	--------	--------	--------
						Result	Result	----	----	----
Dissolved Metals										
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.00253	0.00289	----	----	----
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L		<0.0000050	<0.0000050	----	----	----
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		0.000856	0.000834	----	----	----
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		<0.00050	<0.00050	----	----	----
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	----	----	----
potassium, dissolved	7440-09-7	E421	0.100	mg/L		1.59	1.68	----	----	----
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.000325	0.000344	----	----	----
silicon, dissolved	7440-21-3	E421	0.050	mg/L		8.39	8.43	----	----	----
silver, dissolved	7440-22-4	E421	0.000010	mg/L		0.000021	0.000017	----	----	----
sodium, dissolved	17341-25-2	E421	0.050	mg/L		3.50	3.32	----	----	----
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.0620	0.0623	----	----	----
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		1.68	1.53	----	----	----
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	----	----	----
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	----	----	----
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		0.00113	0.00148	----	----	----
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.000040	0.000038	----	----	----
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		0.00062	0.00069	----	----	----
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		0.0057	0.0058	----	----	----
zirconium, dissolved	7440-67-7	E421	0.00020	mg/L		0.00023	<0.00020	----	----	----
dissolved mercury filtration location	----	EP509	-	-		Field	Field	----	----	----
dissolved metals filtration location	----	EP421	-	-		Field	Field	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2100743**	Page	: 1 of 17
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 02-Jul-2021 11:58
PO	: PO2857(Seepage)- 10-8103-07050	Issue Date	: 09-Jul-2021 16:34
C-O-C number	: 2021-06-30 A		
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 7		
No. of samples analysed	: 7		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SS111	E298	24-Jun-2021	08-Jul-2021	----	----		09-Jul-2021	28 days	15 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SS112	E298	24-Jun-2021	08-Jul-2021	----	----		09-Jul-2021	28 days	15 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SS29	E298	24-Jun-2021	08-Jul-2021	----	----		09-Jul-2021	28 days	15 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SS31	E298	24-Jun-2021	08-Jul-2021	----	----		09-Jul-2021	28 days	15 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SS49	E298	24-Jun-2021	08-Jul-2021	----	----		09-Jul-2021	28 days	15 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SS56	E298	24-Jun-2021	08-Jul-2021	----	----		09-Jul-2021	28 days	15 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) DUP	E298	24-Jun-2021	08-Jul-2021	----	----		09-Jul-2021	28 days	16 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE DUP	E235.Br-L	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE SS111	E235.Br-L	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE SS112	E235.Br-L	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE SS29	E235.Br-L	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE SS31	E235.Br-L	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE SS49	E235.Br-L	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE SS56	E235.Br-L	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE DUP	E235.Cl	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE SS111	E235.Cl	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE SS112	E235.Cl	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE SS29	E235.Cl	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE SS31	E235.Cl	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE SS49	E235.Cl	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE SS56	E235.Cl	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE DUP	E235.F	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE SS111	E235.F	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE SS112	E235.F	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE SS29	E235.F	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE SS31	E235.F	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE SS49	E235.F	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE SS56	E235.F	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE DUP	E235.NO3-L	24-Jun-2021	----	----	----		06-Jul-2021	3 days	12 days	× EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SS111	E235.NO3-L	24-Jun-2021	----	----	----		06-Jul-2021	3 days	12 days	× EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SS112	E235.NO3-L	24-Jun-2021	----	----	----		06-Jul-2021	3 days	12 days	× EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SS29	E235.NO3-L	24-Jun-2021	----	----	----		06-Jul-2021	3 days	12 days	× EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SS31	E235.NO3-L	24-Jun-2021	----	----	----		06-Jul-2021	3 days	12 days	× EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SS49	E235.NO3-L	24-Jun-2021	----	----	----		06-Jul-2021	3 days	12 days	× EHTR

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SS56	E235.NO3-L	24-Jun-2021	----	----	----		06-Jul-2021	3 days	12 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE DUP	E235.NO2-L	24-Jun-2021	----	----	----		06-Jul-2021	3 days	12 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SS111	E235.NO2-L	24-Jun-2021	----	----	----		06-Jul-2021	3 days	12 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SS112	E235.NO2-L	24-Jun-2021	----	----	----		06-Jul-2021	3 days	12 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SS29	E235.NO2-L	24-Jun-2021	----	----	----		06-Jul-2021	3 days	12 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SS31	E235.NO2-L	24-Jun-2021	----	----	----		06-Jul-2021	3 days	12 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SS49	E235.NO2-L	24-Jun-2021	----	----	----		06-Jul-2021	3 days	12 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SS56	E235.NO2-L	24-Jun-2021	----	----	----		06-Jul-2021	3 days	12 days	× EHTR
Anions and Nutrients : Sulfate in Water by IC										
HDPE DUP	E235.SO4	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE SS111	E235.SO4	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE SS112	E235.SO4	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE SS29	E235.SO4	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE SS31	E235.SO4	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE SS49	E235.SO4	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE SS56	E235.SO4	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) SS111	E509	24-Jun-2021	06-Jul-2021	----	----		06-Jul-2021	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) SS112	E509	24-Jun-2021	06-Jul-2021	----	----		06-Jul-2021	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) SS29	E509	24-Jun-2021	06-Jul-2021	----	----		06-Jul-2021	28 days	12 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) SS31	E509	24-Jun-2021	06-Jul-2021	----	----		06-Jul-2021	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) SS49	E509	24-Jun-2021	06-Jul-2021	----	----		06-Jul-2021	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) SS56	E509	24-Jun-2021	06-Jul-2021	----	----		06-Jul-2021	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) DUP	E509	24-Jun-2021	06-Jul-2021	----	----		06-Jul-2021	28 days	13 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SS111	E421	24-Jun-2021	05-Jul-2021	----	----		06-Jul-2021	180 days	12 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SS112	E421	24-Jun-2021	05-Jul-2021	----	----		06-Jul-2021	180 days	12 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SS29	E421	24-Jun-2021	05-Jul-2021	----	----		06-Jul-2021	180 days	12 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SS31	E421	24-Jun-2021	05-Jul-2021	----	----		06-Jul-2021	180 days	12 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SS56	E421	24-Jun-2021	05-Jul-2021	----	----		06-Jul-2021	180 days	12 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) DUP	E421	24-Jun-2021	05-Jul-2021	----	----		06-Jul-2021	180 days	13 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SS49	E421	24-Jun-2021	05-Jul-2021	----	----		06-Jul-2021	180 days	13 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE DUP	E290	24-Jun-2021	----	----	----		06-Jul-2021	14 days	12 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SS111	E290	24-Jun-2021	----	----	----		06-Jul-2021	14 days	12 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SS112	E290	24-Jun-2021	----	----	----		06-Jul-2021	14 days	12 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SS29	E290	24-Jun-2021	----	----	----		06-Jul-2021	14 days	12 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SS31	E290	24-Jun-2021	----	----	----		06-Jul-2021	14 days	12 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SS49	E290	24-Jun-2021	----	----	----		06-Jul-2021	14 days	12 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SS56	E290	24-Jun-2021	----	----	----		06-Jul-2021	14 days	12 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE DUP	E100	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Physical Tests : Conductivity in Water										
HDPE SS111	E100	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Physical Tests : Conductivity in Water										
HDPE SS112	E100	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Physical Tests : Conductivity in Water										
HDPE SS29	E100	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Physical Tests : Conductivity in Water										
HDPE SS31	E100	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Physical Tests : Conductivity in Water										
HDPE SS49	E100	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Physical Tests : Conductivity in Water										
HDPE SS56	E100	24-Jun-2021	----	----	----		06-Jul-2021	28 days	12 days	✓
Physical Tests : pH by Meter										
HDPE SS111	E108	24-Jun-2021	----	----	----		06-Jul-2021	0.25 hrs	277 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE SS31	E108	24-Jun-2021	----	----	----		06-Jul-2021	0.25 hrs	277 hrs	× EHTR-FM

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE SS112	E108	24-Jun-2021	----	----	----		06-Jul-2021	0.25 hrs	278 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE SS29	E108	24-Jun-2021	----	----	----		06-Jul-2021	0.25 hrs	278 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE SS56	E108	24-Jun-2021	----	----	----		06-Jul-2021	0.25 hrs	278 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE SS49	E108	24-Jun-2021	----	----	----		06-Jul-2021	0.25 hrs	284 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE DUP	E108	24-Jun-2021	----	----	----		06-Jul-2021	0.25 hrs	293 hrs	× EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE SS111	E162	24-Jun-2021	----	----	----		06-Jul-2021	7 days	11 days	× EHTR
Physical Tests : TDS by Gravimetry										
HDPE SS112	E162	24-Jun-2021	----	----	----		06-Jul-2021	7 days	11 days	× EHTR
Physical Tests : TDS by Gravimetry										
HDPE SS29	E162	24-Jun-2021	----	----	----		06-Jul-2021	7 days	11 days	× EHTR
Physical Tests : TDS by Gravimetry										
HDPE SS31	E162	24-Jun-2021	----	----	----		06-Jul-2021	7 days	11 days	× EHTR

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE SS56	E162	24-Jun-2021	----	----	----		06-Jul-2021	7 days	11 days	× EHTR
Physical Tests : TDS by Gravimetry										
HDPE DUP	E162	24-Jun-2021	----	----	----		06-Jul-2021	7 days	12 days	× EHTR
Physical Tests : TDS by Gravimetry										
HDPE SS49	E162	24-Jun-2021	----	----	----		06-Jul-2021	7 days	12 days	× EHTR
Physical Tests : TSS by Gravimetry										
HDPE SS111	E160-H	24-Jun-2021	----	----	----		06-Jul-2021	7 days	11 days	× EHTR
Physical Tests : TSS by Gravimetry										
HDPE SS112	E160-H	24-Jun-2021	----	----	----		06-Jul-2021	7 days	11 days	× EHTR
Physical Tests : TSS by Gravimetry										
HDPE SS29	E160-H	24-Jun-2021	----	----	----		06-Jul-2021	7 days	11 days	× EHTR
Physical Tests : TSS by Gravimetry										
HDPE SS31	E160-H	24-Jun-2021	----	----	----		06-Jul-2021	7 days	11 days	× EHTR
Physical Tests : TSS by Gravimetry										
HDPE SS56	E160-H	24-Jun-2021	----	----	----		06-Jul-2021	7 days	11 days	× EHTR
Physical Tests : TSS by Gravimetry										
HDPE DUP	E160-H	24-Jun-2021	----	----	----		06-Jul-2021	7 days	12 days	× EHTR

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE										
SS49	E160-H	24-Jun-2021	----	----	----		06-Jul-2021	7 days	12 days	× EHTR

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	236603	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	239197	1	18	5.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	236607	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	236606	1	20	5.0	5.0	✓
Conductivity in Water	E100	236602	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	237367	2	40	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	236574	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	236605	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	236608	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	236609	1	20	5.0	5.0	✓
pH by Meter	E108	236601	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	236610	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	236624	2	24	8.3	5.0	✓
TSS by Gravimetry	E160-H	236626	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	236603	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	239197	1	18	5.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	236607	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	236606	1	20	5.0	5.0	✓
Conductivity in Water	E100	236602	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	237367	2	40	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	236574	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	236605	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	236608	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	236609	1	20	5.0	5.0	✓
pH by Meter	E108	236601	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	236610	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	236624	2	24	8.3	5.0	✓
TSS by Gravimetry	E160-H	236626	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	236603	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	239197	1	18	5.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	236607	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	236606	1	20	5.0	5.0	✓
Conductivity in Water	E100	236602	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	237367	2	40	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	236574	1	20	5.0	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Method Blanks (MB) - Continued							
Fluoride in Water by IC	E235.F	236605	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	236608	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	236609	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	236610	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	236624	2	24	8.3	5.0	✓
TSS by Gravimetry	E160-H	236626	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	239197	1	18	5.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	236607	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	236606	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	237367	2	40	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	236574	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	236605	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	236608	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	236609	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	236610	1	20	5.0	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Vancouver - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Vancouver - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160-H Vancouver - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Vancouver - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290 Vancouver - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Vancouver - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	“Hardness (as CaCO3), dissolved” is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. “Total Hardness” refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Vancouver - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **WR2100743**	Page	: 1 of 10
Client	: Minto Explorations Ltd.	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 02-Jul-2021 11:58
PO	: PO2857(Seepage)- 10-8103-07050	Date Analysis Commenced	: 05-Jul-2021
C-O-C number	: 2021-06-30 A	Issue Date	: 09-Jul-2021 16:28
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 7		
No. of samples analysed	: 7		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Annabelle Prasad	Analyst	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Sristika Chand	Lab Analyst	Metals, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 236601)											
WR2100736-001	Anonymous	pH	----	E108	0.10	pH units	7.92	7.91	0.114%	4%	----
Physical Tests (QC Lot: 236602)											
WR2100736-001	Anonymous	conductivity	----	E100	2.0	µS/cm	2070	2070	0.00%	10%	----
Physical Tests (QC Lot: 236603)											
WR2100736-001	Anonymous	alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	239	238	0.252%	20%	----
Physical Tests (QC Lot: 236624)											
KS2102063-001	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	1480	1420	4.55%	20%	----
Physical Tests (QC Lot: 236625)											
WR2100743-004	SS29	solids, total dissolved [TDS]	----	E162	20	mg/L	814	880	7.74%	20%	----
Physical Tests (QC Lot: 236626)											
FJ2100488-005	Anonymous	solids, total suspended [TSS]	----	E160-H	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 236605)											
WR2100736-001	Anonymous	fluoride	16984-48-8	E235.F	0.200	mg/L	0.205	<0.200	0.005	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 236606)											
WR2100736-001	Anonymous	chloride	16887-00-6	E235.Cl	5.00	mg/L	<5.00	<5.00	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 236607)											
WR2100736-001	Anonymous	bromide	24959-67-9	E235.Br-L	0.500	mg/L	<0.500	<0.500	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 236608)											
WR2100736-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0500	mg/L	0.130	0.118	0.0119	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 236609)											
WR2100736-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0100	mg/L	0.0516	0.0524	0.0008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 236610)											
WR2100736-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	3.00	mg/L	1140	1130	0.284%	20%	----
Anions and Nutrients (QC Lot: 239197)											
VA21B3451-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0500	mg/L	4.00	3.92	2.17%	20%	----
Dissolved Metals (QC Lot: 236574)											
VA21B3540-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0020	mg/L	23.0	21.1	8.34%	20%	----
		antimony, dissolved	7440-36-0	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00020	mg/L	0.00271	0.00262	3.20%	20%	----
		barium, dissolved	7440-39-3	E421	0.00020	mg/L	0.0149	0.0142	4.45%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000040	mg/L	0.00374	0.00365	2.53%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 236574) - continued											
VA21B3540-001	Anonymous	bismuth, dissolved	7440-69-9	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000100	mg/L	0.124	0.118	5.71%	20%	----
		calcium, dissolved	7440-70-2	E421	0.100	mg/L	89.3	89.6	0.305%	20%	----
		chromium, dissolved	7440-47-3	E421	0.00100	mg/L	0.00291	0.00257	0.00034	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E421	0.00020	mg/L	0.137	0.128	7.07%	20%	----
		copper, dissolved	7440-50-8	E421	0.00040	mg/L	0.228	0.214	6.41%	20%	----
		iron, dissolved	7439-89-6	E421	0.020	mg/L	22.1	20.6	6.94%	20%	----
		lead, dissolved	7439-92-1	E421	0.000100	mg/L	0.000582	0.000584	0.000001	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0020	mg/L	0.0761	0.0739	2.96%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0100	mg/L	31.1	28.5	8.56%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00020	mg/L	6.70	6.21	7.56%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		nickel, dissolved	7440-02-0	E421	0.00100	mg/L	0.651	0.610	6.52%	20%	----
		phosphorus, dissolved	7723-14-0	E421	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.100	mg/L	3.68	3.44	6.61%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000100	mg/L	0.00168	0.00175	4.29%	20%	----
		silicon, dissolved	7440-21-3	E421	0.100	mg/L	29.0	28.7	0.762%	20%	----
		silver, dissolved	7440-22-4	E421	0.000020	mg/L	0.000086	0.000081	0.000005	Diff <2x LOR	----
		sodium, dissolved	17341-25-2	E421	0.100	mg/L	67.0	62.6	6.88%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00040	mg/L	0.355	0.357	0.678%	20%	----
		sulfur, dissolved	7704-34-9	E421	1.00	mg/L	212	212	0.209%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000020	mg/L	0.00364	0.00360	1.14%	20%	----
		tin, dissolved	7440-31-5	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000020	mg/L	0.00442	0.00432	2.23%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0020	mg/L	9.48	8.72	8.35%	20%	----
		zirconium, dissolved	7440-67-7	E421	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 237367)											
VA21B3559-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 237368)											
WR2100743-002	SS31	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 236602)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 236603)						
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 236624)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 236625)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 236626)						
solids, total suspended [TSS]	----	E160-H	3	mg/L	<3.0	----
Anions and Nutrients (QCLot: 236605)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 236606)						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 236607)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 236608)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 236609)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 236610)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 239197)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Dissolved Metals (QCLot: 236574)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 236574) - continued						
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	17341-25-2	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 237367)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 237368)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 236601)									
pH	----	E108	----	pH units	7 pH units	99.0	98.0	102	----
Physical Tests (QCLot: 236602)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	101	90.0	110	----
Physical Tests (QCLot: 236603)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	101	85.0	115	----
Physical Tests (QCLot: 236624)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	106	85.0	115	----
Physical Tests (QCLot: 236625)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	100	85.0	115	----
Physical Tests (QCLot: 236626)									
solids, total suspended [TSS]	----	E160-H	3	mg/L	150 mg/L	94.3	85.0	115	----
Anions and Nutrients (QCLot: 236605)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.5	90.0	110	----
Anions and Nutrients (QCLot: 236606)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 236607)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 236608)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 236609)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 236610)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 239197)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	95.3	85.0	115	----
Dissolved Metals (QCLot: 236574)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	104	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	99.3	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	105	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	102	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	104	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 236574) - continued									
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	102	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	108	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	106	80.0	120	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	106	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	107	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	104	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	105	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	102	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	103	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	104	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	106	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	101	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	104	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	104	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	103	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	104	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	104	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	97.1	80.0	120	----
sodium, dissolved	17341-25-2	E421	0.05	mg/L	50 mg/L	109	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	99.2	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	101	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	103	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	97.8	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	101	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	103	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	107	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	104	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	98.5	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	97.7	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	85.2	80.0	120	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 236605)										
WR2100736-002	Anonymous	fluoride	16984-48-8	E235.F	4.73 mg/L	5 mg/L	94.6	75.0	125	----
Anions and Nutrients (QCLot: 236606)										
WR2100736-002	Anonymous	chloride	16887-00-6	E235.Cl	488 mg/L	500 mg/L	97.6	75.0	125	----
Anions and Nutrients (QCLot: 236607)										
WR2100736-002	Anonymous	bromide	24959-67-9	E235.Br-L	2.41 mg/L	2.5 mg/L	96.6	75.0	125	----
Anions and Nutrients (QCLot: 236608)										
WR2100736-002	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	12.2 mg/L	12.5 mg/L	97.6	75.0	125	----
Anions and Nutrients (QCLot: 236609)										
WR2100736-002	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	2.39 mg/L	2.5 mg/L	95.6	75.0	125	----
Anions and Nutrients (QCLot: 236610)										
WR2100736-002	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	500 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 239197)										
VA21B3451-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	MS-B
Dissolved Metals (QCLot: 236574)										
VA21B3540-001	Anonymous	aluminum, dissolved	7429-90-5	E421	ND mg/L	0.4 mg/L	ND	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0363 mg/L	0.04 mg/L	90.7	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0373 mg/L	0.04 mg/L	93.3	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.0388 mg/L	0.04 mg/L	96.9	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0735 mg/L	0.08 mg/L	91.8	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0170 mg/L	0.02 mg/L	85.2	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.177 mg/L	0.2 mg/L	88.4	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	ND mg/L	0.008 mg/L	ND	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	8 mg/L	ND	70.0	130	----
		chromium, dissolved	7440-47-3	E421	0.0728 mg/L	0.08 mg/L	91.0	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	ND mg/L	0.04 mg/L	ND	70.0	130	----
		copper, dissolved	7440-50-8	E421	ND mg/L	0.04 mg/L	ND	70.0	130	----
		iron, dissolved	7439-89-6	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0359 mg/L	0.04 mg/L	89.7	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.178 mg/L	0.2 mg/L	88.8	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 236574) - continued										
VA21B3540-001	Anonymous	magnesium, dissolved	7439-95-4	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	ND mg/L	0.04 mg/L	ND	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0367 mg/L	0.04 mg/L	91.7	70.0	130	----
		nickel, dissolved	7440-02-0	E421	ND mg/L	0.08 mg/L	ND	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	19.0 mg/L	20 mg/L	95.1	70.0	130	----
		potassium, dissolved	7440-09-7	E421	7.29 mg/L	8 mg/L	91.1	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0780 mg/L	0.08 mg/L	97.5	70.0	130	----
		silicon, dissolved	7440-21-3	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00700 mg/L	0.008 mg/L	87.4	70.0	130	----
		sodium, dissolved	17341-25-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.04 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00686 mg/L	0.008 mg/L	85.8	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0362 mg/L	0.04 mg/L	90.4	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0724 mg/L	0.08 mg/L	90.5	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.00752 mg/L	0.008 mg/L	94.0	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.190 mg/L	0.2 mg/L	95.2	70.0	130	----
		zinc, dissolved	7440-66-6	E421	ND mg/L	0.8 mg/L	ND	70.0	130	----
		zirconium, dissolved	7440-67-7	E421	0.0744 mg/L	0.08 mg/L	93.0	70.0	130	----
Dissolved Metals (QCLot: 237367)										
VA21B3559-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000984 mg/L	0.0001 mg/L	98.4	70.0	130	----
Dissolved Metals (QCLot: 237368)										
WR2100743-003	SS56	mercury, dissolved	7439-97-6	E509	0.0000967 mg/L	0.0001 mg/L	96.7	70.0	130	----

Qualifiers

Qualifier	Description
MS-B	*Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.*

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 2021-06-30 A

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Minto Explorations Ltd.
Contact:	Minto Environment - Coordinator
Phone:	1-604-759-4659
	Company address below will appear on the final report
Street:	61 Wasson Place
City/Province:	Whitehorse
Postal Code:	Y1A 0H7
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Minto Explorations Ltd.
Contact:	Katie Androsoff

Report Format / Distribution	
Select Report Format:	☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	mintoenvironment@mintomine.com
Email 2	
Email 3	

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	ap@mintomine.com
Email 2	

Project Information	
ALS Account # / Quote #:	
Job #:	
PO / AFE:	PO2857 (Seepage) - 10-8103-07050
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only)		ALS Contact:	Sampler:

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4] ☐ | 3 day [P3] ☐ | 2 day [P2] ☐

EMERGENCY: 1 Day [E] ☐

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service

Environmental Division
Whitehorse
Work Order Reference
WR2100743

Telephone : +1 867 668 6689

Analysis

Indicate Filtered (F), Preserved (P) or Filtered

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	P	F/P	P	F/P	P	F/P								Number of
					Total Metals(TM)	Disolved Metals (DM)	Total Mercury, Hardness	Dissolved Mercury	Ammonia (Total Nutrients)	Dissolved Organic Carbon (DOC)	pH, Cond., TSS, TDS, Alkalinity, Anions							
	SS111	24-06-21	15:20	Water		R		R	R		R							4
	SS31	24-06-21	15:35	Water		R		R	R		R							4
	SS56	24-06-21	14:45	Water		R		R	R		R							4
	SS29	24-06-21	15:00	Water		R		R	R		R							4
	SS49	25-06-21	9:10	Water		R		R	R		R							4
	SS112	25-06-21	14:15	Water		R		R	R		R							4
	DUP	25-06-21		Water		R		R	R		R							4

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?
☐ YES ☑ NO

Are samples for human drinking water use?
☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
8	9	3	7	5	1

SHIPMENT RELEASE (client use)		
Released by: Reanna Moore	Date: 2021-06-30	Time:

INITIAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date: JULY 2/21	Time: 11:30

FINAL SHIPMENT RECEPTION (lab use only)		
Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 2021-06-30 A

Report To	Contact and company name below will appear on the final report
Company:	Minto Explorations Ltd.
Contact:	Minto Environment - Coordinator
Phone:	1-604-759-4659
	Company address below will appear on the final report
Street:	61 Wasson Place
City/Province:	Whitehorse
Postal Code:	Y1A 0H7
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Minto Explorations Ltd.
Contact:	Katie Androsoff

Report Format / Distribution

Select Report Format: ☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax mintoenvironment@mintomine.com
Email 2
Email 3

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax ap@mintomine.com
Email 2

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply
Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply
PRIORITY (Business Days): 4 day [P4] ☐ 3 day [P3] ☐ 2 day [P2] ☐
EMERGENCY
Date and Time Required for all E&P TATs:
For tests that can not be performed according to the service
Analysis
Indicate Filtered (F), Preserved (P) or Filtered

Environmental Division
Whitehorse
Work Order Reference
WR2100743
Telephone : +1 867 668 6689

Project Information	
ALS Account # / Quote #:	
Job #:	
PO / AFE:	PO2857 (Seepage) - 10-8103-07050
LSD:	
ALS Lab Work Order # (lab use only)	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	
ALS Contact:	Sampler:

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	Total Metals(TM) (P)	Disolved Metals (DM) (F/P)	Total Mercury, Hardness (P)	Dissolved Mercury (F/P)	Ammonia (Total Nutrients) (P)	Dissolved Organic Carbon (DOC) (F/P)	pH, Cond., TSS, TDS, Alkalinity, Anions	Number of
	SS111	24-06-21	15:20	Water		R		R	R		R	4
	SS31	24-06-21	15:35	Water		R		R	R		R	4
	SS56	24-06-21	14:45	Water		R		R	R		R	4
	SS29	24-06-21	15:00	Water		R		R	R		R	4
	SS49	25-06-21	9:10	Water		R		R	R		R	4
	SS112	25-06-21	14:15	Water		R		R	R		R	4
	DUP	25-06-21		Water		R		R	R		R	4

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO
Are samples for human drinking water use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☑ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C: 8/9/3/7/5/1/8
FINAL COOLER TEMPERATURES °C: 18 (Aug 07 13)

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Reanna Moore	Date: 2021-06-30	Time:	Received by: [signature]	Date: July 2/21	Time: 11:30	Received by: JK	Date: 3 July	Time: 2:45 PM

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2101334**	Page	: 1 of 4
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 21-Sep-2021 13:10
PO	: 2857-10-8103-07050	Date Analysis Commenced	: 23-Sep-2021
C-O-C number	: 2021-09-18 A	Issue Date	: 04-Oct-2021 16:04
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Dion Chan	Lab Assistant	Metals, Burnaby, British Columbia
Ilnaz Badbezanchi	Team Leader - Metals preparation	Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
µS/cm	Microsiemens per centimetre
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
DLDS	*Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	SS31	SS32	SS39	SS22	----
					Client sampling date / time	15-Sep-2021 14:30	15-Sep-2021 11:45	15-Sep-2021 11:00	15-Sep-2021 14:55	----
						WR2101334-001	WR2101334-002	WR2101334-003	WR2101334-004	--------
						Result	Result	Result	Result	----
Physical Tests										
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L		327	100	257	299	----
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	17.8	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	<1.0	----
alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	8.9	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		327	100	275	299	----
conductivity	----	E100	2.0	µS/cm		1180	196	785	815	----
hardness (as CaCO3), dissolved	----	EC100	0.60	mg/L		638	91.0	390	396	----
pH	----	E108	0.10	pH units		8.25	8.18	8.39	8.16	----
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L		849	122	534	553	----
solids, total suspended [TSS]	----	E160-L	1.0	mg/L		<1.0	<1.0	<1.7	42.1	----
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.0184	<0.0050	0.0070	0.0087	----
chloride	16887-00-6	E235.Cl-L	0.10	mg/L		3.09	0.32	2.08	<0.50 DLDS	----
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L		25.6	0.290	9.30	<0.0250 DLDS	----
nitrate + nitrite (as N)	----	EC235.N+N	0.0050	mg/L		25.6	0.292	9.30	<0.0255	----
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L		0.0107	0.0016	<0.0050 DLDS	<0.0050 DLDS	----
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		268	5.81	151	184	----
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0034	0.0046	0.0109	0.0084	----
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00018	0.00015	0.00031	0.00027	----
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.0938	0.0176	0.160	0.0833	----
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	----
boron, dissolved	7440-42-8	E421	0.010	mg/L		0.016	<0.010	0.017	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		0.0000949	<0.0000050	0.0000096	0.0000206	----
calcium, dissolved	7440-70-2	E421	0.050	mg/L		191	28.3	113	112	----
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		0.00012	<0.00010	<0.00010	<0.00010	----
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.0753	0.00113	0.0286	0.0593	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	SS31	SS32	SS39	SS22	----
					Client sampling date / time	15-Sep-2021 14:30	15-Sep-2021 11:45	15-Sep-2021 11:00	15-Sep-2021 14:55	----
						WR2101334-001	WR2101334-002	WR2101334-003	WR2101334-004	--------
						Result	Result	Result	Result	----
Dissolved Metals										
iron, dissolved	7439-89-6	E421	0.010	mg/L		0.106	<0.010	0.030	0.059	----
lead, dissolved	7439-92-1	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		0.0024	<0.0010	0.0020	0.0032	----
magnesium, dissolved	7439-95-4	E421	0.100	mg/L		39.0	4.94	26.2	28.2	----
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.246	0.00031	0.0106	0.153	----
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	----
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		0.00311	0.00336	0.00510	0.000612	----
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	----
potassium, dissolved	7440-09-7	E421	0.100	mg/L		5.26	1.40	4.07	5.09	----
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.0185	0.000172	0.00521	0.000187	----
silicon, dissolved	7440-21-3	E421	0.050	mg/L		7.06	6.20	5.88	8.04	----
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	----
sodium, dissolved	17341-25-2	E421	0.050	mg/L		13.8	3.63	15.9	22.3	----
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		1.13	0.154	1.34	2.42	----
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		97.0	1.63	53.9	64.6	----
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	----
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		<0.00030	0.00039	0.00050	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.00599	0.000393	0.00319	0.000053	----
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	0.00073	<0.00050	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		0.0023	<0.0010	0.0012	0.0062	----
zirconium, dissolved	7440-67-7	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	----
dissolved mercury filtration location	----	EP509	-	-		Field	Field	Field	Field	----
dissolved metals filtration location	----	EP421	-	-		Field	Field	Field	Field	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2101334**	Page	: 1 of 11
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 21-Sep-2021 13:10
PO	: 2857-10-8103-07050	Issue Date	: 04-Oct-2021 16:04
C-O-C number	: 2021-09-18 A		
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SS22	E298	15-Sep-2021	30-Sep-2021	----	----		30-Sep-2021	28 days	15 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SS31	E298	15-Sep-2021	30-Sep-2021	----	----		30-Sep-2021	28 days	15 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SS32	E298	15-Sep-2021	30-Sep-2021	----	----		30-Sep-2021	28 days	15 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SS39	E298	15-Sep-2021	30-Sep-2021	----	----		30-Sep-2021	28 days	15 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE SS22	E235.Cl-L	15-Sep-2021	----	----	----		29-Sep-2021	28 days	14 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE SS31	E235.Cl-L	15-Sep-2021	----	----	----		29-Sep-2021	28 days	14 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE SS32	E235.Cl-L	15-Sep-2021	----	----	----		29-Sep-2021	28 days	14 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE SS39	E235.Cl-L	15-Sep-2021	----	----	----		29-Sep-2021	28 days	14 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SS22	E235.NO3-L	15-Sep-2021	----	----	----		29-Sep-2021	3 days	14 days	× EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SS31	E235.NO3-L	15-Sep-2021	----	----	----		29-Sep-2021	3 days	14 days	× EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SS32	E235.NO3-L	15-Sep-2021	----	----	----		29-Sep-2021	3 days	14 days	× EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE SS39	E235.NO3-L	15-Sep-2021	----	----	----		29-Sep-2021	3 days	14 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SS22	E235.NO2-L	15-Sep-2021	----	----	----		29-Sep-2021	3 days	14 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SS31	E235.NO2-L	15-Sep-2021	----	----	----		29-Sep-2021	3 days	14 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SS32	E235.NO2-L	15-Sep-2021	----	----	----		29-Sep-2021	3 days	14 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE SS39	E235.NO2-L	15-Sep-2021	----	----	----		29-Sep-2021	3 days	14 days	× EHTR

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SS22	E235.SO4	15-Sep-2021	----	----	----		29-Sep-2021	28 days	14 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SS31	E235.SO4	15-Sep-2021	----	----	----		29-Sep-2021	28 days	14 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SS32	E235.SO4	15-Sep-2021	----	----	----		29-Sep-2021	28 days	14 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
SS39	E235.SO4	15-Sep-2021	----	----	----		29-Sep-2021	28 days	14 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SS22	E509	15-Sep-2021	28-Sep-2021	----	----		28-Sep-2021	28 days	13 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SS31	E509	15-Sep-2021	28-Sep-2021	----	----		28-Sep-2021	28 days	13 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SS32	E509	15-Sep-2021	28-Sep-2021	----	----		28-Sep-2021	28 days	13 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
SS39	E509	15-Sep-2021	28-Sep-2021	----	----		28-Sep-2021	28 days	13 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
SS22	E421	15-Sep-2021	29-Sep-2021	----	----		29-Sep-2021	180 days	14 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SS31	E421	15-Sep-2021	29-Sep-2021	----	----		29-Sep-2021	180 days	14 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SS32	E421	15-Sep-2021	29-Sep-2021	----	----		29-Sep-2021	180 days	14 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) SS39	E421	15-Sep-2021	29-Sep-2021	----	----		29-Sep-2021	180 days	14 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE SS22	E290	15-Sep-2021	----	----	----		30-Sep-2021	14 days	15 days	× EHT
Physical Tests : Alkalinity Species by Titration										
HDPE SS31	E290	15-Sep-2021	----	----	----		30-Sep-2021	14 days	15 days	× EHT
Physical Tests : Alkalinity Species by Titration										
HDPE SS32	E290	15-Sep-2021	----	----	----		30-Sep-2021	14 days	15 days	× EHT
Physical Tests : Alkalinity Species by Titration										
HDPE SS39	E290	15-Sep-2021	----	----	----		30-Sep-2021	14 days	15 days	× EHT
Physical Tests : Conductivity in Water										
HDPE SS22	E100	15-Sep-2021	----	----	----		30-Sep-2021	28 days	15 days	✓
Physical Tests : Conductivity in Water										
HDPE SS31	E100	15-Sep-2021	----	----	----		30-Sep-2021	28 days	15 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE SS32	E100	15-Sep-2021	----	----	----		30-Sep-2021	28 days	15 days	✓
Physical Tests : Conductivity in Water										
HDPE SS39	E100	15-Sep-2021	----	----	----		30-Sep-2021	28 days	15 days	✓
Physical Tests : pH by Meter										
HDPE SS22	E108	15-Sep-2021	----	----	----		30-Sep-2021	0.25 hrs	351 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE SS31	E108	15-Sep-2021	----	----	----		30-Sep-2021	0.25 hrs	351 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE SS32	E108	15-Sep-2021	----	----	----		30-Sep-2021	0.25 hrs	354 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE SS39	E108	15-Sep-2021	----	----	----		30-Sep-2021	0.25 hrs	355 hrs	× EHTR-FM
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SS22	E160-L	15-Sep-2021	----	----	----		23-Sep-2021	7 days	8 days	× EHT
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SS31	E160-L	15-Sep-2021	----	----	----		23-Sep-2021	7 days	8 days	× EHT
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE SS32	E160-L	15-Sep-2021	----	----	----		23-Sep-2021	7 days	8 days	× EHT

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE										
SS39	E160-L	15-Sep-2021	----	----	----		23-Sep-2021	7 days	9 days	× EHT

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	305959	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	307616	1	17	5.8	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	305960	1	12	8.3	5.0	✓
Conductivity in Water	E100	305958	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	305001	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	306067	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	305961	1	15	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	305962	1	15	6.6	5.0	✓
pH by Meter	E108	305957	1	18	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	305963	1	15	6.6	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	305959	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	307616	1	17	5.8	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	305960	1	12	8.3	5.0	✓
Conductivity in Water	E100	305958	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	305001	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	306067	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	305961	1	15	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	305962	1	15	6.6	5.0	✓
pH by Meter	E108	305957	1	18	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	305963	1	15	6.6	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	301216	1	17	5.8	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	305959	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	307616	1	17	5.8	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	305960	1	12	8.3	5.0	✓
Conductivity in Water	E100	305958	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	305001	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	306067	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	305961	1	15	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	305962	1	15	6.6	5.0	✓
Sulfate in Water by IC	E235.SO4	305963	1	15	6.6	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	301216	1	17	5.8	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	307616	1	17	5.8	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	305960	1	12	8.3	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	305001	1	20	5.0	5.0	✓

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Dissolved Metals in Water by CRC ICPMS	E421	306067	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	305961	1	15	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	305962	1	15	6.6	5.0	✓
Sulfate in Water by IC	E235.SO4	305963	1	15	6.6	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Vancouver - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Vancouver - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry (Low Level)	E160-L Vancouver - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
Chloride in Water by IC (Low Level)	E235.Cl-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 Vancouver - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Vancouver - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103 Vancouver - Environmental	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N Vancouver - Environmental	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Vancouver - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order	: **WR2101334**	Page	: 1 of 10
Client	: Minto Explorations Ltd.	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 21-Sep-2021 13:10
PO	: 2857-10-8103-07050	Date Analysis Commenced	: 23-Sep-2021
C-O-C number	: 2021-09-18 A	Issue Date	: 04-Oct-2021 16:04
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Dion Chan	Lab Assistant	Metals, Burnaby, British Columbia
Ilnaz Badbezanchi	Team Leader - Metals preparation	Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 305957)											
WR2101333-001	Anonymous	pH	----	E108	0.10	pH units	8.42	8.42	0.00%	4%	----
Physical Tests (QC Lot: 305958)											
WR2101333-001	Anonymous	conductivity	----	E100	2.0	µS/cm	632	636	0.631%	10%	----
Physical Tests (QC Lot: 305959)											
WR2101333-001	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	166	164	0.802%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	13.4	13.0	3.33%	20%	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	6.7	6.5	0.2	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	179	177	0.989%	20%	----
Anions and Nutrients (QC Lot: 305960)											
WR2101333-001	Anonymous	chloride	16887-00-6	E235.Cl-L	0.10	mg/L	0.84	0.83	0.004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 305961)											
WR2101333-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	0.0051	0.0001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 305962)											
WR2101333-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 305963)											
WR2101333-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	179	179	0.0152%	20%	----
Anions and Nutrients (QC Lot: 307616)											
VA21C0935-004	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.504	0.497	1.37%	20%	----
Dissolved Metals (QC Lot: 305001)											
VA21C0931-004	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 306067)											
WR2101333-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0041	0.0044	0.0003	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00057	0.00053	0.00004	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0646	0.0658	1.79%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.021	0.020	0.0006	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	54.8	52.8	3.76%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 306067) - continued											
WR2101333-001	Anonymous	chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00901	0.00929	3.10%	20%	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	0.031	0.033	0.002	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0032	0.0032	0.00006	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E421	0.100	mg/L	35.9	35.8	0.0756%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00343	0.00349	1.74%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00341	0.00356	4.16%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.100	mg/L	3.85	3.92	1.72%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000779	0.000772	0.822%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.66	2.69	0.855%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	17341-25-2	E421	0.050	mg/L	25.4	25.2	0.801%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	1.33	1.40	4.99%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	62.8	60.7	3.26%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00151	0.00155	2.49%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	0.0013	0.0003	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 301216)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 305958)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 305959)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Anions and Nutrients (QCLot: 305960)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 305961)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 305962)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 305963)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 307616)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Dissolved Metals (QCLot: 305001)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 306067)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 306067) - continued						
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	17341-25-2	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 301216)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	93.3	85.0	115	----
Physical Tests (QCLot: 305957)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 305958)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	98.5	90.0	110	----
Physical Tests (QCLot: 305959)									
alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	109	75.0	125	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	104	85.0	115	----
Anions and Nutrients (QCLot: 305960)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 305961)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 305962)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	94.7	90.0	110	----
Anions and Nutrients (QCLot: 305963)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 307616)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	95.4	85.0	115	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	95.4	80.0	120	----
Dissolved Metals (QCLot: 306067)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	105	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	100	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	98.0	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	90.8	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	102	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	89.6	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	99.7	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	97.3	80.0	120	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	100	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	98.3	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	97.4	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 306067) - continued									
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	99.0	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	99.8	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	91.1	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	97.9	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	98.0	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	97.4	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	92.3	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	105	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	97.1	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	101	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	96.7	80.0	120	----
sodium, dissolved	17341-25-2	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	96.8	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	101	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	101	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	98.8	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	97.6	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	102	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	103	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	94.0	80.0	120	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 305960)										
WR2101333-002	Anonymous	chloride	16887-00-6	E235.Cl-L	102 mg/L	100 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 305961)										
WR2101333-002	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	ND mg/L	2.5 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 305962)										
WR2101333-002	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.481 mg/L	0.5 mg/L	96.2	75.0	125	----
Anions and Nutrients (QCLot: 305963)										
WR2101333-002	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	99.4 mg/L	100 mg/L	99.4	75.0	125	----
Anions and Nutrients (QCLot: 307616)										
VA21C0935-005	Anonymous	ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	MS-B
Dissolved Metals (QCLot: 305001)										
VA21C0931-005	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000925 mg/L	0.0001 mg/L	92.5	70.0	130	----
Dissolved Metals (QCLot: 306067)										
WR2101333-002	Anonymous	aluminum, dissolved	7429-90-5	E421	0.202 mg/L	0.2 mg/L	101	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0205 mg/L	0.02 mg/L	102	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0203 mg/L	0.02 mg/L	101	70.0	130	----
		barium, dissolved	7440-39-3	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0392 mg/L	0.04 mg/L	98.0	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00929 mg/L	0.01 mg/L	92.9	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.094 mg/L	0.1 mg/L	94.5	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00402 mg/L	0.004 mg/L	100	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		chromium, dissolved	7440-47-3	E421	0.0403 mg/L	0.04 mg/L	101	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0194 mg/L	0.02 mg/L	96.8	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0188 mg/L	0.02 mg/L	94.0	70.0	130	----
		iron, dissolved	7439-89-6	E421	1.92 mg/L	2 mg/L	96.0	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0197 mg/L	0.02 mg/L	98.4	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0944 mg/L	0.1 mg/L	94.4	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.0200 mg/L	0.02 mg/L	99.8	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 306067) - continued										
WR2101333-002	Anonymous	nickel, dissolved	7440-02-0	E421	0.0378 mg/L	0.04 mg/L	94.4	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	10.1 mg/L	10 mg/L	101	70.0	130	----
		potassium, dissolved	7440-09-7	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0404 mg/L	0.04 mg/L	101	70.0	130	----
		silicon, dissolved	7440-21-3	E421	8.90 mg/L	10 mg/L	89.0	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00383 mg/L	0.004 mg/L	95.7	70.0	130	----
		sodium, dissolved	17341-25-2	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00392 mg/L	0.004 mg/L	97.9	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0392 mg/L	0.04 mg/L	98.0	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.00392 mg/L	0.004 mg/L	98.1	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.398 mg/L	0.4 mg/L	99.5	70.0	130	----
		zirconium, dissolved	7440-67-7	E421	0.0403 mg/L	0.04 mg/L	101	70.0	130	----

Qualifiers

Qualifier	Description
MS-B	*Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.*

Chain of Custody (COC) / Analytical Request Form

COC Number: 2021-09-18 A

Affix ALS barcode label here
(lab use only)

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Environmental Division
Whitehorse
Work Order Reference
WR2101334

Telephone : +1 867 668 6689

Report To	Contact and company name below will appear on the final report
Company:	Minto Explorations Ltd.
Contact:	Minto Environment - Coordinator
Phone:	1-604-759-4659
	Company address below will appear on the final report
Street:	61 Wasson Place
City/Province:	Whitehorse
Postal Code:	Y1A 0H7
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Minto Explorations Ltd.
Contact:	Katie Androsoff

Report Format / Distribution

Select Report Format: ☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: mintoenvironment@mintomine.com
Email 2:
Email 3:

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: ap@mintomine.com
Email 2:

Select Service Level Below - Please confirm all E&P TATs with

Regular [R] ☑ Standard TAT if received

PRIORITY (Business Days)		EMERGENCY
4 day [P4] ☐		
3 day [P3] ☐		
2 day [P2] ☐		1

Date and Time Required for all E&P TATs:
For tests that can not be performed according to the service

Project Information

ALS Account # / Quote #:	
Job #:	
PO / AFE:	PO2857 (Seepage) - 10-8103-07050
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only)	ALS Contact:	Sampler:

Analysis

Indicate Filtered (F), Preserved (P) or Filtered

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total Metals(TM) P	Dissolved Metals (DM) F/P	Total Mercury, Hardness P	Dissolved Mercury F/P	Ammonia (Total Nutrients) P	Dissolved Organic Carbon (DOC) F/P	pH, Cond., TSS, TDS, Alkalinity, Anions	Number of Containers
	SS31	15-09-2021	14:30	Water		R		R	R		R	4
	SS32	15-09-2051	11:45	Water		R		R	R		R	4
	SS39	15-09-2021	11:00	Water		R		R	R		R	4
	SS22	15-09-2021	14:55	Water		R		R	R		R	4

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?
☐ YES ☑ NO

Are samples for human drinking water use?
☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
9	6				

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Dani Thorne	Date: 18-Sep-2021	Time:	Received by:	Date: Aug 21	Time: 1110	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Appendix D – Seepage Survey Documentation

1. Seepage Site GPS Coordinates

ID	Coordinates		Spring 2020	Fall 2020	Spring 2021	Fall 2021
	Northing	Easting				
Southwest Dump						
SS1	N62° 36.872'	W137° 15.589'				
SS13	N62° 36.539'	W137° 15.840'	x	x		
SS21	N62° 36.775'	W137° 15.747'	x			
SS22	N62° 36.480'	W137° 15.801'	x			x
SS28	N62° 36.802'	W137° 15.695'	x			
SS29	N62° 36.758'	W137° 15.764'	x		x	
SS30	N62° 36.625'	W137° 15.836'				
SS31	N62° 36.570'	W137° 15.858'	x	x	x	x
SS43	N62° 36.592'	W137° 15.857'				
SS44	N62° 36.421'	W137° 15.818'	x			
SS51	N62° 36.463'	W137° 15.793'	x			
SS52	N62° 36.395'	W137° 15.818'	x			
SS54	N62° 36.857'	W137° 15.607'				
SS56	N62° 36.789'	W137° 15.719'			x	
SS57	N62° 36.637'	W137° 15.830'	x			
SS65	N62° 36.818'	W137° 15.658'				
SS111	N62° 36.650'	W137° 15.829'			**x**	
Ice-Rich Overburden Dump (Pelly)						
SS39	N62° 36.976'	W137° 15.886'	x		x	x
SS48	N62° 36.953'	W137° 16.005'	x			
SS49	N62° 36.912'	W137° 16.000'	x		x	
SS50	N62° 36.890'	W137° 15.900'	x			
SS63	N62° 36.937'	W137° 16.014'				
SS64	N62° 36.921'	W137° 16.017'	x			
SS66	N62° 61.397'	W137° 26.418'	x			
SS67	N62° 61.685'	W137° 26.739'	x			
SS106	N62° 61.4999'	W137° 26.588'		x		
Main Waste Dump						
SS12	N62° 62.0683'	W137° 26.179'				
SS102	N62° 37.010’	W137° 15.597				
Main Pit and SAT Dump						
SS107	N62° 36.511'	W137° 15.131'	x			
SS109	N62° 37.382'	W137° 15.221'		x		
Minto North						
SS101	N62° 37.598’	W137° 15.710'	x			

SS110	N62° 37.608’	W137° 15.678'			x	
Pit Walls						
SS62 (A2S3 Pit)	N62° 36.878'	W137° 14.656'				
Ridgetop Road						
SS19	N62° 61.1397'	W137° 23.3326'				
SS47	N62° 60.9532'	W137° 23.4804'				
SS58	N62° 36.597'	W137° 14.048'				
SS103	N62° 36.345'	W137° 14.180'	x	x		
W33s	N62° 36.344'	W137° 14.235'	x	x		
Ore Stockpile						
SS5	N62° 37.034'	W137° 14.133'	x	x		
SS6	N62° 37.025'	W137° 14.122'	x			
SS7	N62° 36.999'	W137° 14.108'	x			
SS8	N62° 36.985'	W137° 14.101'		x		
SS33	N62° 37.034'	W137° 14.147'		x		
SS59	N62° 36.967'	W137° 14.099'				
SS105	N62° 61.7453'	W137° 23.6029'	x	x		
Dry Stack Tailings Facility						
SS17	N62° 36.525	W137° 13.311				
SS18	N62° 61.4836'	W137° 22.4870'				
SS45	N62° 36.512	W137° 13.379				
SS53	N62° 61.3521'	W137° 23.0815'	x			
SS104	N62° 61.5639'	W137° 22.2569'				
Mill Valley Fill Extension						
SS9	N62° 37.007'	W137° 13.296'				
SS10	N62° 37.025'	W137° 13.315'				
SS34	N62° 61.9503'	W137° 22.5610'				
SS35	N62° 61.9221'	W137° 22.5257'				
SS36	N62° 37.040'	W137° 13.313'				
SS60	N62° 37.088'	W137° 13.432'				
SS61	N62° 37.202'	W137° 13.266'				
SS62	N62° 22.1651'	W137° 61.6620'				
SS100	N62° 37.225’	W137° 13.305’				
W8A	N62° 37.089'	W137° 13.650'				
W62	N62° 37.223'	W137° 13.279'	x	x		
Water Storage Pond Dam						
W17	N62° 37.454'	W137° 12.551'	x	x		
Camp						
SS32	N62° 37.302'	W137° 14.032'	x	x	x	x
SS112	N62° 37.171'	W137° 14.250'			x	x

2. Seepage Site Photos

2.1 SS31

Figure 2- 1: SS31 Sampling Site (Spring 2021)

Figure 2- 2: SS31 Upstream (Spring 2021)

Figure 2- 3: SS31 Downstream (Spring 2021)

Figure 2- 4: SS31 Seepage Site (Fall 2021)

Figure 2- 5: SS31 Upstream (Fall 2021)

Figure 2- 6: SS31 Downstream (Fall 2021)

2.2 SS32

Figure 2- 7: SS32 Sampling Site (Spring 2021)

Figure 2- 8: SS32 Upstream (Spring 2021)

Figure 2- 9: SS32 Downstream (Spring 2021)

2.3 SS39

Figure 2- 10: SS39 Sampling Site (Timestamp is incorrect) (Spring 2021)

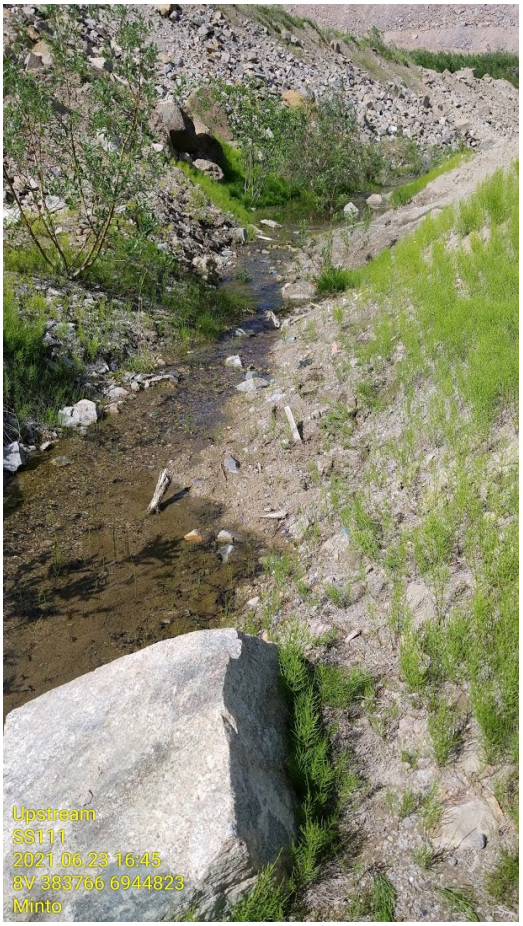


Figure 2- 11: SS39 Upstream (Timestamp is incorrect) (Spring 2021)

Figure 2- 12: SS39 Downstream (Timestamp is incorrect) (Spring 2021)

Figure 2- 13: SS39 Sampling Site (Fall 2021)

Figure 2- 14: SS39 Upstream (Fall 2021)

Figure 2- 15: SS39 Downstream (Fall 2021)

2.4 SS49

Figure 2- 16: SS49 Sampling Site (Spring 2021)

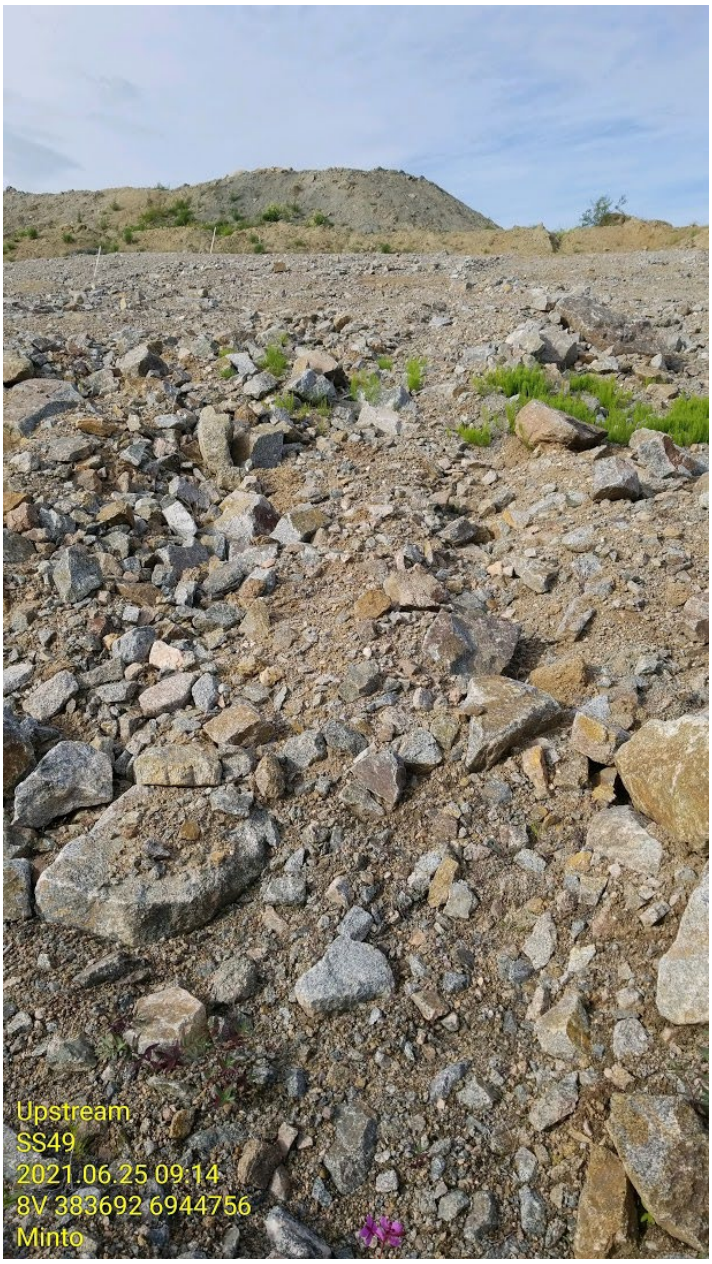


Figure 2- 17: SS49 Upstream (Spring 2021)

Figure 2- 18: SS49 Downstream (Spring 2021)

2.5 SS56

Figure 2- 19: SS56 Sampling Site (Spring 2021)

Figure 2- 20: SS56 Upstream (Spring 2021)

Figure 2- 21: SS56 Downstream (Spring 2021)

2.6 SS110

Figure 2- 22: SS110 Sampling Site (Spring 2021)

Figure 2- 23: SS110 Upstream (Spring 2021)

Figure 2- 24: SS110 Downstream (Spring 2021)

2.7 SS111

Figure 2- 25: SS111 Sampling Site (timestamp is incorrect) (Spring 2021)

Figure 2- 26: SS111 Upstream (timestamp is incorrect) (Spring 2021)

Figure 2- 27: SS111 Downstream (timestamp is incorrect) (Spring 2021)

2.8 SS112

Figure 2- 28: SS112 Sampling Site (timestamp is incorrect) (Spring 2021)

Figure 2- 29: SS112 Upstream (timestamp is incorrect) (Spring 2021)

Figure 2- 30: SS112 Downstream (timestamp is incorrect) (Spring 2021)

3. Seepage Field Data Sheets

Seepage Water Quality Field Sheets

1. Sample Site:	Date:	Time:	Sampler(s):
SS110	June 21/21	1400	BH/RM/SS

Sky: Clear, P.Cloudy, O/cast, Fog, (Haze), Other — Temp: 12°C — Precip: Nil, Light, Mod, Strong, Rain, Snow, Other — Wind: (Calm), Light, Mod, Strong, N, E, S, W, Var

Temp C	DO %	DO mg/L	SPC µs/cm	EC µs/cm	pH	ORP mv	Turb NTU
11.3	90.3	9.98	259.0	190.9	7.72	165.6	

QA/QC? Y / (N)

Note: 1 every 10 samples must be dumped

New Sample ? (Y) N IF Yes, Record GPS Coordinates

Photos: Close-up ☑, Upstream ☑, Downstream ☑

Water Colour? Turbidity, Precipitates? Description of Sampling Conditions:

clear, little to know flow

DM 120 ml	GENERAL ~~500~~ 250 ml	TOTAL Nutrients 120 ml	D-Hg (40 ml)	Colour of Sediment on filter:
✓	✓	✓	✓	# of Filters Used: 3

Notes (site conditions or variations from normal, i.e. ice cover, sediment, flows, etc.)

SKETCH of Sampling location (location of toe, pools of water, trace of surface water flow, site feautures such as roads, ditches, sumps, etc.)

Data entered (Initials): BH

Data entry reviewed (Initials): RM

1. Sample Site:	Date:	Time:	Sampler(s):
~~SS111~~ SS39	23-06-21	16 40	BH/RM/TP

Sky: Clear, (P.Cloudy), O/cast, Fog, Haze, Other — Temp: 16° — Precip: (Nil), Light, Mod, Strong, Rain, Snow, Other — Wind: Calm, Light, (Mod), Strong, N, E, S, W, (Var)

Temp C	DO %	DO mg/L	SPC µs/cm	EC µs/cm	pH	ORP mv	Turb NTU
9.2	104.0	11.91	676.4	473.3	7.45	117.5	

QA/QC? Y / (N)

Note: 1 every 10 samples must be dumped

New Sample ? Y (N) IF Yes, Record GPS Coordinates SS39

Photos: Close-up ☐, Upstream ☑, Downstream ☑

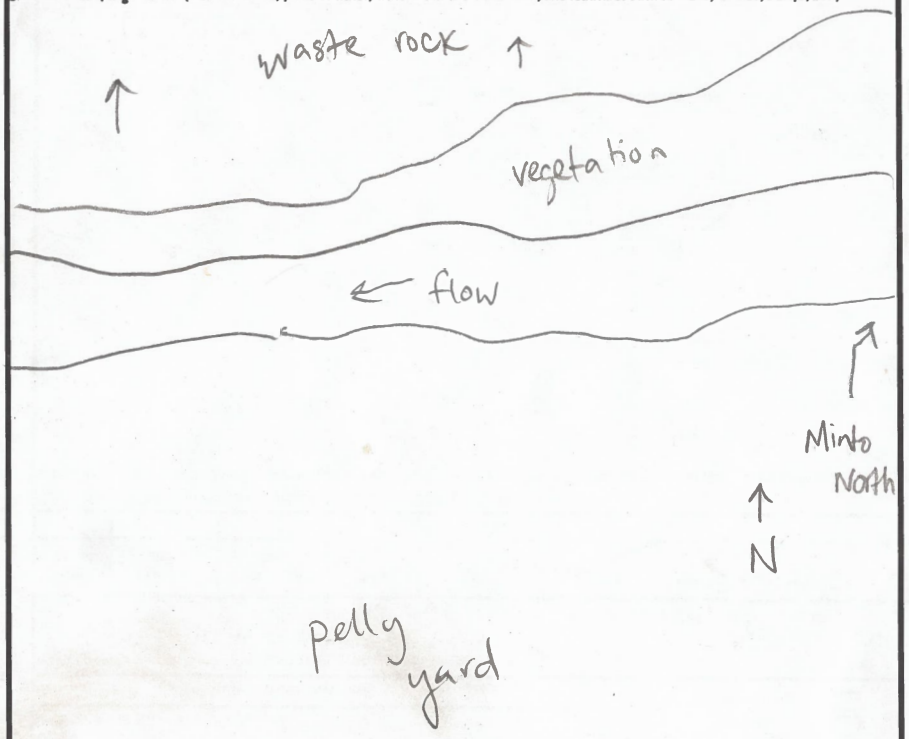
Water Colour? Turbidity, Precipitates? Description of Sampling Conditions:

clear, not turbid, no recent precip. → water flowing, algae

DM 120 ml	GENERAL ~~500~~ 250 ml	TOTAL Nutrients 120 ml	D-Hg (40 ml)	Colour of Sediment on filter: brown/grey
✓	✓	✓	✓	# of Filters Used: 1

Notes (site conditions or variations from normal, i.e. ice cover, sediment, flows, etc.)

SKETCH of Sampling location (location of toe, pools of water, trace of surface water flow, site feautures such as roads, ditches, sumps, etc.)



Data entered (Initials): RM

Data entry reviewed (Initials): BH

Seepage Water Quality Field Sheets

1. Sample Site:	Date:	Time:	Sampler(s):
SS 32	21-06-23	17:20	BH/RM

Sky: (Clear) P.Cloudy O/cast Fog Haze Other — Temp: 22 — Precip: (Nil) Light Mod Strong Rain Snow Other — Wind: Calm Light (Mod) Strong N E S W Var

Temp C	DO %	DO mg/L	SPC µs/cm	EC µs/cm	pH	ORP mv	Turb NTU
4.1	94.8	12.01	205.6	123.1	7.49	142.7	

QA/QC? Y / (N) — Photos: Close-up ☒, Upstream ☒, Downstream ☒

Note: 1 every 10 samples must be dumped

New Sample ? Y / (N) IF Yes, Record GPS Coordinates

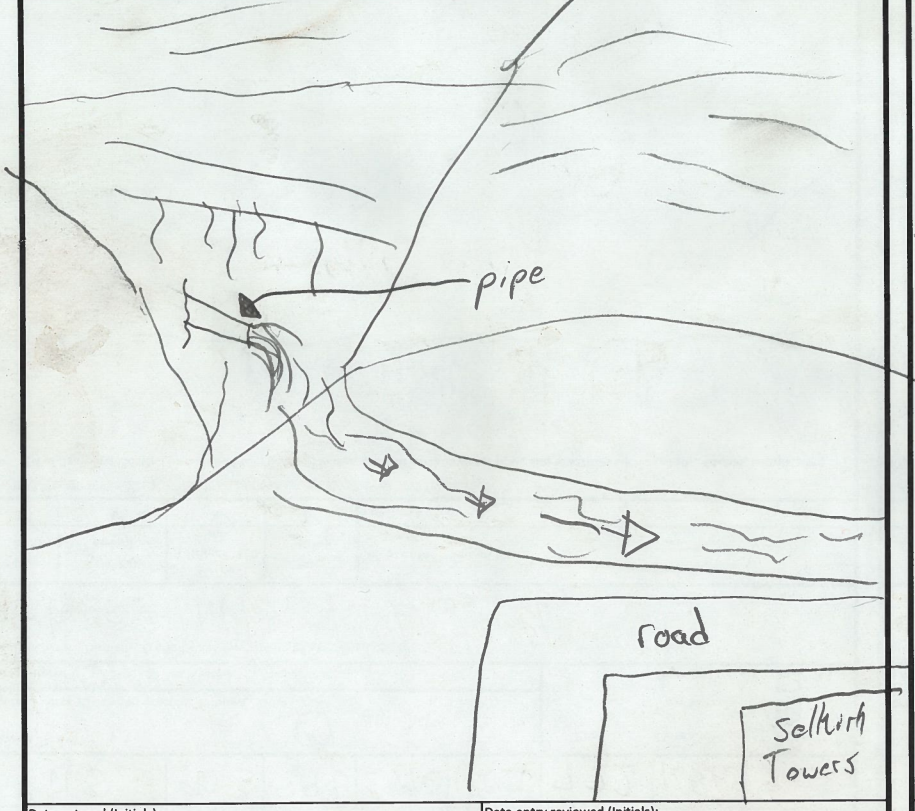
Water Colour? Turbidity, Precipitates? Description of Sampling Conditions:

clear, mod flow

DM 120 ml	GENERAL 500 ml	TOTAL Nutrients 120ml	D-Hg (40ml)	Colour of Sediment on filter: grey
✓	✓	✓	✓	# of Filters Used: 2

Notes (site conditions or variations from normal, i.e. ice cover, sediment, flows, etc.)

SKETCH of Sampling location (location of toe, pools of water, trace of surface water flow, site feautures such as roads, ditches, sumps, etc.)



Data entered (Initials): RM — Data entry reviewed (Initials): BH

1. Sample Site:	Date:	Time:	Sampler(s):
SS49	15-06-21	9:10	BH/RM

Sky: Clear (P.Cloudy) O/cast Fog Haze Other — Temp: 23 — Precip: (Nil) Light Mod Strong Rain Snow Other — Wind: (Calm) Light Mod Strong N E S W Var

Temp C	DO %	DO mg/L	SPC µs/cm	EC µs/cm	pH	ORP mv	Turb NTU
10.8	54.5	6.02	459.8	334.4	7.41	148.6	

QA/QC? Y / (N) — Photos: Close-up ☑, Upstream ☑, Downstream ☑

Note: 1 every 10 samples must be dumped

New Sample ? Y / (N) IF Yes, Record GPS Coordinates

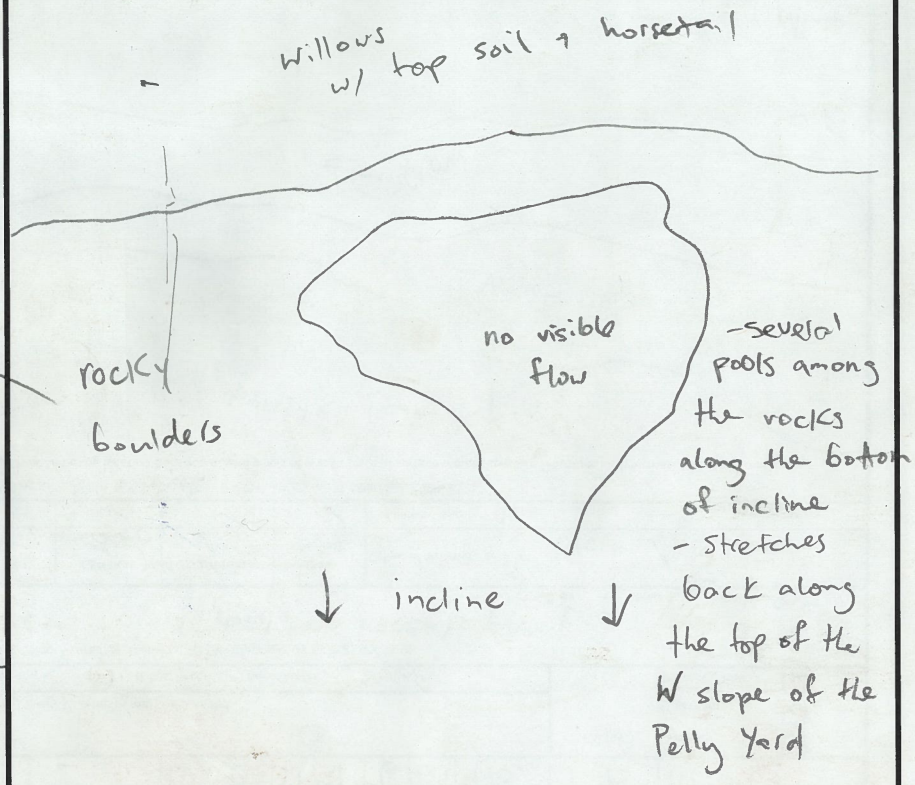
Water Colour? Turbidity, Precipitates? Description of Sampling Conditions:

clear, no algae or precipitates
no visible flow, lots of nearby standing water

DM 120 ml	GENERAL 500 ml	TOTAL Nutrients 120ml	D-Hg (40ml)	Colour of Sediment on filter: grey
✓	✓	✓	✓	# of Filters Used: 1

Notes (site conditions or variations from normal, i.e. ice cover, sediment, flows, etc.)

SKETCH of Sampling location (location of toe, pools of water, trace of surface water flow, site feautures such as roads, ditches, sumps, etc.)



Data entered (Initials): BH — Data entry reviewed (Initials):

Seepage Water Quality Field Sheets

1. Sample Site:	Date:	Time:	Sampler(s):
SS1 ~~3~~ 1/2	25-06-21	14:15	RM

Sky: Clear / P.Cloudy / O/cast / Fog / Haze / Other — Temp: 20 — Precip: Nil / Light / Mod / Strong / Rain / Snow / Other — Wind: Calm / Light / Mod / Strong / N / E / S / W / Var

Temp C	DO %	DO mg/L	SPC µs/cm	EC µs/cm	pH	ORP mv	Turb NTU
12.2	97.9	10.48	76.7	67.2	7.17	180.4	

QA/QC? (Y) / N — Photos: Close-up ☑ Upstream ☑ Downstream ☐

Note: 1 every 10 samples must be dumped

New Sample ? (Y) N IF Yes, Record GPS Coordinates

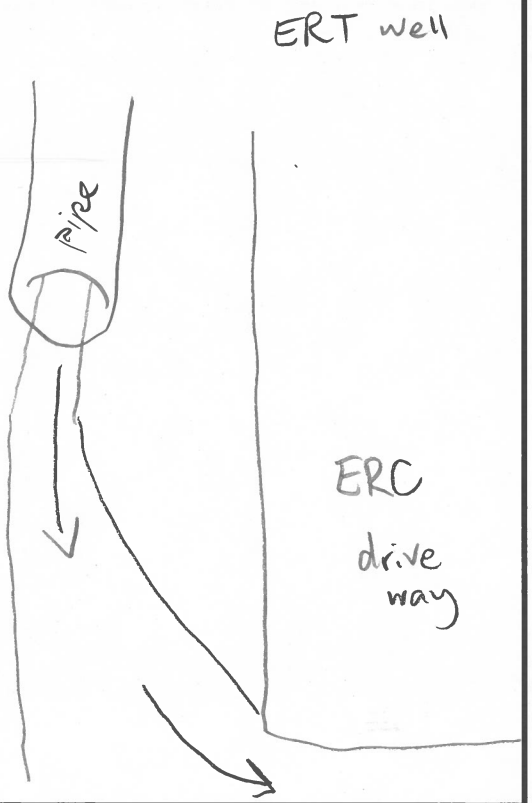
Water Colour? Turbidity, Precipitates? Description of Sampling Conditions:

clear, no visible particles

DM 120 ml	GENERAL 500 ml	TOTAL Nutrients 120ml	D-Hg (40ml)	Colour of Sediment on filter: n/a
✓	✓	✓	✓	# of Filters Used:

Notes (site conditions or variations from normal, i.e. ice cover, sediment, flows, etc.)

SKETCH of Sampling location (location of toe, pools of water, trace of surface water flow, site feautures such as roads, ditches, sumps, etc.)



Data entered (Initials): JH — Data entry reviewed (Initials): RM

1. Sample Site:	Date:	Time:	Sampler(s):

Sky: Clear / P.Cloudy / O/cast / Fog / Haze / Other — Temp: — Precip: Nil / Light / Mod / Strong / Rain / Snow / Other — Wind: Calm / Light / Mod / Strong / N / E / S / W / Var

Temp C	DO %	DO mg/L	SPC µs/cm	EC µs/cm	pH	ORP mv	Turb NTU

QA/QC? Y / N — Photos: Close-up ☐ Upstream ☐ Downstream ☐

Note: 1 every 10 samples must be dumped

New Sample ? Y / N IF Yes, Record GPS Coordinates

Water Colour? Turbidity, Precipitates? Description of Sampling Conditions:

DM 120 ml	GENERAL 500 ml	TOTAL Nutrients 120ml	D-Hg (40ml)	Colour of Sediment on filter:
				# of Filters Used:

Notes (site conditions or variations from normal, i.e. ice cover, sediment, flows, etc.)

SKETCH of Sampling location (location of toe, pools of water, trace of surface water flow, site feautures such as roads, ditches, sumps, etc.)

Data entered (Initials): — Data entry reviewed (Initials):

Seepage Water Quality Field Sheets

1. Sample Site:	Date:	Time:	Sampler(s):
SS56	24-06-21	14:45	BH/RM

Sky: Clear / O/cast / Fog / P.Cloudy / Haze / Other

Temp: +24°

Precip: Nil / Light / Mod / Strong / Rain / Snow / Other

Wind: Calm / Light / Mod / Strong / N / E / S / W / Var

Temp C	DO %	DO mg/L	SPC µs/cm	EC µs/cm	pH	ORP mv	Turb NTU
4.7	65.4	8.46	1201	738	7.14	123.1	

QA/QC? Y / (N)

Note: 1 every 10 samples must be dumped

New Sample ? Y (N) IF Yes, Record GPS Coordinates

Photos: Close-up ☑ Upstream ☑ Downstream ☑

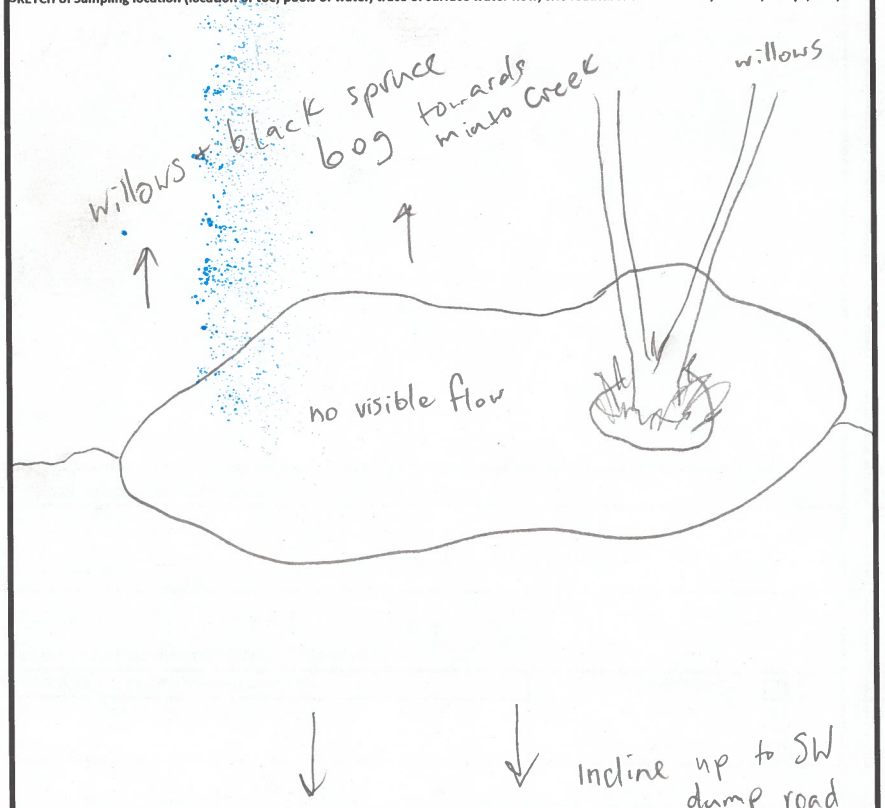
Water Colour? Turbidity, Precipitates? Description of Sampling Conditions:

clear, not turbid,

DM 120 ml	GENERAL 500 ml	TOTAL Nutrients 120ml	D-Hg (40ml)	Colour of Sediment on filter: grey
✓	✓	✓	✓	# of Filters Used: 1

Notes (site conditions or variations from normal, i.e. ice cover, sediment, flows, etc.)

SKETCH of Sampling location (location of toe, pools of water, trace of surface water flow, site feautures such as roads, ditches, sumps, etc.)



Data entered (Initials): BH

Data entry reviewed (Initials): RM

1. Sample Site:	Date:	Time:	Sampler(s):
SS29	24-06-21	3:00	BH/RM

Sky: Clear / O/cast / Fog / P.Cloudy / Haze / Other

Temp: +25

Precip: Nil / Light / Mod / Strong / Rain / Snow / Other

Wind: Calm / Light / Mod / Strong / N / E / S / W / Var

Temp C	DO %	DO mg/L	SPC µs/cm	EC µs/cm	pH	ORP mv	Turb NTU
1.7	73.8	10.31	1173	652	7.44	126.3	

QA/QC? Y / (N)

Note: 1 every 10 samples must be dumped

New Sample ? Y (N) IF Yes, Record GPS Coordinates

Photos: Close-up ☒ Upstream ☒ Downstream ☒

Water Colour? Turbidity, Precipitates? Description of Sampling Conditions:

Clear, flowing N → S , No Photos

DM 120 ml	GENERAL 500 ml	TOTAL Nutrients 120ml	D-Hg (40ml)	Colour of Sediment on filter: grey
✓	✓	✓	✓	# of Filters Used: 2

Notes (site conditions or variations from normal, i.e. ice cover, sediment, flows, etc.)

SKETCH of Sampling location (location of toe, pools of water, trace of surface water flow, site feautures such as roads, ditches, sumps, etc.)

Data entered (Initials): BH

Data entry reviewed (Initials): RM

Seepage Water Quality Field Sheets

1. Sample Site:	Date:	Time:	Sampler(s):
SS~~H2~~ 111	24-06-21	15:20	BH/RM

Sky: Clear / P.Cloudy / O/cast / Fog / Haze / Other — Temp: + 26°

Precip: Nil / Light / Mod / Strong / Rain / Snow / Other — Wind: Calm / Light / Mod / Strong / N / E / S / W / Var

Temp C	DO %	DO mg/L	SPC µs/cm	EC µs/cm	pH	ORP mv	Turb NTU
0.5	73.8	10.59	116.4	619	7.24	158.0	

QA/QC? Y / (N)

Note: 1 every 10 samples must be dumped

New Sample ? (Y) / N IF Yes, Record GPS Coordinates

Photos: Close-up ☑ Upstream ☑ Downstream ☑

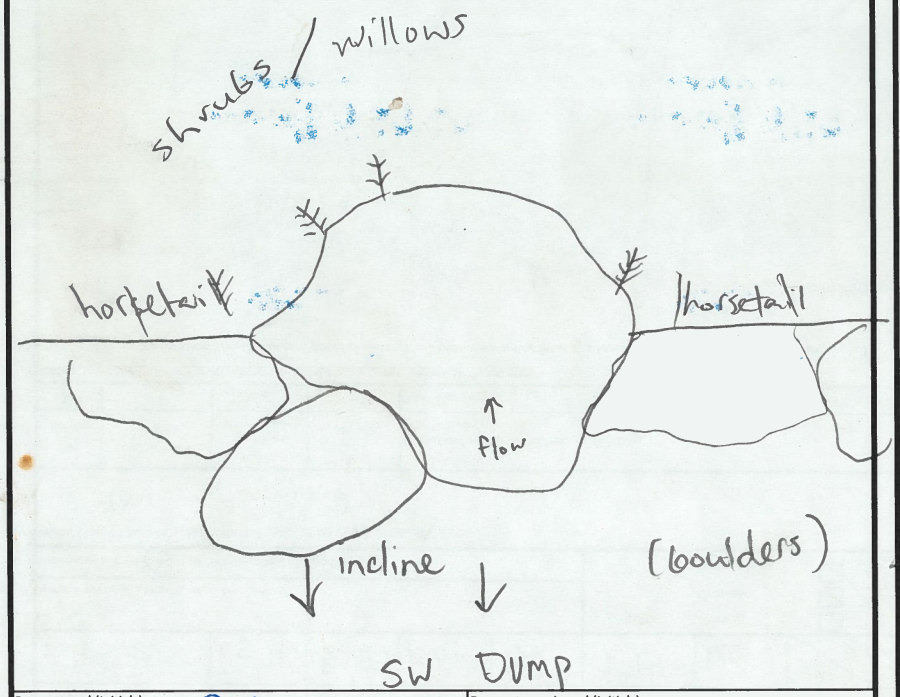
Water Colour? Turbidity, Precipitates? Description of Sampling Conditions:

clear, not turbid, slight flow

DM 120 ml	GENERAL 500 ml	TOTAL Nutrients 120 ml	D-Hg (40 ml)	Colour of Sediment on filter: grey
✓	✓	✓	✓	# of Filters Used: 1

Notes (site conditions or variations from normal, i.e. ice cover, sediment, flows, etc.)

SKETCH of Sampling location (location of toe, pools of water, trace of surface water flow, site feautures such as roads, ditches, sumps, etc.)



Data entered (Initials): BH

Data entry reviewed (Initials): RM

1. Sample Site:	Date:	Time:	Sampler(s):
SS3~~4~~	24-06-21	15:35	BH/RM

Sky: Clear / P.Cloudy / O/cast / Fog / (Haze) / Other — Temp: 26

Precip: (Nil) / Light / Mod / Strong / Rain / Snow / Other — Wind: Calm / (Light) / Mod / Strong / N / E / (S) / W / Var

Temp C	DO %	DO mg/L	SPC µs/cm	EC µs/cm	pH	ORP mv	Turb NTU
4.1	67.8	8.86	1136	679	7.28	158.9	

QA/QC? Y / (N)

Note: 1 every 10 samples must be dumped

New Sample ? Y / N IF Yes, Record GPS Coordinates

Photos: Close-up ☒ Upstream ☒ Downstream ☒

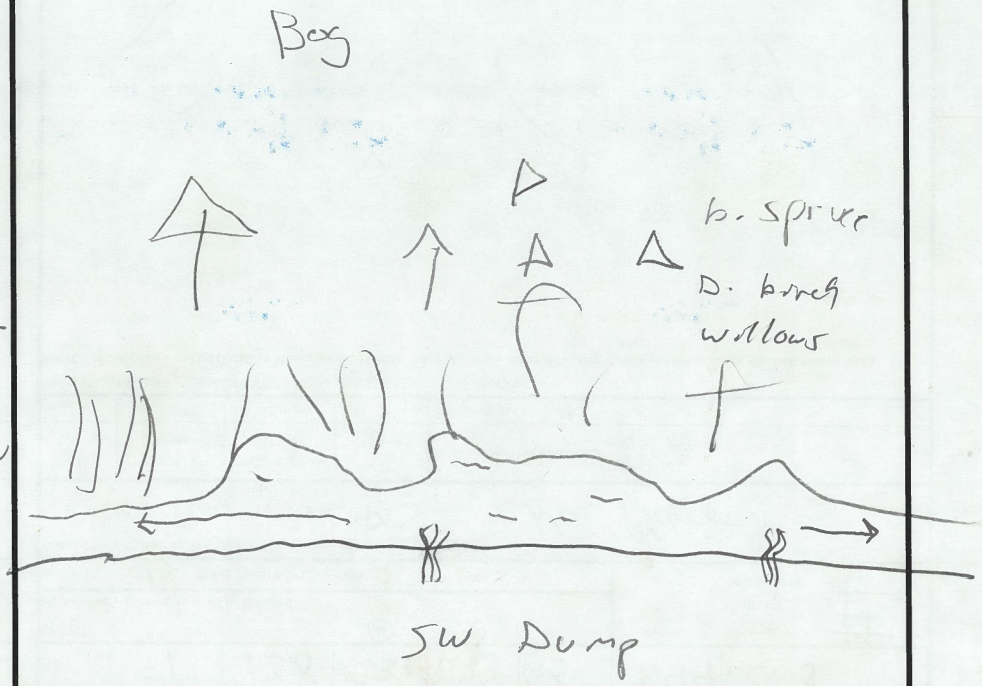
Water Colour? Turbidity, Precipitates? Description of Sampling Conditions:

multiple seeps from rock, flows in both directions approx 50 m along edge of rock

DM 120 ml	GENERAL 500 ml	TOTAL Nutrients 120 ml	D-Hg (40 ml)	Colour of Sediment on filter: brown
✓	✓	✓	✓	# of Filters Used: 3

Notes (site conditions or variations from normal, i.e. ice cover, sediment, flows, etc.)

SKETCH of Sampling location (location of toe, pools of water, trace of surface water flow, site feautures such as roads, ditches, sumps, etc.)



Data entered (Initials): BH

Data entry reviewed (Initials): RM

Seepage Water Quality Field Sheets

1. Sample Site:	Date:	Time:	Sampler(s):
SS39	21-09-15	11:00	BM DT

Sky: Clear / P.Cloudy / O/cast / Fog / Haze / Other

Temp: 12

Precip: (Nil) / Light / Mod / Strong / Rain / Snow / Other

Wind: (Calm) / Light / Mod / Strong / N / E / S / W / Var

Temp C	DO %	DO mg/L	SPC µs/cm	EC µs/cm	pH	ORP mv	Turb NTU
0.9	86.9	12.33	825.0	446.0	7.66	113.2	

QA/QC? Y / (N)

Note: 1 every 10 samples must be dumped

New Sample ? Y / (N) IF Yes, Record GPS Coordinates

Photos: Close-up ☒ Upstream ☒ Downstream ☒

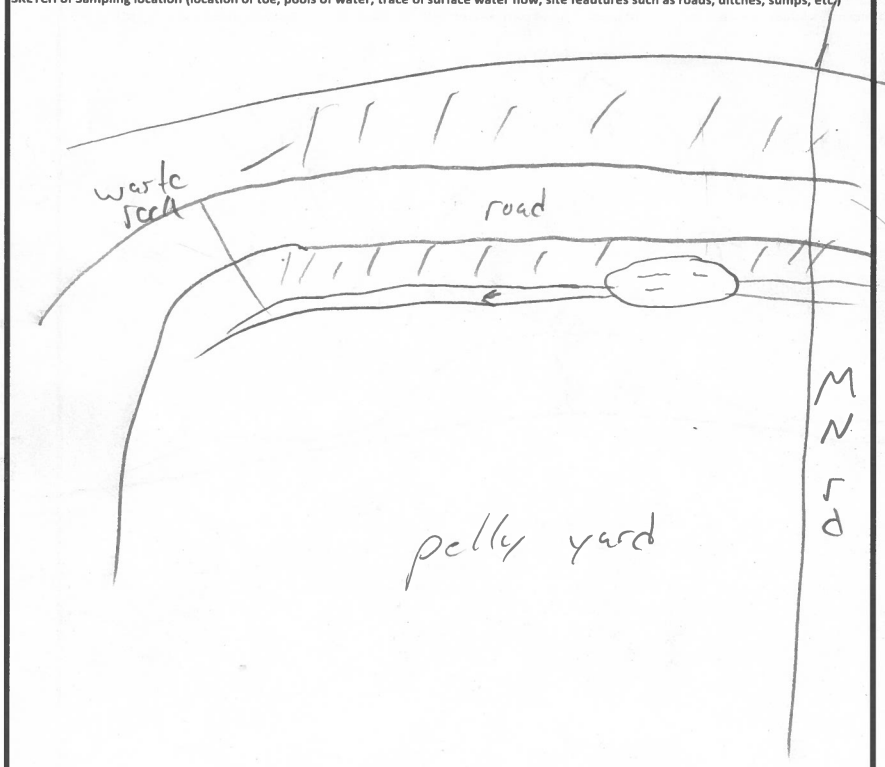
Water Colour? Turbidity, Precipitates? Description of Sampling Conditions:

some veg. growing in flow, water moving, clear, multiple sources

DM 120 ml	GENERAL ~~500ml~~ 250mL	TOTAL Nutrients 120ml	D-Hg (40ml)	Colour of Sediment on filter: none
✓	✓	✓	✓	# of Filters Used: 2

Notes (site conditions or variations from normal, i.e. ice cover, sediment, flows, etc.)

SKETCH of Sampling location (location of toe, pools of water, trace of surface water flow, site feautures such as roads, ditches, sumps, etc.)



Data entered (Initials): BM

Data entry reviewed (Initials): DT

1. Sample Site:	Date:	Time:	Sampler(s):
SS32	21-09-15	1145	BM DT

Sky: Clear / P.Cloudy / O/cast / Fog / Haze / Other

Temp: 12

Precip: (Nil) / Light / Mod / Strong / Rain / Snow / Other

Wind: Calm / Light / Mod / Strong / N / E / (S) / W / Var

Temp C	DO %	DO mg/L	SPC µs/cm	EC µs/cm	pH	ORP mv	Turb NTU
2.6	98.1	13.21	198.0	111.8	8.10	105.6	

QA/QC? Y / (N)

Note: 1 every 10 samples must be dumped

New Sample ? Y / (N) IF Yes, Record GPS Coordinates

Photos: Close-up ☒ Upstream ☒ Downstream ☒

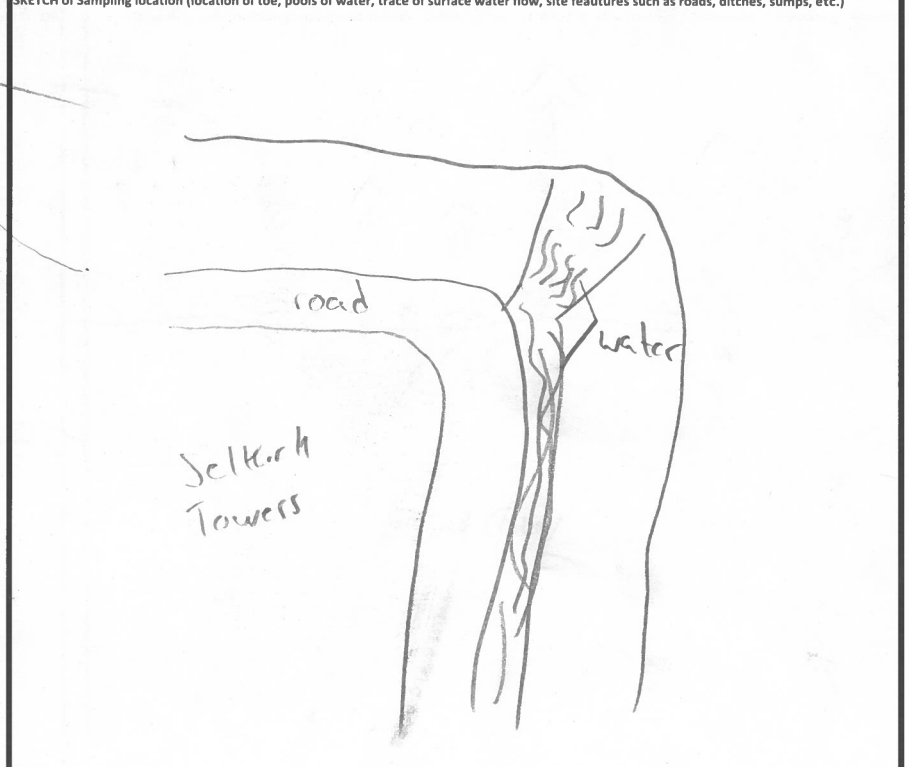
Water Colour? Turbidity, Precipitates? Description of Sampling Conditions:

Spring, multiple sources, little vegetation. Strong flow

DM 120 ml	GENERAL ~~500ml~~ 250mL	TOTAL Nutrients 120ml	D-Hg (40ml)	Colour of Sediment on filter: none
✓	✓	✓	✓	# of Filters Used: 1

Notes (site conditions or variations from normal, i.e. ice cover, sediment, flows, etc.)

SKETCH of Sampling location (location of toe, pools of water, trace of surface water flow, site feautures such as roads, ditches, sumps, etc.)



Data entered (Initials): BM

Data entry reviewed (Initials): DT

Seepage Water Quality Field Sheets

1. Sample Site:	Date:	Time:	Sampler(s):
SS31	21-09-15	14:30	BH DT

Sky: (Clear) P.Cloudy / O/cast / Fog / Haze / Other

Temp: 13

Precip: (Nil) / Light / Mod / Strong / Rain / Snow / Other

Wind: (Calm) / Light / Mod / Strong / N / E / S / W / Var

Temp C	DO %	DO mg/L	SPC µs/cm	EC µs/cm	pH	ORP mv	Turb NTU
0.1	85.9	12.48	1243	651	7.33	105.6	

QA/QC? Y / (N)

Note: 1 every 10 samples must be dumped

New Sample ? Y / (N) IF Yes, Record GPS Coordinates

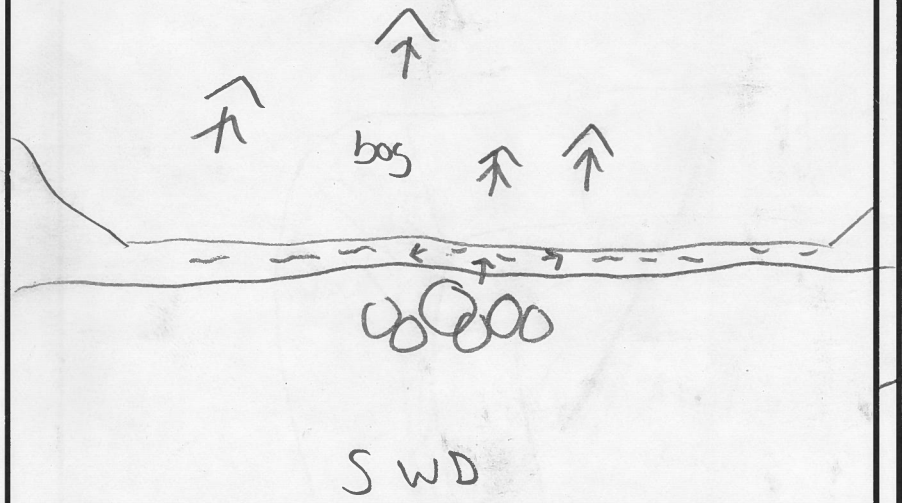
Photos: Close-up ☒ Upstream ☒ Downstream ☒

Water Colour? Turbidity, Precipitates? Description of Sampling Conditions:
clear, flow source identified, flowing both directions

DM 120 ml	GENERAL ~~300 ml~~ 250ml	TOTAL Nutrients 120 ml	D-Hg (40 ml)	Colour of Sediment on filter: clear
✓	✓	✓	✓	# of Filters Used: 2

Notes (site conditions or variations from normal, i.e. ice cover, sediment, flows, etc.)

SKETCH of Sampling location (location of toe, pools of water, trace of surface water flow, site feautures such as roads, ditches, sumps, etc.)



Data entered (Initials): BH

Data entry reviewed (Initials): DT

1. Sample Site:	Date:	Time:	Sampler(s):
SS32	21-09-15	14:55	BH DT

Sky: (Clear) / P.Cloudy / O/cast / Fog / Haze / Other

Temp: 14

Precip: (Nil) / Light / Mod / Strong / Rain / Snow / Other

Wind: (Calm) / Light / Mod / Strong / N / E / S / W / Var

Temp C	DO %	DO mg/L	SPC µs/cm	EC µs/cm	pH	ORP mv	Turb NTU
4.3	17.4	2.27	838	506	6.92	-105.3	

QA/QC? Y / (N)

Note: 1 every 10 samples must be dumped

New Sample ? Y / (N) IF Yes, Record GPS Coordinates

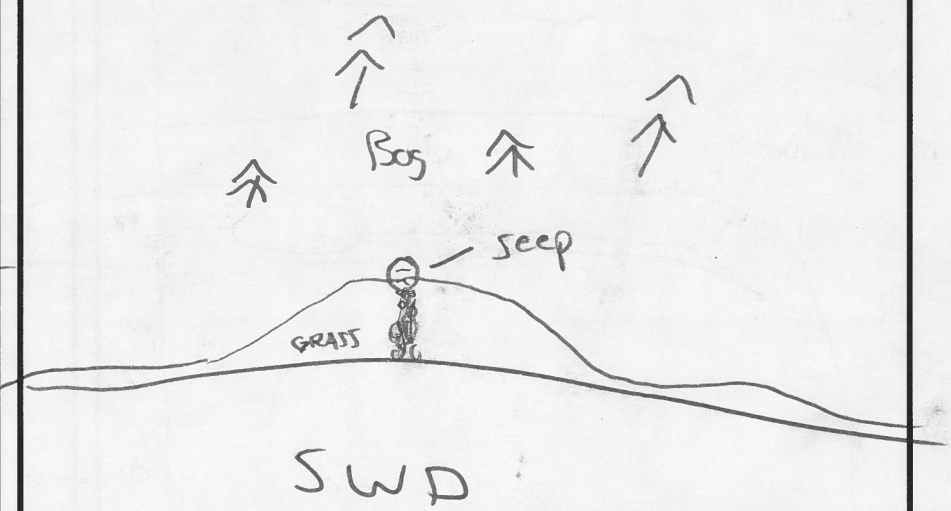
Photos: Close-up ☒ Upstream ☒ Downstream ☒

Water Colour? Turbidity, Precipitates? Description of Sampling Conditions:
No flow, seems to be coming from SWD, pool with mossy rocks, clear water

DM 120 ml	GENERAL ~~500 ml~~ 250ml	TOTAL Nutrients 120 ml	D-Hg (40 ml)	Colour of Sediment on filter: brownish
✓	✓	✓	✓	# of Filters Used: 2

Notes (site conditions or variations from normal, i.e. ice cover, sediment, flows, etc.)

SKETCH of Sampling location (location of toe, pools of water, trace of surface water flow, site feautures such as roads, ditches, sumps, etc.)



Data entered (Initials): BH

Data entry reviewed (Initials): DT

Appendix E – 2021 Water Balance and Water Quality Model Summary

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Memo

To:	Ian Smith, Journey Paulus	**Client:**	Minto Explorations Ltd.
From:	Soren Jensen	**Project No:**	1CM002.065
Cc:	Dylan MacGregor	**Date:**	March 31, 2022
Subject:	2021 Water Balance and Water Quality Model Summary for the Minto Mine Site		

1 Introduction and Background

This memorandum provides a summary of the 2021 water balance and water quality model updates for the Minto Mine site. The update covers the period January 1, 2021, through December 31, 2021.

The water balance update includes a review and summary of precipitation, flow, and water inventory data for the Mine site. Geochemical source term and the site-wide water balance and water quality model for Minto was updated in late 2021. The updated water and load balance model report is provided as an attachment to this memo.

2 Water Balance Update

2.1 Precipitation

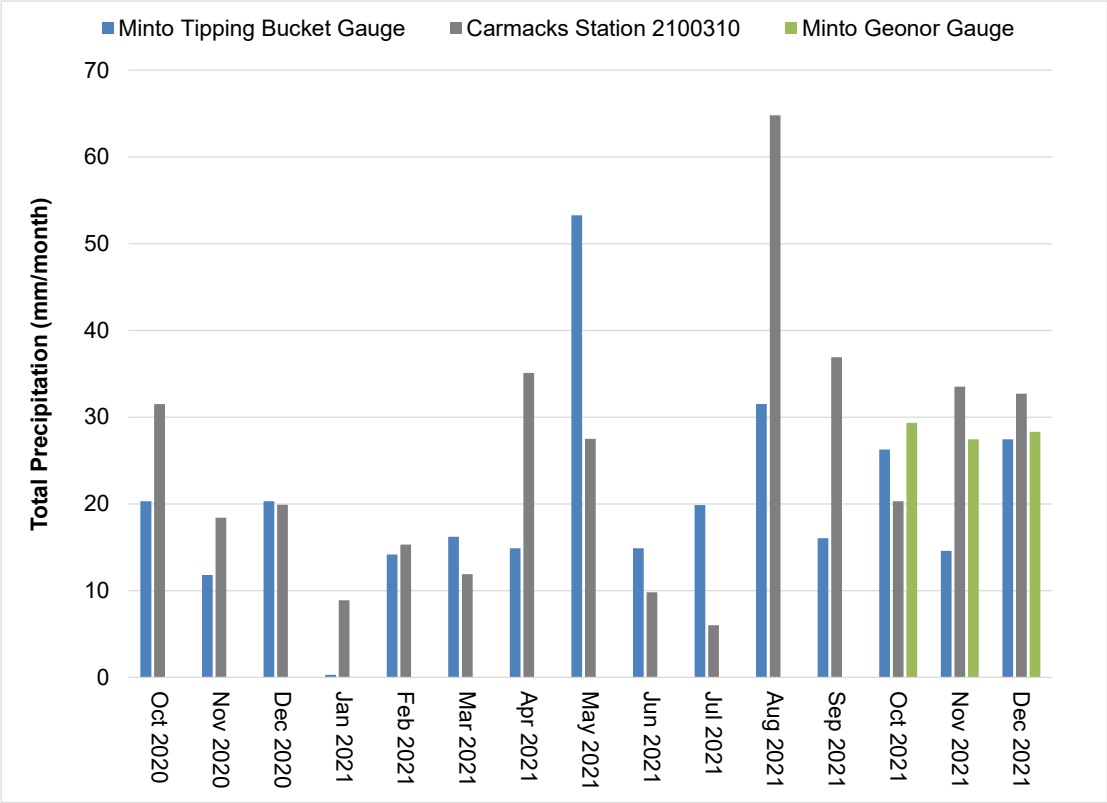
Table 1 shows a summary of monthly precipitation measured at the Mine site between October 2020 and December 2021 along with precipitation data from the regional station at Carmacks, YT (Climate ID: 2100301)[1], which is located 77 km Southwest of the Minto Mine. In the past, the meteorological station at Pelly Ranch (Climate ID 2100880)[1] located 25 km north of Minto was used as a regional reference station. However, the published data record from Pelly Ranch ends in March 2017 so the Carmacks Station was used instead.

Minto's Campbell Scientific meteorological station measures total precipitation using a Geonor gauge and a tipping bucket rain gauge. From October through May, the tipping bucket is equipped with a snowfall conversion adaptor, which allows it to measure snowfall as snow water equivalent. The Geonor precipitation gauge collects precipitation in a bucket and records precipitation by measuring the weight of the bucket. In the winter months, the bucket is partially filled with an antifreeze solution that melts any snow collected. In 2021, the total precipitation measurement collected by the Geonor gauge were functional but the analogue signal from the

[1] Data obtained from Meteorological Service of Canada, Environment Canada.

vibrating wire load cells were unreliable. However, on September 18, 2021, the gauge was repaired and reliable precipitation measurements were collected from then on.

Figure 1 and Table 1 show monthly total precipitation values recorded by Minto's tipping bucket and Geonor gauges and by the regional station at Carmacks.



https://...Minto 2021 Update/2021 Water Balance Update\2021 Met Station Data Summary.xlsx

Figure 1: 2021 Total Precipitation Measurements at Minto and at Carmacks

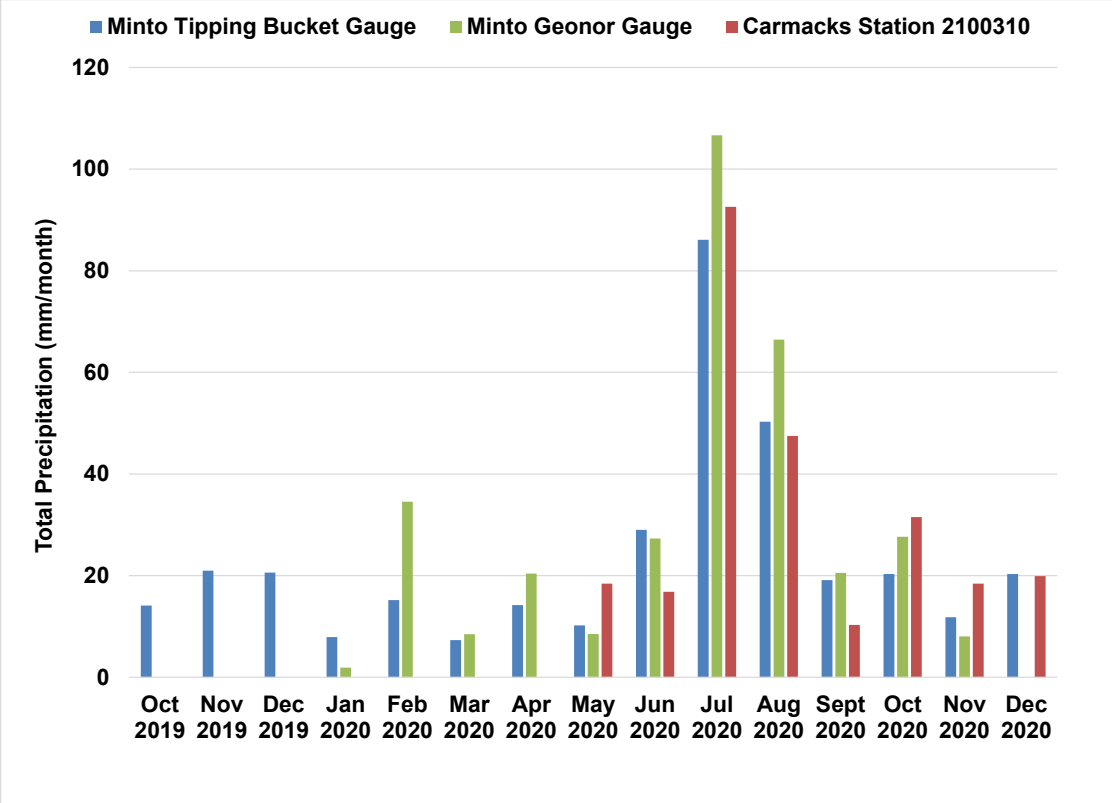
In past years the total precipitation measurements recorded at Minto have correlated reasonably well with precipitation measured at the Carmacks station. Total precipitation recorded by the Geonor gauge and at Carmacks in October, November and December 2021 are comparable, as were 2020 precipitation measurements (Figure 2). However, from January to September 2021 the measurements were not well correlated and the tipping bucket measurements appear to have gaps (such as in January 2021). Total annual precipitation recorded by the tipping bucket gauge was about 249 mm while the station at Carmacks reported 303 mm (Table 1). As discussed above, the Geonor data collected prior to October 2021 were unreliable. It is not known whether the mis-match between total precipitation measurements are due to actual variability in precipitation between the two sites or if the tipping bucket measurements at Minto may have been unreliable.

In any event, a total annual precipitation in the range of 250 to 300 mm at the Minto Mine site in the 2021 hydrological year is below the average annual precipitation of 329 mm and similar to the estimated precipitation in 2020 (300 mm) but greater than annual precipitation measured in 2019 (230 mm), 2018 (192 mm) and in 2017 (210 mm).

Table 1: Precipitation Records for the Minto Mine Site and Carmacks

		Campbell Scientific Station (Minto) Mine)		Carmacks Station
Year	**Month and Year**	**Tipping Bucket Gauge**	**Geonor Gauge**	**(Climate ID 2100880[A])**
		mm/month	mm/month	mm/month
2020	Oct 2020	20.3	0.0	31.5
2020	Nov 2020	11.8	0.0	18.4
2020	Dec 2020	20.3	n/a	19.9
2021	Jan 2021	0.3	13.4	8.9
2021	Feb 2021	14.2	4.1	15.3
2021	Mar 2021	16.2	14.3	11.9
2021	Apr 2021	14.9	6.3	35.1
2021	May 2021	53.3	6.4	27.5
2021	Jun 2021	14.9	18.5	9.8
2021	Jul 2021	19.8	22.5	6
2021	Aug 2021	31.5	40.9	64.8
2021	Sep 2021	16.1	12.4	36.9
2021	Oct 2021	26.3	29.4	20.3
2021	Nov 2021	14.6	27.4	33.5
2021	Dec 2021	27.4	28.3	32.7
	SUM Calendar Year	249	224	303

Source: Minto Site Data: 2021 Met Station Data Summary.xlsx
Notes:
A: Data obtained from Meteorological Service of Canada, Environment Canada.



X:\01_SITES\Minto\1CM002.024_Water_Balance_Support\2020 Water Balance Update\2020 Met Station Data Summary.xlsx

Figure 2: 2020 Total Precipitation Measurements at Minto and at Carmacks

2.2 Snow Course Data

Snow course surveys were completed at four snow survey stations at the mine site in 2021 in February, March, and April. Table 2 shows a summary of the snow survey data (*i.e.* an average of the results from the four stations) from 2009 to 2021.

The snowpack was slightly below average (of the 13 years recoded) in February, slightly greater than average in March and the highest on record in April (162 mm snow water equivalent compared to an average of 102 mm). The greater snowpack resulted in a higher catchment yield in May 2021 compared to the year before (Figure 3).

Table 2: Summary of Snow Survey Data for the Minto Mine Site

Year	February	March	April
	Water Equivalent (mm)	Water Equivalent (mm)	Water Equivalent (mm)
2009	92.7	110.0	150.7
2010	107.7	120.7	56.0
2011	106.0	141.7	111.7
2012	111.0	127.0	132.7
2013	91.3	106.0	62.7
2014	84.3	99.7	67.3
2015	90.3	76.6	67.8
2016	80.3	80.7	n/a
2017	79.0	72.7	59.3
2018	60.0	69.4	101.1
2019	51.7	51.3	No Survey
2020	112	139	135
2021	79.5	118	161

Source: MINTO_Snow_Master_2021.xlsx

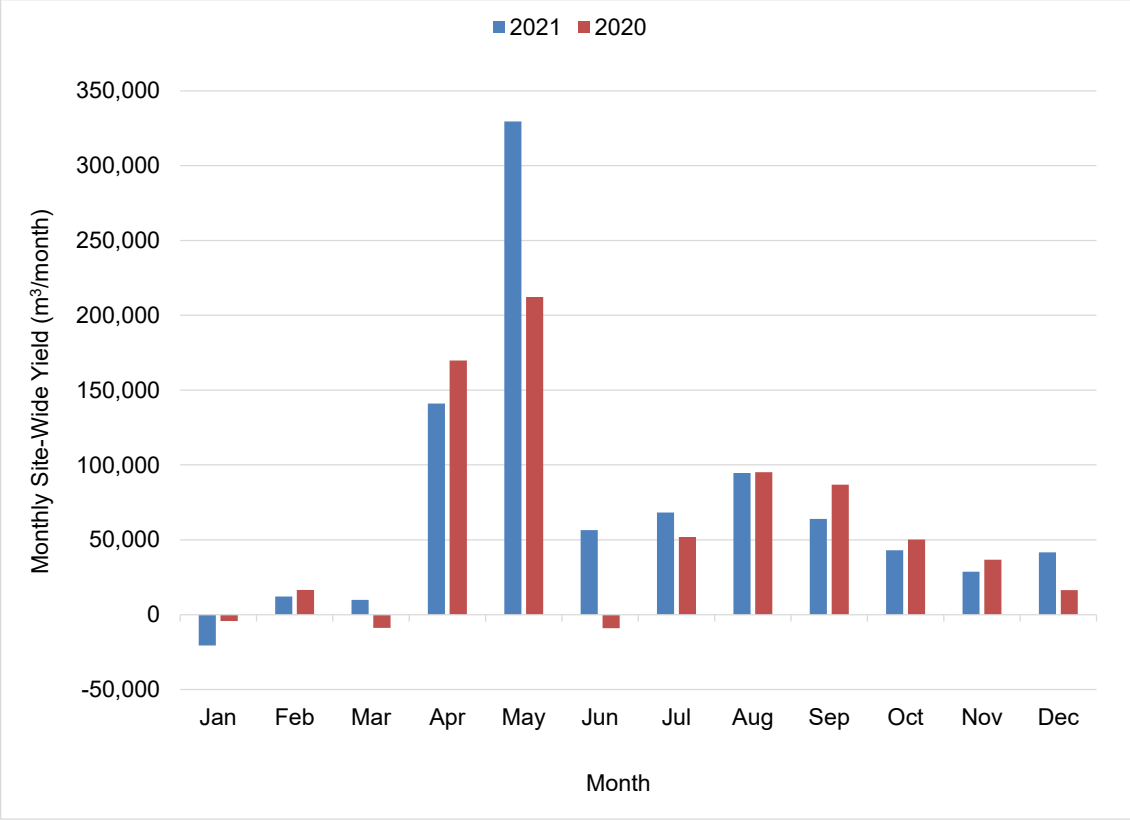


Figure 3 Estimate Monthly Site-Wide Catchment Yield at Minto in 2021

2.3 Water Management

Water that can be diverted away from the active mine site and meets the Effluent Quality Standards (EQS) is conveyed to the Water Storage Pond (WSP), while water collected from active mine areas is routed to the Main Pit Tailings Management Facility (MPTMF) or the Area 2 Pit Tailings Management Facility (A2PTMF). Between November 2012 and June 2015, the MPTMF was also used for subaqueous deposition of tailings. Deposition of mine water and tailings (subaqueous) to the A2PTMF commenced in April 2015 and is ongoing.

Other water management features on the Mine site include:

- WSP: reservoir for water that meets discharge criteria and is destined for discharge to Minto Creek.
- W15 sump: collects surface runoff and seepage from:
  - The Southwest Waste Dump;
  - Part of the Main Waste Dump; and
  - Adjacent undisturbed catchments.

  In 2021, approximately 19,000 m^3 of water collected at W15 was routed to the WSP in April and in part of May. From May through September, the W15 water was routed to the MPTMF because the water quality did not meet the EQS (approximately 85,000 m^3).
- W35 sump: collects surface runoff from the minimally disturbed southern catchments. Water collected at W35 in 2021 was piped to the Area 2 Pit TMF from April until October when the sump dried up (approximately 40,000 m^3).
- W62 sump: collects surface runoff and seepage from the mill valley, including contributions from the Dry Stack Tailings Storage Facility. Water collected at the W62 sump is pumped to the MPTMF. In 2021, water was pumped from W62 to the MPTMF year-round (approximately 133,000 m^3 in 2021).

2.4 2021 Water Balance

Table 3 summarizes the monthly water and tailings inventory in Minto's MPTMF and A2PTMF as well as water inventory in the WSP. The water inventory in the MPTMF increased modestly by about 70,000 m^3 in 2021, while the tailings and water inventory in the A2PTMF increased by approximately 1.0 Mm^3.

Table 4 shows a summary of the 2021 water balance for the Mine site. Volume estimates were rounded to the nearest 1,000 m^3 in accordance with the presumed precision of the estimates. In 2021, the calculated overall site yield was approximately 844,000 m^3. This yield represents all runoff and seepage collected across the site, which must be managed by the operations. The total catchment upstream of the Water Storage Dam measures approximately 1,040 ha. A runoff volume of 844,000 m^3 from 1,040 ha gives a unit yield of approximately 81 mm/year.

The site-wide runoff coefficient is calculated based on the total precipitation estimates, which ranged from 249 mm/year (tipping bucket) to 303 mm/year (based on precipitation measurements at Carmacks). The two precipitation estimates give the following site-wide runoff coefficients

Carmacks:

Annual Yield/ Total Annual Precipitation = Runoff Coefficient → 81mm/303mm = ***0.27***

Tipping Bucket at Minto:

Annual Yield/ Total Annual Precipitation = Runoff Coefficient → 81mm/249mm = ***0.32***

As discussed above, the total precipitation measured in Carmacks is likely a more reliable estimate for site precipitation than the tipping bucket measurements. 4 shows annual yields vs. annual total precipitation along with lines that indicate the site-wide yield coefficients.

Table 3: 2021 Water Inventory Change and Site Yield

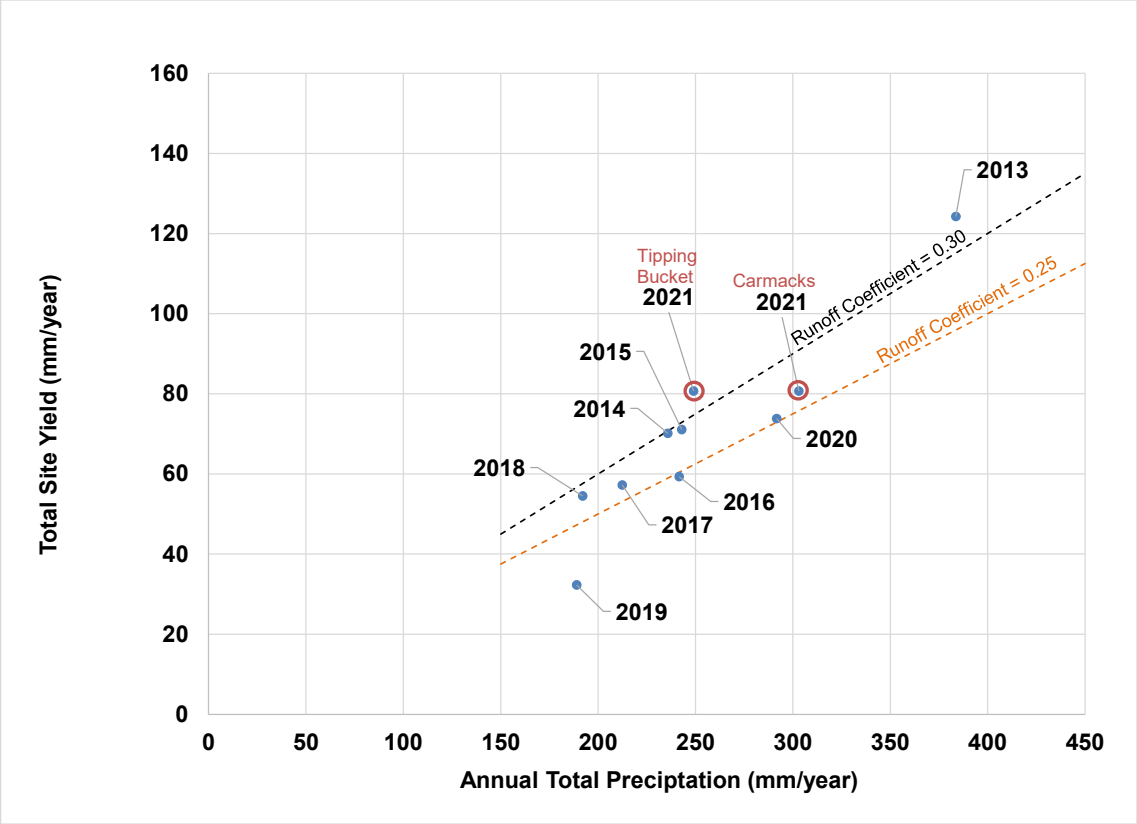
Month[A]	Change in MPTMF Water Inventory	Tailings Solids Deposition in MPTMF	Change in A2PTMF Water and Tailings Inventory	Tailings Solids Deposition in A2PTMF	Change in WSP Water Inventory	Discharged to Minto Creek
Year	m^3/month	BCM/month	m^3/month	BCM/month	m^3/month	m^3/month
1-Jan-21	-10,554	0	28,352	30,406	-7,945	0
1-Feb-21	27,070	0	10,610	21,627	-3,886	0
1-Mar-21	8,940	0	26,212	24,252	-1,018	0
1-Apr-21	20,616	0	121,875	26,078	24,577	0
1-May-21	104,173	0	151,915	29,454	95,191	7,762
1-Jun-21	45,016	0	30,216	27,355	3,225	5,397
1-Jul-21	-126,177	0	221,727	25,096	-2,363	178
1-Aug-21	-32,656	0	143,909	19,947	3,342	0
1-Sep-21	2,496	0	106,239	25,933	-18,815	0
1-Oct-21	66,841	0	157	28,124	4,228	0
1-Nov-21	-10,992	0	75,829	31,578	-4,479	0
1-Dec-21	-24,271	0	100,678	33,274	-1,529	0
1-Jan-22						
SUM	70,501		1,017,721	323,123	90,527	13,337
				Total Site Yield	**838,962**	**m^3**

Notes: **A** – on the first day of the month.
Source: https://srk-my.sharepoint.com/personal/sjensen_srk_com/Documents/Desktop/Minto 2021 Update/2021 Water Balance Update\2021 Water Balance Update REV01 SRJ.xlsx

Table 4: Water Balance Summary of the Minto Mine Site, 2021 (Rounded, Jan to Dec)

	Units	Main Pit TMF	Area 2 Pit TMF	WSP
Volume Change 2021 (water + tailings)	m^3	70,000	1,018,000	90,000
Tailings Deposited, Total Bank Volume[A]	BCM	-	323,000	-
Bulk Volume of Tailings Deposited[B]	m^3		671,000	
Water Volume Change 2021	m^3	70,000	697,000	90,000
Estimated Groundwater Inflow	m^3	30,000		
Total Water Inventory Increase in 2021	**m^3**	857,000		
Total Water Discharged to Minto Creek	m^3	13,000		
Total Site-Wide Yield in 2021	**m^3**	**840,000**		

Notes: Source: 2021 Water Balance Update REV01 SRJ.xlsx
[A] – the bank volume is the volume of competent solids, which equals the water volume displaced when tailings are inundated.
[B] – the bulk volume is the volume occupied by the tailings in the tailings management facilities.



Source: 2021 Water Balance Update REV01 SRJ.xlsx

Figure 4 Total Site Yield vs. Annual Total Precipitation

3 Water Quality Model Update

Water quality model source terms and the site-wide water and load balance model were updated in 2021 (SRK, 2021). A detailed description of the modelling approach, methodology, inputs, and model results are provided in the model report.

Monitoring data collected in 2021 were used to calibrate the water balance and water quality model. The agreement between model results and monitoring data for 2021 was therefore dictated by the extent to which the model calibration was able to reproduce historical water quality trends. Comparisons of water quality monitoring data and model results in the coming years will be a meaningful basis for evaluating the skill of the model.

4 Closing

The summary of the updated water balance and water quality model for the Minto Mine was prepared in support of annual reporting. SRK would be pleased to address any questions or comments.

5 References

SRK, 2021. Minto Mine Water and Load Balance Model Update 2021. Report prepared for Minto Explorations Ltd. Canada. Issued December 2021.

Appendix F – Summary of Minto and McGinty Creek Surface Hydrology 2021

Summary of Minto and McGinty Creek 2021 Surface Hydrology

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1 Introduction

In 2021, as part of the EMSRP, Minto monitored hydrological conditions at water quality stations including the following: stations within the operational mine area; stations downstream from the mine operational area that are influenced by mine effluent discharge; and reference stations downstream from the mine operational area that are not exposed to effluent. Hydrological monitoring is performed using a variety of methods including: manual discrete discharge measurements with combinations of flow meters, continuous stage measurements through the deployment of Solinst Level Loggers and Barometric Loggers and monitoring of an engineered flume.

Minto maintained and monitored 8 hydrometric stations located on Minto Creek and McGinty Creek as listed below and shown in Figure 1.

- Minto Creek
    1. W3: Flume downstream of the Water Storage Pond (WSP)
    2. MC1: Located in Minto Canyon – mid-catchment
    3. W1: Located approximately 1 km upstream of Yukon River – lower catchment
    4. W7: Tributary on the south side of Minto Creek
- McGinty Creek
    5. MN-0.5: West Tributary of McGinty Creek
    6. MN-1.5: Upper East Arm of McGinty Creek
    7. MN-2.5: East Tributary of McGinty Creek
    8. MN-4.5: McGinty Creek near the Mouth

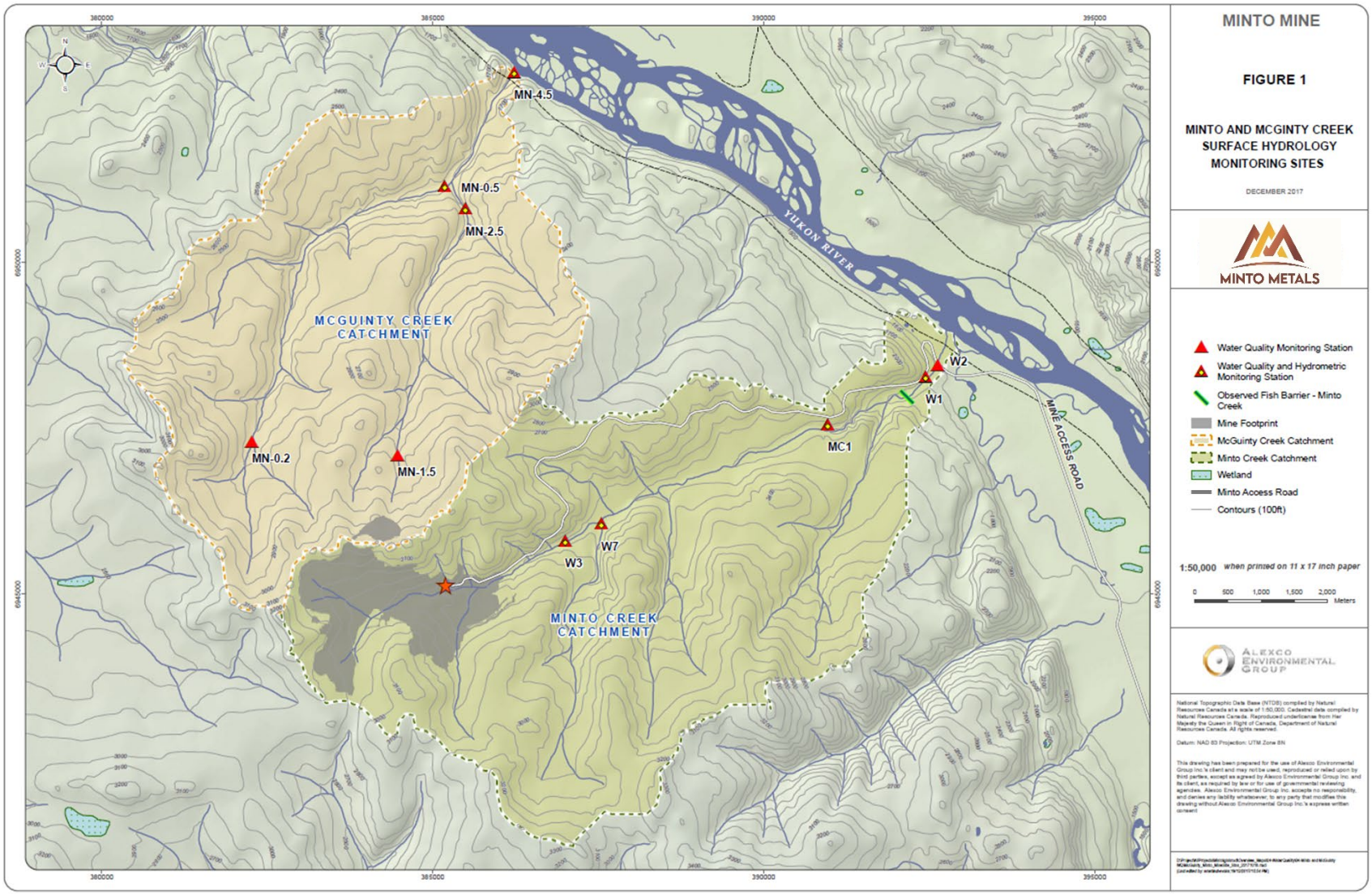

Figure 1: Minto and McGinty Creek Hydrology Surface Map

The 2021 open water season was characterized by above average flows during freshet, a dry spell during July which saw W1 dry up completely, followed by average flows sustained by regular precipitation events in late summer and early fall. A brief period of active mine discharge, from the Water Treatment Plant (RO), occurred from May 25th to June 1st and again from September 20th to September 25th. A single day of discharge occurred on September 29th.

The following sections will present the methods used to measure flow at the hydrometric program, the summary of each station's hydrometric program and recommendations for future monitoring.

2 Methods

Minto personnel conduct regular discrete discharge measurements and maintenance at the stations listed below. Additionally, these stations are equipped with Solinst Level Logger and Barometric Logger for continuous measurements. In 2021 updated Solinst Leveloggers and Barologgers were launched at all McGinty Creek sites, this hardware proved more reliable than the hardware used in Minto Creek and in 2022 all new Solinst hardware will be deployed at Minto Creek sites. In 2021, W7's frequency of monitoring increased from monthly to weekly. Table 2-1 provides an overview of instrumentation available and discrete measurement frequency at these stations.

Table 2-1: Summary of Hydrometric Program

Station	Watershed	Years Monitored	Frequency of Discrete Measurement	Instrumentation Available
W3	Minto Creek	2012-2021	Weekly	Flume, Data Logger
MC1	Minto Creek	2012-2021	Weekly	Staff Gauge, Data Logger
W1	Minto Creek	2012-2021	Weekly	Staff Gauge, Data Logger
W7	Minto Creek	2013-2021	Weekly	Staff Gauge, Data Logger
MN-0.5	McGinty Creek	2014-2021	Monthly	Staff Gauge, Data Logger
MN-1.5	McGinty Creek	2018-2021	Monthly	Staff Gauge, Data Logger
MN-2.5	McGinty Creek	2014-2021	Monthly	Staff Gauge, Data Logger
MN-4.5	McGinty Creek	2011-2021	Monthly	Staff Gauge, Data Logger

Stream-gauge data is collected and managed throughout the open water season by the Minto personnel. Velocities are measured using a Hach FH950 handheld electromagnetic flowmeter. Velocity and water depth measurements are converted to flows using the area-velocity relationship methods. All hydrometric data, calculated flows and the time-series of recorded water levels and temperature data from the loggers were processed by Minto personnel under AEG guidance.

Levelogger data was compared to the staff gauge readings as logger records for water level may have shifted over the course of the season due to repositioning, and data was corrected to match staff gauge measurements.

Stage-discharge relationships (rating curves) were created with discrete flow measurements and staff gauge readings. Ice affected readings or readings that were far outliers that could not be confirmed by photography may have been removed from the stage-discharge curves.

3 Minto Creek

3.1 Station W3 – Flume below the Water Storage Pond Dam

W3 is located about 500 meters downstream of the water storage pond dam where Minto Creek flows through an engineered flume inside a heated structure that allows for year-round flow. Solinst loggers record water levels and atmospheric pressure every 30 minutes, and water levels at the flume are recorded weekly. Early in 2021 the flume area had begun to freeze and back-up, causing the water level within the flume to rise and stop flowing, making accurate flow measurement impossible. Ice blockage was dislodged and water began to flow freely through the flume in May 2021. Flow measurements from November 16th to December 31st is based on averages calculated by flume readings due to malfunctioning logger equipment.

A summary of the level and flow data recorded at W3 are presented in Figure 2 to Figure 4. Figure 2 presents recorded water level and temperature for 2021. This data is collected using a pressure transducer and is corrected/calibrated using the stage-discharge relationship presented in Figure 3. The stage-discharge relationship is based on discrete measurements of the staff gauge within the engineered flume from 2013 to 2021. Figure 4 presents calculated flow rates based on transducer data and flow rates from discrete measurements of the flume staff gauge.

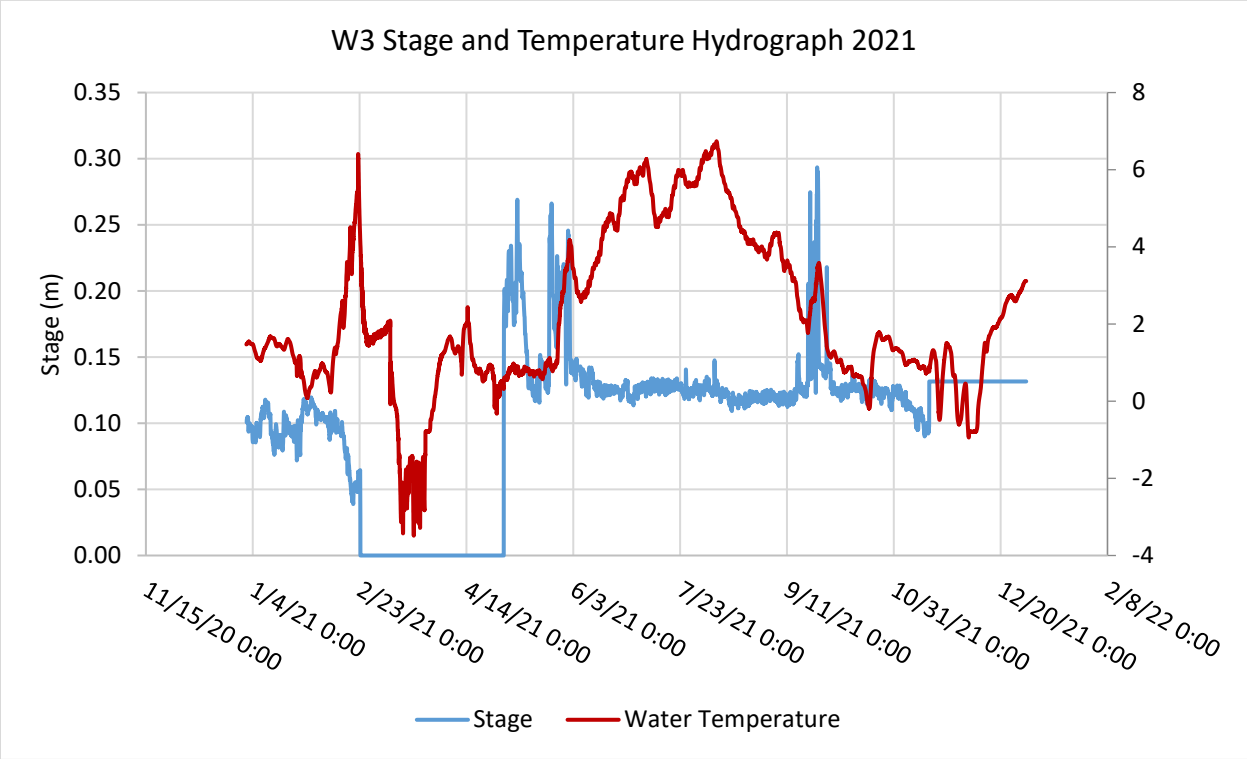

Figure 2: W3 Stage and Temperature Hydrograph 2021

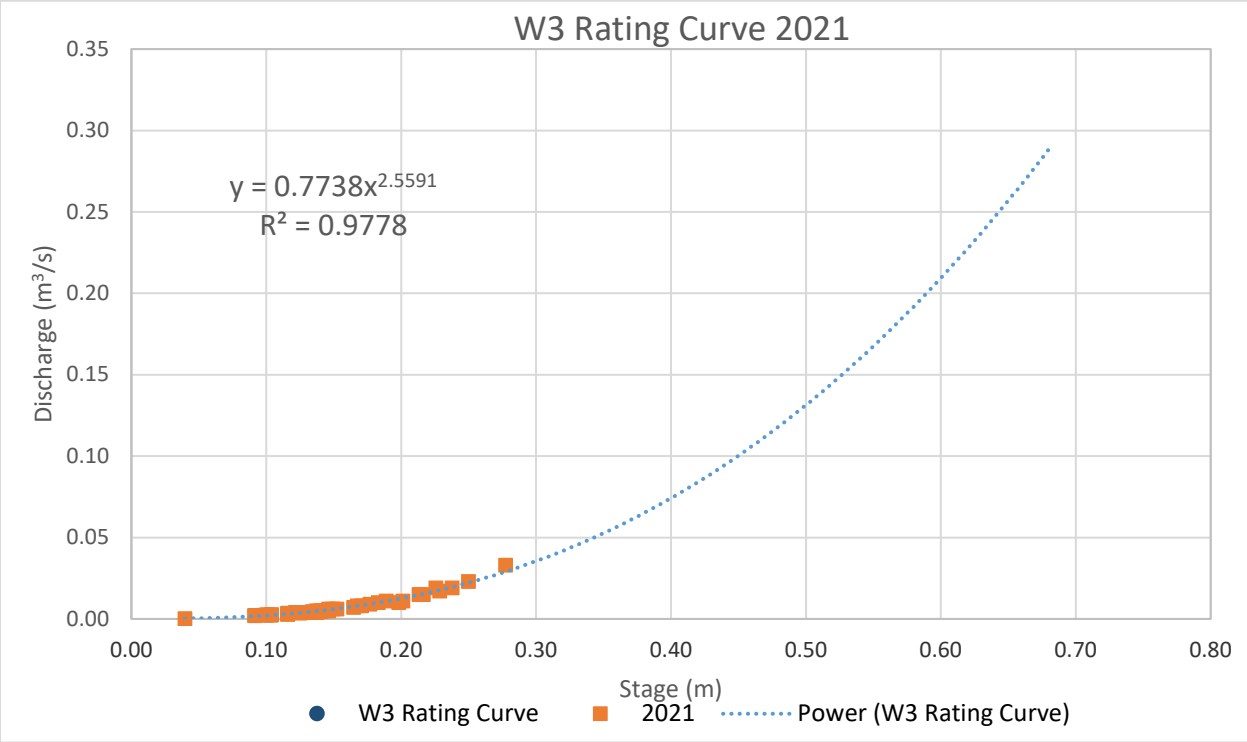

Figure 3: W3 Rating Curve 2021

Figure 4 shows the 2021 hydrograph and discrete flow measurements conducted during the recorded dataset. W3 is directly influenced by discharge from the Water Treatment Plant to Minto Creek. Water level spikes in May and September correlate with discharge from the Water Treatment Plant.

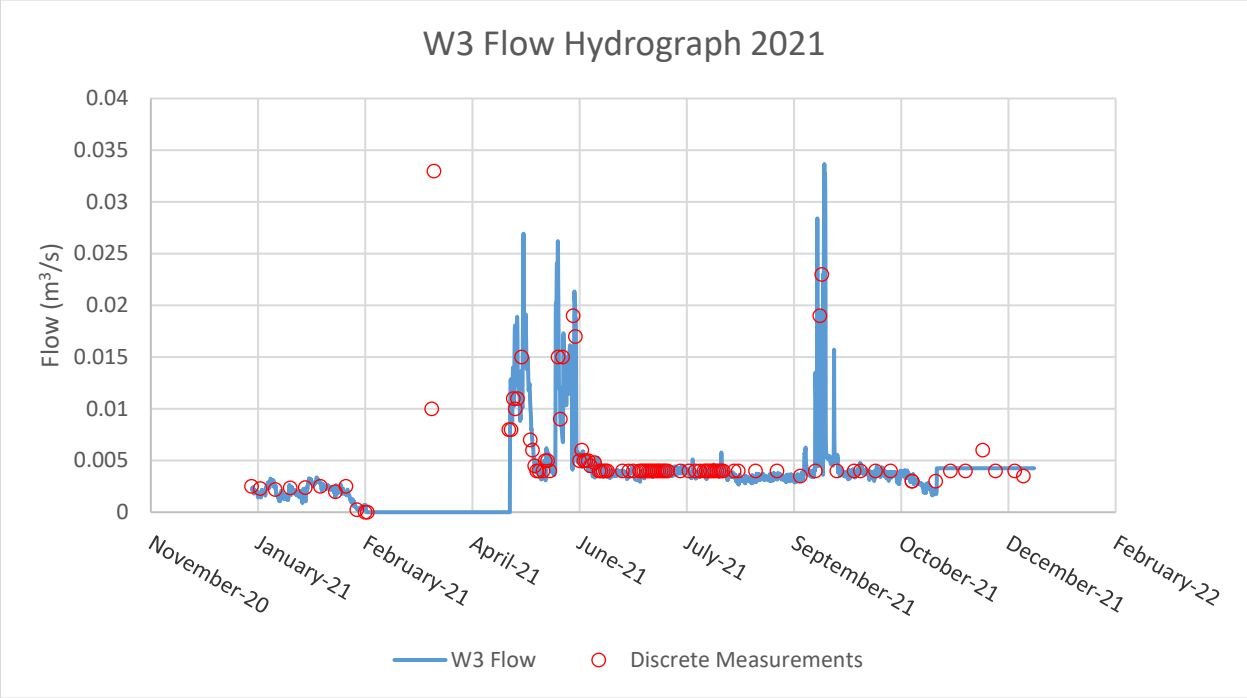

Figure 4. W3 Flow Hydrograph (with discrete measurements) 2021

Table 3-1 provides a summary of the average water temperature, flow and total flow volume in 2021. Table 3-2 summarizes the historical mean monthly flows to previous years of the hydrometric program.

Table 3-1: W3 2021 Hydrometric Data and Temperature Summary

Month	Period of Record (Day)	Mean Water Temperature (°C)	Mean Flow (m3/s)	Total Flow (m3)
Jan	**31**	1.190	0.002	5571.0
Feb	**23**	2.080	0.002	3243.4
Mar	**0**	0*	0*	0*
Apr	**0**	0*	0*	0*
May	**31**	1.153	0.010	27512.7
Jun	**30**	4.122	0.004	11179.9
Jul	**31**	5.498	0.004	10359.7
Aug	**31**	5.182	0.003	9268.7
Sep	**30**	3.045	0.006	15154.1
Oct	**31**	1.021	0.004	10031.7
Nov	**30**	0.868	0.003[1]	8249.7[1]
Dec	**31**	1.408	0.004[2]	11718.0[2]

* Water backed up and not flowing due to ice jams

[1] Logger readings averaged with Nov flume readings (Nov 16 to Nov 30)

[2] Calculated based on Dec flume reading averages

Table 3-2: W3 Historical Mean Monthly Flow (m^3/s)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2012	-	-	-	-	-	0.005	0.005	0.006	0.005	-	-	-
2013	-	-	-	-	-	0.003	0.004	0.004	0.004	-	-	-
2014	-	-	-	-	-	<0.001	<0.001	0.002	0.003	0.003	0.006	0.004
2015	0.003	0.006	0.006	0.057	0.086	0.003	0.003	0.003	0.004	0.004	0.006	0.026
2016	-	-	-	0.022	0.052	0.003	0.003	0.004	0.004	0.004	0.003	0.004
2017	0.030	0.020	0.010	0.010	0.016	0.018	0.006	0.008	0.007	0.012	0.010	0.015
2018	-	-	-	-	-	0.028	0.022	0.015	0.013	0.012	-	-
2019	-	-	-	-	-	0.003	0.003	0.003	0.003	0.004	0.003	-
2020	-	0.002	0.002	0.006	0.004	0.003	0.003	0.003	0.004	0.005	0.002	0.002
2021	0.002	0.002	0.000	0.000	0.010	0.004	0.004	0.003	0.006	0.004	0.003	0.004

Note: Shaded cells indicate incomplete months of data

1.2 MC1 - Minto Creek Mid-Catchment

The hydrometric station MC1 on Minto Creek is located downstream of the W3 Flume and immediately upstream of the canyon along Minto Creek. The Solinst loggers installed at this station recorded temperature and water levels at 30-minute intervals from May 5th to September 26th (144 days). Flow Measurements from July 31st to Aug 3rd were calculated using an average of 1 week of readings before and after the gap of missing data due to malfunctioning loggers. The loggers were pre-emptively removed on September 26th due to ice forming on the creek surface. Figure 5 shows water level and temperature data for Minto Creek at MC1 during the open-water season.

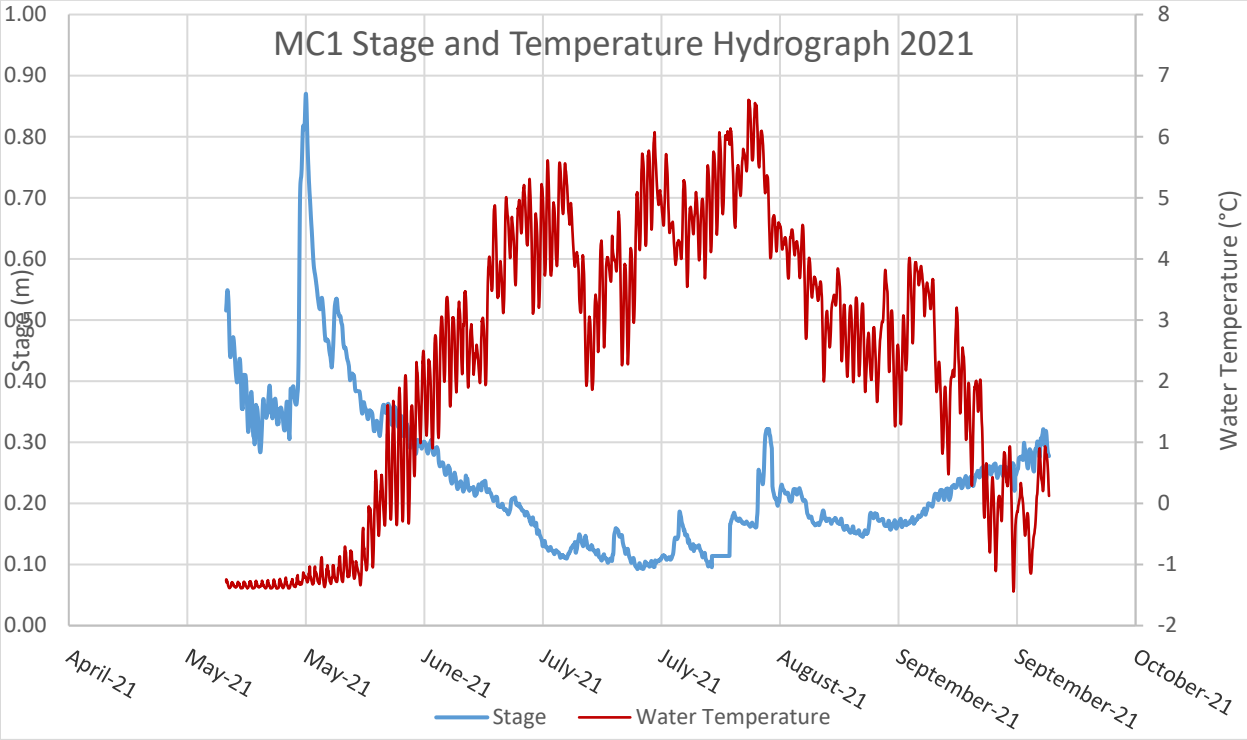

Figure 5: MC1 Stage and Temperature Hydrograph 2021

Over the course of the hydrometric program in 2021, numerous discrete discharge measurements were recorded in conjunction with water level readings recorded by both the logger and the staff gauge. This data provides the information necessary to generate a stage-discharge relationship which enables the computation of creek discharge for the recorded stage data. The stage-discharge relationship is presented in Figure 6.

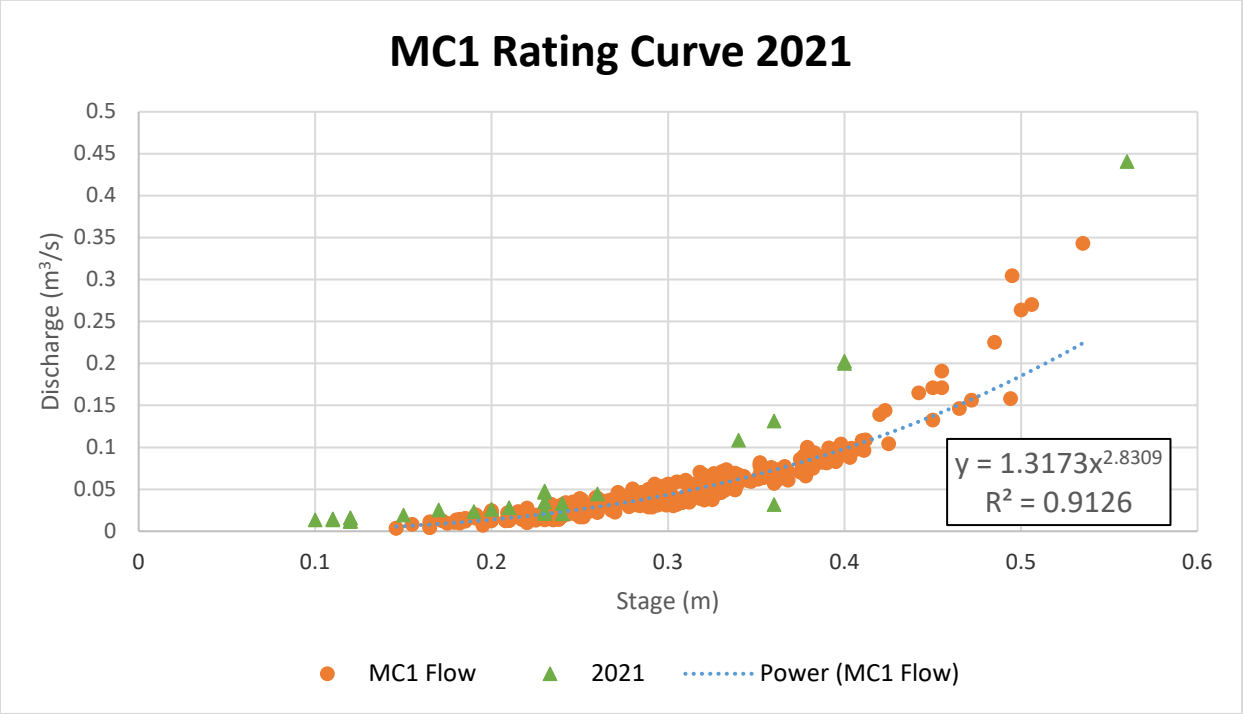

Figure 6: MC1 Rating Curve 2021

The 2021 hydrograph and discrete measurements for MC1 are shown in Figure 7. The maximum measured flow of 0.441 m^3/s occurred on May 25, 2021 during the peak of freshet. As noted above, the pressure transducer was removed on September 26 to avoid freezing damage.

Discrete and calculated flow measurements corresponded reasonably well in 2021, however the degree of variability suggests there may be improvements that can be made to flow measurement procedures at this station. It is likely that stream characteristics at the hydrological station have changed since installation in 2013 due to erosion, sedimentation, and water sampling activities.

In 2021 discrete samples were collected approximately 3m downstream from previous years as it was more representative of the site and didn't have the erosion issues that were identified in the original measurement transect.

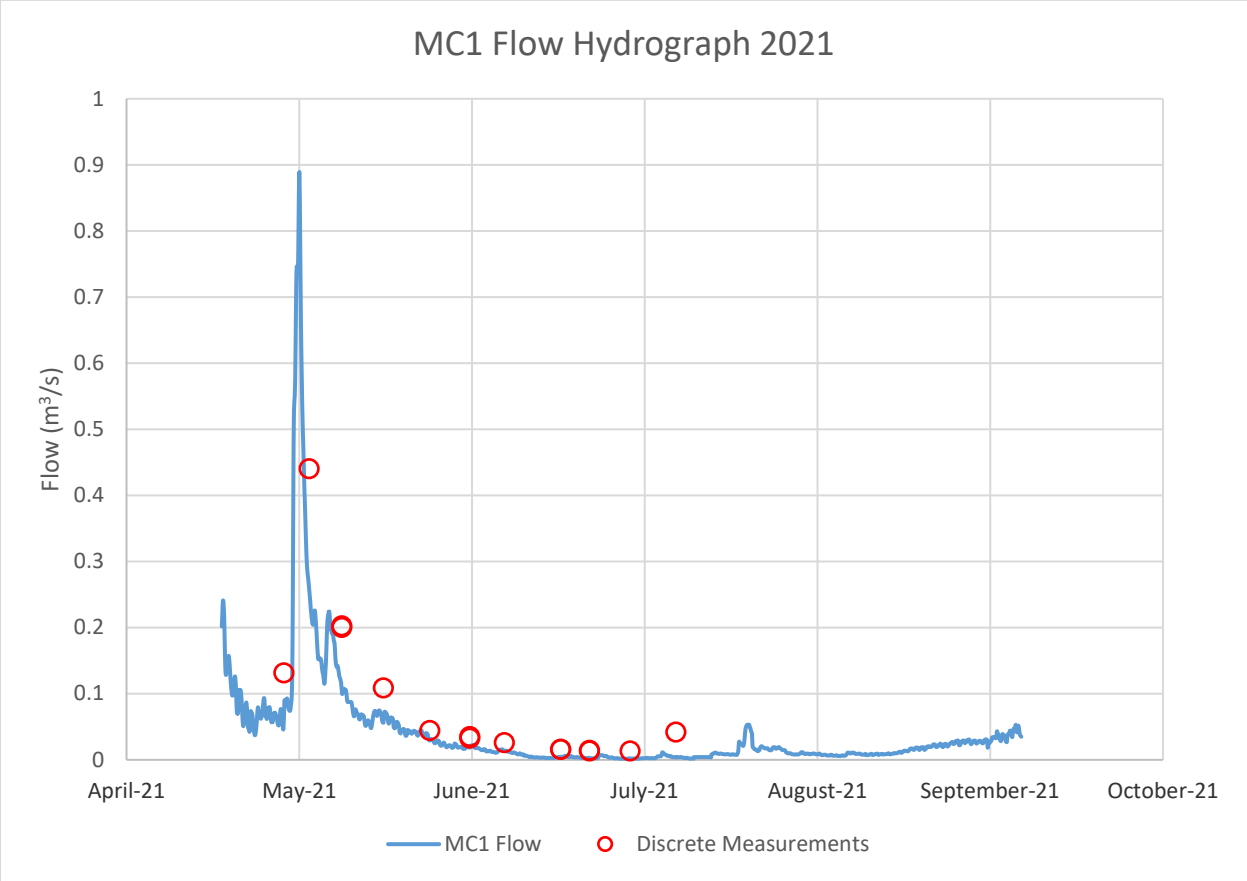

Figure 7: MC1 Discharge and Discrete Measurement Hydrograph 2021

Table 3-3 provides a summary of the average water temperature, flow and total flow volume in 2021.

Table 3-3: MC1 2021 Hydrometric Data and Temperature Summary

Month	Period of Record (Day)	Mean Water Temperature (°C)	Mean Flow (m^3/s)	Total Flow (m3)
Jan	No Data			
Feb	No Data			
Mar	No Data			
Apr	No Data			
May	21	-1.26	0.170	314813.4
Jun	30	2.08	0.036	92489.7
Jul	31	4.27	0.004*	10182.0*
Aug	31	3.95	0.012*	31892.2*
Sept	26	1.33	0.023	51136.1
Oct	No Data			
Nov	No Data			
Dec	No Data			

Note: Shaded cells indicate incomplete months of data
*Calculated with a combination of logger data and averages

Table 3-4 summarizes the historical mean monthly flows to previous years of the hydrometric program.

Table 3-4: MC1 Historical Mean Monthly Flow (m^3/s)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2012	-	-	-	-	0.179	0.065	0.052	0.041	0.108	-	-	-
2013	-	-	-	-	0.358	0.085	0.103	0.44	0.089	0.064	-	-
2014	-	-	-	-	0.187	0.028	0.031	0.036	0.028	0.033	-	-
2015	-	-	-	-	0.862	0.014	0.028	0.042	0.035	0.031	-	-
2016	-	-	-	-	-	0.029	0.036	0.048	0.076	-	-	-
2017	-	-	-	-	0.102	0.074	0.018	0.01	0.028	0.029	-	-
2018	-	-	-	-	-	0.072	0.016	0.025	0.021	0.012	-	-
2019	-	-	-	-	0.029	0.027	0.009	0.007	0.0212	0.2122		
2020	-	-	-	-	0.074	0.040	0.034	0.036	0.039	0.061		
2021					0.170	0.036	0.004	0.012	0.023			

Note: Shaded cells indicate incomplete months of data

1.3 W1 – Lower Minto Creek above Road Crossing

W1 station is located on the lower reach of Minto Creek before flowing into the Yukon River. In 2021, water level and temperature data were continuously measured and recorded every 15 minutes by the Solinst Levelogger and Barologger. Figure 9 shows Minto Creek at W1 water level and temperature data for the 139-day record from May 5 to September 26, 2020. The station had little to no flow from July 3r^{d} to 25th but regular precipitation after this period kept it running until freeze-up.. The data logger was removed on September 26t^{h} to avoid ice damage, but discrete measurements continued until October 12th. The Stage and Water temperature hydrograph is presented in Figure 8, below.

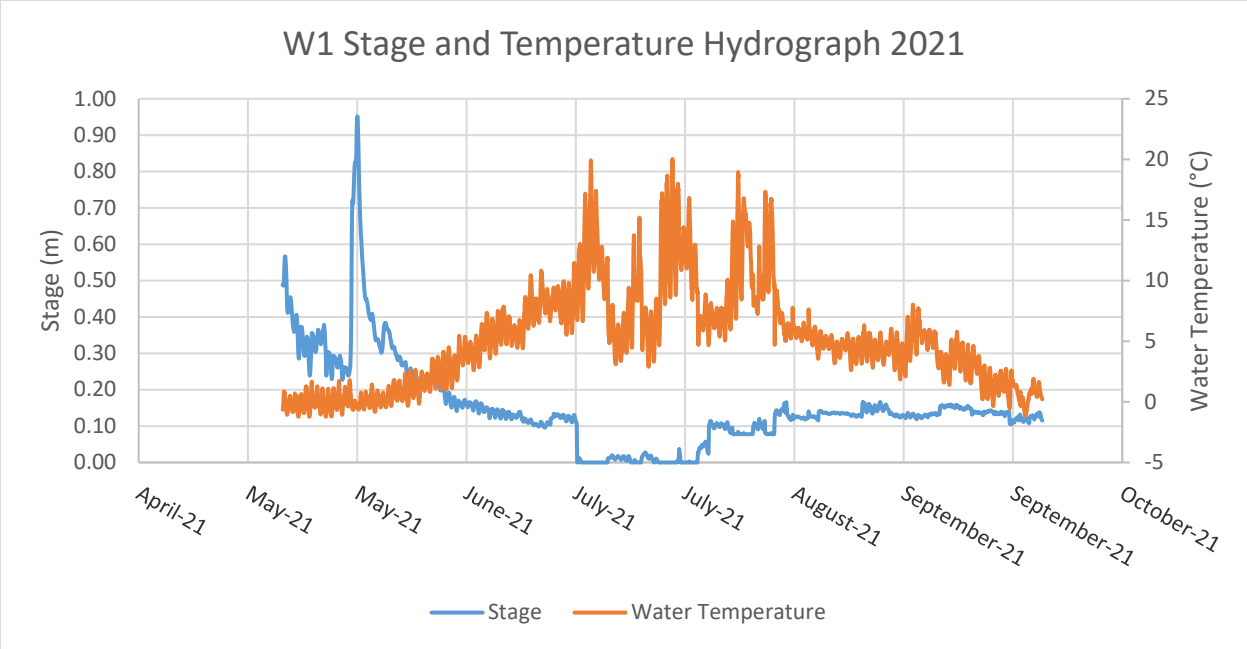

Figure 8: W1 Stage and Temperature Hydrograph 2021

The stage-discharge relationship for W1 is presented in Figure 9. After removing outliers and including 2021 measurements the R^2 is 0.8669. In 2020, the R^2 was 0.8660. Efforts will be made to ensure that future measurements continue to be accurate and representative to further refine the curve.

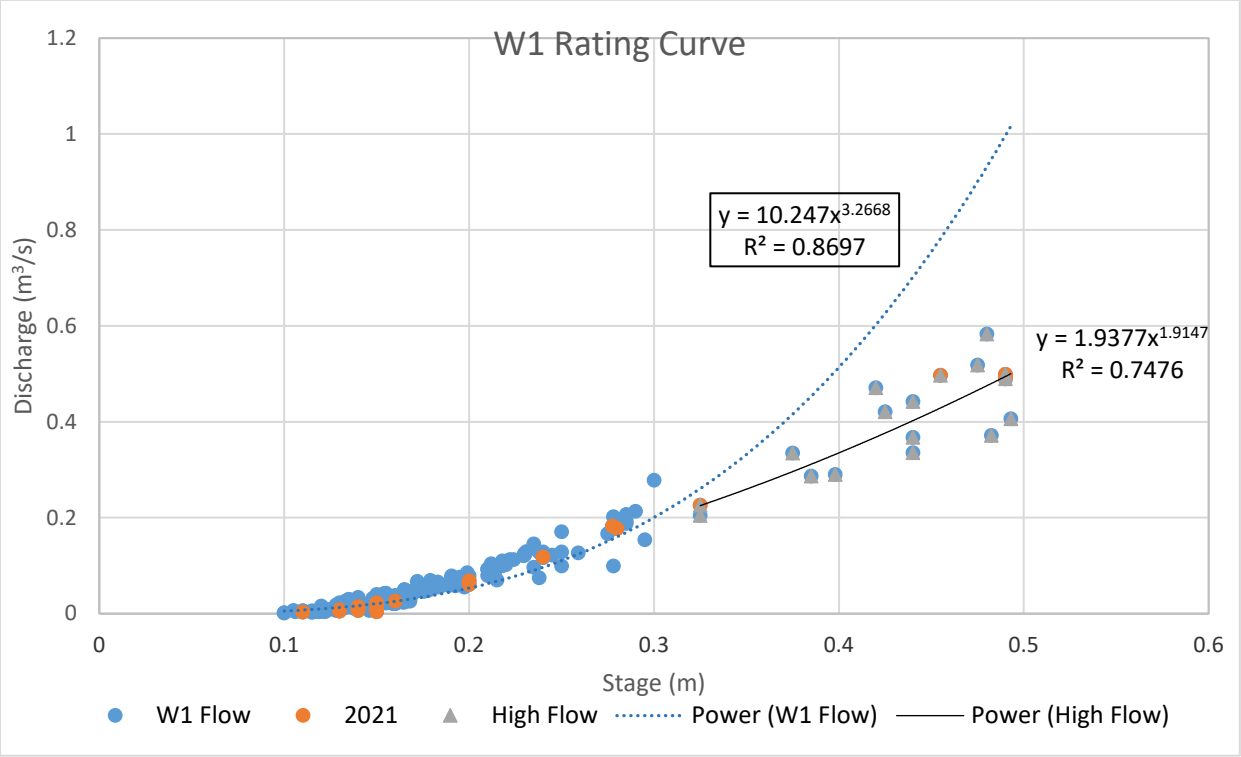

Figure 9: W1 Rating Curve 2021

The 2021 hydrograph and discrete measurements for W1 are shown in Figure 10. In 2021, the maximum measured flow was 0.499m3/s on May 10, during the height of freshet. In 2020 the maximum measured flow was 0.1667 m^3/s on May 12.

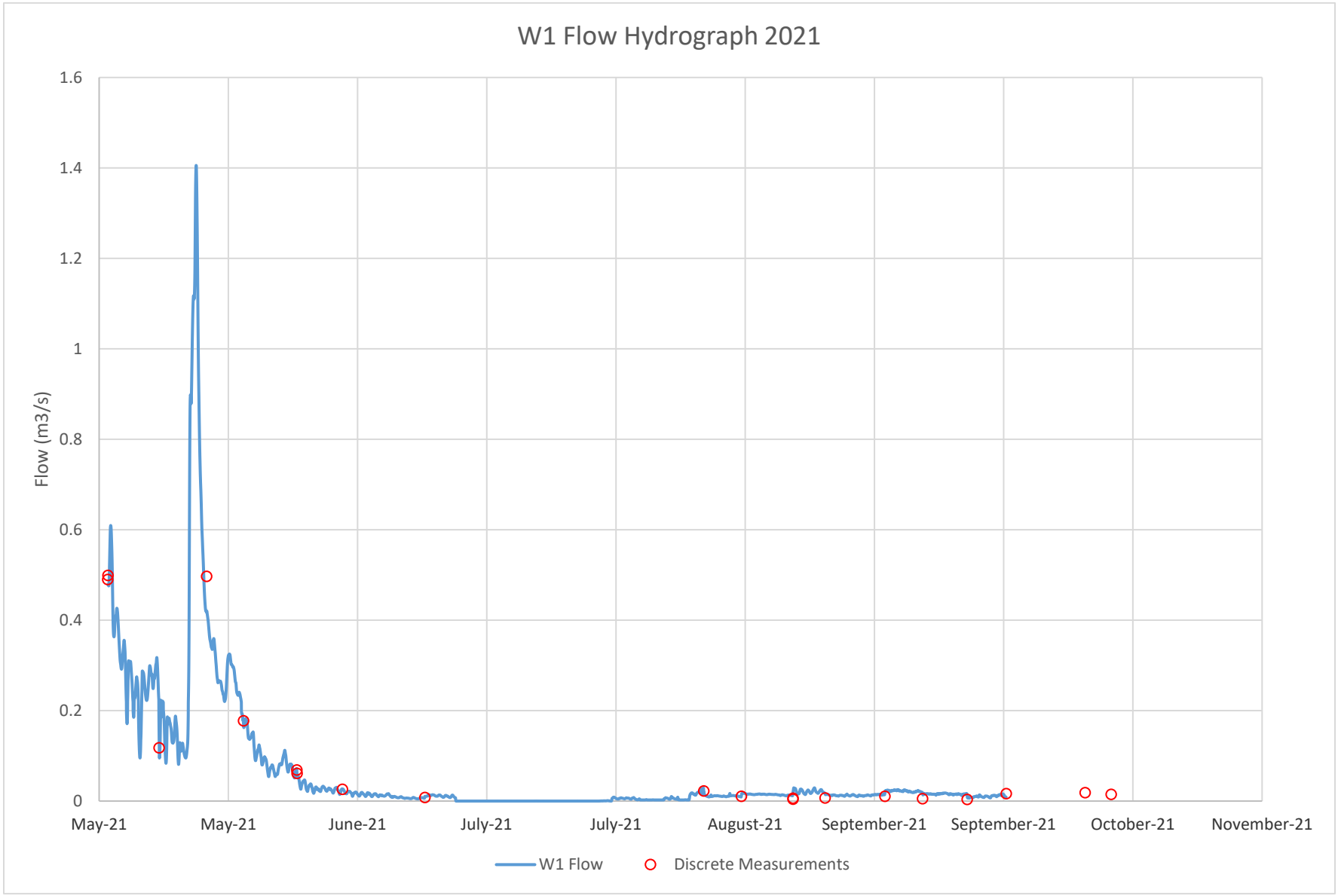

Figure 10: W1 Flow Hydrograph 2021

Figure 11 shows W1 and MC1 flows. W1 is located downstream of MC1 and it is expected that flows would be larger because it has a larger catchment area than MC1, however flows at W1 are consistently lower than those recorded at MC1.. It is believed that some water downstream of MC1 passes through a preferential subterranean pathway and by-passes W1. The placement of the stream flow measuring point at MC1 will be considered in 2022, as changes in the stream character may be impacting the accuracy of measurements since installation.

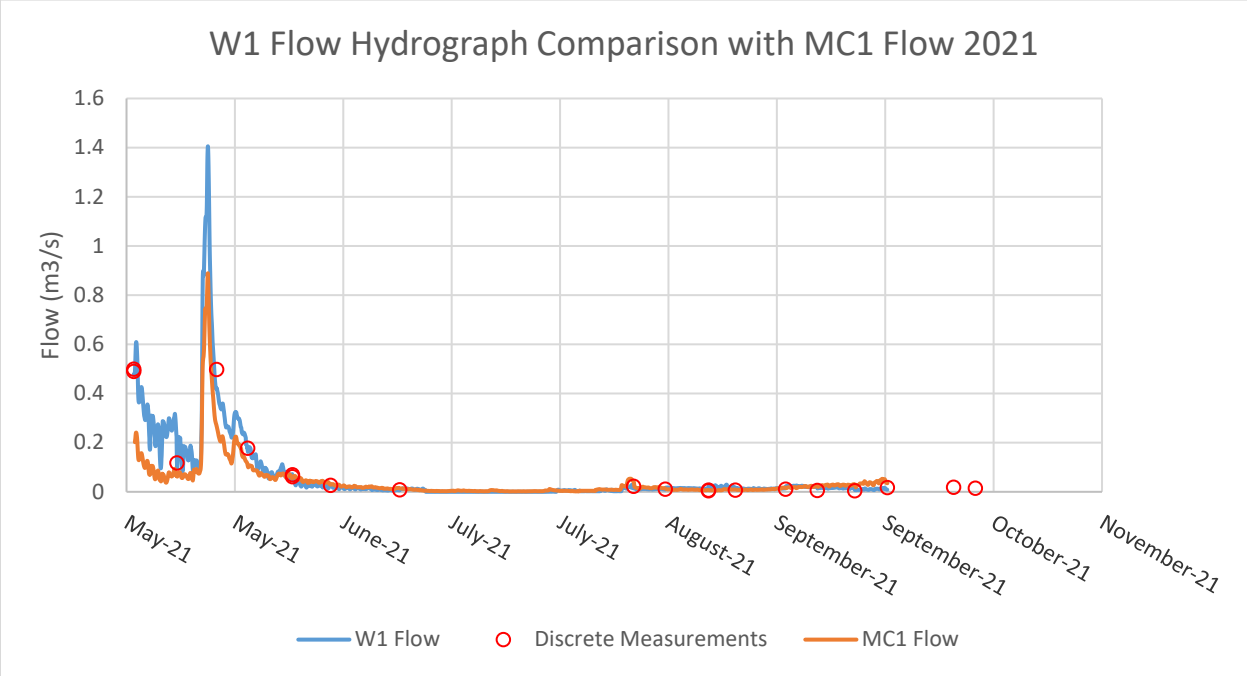

Figure 11: W1 Flow Hydrograph Comparison with MC1 Flow 2021

Table 3-5 provides a summary of the average water temperature, flow and total flow volume in 2021. Table 3-6 summarizes the historical mean monthly flows to previous years of the hydrometric program. The history shows that freeze-up begins in October and that freshet typically occurs in April/May.

Table 3-5: W1 2021 Hydrometric Data and Temperature Summary

Month	Period of Record (Day)	Mean Water Temperature (°C)	Mean Flow (m^3/s)	Total Flow (m^3)
Jan	No Data			
Feb	No Data			
Mar	No Data			
Apr	No Data			
May	21	0.06	0.3305	613058.6
Jun	30	4.71	0.0361	92009.7
Jul	31	7.51	0.0025	4184.3
Aug	31	6.60	0.0126	34331.0
Sep	26	2.74	0.0152	33278.1
Oct	No Data			
Nov	No Data			
Dec	No Data			

Note: Shaded cells indicate incomplete months of data

Table 3-6: W1 Historical Mean Monthly Flow

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2012	-	-	-	-	0.296	0.073	0.052	0.051	0.078	0.056	-	-
2013	-	-	-	-	0.485	0.064	0.065	0.044	0.850	0.059	-	-
2014	-	-	-	-	0.138	0.022	0.020	0.014	0.310	0.025	-	-
2015	-	-	-	-	0.117	0.010	0.010	0.030	0.240	0.020	-	-
2016	-	-	-	0.252	0.047	0.020	0.017	0.024	0.043	0.026	-	-
2017	-	-	-	-	0.085	0.074	0.014	0.011	0.017	0.031	-	-
2018	-	-	-	-	0.132	0.093	0.039	0.009	0.006	0.002	-	-
2019	-	-	-	-	0.042	0.034	-	-	-	-	-	-
2020	-	-	-	-	0.076	0.024	0.046	0.047	0.026	-	-	-
2021					0.331	0.036	0.003	0.013	0.015			

Note: Shaded cells indicate incomplete months of data

1.4 W7 – Tributary of Minto Creek

A staff gauge was installed at this station in the summer of 2013. Before the installation of the staff gauge, this station was regularly monitored for surface water quality. The staff gauge was damaged during the winter 2014 and repaired for the hydrometric program running in 2015. In 2016, no stage measurements were continuously recorded but several discrete discharge measurements were conducted during the open water season. In early June 2017, a staff gauge and loggers were installed at this site.

Continuous water level and water temperature were recorded from June 2, 2021 to September 26, 2021, however the pressure transducer experienced a number of malfunctions from June 28th to July 20th which caused erratic readings. This period of flow was calculated based on an average of 1 week of flow readings before and after the data gap.

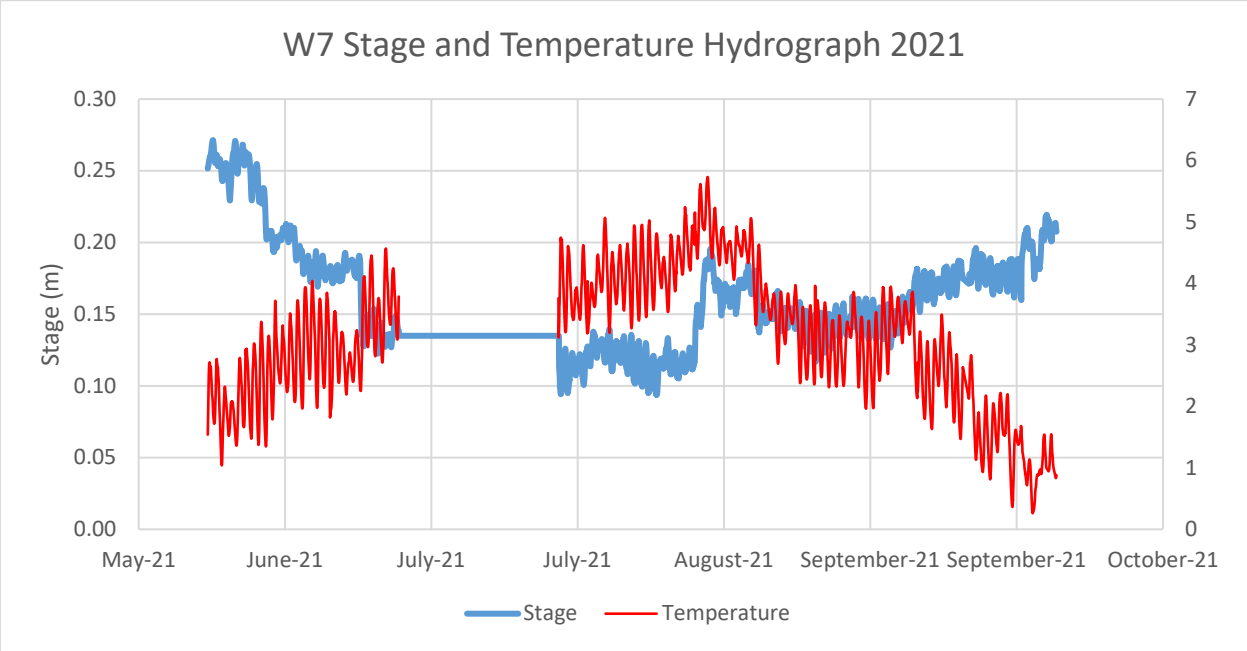

Figure 12: W7 Stage and Temperature Hydrograph 2021

A rating curve (**Figure 13**) was initiated in the 2017 hydrometric season; with limited data points from 2017 to 2019. In 2021 the measurement frequency was increased from monthly to weekly and the correlation between discrete and calculated measurements suggests that the rating curve is developing well.

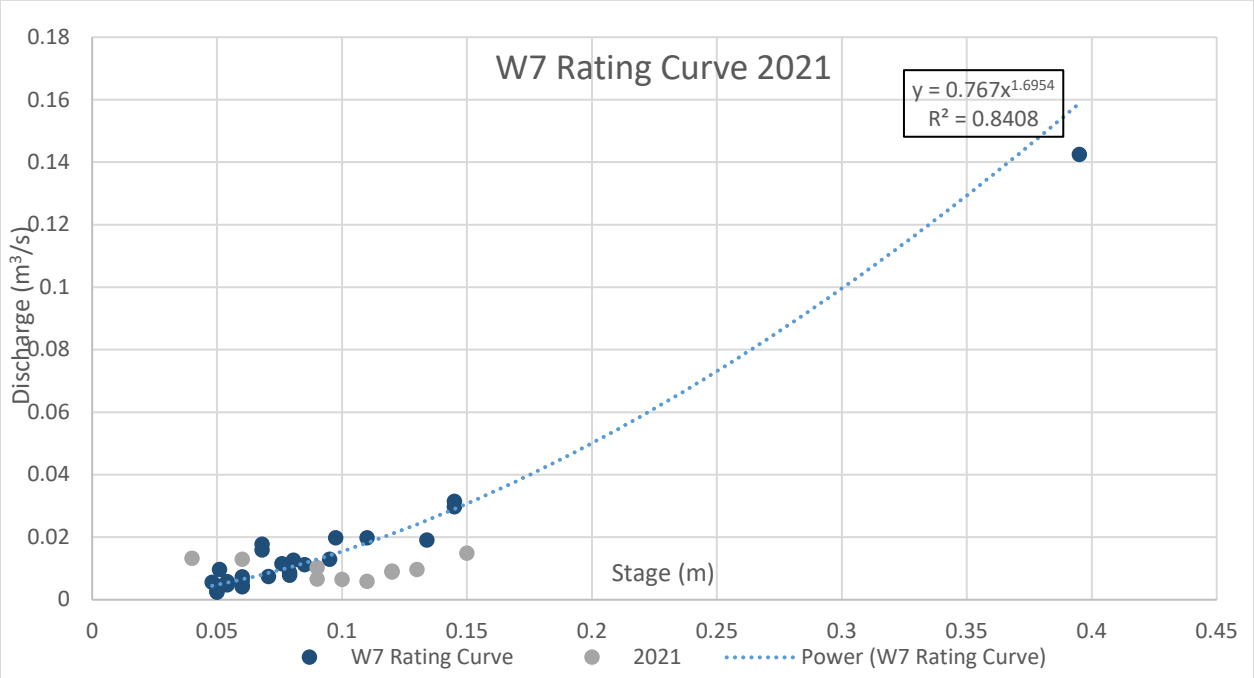

Figure 13: W7 Rating Curve

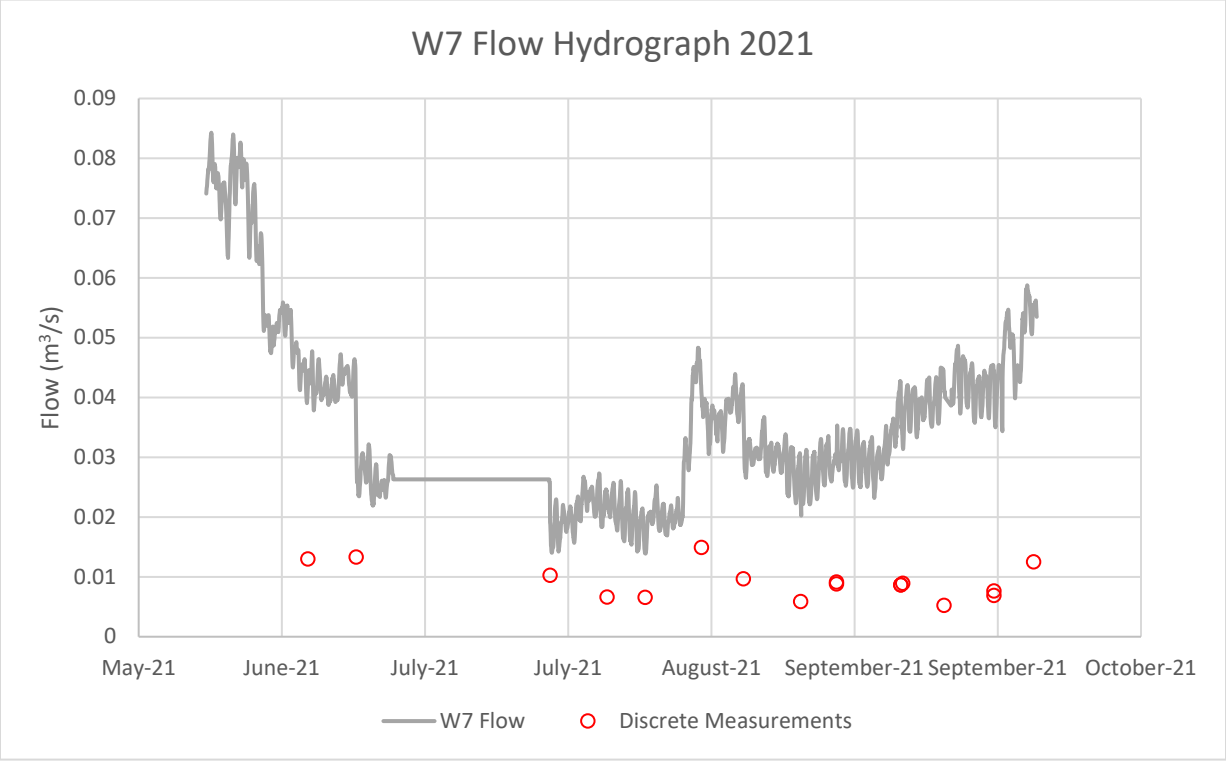

Figure 14: W7 Flow Hydrograph 2021

Table 3-7 provides a summary of the average water temperature, flow and total flow volume in 2021.

Table 3-7: W7 2021 Hydrometric Data and Temperature Summary

Month	Period of Record (Day)	Mean Water Temperature (°C)	Mean Flow (m^3/s)	Total Flow (m^3)
Jan	No Data			
Feb	No Data			
Mar	No Data			
Apr	No Data			
May	No Data			
Jun	29	2.77	0.051*	114445.2*
Jul	31	4.01	0.021*	20915.0*
Aug	31	3.88	0.029	78504.7
Sep	26	2.11	0.040	85537.7
Oct	No Data			
Nov	No Data			
Dec	No Data			

Note: Shaded cells indicate incomplete months of data

*Calculated with a combination of logger data and averages

Table 3-8 presents the summary of historically measured flows at W7, based on discrete measurements before 2017, and based on continuous pressure readings for 2017 to 2021.

Table 3-8: W7 Historical Mean Monthly Flow (m3/s)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	-	-	-	-	-	-	0.013	0.031	0.019	0.006	-	-
2014	-	-	-	-	0.112	-	-	-	-	-	-	-
2015	-	-	-	-	-	0.006	0.004	0.011	0.011	0.029	-	-
2016	-	-	-	-	-	0.006	0.01	0.01	0.013	0.01	-	-
2017	-	-	-	-	-	0.002	0.003	0.003	0.004	0.004	-	-
2018	-	-	-	-	-	-	0.006	0.007	0.007	-	-	-
2019	-	-	-	-	-	0.01	0.003	0.003	0.004	0.005	-	-
2020	-	-	-	-	-	0.005	0.012	0.010	0.008	-	-	-
2021	-	-	-	-	-	0.051	0.021	0.029	0.040	-	-	-

Note: Shaded cells indicate incomplete months of data

4 McGinty Creek Hydrology

In 2021, hydrological monitoring on McGinty Creek was conducted as per the schedule outlined in the EMSRP. Station MN-1.5 was added to the monitoring schedule with continuous measurements. During the 2021 monitoring period, Minto Mine maintained and collected data from the following four hydrometric stations along McGinty Creek: MN-0.5, MN-1.5, MN-2.5, and MN-4.5.

At the hydrometric stations, Solinst Level Loggers and Barometric Loggers were used in conjunction with staff gauge readings and manual flow measurements to produce volumetric flow rates. Manual flow measurements were conducted monthly during flow season unless otherwise noted below.

4.1 Station MN-0.5 – West Tributary of McGinty Creek

MN-0.5 station is located on the upper west stem of McGinty Creek. In 2021, water level and temperature data were continuously measured and recorded every 30 minutes by a pressure transducer/data logger. Figure 15 shows McGinty Creek at MN-0.5 water level and temperature data for the 103-day record from June 14 to September 25, 2021.

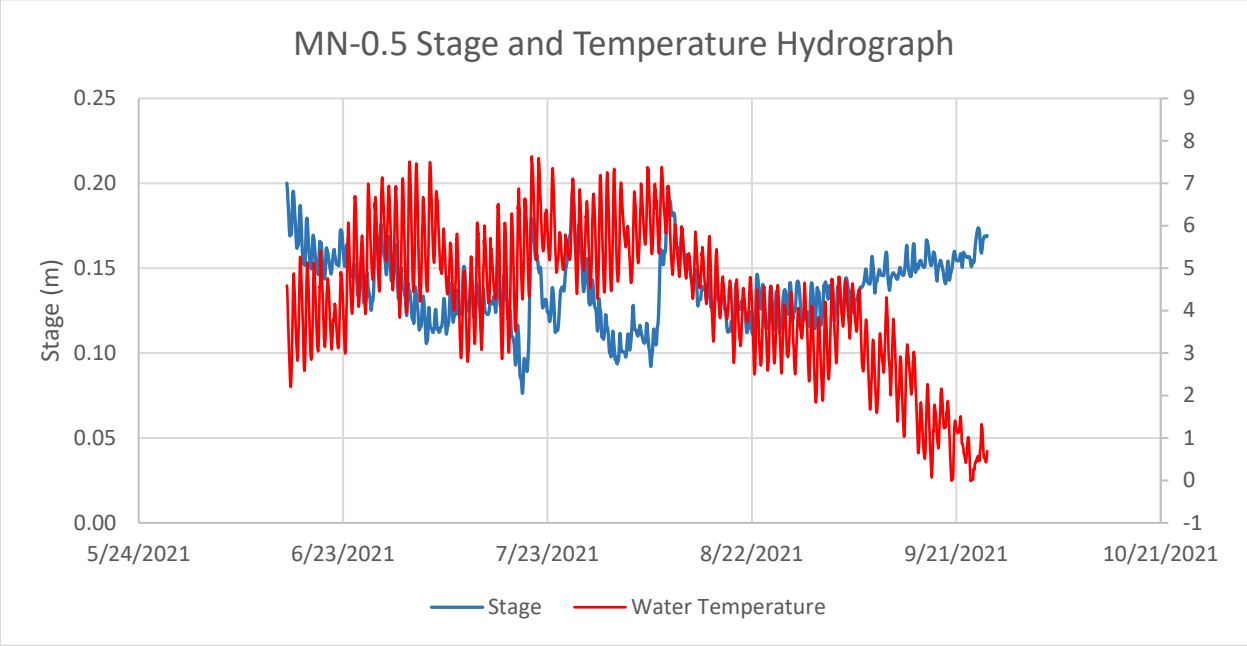

Figure 15: MN-0.5 Stage and Temperature Hydrograph

A stage-discharge relationship was established for MN-0.5 in 2015 but it had limited flow data and corresponding staff gauge readings and was therefore not very accurate. Through investigation of prior years' flow measurements, field notes, and photographs, outliers and unrepresentative readings were identified and either removed from the rating curve or adjusted to reflect changes in stream condition. The updated stage curve is now more accurate and is presented in Figure 16. Further study and continued accurate flow measurement will be required going forward to confirm the curve's accuracy.

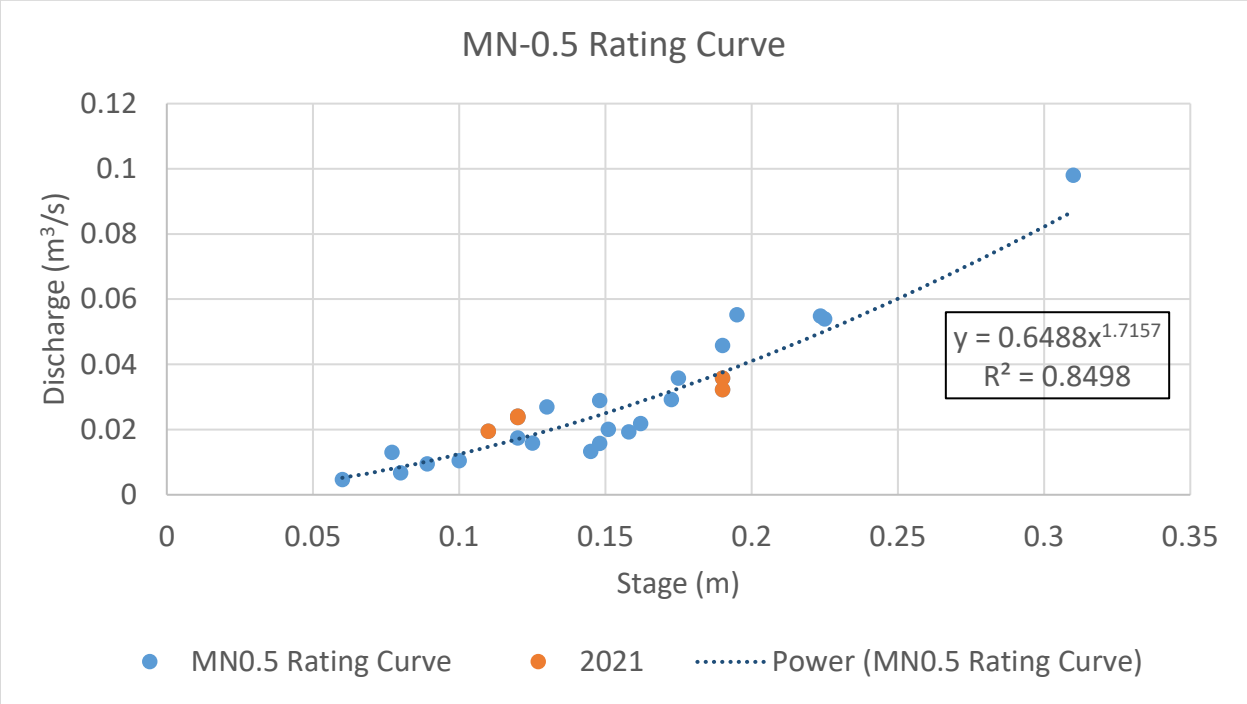

Figure 16: MN-0.5 Rating Curve

Continuous flow measurements, calculated using the above rating curve, are displayed in Figure 17 alongside discrete measurements. The discrepancy between the calculated and measured flows shows that more work is needed to improve the accuracy of this station. An investigation of staff gauge movement and cross-section placement will be conducted in 2022.

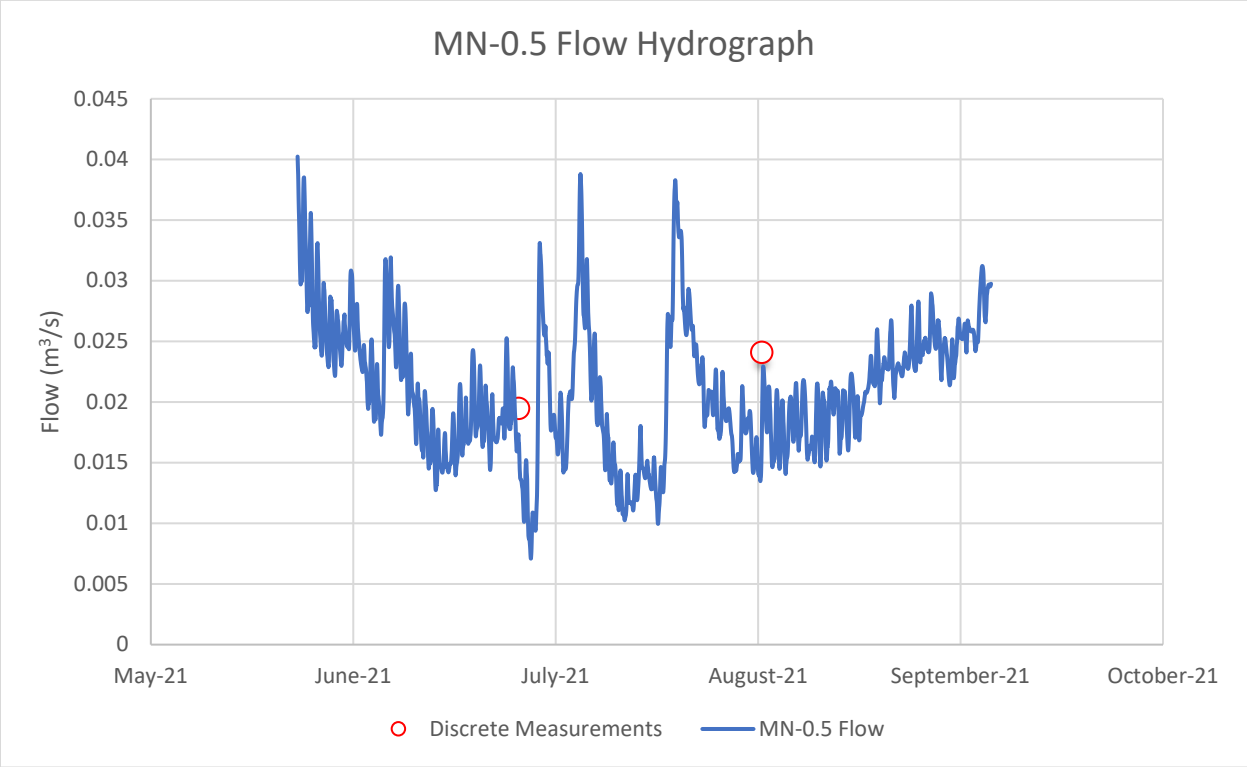

Figure 17: MN-0.5 Flow Hydrograph

Table 4-1 provides a summary of the average water temperature, flow and total flow volume in 2021 while Table 4-2 provides a summary historical measured flows at MN-0.5. Data for years prior to 2020 are based on direct measurements only.

Table 4-1: MN-0.5 2020 Hydrometric Data and Temperature Summary

Month	Period of Record (Day)	Mean Water Temperature (°C)	Mean Flow (m^3/s)	Total Flow (m^3)
Jan	No Data			
Feb	No Data			
Mar	No Data			
Apr	No Data			

May	No Data			
Jun	16	4.605	0.026	36590.950
Jul	31	5.335	0.019	50453.590
Aug	31	4.652	0.019	49633.630
Sep	25	2.203	0.023	49372.850
Oct	No Data			
Nov	No Data			
Dec	No Data			

Note: Shaded cells indicate incomplete months of data

Table 4-2: MN-0.5 Historical Mean Monthly Flow (m^3/s)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	-	-	-	-	0.045	-	-	-	-	-	-	-
2015	-	-	-	-	0.035	0.013	0.054	0.098	0.029	0.025	-	-
2016	-	-	-	-	0.28	0.016	0.01	0.016	0.035	0.018	-	-
2017	-	-	-	-	-	0.017	0.023	0.02	0.017	0.019	-	-
2018	-	-	-	-	-	0.03	0.016	0.021	0.025	0.04	-	-
2019	-	-	-	-	-	0.018	0.008	0.007	0.008	-	-	-
2020	-	-	-	-	-	0.016	0.035	0.034	0.030	0.032	-	-
2021	-	-	-	-	-	0.026	0.019	0.019	0.023	-	-	-

Note: Shaded cells indicate incomplete months of data

4.2 Station MN-1.5 – Upper East Tributary of McGinty Creek

MN-1.5 is marshy area with a small stream collecting water which flows into the lower stem of McGinty Creek. A staff gauge was installed on July 5, 2018. As a newly established station the rating curve had a large error. The hope was that as monitoring continued and more flow measurements were taken the stage curve would become more accurate. Unfortunately, the stream became less consolidated and more braided over the course of 2019, 2020, and 2021. No representative flow measurements

could be collected during this time. A pressure transducer/logger was installed in 2020, however changes to the stream were so severe that the staff gauge levels were no longer representative of the streams' total flow (Figure 18). As such, no accurate data was collected at MN-1.5 in 2021 and none will be presented here.

Figure 18: MN-1.5 Stream and Staff Gauge, September 22, 2021

If MN-1.5 is to be established as permanent hydrometric station the staff gauge must be re-installed in a more stable section of the stream. The stream is more consolidated both up and downstream of the current location but it is quite narrow, so a location will need to be identified where stream width is sufficient to conduct accurate flow measurements.

Crossing the marshy stream to collect samples and flow measurements, as well as it's placement along an active game trail, likely contributed to the degradation of the current location. A new site should be installed at a location where water quality sampling and flow measurement can be conducted without crossing the stream or disturbing its banks. If a new trail is required, it should avoid existing game trails or creating new potential pathways for large animals, if possible.

Once a new station is installed, increasing flow measurement frequency to bi-weekly could be considered to help establish an accurate rating curve more quickly. MN-1.5 is the closest of the McGinty Creek sampling locations so this option is more feasible than it would be at other locations within the catchment.

4.2 Station MN-2.5 – East Tributary of McGinty Creek

MN-2.5 station is located on the lower stem of McGinty Creek. In 2021, water level and temperature data were continuously measured and recorded every 30 minutes by a pressure transducer/data logger. Figure 19 shows water level and temperature data at MN-2.5 for the 103-day record from June 14th to September 25th, 2021.

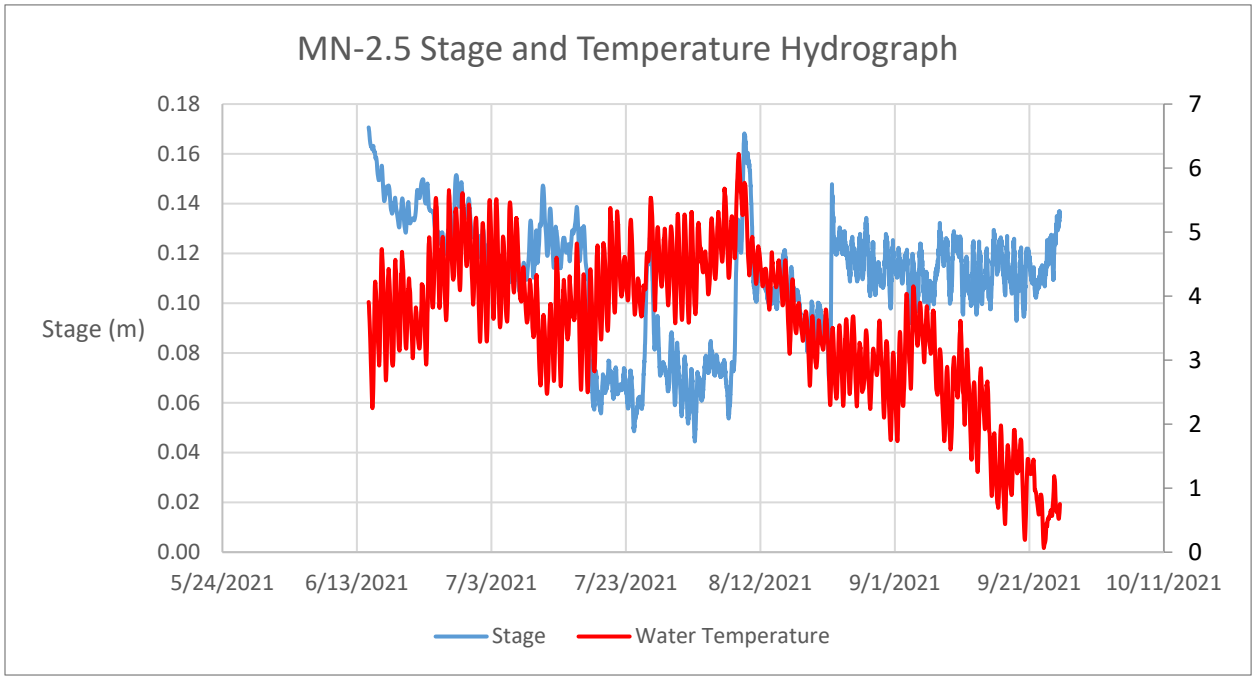

Figure 19: MN-2.5 Stage and Temperature Hydrograph

A stage-discharge relationship was established for MN-2.5 in 2015 but due to limited accurate flow data and corresponding staff gauge readings it was not reliable curve. In 2020, an audit of previous measurements was conducted to identify and remove outliers and adjust staff gauge measurements based on photographic data. This, combined with a relatively large and precise dataset collected in 2020-2021, has produced a more accurate curve. Figure 20 shows the rating curve for the 2021 dataset

as well as the curve for all confirmed accurate measurements from 2015 to present. To reflect historic variability, the combined rating curve was used to calculate continuous flow in 2021 presented in Figure 21 alongside discrete flow measurements.

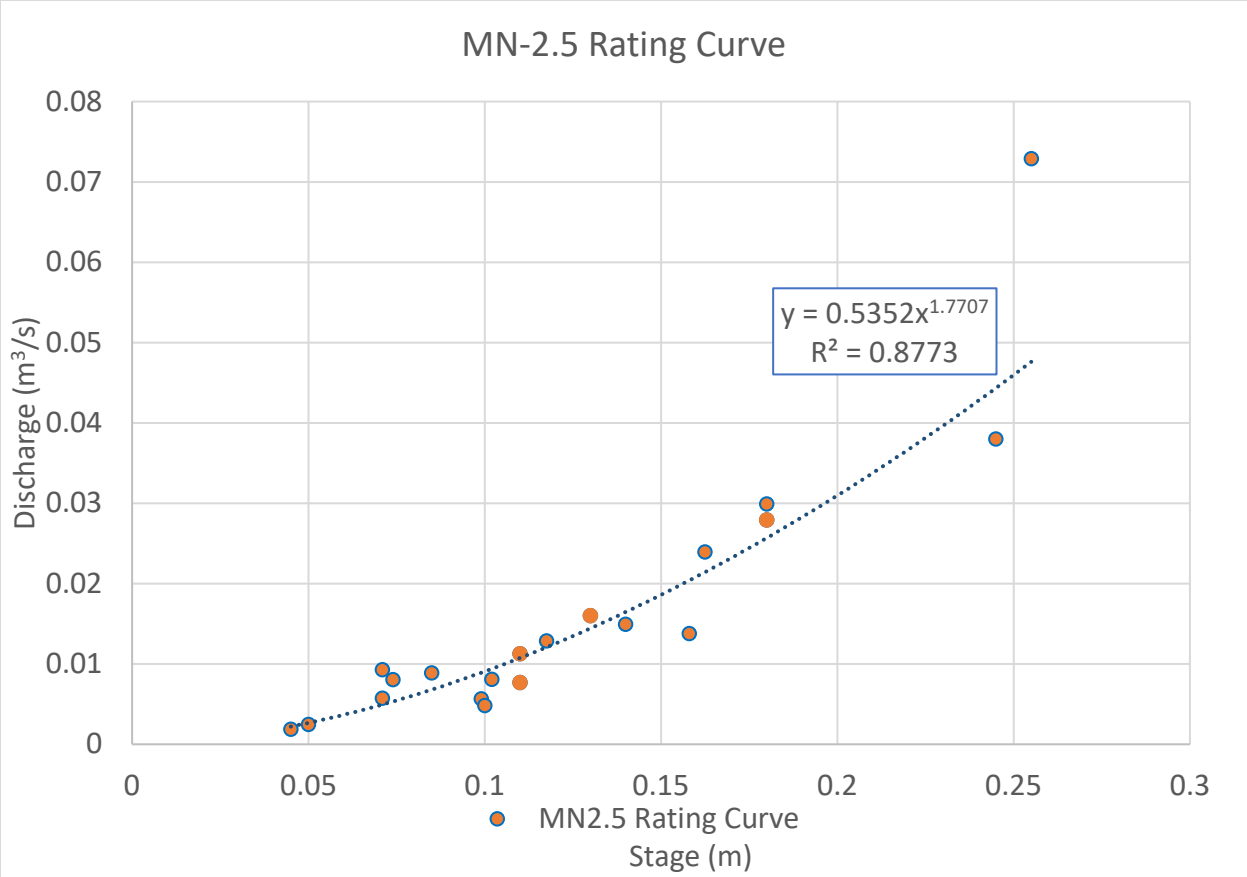

Figure 20: MN-2.5 Rating Curve

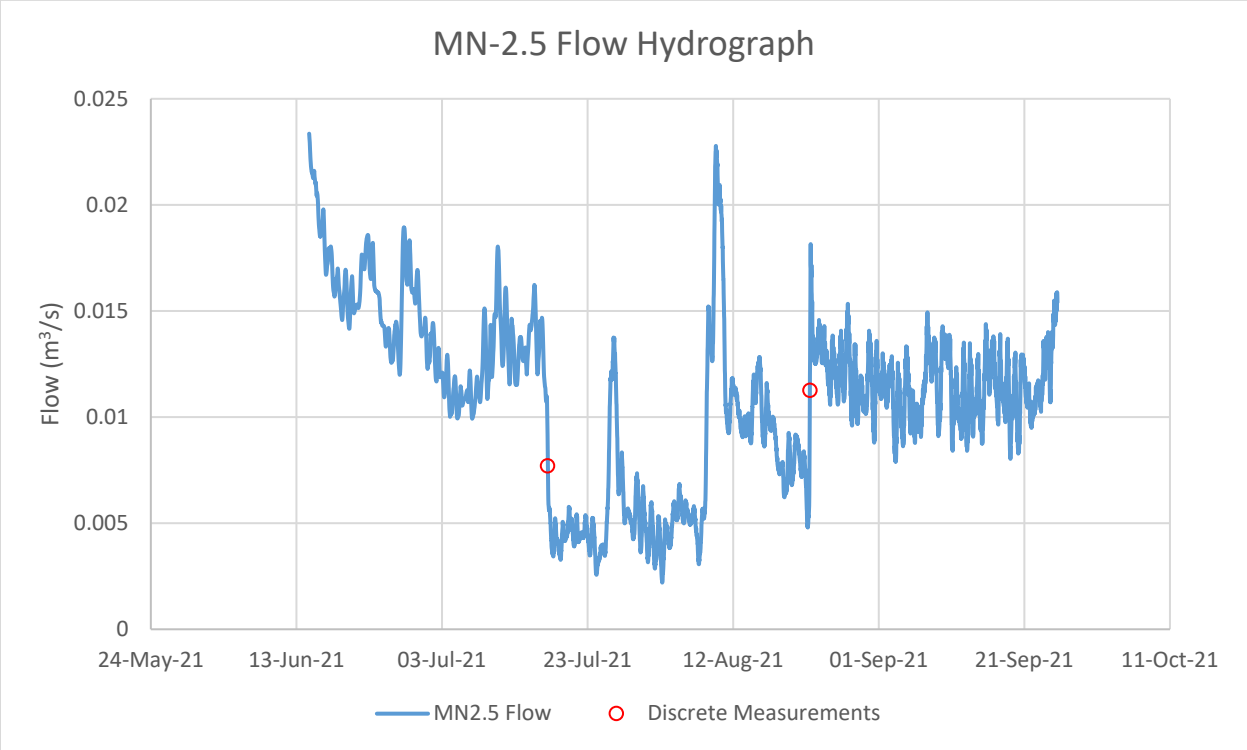

Figure 21: MN-2.5 Flow Hydrograph

Table 4-3 provides a summary of the average water temperature, flow and total flow volume in 2019. Table 4-4 provides a summary of historical measured flows at MN-2.5. These flows are based on discrete measurements until 2016, the pressure loggers were used from 2017 to 2020.

Table 4-3: MN-2.5 Hydrometric Data and Temperature Summary

Month	Period of Record (Day)	Mean Water Temperature (°C)	Mean Flow (m^3/s)	Total Flow (m^3)
Jan	No Data			
Feb	No Data			
Mar	No Data			

Apr	No Data			
May	No Data			
Jun	16	4.109	0.016	22901.550
Jul	31	4.115	0.009	24691.703
Aug	31	3.853	0.010	25995.610
Sep	25	2.025	0.011	23999.600
Oct	No Data			
Nov	No Data			
Dec	No Data			

Table 4-4: MN-2.5 Historical Mean Monthly Flow (m^3/s)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	-	-	-	-	0.032	-	-	-	-	-	-	-
2015	-	-	-	-	0.015	0.003	0.011	0.038	0.01	0.01	-	-
2016	-	-	-	0.034	0.008	-	-	0.009	0.014	0.003	-	-
2017	-	-	-	-	-	0.011	0.01	0.007	0.004	0.013	-	-
2018	-	-	-	-	-	-	0.011	0.014	0.014	0.019	-	-
2019	-	-	-	-	-	0.006	0.006	0.006	0.006	0.007	-	-
2020	-	-	-	-	-	0.003	0.017	0.030	0.017	0.020	-	-
2021	-	-	-	-	-	0.016	0.009	0.010	0.011	-	-	-

Note: Shaded cells indicate incomplete months of data

4.3 Station MN-4.5 -McGinty Creek near the Mouth

MN-4.5 station is located on the lower reach of McGinty Creek before flowing into the Yukon River. In 2021, water level and temperature data were continuously measured and recorded every 30 minutes by a pressure transducer/data logger. Figure 22 shows McGinty Creek at MN-4.5 water level and temperature data for the 103-day record from June 14 to September 25, 2021.

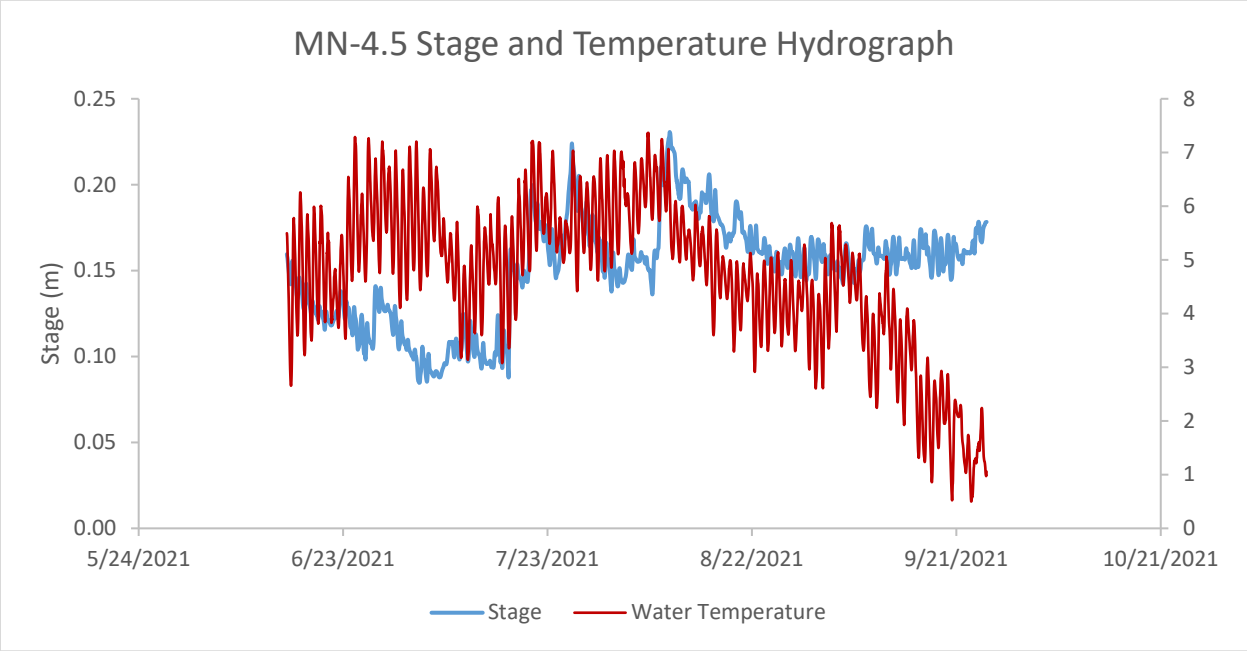

Figure 22: MN-4.5 Stage and Temperature Hydrograph

The stage-discharge relationship for MN-4.5 is presented in Figure 23. The rating curve at MN-4.5 continues to improve year over year, going from an R^2 value of 0.9051 in 2019 to 0.9214 in 2021. The 2021 hydrograph and discrete measurements for MN-4.5 are shown in Figure 24.

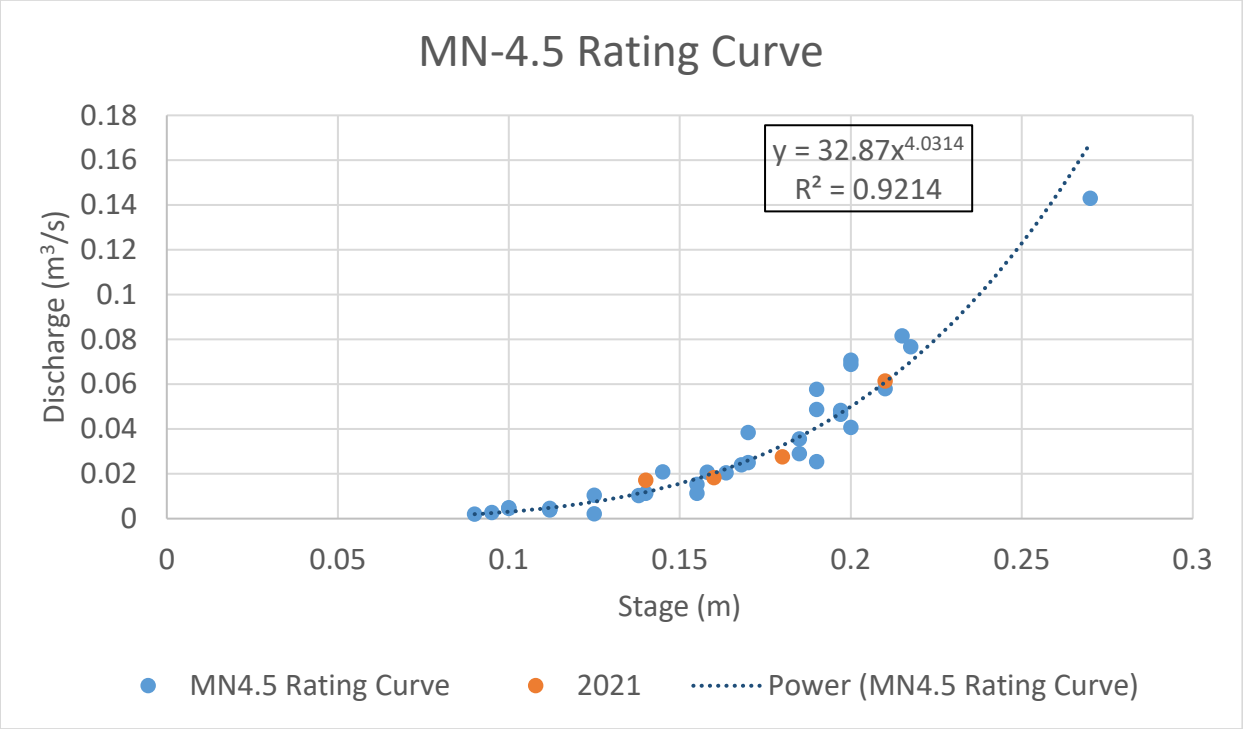

Figure 23: MN-4.5 Rating Curve

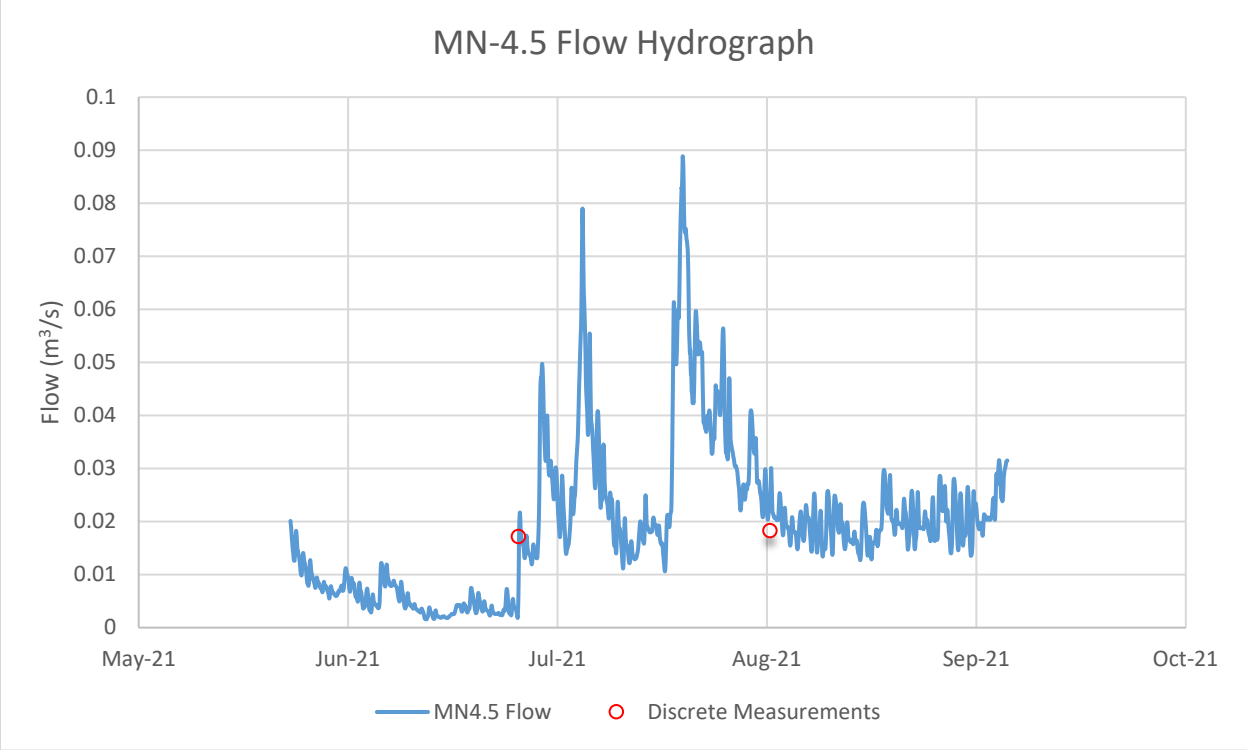

Figure 24: MN-4.5 Flow Hydrograph

Table 4-5 provides a summary of the average water temperature, flow and total flow volume in 2021. Table 4-6 summarizes the historical mean monthly flows to previous years of the hydrometric program.

Table 4-5: MN-4.5 2020 Hydrometric Data and Temperature Summary

Month	Period of Record (Day)	Mean Water Temperature (°C)	Mean Flow (m^3/s)	Total Flow (m^3)
Jan	No Data			
Feb	No Data			
Mar	No Data			
Apr	No Data			
May	No Data			
Jun	16	5.2010	0.0082	11581.62
Jul	31	5.3936	0.0148	39723.88
Aug	31	5.0563	0.0289	77364.70
Sep	25	3.0410	0.0203	42895.32
Oct	No Data			
Nov	No Data			
Dec	No Data			

Note: Shaded cells indicate incomplete months of data

Table 4-6: MN-4.5 Historical Mean Monthly Flow (m^3/s)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2011	-	-	-	-	0.444	0.093	0.125	0.134	0.068	0.045	-	-
2012	-	-	-	0.212	0.023	0.18	0.082	0.053	0.109	-	-	-
2013	-	-	-	-	-	0.054	0.103	0.093	0.116	-	-	-
2014	-	-	-	-	0.23	0.041	0.037	0.026	0.046	-	-	-
2015	-	-	-	-	-	0.013	0.046	0.049	0.029	0.029	-	-
2016	-	-	-	-	0.017	0.015	0.026	0.028	0.028	0.01	-	-
2017	-	-	-	-	0.079	0.12	0.027	0.003	0.012	0.079	-	-

2018	-	-	-	-	0.031	0.021	0.006	0.021	0.022	0.006	-	-
2019	-	-	-	-	0.025	0.064	0.013	-	-	-	-	-
2020	-	-	-	-	0.017	0.008	0.065	0.045	0.032	0.032	-	-
2021	-	-	-	-	-	0.008	0.015	0.029	0.020	-	-	-

Note: Shaded cells indicate incomplete months of data

5 Hydrology QA/QC

Detailed procedures for hydrology monitoring at the Minto Mine are detailed in the *Minto Mine Surface Water Hydrology* SOP. In 2021, Minto environmental staff conducted a duplicate of hydrometric measurements at a random station every week, to reach a 10% QAQC target.

Appendix G – Results of Selenium Monitoring in Minto Creek - 2021

minnow environmental inc.
A Trinity Consultants Company
204-1006 Fort Street
Victoria, British Columbia
V8V 3K4
Tel: (250) 595-1627
Fax: (250) 595-1625

March 30, 2022

Ms. Journey Paulus
Manager of Environment and Permitting
Minto Metals Corporation
61 Wasson Place
Whitehorse, Yukon
Y1A 5H7

Dear Ms. Paulus,

Re: Results of Selenium Monitoring in Minto Creek - 2021

The Yukon Government's 2011 intervention to the Minto Mine's Water Use Licence (WUL) Amendment Application identified selenium as a parameter of concern. The most recent Minto Mine WUL (QZ14-031, August 2015) includes an effluent quality objective of 0.006 milligrams per litre (mg/L) dissolved selenium and a site-specific water quality objective (SSWQO; applicable at lower Minto Creek) of 0.002 mg/L dissolved selenium (adopted from the British Columbia Water Quality Guidelines; BCWQG; BCMOE 2014). There is substantial evidence that water-based guidelines for selenium are poor predictors of potential adverse effects to aquatic life (e.g., Chapman et al. 2010; DeForest et al. 2012; Janz 2012) and that running water (lotic) environments such as Minto Creek and the Yukon River are less sensitive to selenium than still water (lentic) environments (Orr et al. 2006; Presser and Luoma 2010; Stewart et al. 2010; USEPA 2016; DeForest et al. 2017).

In response to the uncertainty over the application of a generic water-based guideline (the BCWQG; BCMOE 2014) as a water quality objective for selenium, the Minto Mine requested an assessment of selenium in lower Minto Creek. This assessment, implemented by Minnow Environmental Inc. (Minnow) and the Minto Mine includes selenium monitoring in water, sediment, periphyton, and benthic invertebrates (2012 to 2021[1]). Attempts to collect resident fish tissue data were made in 2012 and 2013 by Access Consulting Group (ACG 2013, 2014), but were unsuccessful due to very low abundance of resident fish (slimy sculpin) in lower Minto Creek.

[1] Due to dry conditions at lower Minto Creek in 2019, monitoring in 2019 only included sediment sampling at upper Minto Creek and the reference area, upper McGinty Creek.

Subsequent monitoring of fish presence in lower Minto Creek undertaken by Minto Mine from 2014 to 2019[2] continues to confirm very limited use. To date, fishing efforts have documented extremely low catches of fish other than juvenile chinook salmon (which are present in lower Minto Creek only for short periods of time; ACG 2010) over the 2012 to 2019 period (MEL 2020; Minnow 2020). Accordingly, selenium monitoring in 2021 focused on water, sediment, periphyton, and benthic invertebrates (Figure 1). This brief letter report provides the results of the 2021 monitoring, a brief interpretation of the results, and recommendations for future monitoring and assessment of selenium.

Water Quality

In 2021, water quality data routinely collected by the Minto Mine documented selenium concentrations were well below the SSWQO (0.002 mg/L; Figure 2; Attachment Table A.1). Intermittent discharge of effluent into Minto Creek took place between May and October, with routine water quality sampling at station W2 completed mid-April to the beginning of November.[3] Both the maximum total selenium concentration (0.000305 mg/L) and the maximum dissolved selenium concentration (0.000293 mg/L) were observed in lower Minto Creek in April 2021 (Figure 2, Attachment Table A.1). Throughout the rest of the year, selenium concentrations remained below 0.00025 mg/L (Figure 2). Annual total and dissolved selenium concentrations (mean ± standard deviations [of monthly means]) in lower Minto Creek were 0.000155 ± 0.0000337 mg/L and 0.000158 ± 0.000035 mg/L, respectively (Attachment Table A.1). In September 2021, water samples were also collected during the Aquatic Effects Monitoring Program (AEMP). Total selenium (0.00028 mg/L) was highest at upper McGinty reference, while dissolved selenium (0.000305 mg/L) was highest at upper Minto Creek (0.000305 mg/L; Figure 3; Attachment Table A.2). Lower Minto Creek had higher concentrations of total and dissolved selenium compared to both reference areas (Figure 3; Attachment Table A.2). All concentrations were well below the SSWQO (0.002 mg/L) and the Canadian Water Quality Guideline (CWQG; 0.001 mg/L; CCME 1999).

Sediment Quality

In September 2021, sediment was collected in upper and lower Minto Creek and corresponding reference areas, upper McGinty Creek and lower Wolverine Creek, respectively (Figure 1). Concentrations of selenium in sediment at upper Minto Creek and lower Minto Creek did not differ significantly compared to reference areas (Figure 4; Attachment Table A.2). Mean selenium concentrations at upper Minto Creek were lower compared to the upper McGinty Creek reference

[2] After 2019, the fisheries monitoring component of the AEMP was reduced from annually to once every three years, coinciding with the Environmental Effects Monitoring.

[3] Effluent discharge into Minto Creek took place from May 25 to June 1, September 20 to 25, and September 29, 2021. Due to low flow conditions, water quality sampling was not conducted in July 2021.

area, while mean selenium concentrations at lower Minto Creek were higher compared to the lower Wolverine Creek reference area. All selenium results were below the British Columbia alert concentration for aquatic sediment (BCSQG; 2.0 milligrams per kilograms dry weight [mg/kg dw]; BCMOE 2014) except for one station at upper McGinty Creek.

Since 2016, concentrations of selenium in sediment have been higher at upper Minto Creek compared to upper McGinty Creek reference (except in 2021). However, these differences have not been statistically significant. Concentrations of selenium in sediment have also been higher at lower Minto Creek compared to lower Wolverine Creek reference. These differences have been statistically significant since 2016, except in 2018 and 2021, when differences were not significant (Figure 4; Attachment Tables A.2 to A.6). All selenium concentrations since 2012 have been below the BCSQG for selenium (2 mg/kg dw; BCMOE 2014).

Tissue Quality

Periphyton Tissue

Periphyton has been identified as having an important role in the incorporation of selenium into lotic food chains (e.g., Presser and Luoma 2010; Stewart et al. 2010; Ohlendorf et al. 2011). In 2021, selenium concentrations in periphyton from lower Minto Creek were significantly higher than concentrations at both Lower Wolverine Creek and Lower Big Creek reference areas. This has been observed in previous years (2013 to 2018), except in 2017 when periphyton selenium concentrations in lower Minto Creek were only significantly greater than those from lower Big Creek (Figure 5; Attachment Tables A.2 to A.10).

Benthic Invertebrate Tissue

Benthic invertebrates represent the next trophic level up from periphyton and are important food source for fish. In September 2021, selenium concentrations in benthic invertebrates collected from lower Minto Creek (mean concentration of 1.6 mg/kg dry weight [dw]) were significantly lower than both reference areas (Figure 6). Selenium concentrations in benthic invertebrate tissue have not been significantly higher at lower Minto Creek compared to both reference areas since 2017. The majority of results were below the interim British Columbia guideline for invertebrate tissue (4.0 mg/kg dw; BCMOE 2014), with only one sample from lower Wolverine Creek reference (LWC-1; 4.19 mg/kg dw) exceeding the guideline (Figure 6; Attachment Tables A.2 to A.10).

Conclusions and Recommendations

Selenium concentrations in Minto Creek water and sediment remain well below guidelines for the protection of aquatic life. The 2021 selenium monitoring results indicate fairly low trophic transfer of selenium from periphyton (in which selenium concentrations were moderately higher in lower

Minto Creek than reference) to benthic invertebrates (in which selenium concentrations were moderately lower than reference). Monitoring from 2012 to 2021 has indicated an increase in selenium concentrations in benthic invertebrates at lower Minto Creek. However, similar increases in selenium concentrations were observed at reference areas, suggesting factors other than mine influence. Mean concentrations of selenium in benthic invertebrates have been below the interim British Columbia guideline for invertebrate tissue, but individual sample exceedances were observed over the years in lower Minto Creek and the lower Wolverine Creek reference. In 2021, only one sample from the lower Wolverine Creek reference had selenium concentrations that exceeded the BC interim guideline for invertebrate tissue. Overall, the 2021 selenium monitoring results indicate no selenium-associated risk of adverse effects to aquatic life, particularly in consideration of lower sensitivity of lotic environments and limited exposure to fish.

As in previous years, it is recommended that the separate reporting of selenium concentrations be discontinued and incorporated into the AEMP report with Minto Mine continuing to collect selenium concentration data in water and sediment under the AEMP. Furthermore, it is recommended that sampling of periphyton tissue quality and benthic invertebrate tissue quality is only undertaken if the SSWQO for selenium in water (0.002 mg/L) is exceeded or if the mean concentration of selenium in lower Minto Creek sediment exceeds the alert concentration (2.0 mg/kg dw). If such exceedances occur, it is recommended that they trigger periphyton and benthic invertebrate tissue quality monitoring in association with the next implementation of the AEMP (i.e., the following September).

I trust that this brief letter effectively communicates the results of the 2021 selenium monitoring program and the recommendations for selenium monitoring in 2022. If you have any comments or questions on the content of this letter, I would be pleased to discuss them with you.

Sincerely,

Minnow Environmental Inc.

Sarah Latimer, H.B.Sc

Junior Aquatic Scientist

cc: Pierre Stecko, M.Sc., R.P.Bio., EP, Senior Aquatic Scientist / Managing Principal

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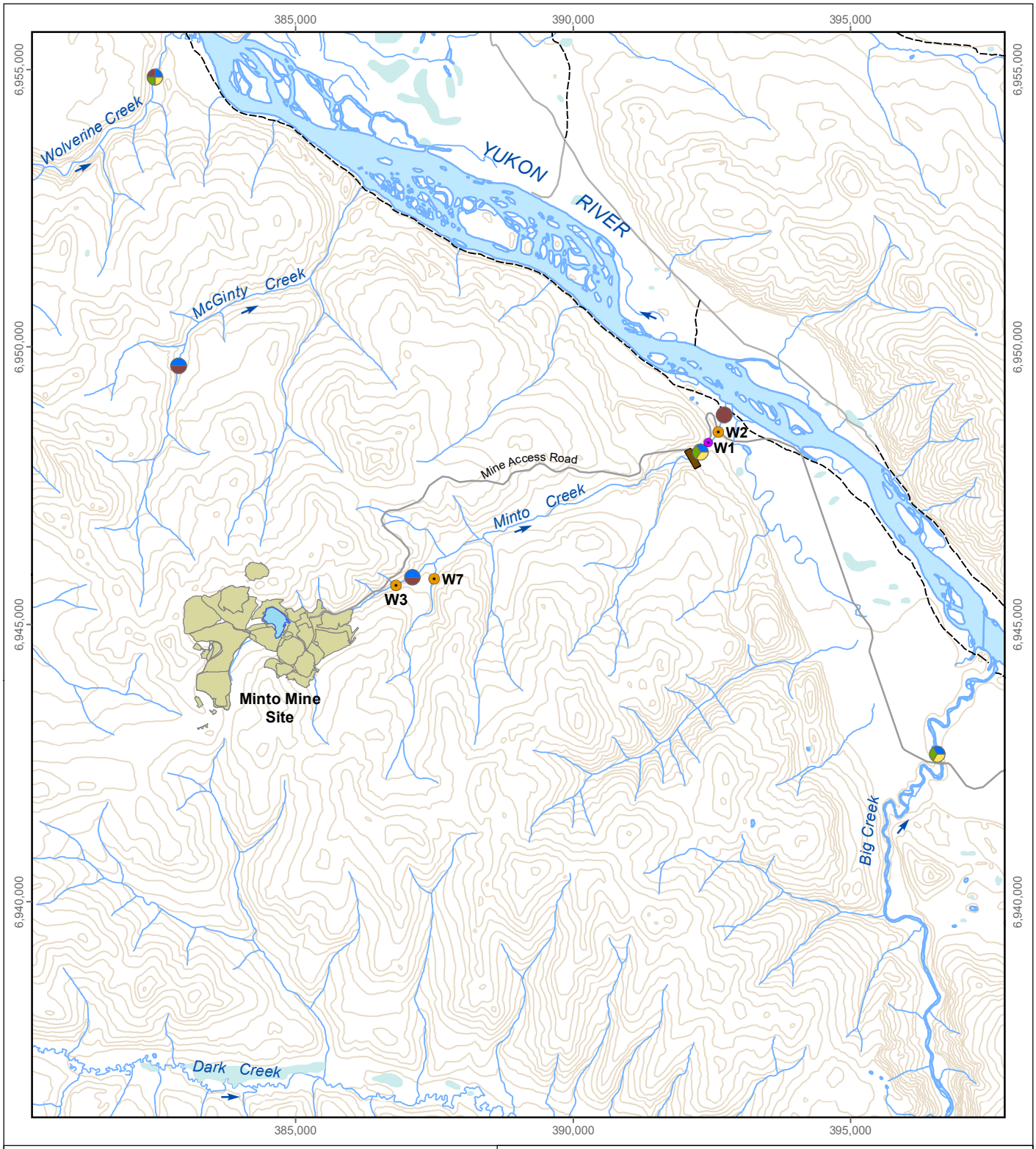
FIGURES



LEGEND

Samples Collected

- Water
- Sediment
- Periphyton
- Benthos
- Routine Water Station
- Staff Gauge Location
- Fish Barrier
- Main Pit Lake
- Mine Footprint

Mine infrastructure data provided by Access Mining Consultants Inc. Mine site contours derived from 2012 aerial imagery otained from Challenger Geomatics.

Water, Sediment, Periphyton, and Benthic Invertebrate Monitoring Areas, September 2021

0 1.75 3.5 7 km

N W E S

Datum: NAD 83 Map Projection: UTM Zone 8V Data Source: National Topographic Data Base (NTDB) compiled by Department of Natural Resources Canada at a scale of 1:50,000. All rights reserved.

Date March 2022
Project 217202.0092

minnow environmental inc.

Figure 1

Document Path: C:\Users\MLaPalme\Trinity Consultants, Inc\Pembridge Resources - 217202.0092 - Minto AEMP 2021\D - GIS\Report\21-92 Figure 1.3 Monitoring Areas for the Minto Mine.mxd

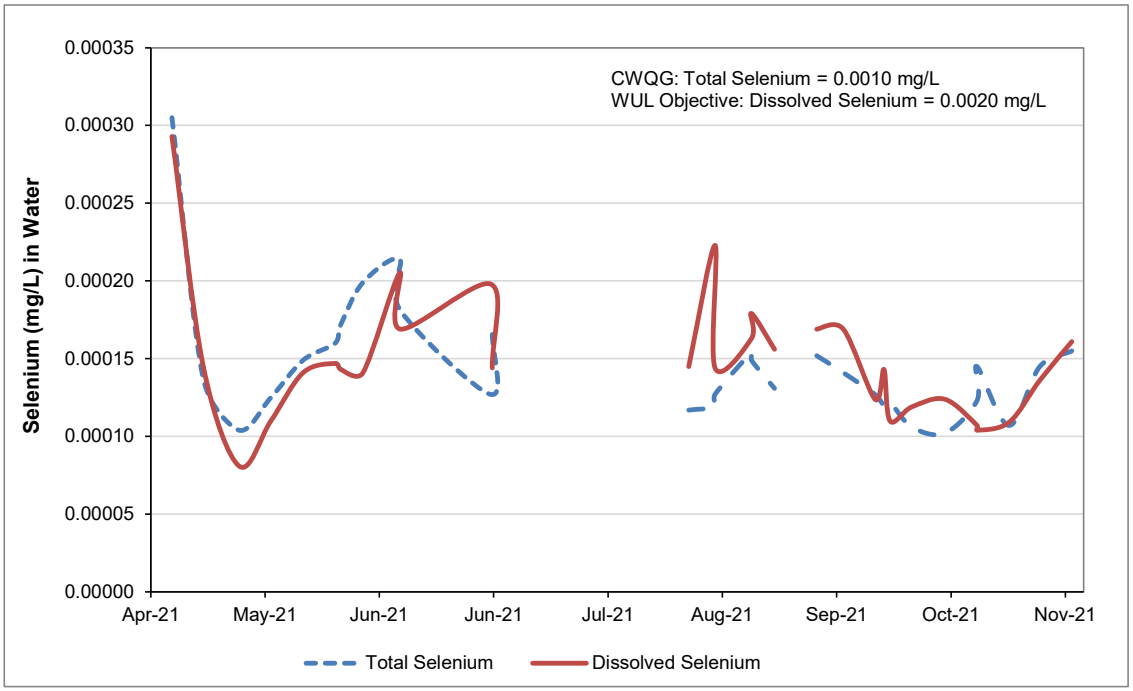


Figure 2: Selenium Concentrations (mg/L) in Water at Minto Mine Routine Monitoring Stations in Lower Minto Creek, 2021

Notes: CWQG = Canadian Water Quality Guidelines; CCME 1999. WUL = water use license. No water quality samples collected in July due to low flows.

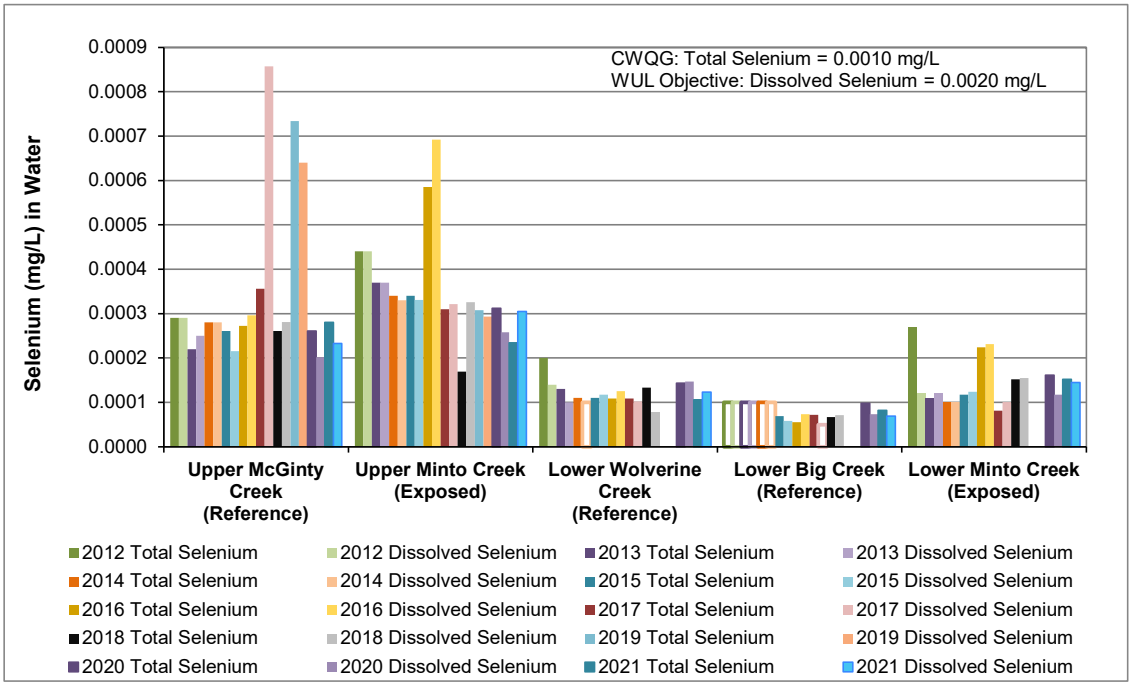


Figure 3: Total and Dissolved Selenium Concentrations (mg/L) in Water at Upper and Lower Minto Creek and Associated Reference Areas, 2012 to 2021[a]

Notes: All unfilled bars were < laboratory reporting limits. CWQG = Canadian Water Quality Guidelines; CCME 1999. Sample size = 1.

[a] Due to dry conditions at lower Minto Creek in 2019, sampling only took place in upper Minto Creek and reference

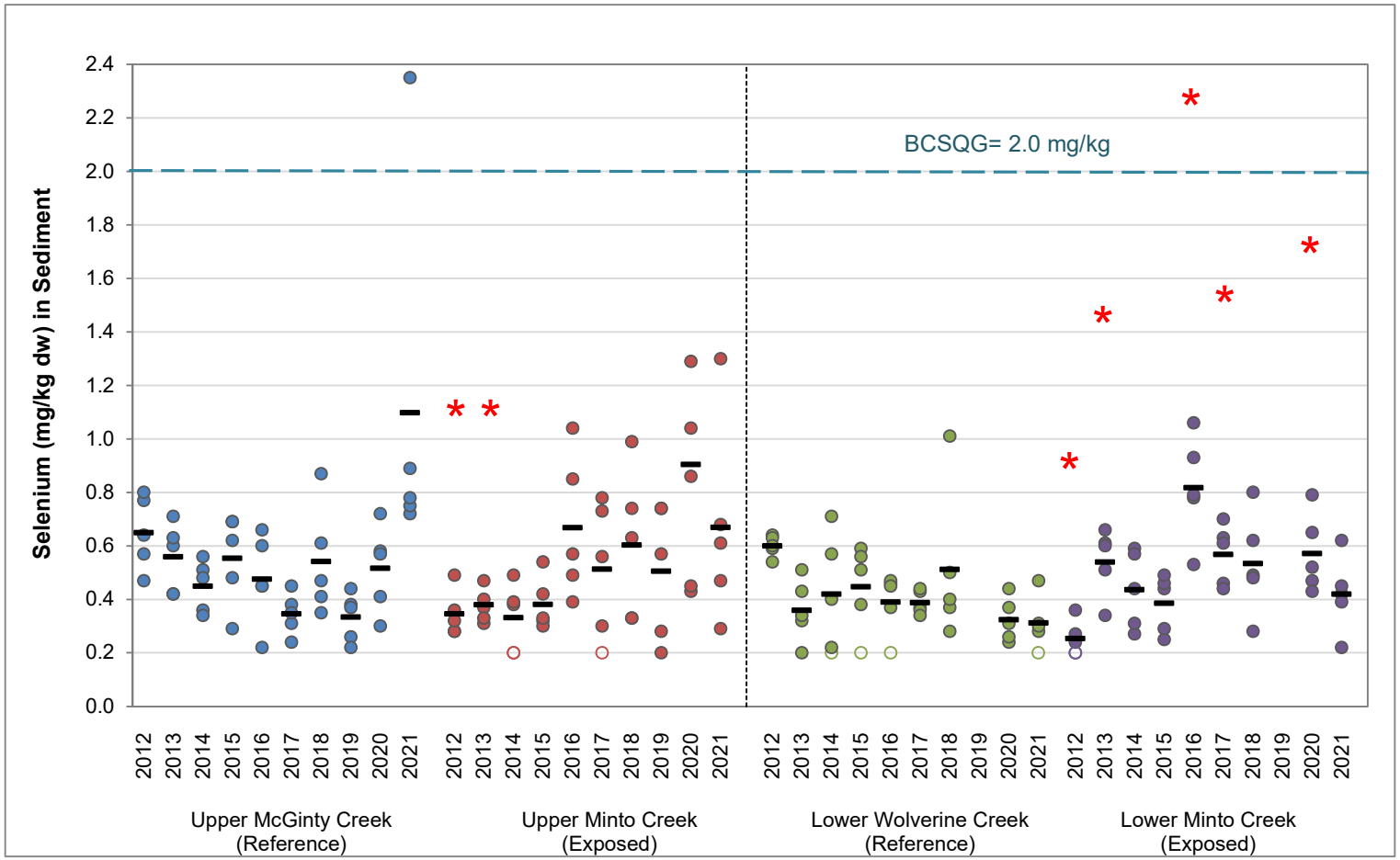


Figure 4: Selenium Concentrations in Sediment at Upper and Lower Minto Creek and Associated Reference Areas, 2012 to 2021[a]

Notes: Mean concentrations at exposed areas that differ significantly ($p < 0.05$) within year from the corresponding reference area (i.e., upper Minto Creek vs. upper McGinty Creek; lower Minto Creek vs. lower Wolverine Creek), are marked with *, n = 5. Unfilled circles represents samples < laboratory detection limits. Means are represented by black dashes. The dashed line separates the upper and lower areas. BCSQG = British Columbia Sediment Quality Guideline.

[a] Due to dry conditions at lower Minto Creek in 2019, sediment sampling only took place in upper Minto Creek and reference.

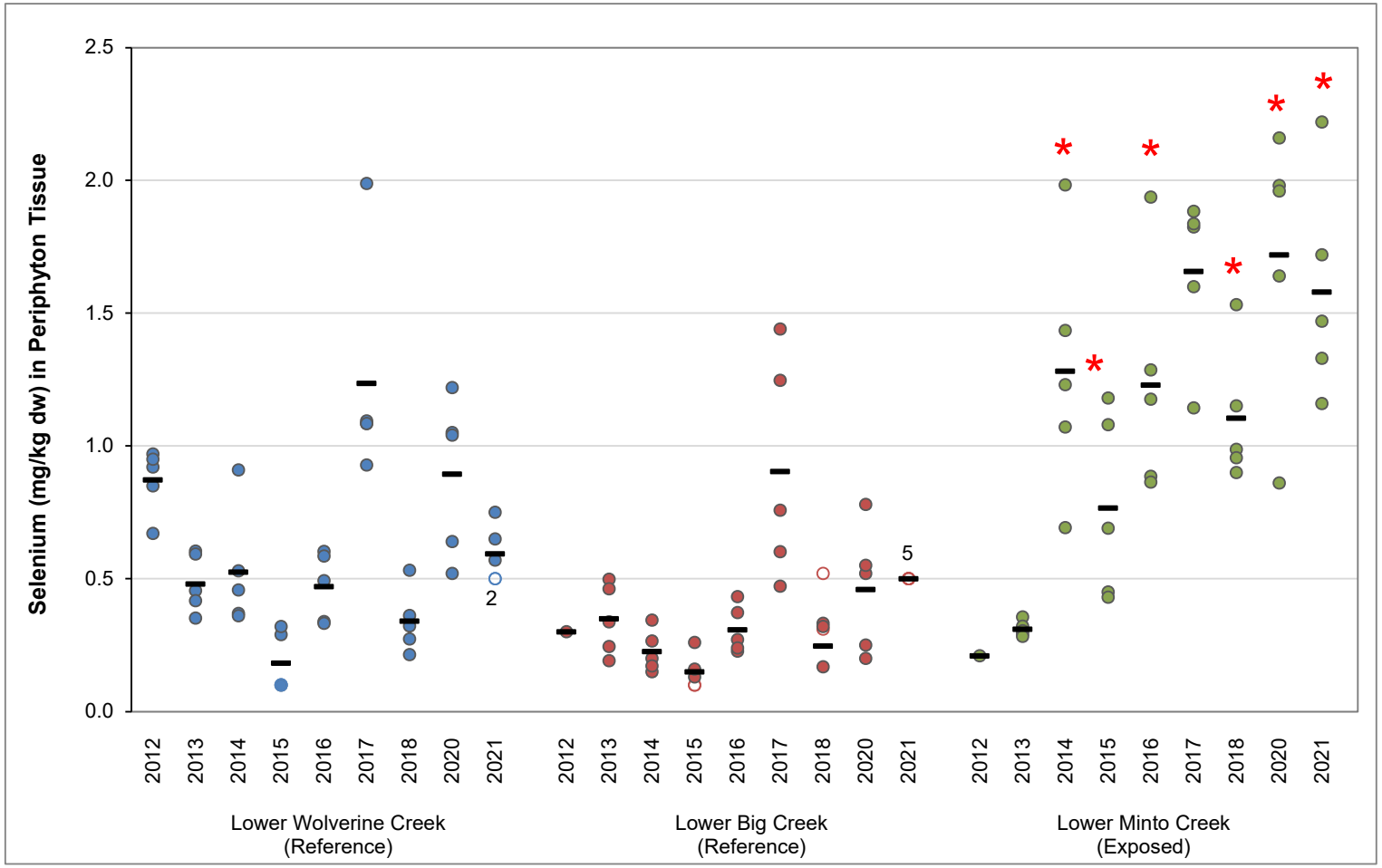


Figure 5: Periphyton Tissue Selenium Concentrations at Lower Minto Creek and Associated Reference Areas, 2012 to 2021[a]

Notes: Mean concentrations that that differ significantly ($p < 0.05$) within year between exposed and **both** reference areas are marked with with *, n = 5, except in lower Minto and lower Big creeks in 2012 (n = 1). Unfilled circles represents samples < laboratory detection limits. Means are represented by black dashes. For 2021 data, numbers near the unfilled circles indicates the number of samples at laboratory detection limit.

[a] Due to dry conditions at lower Minto Creek in 2019, periphyton sampling was not conducted.

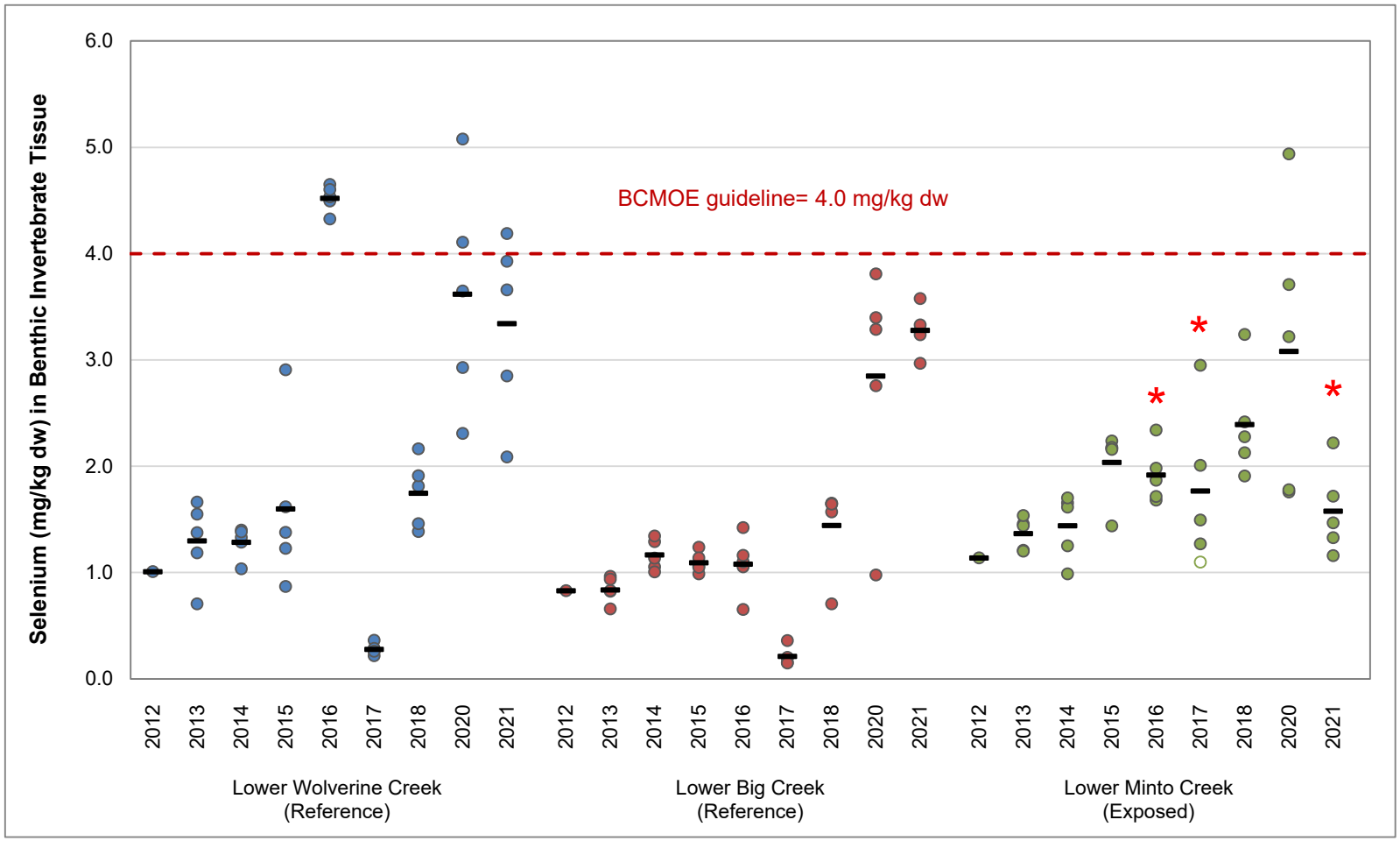


Figure 6: Benthic Invertebrate Tissue Selenium Concentrations at Lower Minto Creek and Associated Reference Areas, 2012 to 2021[a]

Notes: BCMOE = British Columbia Ministry of the Environment. Guideline is for dry weight (dw) selenium concentrations (BCMOE 2014). Mean concentrations that that differ significantly ($p < 0.05$) within year between exposed and **both** reference areas are marked with with *, n = 5, except in 2012 (n = 1). Unfilled circles represents samples < laboratory detection limits. Means are represented by black dashes.

[a] Due to dry conditions at lower Minto Creek in 2019, benthic invertebrate sampling was not conducted.

TABLES

Table A.1: Concentrations of Selenium and Total Suspended Solids at Lower Minto Creek Routine Water Quality Monitoring Station W2, 2021[a]

Sampling Date	Total Selenium	Dissolved Selenium	Total Suspended Solids
	mg/L	mg/L	mg/L
19-Apr-21	0.000305	0.000293	60.4
26-Apr-21	0.000137	0.000145	55.3
April Mean	**0.000221**	**0.000219**	**57.8**
4-May-21	0.000104	0.0000810	31.3
11-May-21	0.000125	0.000110	37.3
18-May-21	0.000149	0.000141	4.00
25-May-21	0.000160	0.000147	83.4
26-May-21	0.000172	0.000143	87.6
31-May-21	0.000199	0.000141	41.4
May Mean	**0.000152**	**0.000127**	**47.5**
8-Jun-21	0.000214	0.000205	<1
8-Jun-21	0.000181	0.000169	14.3
28-Jun-21	0.000127	0.000198	<1
28-Jun-21	0.000167	0.000144	50.1
June Mean	**0.000172**	**0.000179**	**16.6**
10-Aug-21	0.000117	0.000145	5.50
16-Aug-21	0.000119	0.000223	4.00
16-Aug-21	0.000127	0.000144	4.70
24-Aug-21	0.000154	0.000163	7.40
24-Aug-21	0.000149	0.000179	1.40
29-Aug-21	0.000131	0.000156	1.60
August Mean	**0.000133**	**0.000168**	**4.10**
7-Sep-21	0.000152	0.000169	1.30
13-Sep-21	0.000141	0.000169	<1
20-Sep-21	0.000127	0.000124	<1
22-Sep-21	0.000120	0.000143	6.70
23-Sep-21	0.000122	0.000110	1.20
28-Sep-21	0.000106	0.000119	<1
September Mean	**0.000128**	**0.000139**	**2.03**
5-Oct-21	0.000102	0.000124	<1
12-Oct-21	0.000123	0.000107	<1
12-Oct-21	0.000145	0.000104	<1
19-Oct-21	0.000107	0.000109	3.30
26-Oct-21	0.000145	0.000136	99.2
October Mean	**0.000124**	**0.000116**	**21.1**
2-Nov-21	0.000155	0.000161	80.3
Summary Stats based on Monthly Means			
Count	7	7	7
Count <DL	0	0	0
Mean	0.000158	0.000155	32.8
Standard Deviation	0.000035	0.0000337	29.6
Minimum	0.000116	0.000124	2.03
Maximum	0.000219	0.000221	80.3
1st Quartile	0.000127	0.000128	4.10
Median	0.000161	0.000152	21.1
3rd Quartile	0.000179	0.000172	57.8

Notes: Means were considered < Laboratory Reporting Limits (LRL) if all samples were < LRL. Monthly means are calculated first and annual calculations are based off of these values. Monthly mean was not displayed for November, as there was only one sample collected.

[a] No water quality sample collected in July, as water levels were low.

Table A.2: Selenium Concentrations at Upper and Lower Areas in Different Sampling Components, Minto Mine, 2021[a]

Area		Selenium Concentrations				
		Water		Sediment (mg/kg dw)	Periphyton Tissue (mg/kg dw)	Benthic Invertebrate Tissue (mg/kg dw)
		Total (mg/L)	Dissolved (mg/L)			
Upper McGinty Creek (Reference)	URC-1	0.00028	0.00023	0.89	-	-
	URC-2	-	-	0.72	-	-
	URC-3	-	-	2.4	-	-
	URC-4	-	-	0.75	-	-
	URC-5	-	-	0.78	-	-
Mean		-	-	**1.1**	-	-
Standard Deviation		-	-	**0.70**	-	-
Upper Minto Creek (Exposed)	UMC-1	0.00023	0.00031	0.68	-	-
	UMC-2	-	-	0.61	-	-
	UMC-3	-	-	1.3	-	-
	UMC-4	-	-	0.47	-	-
	UMC-5	-	-	0.29	-	-
Mean		-	-	**0.67**	-	-
Standard Deviation		-	-	**0.38**	-	-
Lower Wolverine Creek (Reference)	LWC-1	0.00011	0.00012	<0.20	0.65	3.7
	LWC-2	-	-	0.31	0.57	2.9
	LWC-3	-	-	0.47	<0.50	3.9
	LWC-4	-	-	0.30	0.75	4.2
	LWC-5	-	-	0.28	<0.50	2.1
Mean		-	-	**0.31**	**0.59**	**3.3**
Standard Deviation		-	-	**0.083**	**0.087**	**0.86**
Lower Big Creek (Reference)	LBC-1	0.000082	0.000069	-	<0.50	3.6
	LBC-2	-	-	-	<0.50	3.3
	LBC-3	-	-	-	<0.50	3.0
	LBC-4	-	-	-	<0.50	3.3
	LBC-5	-	-	-	<0.50	3.2
Mean		-	-	-	**<0.50**	**3.3**
Standard Deviation		-	-	-	**-**	**0.22**
Lower Minto Creek (Exposed)	LMC-1	0.00015	0.00015	0.42	2.2	1.2
	LMC-2	-	-	0.62	0.72	1.5
	LMC-3	-	-	0.39	0.82	1.3
	LMC-4	-	-	0.22	1.2	1.7
	LMC-5	-	-	0.45	1.4	2.2
Mean		-	-	**0.42**	**1.3**	**1.6**
Standard Deviation		-	-	**0.14**	**0.58**	**0.41**

Notes: mg/L = milligram per litre. mg/kg = milligram per killogram. dw = dry weight. Standard deviation not displayed when all results are below the laboratory reporting limit.

[a] Areas with values < laboratory reporting limits were analyzed using the non-parametric Kaplan-Meier method (Helsel 2012).

Table A.3: Selenium Concentrations at Upper and Lower Areas in Different Compartments, Minto Mine, 2020[a]

Area		Selenium Concentrations				
		Water		Sediment (mg/kg dw)	Periphyton Tissue (mg/kg dw)	Benthic Invertebrate Tissue (mg/kg dw)
		Total (mg/L)	Dissolved (mg/L)			
Upper McGinty Creek (Reference)	URC-1	0.00026	0.00020	0.41	-	-
	URC-2	-	-	0.72	-	-
	URC-3	-	-	0.58	-	-
	URC-4	-	-	0.57	-	-
	URC-5	-	-	0.30	-	-
Mean		-	-	**0.52**	-	-
Standard Deviation		-	-	**0.16**	-	-
Upper Minto Creek (Exposed)	UMC-1	0.00031	0.00026	0.86	-	-
	UMC-2	-	-	1.3	-	-
	UMC-3	-	-	1.0	-	-
	UMC-4	-	-	0.43	-	-
	UMC-5	-	-	0.45	-	-
Mean		-	-	**0.81**	-	-
Standard Deviation		-	-	**0.37**	-	-
Lower Wolverine Creek (Reference)	LWC-1	0.00014	0.00015	0.44	0.52	4.1
	LWC-2	-	-	0.24	0.64	2.3
	LWC-3	-	-	0.26	1.2	3.7
	LWC-4	-	-	0.31	1.1	5.1
	LWC-5	-	-	0.37	1.0	2.9
Mean		-	-	**0.32**	**0.89**	**3.6**
Standard Deviation		-	-	**0.082**	**0.30**	**1.1**
Lower Big Creek (Reference)	LBC-1	0.00010	0.000073	-	0.20	3.4
	LBC-2	-	-	-	0.52	3.8
	LBC-3	-	-	-	0.55	2.8
	LBC-4	-	-	-	0.78	3.3
	LBC-5	-	-	-	0.25	0.98
Mean		-	-	-	**0.46**	**2.9**
Standard Deviation		-	-	-	**0.24**	**1.1**
Lower Minto Creek (Exposed)	LMC-1	0.00016	0.00012	0.65	2.2	3.7
	LMC-2	-	-	0.79	0.86	1.8
	LMC-3	-	-	0.47	2.0	1.8
	LMC-4	-	-	0.52	1.6	3.2
	LMC-5	-	-	0.43	2.0	4.9
Mean		-	-	**0.57**	**1.7**	**3.1**
Standard Deviation		-	-	**0.15**	**0.52**	**1.4**

Notes: mg/L = milligram per litre. mg/kg = milligram per killogram. dw = dry weight.

[a] Areas with values < laboratory reporting limits were analyzed using the non-parametric Kaplan-Meier method (Helsel 2012).

Table A.4: Selenium Concentrations at Upper and Lower Areas in Different Sampling Components, Minto Mine, 2018[a]

Area		Selenium Concentrations				
		Water		Sediment (mg/kg dw)	Periphyton Tissue (mg/kg dw)	Benthic Invertebrate Tissue (mg/kg dw)
		Total (mg/L)	Dissolved (mg/L)			
Upper McGinty Creek (Reference)	URC-1	0.00026	0.00028	0.61	-	-
	URC-2	-	-	0.87	-	-
	URC-3	-	-	0.35	-	-
	URC-4	-	-	0.41	-	-
	URC-5	-	-	0.47	-	-
Mean		-	-	**0.54**	-	-
Standard Deviation		-	-	**0.21**	-	-
Upper Minto Creek (Exposed)	UMC-1	0.00017	0.00033	0.99	-	-
	UMC-2	-	-	0.63	-	-
	UMC-3	-	-	0.74	-	-
	UMC-4	-	-	0.33	-	-
	UMC-5	-	-	0.33	-	-
Mean		-	-	**0.60**	-	-
Standard Deviation		-	-	**0.28**	-	-
Lower Wolverine Creek (Reference)	LWC-1	0.00013	0.000077	0.28	0.53	1.4
	LWC-2	-	-	0.37	0.36	1.5
	LWC-3	-	-	1.0	0.27	1.8
	LWC-4	-	-	0.40	0.32	1.9
	LWC-5	-	-	0.50	0.21	2.2
Mean		-	-	**0.51**	**0.34**	**1.7**
Standard Deviation		-	-	**0.29**	**0.12**	**0.32**
Lower Big Creek (Reference)	LBC-1	0.000067	0.000071	-	< 0.31	1.6
	LBC-2	-	-	-	0.17	1.7
	LBC-3	-	-	-	0.33	1.6
	LBC-4	-	-	-	< 0.52	1.6
	LBC-5	-	-	-	0.32	0.71
Mean		-	-	-	**0.25**	**1.4**
Standard Deviation		-	-	-	**0.097**	**0.41**
Lower Minto Creek (Exposed)	LMC-1	0.00015	0.00016	0.49	0.99	3.2
	LMC-2	-	-	0.80	0.90	2.1
	LMC-3	-	-	0.28	1.5	2.3
	LMC-4	-	-	0.62	0.96	1.9
	LMC-5	-	-	0.48	1.2	2.4
Mean		-	-	**0.53**	**1.1**	**2.4**
Standard Deviation		-	-	**0.19**	**0.26**	**0.51**

Notes: mg/L = milligram per litre. mg/kg = milligram per kilogram. dw = dry weight.

[a] Areas with values < laboratory reporting limits were analyzed using the non-parametric Kaplan-Meier method (Helsel 2012) in R statistical software (R Core Team 2017).

Table A.5: Selenium Concentrations at Upper and Lower Areas in Different Sampling Components, Minto Mine, 2017[a]

Area		Selenium Concentrations				
		Water		Sediment (mg/kg dw)	Periphyton Tissue (mg/kg dw)	Benthic Invertebrate Tissue (mg/kg dw)
		Total (mg/L)	Dissolved (mg/L)			
Upper McGinty Creek (Reference)	URC-1	0.00036	0.00086	0.45	-	-
	URC-2	-	-	0.24	-	-
	URC-3	-	-	0.31	-	-
	URC-4	-	-	0.38	-	-
	URC-5	-	-	0.35	-	-
Mean		-	-	**0.35**	-	-
Standard Deviation		-	-	**0.078**	-	-
Upper Minto Creek (Exposed)	UMC-1	0.00031	0.00032	0.56	-	-
	UMC-2	-	-	0.78	-	-
	UMC-3	-	-	0.73	-	-
	UMC-4	-	-	<0.20	-	-
	UMC-5	-	-	0.30	-	-
Mean		-	-	**0.51**	-	-
Standard Deviation		-	-	**0.24**	-	-
Lower Wolverine Creek (Reference)	LWC-1	0.00011	0.00010	0.37	0.93	0.37
	LWC-2	-	-	0.43	1.1	0.26
	LWC-3	-	-	0.36	1.1	0.29
	LWC-4	-	-	0.44	2.0	0.22
	LWC-5	-	-	0.34	1.1	0.26
Mean		-	-	**0.39**	**1.2**	**0.28**
Standard Deviation		-	-	**0.044**	**0.43**	**0.054**
Lower Big Creek (Reference)	LBC-1	0.000072	<0.000050	-	1.2	0.20
	LBC-2	-	-	-	0.60	0.20
	LBC-3	-	-	-	1.4	0.16
	LBC-4	-	-	-	0.76	0.15
	LBC-5	-	-	-	0.47	0.36
Mean		-	-	-	**0.90**	**0.21**
Standard Deviation		-	-	-	**0.42**	**0.086**
Lower Minto Creek (Exposed)	LMC-1	0.000081	0.00010	0.46	1.6	1.5
	LMC-2	-	-	0.63	1.1	1.3
	LMC-3	-	-	0.61	1.8	<1.1
	LMC-4	-	-	0.70	1.8	3.0
	LMC-5	-	-	0.44	1.9	2.0
Mean		-	-	**0.57**	**1.7**	**1.8**
Standard Deviation		-	-	**0.11**	**0.31**	**0.73**

Notes: mg/L = milligram per litre. mg/kg = milligram per killogram. dw = dry weight.

[a] Areas with values < laboratory reporting limit were analyzed using the non-parametric Kaplan-Meier method (Helsel 2012) in R statistical software (R Core Team 2017).

Table A.6: Selenium Concentrations at Upper and Lower Areas in Different Sampling Components, Minto Mine, 2016[a]

Area		Selenium Concentrations				
		Water		Sediment (mg/kg dw)	Periphyton Tissue (mg/kg dw)	Benthic Invertebrate Tissue (mg/kg dw)
		Total (mg/L)	Dissolved (mg/L)			
Upper McGinty Creek (Reference)	URC-1	0.00027	0.00030	0.45	-	-
	URC-2	-	-	0.45	-	-
	URC-3	-	-	0.66	-	-
	URC-4	-	-	0.60	-	-
	URC-5	-	-	0.22	-	-
Mean		-	-	**0.48**	-	-
Standard Deviation		-	-	**0.17**	-	-
Upper Minto Creek (Exposed)	UMC-1	0.00059	0.00069	0.49	-	-
	UMC-2	-	-	0.57	-	-
	UMC-3	-	-	0.85	-	-
	UMC-4	-	-	1.0	-	-
	UMC-5	-	-	0.39	-	-
Mean		-	-	**0.67**	-	-
Standard Deviation		-	-	**0.27**	-	-
Lower Wolverine Creek (Reference)	LWC-1	0.00011	0.00013	0.46	0.60	4.5
	LWC-2	-	-	<0.20	0.59	4.7
	LWC-3	-	-	0.37	0.49	4.5
	LWC-4	-	-	0.45	0.34	4.3
	LWC-5	-	-	0.47	0.33	4.6
Mean		-	-	**0.39**	**0.47**	**4.5**
Standard Deviation		-	-	**0.11**	**0.13**	**0.13**
Lower Big Creek (Reference)	LBC-1	0.000055	0.000073	-	0.23	0.65
	LBC-2	-	-	-	0.27	1.1
	LBC-3	-	-	-	0.37	1.1
	LBC-4	-	-	-	0.24	1.2
	LBC-5	-	-	-	0.43	1.4
Mean		-	-	-	**0.31**	**1.1**
Standard Deviation		-	-	-	**0.090**	**0.28**
Lower Minto Creek (Exposed)	LMC-1	0.00022	0.00023	0.53	1.3	1.7
	LMC-2	-	-	0.93	1.2	1.9
	LMC-3	-	-	0.78	0.89	2.0
	LMC-4	-	-	1.1	0.86	1.7
	LMC-5	-	-	0.79	1.9	2.3
Mean		-	-	**0.82**	**1.2**	**1.9**
Standard Deviation		-	-	**0.20**	**0.44**	**0.27**

Notes: mg/L = milligram per litre. mg/kg = milligram per killogram. dw = dry weight.

[a] If value was < laboratory reporting limit (LRL), summary statistics were calculated using 1x LRL.

Table A.7: Selenium Concentrations at Upper and Lower Areas in Different Sampling Components, Minto Mine, 2015[a]

Area		Selenium Concentrations				
		Water		Sediment (mg/kg dw)	Periphyton Tissue (mg/kg dw)	Benthic Invertebrate Tissue (mg/kg dw)
		Total (mg/L)	Dissolved (mg/L)			
Upper McGinty Creek (Reference)	URC-1	0.00026	0.00022	0.62	-	-
	URC-2	-	-	0.48	-	-
	URC-3	-	-	0.69	-	-
	URC-4	-	-	0.69	-	-
	URC-5	-	-	0.29	-	-
Mean		-	-	**0.554**	-	-
Standard Deviation		-	-	**0.171**	-	-
Upper Minto Creek (Exposed)	UMC-1	0.00034	0.00033	0.32	-	-
	UMC-2	-	-	0.30	-	-
	UMC-3	-	-	0.42	-	-
	UMC-4	-	-	0.54	-	-
	UMC-5	-	-	0.33	-	-
Mean		-	-	**0.38**	-	-
Standard Deviation		-	-	**0.10**	-	-
Lower Wolverine Creek (Reference)	LWC-1	0.00011	0.00012	0.51	0.10	1.6
	LWC-2	-	-	0.59	<0.10	1.4
	LWC-3	-	-	0.56	0.29	2.9
	LWC-4	-	-	0.38	<0.10	1.2
	LWC-5	-	-	<0.20	0.32	0.87
Mean		-	-	**0.45**	**0.18**	**1.6**
Standard Deviation		-	-	**0.16**	**0.11**	**0.78**
Lower Big Creek (Reference)	LBC-1	0.000069	0.000058	-	<0.10	1.1
	LBC-2	-	-	-	<0.10	1.2
	LBC-3	-	-	-	0.26	0.99
	LBC-4	-	-	-	0.13	1.1
	LBC-5	-	-	-	0.16	1.1
Mean		-	-	-	**0.15**	**1.1**
Standard Deviation		-	-	-	**0.066**	**0.097**
Lower Minto Creek (Exposed)	LMC-1	0.00012	0.00012	0.44	0.69	2.2
	LMC-2	-	-	0.46	0.45	2.2
	LMC-3	-	-	0.49	1.2	2.2
	LMC-4	-	-	0.25	1.1	1.4
	LMC-5	-	-	0.29	0.43	2.2
Mean		-	-	**0.39**	**0.77**	**2.0**
Standard Deviation		-	-	**0.11**	**0.35**	**0.34**

Notes: mg/L = milligram per litre. mg/kg = milligram per killogram. dw = dry weight.

[a] If value was < laboratory reporting limit (LRL), summary statistics were calculated using 1x LRL.

Table A.8: Selenium Concentrations at Upper and Lower Areas in Different Sampling Components, 2014[a]

Area		Selenium Concentrations				
		Water		Sediment (mg/kg dw)	Periphyton Tissue (mg/kg dw)	Benthic Invertebrate Tissue (mg/kg dw)
		Total (mg/L)	Dissolved (mg/L)			
Upper McGinty Creek (Reference)	URC-1	0.00028	0.00028	0.51	-	-
	URC-2	-	-	0.48	-	-
	URC-3	-	-	0.36	-	-
	URC-4	-	-	0.56	-	-
	URC-5	-	-	0.34	-	-
Mean		-	-	**0.45**	-	-
Standard Deviation		-	-	**0.10**	-	-
Upper Minto Creek (Exposed)	UMC-1	0.00034	0.00033	0.38	-	-
	UMC-2	-	-	0.39	-	-
	UMC-3	-	-	0.49	-	-
	UMC-4	-	-	<0.20	-	-
	UMC-5	-	-	<0.20	-	-
Mean		-	-	**0.33**	-	-
Standard Deviation		-	-	**0.13**	-	-
Lower Wolverine Creek (Reference)	LWC-1	0.00011	<0.00010	0.71	0.37	1.3
	LWC-2	-	-	0.40	0.53	1.4
	LWC-3	-	-	<0.20	0.91	1.3
	LWC-4	-	-	0.22	0.46	1.4
	LWC-5	-	-	0.57	0.36	1.0
Mean		-	-	**0.42**	**0.53**	**1.3**
Standard Deviation		-	-	**0.22**	**0.23**	**0.15**
Lower Big Creek (Reference)	LBC-1	<0.00010	<0.00010	-	0.34	1.3
	LBC-2	-	-	-	0.20	1.1
	LBC-3	-	-	-	0.15	1.3
	LBC-4	-	-	-	0.17	1.0
	LBC-5	-	-	-	0.27	1.1
Mean		-	-	-	**0.23**	**1.2**
Standard Deviation		-	-	-	**0.08**	**0.15**
Lower Minto Creek (Exposed)	LMC-1	<0.00010	0.00010	0.27	1.4	1.7
	LMC-2	-	-	0.44	0.69	0.99
	LMC-3	-	-	0.59	2.0	1.6
	LMC-4	-	-	0.57	1.2	1.3
	LMC-5	-	-	0.31	1.1	1.7
Mean		-	-	**0.44**	**1.3**	**1.4**
Standard Deviation		-	-	**0.15**	**0.477**	**0.31**

Notes: mg/L = milligram per litre. mg/kg = milligram per killogram. dw = dry weight.

[a] If value was < laboratory reporting limit (LRL), summary statistics were calculated using 1x LRL.

Table A.9: Selenium Concentrations at Upper and Lower Areas in Different Sampling Components, Minto Mine, 2013[a]

Area		Selenium Concentrations					
		Water		Sediment (mg/kg dw)	Periphyton Tissue (mg/kg dw)	Benthic Invertebrate Tissue (mg/kg dw)	Fish Whole Body[b] (mg/kg dw)
		Total (mg/L)	Dissolved (mg/L)				
Upper McGinty Creek (Reference)	URC-1	0.00022	0.00025	0.42	-	-	-
	URC-2	-	-	0.42	-	-	-
	URC-3	-	-	0.60	-	-	-
	URC-4	-	-	0.63	-	-	-
	URC-5	-	-	0.71	-	-	-
Mean		-	-	**0.56**	-	-	-
Standard Deviation		-	-	**0.13**	-	-	-
Upper Minto Creek (Exposed)	UMC-1	0.00037	0.00037	0.31	-	-	-
	UMC-2	-	-	0.37	-	-	-
	UMC-3	-	-	0.40	-	-	-
	UMC-4	-	-	0.47	-	-	-
	UMC-5	-	-	0.33	-	-	-
Mean		-	-	**0.38**	-	-	-
Standard Deviation		-	-	**0.063**	-	-	-
Lower Wolverine Creek (Reference)	LWC-1	0.00013	0.00010	0.51	0.60	1.6	-
	LWC-2	-	-	0.32	0.46	1.7	-
	LWC-3	-	-	0.43	0.59	0.71	-
	LWC-4	-	-	0.34	0.42	1.4	-
	LWC-5	-	-	<0.20	0.35	1.2	-
Mean		-	-	**0.36**	**0.48**	**1.3**	-
Standard Deviation		-	-	**0.12**	**0.11**	**0.38**	-
Lower Big Creek (Reference)	LBC-1	<0.00010	<0.00010	-	0.24	0.83	1.1
	LBC-2	-	-	-	0.34	0.97	2.1
	LBC-3	-	-	-	0.50	0.83	-
	LBC-4	-	-	-	0.46	0.66	-
	LBC-5	-	-	-	0.19	0.94	-
Mean		-	-	-	**0.35**	**0.84**	**1.6**
Standard Deviation		-	-	-	**0.13**	**0.12**	**0.71**
Lower Minto Creek (Exposed)	LMC-1	0.00011	0.00012	0.51	0.36	1.5	3.0
	LMC-2	-	-	0.66	0.29	1.2	4.5
	LMC-3	-	-	0.34	0.32	1.4	-
	LMC-4	-	-	0.61	0.30	1.2	-
	LMC-5	-	-	0.60	0.28	1.5	-
Mean		-	-	**0.54**	**0.31**	**1.4**	**3.7**
Standard Deviation		-	-	**0.13**	**0.029**	**0.15**	**1.1**

Notes: mg/L = milligram per litre. mg/kg = milligram per killogram. dw = dry weight.

[a] If value was < laboratory reporting limit (LRL), summary statistics were calculated using 1x LRL.

[b] Slimy sculpin (*Cottus cognatus*).

Table A.10: Selenium Concentrations at Upper and Lower Areas in Different Sampling Components, Minto Mine, 2012[a]

Area		Selenium Concentrations					
		Water		Sediment (mg/kg dw)	Periphyton Tissue (mg/kg dw)	Benthic Invertebrate Tissue (mg/kg dw)	Fish Whole Body[b] (mg/kg dw)
		Total (mg/L)	Dissolved (mg/L)				
Upper McGinty Creek (Reference)	URC-1	0.00029	0.00029	0.77	-	-	-
	URC-2	-	-	0.80	-	-	-
	URC-3	-	-	0.64	-	-	-
	URC-4	-	-	0.47	-	-	-
	URC-5	-	-	0.57	-	-	-
Mean		-	-	**0.65**	-	-	-
Standard Deviation		-	-	**0.14**	-	-	-
Upper Minto Creek (Exposed)	UMC-1	0.00044	0.00044	0.36	-	-	-
	UMC-2	-	-	0.28	-	-	-
	UMC-3	-	-	0.28	-	-	-
	UMC-4	-	-	0.49	-	-	-
	UMC-5	-	-	0.32	-	-	-
Mean		-	-	**0.35**	-	-	-
Standard Deviation		-	-	**0.087**	-	-	-
Lower Wolverine Creek (Reference)	LWC-1	0.00020	0.00014	0.64	0.97	1.0	-
	LWC-2	-	-	0.59	0.92	-	-
	LWC-3	-	-	0.63	0.67	-	-
	LWC-4	-	-	0.54	0.95	-	-
	LWC-5	-	-	0.60	0.85	-	-
Mean		-	-	**0.60**	**0.87**	-	-
Standard Deviation		-	-	**0.039**	**0.12**	-	-
Lower Big Creek (Reference)	LBC-1	<0.00010	<0.00010	-	0.30	0.83	3.8
	LBC-2	-	-	-	-	-	4.2
	LBC-3	-	-	-	-	-	2.7
	LBC-4	-	-	-	-	-	4.5
	LBC-5	-	-	-	-	-	3.4
	LBC-6	-	-	-	-	-	3.2
	LBC-7	-	-	-	-	-	2.6
	LBC-8	-	-	-	-	-	2.6
Mean		-	-	-	-	-	**3.4**
Standard Deviation		-	-	-	-	-	**0.73**
Lower Minto Creek (Exposed)	LMC-1	0.00027	0.00012	0.24	0.21	1.1	4.5
	LMC-2	-	-	<0.20	-	-	5.3
	LMC-3	-	-	0.27	-	-	5.4
	LMC-4	-	-	0.36	-	-	5.4
	LMC-5	-	-	<0.20	-	-	7.4
	LMC-6	-	-	-	-	-	4.8
	LMC-7	-	-	-	-	-	4.0
Mean		-	-	**0.25**	-	-	**5.3**
Standard Deviation		-	-	**0.066**	-	-	**1.1**

Notes: mg/L = milligram per litre. mg/kg = milligram per killogram. dw = dry weight.

[a] If value was < laboratory reporting limit (LRL), summary statistics were calculated using 1x LRL.

[b] Slimy sculpin (*Cottus cognatus*).

Appendix H – Minto Annual Groundwater Review 2021

FINAL

Minto Mine –2021 Groundwater Review and Summary of OAMP SPT Exceedances

Prepared for

Minto Metals Corp.

Prepared by

SRK Consulting (Canada) Inc.
1CM002.055
March 2022

Minto Mine –2021 Groundwater Review and Summary of OAMP SPT Exceedances

March 2022

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srk consulting

Executive Summary

SRK Consulting (SRK) was retained by Minto Metals Corp. (Minto) to provide quarterly and annual reporting on groundwater chemistry monitoring in accordance with specific performance threshold (SPT) exceedances as outlined in the Minto Mine Operational Adaptive Management Plan (OAMP; Minto, 2017) and to review overall groundwater quality at the Minto Mine. The purpose of this report is to summarize the 2021 groundwater quality, to expand on findings of the quarterly reporting, and to provide context for the associated risks.

The groundwater monitoring network at Minto includes 10 active multi-level monitoring wells installed between 2009 and 2017 that are used for on-going water quality monitoring. Groundwater is sampled in accordance with the Minto Mine Groundwater Monitoring Plan and a review of the results is carried out as part of the OAMP. There are three SPT levels for groundwater quality defined in the OAMP for the Minto Creek Catchment, and two for the McGinty Creek Catchment. Of the 10 active monitoring wells, only three are compared to the SPT in the AMP: MW12-05 and MW12-06 (Minto Creek Catchment), and MW09-03 (McGinty Creek Catchment).

Groundwater exceedances of the OAMP SPTs in 2021 were limited to a few parameters and consistent SPT exceedance is not widespread; most monitoring zones (~67%) did not exceed more than one OAMP SPT in 2021. A summary of exceedances and relevant discussion points for each catchment is provided below.

Minto Creek Catchment

- Ongoing exceedances include sulphate in MW12-05 and chromium in MW12-06.
- Elevated sulphate concentrations at MW12-05 have been restricted to monitoring zones greater than 85 mbgs. The source of elevated sulphate in the deep groundwater has been investigated in the past and findings do not suggest it is a result of mining activities. As the sulphate concentrations are interpreted to reflect natural conditions, are restricted to the deepest zones, and no effects have been observed in Minto Creek, mitigation actions are not considered necessary at this time.
- Elevated chromium concentrations at MW12-06 have been restricted to only the deepest zone (MW12-06-01) at 142 mbgs and occur simultaneously with lower, sub-SPT, concentration increases in additional trace elements. Changes in chemistry are concurrent with stoppage of the Minto South Underground, and while contact water is not suspected to be the source of chromium, equilibrium conditions in the deep groundwater may be affected by mine activities, resulting in the observed changes in chemistry. As of January 2020, concentrations have been decreasing, with the most recent monitoring event below SPT 2. As chromium is restricted to the deepest zone, and no effects have been observed in Minto Creek, mitigation actions are not considered necessary at this time.
- Sulphate concentrations in MW12-06-01 have been steadily increasing since the beginning of 2020 but have not yet reached SPT 2 (1000 mg/L). The Main Pit has previously been evaluated as a potential source of loading to groundwater in the deep groundwater near

MW12-06, but was not found to be the source. While sulphate at MW12-06-01 is increasing, other conservative parameters associated with pit water (e.g., chloride) are not, suggesting pit infiltration is not responsible for increasing sulphate concentrations in MW12-06-01. While the Dry Stack Tailings Storage Facility (DSTSF) may be considered another potential source, it is not considered responsible for the observed sulphate because concentrations in MW12-06-01 have surpassed concentrations observed in seepage from this facility. There have also been no elevated concentrations of sulphate observed in the shallow groundwater in the vicinity. This monitoring zone has always been unique, with water levels that seemingly respond to underground mining activities and chromium at concentrations not seen at any other monitoring points. The source of increasing sulphate remains under investigation, including a hypothesis that observed concentrations could be related to deeper, naturally high sulphate groundwaters as observed in MW12-05-01 and MW17-12-01, moving upwards towards the underground workings as they advance and are being dewatered, which causes upwards gradients in the deeper groundwater system.

- Concentrations in Minto Creek have remained in the range of observed baseline conditions with no observed changes that reflect any change in influence from mine-affected groundwater.

McGinty Creek Catchment

- Ongoing exceedances in the McGinty Creek catchment include arsenic and zinc in MW09-03-01 and cadmium, nitrate, and zinc in MW09-03-02.
- Minto North Pit acts as a hydraulic sink and migration of pit water towards MW09-03 is not considered to be the cause of elevated concentrations in the groundwater.
- Increases in nitrate concentrations appear to be caused by a shift in redox conditions following mining of the Minto North Pit. The shift in redox conditions may also be indirectly responsible for changes observed in arsenic, cadmium, and zinc, as equilibrium conditions were disrupted.
- Flushing of nitrogen-containing blast residuals from waste rock used to construct the Minto North haul road is another possible source of nitrate load to the groundwater.
- Concentrations in McGinty Creek have remained in the range of observed baseline conditions with no observed changes that reflect an influence from mine-affected groundwater.

Recommendations

- Continue groundwater monitoring as per the Minto Groundwater Monitoring Plan.
- Continue efforts to sample seepage and surface runoff during high precipitation events along the Minto North haul road to better constrain seepage water quality.
- Reduce sampling frequency of Zone 4, Zone 6, and Zone 7 in MW17-12 from quarterly to semi-annually in Q1 and Q3 of each year.

- Conduct opportunistic sampling of deep groundwater to assess sulphate trends with depth during exploratory drilling or from underground workings.
- Conduct a mid to late summer flow and water quality accretion survey along McGinty Creek beginning at the headwaters and extending to MN-2.5 to better understand groundwater – surface water interactions and risk due to groundwater discharge and loading when conditions are appropriate.
    - This was also recommended in the 2020 Groundwater Review, but plans were postponed as conditions were not deemed appropriate.

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1 Introduction

The Minto Mine is a high-grade copper mine located approximately 240 kilometers (km) north of Whitehorse in the Yukon Territory. Mining operations began in 2007 and are currently on-going. SRK Consulting (SRK) was retained by Minto Explorations Ltd (Minto Explorations) to provide 2021 quarterly and annual reporting on groundwater monitoring in accordance with specific performance threshold (SPT) exceedances as outlined in the Minto Mine Operational Adaptive Management Plan (OAMP; Minto, 2017). In addition, SRK has completed a review of groundwater chemistry across the whole site to evaluate the potential impacts of mining activities on groundwater. The purpose of this report is to summarize the 2021 groundwater quality, to expand on findings of the quarterly OAMP SPT reporting, and to provide context for the associated risks.

1.1 Scope

The scope of this report includes a summary review of groundwater conditions across the entire project area and specific review of SPT exceedances, with interpretation of cause and/or recommended actions as required. The scope of this work does not include in-depth review of geochemical, hydrological, or climatic conditions, unless specifically pertinent to a groundwater-related question. Recommendations regarding SPT exceedances are included.

2 Background

2.1 Catchment Overview

The Minto Mine is situated in the headwaters of Minto Creek and McGinty Creek, both of which drain northeast to the Yukon River (Figure 1). The Minto Creek catchment is characterized by moderate to steep slopes to the north, south and west. The portion of the catchment occupied by the mine is known as Upper Minto Creek, which covers an area of approximately 1,040 hectares (ha) of the larger 4,100 ha Minto Creek catchment and is defined as the catchment area topographically upgradient of the Water Storage Dam (SRK 2012). The catchment below the Water Storage Dam contains no mine components and is known as Lower Minto Creek.

Minto North Pit, which is a relatively small component of the overall mine, is within the McGinty Creek catchment, which has a total area of approximately 3,400 ha (Figure 1). The Minto North Pit is located in the upper portion of the east tributary of McGinty Creek and itself has a catchment area of approximately 12 ha, including related roads.

2.2 OAMP SPT Overview

Groundwater monitoring is conducted as required by the Minto Mine Groundwater Monitoring Plan (Minto, 2016). Review of groundwater monitoring results is carried out as part of the OAMP. In the OAMP, performance thresholds have been defined to establish changes in concentration and concentration values for specific constituents of concern (CoCs) at which actions may need to be taken by Minto to avoid potential impacts to the environment. Specifically, the OAMP states:

> *"Specific Performance Thresholds (SPTs) are defined for each of the Effluent Quality Standards (EQS) parameters identified in Clause 9 (a), Table 1 of Water Use Licence QZ14-031, with the exception of pH, oil and grease, iron and nitrite."*

There are three SPT levels for groundwater quality defined in the OAMP for the Minto Creek Catchment, and two for the McGinty Creek Catchment. Of the 10 multi-port monitoring wells active in the monitoring network, only three are compared to the SPTs in the OAMP. They are MW12-05 and MW12-06 (Minto Creek Catchment), and MW09-03 (McGinty Creek Catchment). All three of these monitoring wells are located hydraulically or topographically down gradient of certain mine components:

- MW09-03 – topographically down gradient of the Minto North Pit in the McGinty Creek catchment;

- MW12-06 – hydraulically and topographically down gradient of the Main and Area 2 open pits, Dry Stack Tailings Storage Facility (DSTSF) and Mill Valley Fill Extension (MVFE), in the Minto Creek catchment;
- MW12-05 – hydraulically and topographically down gradient of all mine activities in the Minto Creek catchment.

Attachment 1 includes tables of SPT threshold concentrations. SPTs for each catchment are summarized below:

Minto Creek Catchment

1. SPT 1 corresponds to a trend-based assessment designed to flag potential increasing groundwater concentrations that have not yet exceeded concentration-based thresholds.
2. SPT 2 corresponds to the EQS concentrations defined in the OAMP, with the exception of Cr-D, Cu-D, Ni-D, for which SPT-2 is set to 50% of (0.5x) the EQS concentration, and sulphate, for which SPT-2 is set to the Aquatic Life guideline from the Contaminated Sites Regulation Schedule 3.
3. SPT 3 corresponds to the estimated concentrations in groundwater that would be necessary to cause exceedance of the Water Quality Objectives in lower Minto Creek under long term steady state groundwater flow conditions based on results of groundwater modeling.

McGinty Creek Catchment

1. SPT 1 is triggered when there are three consecutive exceedances of the 75th percentile background concentration in a single monitoring port.
2. SPT 2 is triggered when there are three consecutive exceedances of the 95th percentile background concentration in a single monitoring port.

Groundwater monitoring results are reviewed quarterly and, if a SPT is reached or exceeded, data are reviewed, interpretations are made, the risk narrative is assessed (in terms of the receiving environment), and recommendations for additional work or management actions are defined. If an OAMP SPT has not been reached for any parameter at any location, no further action is taken on the assumption that there has been no change of significance from defined baseline conditions. Quarterly OAMP reports are provided to the Yukon Government as per the OAMP.

2.3 Previous and On-going Hydrogeological Studies

In addition to the SPT exceedance reporting under the OAMP, various hydrogeologic studies have been conducted to characterize both the physical and chemical aspects of groundwater at the Minto Mine and contribute to the overall conceptual model of groundwater flow. In addition to the *Minto Groundwater Characterization and Conceptual and Numerical Model Update Report* summarized in Section 2.4, the main studies are summarized as follows:

Minto Mine Phase V/VI Expansion: Hydrogeologic Characterization Report (SRK 2013)

This study presents an early stage hydrogeologic conceptual model that characterizes the groundwater flow regime of the Minto Mine site in order to determine flow paths and where they may discharge into the receiving environment. Existing hydrogeologic knowledge of the site is integrated with site hydrology in context of the proposed plans for mine expansion.

Minto Mine Numerical Groundwater Model (SRK 2014)

This study presents the initial numerical groundwater model developed for the Minto Mine site as specifically required by the Yukon Environmental and Socio-Economic Assessment Board. The objectives of this study were to evaluate the possible extent of a solute plume originating from the mine facilities, identify where groundwater is discharging into Minto Creek and evaluate the effect of the Minto North Pit development on mass loading to McGinty Creek. Modeling included assessment of the potential for geological structures to act as conduits that could transport constituents from the main mining area (Main Pit) to areas close to the property boundary (e.g., MW12-05)

Minto 2015 Groundwater Model Update (SRK 2015)

This study presents an update to the original numerical groundwater model. The report includes a summary of new monitoring data, an update to the hydrogeologic conceptual model, a description of the updated groundwater numerical model and the subsequent results.

Minto Mine Groundwater Monitoring Program – Environmental Tracer Study Results (SRK 2017)

This study presents the results of the environmental tracer study completed as a specific requirement of the Groundwater Monitoring Program under the water license QZ14-031. The objective of the study was to evaluate longitudinal flow paths using non-toxic tracer testing, the results of which were to be ultimately incorporated into the numerical groundwater model. This report presents a succinct summary of the study methods and results. Interpretation of the results are provided in the *Minto Groundwater Characterization and Hydrogeologic Conceptual Model Update Report* (SRK 2018).

Minto Groundwater Characterization and Hydrogeologic Conceptual Model Update Report (SRK 2018)

This report presents pertinent data collected from the site groundwater monitoring network, a summary of current groundwater conditions (quantity and quality) and an updated hydrogeological conceptual mode. This report largely builds upon the conceptual model presented in SRK 2013.

Minto Mine 2019 and 2020 Groundwater Review and Summary of OAMP SPT Exceedances (SRK 2020, 2021a)

These studies are conducted on a yearly basis and summarize OAMP SPT groundwater exceedances that occurred in the previous year, expand upon the conditions which lead to exceedances and provide detailed discussion of associated risks. SRK 2020 provides an evaluation of MW17-08 for use as a background well and loading calculations to assess the risk of groundwater discharge to McGinty Creek.

SRK Memo – Response to YWB's Request for Information (IR5-48) – Sulphate Exceedances in Groundwater (SRK 2021b)

This memo addresses elevated Sulphate concentrations observed in the deep groundwater at MW12-05 on the property boundary near Minto Creek. Evidence from past studies is gathered and presented to support the hypothesis that the elevated Sulphate concentrations are naturally occurring and not a result of mine activities.

2.4 Groundwater Conceptual Model

A detailed hydrogeologic and hydrogeochemical conceptual model is presented in the *Minto Groundwater Characterization, Conceptual and Numerical Model Update Report* (SRK 2021c) and the key points are summarized below:

- There are two hydrostratigraphic units on site: (1) overburden, which is spatially discontinuous but thick along the valley bottoms, and (2) bedrock where hydraulic conductivity is relatively low, and groundwater occurs in secondary permeability along joints and fractures. The majority of flow is expected to occur relatively near to the ground surface, in the absence of permafrost;
- Permafrost can occur within the overburden unit and act as an aquiclude. Permafrost is observed and expected to occur on north-facing slopes and valley bottoms, but the spatial distribution is not well constrained;
- Groundwater flow generally follows topographic gradients overprinted by the effects of open pits or underground development with the overall flow direction towards the Minto and McGinty Creek valleys and ultimately the Yukon River. Vertical gradients across site are variable with upwards, downwards, and complex multi-directional gradients observed in the monitoring wells;

- The Minto North Pit acts as both a hydraulic sink and is not thought to contribute load to the groundwater system, while groundwater flow can enter and exit the flooded Main Pit and Area 2 Pit complex (i.e., flow through);
- Water seeping from waste rock dumps, the flooded pits, and the dry stack tailings storage facility (DSTSF) can be assumed to flow down valley but will be inhibited in overburden due to permafrost and in bedrock by the overall low hydraulic conductivity of the fractured bedrock; and
- The large majority of mine contact water is expected to ultimately discharge to ground surface upgradient of the Water Storage Pond (WSP). Groundwater that does pass the WSP has a limited flow rate and is expected to discharge to Minto Creek with contributions from unaffected catchments increasing progressively downstream.

In addition to the conceptual model, SRK 2021c presents pertinent data collected from the site groundwater monitoring network, a summary of the current groundwater conditions (both physically and chemically) and an update to the numerical groundwater model. SRK 2021c builds upon the conceptual models presented in the *2018 Hydrogeological Characterization Report* (SRK 2018) and the *Minto 2015 Groundwater Model Update (*SRK 2015) reports by incorporating monitoring data gathered since the submission of those reports together with updated mine infrastructure. Newly incorporated data did not fundamentally change interpretations from the previous conceptual models apart from groundwater flow gradients in the vicinity of the Area 2 pit. As water levels in the pit have increased, it no longer acts as a hydraulic sink. The Area 2 pit now acts as a sink for upgradient groundwater, and a source for the downgradient system, similar to the Main pit.

2.5 Groundwater Monitoring Network

The groundwater monitoring network used for on-going water quality monitoring at Minto includes 10 active multi-level monitoring wells that were installed between 2009 and 2017. The monitoring wells are spatially distributed across the site, both outside of the current mining footprint and topographically (and hydraulically) down gradient of mining activities. Monitoring locations are shown on Figure 1 and well installation details can be found in Table 1.

All of these monitoring wells were installed after the start of mining, with the exception of MW09-03 in the Minto North area, which was installed after the main Minto operations began, but before mining at the adjacent Minto North Pit started. Nomenclature of the monitoring wells and their zones is as follows:

- The two numeric digits proceeding MW are the year of installation (i.e., MW12-06 was installed in 2012); and
- Vertical monitoring zones are numbered sequentially from deep to shallow, with Zone 1 being the deepest. Zone numbers are added as a suffix to the well name (i.e. MW12-06-01 is Zone 1, the deepest monitoring point).

The monitoring zones target either overburden, bedrock (weathered or competent) or the contact between the two. MW12-06-06 is the only zone to target exclusively overburden. The following list summarizes the locations of the active monitoring wells:

- MW09-03 and MW17-11: located in the McGinty Creek catchment, topographically downgradient of the Minto North Pit;
- MW17-08: located topographically upgradient of mine activities in the Minto Creek catchment and is considered representative of background conditions near the western limit of the Minto Creek catchment;
- MW09-01 and MW17-10: located within the mine site between the Main Waste Dump and the Main Pit. MW09-01 has been dry since soon after installation;
- MW17-09: located within the mine site east of the Ice-Rick Overburden Dump and the Southwest Waste Dump;
- MW12-07: located down gradient of the Main pit, between the Main Pit and the mill;

- MW12-06: located between the Dry Stack Tailings Storage Facility (DSTSF) and the Water Storage Pond (WSP); and
- MW12-05 and MW17-12: located alongside Minto Creek, east of the WSP and east of all mine activities, at the property boundary.

More details on the groundwater monitoring network can be found in the ***Minto Groundwater Characterization, Conceptual and Numerical Model Update Report***, submitted to Minto Explorations by SRK in October 2021.

2.6 Site Activity

Site activities and mine development have been dynamic since operations began in 2006 and are important to understand the potential influence on the groundwater system. The following points summarize important events and dates of mining and key water management actions over time and a visual representation of the timeline is presented in Figure 2:

- Early 2006 to Mid 2011: Mining of the Main Pit, during which time the pit was dewatered and acted as a hydraulic sink;
- Mid 2011 to Late 2012: Water accumulated in the Main Pit;
- Late 2012 to Early 2015: Tailings and water deposited into the Main Pit;
- Early 2015 to Present: Water pumped from Main Pit to the Area 2 pit and vice versa. In late 2019, Area 2 Stage 2 Pit began overflowing to Stage 3 where pumping now occurs;
- Early 2011 to Mid 2015: Mining of Area 2 Stage 2 Pit, during which time the pit was dewatered and acted as a hydraulic sink;
- Early to Mid 2015: Road was built to access the Minto North Pit, adjacent to MW09-03 and MW17-11;
- Late 2015 to Late 2016: Mining of Minto North Pit to a bottom elevation of 835 meters above sea level (masl);
- Mid 2015 to Present: Tailings and water deposited into Area 2 Stage 2 Pit, in addition to water pumped from the Main Pit;
- 2016 to Present: Minto North Pit accumulates water from runoff and groundwater inflow only;
- Mid 2012 to October 2018; September 2019 to Present: Minto Underground advanced, during which time the underground acted as a hydraulic sink and collected water pumped to Area 2 Pit and Main Pit; and
- Late 2019 to Present: Water from the Main Pit is pumped to the mill and then to the Area 2 Pit as tailings. Water is reclaimed from the Area 2 Stage 4 Pit and pumped back to the Main Pit.

2.7 Groundwater Data and Current Conditions

2.7.1 Water Elevations and Flow

Consistent with the conceptual model, groundwater generally flows in the same direction as surface water, discharging into Minto and McGinty Creeks, and ultimately the Yukon River (Figure 3). Groundwater is expected to be contained within each catchment, with a groundwater divide located along the ridge between Minto North Pit and main site activities in the Minto Creek catchment. Locally, the Minto North Pit acts as hydraulic sink, while the Main Pit and Area 2 Pit act as both a sink and source for groundwater with groundwater entering from the north and west uphill directions and discharging to the east and south towards Minto Creek. The Minto underground acts as a groundwater sink.

Groundwater elevations in the McGinty Creek Catchment range from 893.3 to 903.1 masl in the shallowest monitoring ports of the multi-level wells. The vertical gradient is downwards in MW17-11 and with water levels in both monitoring ports of MW09-03 essentially the same.

Groundwater elevations in the Minto Creek Catchment range from 926.6 masl in MW17-08, located west of the mining activities, to 662.2 masl in MW12-05, located approximately 0.5 km downgradient of the Water Storage Pond along Minto Creek. Vertical gradients are variable within the catchment, with overall upwards gradients in MW17-10 and MW17-12 and downwards gradients in MW17-08, MW12-07 and MW12-05 (Figure 3).

2.7.2 Groundwater Quality

Groundwater quality at the Minto Mine is largely within the range of observed baseline conditions, with a low number of consistent SPT exceedances. While SPTs are not exceeded or applied to specific wells, visual trends (increasing or decreasing) are observed for various parameters. Table 1 summarizes qualitative trends observed in groundwater chemistry at each well with parameters identified that consistently exceed thresholds. The review focused on data from 2016 to present, a period which has a consistent record from all monitoring zones. In addition to Table 1, time series presenting monitoring data for each CoC for each well are provided in Attachment 2 and a discussion of the trends is provided in Section 4.

Table 1: Summary of Qualitative Trends in CoCs and Consistent SPT Exceedances in Active Monitoring Wells

Catchment	Well ID	Monitoring Zone	Visual Trends		Consistent Threshold Exceedances		
			Increasing	Decreasing	SPT 1	SPT 2	SPT 3
Minto Creek	MW12-05	1	SO_4	-	-	SO_4	-
		2	SO_4	-	-	SO_4	
		3	-	Zn, NH_3	-	-	-
		4	Se, SO_4	-	-	-	-
		5	-	NO_3	-	-	-
		6	-	Zn, NO_3	-	-	-
		7	NH_3, SO_4	-	-	-	-
	MW12-06	1	Se, NH_3, SO_4	Cr	-	-	Cr
		2	-	-	-	-	-
		3	-	Cr, Mo, Zn	-	-	-
		4	-	Zn	-	-	-
		5	-	Zn	-	-	-
		6	-	Zn	-	-	-
	MW12-07	1	As, Zn, NO_3	Cr	---	---	---
		2	Cd, Cl Cu, NO_3	NH_3	---	---	---
		3	--	--	---	---	---
		4	--	--	---	---	---
	MW17-08	1	-	-	---	---	---
		2	-	-	---	---	---
		3	-	-	---	---	---
		4	--	--	---	---	---
	MW17-10	1	Se, NO_3	-	---	---	---
		2	Se, NO_3	Cu, Ni	---	---	---
		3	Se, NO_3	Cu, Ni	---	---	---
		4	--	--	---	---	---
		5	--	--	---	---	---
	MW17-12	1	Zn	-	---	---	---
		2	--	-	---	---	---
		3	Se, Zn	-	---	---	---
		4	--	--	---	---	---
		5	--	Ni, Se	---	---	---
		6	--	Ni, Se	---	---	---
		7	--	--	---	---	---
		8	--	NO_3	---	---	---

Catchment	Well ID	Monitoring Zone	Visual Trends		Consistent Threshold Exceedances		
			Increasing	Decreasing	SPT 1	SPT 2	SPT 3
McGinty Creek	MW09-03	1	Cd	Al, Cl, Ni, Mo, SO_4	---	As, Zn	---
		2	Cd, Cl, NO_3	Al, Mo, SO_4	Cd	Zn, NO_3	---
		3	--	--	-	-	---
	MW17-11	1	As	Mo	---	---	---
		2	As	-	---	---	---
		3	-	-	---	---	---
		4	-	-	---	---	---
		5	-	-	---	---	---

Notes:

'-' No trends or exceedances were identified

'--' Insufficient data to evaluate trends

'---' SPT does not apply to monitoring well or catchment

3 2021 Groundwater AMP SPT Events

Table 2 and Table 3 summarize groundwater locations and parameters for which OAMP SPTs have been reached for the 2021 monitoring year. CoCs at any groundwater monitoring location that are not identified in this table did not have changes of significance in terms of OAMP SPTs. Baseline groundwater conditions are defined in the OAMP based on data from MW09-03 prior to 2015 (start of Minto North mining). MW17-08 was installed upgradient of mine activities with the intention of gathering background chemistry data that could be used to evaluate SPTs with catchment specific data. After a review completed in 2020 however, this location was deemed inappropriate as it represents background conditions at one location, upgradient of the ore body. Baseline chemistry prior to mining activities may be significantly different downgradient of the ore body or deeper in the aquifer so therefore the original SPTs developed using baseline data from MW09-03 are considered the most appropriate (SRK 2020).

The McGinty Creek monitoring wells are required to be sampled monthly, where the Minto Creek monitoring wells are sampled once a quarter. Due to issues with sampling equipment and/or the presence of glycol in the monitoring ports, samples could not be obtained in the McGinty Creek catchment for MW09-03-01 in January or March and in MW09-03-02 in January. In the Minto Creek catchment, samples were not obtained in Q1 for MW12-06-06 and MW12-06-05, in Q3 for MW12-05-06, MW12-05-07 and MW12-06-01 and in Q4 for MW12-05-04 and MW12-06-01.

Figures representing groundwater monitoring data for all CoCs are included in Attachment 2. A complete dataset for all monitoring wells along with key monitoring stations in McGinty Creek, Minto Creek and within the mine operations are provided in Attachment 3 and a description of each monitoring station is provided in Attachment 4.

Table 2: McGinty Creek Catchment Threshold Exceedances

Monitoring Well Zone	Parameter	SPT	Context
MW09-03-01	As	2	10 of 10 samples exceeded threshold concentration
	Ag	2	1 of 10 samples exceeded threshold concentration
	Cd	1	3 of 10 samples exceeded threshold concentration
	Se	1	2 of 10 samples exceeded threshold concentration
	Zn	1	2 of 10 samples exceeded threshold concentration
		2	6 of 10 samples exceeded threshold concentration
	NO_3^-	1	1 of 10 samples exceeded threshold concentration
MW09-03-02	Al	1	1 of 11 samples exceeded threshold concentration
		2	1 of 11 samples exceeded threshold concentration
	Cd	1	7 of 11 samples exceeded threshold concentration
		2	2 of 11 samples exceeded threshold concentration
	Cu	1	2 of 11 samples exceeded threshold concentration
	Se	1	5 of 11 samples exceeded threshold concentration
	Zn	2	11 of 11 samples exceeded threshold concentration
	NO_3^-	2	11 of 11 samples exceeded threshold concentration
	SO_4^{2-}	1	5 of 11 samples exceeded threshold concentration

Table 3: Minto Creek Catchment Threshold Exceedances

Monitoring Well Zone	Parameter	SPT	Context
MW12-05-01	SO_4^{2-}	2	4 of 4 samples exceeded threshold concentration
MW12-05-02	Cr	1	1 of 4 samples exceeded threshold concentration
	Se	1	1 of 4 samples exceeded threshold concentration
	SO_4^{2-}	2	4 of 4 samples exceeded threshold concentration
MW12-05-03	Zn	1	1 of 4 samples exceeded threshold concentration
	SO_4^{2-}	1	1 of 4 samples exceeded threshold concentration
MW12-05-04	Se	1	1 of 3 samples exceeded threshold concentration
MW12-06-01	Cr	2	2 of 2 samples exceeded threshold concentration
	Se	2	1 of 2 samples exceeded threshold concentration
	SO_4^{2-}	1	1 of 2 samples exceeded threshold concentration
MW12-06-03	Se	1	1 of 3 samples exceeded threshold concentration
MW12-06-06	Zn	1	1 of 4 samples exceeded threshold concentration
		3	1 of 4 samples exceeded threshold concentration

4 2021 Discussion Points

4.1 Groundwater Quality in Minto Creek Catchment

4.1.1 SPT Exceedances

Trends in certain parameters within the groundwater monitoring network in the Minto Creek catchment are present, as listed in Table 1; however, only sulphate and chromium have consistently exceeded SPTs. While the other parameters provide useful insight for interpretation of overall conditions at the Project and comparison with previously provided water quality predictions, they are not considered problematic at this time as concentrations remain below OAMP thresholds. Changes in groundwater quality within the mine site are consistent with what is expected during active operations and concentrations in Minto Creek generally remain in the range of baseline conditions. Figures representing groundwater monitoring data for all CoCs are included in Attachment 2. A complete dataset for all monitoring wells along with key monitoring stations in McGinty Creek, Minto Creek and within the mine operations are provided in Attachment 3 and a description of each monitoring station is provided in Attachment 4.

Sulphate

Sulphate SPT exceedances only occur consistently in MW12-05 and have been restricted to the deeper zones (MW12-05-01, MW12-05-02 and MW12-05-03) which monitor depths greater than 85 meters below ground surface (mbgs) Figure 4, Figure 5, & Figure 6 show sulphate concentrations at MW12-05 with MW17-12 and MW12-06 for comparison. Concentrations have been increasing in these three zones at MW12-05, but at a slower rate than previously (Figure 6). Monitoring zones shallower than Zone 3 have also been increasing since installation, but at far lower sulphate concentrations (<100 mg/L) and show signs of stabilization in recent monitoring

events. This trend is characteristic of groundwaters reaching equilibrium following installation, which can take several years in aquifers with low hydraulic conductivity.

Figure 4 presents a cross sectional representation of sulphate concentrations in the Minto Creek catchment and Figure 5 presents the distribution of sulphate concentrations in plan view, with nested diamonds representing multi-level wells and the smallest diamonds as the deepest zones. The highest concentrations are localized to the deepest groundwater furthest downgradient in the catchment, within the Main and Area 2 pits and the underground workings. While many of the wells show increasing sulphate concentrations with depth, MW17-12 is the only other location with concentrations above 1000 mg/L and is the only well to monitor water as deep as MW12-05.

MW12-06 is located in the pre-mining Minto Creek valley bottom, between the water storage pond and the pits, and upgradient of MW17-12 and MW12-05. Sulphate concentrations have been increasing in the deepest zone of MW12-06 since the beginning of 2020 but have not yet reached SPT 2 (1000 mg/L). The highest concentration was recorded in May 2021 at 612 mg/L. Due to equipment malfunction and the presence of glycol in sampling ports, samples were not obtained in Q3 and Q4 of 2021. While sulphate is increasing, other conservative parameters associated with pit water (e.g., chloride) are not, suggesting pit infiltration is not responsible for increasing sulphate concentrations in MW12-06-01. While another potential source may be the DSTSF, it is not considered responsible for the observed sulfate because concentrations in MW12-06-01 have surpassed concentrations observed in seepage from this facility (Figure 7). There have also been no elevated concentrations of sulfate observed in the shallow groundwater in the vicinity. Chromium is concurrently decreasing in this zone, a parameter that has always been unique to the deepest zone in MW12-06. This zone has also been unique in its apparent response to underground mining, showing water levels that have decreased and then rebounded as new areas in the underground workings are advanced. The source of increasing sulphate remains under investigation, including a hypothesis that observed concentrations could be related to deeper, naturally high sulphate groundwaters as observed in MW12-05-01 and MW17-12-01, moving upwards towards the underground workings as they advance and are being dewatered, which causes upwards gradients in the deeper groundwater system.

Elevated sulphate concentrations in groundwaters near sulphide-containing ore bodies are not uncommon due to interaction with sulphur bearing minerals along the groundwater flow paths. Sulphate concentrations have been examined in multiple investigations, all of which suggest elevated concentrations at MW12-05 are not related to mining activities. Details of these investigations can be found in SRK 2021, and a summary of the observations that contribute to this conclusion are provided below.

- Sulphate concentrations at MW12-05 immediately following installation (2012) were higher than any mine source (i.e. Main Pit, DSTSF seepage, etc.);
- The Main Pit acted as a hydraulic sink for groundwater until 2013, one year after the installation of MW12-05 and after the initial increase was observed in MW12-05;
- Chloride, which is only present in high concentrations in mine affected waters, did not increase in MW12-05 concurrent with sulphate (and hasn't increased at all). If MW12-05

was receiving mine affected waters, the chloride would also have been expected to increase, which it did not. In addition, chloride concentrations in MW17-12 are very similar to MW12-05 and have shown no sign of increasing;

- The isotopic signatures of deep groundwater at MW12-05 are not indicative of recent mixing with surface/mine site sources; and
- Measured hydraulic conductivities in the bedrock are very low and there are no mapped structures that would act as a conduit for groundwater flow. Additionally, all solute transport simulations conducted during modelling concluded the observed concentrations are unrelated to mine activities.

While sulphate concentrations have been increasing and exceeding thresholds in the deeper zones, all available evidence suggests they are not related to mine activities and they are considered to be naturally occurring due to interaction with the sulphur-bearing minerals of the ore body.

Chromium

Chromium concentrations consistently exceeded thresholds in the deepest zone of MW12-06 (150 mbgs) in the past but have recently decreased to levels below SPT 2 (Figure 8). Chromium was the only parameter to consistently exceed thresholds in MW12-06 since installation and is not thought to be caused by mine affected waters infiltrating into groundwater.

As chromium is sensitive to changes in redox conditions, the analysis of other redox-sensitive elements is useful to understand possible mechanisms for observed concentrations in MW12-06-01. Manganese and iron, which exist in an aqueous phase under reducing conditions at neutral pH, were stable until late 2018, at which point they suddenly increased (Figure 9). Concentrations of iron have since decreased, following the same trend as chromium (Figure 9). This event coincides with stoppage of active mining in the Minto South Underground. At that time, water levels (pressure) in MW12-06-01 dropped significantly while no other monitoring zones were affected (Figure 10).

The drop in pressure in MW12-06-01 suggests deep groundwaters in the vicinity of the well are affected by underground mining activities which may disrupt the system's equilibrium. The changes in redox sensitive elements are likely a response to this disruption, as hydraulic gradients shift due to pressure changes.

While mine activities may influence the groundwater system equilibrium in the vicinity of MW12-06-01, elevated concentrations are not a direct result of mine water infiltration. These trends are not unexpected near active mining, where the development of pits and underground workings abruptly depressurizes the groundwater system.

Other Parameters

Isolated exceedances of SPT 1 and SPT 2 criteria occurred at multiple locations for a variety of parameters. SPT definitions were provided in Section 2.2. SPT 1 generally identifies significant change in concentration since the previous monitoring event but have not exceeded a

concentration-based threshold. SPT 2 criteria generally identify concentrations that have exceeded a defined baseline or EQS concentration.

- Isolated SPT 1 exceedances in 2021 include: chromium in MW12-05-02; selenium in MW12-05-02, MW12-05-04, MW12-06-01 and MW12-06-03; zinc in MW12-05-02 and MW12-05-06 and sulphate in MW12-05-03.

While the exact cause of these exceedances is uncertain, they occur as sporadic and as isolated events. Continuous trends are not present for these parameters and are therefore not considered a risk at this time.

4.1.2 General Visual Trends

In addition to the exceedances discussed above, some parameters exhibit increasing trends at concentrations that are currently below thresholds, as outlined in Table 1.

While it is important to monitor these trends, they are not unexpected in the vicinity of active mining where the development of pits and underground workings depressurize the system and upset equilibrium conditions, and do not currently pose a risk to Minto Creek water quality.

4.1.3 Risk Context

Elevated concentrations of CoCs in groundwater are assessed to identify and mitigate potential risks to surface water quality in Minto Creek. At this time, elevated concentrations of CoCs in groundwater are not considered a high risk to surface water quality. The following points summarize the rationale for this conclusion:

- Consistent exceedances are not widespread and are limited to only sulphate and chromium;
- Elevated concentrations of sulphate and chromium are isolated to the deepest zones of MW12-05 and MW12-06, with no known conduit connecting groundwater at these depths to Minto Creek at surface;
- Data suggest sulphate concentrations in MW12-05 are not related to mine activities;
- Data suggest chromium concentrations are a result of the groundwater equilibrium being disrupted by depressurization and not direct mine-water infiltration; and
- Concentrations in Minto Creek have remained in the range of observed baseline conditions with no observed changes that reflect an influence from mine-affected groundwater.

The overall risk of mine-affected groundwater contributions to Minto Creek water quality is considered low; mitigation is not considered necessary at this time.

4.2 Groundwater Quality in McGinty Creek Catchment

4.2.1 SPT Exceedances

Trends in certain parameters within the groundwater monitoring network in the McGinty Creek catchment are present, as listed in Table 1; however, only arsenic and zinc in MW09-03-01 and cadmium, nitrate, and zinc in MW09-03-02 have consistently exceeded SPTs. While the other parameters provide useful insight for interpretation of overall conditions at the Project and comparison with previously provided water quality predictions, they are not considered problematic at this time as concentrations remain below OAMP thresholds. Figures representing groundwater monitoring data for all CoCs are included in Attachment 2. A complete dataset for all monitoring wells along with key monitoring stations in McGinty Creek, Minto Creek and within the mine operations are provided in Attachment 3 and a description of each monitoring station is provided in Attachment 4.

For context, in 2020, molybdenum and selenium consistently exceeded thresholds in MW09-03-01. In 2021, concentrations decreased with only two exceedances for selenium and none for molybdenum.

Nitrate

Nitrate concentrations at MW09-03-02 have been increasing since the beginning of 2017 and have consistently exceeded SPT 2. The nitrate concentration of the deeper zone, MW09-03-01, remains stable and below both SPT 1 and SPT 2. Nitrate concentrations of the same magnitude observed at MW09-03-02 are consistently observed in MW17-11-05, which is at a similar elevation and adjacent to MW09-03-02 (Figure 11). Presently, the Minto North Pit acts as a hydraulic sink, with a hydraulic divide possible in the vicinity of MW09-03 and MW-17-11 and gradient towards the pit from both wells. As the pit water level is much lower than water levels in the wells, migration of pit water is not the cause of the nitrate increase observed at MW09-03-02.

The increase in nitrate concentrations do coincide with development of the Minto North Pit, which resulted in a water level decrease in MW09-03 and subsequent changes in redox conditions which can cause an increase in nitrate (discussed below). The development of Minto North involved the construction of a haul road using blasted rock which may also contribute nitrogen load to the groundwater. Observed concentrations in MW09-03-02 may be the result of these two different mechanisms.

Nitrate is sensitive to changes in redox conditions. Other redox-sensitive elements were assessed to understand the observed concentrations in MW09-03. Concentrations of ammonia, iron and manganese decreased significantly and concurrently with an increase in oxidation-reduction potential (ORP) at the same time as the observed water level decrease. These observations suggest conditions in the aquifer changed from reducing to oxidizing, resulting in the formation of iron and manganese oxides/oxyhydroxides and a shift in nitrogen speciation from an ammonia dominated system to nitrate (Figure 12). After the initial increase in nitrate and decrease in ammonia (2016-2017), ammonia concentrations stabilized but nitrate continued to increase. At this time, nitrate also started to exhibit a seasonal trend with highest concentrations

occurring in Q3 of each year and the lowest in the winter months when surface conditions are frozen. Blasted rock was used to construct the Minto North haul road which contains nitrogen compounds as residue from the process. These nitrogen compounds can be mobilized as nitrate by precipitation infiltrating through the blasted material. Seepage from nitrogen-containing blast residuals in the haul road material are likely contributing additional load to the groundwater, which is consistent with the seasonal trends observed since 2018. While the initial nitrate load may have been due a change in redox state, flushing from the haul road is likely responsible for the more recent trends.

While elevated nitrate concentrations are observed in the shallow groundwater, effects have not been observed in McGinty Creek, suggesting the influence is localized. We do not believe that observations suggest mitigation is necessary at this time but continued monitoring and evaluation is warranted to ensure this interpretation does not change.

Arsenic

Arsenic concentrations in MW09-03-01 increased concurrent with the development of the Minto North Pit but appear to have reached equilibrium quickly, as concentrations have since stabilized. Concentrations are consistently above SPT 2 but, as Minto North Pit acts as a hydraulic sink, are not due to pit water infiltration. An inverse trend was observed in MW09-03-02, with an initial decrease followed by stabilization (Figure 13). Concentrations in the deepest zones of MW17-11 have been slowly increasing since installation and may still be approaching equilibrium after development.

Similar to nitrate, arsenic is redox sensitive, and these trends may be attributed to a change in aquifer conditions as water levels dropped in 2015 following the onset of mining at Minto North.

Cadmium and Zinc

Zinc increased in concentration and variability in MW09-03-01 and MW09-03-02, beginning in 2015 when mining of the Minto North pit started (Figure 15). Cadmium showed similar behavior, particularly in MW09-03-02 (Figure 16). The dominant attenuation process for these ions is adsorption, and it is possible with a change in conditions, competition for adsorption sites and the preferential adsorption of other metals caused the increased mobility of zinc and cadmium which have not yet reached equilibrium.

Other Parameters

In addition to the consistent exceedances discussed above, a few other exceedances to thresholds were observed: silver, selenium, and nitrate in MW09-03-01 and aluminum, copper, selenium, and sulfate in MW09-03-02.

While the exact cause of these exceedances is uncertain, they occur sporadically and often as isolated events. Continuous trends are not present for these parameters and are therefore not discussed further at this time.

4.2.2 General Visual Trends

In addition to the exceedances discussed above, some parameters exhibit increasing trends at concentrations that are currently below thresholds, as outlined in Table 1.

While it is important to monitor these trends, they are not unexpected near active mining, where the development of pits abruptly depressurizes the groundwater system and upsets equilibrium conditions, and do not currently pose a risk to McGinty Creek water quality.

4.2.3 Risk Context

Elevated concentrations of CoCs in groundwater are assessed to identify and mitigate potential risks to surface water quality in Minto Creek. At this time, elevated concentrations of CoCs in groundwater are not considered a high risk to surface water quality. The following points summarize the rationale for this conclusion:

- Groundwater levels in all monitoring zones of MW09-03 and MW17-11 are at least 30 m higher than the Minto North Pit, creating a hydraulic barrier preventing pit water from migrating towards McGinty Creek;
- Concentrations in McGinty Creek have remained in the range of observed baseline conditions with no observed changes that reflect an influence from mine-affected groundwater; and
- Loading calculations presented in SRK 2020 indicate groundwater concentrations would have to increase by at least one order of magnitude from the 2019 average to contribute enough load to McGinty Creek for SPT 1 to be exceeded, with the exception of selenium, which has been elevated in baseline data and already exceeds SPT 1 at MN-4.5 (Table 4). Additional context is provided below.

While the required nitrate concentration (37 mg/L) determined by the loading calculations is an order of magnitude higher than the 2019 average (7.9 mg/L), monitoring events during Q2 2021 had concentrations as high as 19.6 mg/L in MW09-03-02 with a 2021 average concentration of 10.4 mg/L. If nitrate continues to increase in MW09-03-02, the loading calculations suggest an impact could be seen in McGinty Creek. It is still uncertain, however, if the groundwater poses the highest risk of loading, or if surficial seeps from the Minto North haul road are more important. The overall estimated percentage of groundwater loading to McGinty Creek, which was calculated using an area percentage of the total McGinty Creek catchment, is low (0.45%) and as the Minto North Pit acts as a hydraulic sink, this is a conservative estimate of groundwater contributions. This method is also considered conservative compared to using observed baseflows presented in the *Minto Mine Numerical Groundwater Model Report* (SRK 2014), which were considerably lower than the flows calculated for use in the loading assessment.

The average concentrations in 2021 were not significantly different than 2019, and even decreased in some cases (Table 4).

The overall risk of mine-affected groundwater contributions to McGinty Creek water quality is considered low; mitigation is not considered necessary at this time.

Table 4: Results of McGinty Creek Loading Calculations

Parameter	Units	Minto Creek SPT 1	2019 Average Concentrations		2021 Average Concentrations		Groundwater Concentration Required to Exceed SPT 1
			Surface Water (MN-4.5)	Groundwater (MW-09-03-02)	Surface Water (MN-4.5)	Groundwater (MW-09-03-02)	
Ag-D	mg/L	0.00002	0.00001	0.00001	0.00001	0.00001	0.0022
Al-D	mg/L	0.049	0.0092	0.0025	0.0367	0.0037	8.8
As-D	mg/L	0.00055	0.00032	0.00023	0.00036	0.0001	0.051
Cd-D	mg/L	0.000026	0.0000053	0.00012	0.000005	0.00013	0.0046
Cr-D	mg/L	0.001	0.00016	0.00012	0.00051	0.00043	0.19
Cu-D	mg/L	0.0029	0.0016	0.0022	0.0026	0.0018	0.29
Pb-D	mg/L	0.0002	0.00005	0.00006	0.00005	0.00005	0.034
Mo-D	mg/L	0.001	0.00096	0.0042	0.0007	0.0035	0.01
Ni-D	mg/L	0.0016	0.00073	0.0005	0.0013	0.0005	0.19
Se-D	mg/L	0.00017	0.00023	0.00031	0.00021	0.00054	-
Zn-D	mg/L	0.005	0.001	0.052	0.001	0.054	0.89
$N\text{-}NO_3$	mg/L	0.2	0.036	7.9	0.019	10.4	37
Ammonia	mg/L	0.04	0.0063	0.0085	0.008	0.007	7.5
Sulphate	mg/L	-	11	5.5	8	6.7	-

Notes:

Red cell indicates surface water concentrations are historically higher than Minto Creek SPTs

"Groundwater concentration required to exceed SPT 1" are based on 2019 average concentrations and details of this calculation can be found in SRK 2020. The 2021 average concentrations are provided for year to year comparison.

5 Review of Sampling Frequency in MW17-12

Table 2-3 in the Minto Mine Environmental Monitoring, Surveillance and Reporting Plan (2018-01) outlines the frequency with which each well is required to be monitored and the rationale for each zone. While MW17-12 is monitored seasonally, three of the zones (4, 6 and 7) may be reduced if concentrations are found to be stable after one year of monitoring. Parameters that exceeded SPTs in the Minto Creek Catchment were plotted for MW17-12 to assess stability and are presented in Figure 17. Apart from the Q3 2021 monitoring event, which appears to be an outlier, concentrations have been stable since sampling began in 2017. As such, it is appropriate to decrease the frequency of monitoring in Zone 4, Zone 6, and Zone 7 of MW17-12 from quarterly to semi-annually, with samples collected in Q1 and Q3 of each year.

6 Conclusions

Groundwater exceedances of the OAMP SPTs in 2021 have been limited to a few parameters and consistent SPT exceedance is not widespread; most monitoring zones (~67%) did not exceed more than one OAMP SPT in 2021. Isolated exceedances are expected due to the range in natural variability within the groundwater system and are therefore not considered a risk at this time.

6.1 Minto Creek

- On-going exceedances in the Minto Creek catchment include sulphate in MW12-05-01 and MW12-05-02 and chromium in MW12-06-01.
- Chromium concentrations in MW12-06-01 have been decreasing since the beginning of 2020 and are now below SPT 2 for the first time since monitoring began.
- Sulphate concentrations exhibit an increasing trend with depth across the site and events have been restricted to the deepest monitoring zones at depths greater than 85 mbgs.
- The source of elevated sulphate in the groundwater has been examined in multiple investigations, all of which suggest elevated concentrations at MW12-05 are not related to mining activities and is instead likely due to interaction with sulphur-bearing minerals in the ore body.
- Sulphate concentrations in MW12-06-01 have been steadily increasing since the beginning of 2020 but have not yet reached SPT 2 (1000 mg/L).
- Changes in water levels and redox sensitive parameters indicate underground mine activities may disrupt the equilibrium conditions of groundwater at MW12-06-01, but elevated chromium concentrations are not a direct result of mine water infiltration.
- Concentrations in Minto Creek have remained in the range of observed baseline conditions with no observed changes that reflect an influence from mine-affected groundwater.

6.2 McGinty Creek

- On-going exceedances in the McGinty Creek catchment include arsenic and zinc in MW09-03-01 and cadmium, nitrate, and zinc in MW09-03-02.
- Minto North Pit acts as a hydraulic sink and the migration of pit water is not responsible for elevated concentrations in groundwater.
- The system experienced a shift in redox conditions following a water level drop concurrent with the development of Minto North. This shift may be responsible in part for observed exceedances as equilibrium conditions were disrupted.
- Flushing of nitrogen-containing blast residuals from waste rock used to construct the Minto North haul road is considered another likely source of loading to the groundwater.
- Results of the groundwater loading calculations indicate most parameters would have to increase beyond current concentrations by at least one order of magnitude to contribute enough load into McGinty Creek for SPT 1 to be exceeded.
- The overall contribution of groundwater to McGinty Creek is low and a hydraulic barrier exists between Minto North Pit and McGinty Creek, preventing seepage from entering the surface water system from the pit itself.

Concentrations in Minto and McGinty Creeks have remained in the range of observed baseline conditions with no observed changes that reflect an influence from mine-affected groundwater. The overall risk of contact water migrating through the groundwater and negatively affecting McGinty and Minto Creeks is considered low and mitigation efforts are not necessary at this time.

7 Recommendations

Groundwater exceedances of the OAMP SPTs do not require mitigation as surface water bodies have not been impacted by elevated groundwater concentrations and several lines of evidence, along with water quality predictions for the overall project, suggest the overall risk of future impacts to surface water quality is low. Groundwater monitoring should continue as per the Minto Mine Groundwater Monitoring Plan, and results should continue to be evaluated against the Operational Adaptive Management Plan SPTs and compared with other studies assessing natural background conditions. The following actions are also recommended to inform future mitigation efforts:

- Continue groundwater monitoring as per the Minto Groundwater Monitoring Plan.
- Continue efforts to sample seepage and surface runoff during high precipitation events along the Minto North haul road to better constrain seepage water quality.
- Reduce sampling frequency of Zone 4, Zone 6, and Zone 7 in MW17-12 from quarterly to semi-annually in Q1 and Q3 of each year.
- Conduct opportunistic sampling of deep groundwater to assess sulphate trends with depth during exploratory drilling or from underground workings.
- Conduct a mid to late summer flow and water quality accretion survey along McGinty Creek beginning at the headwaters and extending to MN-2.5 to better understand groundwater – surface water interactions and risk due to groundwater discharge and loading when conditions are appropriate.
    - This was also recommended in the 2020 Groundwater Review, but plans were postponed as conditions were not deemed appropriate.

This report, Minto Mine – 2021 Groundwater Review and Summary of OAMP SPT Exceedances, was prepared by:

03/30/22

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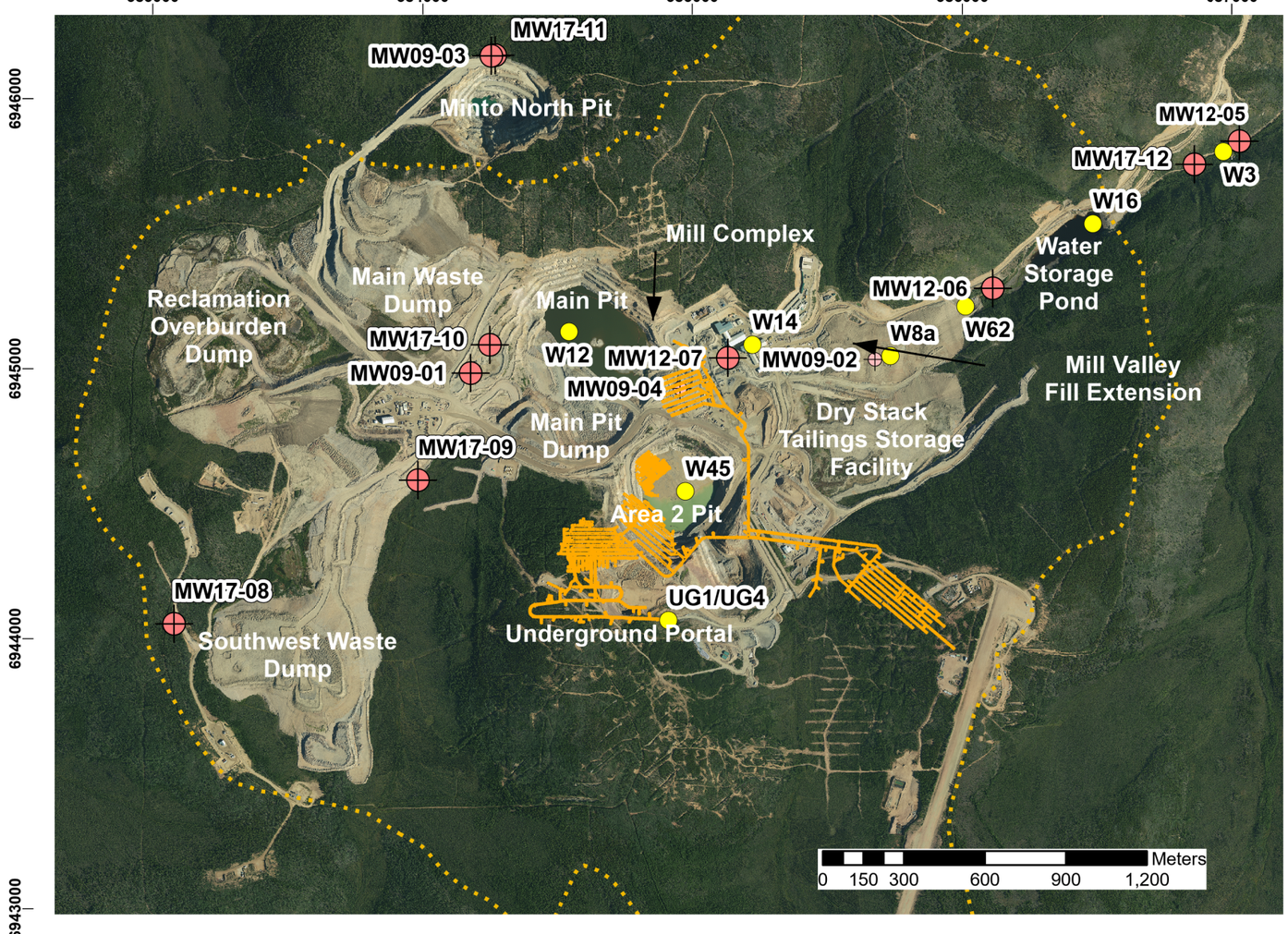
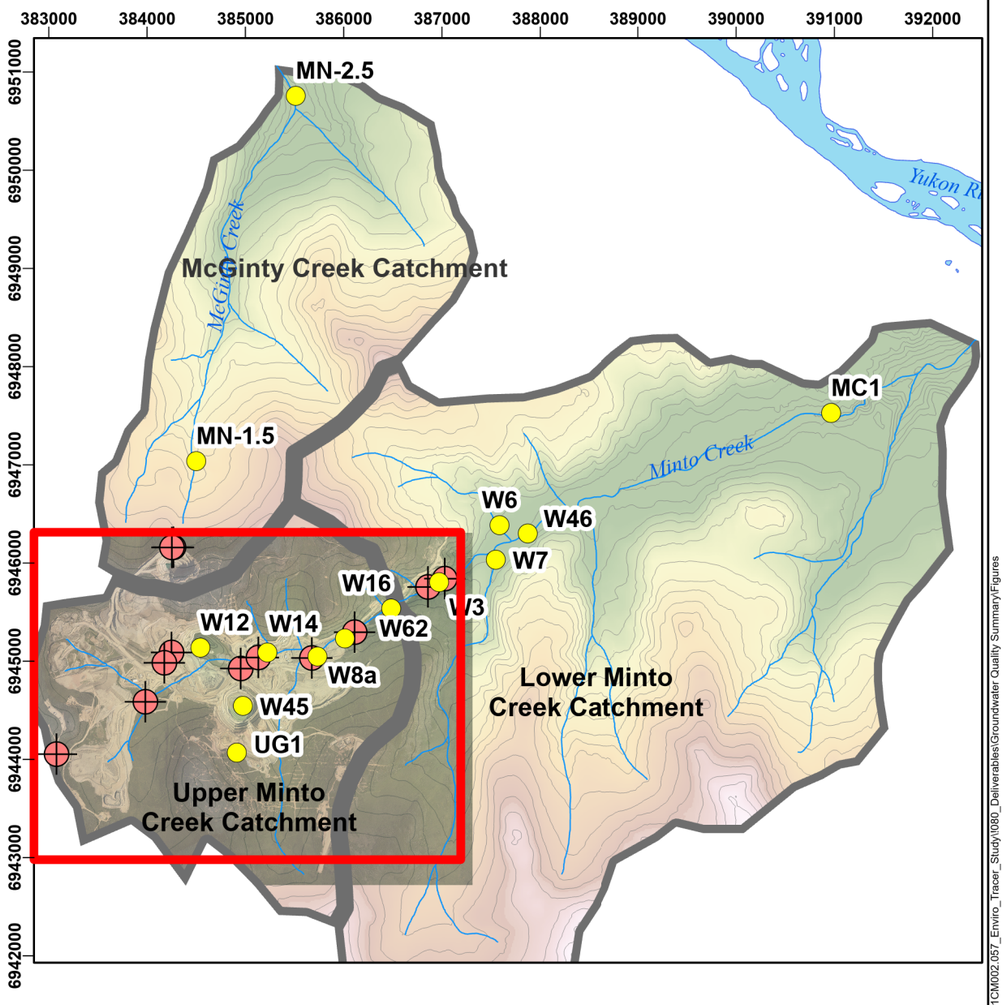
Figures





Legend

- Streams
- Elevation Contours 20m
- Upper Minto Creek Catchment
- MP Monitoring Wells
- Existing Underground Workings

Topography (masl)

High : 1020

Low : 650

Notes:
1. Data presented in NAD 1983 UTM Zone 8N.
2. Topography provided by Minto Mine, 2017.
3. Base orthophoto provided by Minto Mine, 2017.

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Job No: 1CM002.055

Filename: Minto_Fig1_2021.mxd

MINTO METALS

MINTO MINE

2020 Groundwater Quality and OAMP Exceedance Review

Groundwater Monitoring Stations

Date: March 2022 | Approved: MSi | Figure: 1

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		Main Pit (MP)	Area 2 Stage 2 (A2S2)	Area 2 Stage 3 Pit (A2S3)	Area 118 (118)	Minto North Pit (MN)	MZone UG (MZUG)	Minto South UG (MSUG)	Minto East UG (MEUG)	Copper Keel UG (CKUG)
2006	Q1	Mining								
	Q2	Mining								
	Q3	Mining								
	Q4	Mining								
2007	Q1	Mining								
	Q2	Mining								
	Q3	Mining								
	Q4	Mining								
2008	Q1	Mining								
	Q2	Mining								
	Q3	Mining								
	Q4	Mining								
2009	Q1	Mining								
	Q2	Mining								
	Q3	Mining								
	Q4	Mining								
2010	Q1	Mining								
	Q2	Mining								
	Q3	Mining								
	Q4	Mining								
2011	Q1	Mining								
	Q2	Mining	Mining							
	Q3	Water accum.	Mining							
	Q4	Water accum.	Mining							
2012	Q1	Water accum.	Mining							
	Q2	Water accum.	Mining							
	Q3	Water accum.	Mining					Mining		
	Q4	T+W	Mining					Mining		
2013	Q1	T+W	Mining					Mining		
	Q2	T+W	Mining					Mining		
	Q3	T+W	Mining					Mining		
	Q4	T+W	Mining					Mining		
2014	Q1	T+W	Mining		Mining		Mining	Mining		
	Q2	T+W	Mining		Mining		Mining			
	Q3	T+W	Mining		Mining		Mining			
	Q4	T+W	Mining				Mining			
2015	Q1	T+W	Mining				Mining			
	Q2	T+W	Mining				Flooded by A2S2	Mining		
	Q3	T+W, P from/to A2S2	T+W, P from/to MP			Mining	Flooded by A2S2	Mining		
	Q4	T+W, P from/to A2S2	T+W, P from/to MP			Mining	Flooded by A2S2	Mining		
2016	Q1	T+W, P from/to A2S2	T+W, P from/to MP			Mining	Flooded by A2S2	Mining		
	Q2	T+W, P from/to A2S2	T+W, P from/to MP			Mining	Flooded by A2S2	Mining		
	Q3	T+W, P from/to A2S2	T+W, P from/to MP			Mining	Flooded by A2S2	Mining		
	Q4	T+W, P from/to A2S2	T+W, P from/to MP		Ovb backfill	Mining	Flooded by A2S2	Mining		
2017	Q1	T+W, P from/to A2S2	T+W, P from/to MP	Mining	Ovb backfill	Water accum.	Flooded by A2S2	Mining	Mining	
	Q2	T+W, P from/to A2S2	T+W, P from/to MP	Mining	Ovb backfill	Water accum.	Flooded by A2S2	Mining	Mining	
	Q3	T+W, P from/to A2S2	T+W, P from/to MP	Mining	Ovb backfill	Water accum.	Flooded by A2S2	Mining	Mining	
	Q4	T+W, P from/to A2S2	T+W, P from/to MP	Mining	Ovb backfill	Water accum.	Flooded by A2S2	Mining	Mining	
2018	Q1	T+W, P from/to A2S2	T+W, P from/to MP	Mining	Ovb backfill	Water accum.	Flooded by A2S2	Mining	Mining	
	Q2	T+W, P from/to A2S2	T+W, P from/to MP	Mining	Ovb backfill	Water accum.	Flooded by A2S2	Mining	Mining	
	Q3	T+W, P from/to A2S2	T+W, P from/to MP	Mining	Ovb backfill	Water accum.	Flooded by A2S2	Mining	Mining	
	Q4	T+W, P from/to A2S2	T+W, P from/to MP	Water accum.	Ovb backfill	Water accum.	Flooded by A2S2			
2019	Q1	T+W, P from/to A2S2	T+W, P from/to MP	Water accum.	Ovb backfill	Water accum.	Flooded by A2S2			
	Q2	T+W, P from/to A2S2	T+W, P from/to MP	Water accum.	Ovb backfill	Water accum.	Flooded by A2S2			
	Q3	T+W, P from/to A2S3	Overflow to A2S3	T+W, P from/to MP	Ovb backfill	Water accum.	Flooded by A2S2			Mining
	Q4	T+W, P from/to A2S3	Overflow to A2S3	T+W, P from/to MP	Ovb backfill	Water accum.	Flooded by A2S2			Mining
2020	Q1	T+W, P from/to A2S2	Overflow to A2S3	T+W, P from/to MP	Ovb backfill	Water accum.	Flooded by A2S2			Mining
	Q2	T+W, P from/to A2S2	Overflow to A2S3	T+W, P from/to MP	Ovb backfill	Water accum.	Flooded by A2S2			Mining
	Q3	T+W, P from/to A2S3	Overflow to A2S3	T+W, P from/to MP	Ovb backfill	Water accum.	Flooded by A2S2			Mining
	Q4	T+W, P from/to A2S3	Overflow to A2S3	T+W, P from/to MP	Ovb backfill	Water accum.	Flooded by A2S2			Mining
2021	Q1	T+W, P from/to A2S2	Overflow to A2S3	T+W, P from/to MP	Ovb backfill	Water accum.	Flooded by A2S2			Mining
	Q2	T+W, P from/to A2S2	Overflow to A2S3	T+W, P from/to MP	Ovb backfill	Water accum.	Flooded by A2S2			Mining
	Q3	T+W, P from/to A2S3	Overflow to A2S3	T+W, P from/to MP	Ovb backfill	Water accum.	Flooded by A2S2			Mining
	Q4	T+W, P from/to A2S3	Overflow to A2S3	T+W, P from/to MP	Ovb backfill	Water accum.	Flooded by A2S2			Mining

Notes:

T+W: Deposition of tailings (T) and collection of water (W)

P from/to A2S2: Pumping water to and from Main Pit to Area 2 Stage 2 Pit

P from/to MP: Pumping water to and from Main Pit

Overflow to A2S3: Area 2 Stage 2 Pit overflowing into Area 2 Stage 3 Pit

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Job No: 1CM002.057

Filename: Fig2_MineSequence_rev00

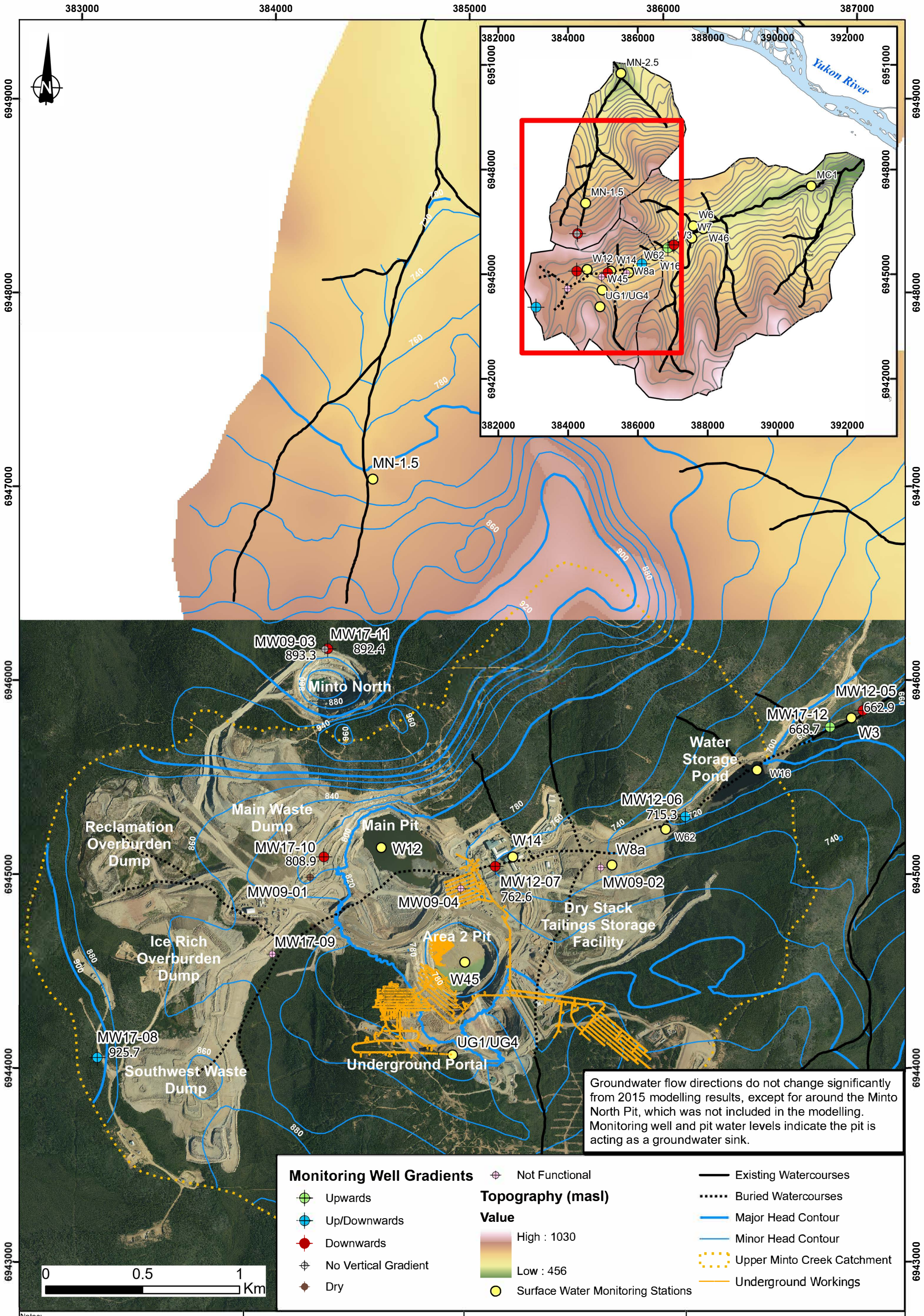
MINTO METALS

Minto Mine

Minto Mine – 2021 Groundwater Review and Summary of OAMP SPT Exceedances

Timeline of Mine Sequence and Water Management

Date:	Approved:	Figure:
May 2022	LV	2



Notes:
1. Data presented in NAD 1983 UTM Zone 8N.
2. Base orthophoto provided by Minto Mine, 2017.
3. Head contours are in masl with 20 m intervals
4. Water levels based on Q4 2021 measurements. Groundwater contours based on 2015 groundwater model with adjustments to fit current water levels.
5. Groundwater contours reflect near surface groundwater, represented by shallow-most sensors in multi-level monitoring wells unless that sensor is dry, in which case the second shallowest value is reported. Well is marked "Dry" if all sensors are dry.
6. Value below Well ID labels indicate hydraulic head (masl).

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Job No: 1CM002.055

Filename: Minto_GW_Contours

MINTO METALS

Minto Mine

2021 Annual Groundwater Review

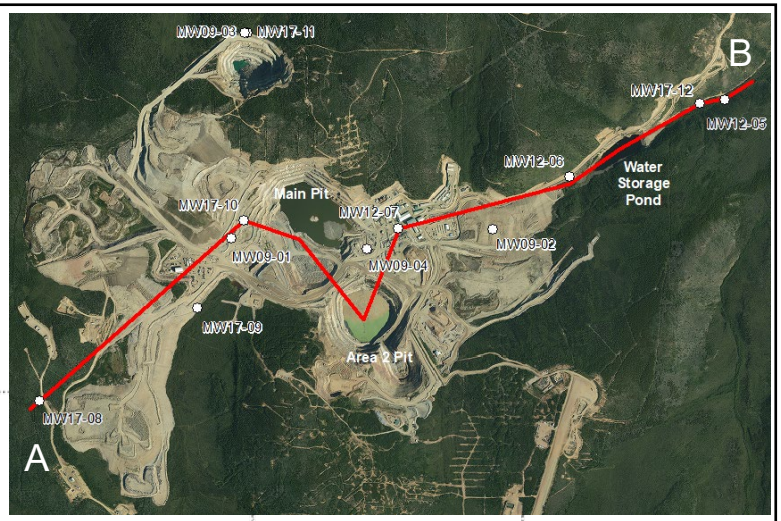
2021 Groundwater Contours and Vertical Gradients

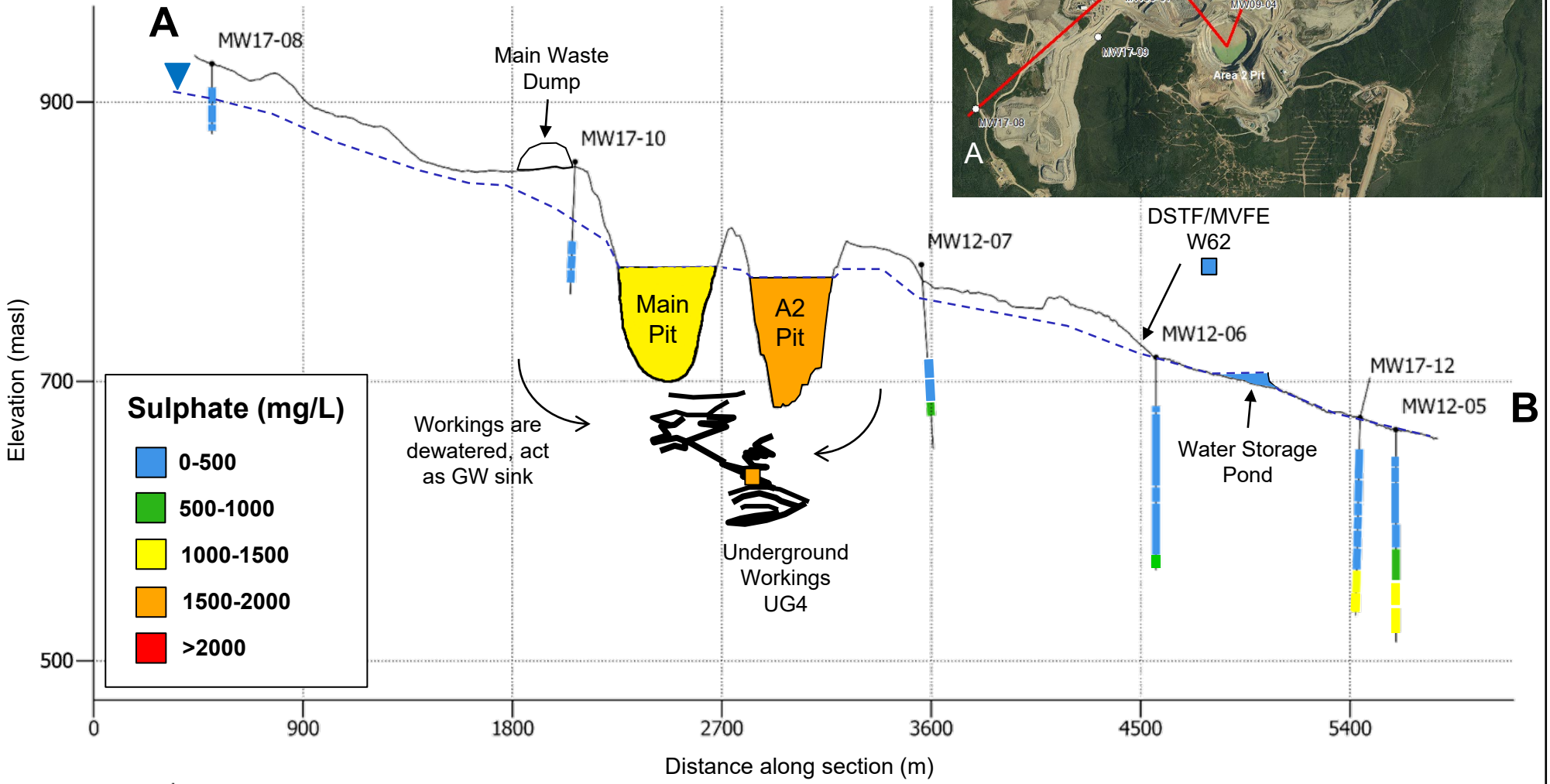
Date:	Approved:	Figure:
March 2022	MSi	3

C:\Users\msimons\Desktop\Minto_GW_Contours.aprx

Notes:

1. Base orthophoto provided by Minto Mine, 2017
2. Water table based on Dec 2021 measurements, combined with 2015 groundwater model results
3. Sulphate concentrations are maximum observed value at a given location in 2021.
4. For most ports, maximum sulphate concentration fell in the same category as the mean concentration throughout 2021. Exceptions to this are UG4 (mean of 1156 mg/L), Main Pit – W12 (mean of 712 mg/L) and A2 Pit – W51 (mean of 1236 mg/L)
5. Main Pit bottom elevation estimated to be 700m.
6. Underground workings location is roughly accurate, but not to scale due to nature of diagram. Workings could not be projected onto section.





Scale: 1:25,000

Vertical exaggeration: 6x

0m 1000m

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MINTO METALS

Job No: 1CM002.055

Filename: Fig5_Xsection_Sulphate_rev00.pdf

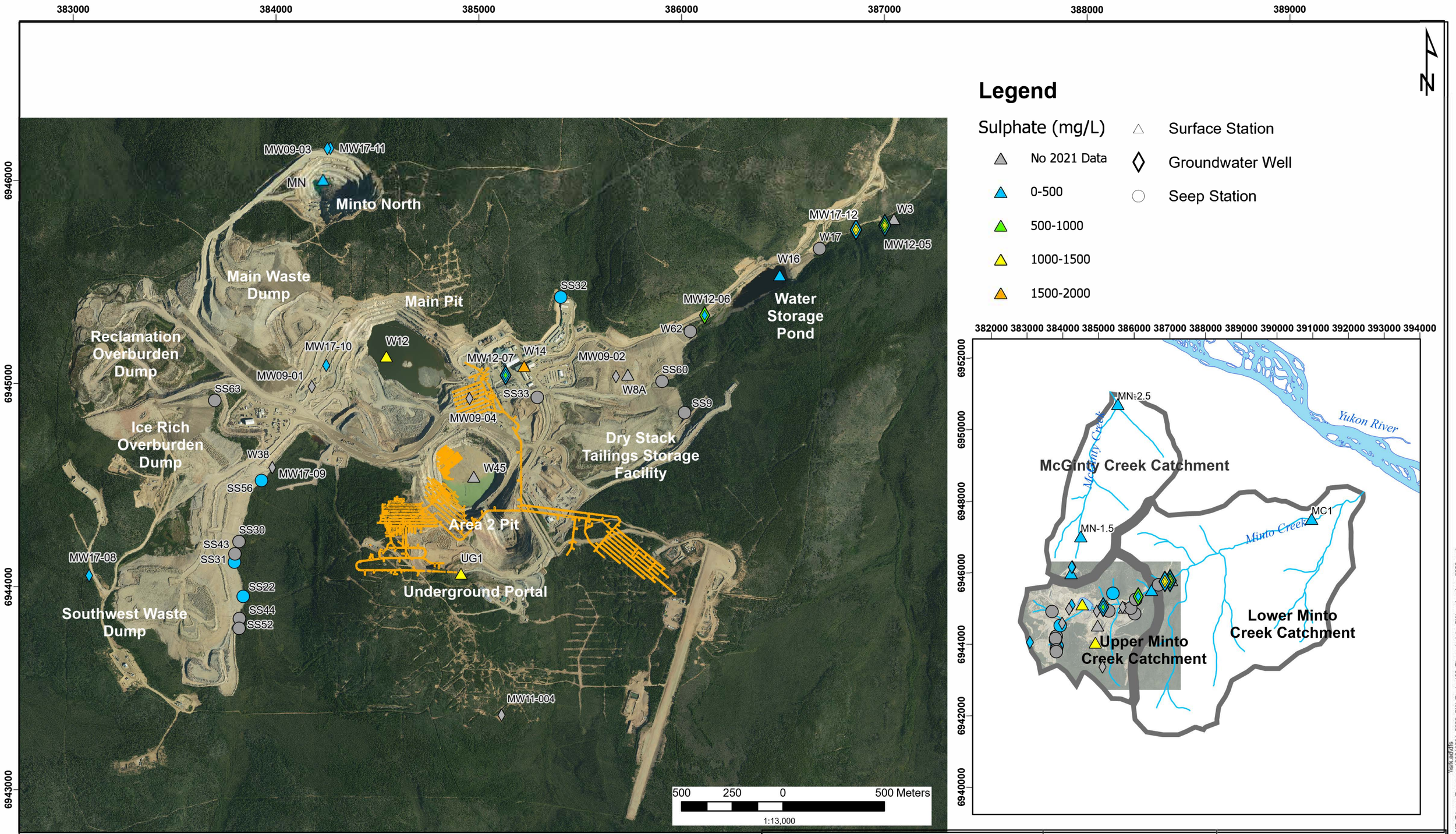
Minto Mine

Minto Mine – 2021 Groundwater Review and Summary of OAMP SPT Exceedances

2021 Monitoring Well Sulphate Concentration Fence Diagram

Date:	Approved:	Figure:
March 2022	LV	4

\\VAN-SVR01\Projects\01_SITES\Minto\1CM002.057_Enviro_Tracer_Study\040_AutoCAD\minto_SO4_fence_section_inset.mxd



Notes:
1. Data presented in NAD 1983 UTM Zone 8N.
2. Base orthophoto provided by Minto Mine, 2017.
3. Posted sulphate concentrations are maximum observed at a given location in 2020.
4. Multi-level monitoring wells are presented as nested diamonds only if concentrations are variable between depths.
5. The inside marker in a nested diamond represents the deepest port, with diamond size increasing towards the ground surface.
6. Ports shallower than Zone 4 in MW12-05 have sulphate concentrations <500 mg/L and are not presented on the figure.
7. Ports 2 and 3 in MW12-06 have similar concentrations and have had their symbols combined.
8. In MW17-12, Zones 3 and shallower have concentrations <500 mg/L and have had their symbols combined.

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Job No: 1CM002.055

Filename: Minto_2021_Sulphate_Map.mxd

MINTO METALS

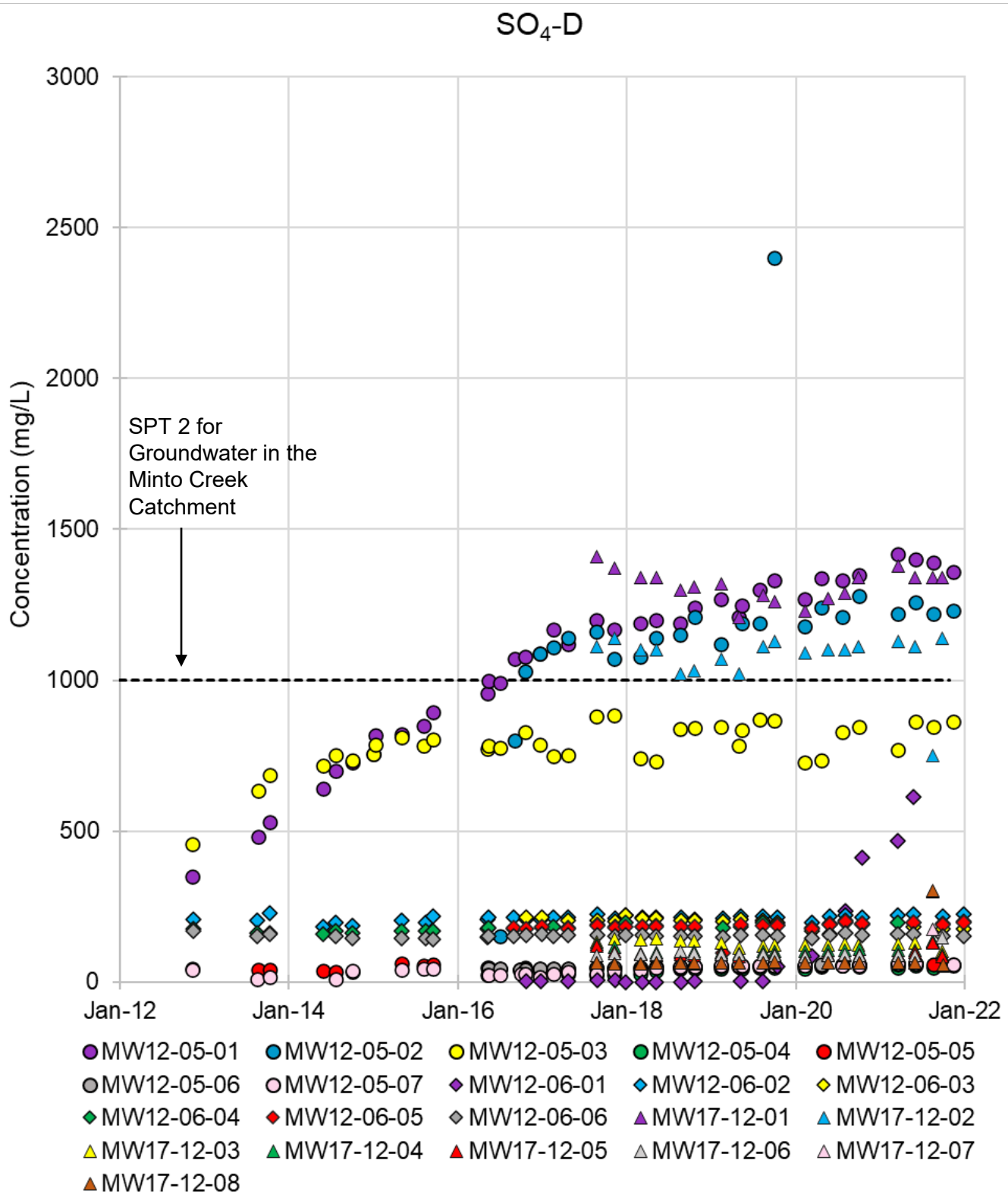
MINTO MINE

2021 Groundwater Quality and OAMP Exceedance Review

Maximum Sulphate Concentration in 2021

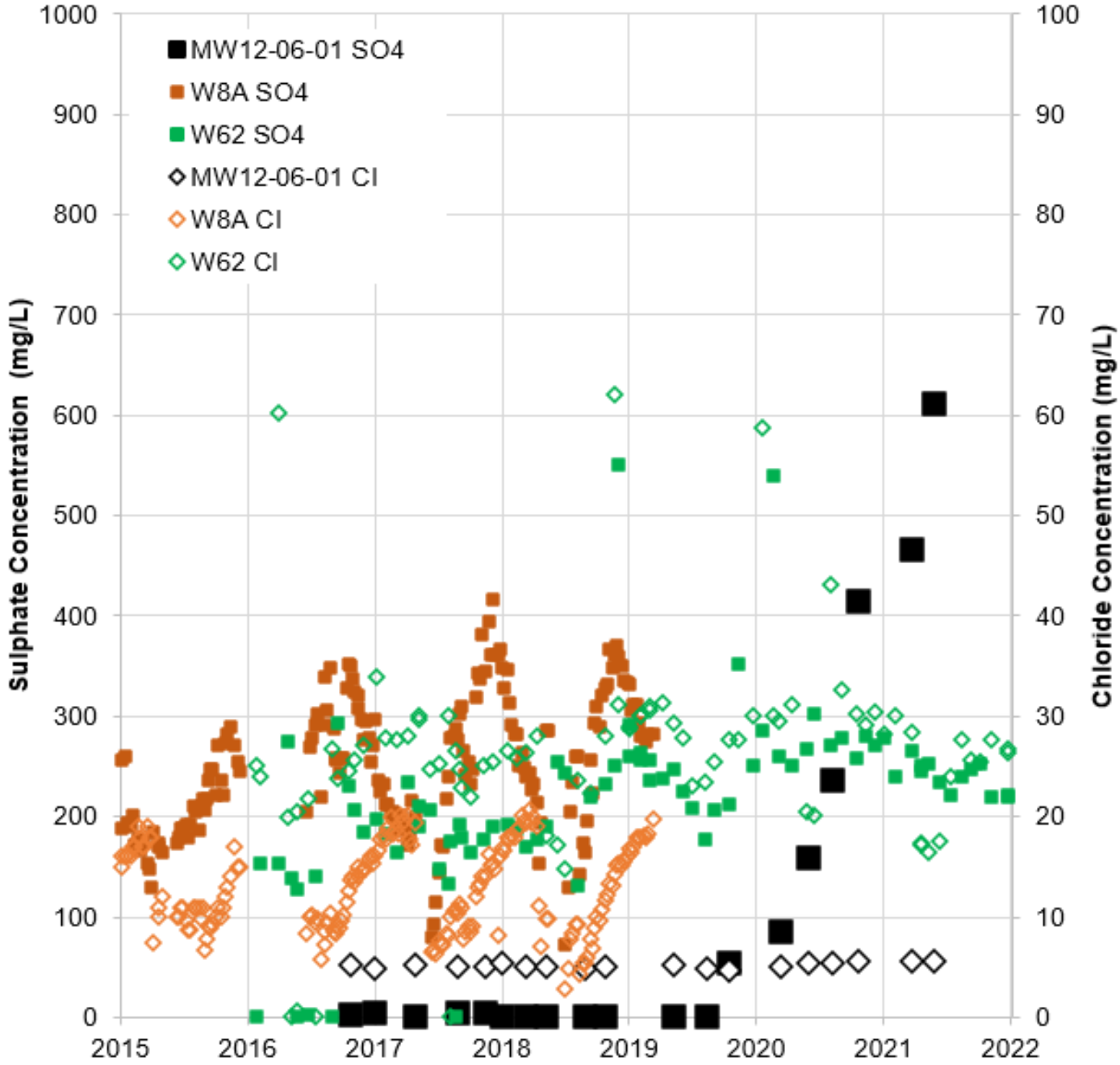
Date:	Approved:	Figure:
March 2022	MSi	5

\\srk.ad\dfs
a:\van\Projects\01_SITES\Minto\1CM002.055_AMP_Trigger_Responses\20210301_2020_GW_Review\03_Figures\minto_GW_sc4_colour_2020.mxd



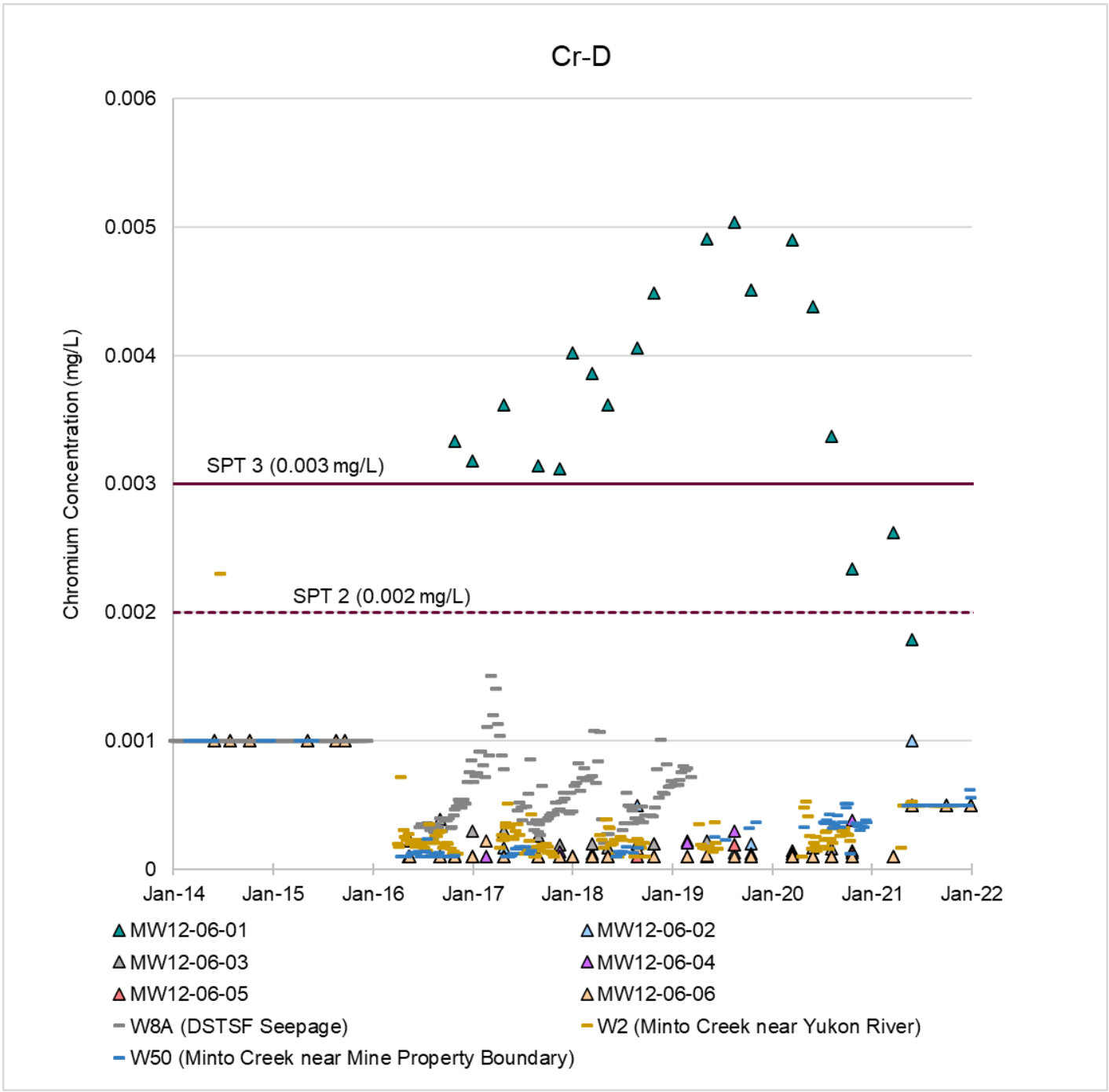
srk consulting	MINTO METALS	Minto Mine – 2021 Groundwater Review and Summary of OAMP SPT Exceedances **Sulphate at MW12-05, MW12-06 and MW17-12**
Job No: 1CM002.057 Filename: Fig6-8_ChemistryPlots_1CM002.057	Minto Mine	Date: May 2022 / Approved: LV / Figure: 6

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220217_2021_GW_Review/1CM002.055_ChemistryDataFigures_WorkingFile_Rev1_efg.xlsx?d=w1bd83f08045f45d38b300b5fbada2111a&csf=1&web=1&e=4JVUTg



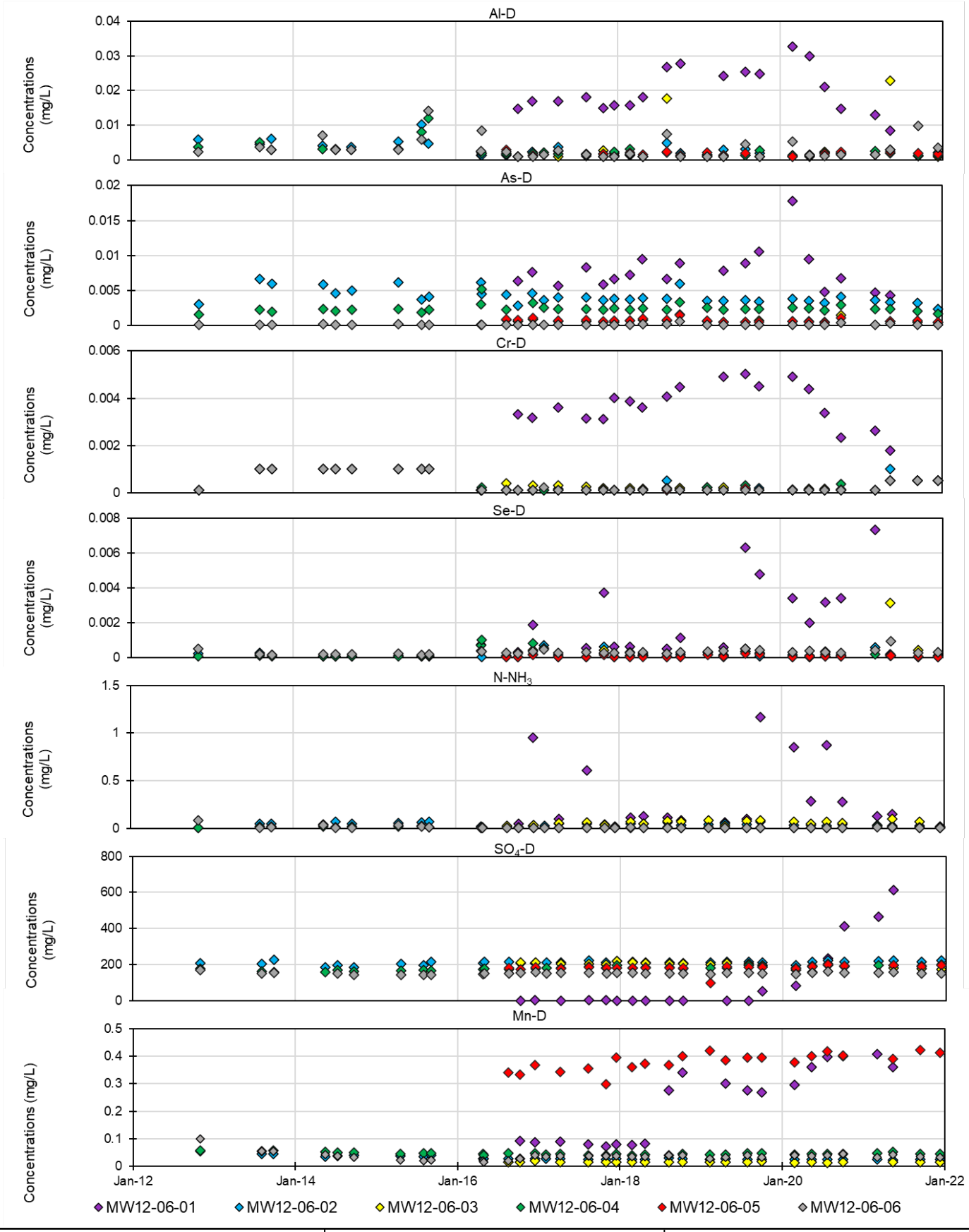
srk consulting	MINTO METALS	Minto Mine – 2021 Groundwater Review and Summary of OAMP SPT Exceedances		
		Sulphate and Chloride at MW12-06-01, W62 and W8A (DSTSF)		
Job No: 1CM002.057 Filename: Fig6-8_ChemistryPlots_1CM002.057	Minto Mine	Date: May 2022	Approved: LV	Figure: **7**

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220217_2021_GW_Review/1CM002.055_ChemistryDataFigures_WorkingFile_Rev1_efg.xlsx?d=w1bd83f08045f45d38b300b5fbada2111a&csf=1&web=1&e=4JVUTg



srk consulting	MINTO METALS	Minto Mine – 2021 Groundwater Review and Summary of OAMP SPT Exceedances
		Chromium at MW12-06, W2, W8A, and W50
Job No: 1CM002.057 Filename: Fig6-8_ChemistryPlots_1CM002.057	Minto Mine	Date: May 2022 / Approved: LV / Figure: **8**

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220217_2021_GW_Review/1CM002.055_ChemistryDataFigures_WorkingFile_Rev1_efg.xlsx?d=w1bd83f08045f45d38b300b5fbada211a&csf=1&web=1&e=4JVUTg



https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220217_2021_GW_Review/1CM002.055_ChemistryDataFigures_WorkingFile_Rev1_efg.xlsx?d=w1bd83f08045f45d38b300b5fbada211a&csf=1&web=1&e=4JVUTg

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MINTO METALS

Minto Mine – 2021 Groundwater Review and Summary of OAMP SPT Exceedances

Trace Elements, NH_3, SO_4 and Mn at MW12-06

Job No: 1CM002.057

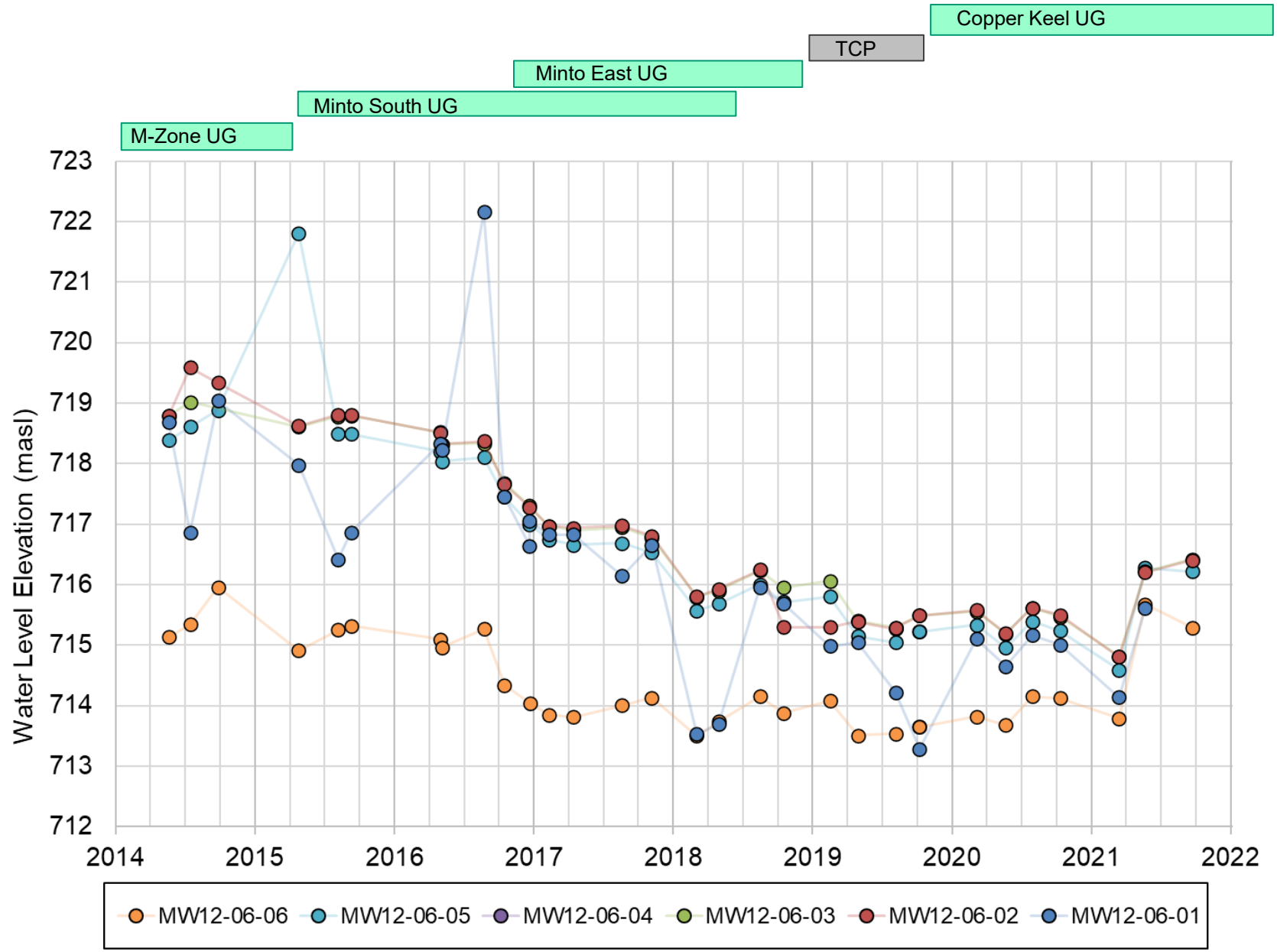
Filename: Fig6-8_ChemistryPlots_1CM002.057

Minto Mine

Date: May 2022

Approved: LV

Figure: 9



Notes:
1. TCP refers to the Temporary Closure Period

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Job No: 1CM002.057
Filename: Fig9_MW12-06_WLs.pptx

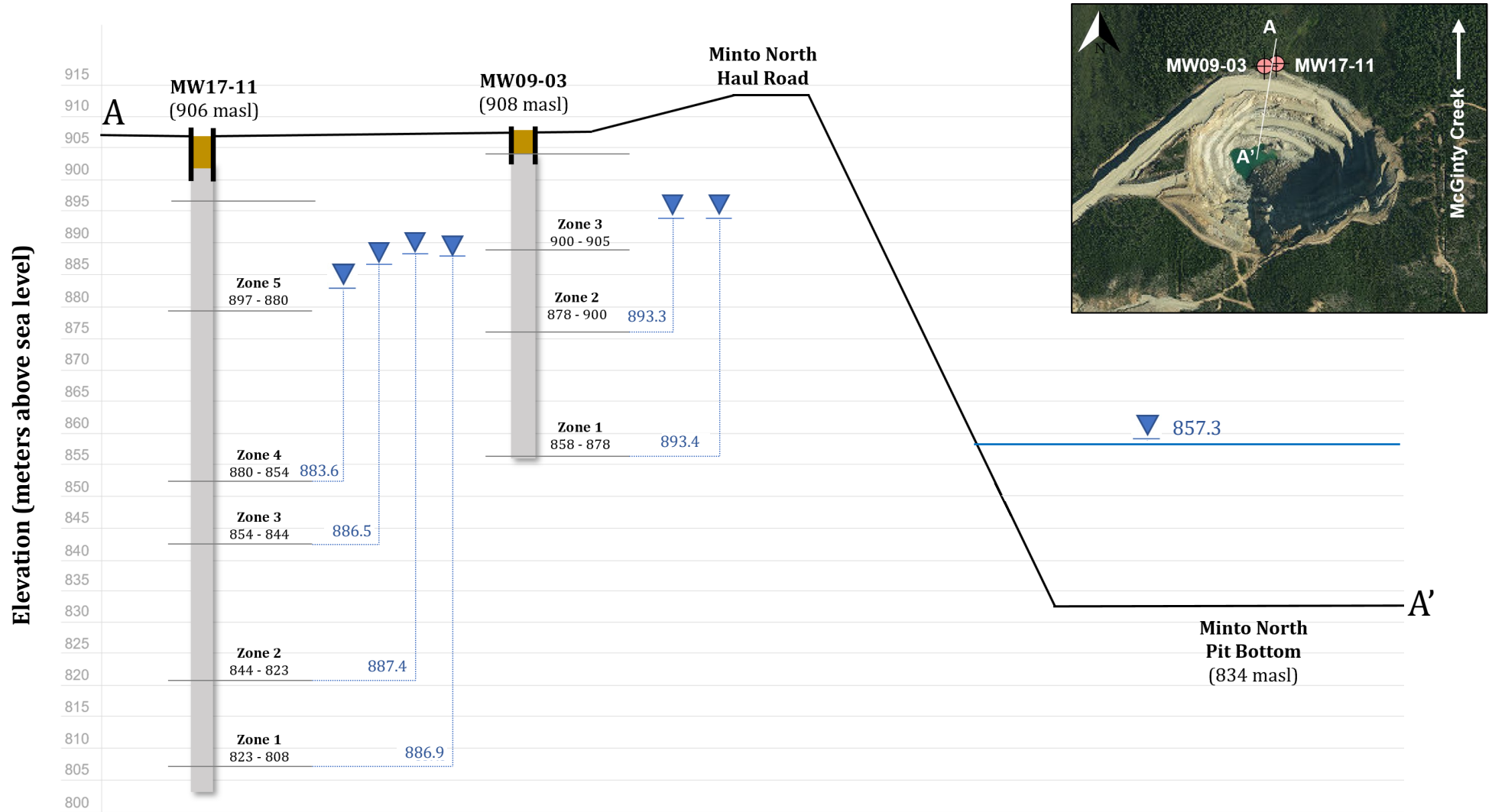
MINTO METALS

Minto Mine

Minto Mine – 2021 Groundwater Review and Summary of OAMP SPT Exceedances

Water Level Elevations in MW12-06 and Timeline of Underground Workings

Date:	Approved:	Figure:
March 2022	LV	**10**



Notes:
Drawing is not to scale
Groundwater levels in MW17-11 recorded in Oct 2021
Pit water level and MW09-03 recorded in Nov 2021

LEGEND

- Overburden
- Granodiorite
- Water Level
- Monitoring Well

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Job No: 1CM002.044
Filename: MintoNorthCrossSection_Figure_rev01.pptx

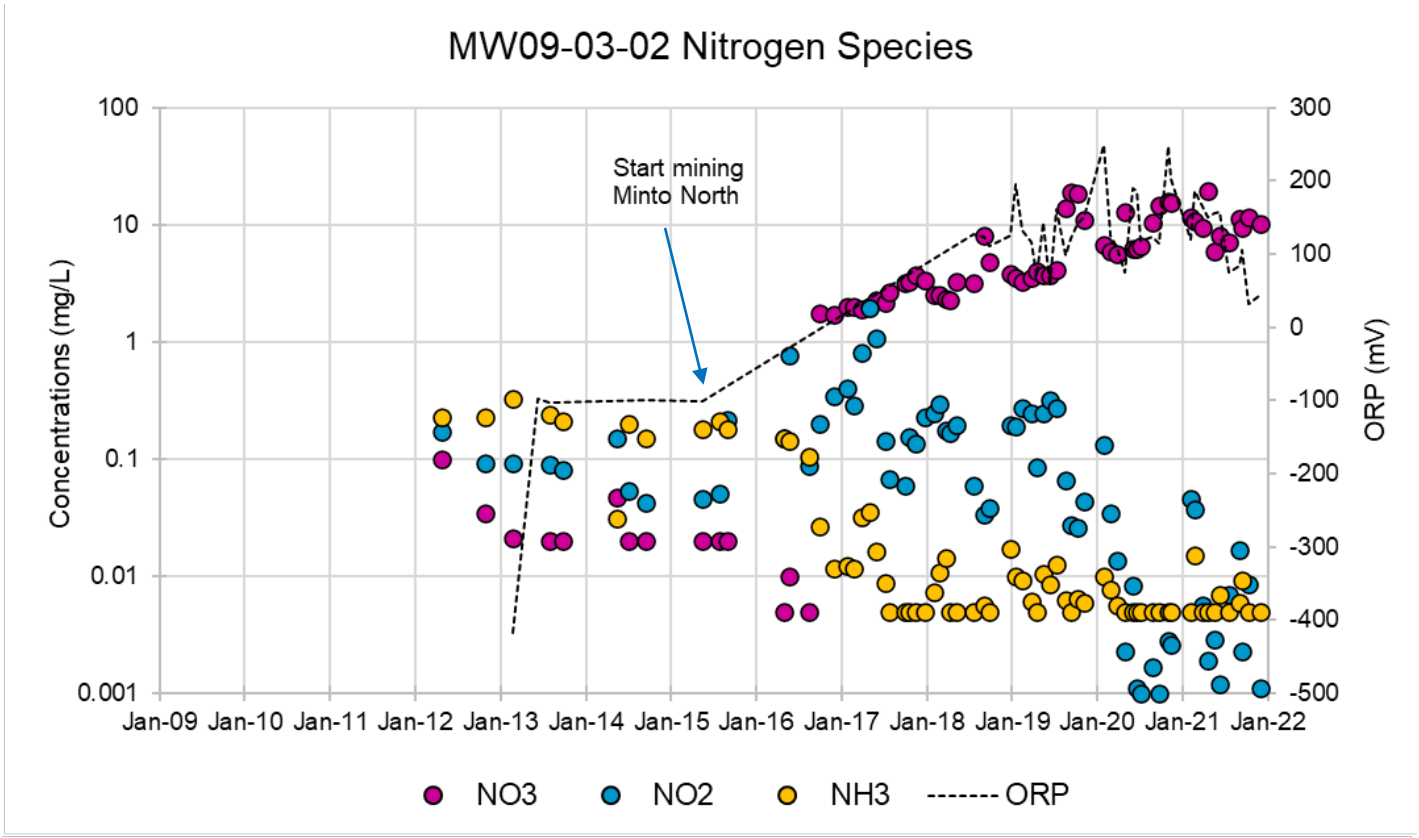
MINTO METALS

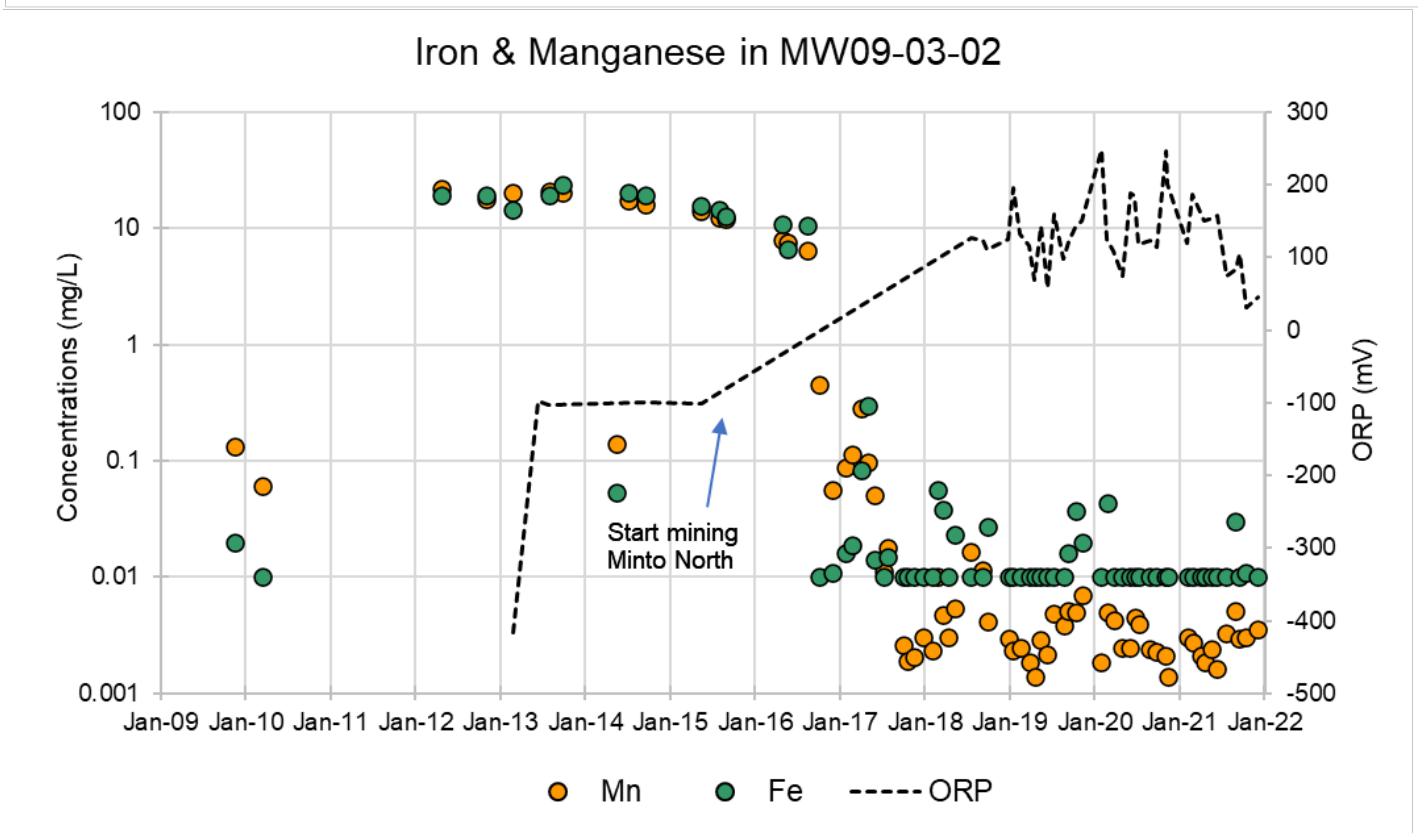
Minto Mine

2021 Groundwater Review

Groundwater and Pit Water Levels in McGinty Creek Catchment

Date:	Approved:	Figure:
March 2022	LV	11





https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220217_2021_GW_Review/1CM002.055_ChemistryDataFigures_WorkingFile_Rev1_efg.xlsx?d=w1bd83f080455f45d38b300b5fbada211a&csf=1&web=1&e=4JVUTg

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MINTO METALS

Minto Mine – 2021 Groundwater Review and Summary of OAMP SPT Exceedances

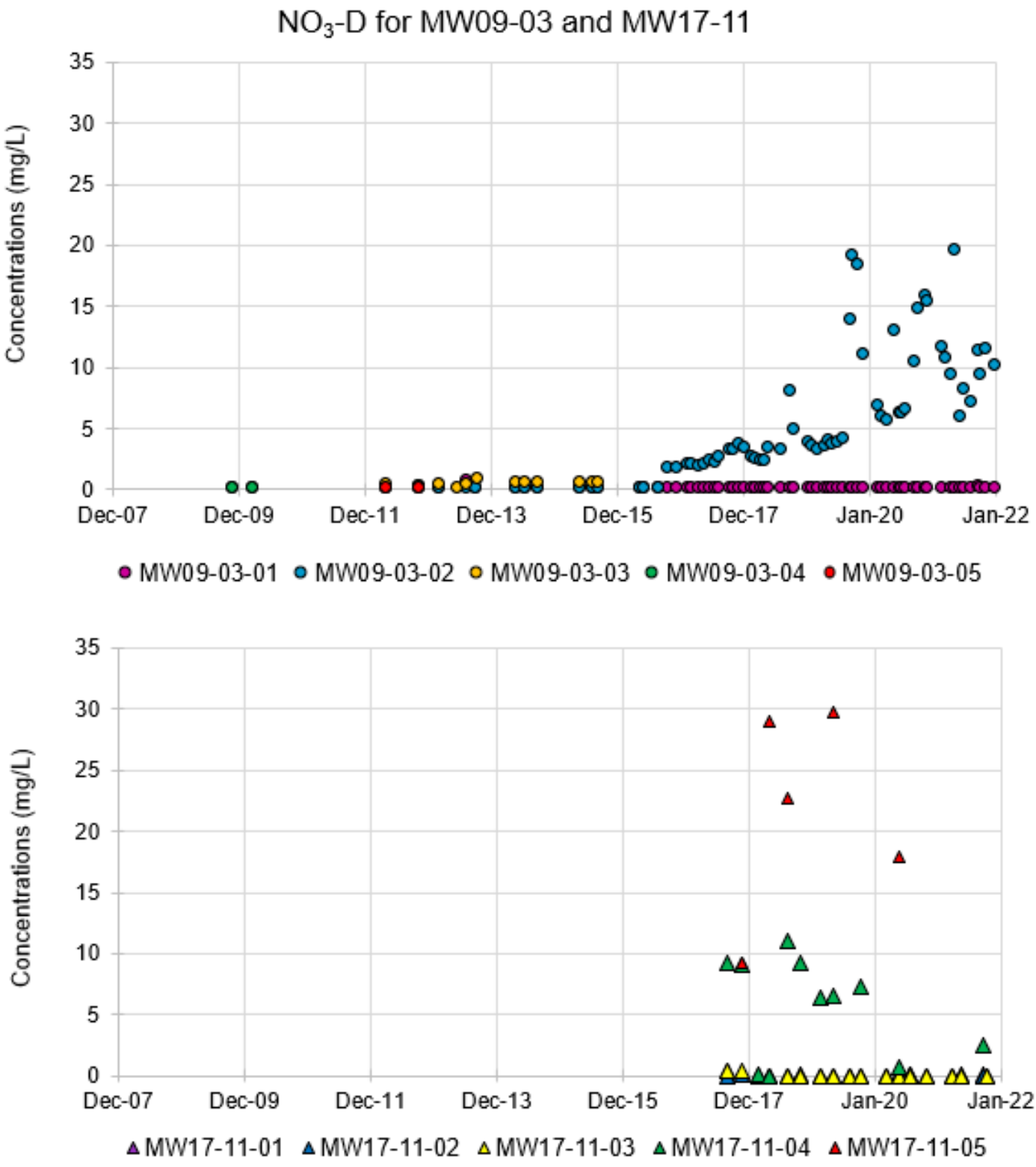
Iron, Manganese and Nitrogen Species Compared to ORP in MW09-03-02

Job No: 1CM002.057

Filename: Fig10-16_ChemistryPlots_1CM002.057

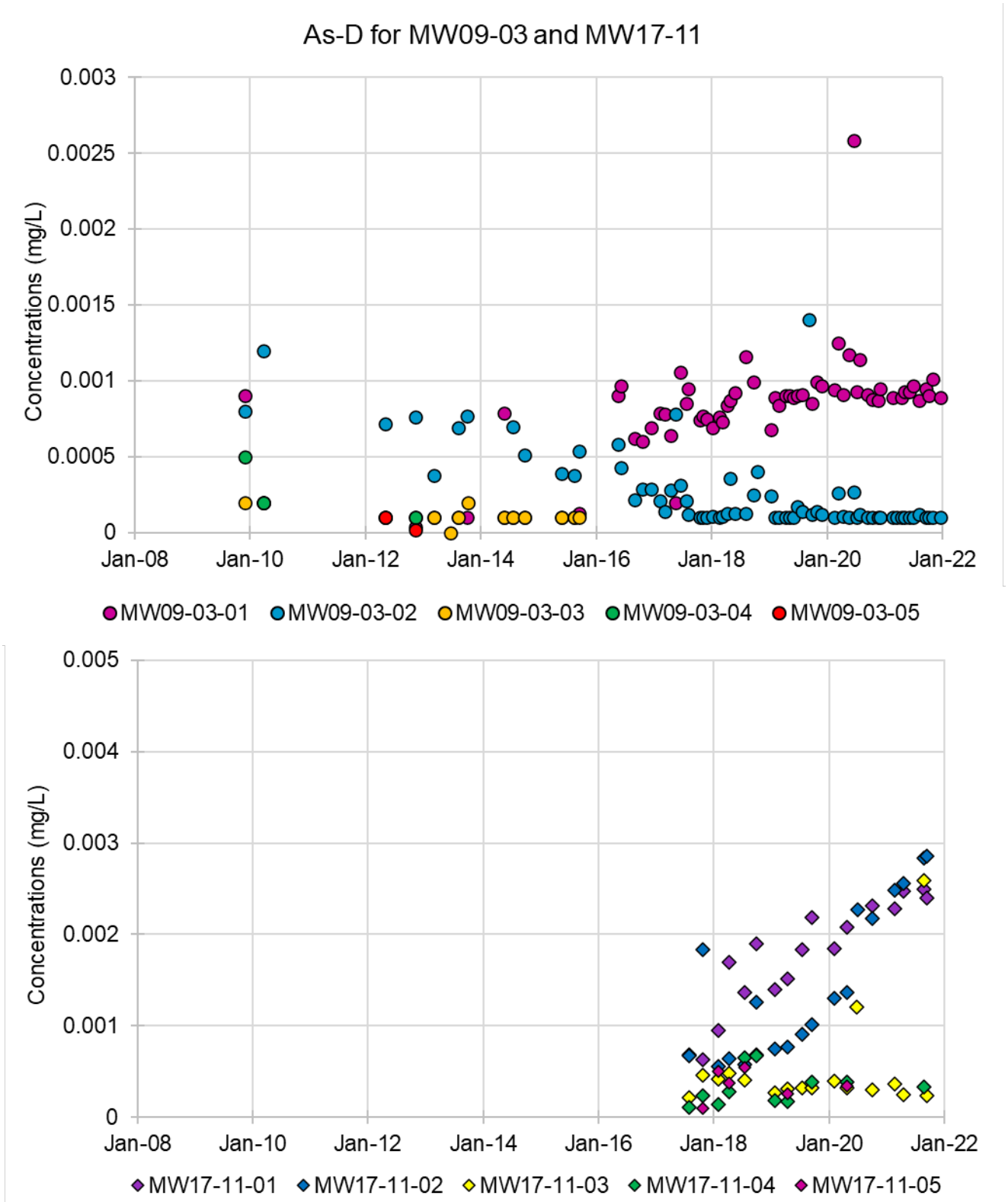
Minto Mine

Date:	Approved:	Figure:
March 2022	LV	12



srk consulting	MINTO METALS	Minto Mine – 2021 Groundwater Review and Summary of OAMP SPT Exceedances		
		Nitrate in MW09-03 and MW17-11		
Job No: 1CM002.057 Filename: Fig10-16_ChemistryPlots_1CM002.057	Minto Mine	Date: March 2022	Approved: LV	Figure: **13**

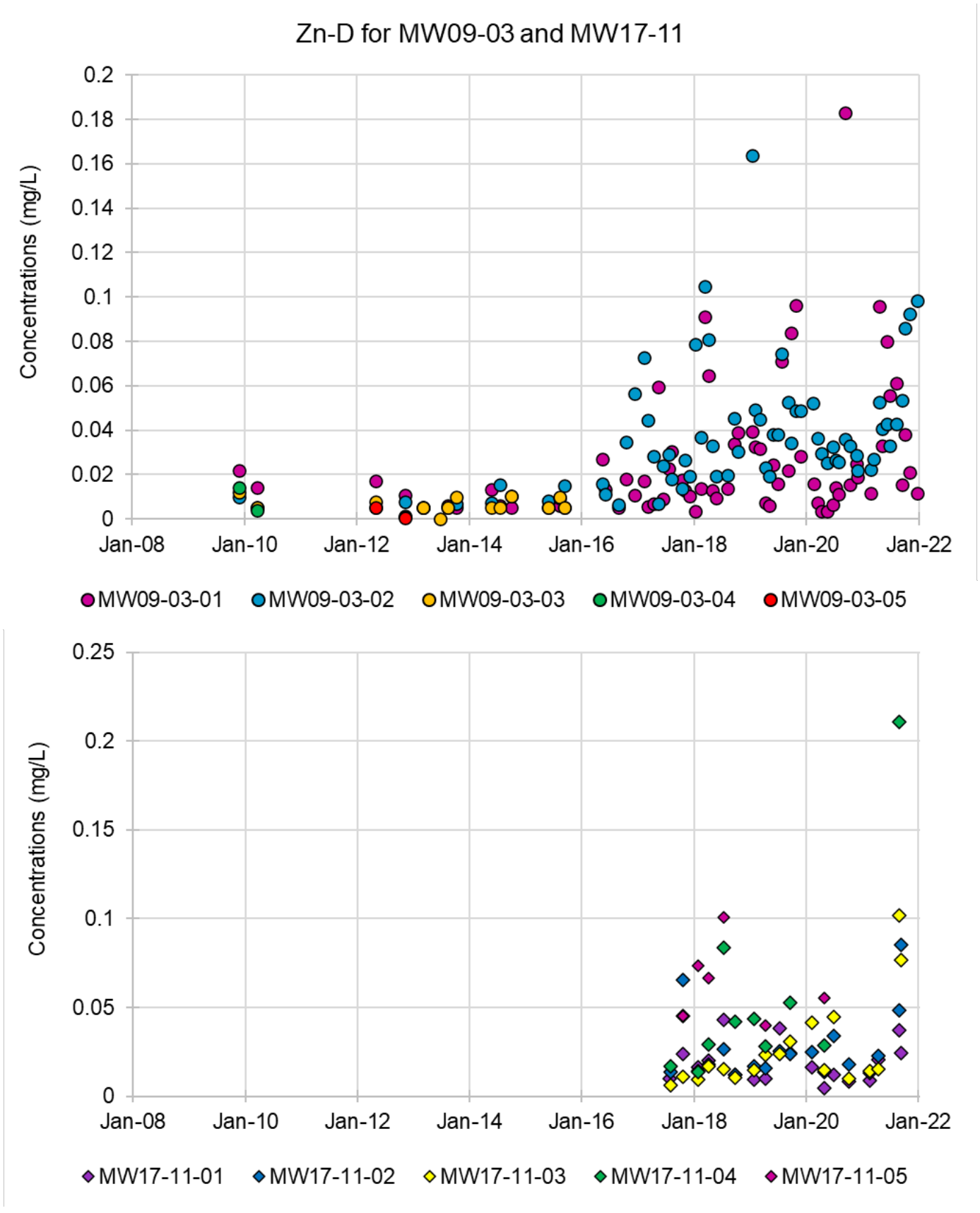
https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220217_2021_GW_Review/1CM002.055_ChemistryDataFigures_WorkingFile_Rev1_efg.xlsx?d=w1bd83f08045f45d38b300b5fbada211a&csf=1&web=1&e=4JVUTg



Outliers were removed for interpretation:
MW09-03-01: 0.0093 (Oct 19, 2018), 0.0041 (Sept 13, 2019),
MW17-11-01: 0.030 (Jul 26, 2020)

srk consulting	MINTO METALS	Minto Mine – 2021 Groundwater Review and Summary of OAMP SPT Exceedances		
		Arsenic in MW09-03 and MW17-11		
Job No: 1CM002.057 Filename: Fig10-16_ChemistryPlots_1CM002.057	Minto Mine	Date: March 2022	Approved: LV	Figure: **14**

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220217_2021_GW_Review/1CM002.055_ChemistryDataFigures_WorkingFile_Rev1_efg.xlsx?d=w1bd83f08045f45d38b300b5fbada211a&csf=1&web=1&e=4JVUTg



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srk consulting

MINTO METALS

Minto Mine – 2021 Groundwater Review and Summary of OAMP SPT Exceedances

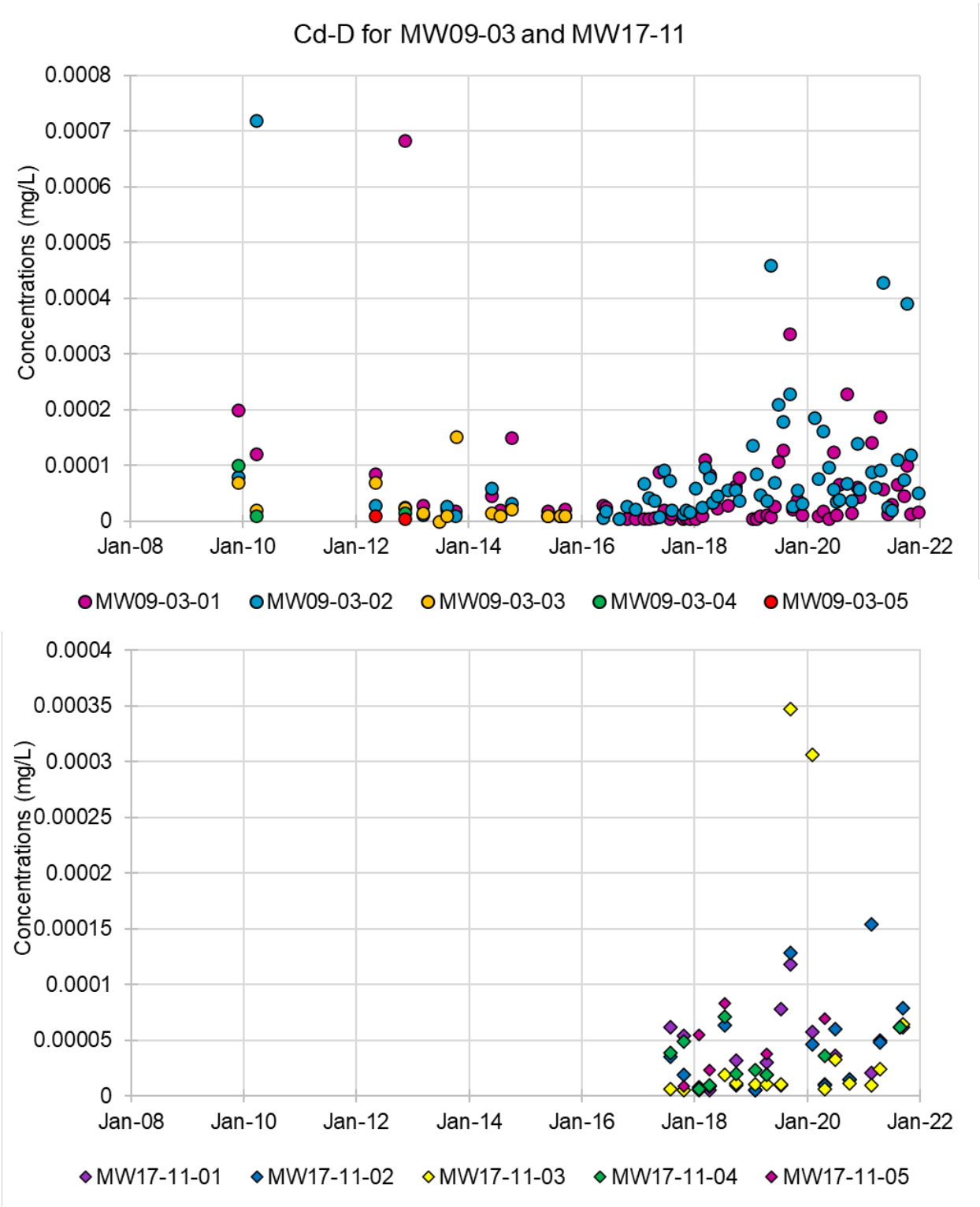
Zinc in MW09-03 and MW17-11

Job No: 1CM002.057

Filename: Fig10-16_ChemistryPlots_1CM002.057

Minto Mine

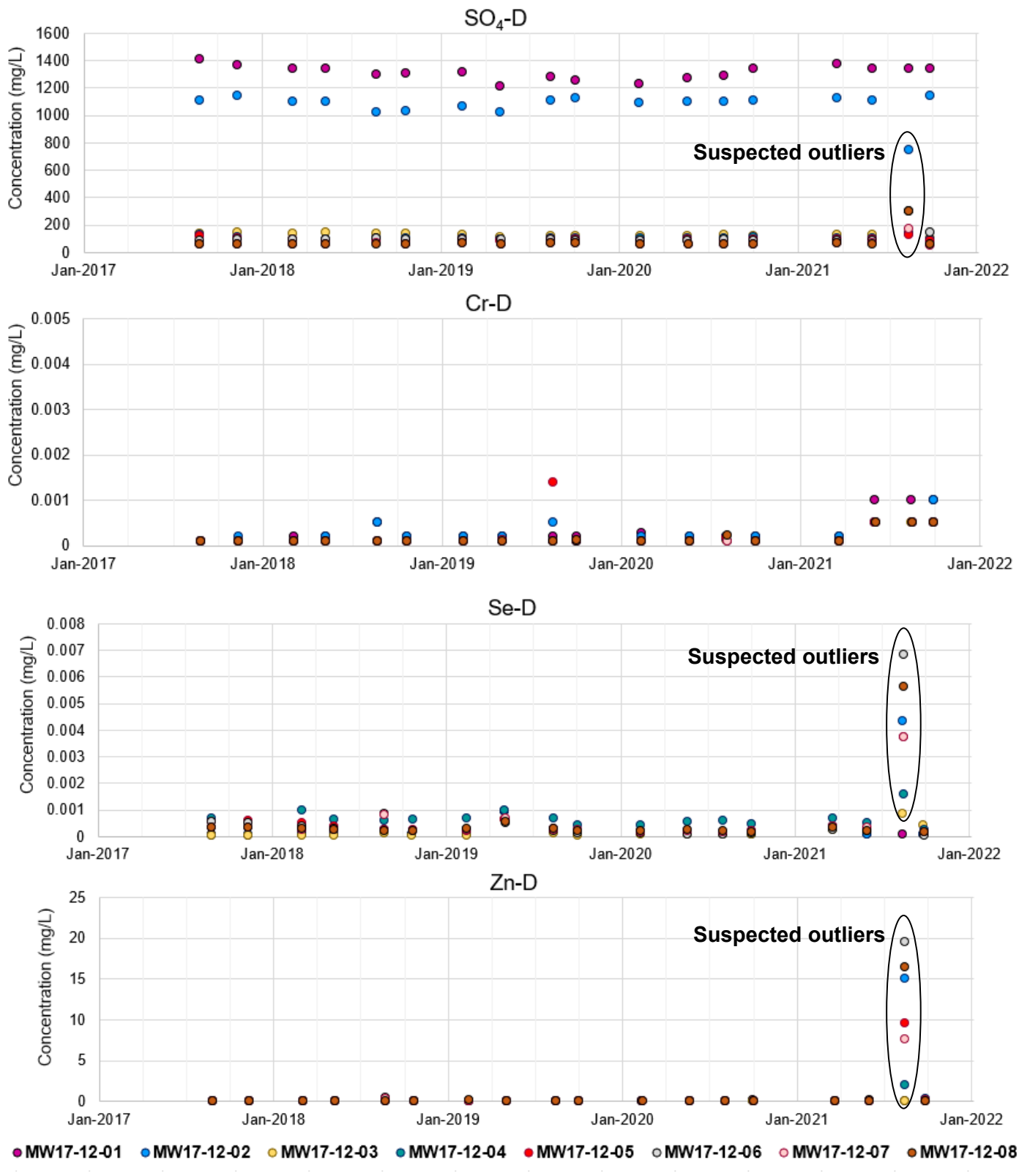
Date:	Approved:	Figure:
March 2022	LV	15



Outliers were removed for interpretation:
MW09-03-01: 0.001 (Feb 23, 2020)
MW17-11-01: 0.007 (Aug 12, 2018)
MW17-11-03: 0.0004 (Oct 14, 2019)
MW17-11-04: 0.0005 (Oct 14, 2019)

srk consulting	MINTO METALS	Minto Mine – 2021 Groundwater Review and Summary of OAMP SPT Exceedances		
		Cadmium in MW09-03 and MW17-11		
Job No: 1CM002.057 Filename: Fig10-16_ChemistryPlots_1CM002.057	Minto Mine	Date: March 2022	Approved: LV	Figure: **16**

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220217_2021_GW_Review/1CM002.055_ChemistryDataFigures_WorkingFile_Rev1_efg.xlsx?d=w1bd83f08045f45d38b300b5fbada211a&csf=1&web=1&e=4JVUTg



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srk consulting

MINTO METALS

Minto Mine – 2021 Groundwater Review and Summary of OAMP SPT Exceedances

SO_4, Cr, Se and Zn at MW17-12

Job No: 1CM002.057

Filename: Fig6-8_ChemistryPlots_1CM002.057

Minto Mine

Date: March 2022

Approved: LV

Figure: **17**

Attachment 1: SPT Threshold Concentrations

Attachment 1

Minto Creek SPTs

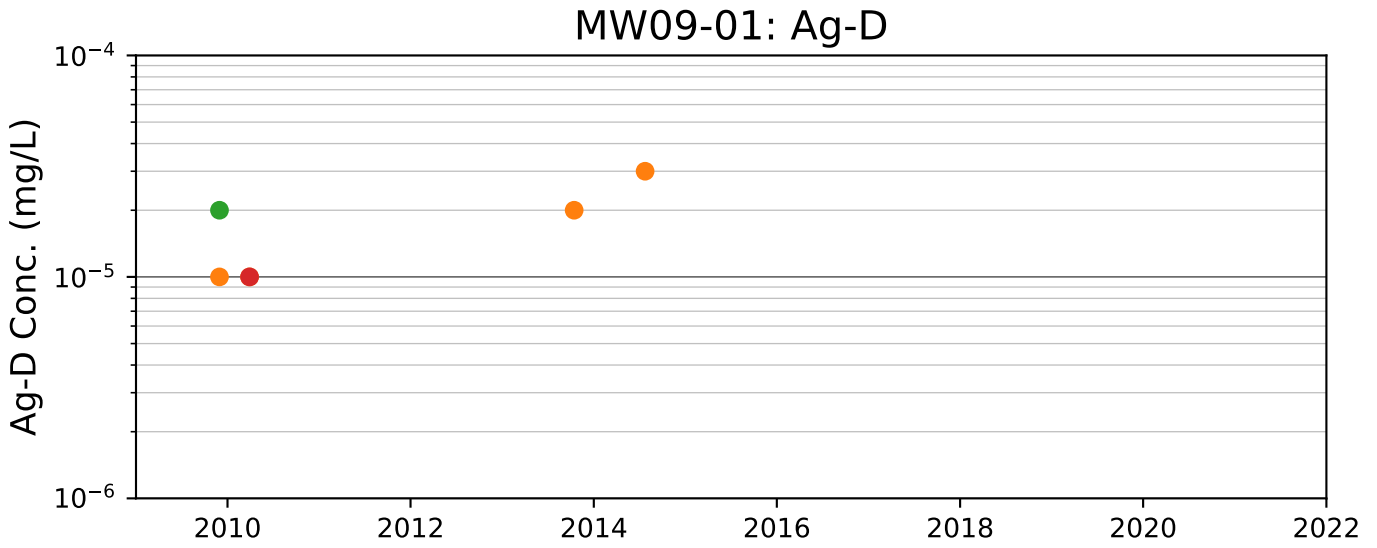
	Ag-D	Al-D	As-D	Cd-D	Cr-D	Cu-D	Pb-D	Mo-D	Ni-D	Se-D	Zn-D	N-NO3	Ammonia	Sulphate
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SPT-2	0.00030	0.30	0.015	0.003	0.0020	0.030	0.012	0.22	0.165	0.0060	0.090	27	0.75	1000
SPT-3	0.00046	0.48	0.025	0.006	0.0030	0.060	0.020	0.34	0.34	0.0093	0.13	45	1.0	4951

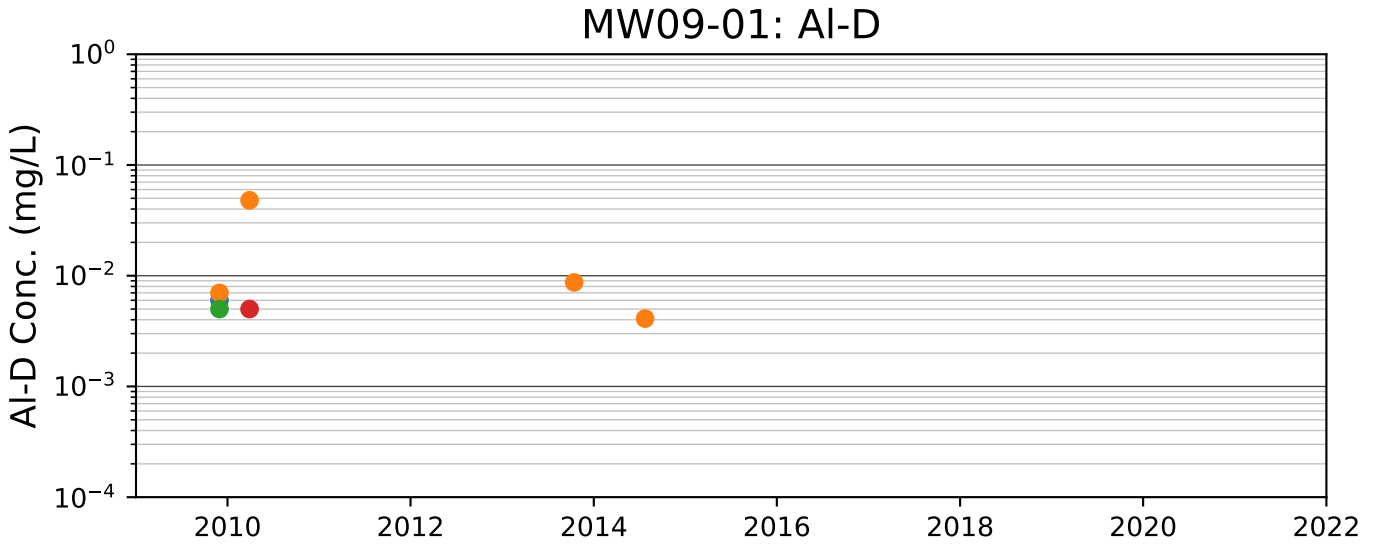
McGinty Creek SPTs

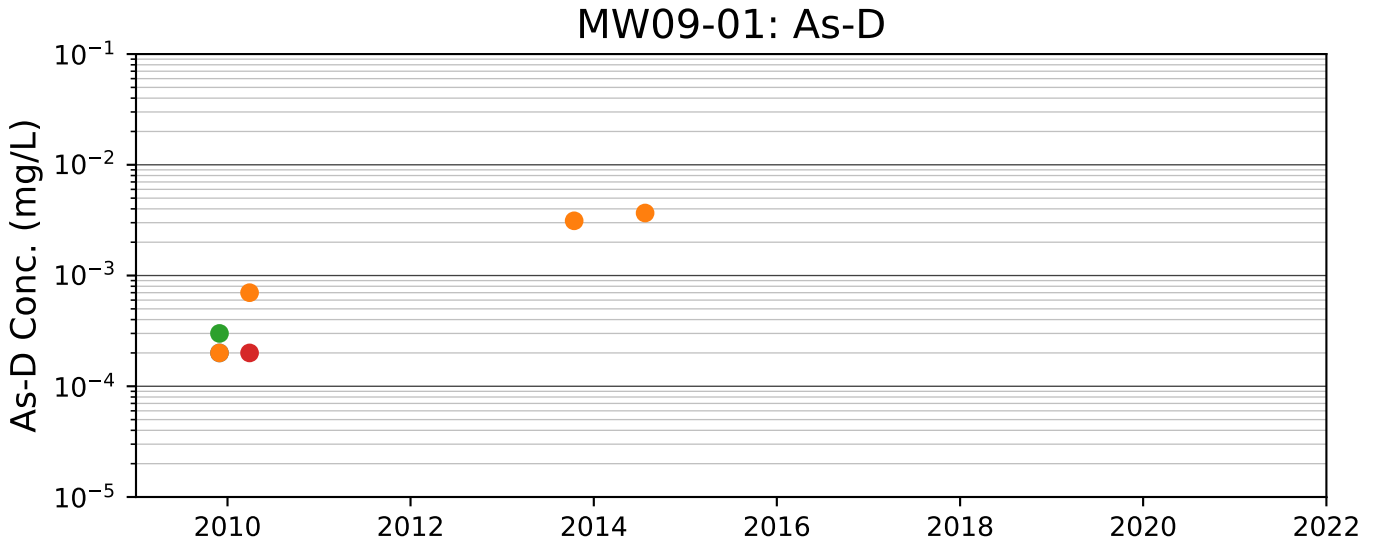
		Ag-D	Al-D	As-D	Cd-D	Cr-D	Cu-D	Pb-D	Mo-D	Ni-D	Se-D	Zn-D	N-NO3	Ammonia	Sulphate
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW09-03-01	SPT-1	0.000010	0.0065	0.00011	0.000075	0.000500	0.00155	0.0001	0.005	0.0021	0.0001	0.013	0.13	0.067	24
	SPT-2	0.000016	0.0101	0.00081	0.000272	0.000575	0.00625	0.0003	0.026	0.0060	0.0015	0.022	0.28	0.133	38
MW09-03-02	SPT-1	0.000018	0.0073	0.00074	0.000031	0.000500	0.00263	0.0001	0.018	0.0009	0.0005	0.010	0.03	0.230	7
	SPT-2	0.000034	0.0095	0.00092	0.000272	0.000796	0.01080	0.0002	0.062	0.0026	0.0040	0.015	0.07	0.282	67
MW09-03-03	SPT-1	0.000010	0.0047	0.00005	0.000023	0.000500	0.00247	0.0001	0.006	0.0005	0.0004	0.008	0.50	0.020	12
	SPT-2	0.000010	0.0075	0.00014	0.000069	0.000500	0.00500	0.0003	0.018	0.0011	0.0004	0.011	0.54	0.058	13

Source: Minto 2017-02 OAMP, pages 21 and 25 (Minto, 2017)

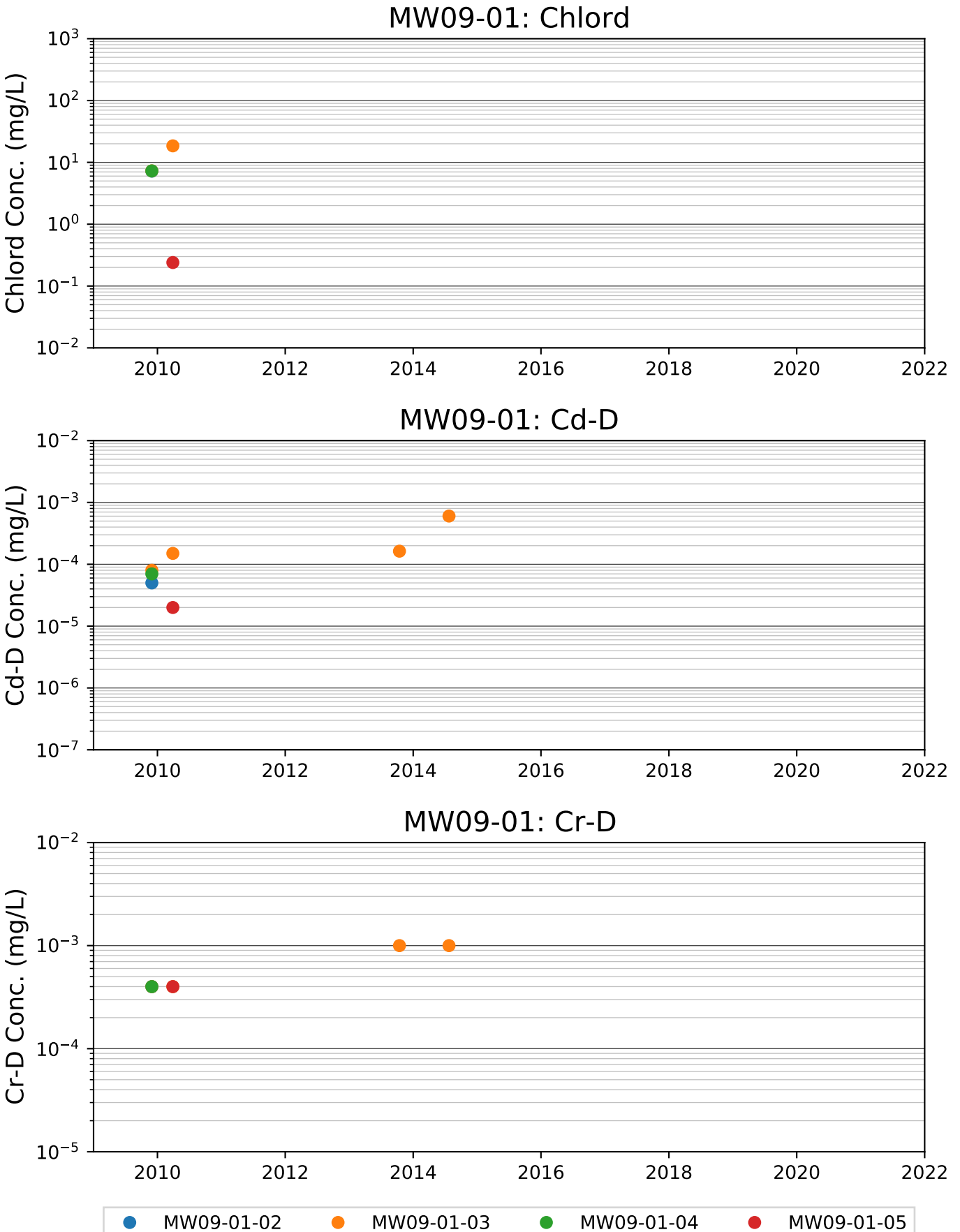
Attachment 2: Groundwater Monitoring Data for All CoCs

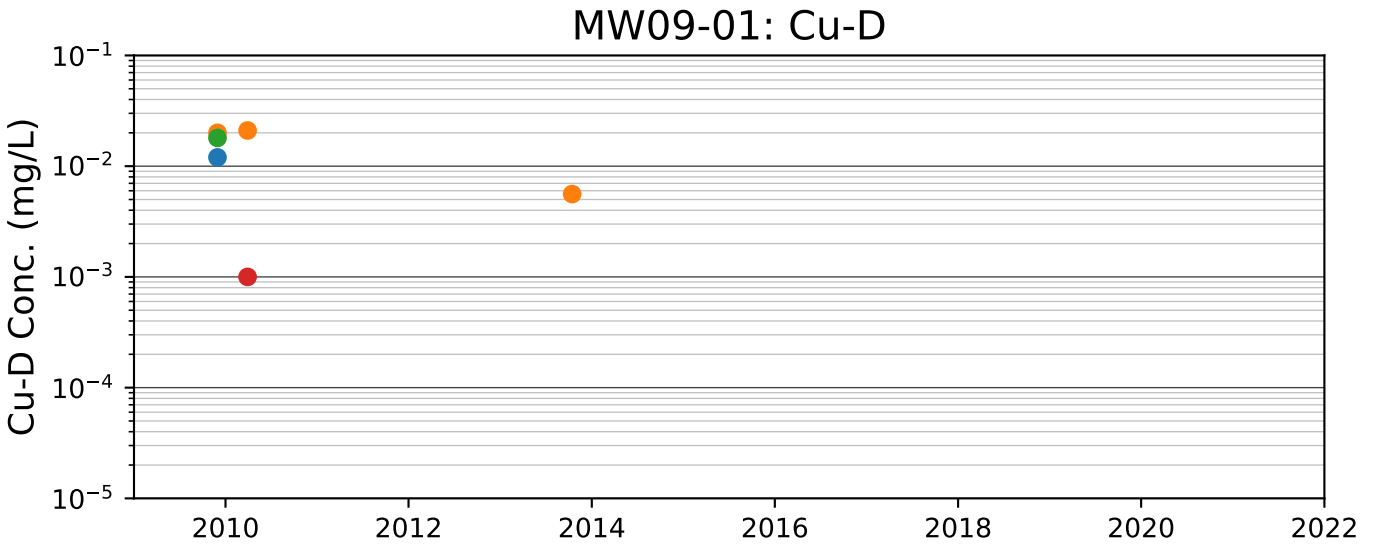

MW09-01: Ag-D
Ag-D Conc. (mg/L)
10^{-4}
10^{-5}
10^{-6}
2010
2012
2014
2016
2018
2020
2022

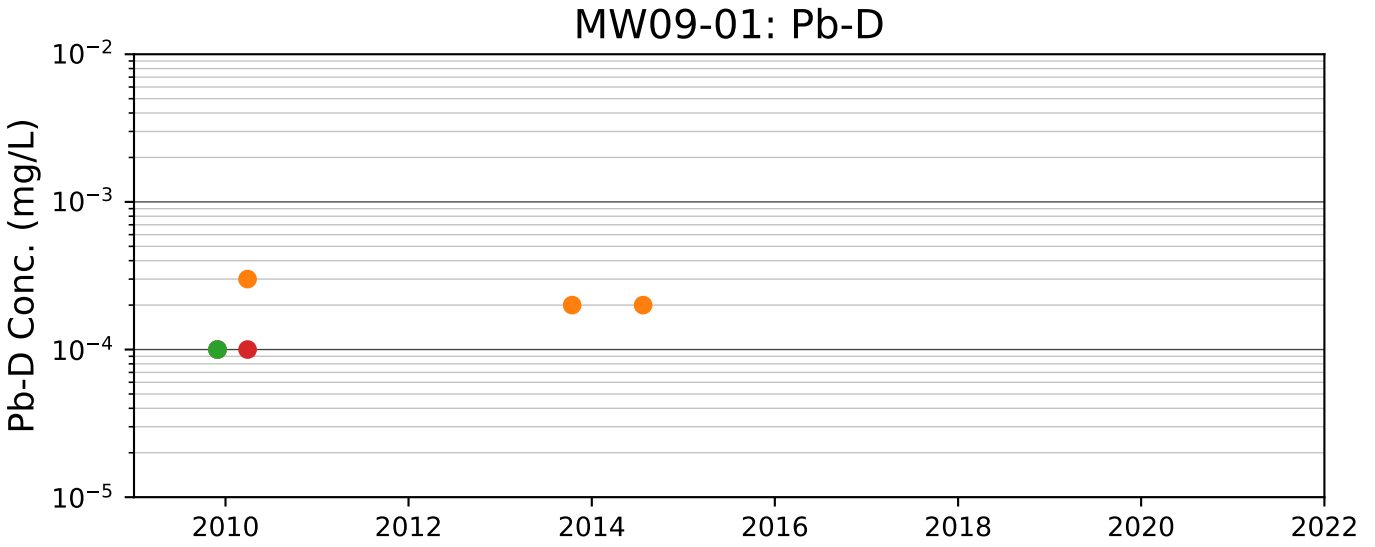

MW09-01: Al-D
Al-D Conc. (mg/L)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022

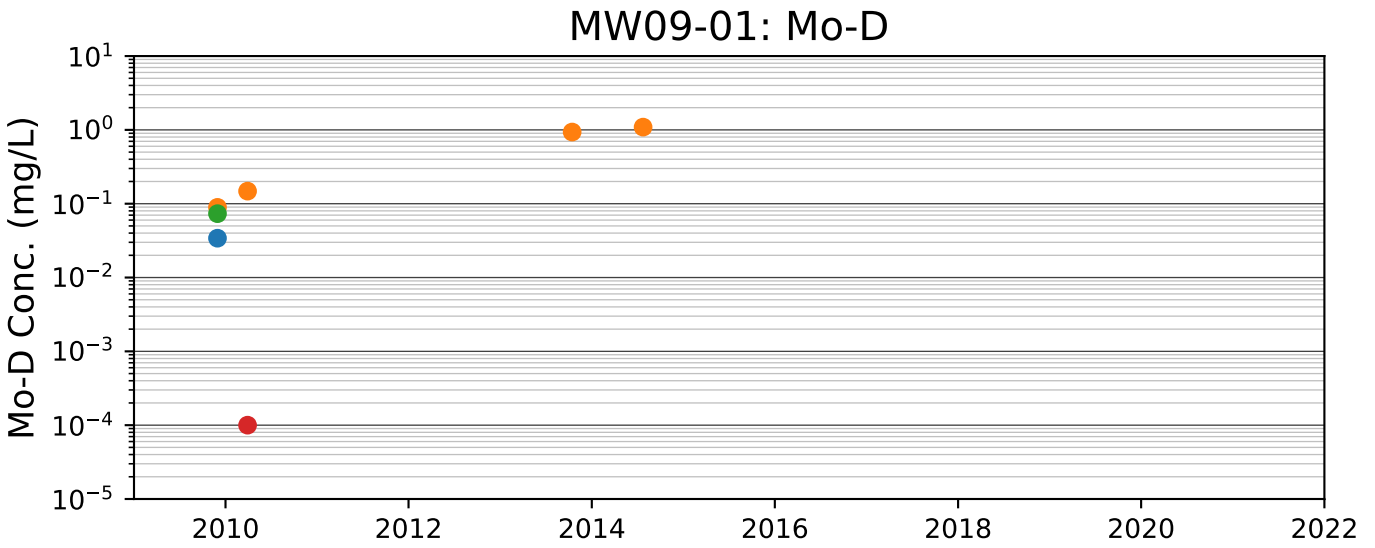

MW09-01: As-D
As-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

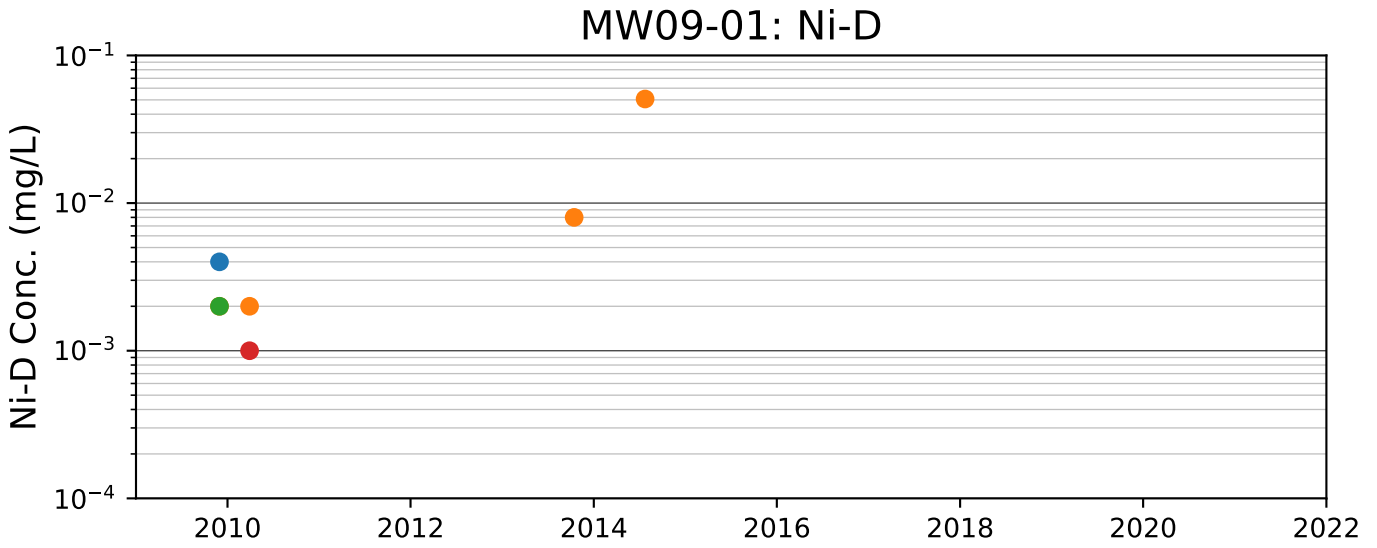
MW09-01-02
MW09-01-03
MW09-01-04
MW09-01-05

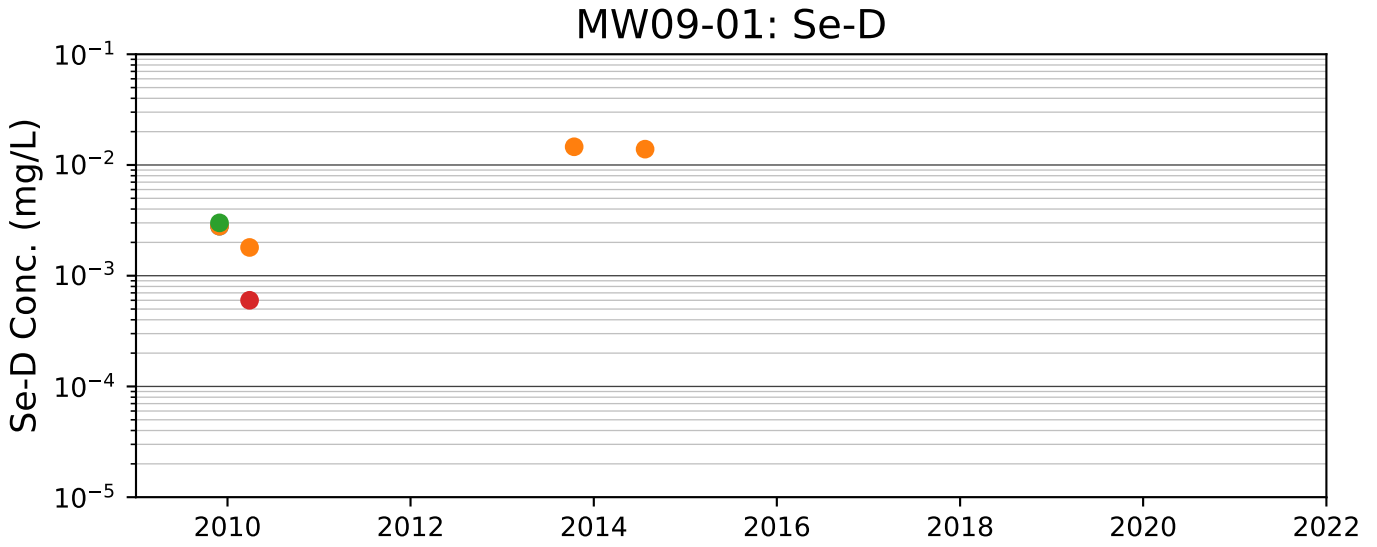

MW09-01: Chlord
Chlord Conc. (mg/L)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022
MW09-01: Cd-D
Cd-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
2010
2012
2014
2016
2018
2020
2022
MW09-01: Cr-D
Cr-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW09-01-02
MW09-01-03
MW09-01-04
MW09-01-05

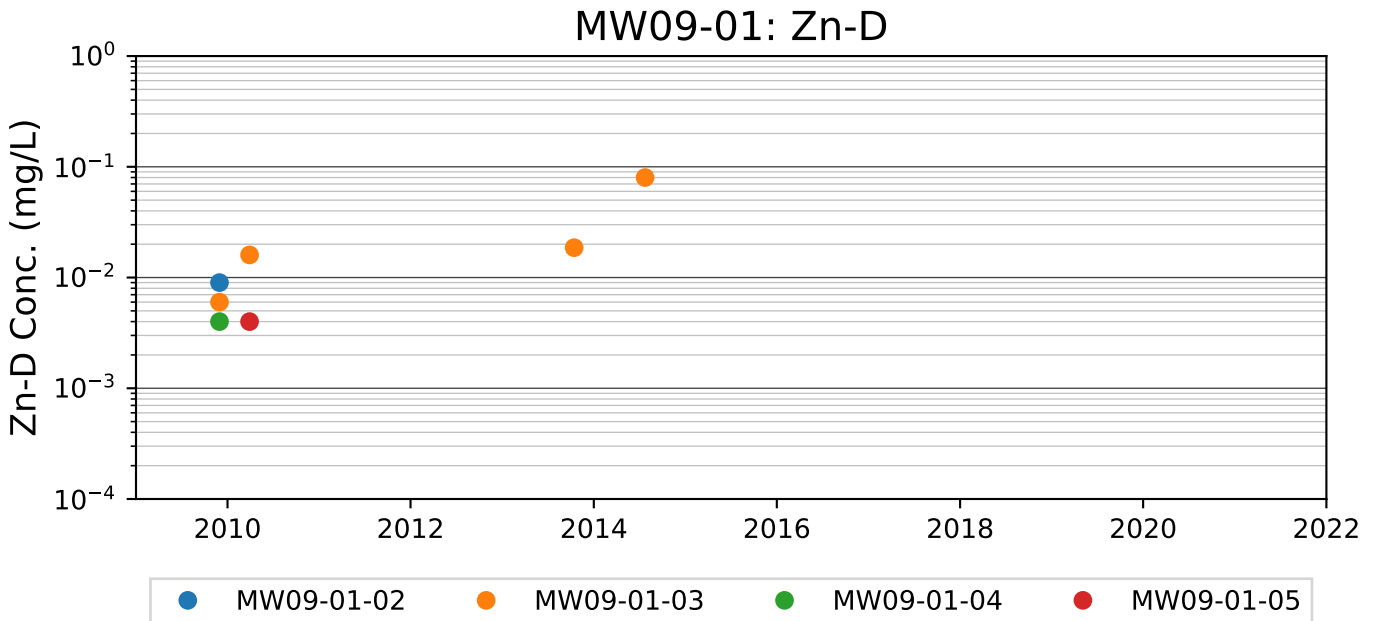

MW09-01: Cu-D
Cu-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

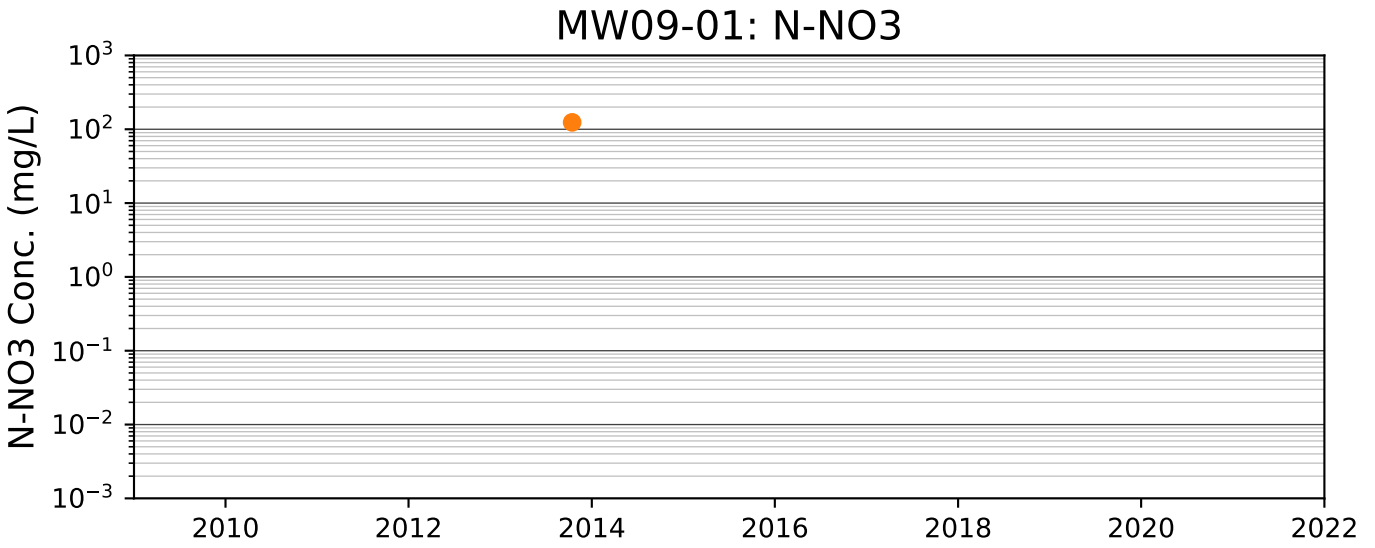

MW09-01: Pb-D
Pb-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

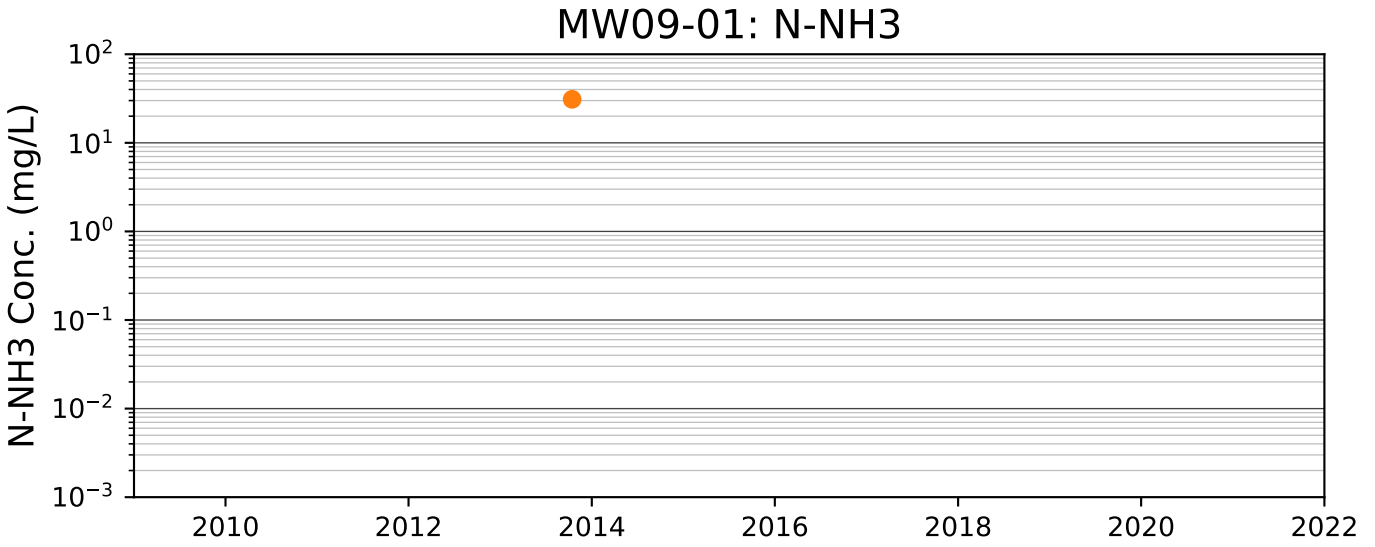

MW09-01: Mo-D
Mo-D Conc. (mg/L)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW09-01-02
MW09-01-03
MW09-01-04
MW09-01-05

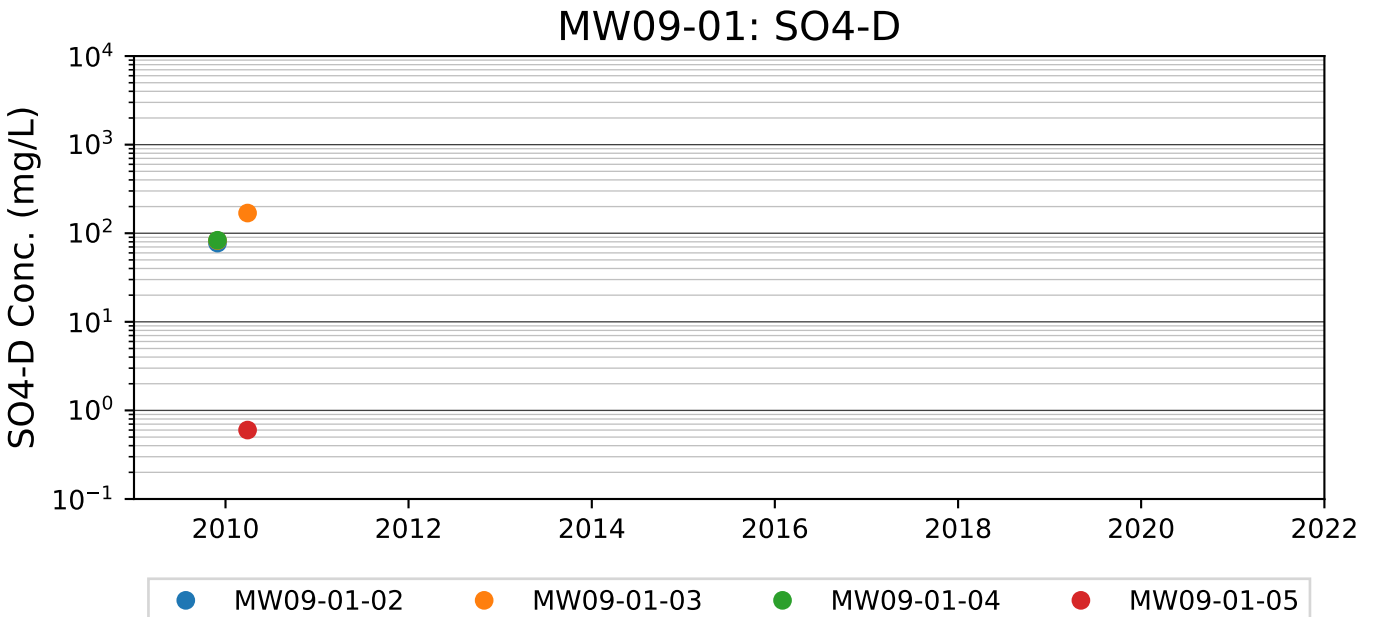

MW09-01: Ni-D
Ni-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022

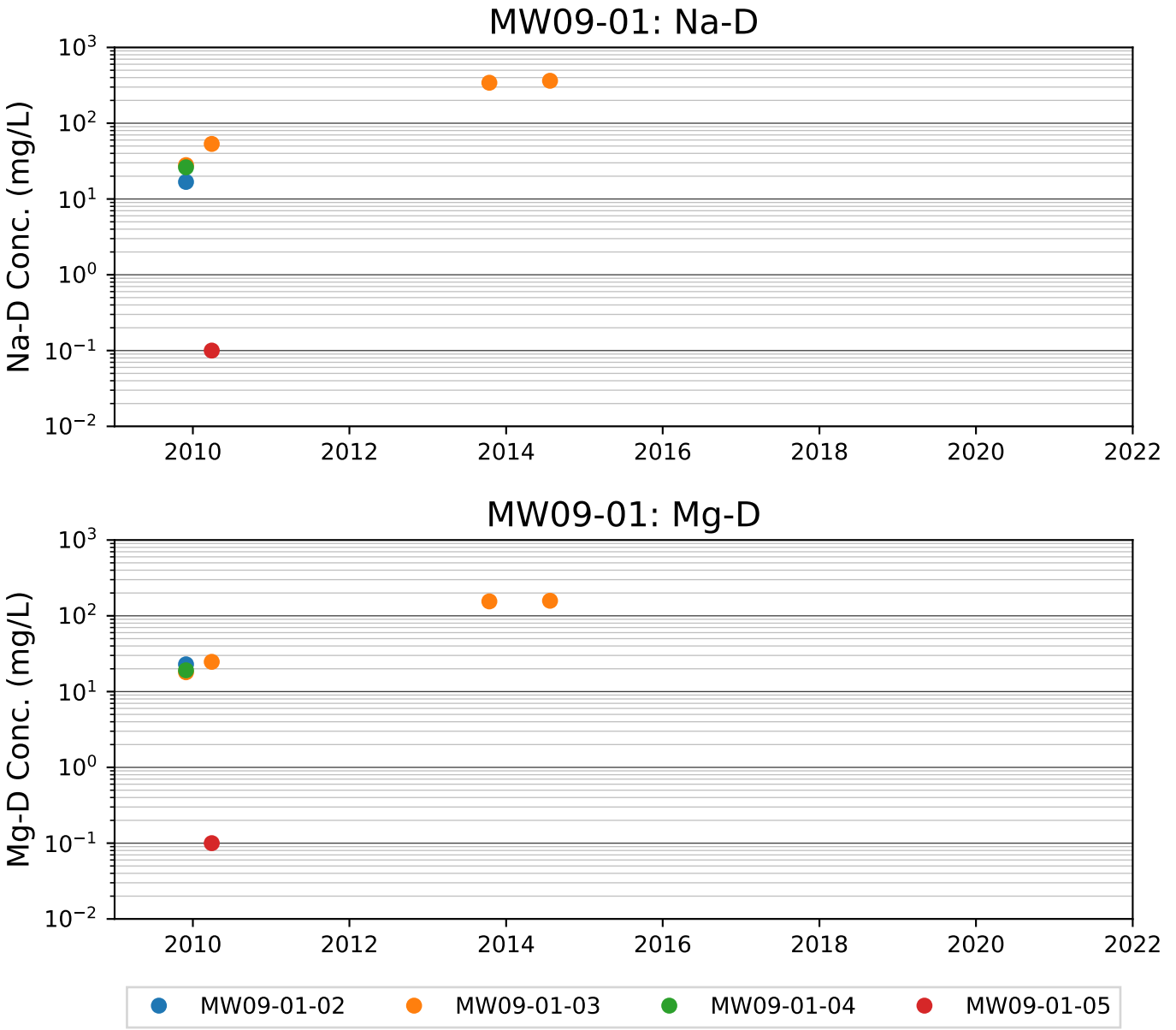

MW09-01: Se-D
Se-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

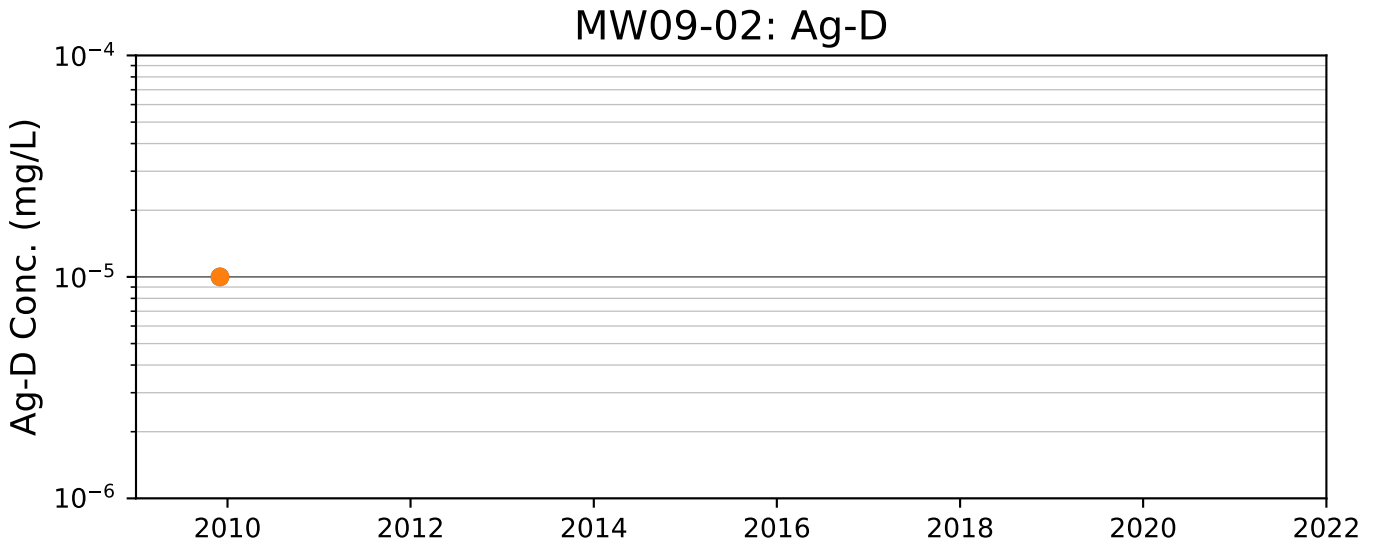

MW09-01: Zn-D
Zn-D Conc. (mg/L)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022
MW09-01-02
MW09-01-03
MW09-01-04
MW09-01-05

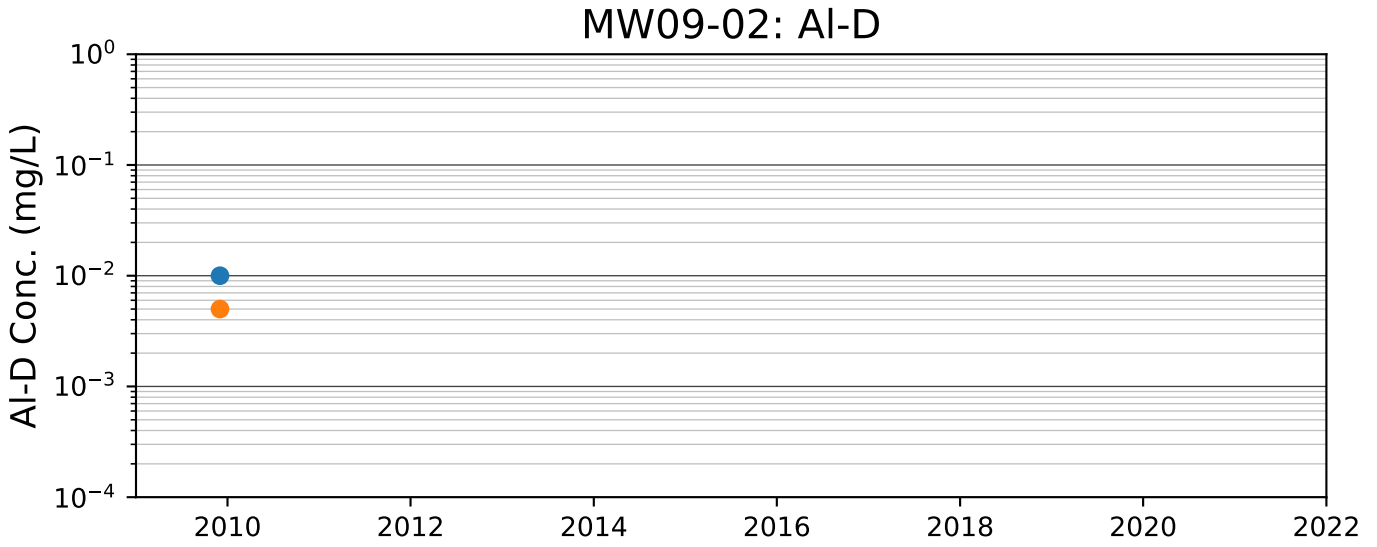

MW09-01: N-NO3
N-NO3 Conc. (mg/L)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
2010
2012
2014
2016
2018
2020
2022

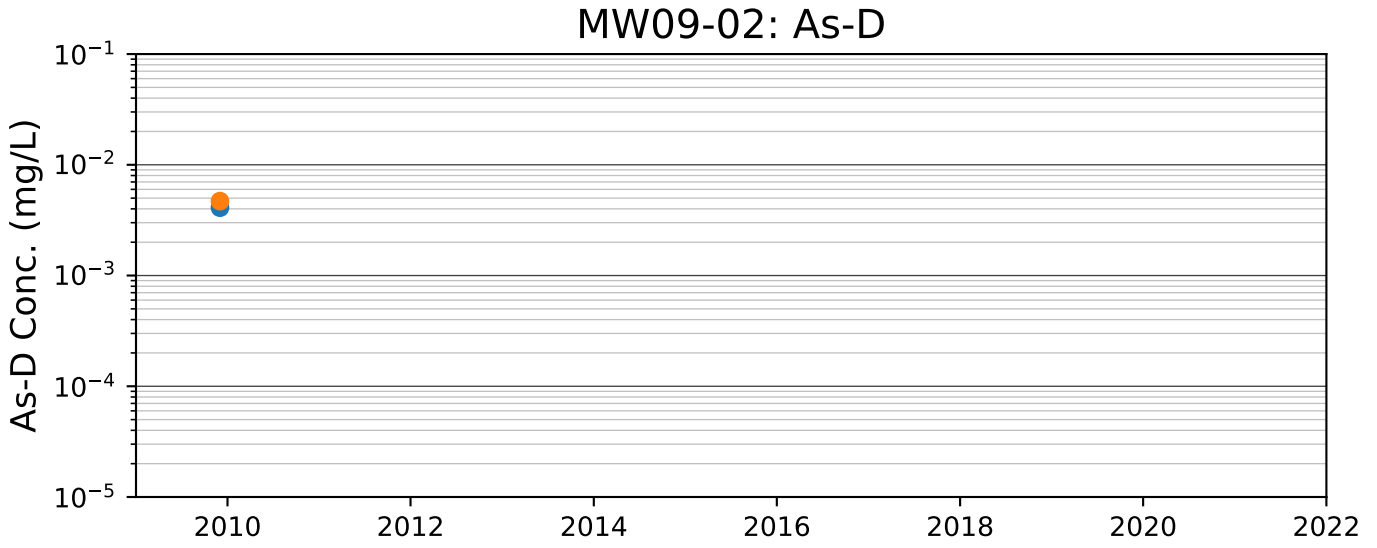

MW09-01: N-NH3
N-NH3 Conc. (mg/L)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
2010
2012
2014
2016
2018
2020
2022

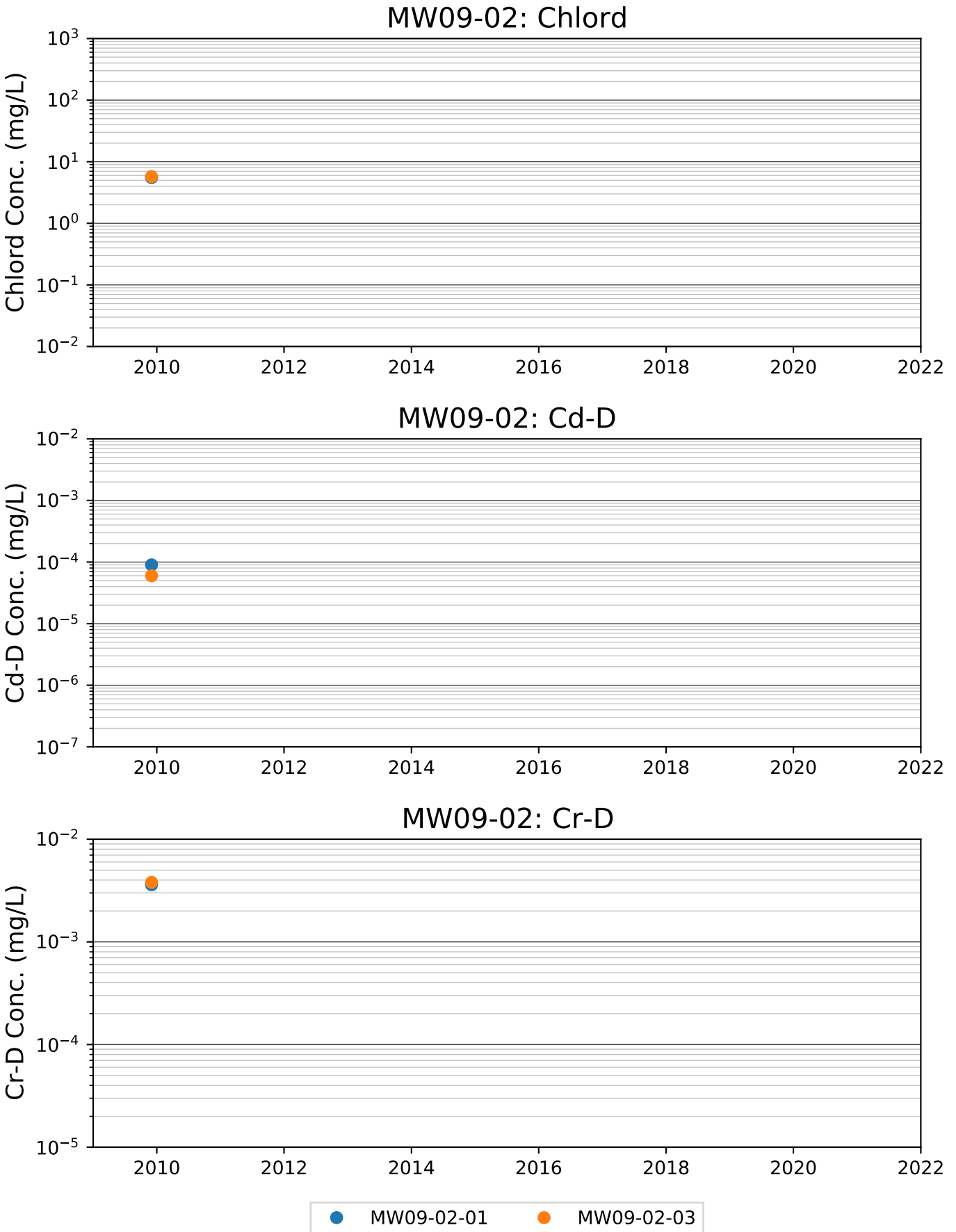

MW09-01: SO4-D
SO4-D Conc. (mg/L)
10^{4}
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
2010
2012
2014
2016
2018
2020
2022
MW09-01-02
MW09-01-03
MW09-01-04
MW09-01-05

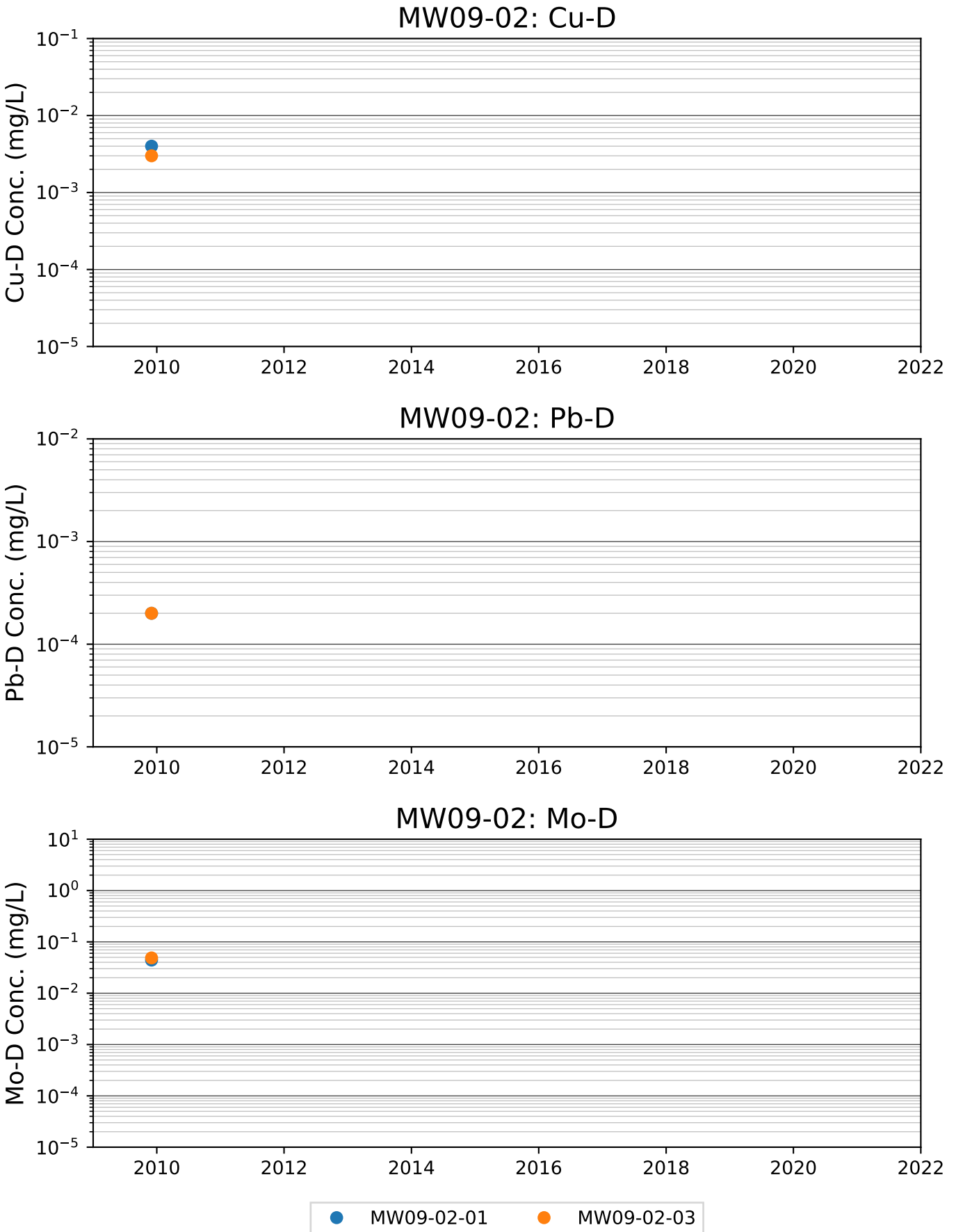

MW09-01: Na-D
Na-D Conc. (mg/L)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022
MW09-01: Mg-D
Mg-D Conc. (mg/L)
MW09-01-02
MW09-01-03
MW09-01-04
MW09-01-05

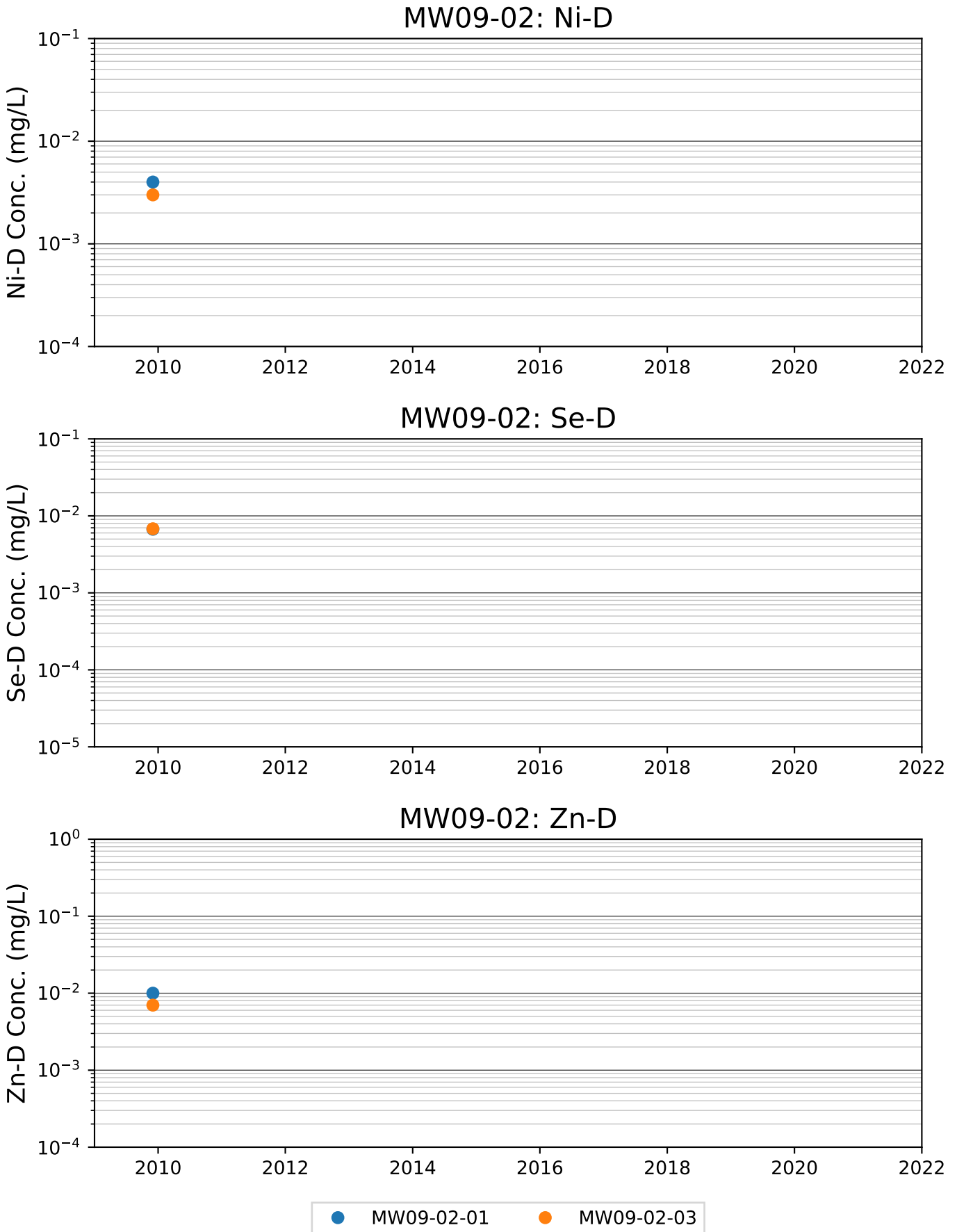

MW09-02: Ag-D
Ag-D Conc. (mg/L)
10^{-4}
10^{-5}
10^{-6}
2010
2012
2014
2016
2018
2020
2022

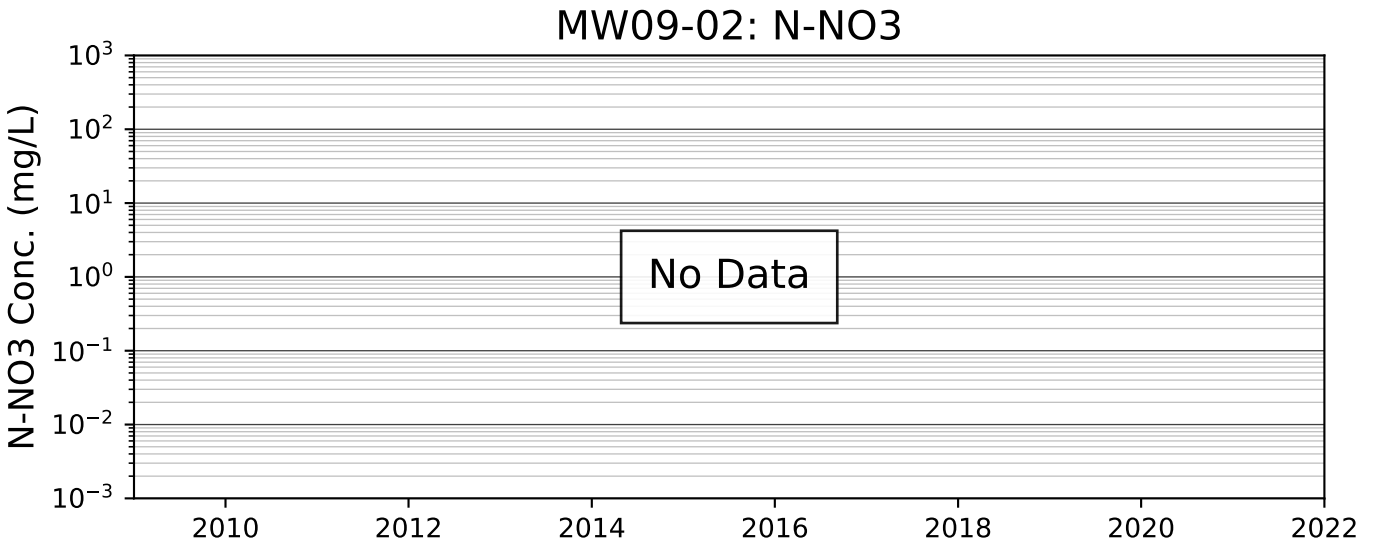

MW09-02: Al-D
Al-D Conc. (mg/L)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022

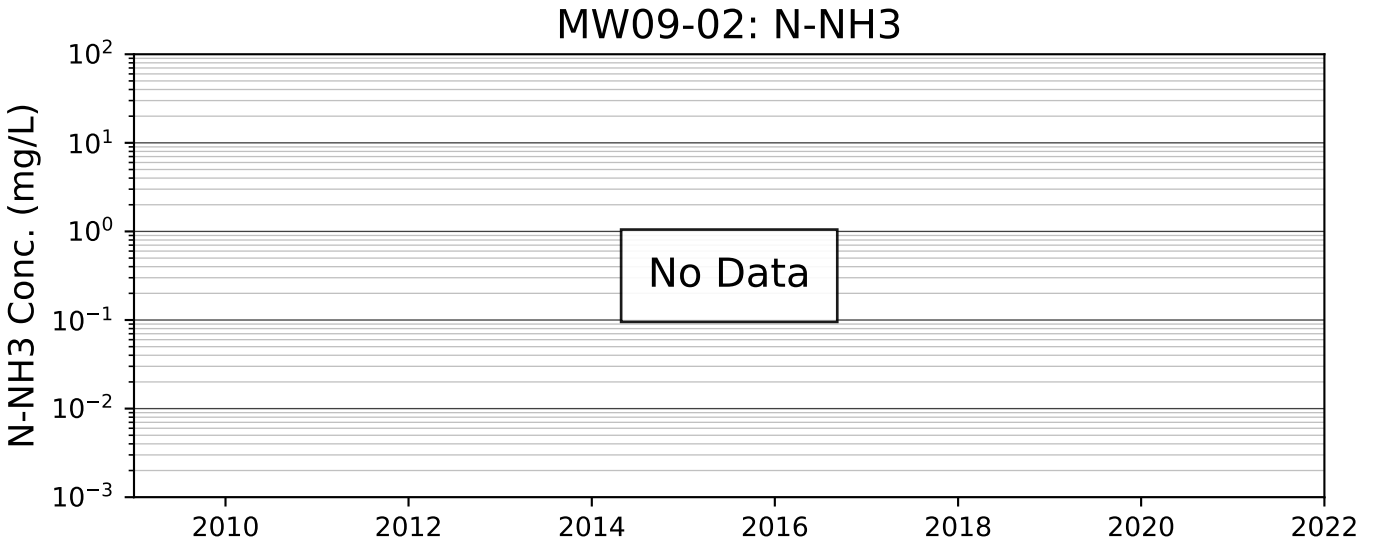

MW09-02: As-D
As-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW09-02-01
MW09-02-03

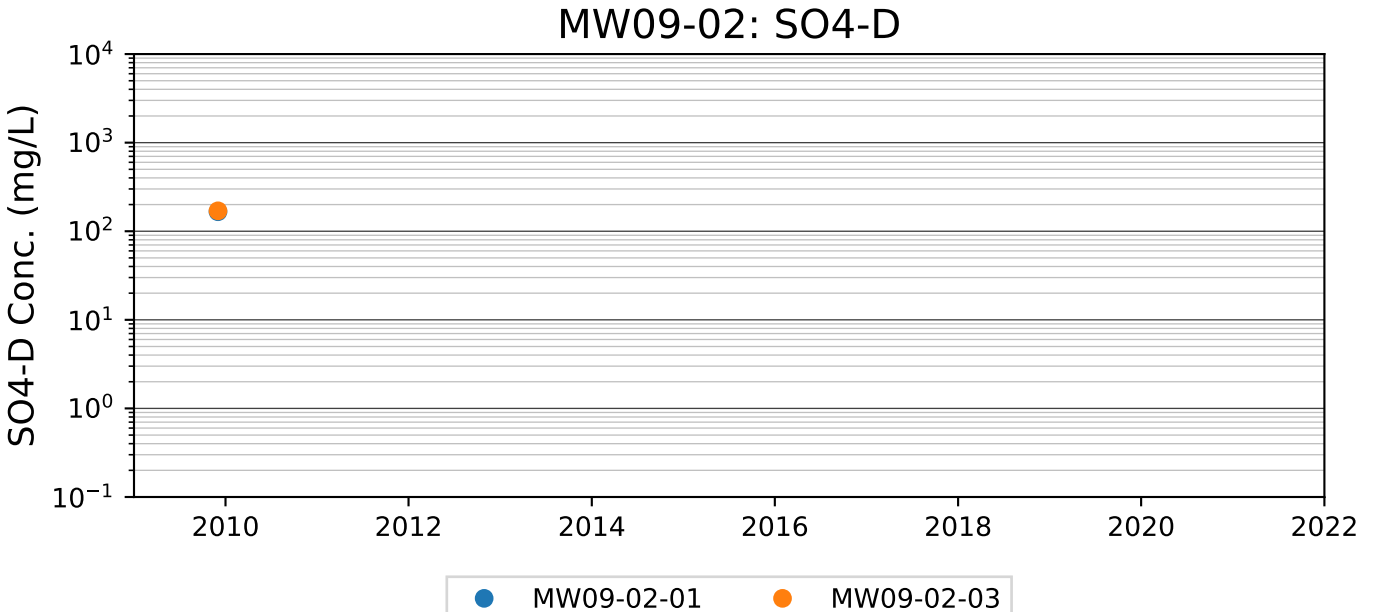

MW09-02: Chlord
Chlord Conc. (mg/L)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022
MW09-02: Cd-D
Cd-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
2010
2012
2014
2016
2018
2020
2022
MW09-02: Cr-D
Cr-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW09-02-01
MW09-02-03

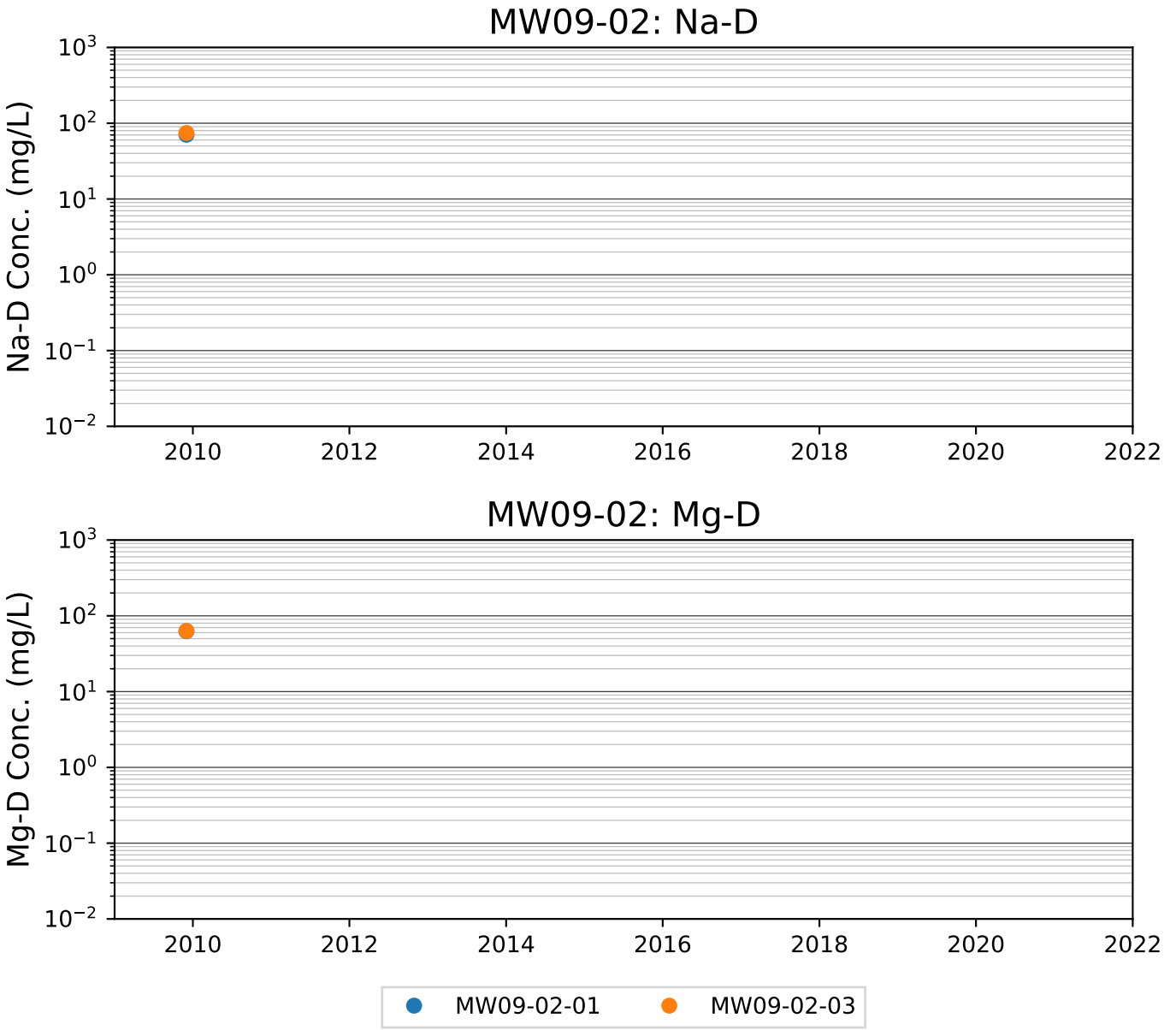

MW09-02: Cu-D
Cu-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW09-02: Pb-D
Pb-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW09-02: Mo-D
Mo-D Conc. (mg/L)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW09-02-01
MW09-02-03

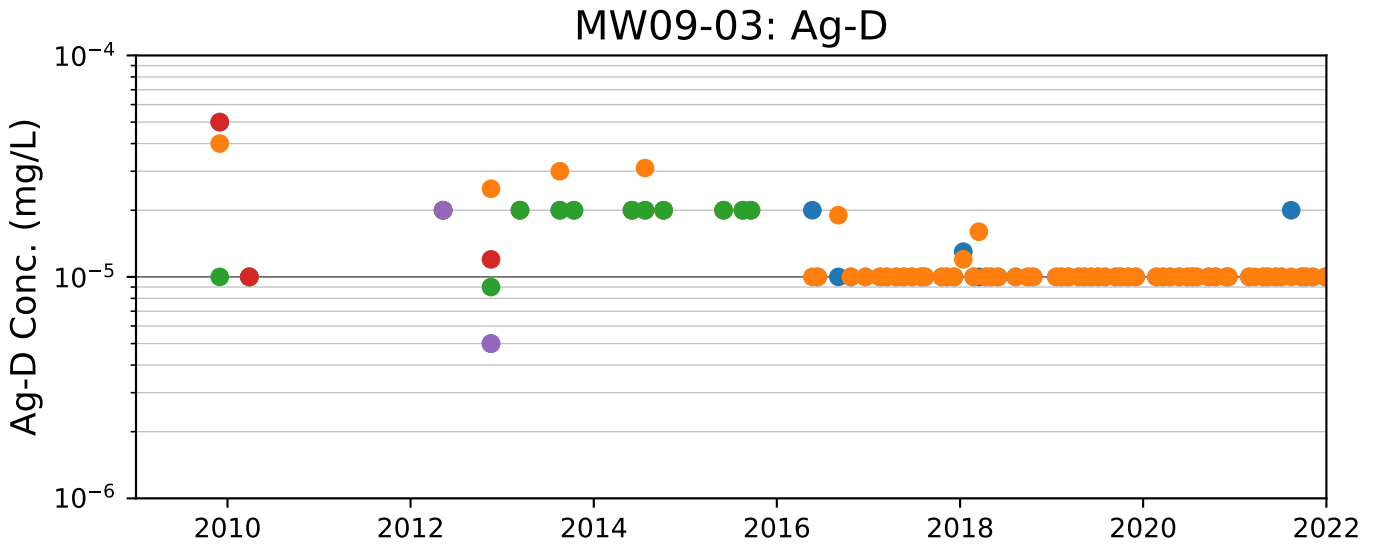

MW09-02: Ni-D
Ni-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022
MW09-02: Se-D
Se-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW09-02: Zn-D
Zn-D Conc. (mg/L)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022
MW09-02-01
MW09-02-03

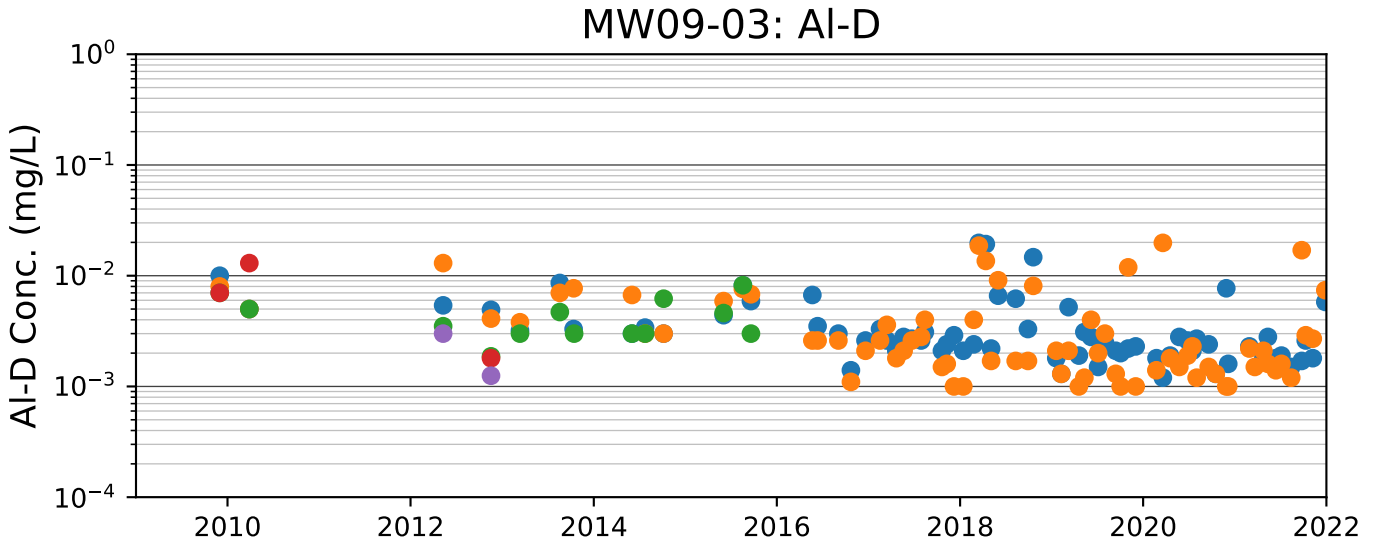

MW09-02: N-NO3
N-NO3 Conc. (mg/L)
No Data
2010
2012
2014
2016
2018
2020
2022

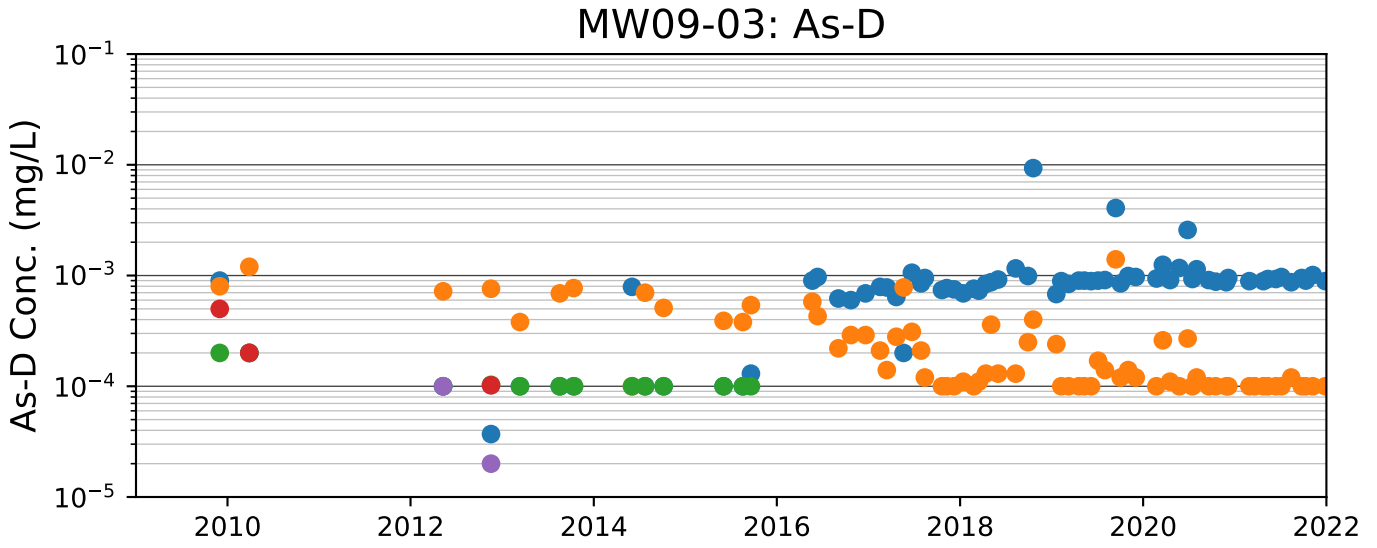

MW09-02: N-NH3
N-NH3 Conc. (mg/L)
No Data
2010
2012
2014
2016
2018
2020
2022

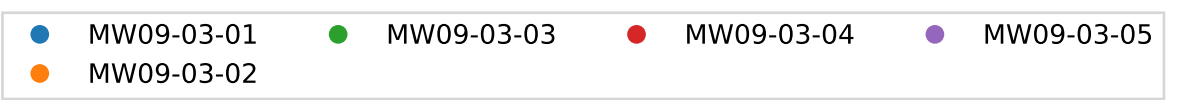

MW09-02: SO4-D
SO4-D Conc. (mg/L)
2010
2012
2014
2016
2018
2020
2022
MW09-02-01
MW09-02-03

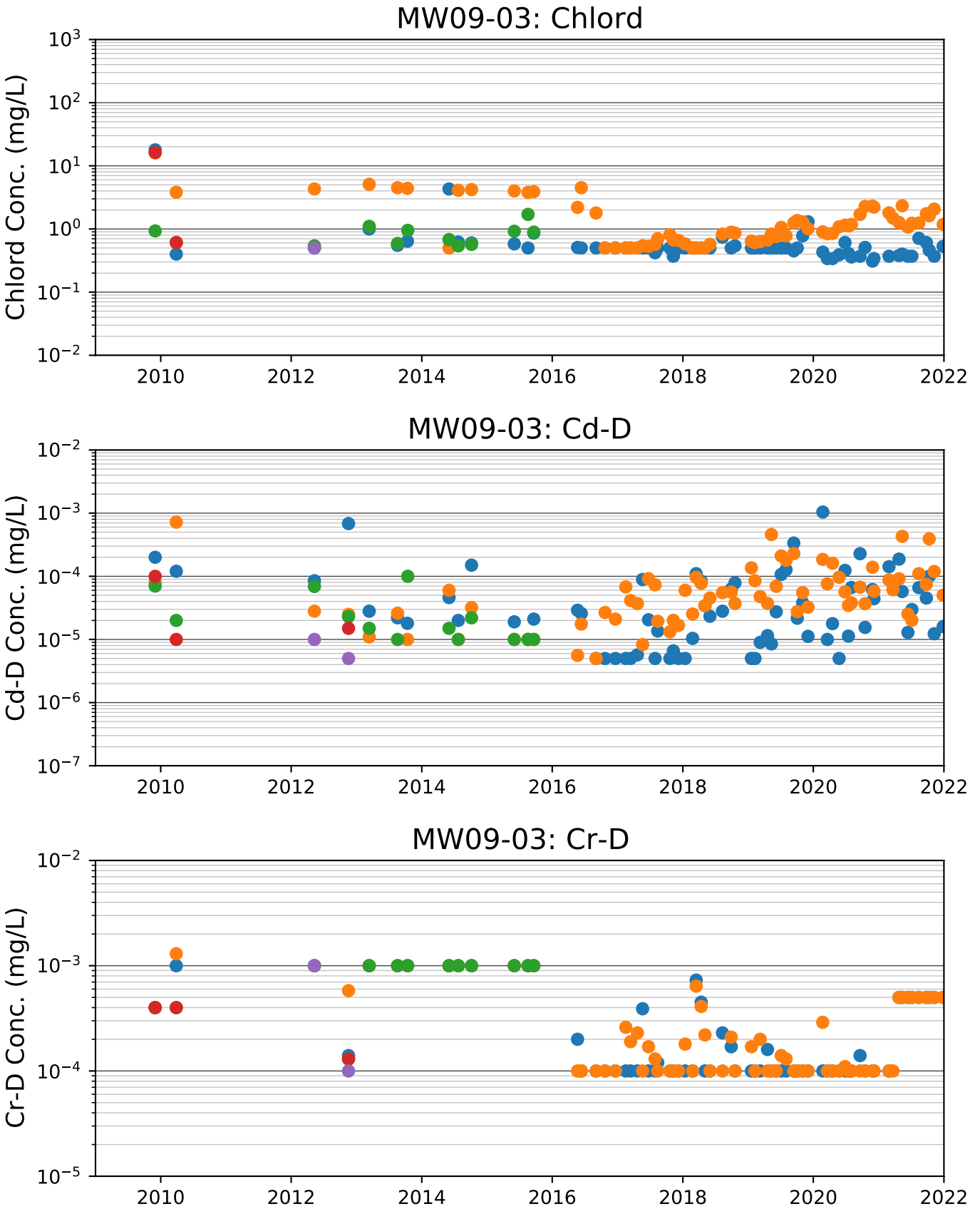

MW09-02: Na-D
Na-D Conc. (mg/L)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022
MW09-02: Mg-D
Mg-D Conc. (mg/L)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022
MW09-02-01
MW09-02-03

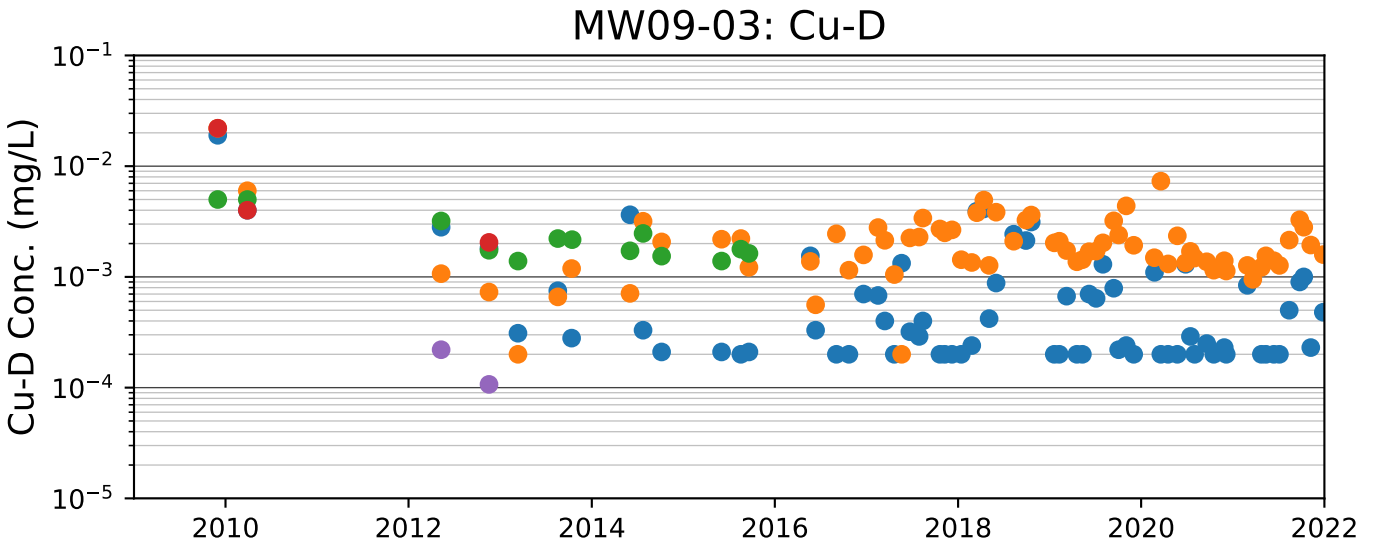

MW09-03: Ag-D
Ag-D Conc. (mg/L)
10^{-4}
10^{-5}
10^{-6}
2010
2012
2014
2016
2018
2020
2022

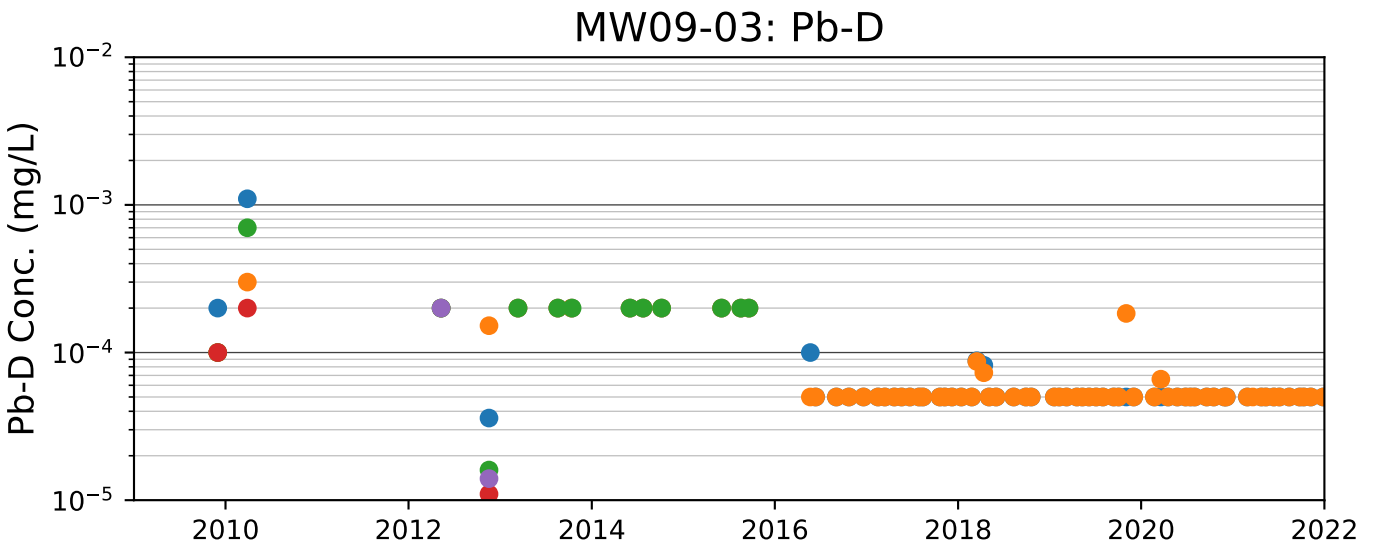

MW09-03: Al-D
Al-D Conc. (mg/L)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022

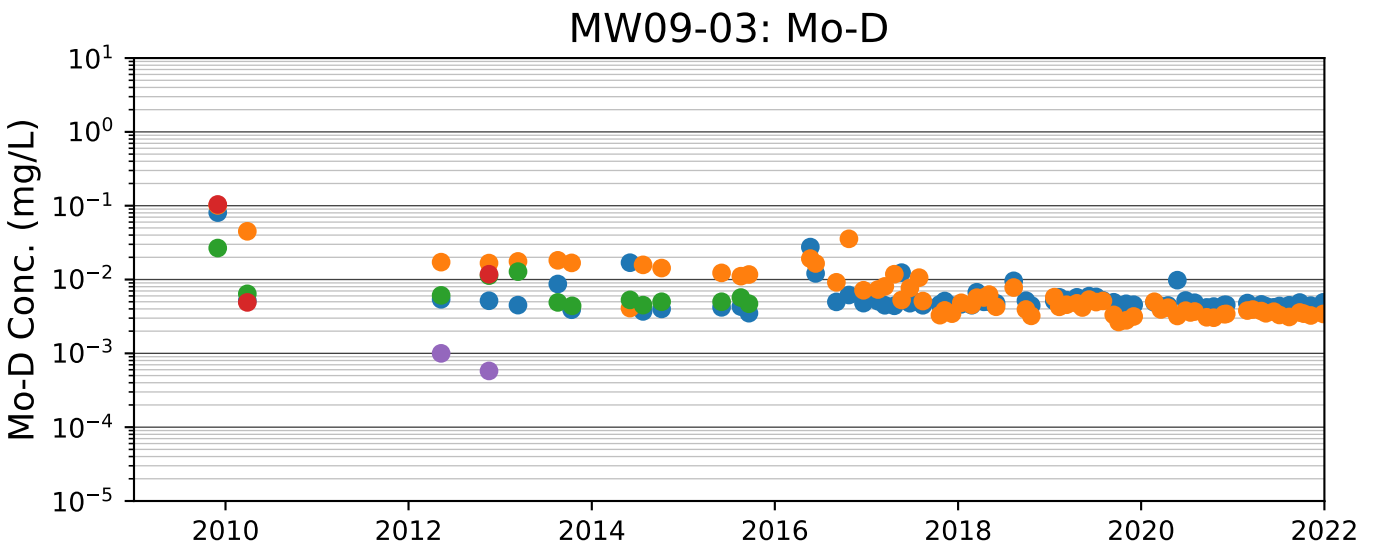

MW09-03: As-D
As-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

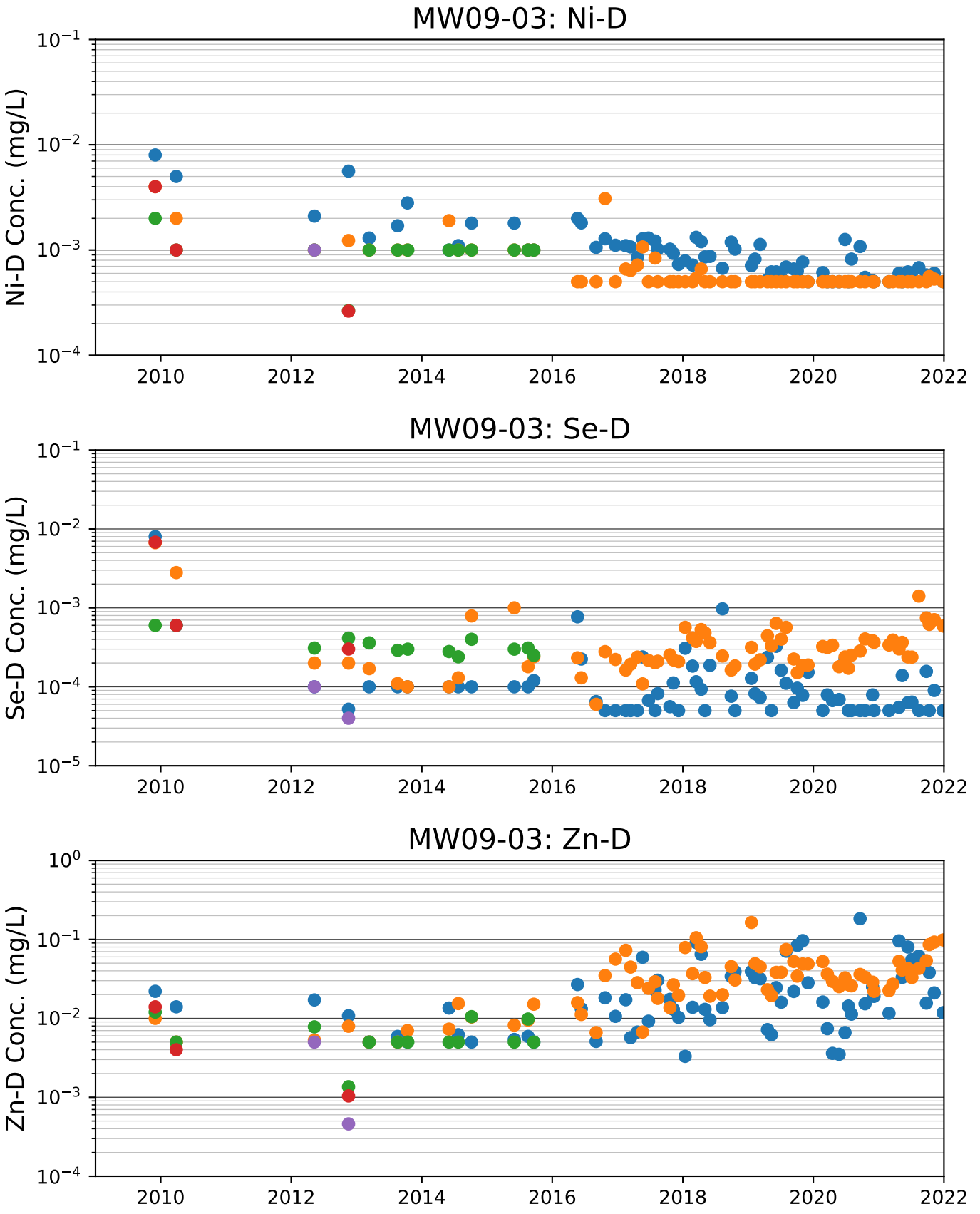

MW09-03-01
MW09-03-02
MW09-03-03
MW09-03-04
MW09-03-05

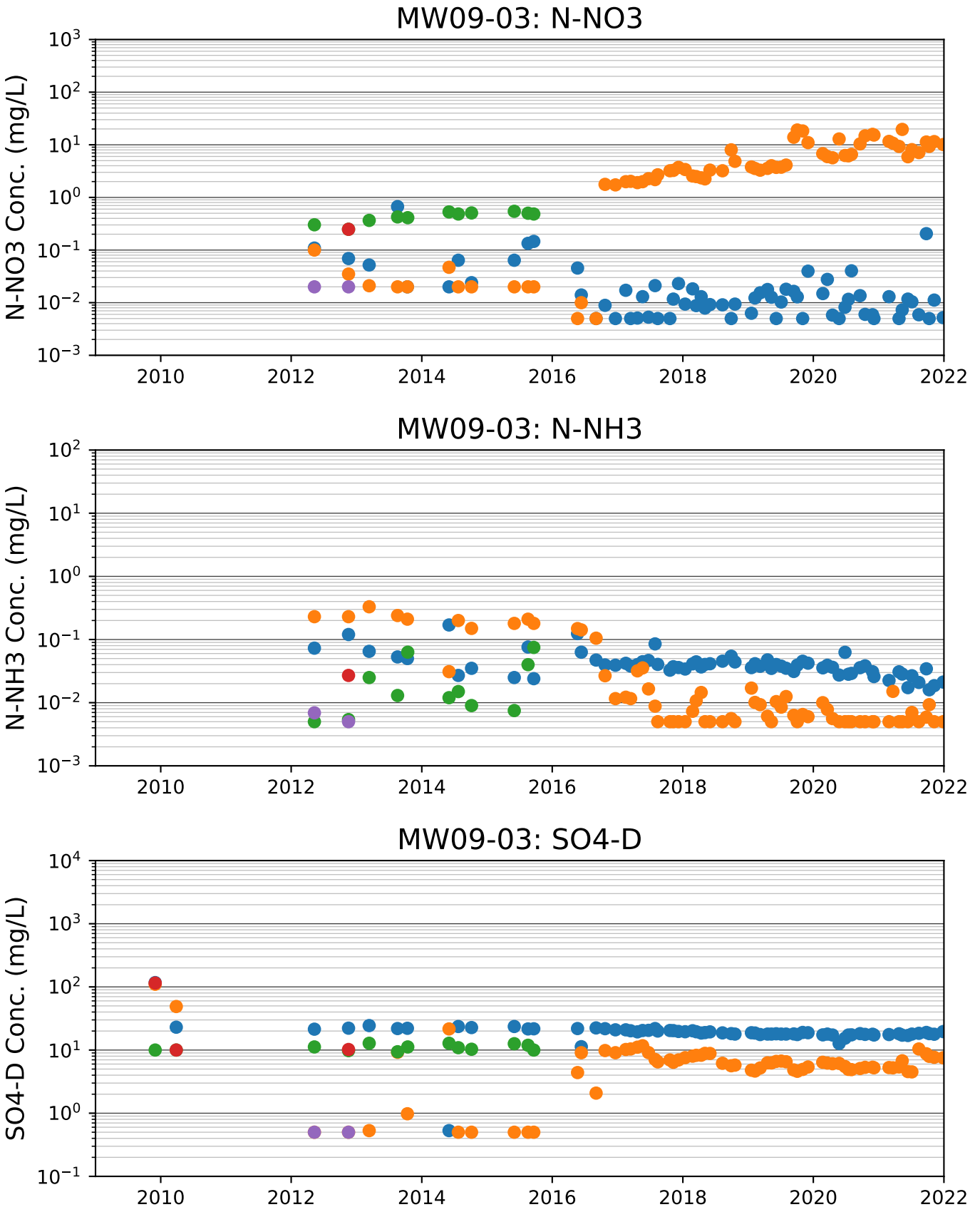

MW09-03: Chlord
Chlord Conc. (mg/L)
MW09-03: Cd-D
Cd-D Conc. (mg/L)
MW09-03: Cr-D
Cr-D Conc. (mg/L)
2010
2012
2014
2016
2018
2020
2022
MW09-03-01
MW09-03-02
MW09-03-03
MW09-03-04
MW09-03-05

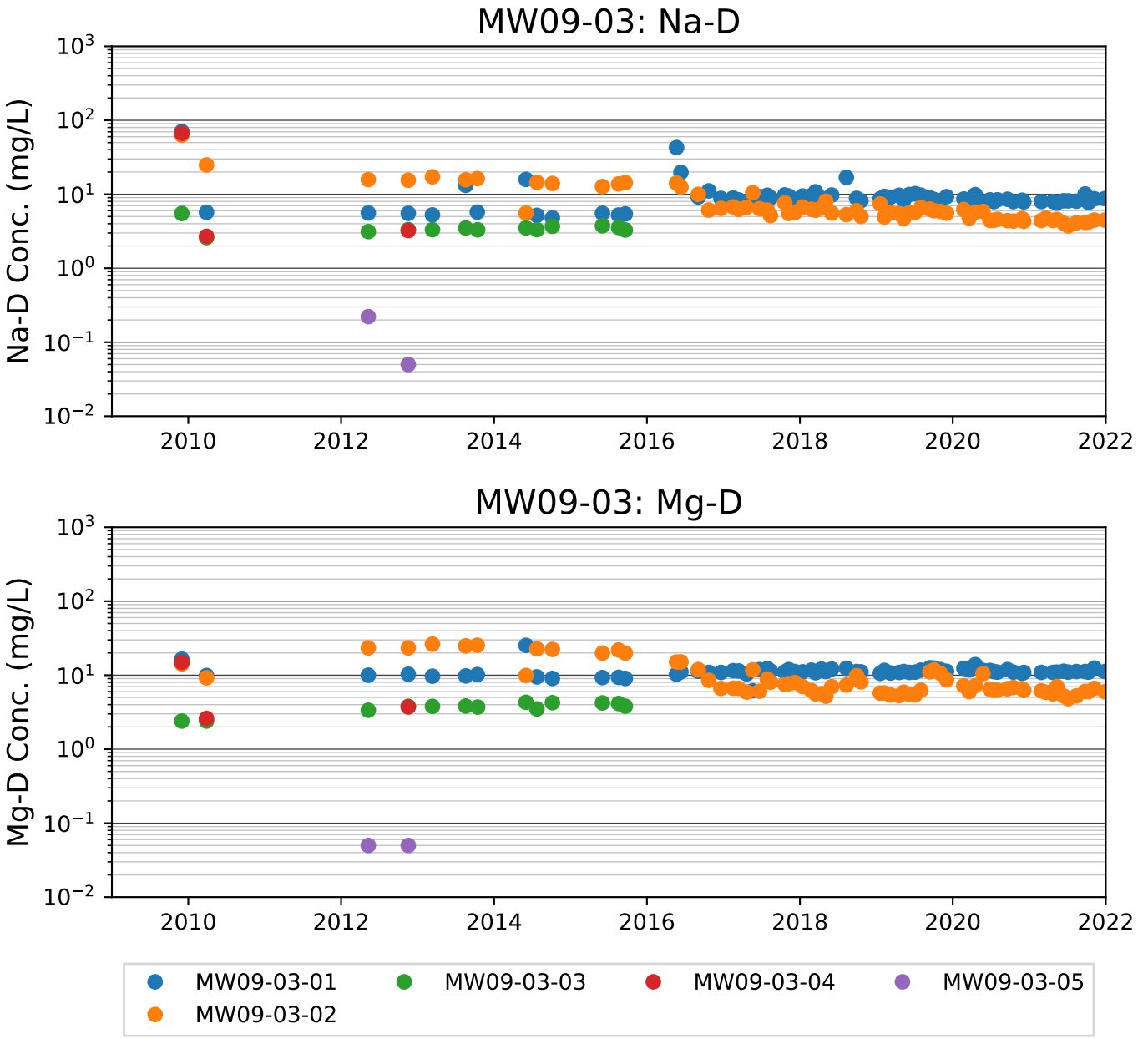

MW09-03: Cu-D
Cu-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

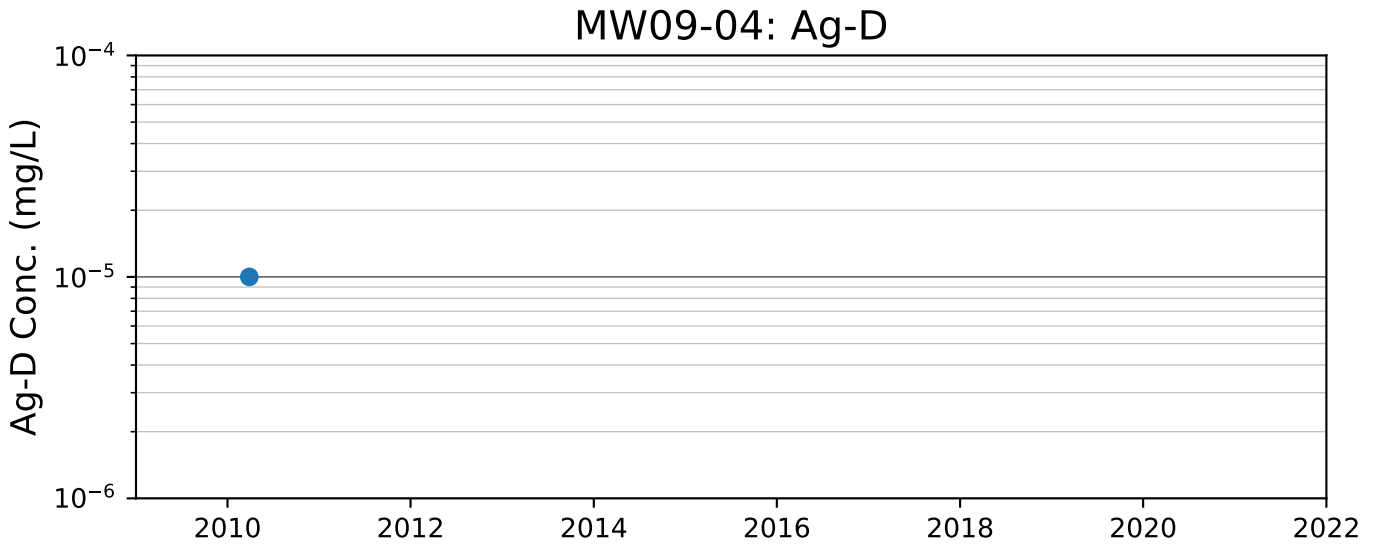

MW09-03: Pb-D
Pb-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

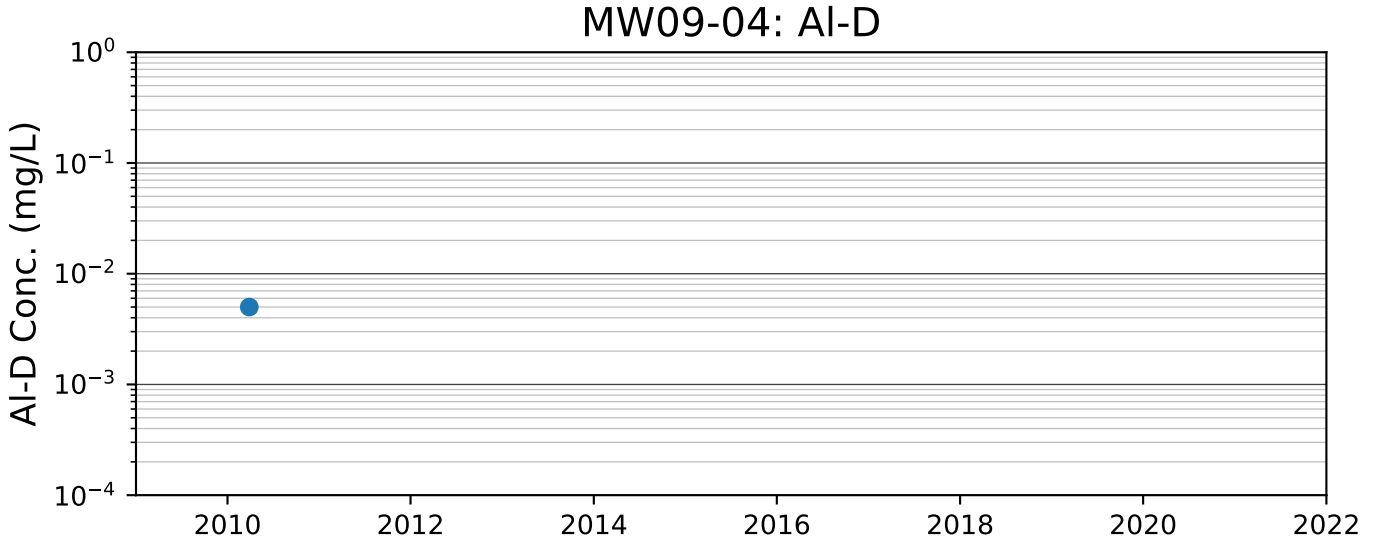

MW09-03: Mo-D
Mo-D Conc. (mg/L)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW09-03-01
MW09-03-02
MW09-03-03
MW09-03-04
MW09-03-05

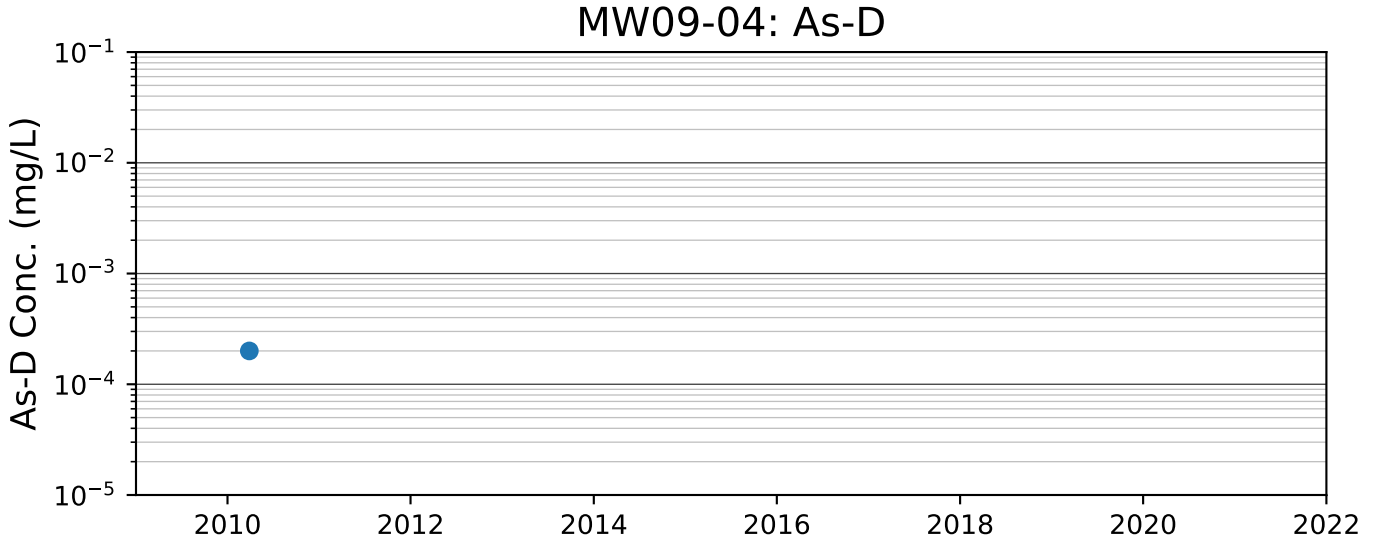

MW09-03: Ni-D
Ni-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022
MW09-03: Se-D
Se-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW09-03: Zn-D
Zn-D Conc. (mg/L)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022
MW09-03-01
MW09-03-02
MW09-03-03
MW09-03-04
MW09-03-05

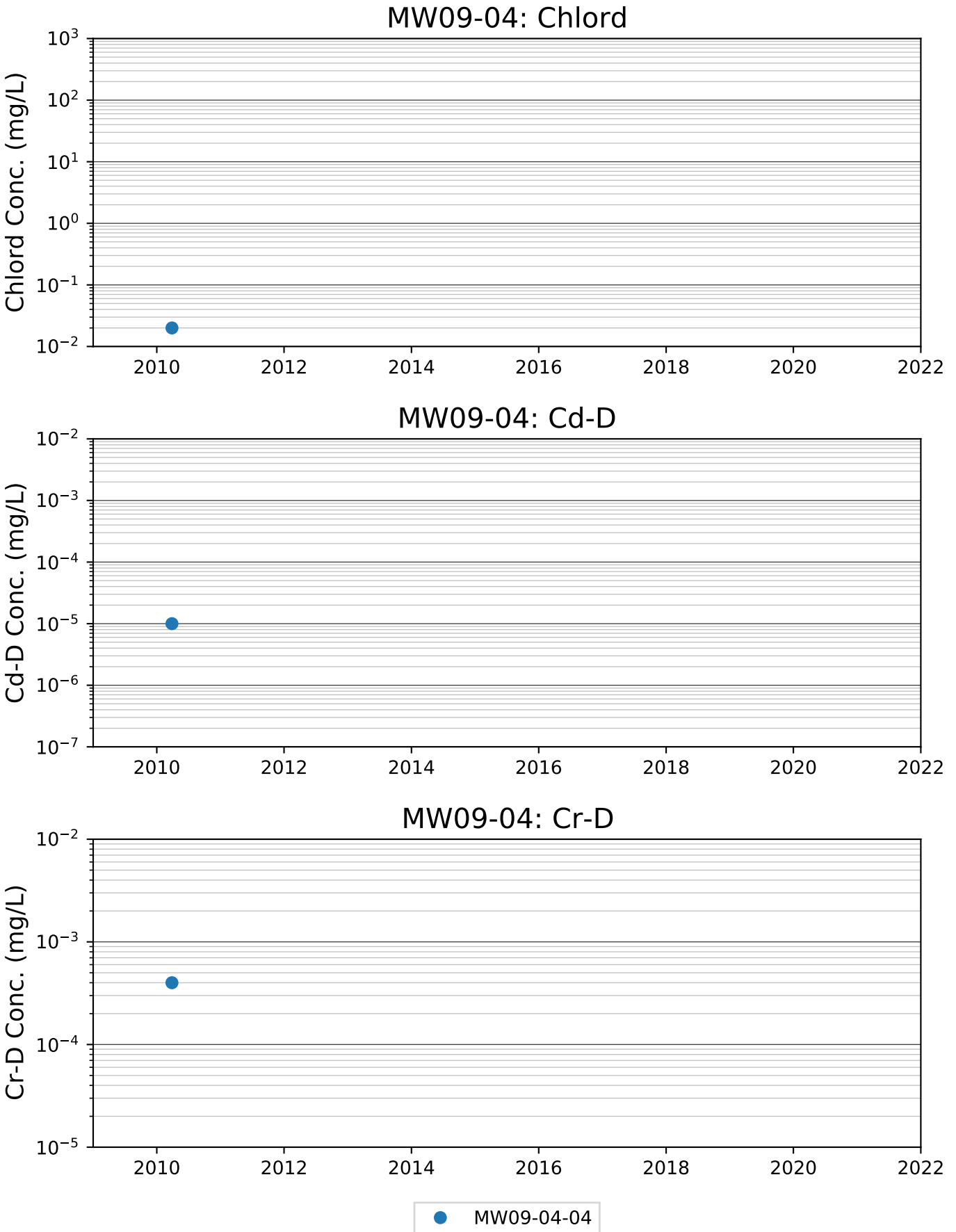

MW09-03: N-NO3
N-NO3 Conc. (mg/L)
MW09-03: N-NH3
N-NH3 Conc. (mg/L)
MW09-03: SO4-D
SO4-D Conc. (mg/L)
2010
2012
2014
2016
2018
2020
2022
MW09-03-01
MW09-03-02
MW09-03-03
MW09-03-04
MW09-03-05

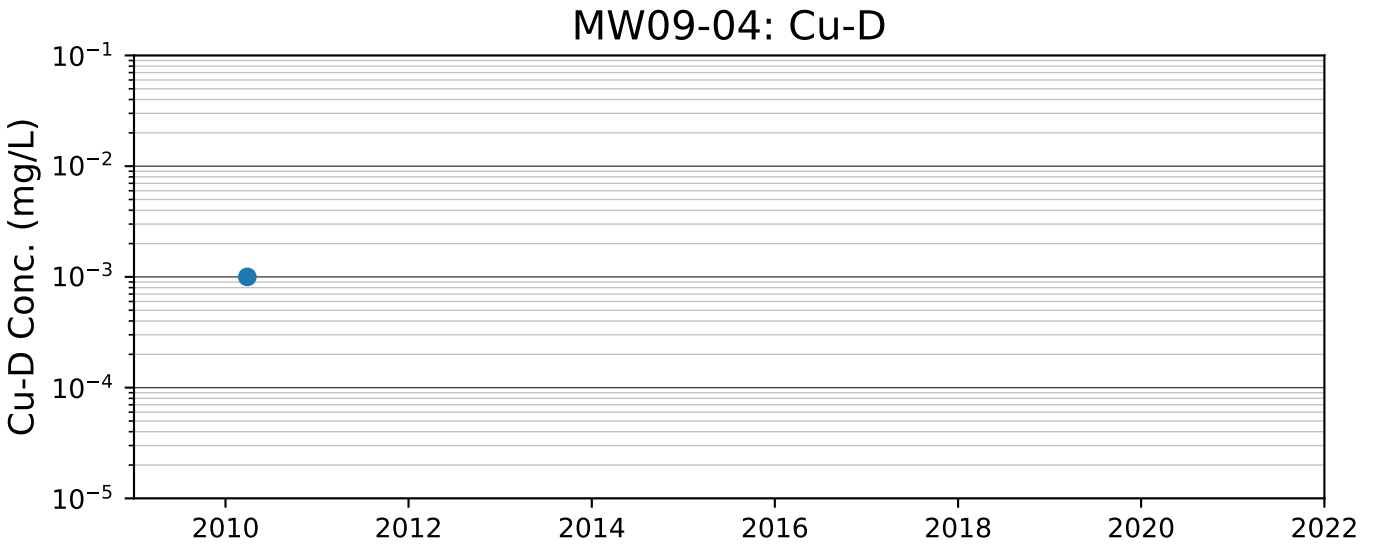

MW09-03: Na-D
Na-D Conc. (mg/L)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022
MW09-03: Mg-D
Mg-D Conc. (mg/L)
MW09-03-01
MW09-03-02
MW09-03-03
MW09-03-04
MW09-03-05

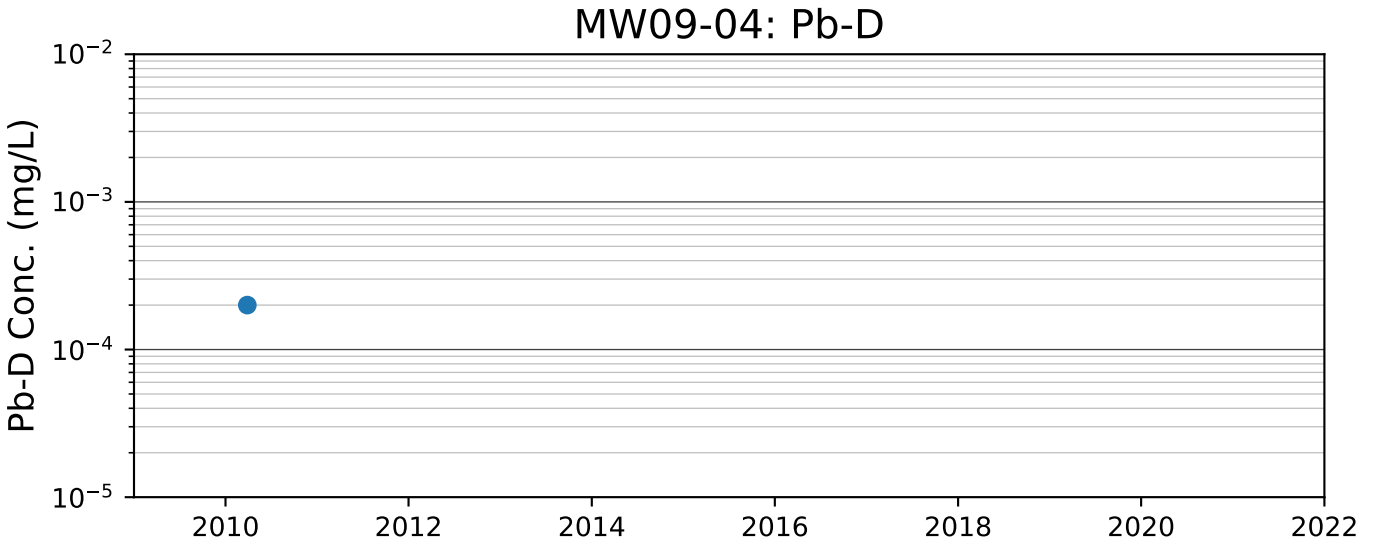

MW09-04: Ag-D
Ag-D Conc. (mg/L)
10^{-4}
10^{-5}
10^{-6}
2010
2012
2014
2016
2018
2020
2022

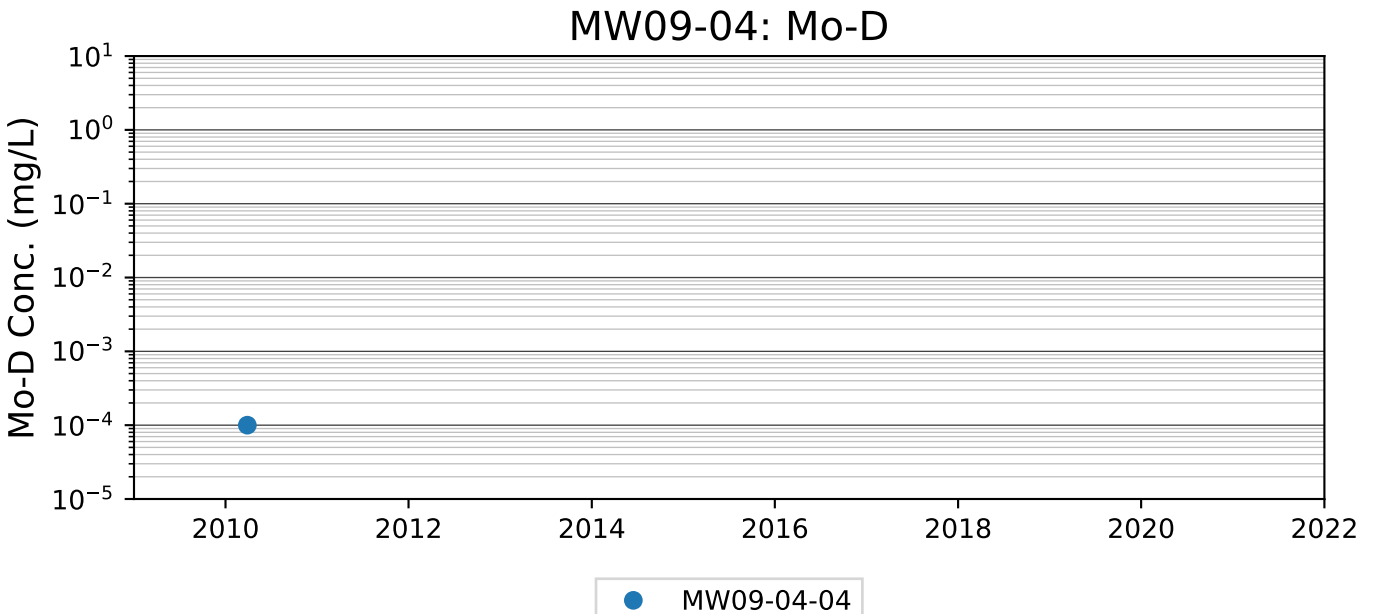

MW09-04: Al-D
Al-D Conc. (mg/L)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022

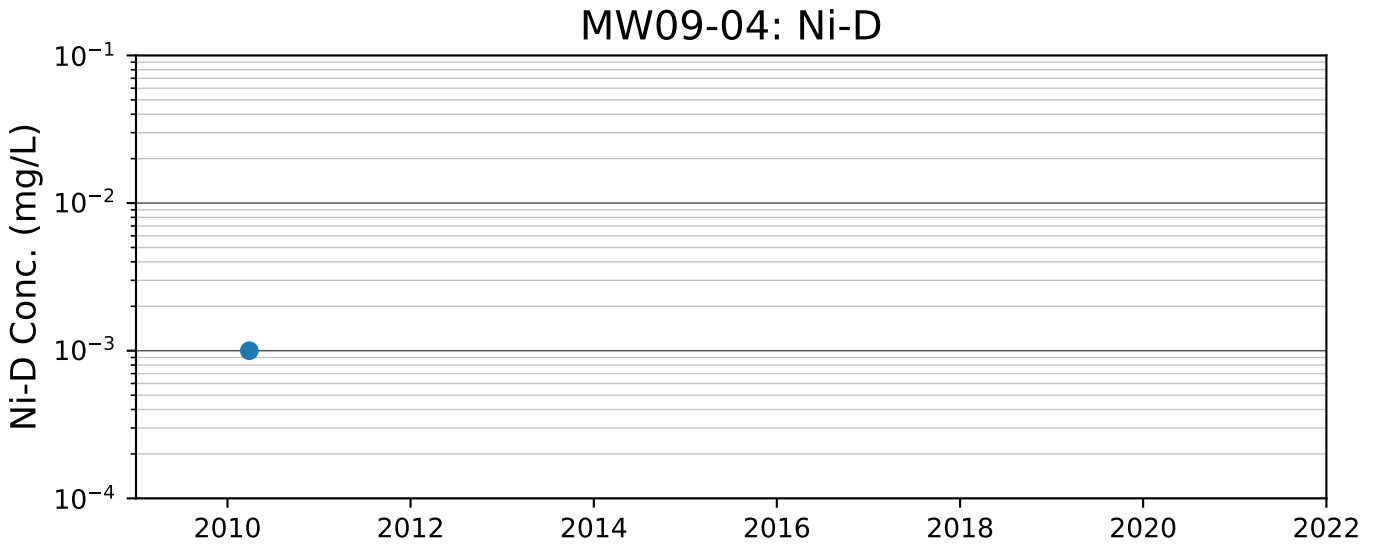

MW09-04: As-D
As-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW09-04-04

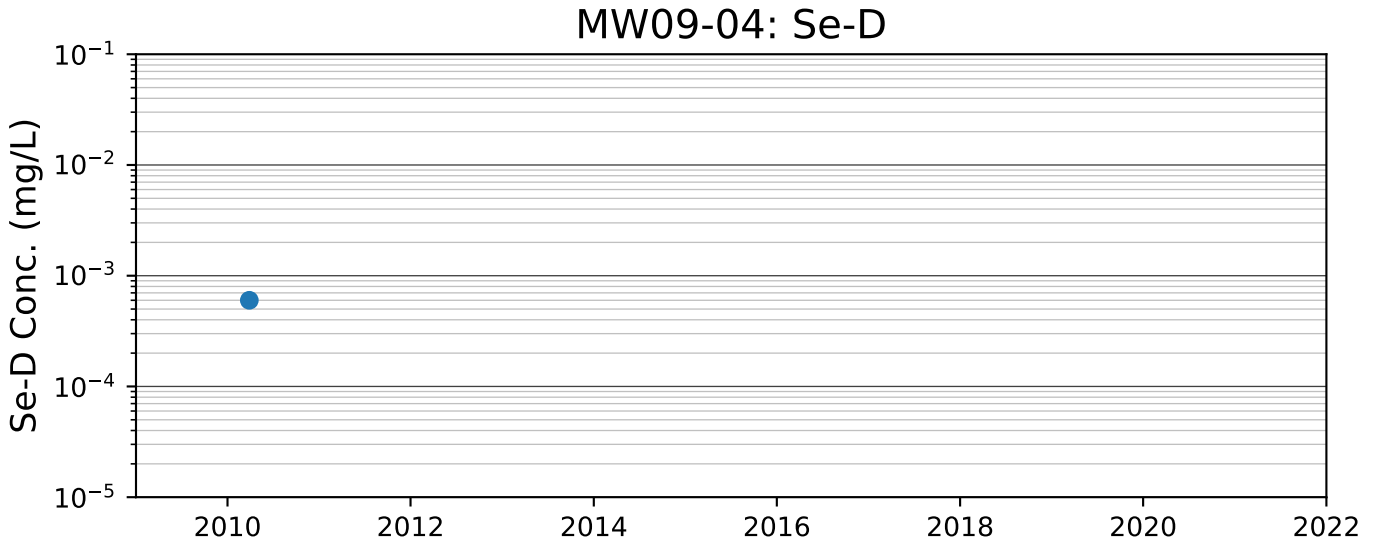

MW09-04: Chlord
Chlord Conc. (mg/L)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022
MW09-04: Cd-D
Cd-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
2010
2012
2014
2016
2018
2020
2022
MW09-04: Cr-D
Cr-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW09-04-04

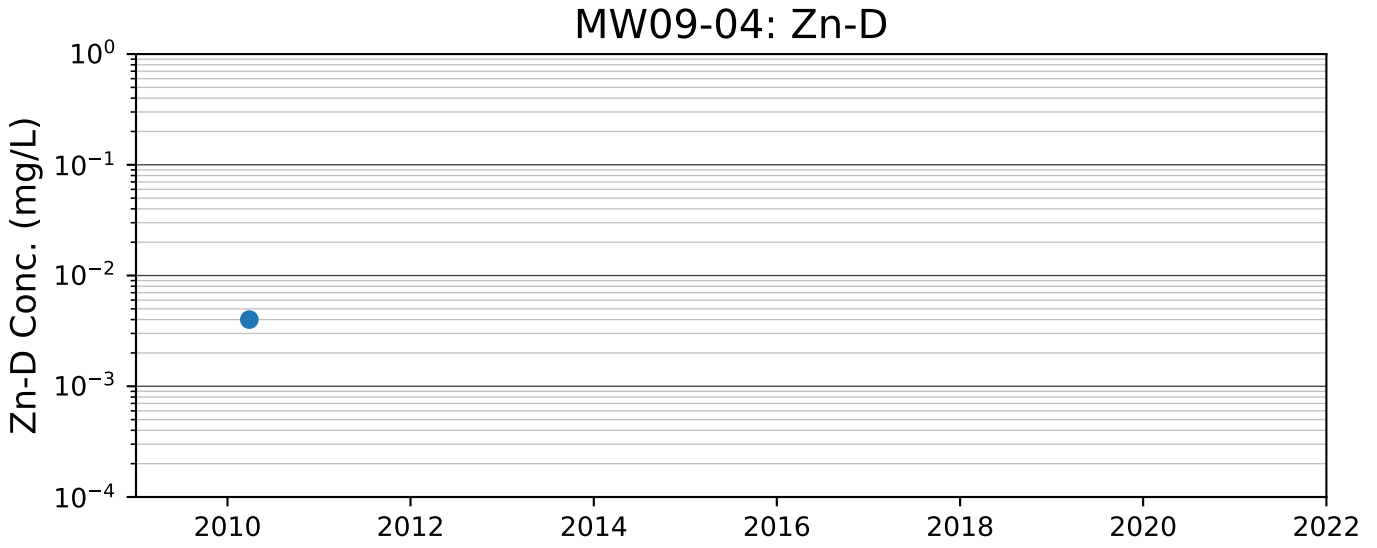

MW09-04: Cu-D
Cu-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

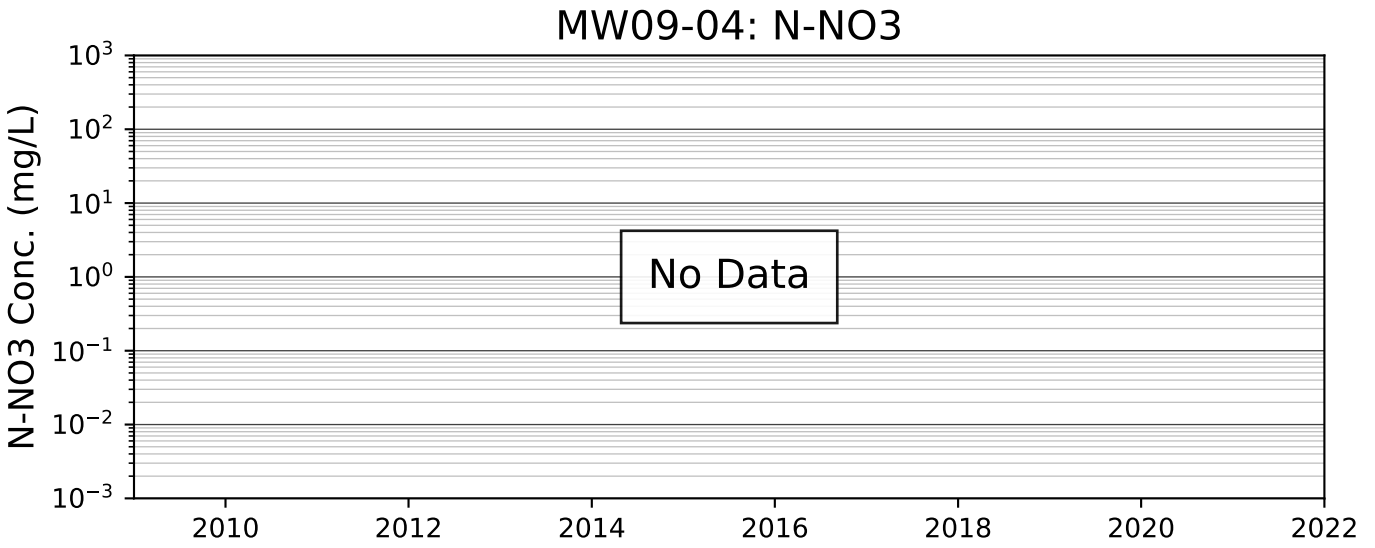

MW09-04: Pb-D
Pb-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

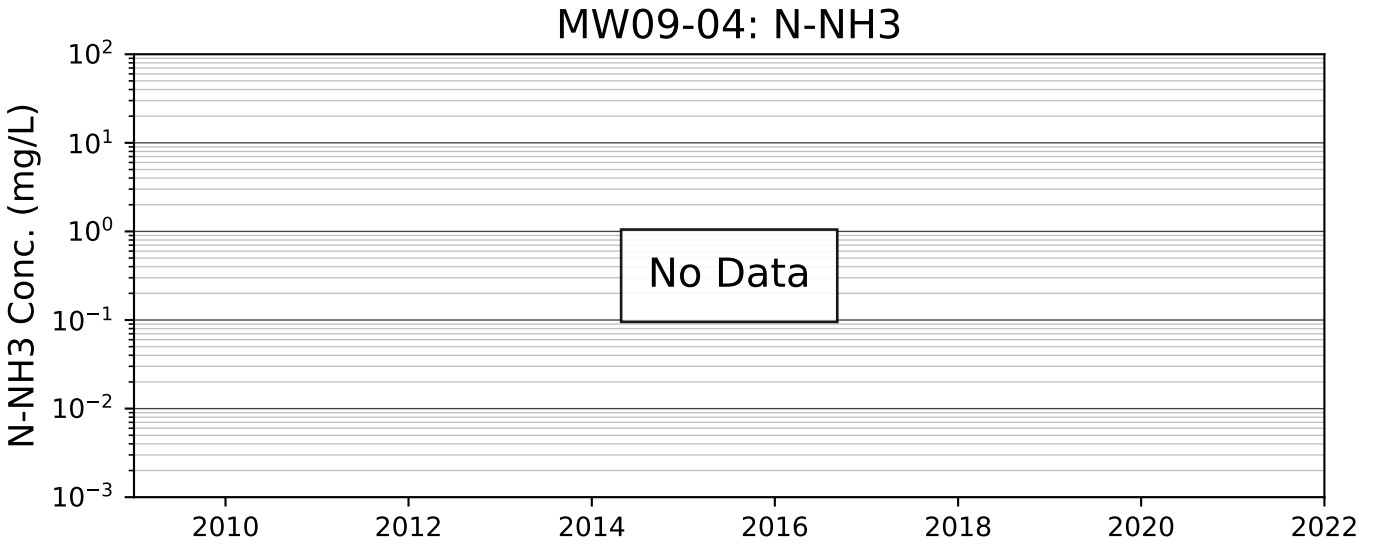

MW09-04: Mo-D
Mo-D Conc. (mg/L)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW09-04-04

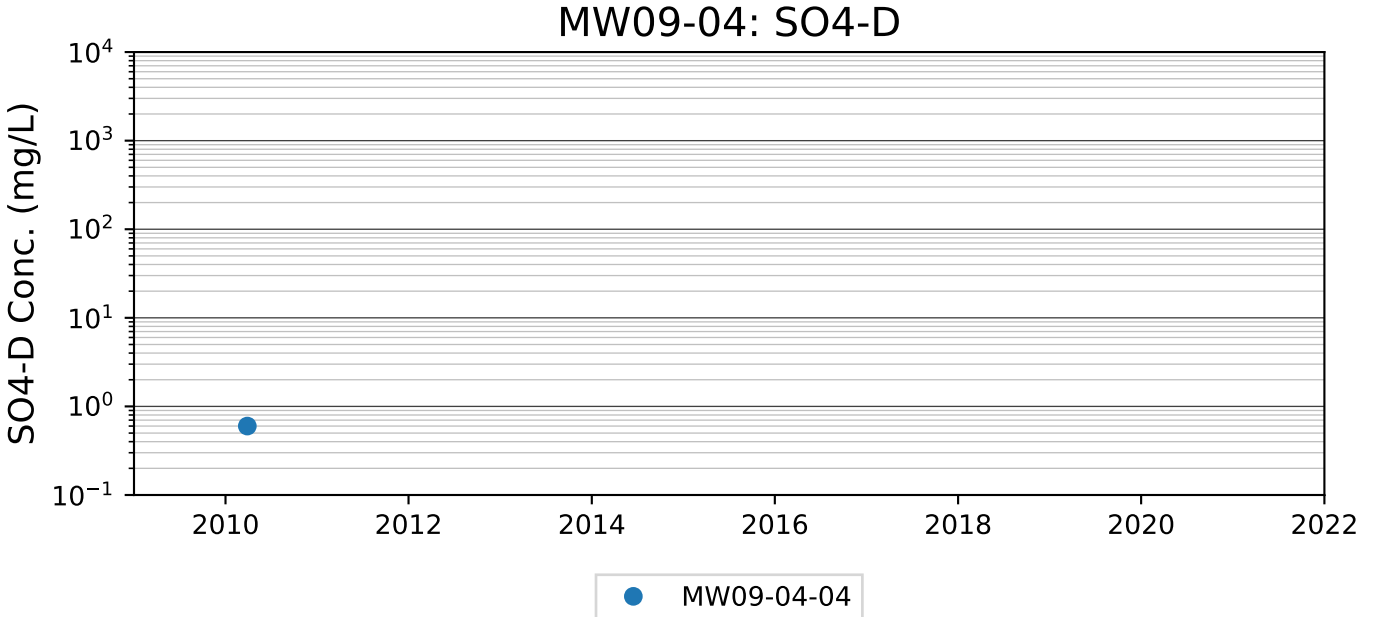

MW09-04: Ni-D
Ni-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022

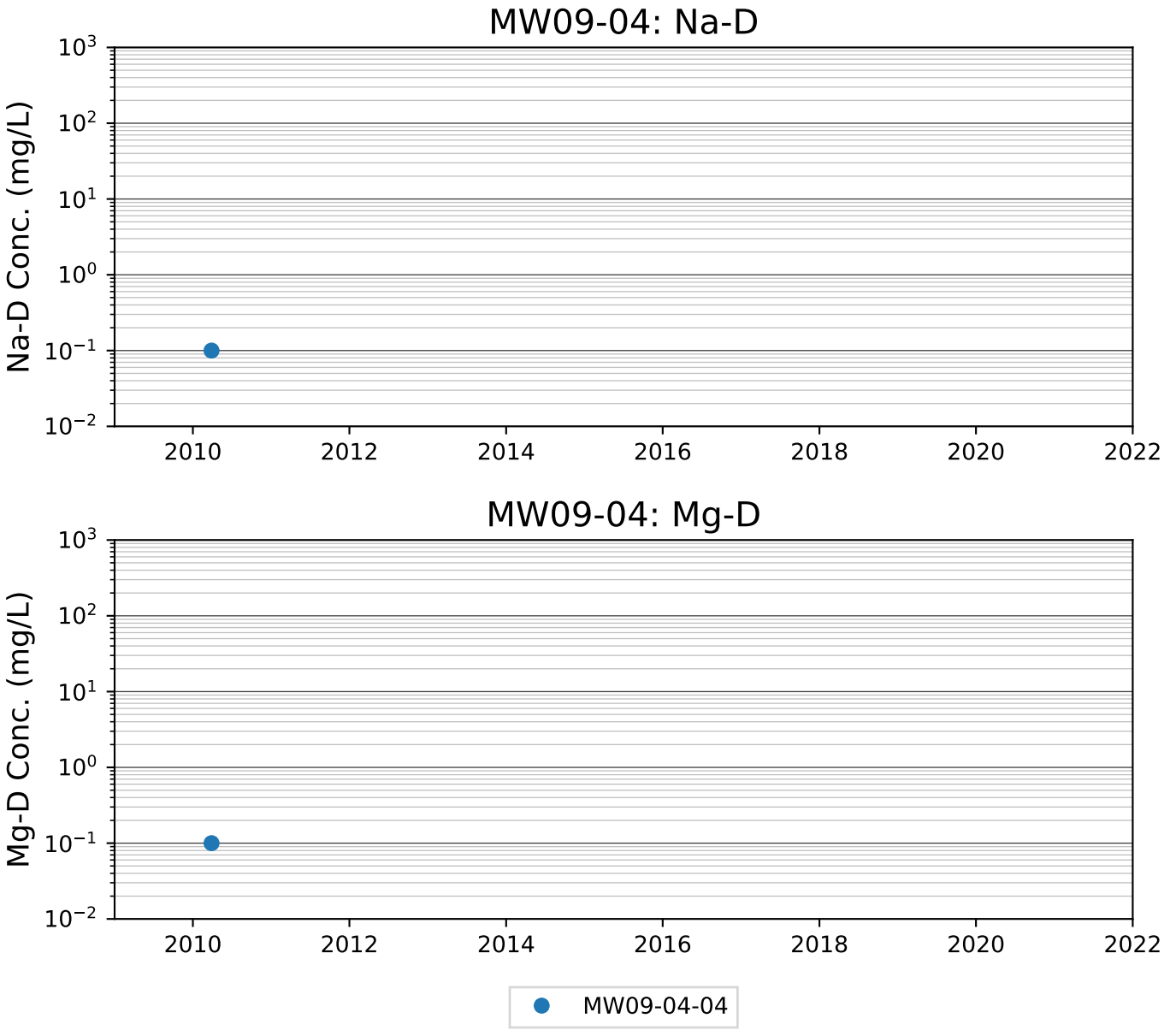

MW09-04: Se-D
Se-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

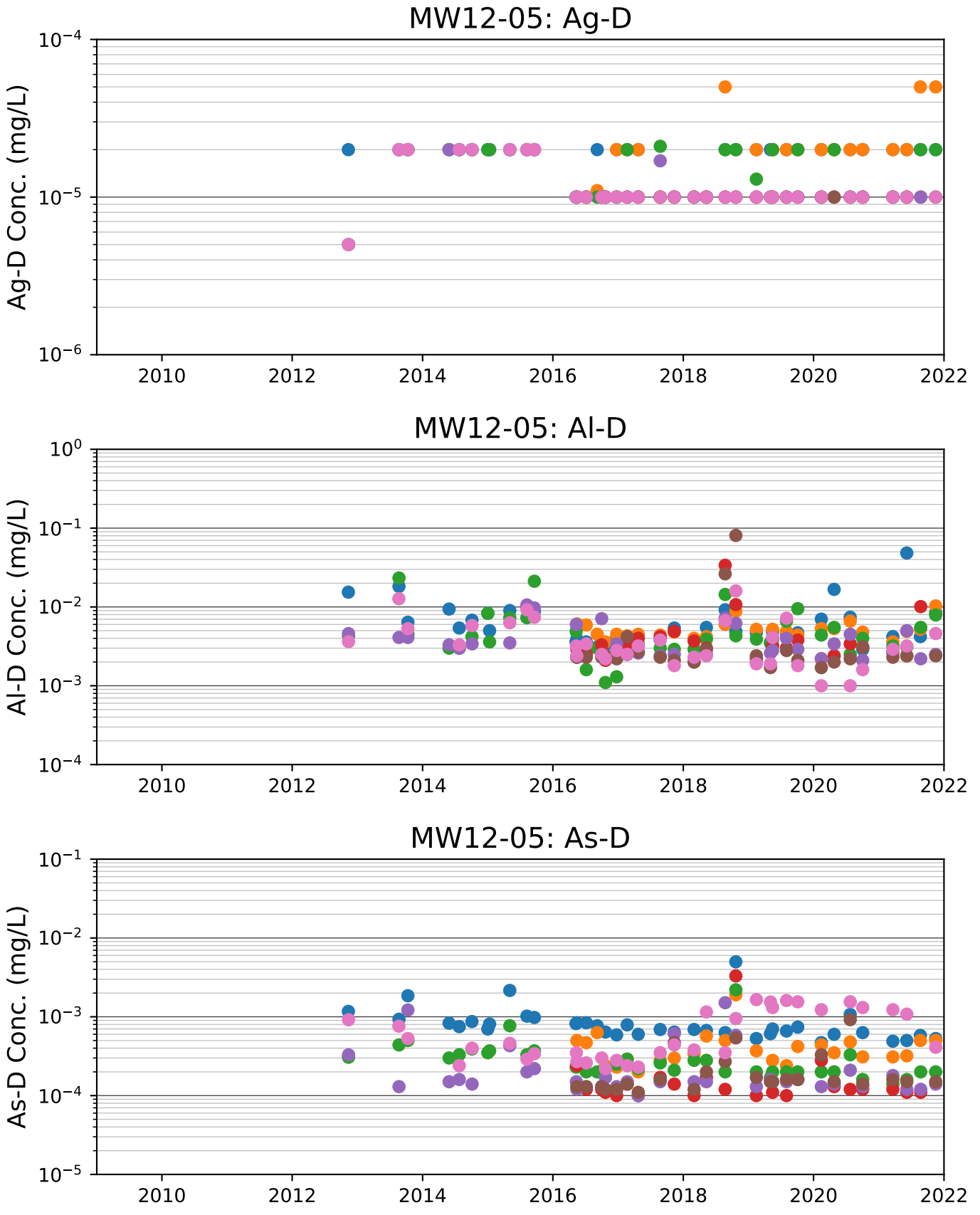

MW09-04: Zn-D
Zn-D Conc. (mg/L)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022
MW09-04-04

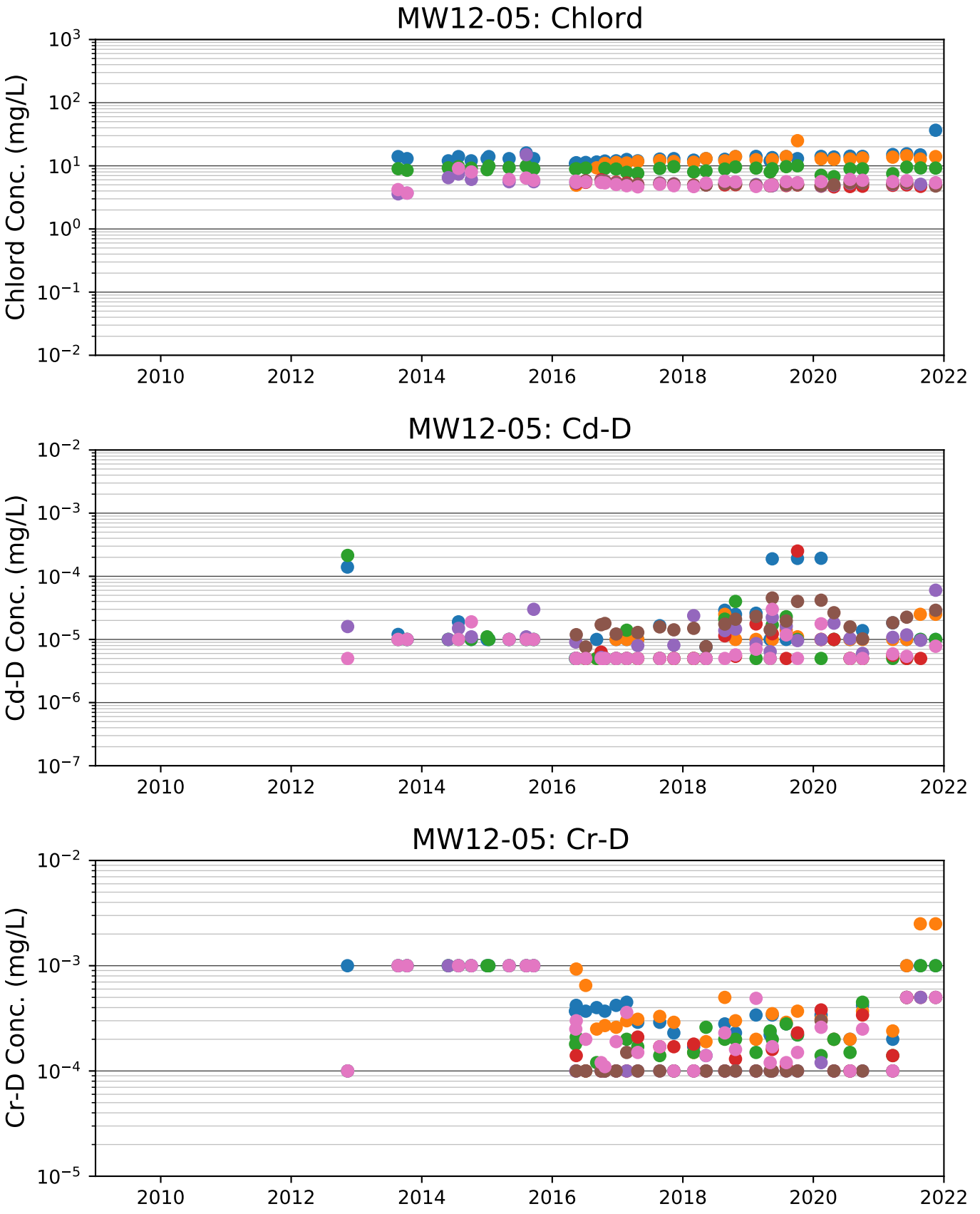

MW09-04: N-NO3
N-NO3 Conc. (mg/L)
No Data
2010
2012
2014
2016
2018
2020
2022

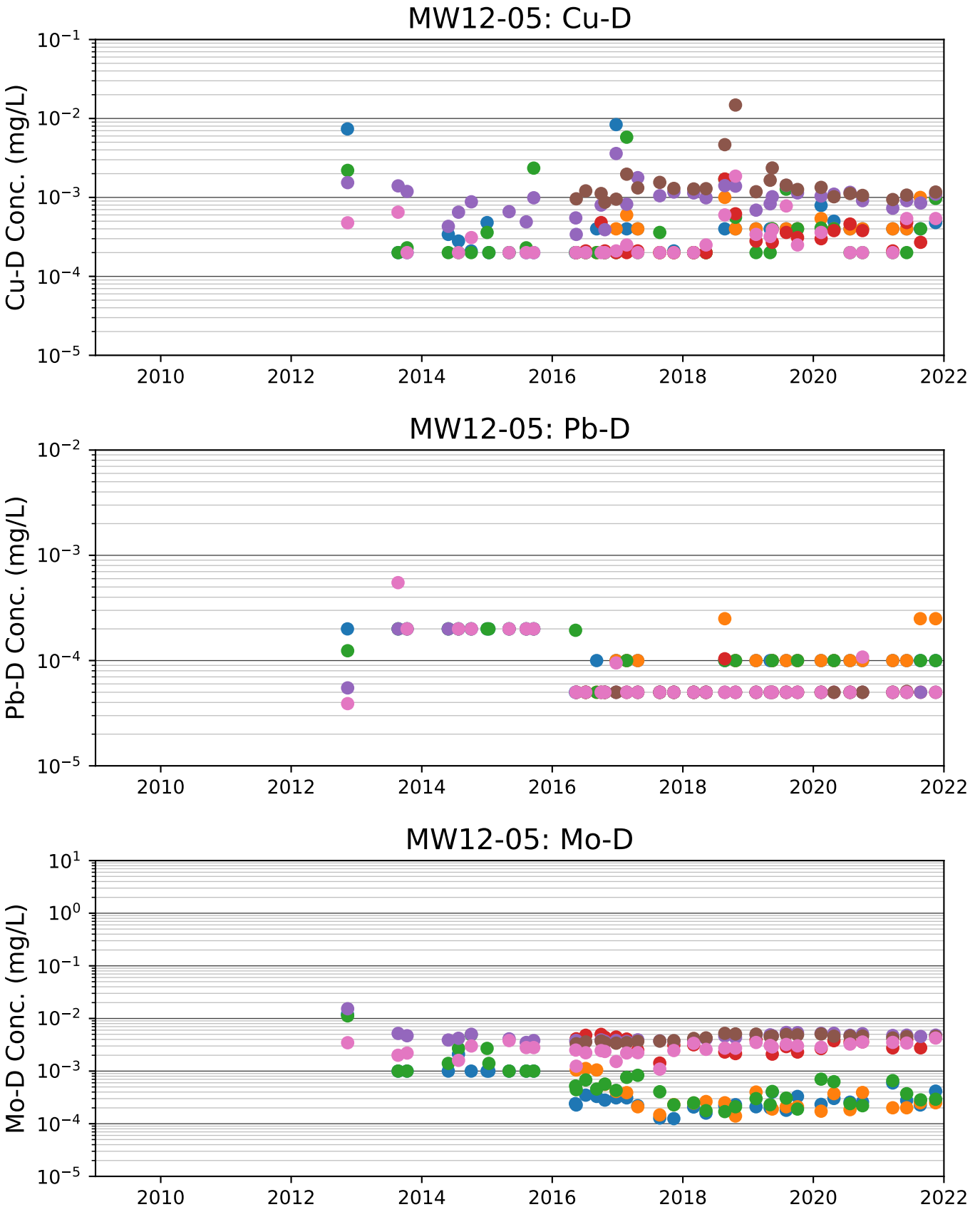

MW09-04: N-NH3
N-NH3 Conc. (mg/L)
No Data
2010
2012
2014
2016
2018
2020
2022

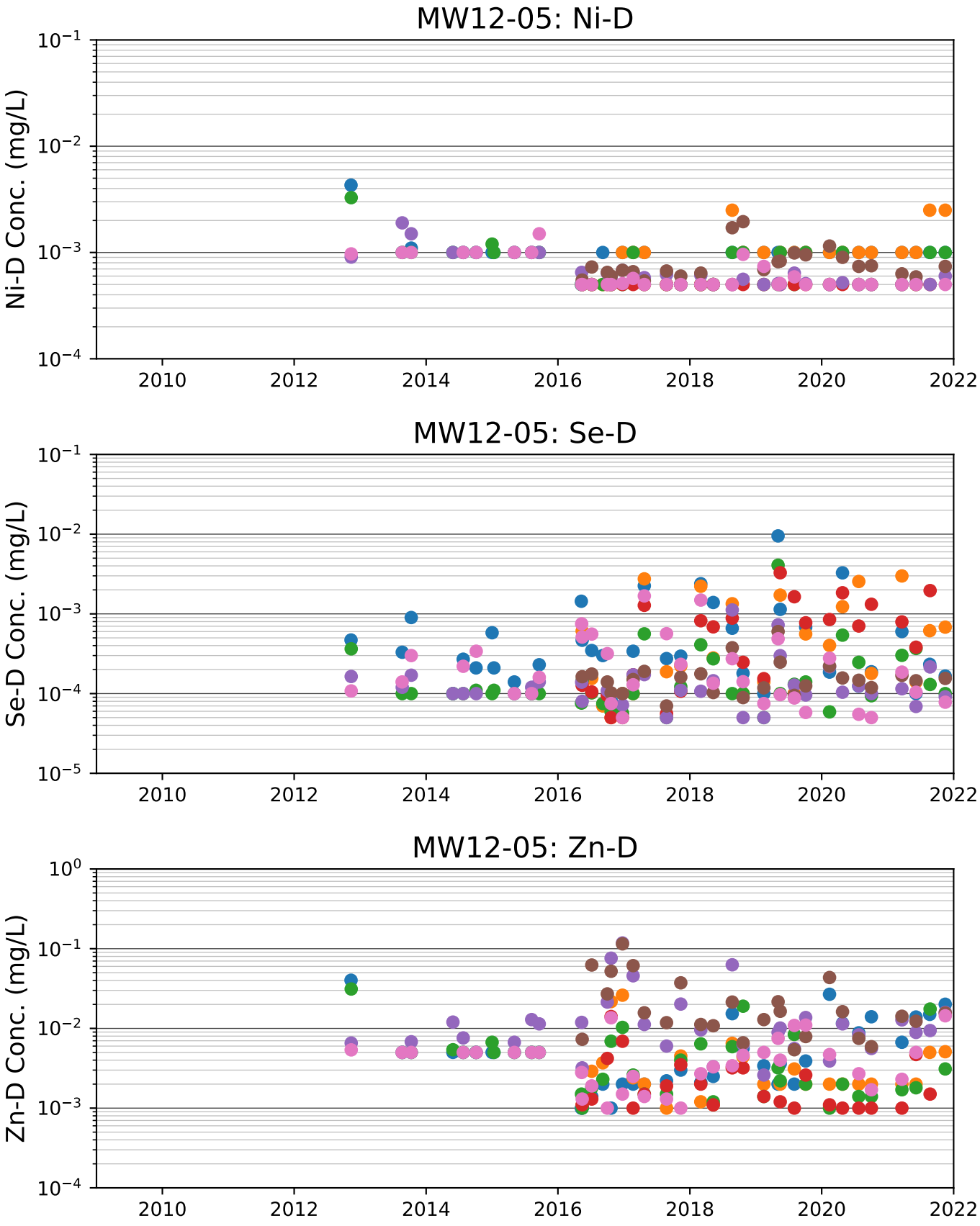

MW09-04: SO4-D
SO4-D Conc. (mg/L)
2010
2012
2014
2016
2018
2020
2022
MW09-04-04

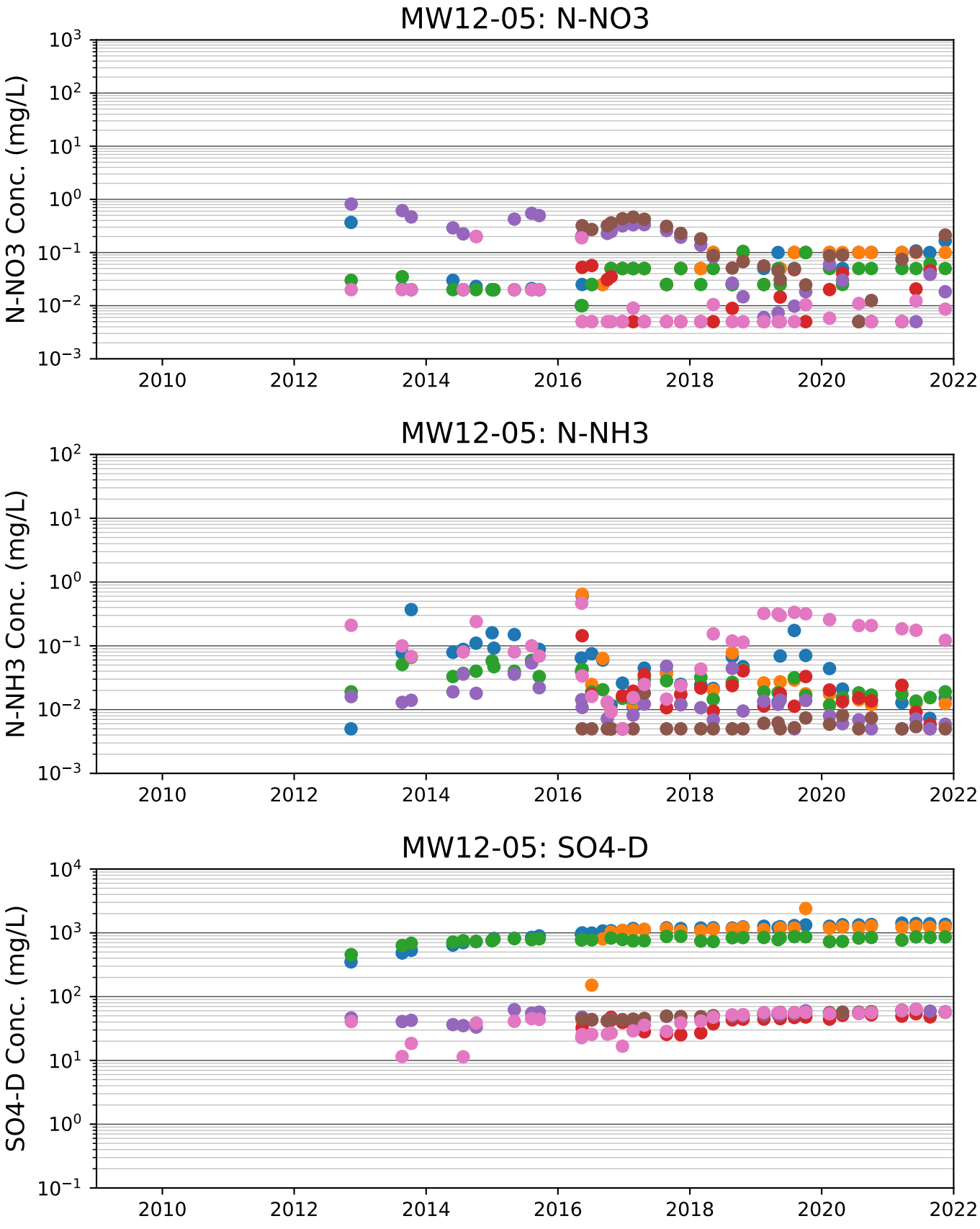

MW09-04: Na-D
Na-D Conc. (mg/L)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022
MW09-04: Mg-D
Mg-D Conc. (mg/L)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022
MW09-04-04

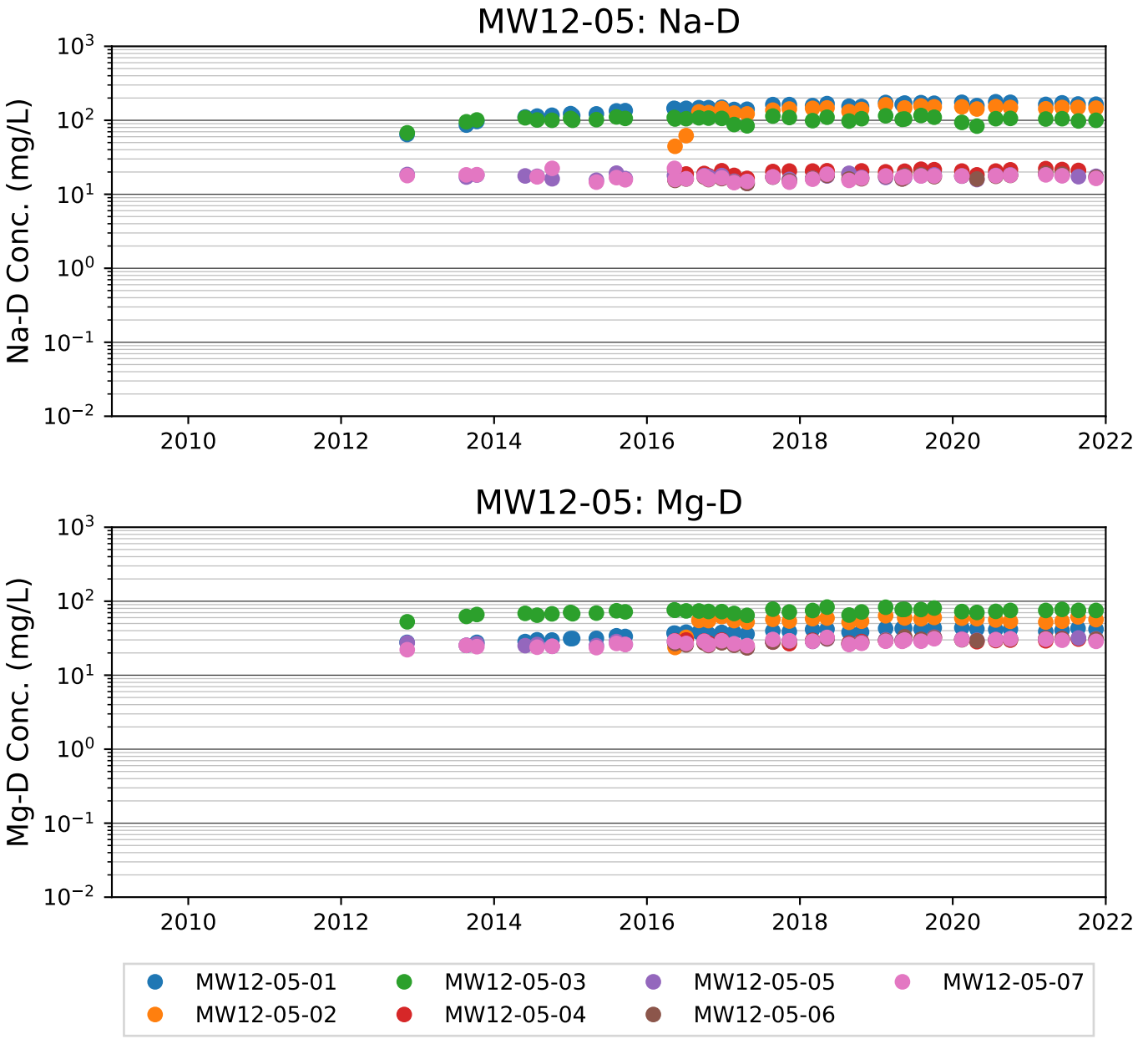

MW12-05: Ag-D
Ag-D Conc. (mg/L)
10^{-4}
10^{-5}
10^{-6}
2010
2012
2014
2016
2018
2020
2022
MW12-05: Al-D
Al-D Conc. (mg/L)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022
MW12-05: As-D
As-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW12-05-01
MW12-05-02
MW12-05-03
MW12-05-04
MW12-05-05
MW12-05-06
MW12-05-07

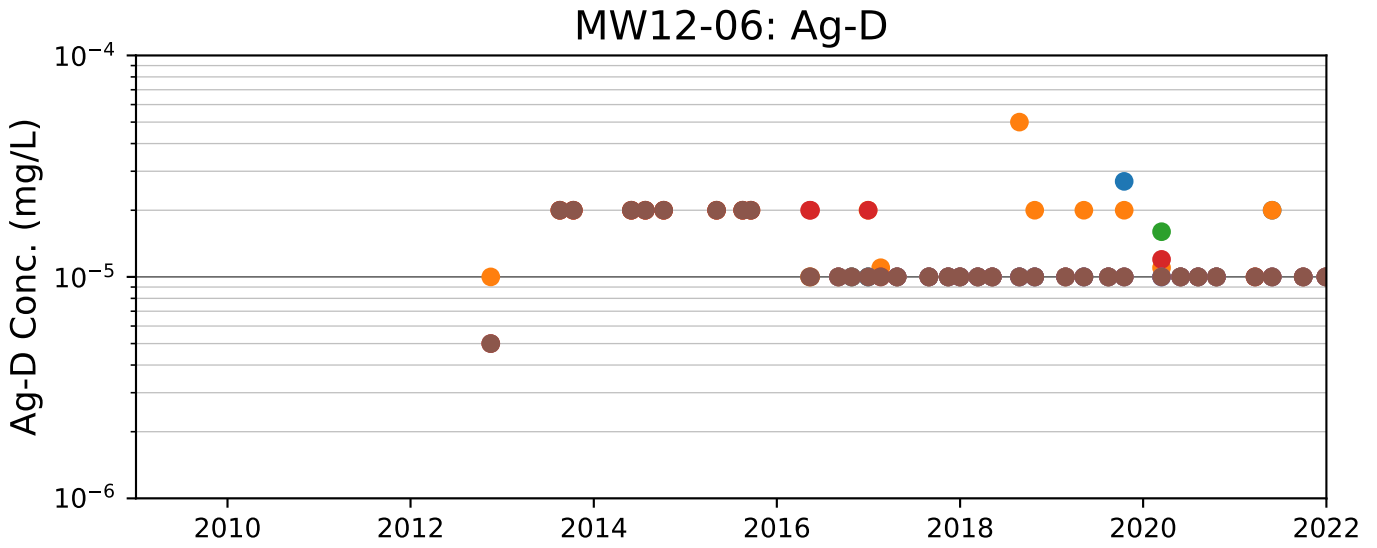

MW12-05: Chlord
Chlord Conc. (mg/L)
MW12-05: Cd-D
Cd-D Conc. (mg/L)
MW12-05: Cr-D
Cr-D Conc. (mg/L)
2010
2012
2014
2016
2018
2020
2022
MW12-05-01
MW12-05-02
MW12-05-03
MW12-05-04
MW12-05-05
MW12-05-06
MW12-05-07

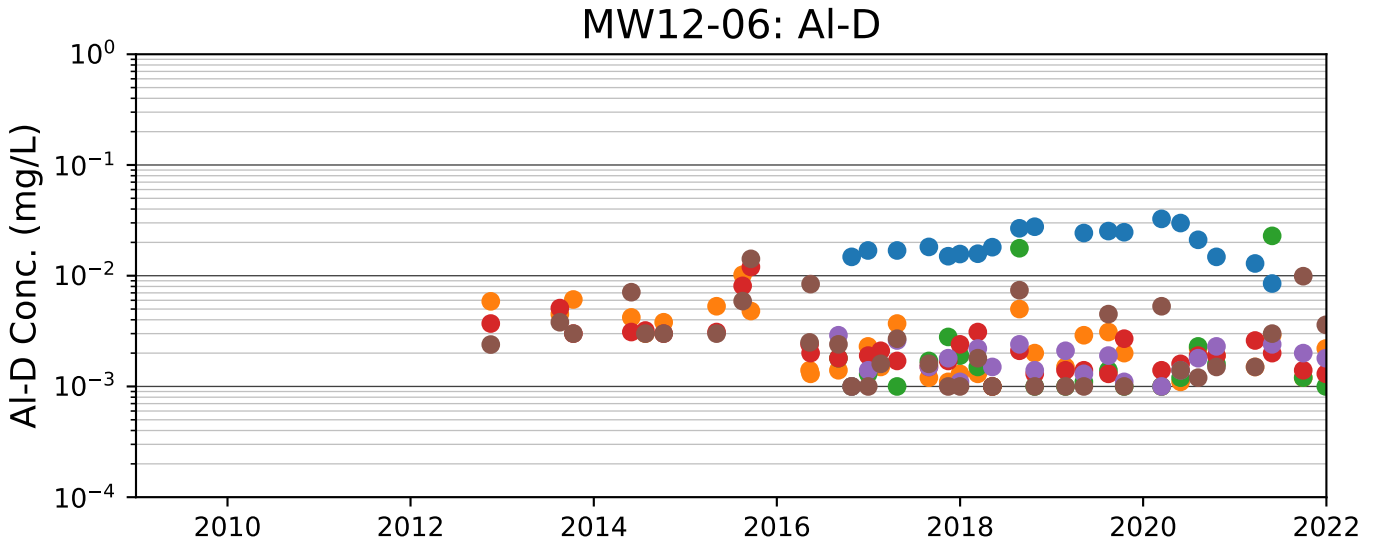

MW12-05: Cu-D
Cu-D Conc. (mg/L)
MW12-05: Pb-D
Pb-D Conc. (mg/L)
MW12-05: Mo-D
Mo-D Conc. (mg/L)
2010
2012
2014
2016
2018
2020
2022
MW12-05-01
MW12-05-02
MW12-05-03
MW12-05-04
MW12-05-05
MW12-05-06
MW12-05-07

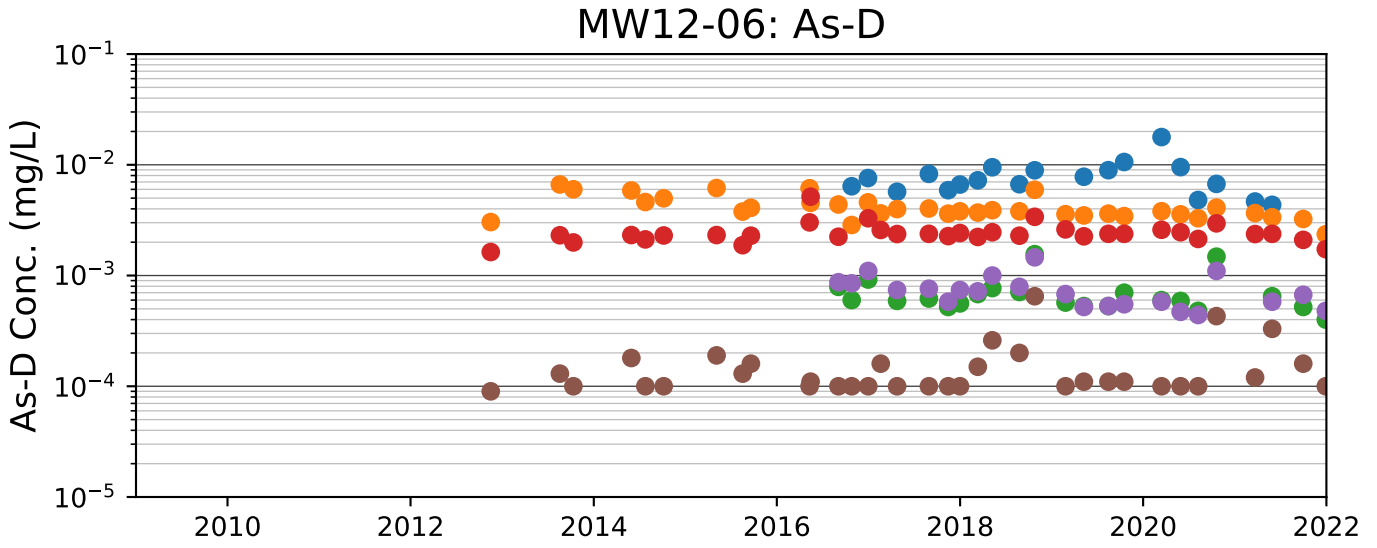

MW12-05: Ni-D
Ni-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022
MW12-05: Se-D
Se-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW12-05: Zn-D
Zn-D Conc. (mg/L)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022
MW12-05-01
MW12-05-02
MW12-05-03
MW12-05-04
MW12-05-05
MW12-05-06
MW12-05-07

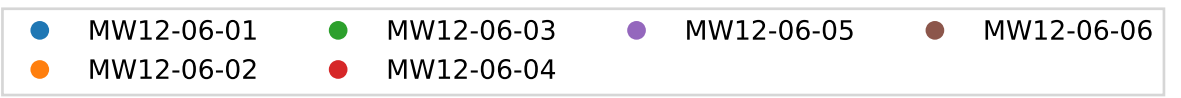

MW12-05: N-NO3
N-NO3 Conc. (mg/L)
MW12-05: N-NH3
N-NH3 Conc. (mg/L)
MW12-05: SO4-D
SO4-D Conc. (mg/L)
2010
2012
2014
2016
2018
2020
2022
MW12-05-01
MW12-05-02
MW12-05-03
MW12-05-04
MW12-05-05
MW12-05-06
MW12-05-07

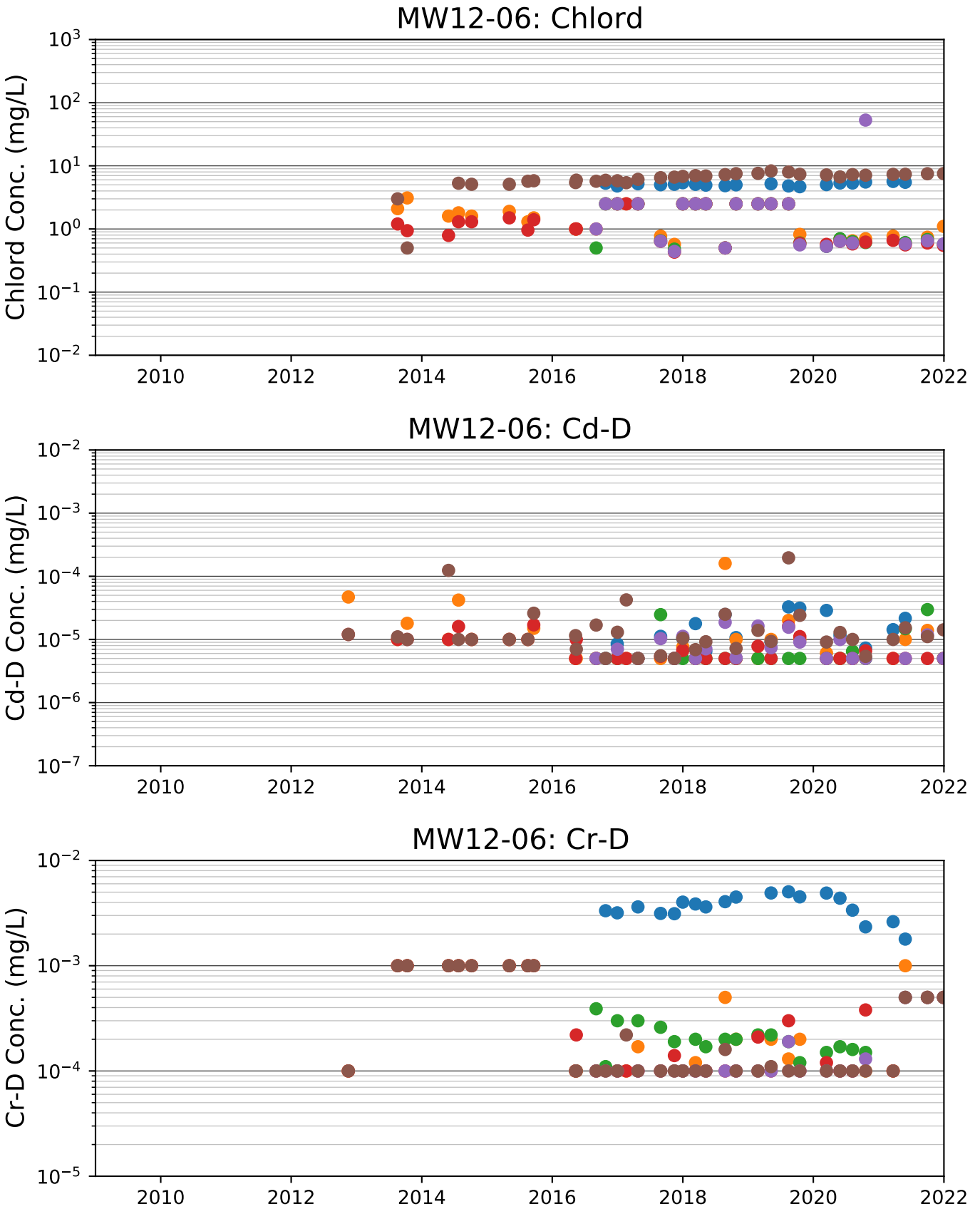

MW12-05: Na-D
Na-D Conc. (mg/L)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022
MW12-05: Mg-D
Mg-D Conc. (mg/L)
MW12-05-01
MW12-05-02
MW12-05-03
MW12-05-04
MW12-05-05
MW12-05-06
MW12-05-07

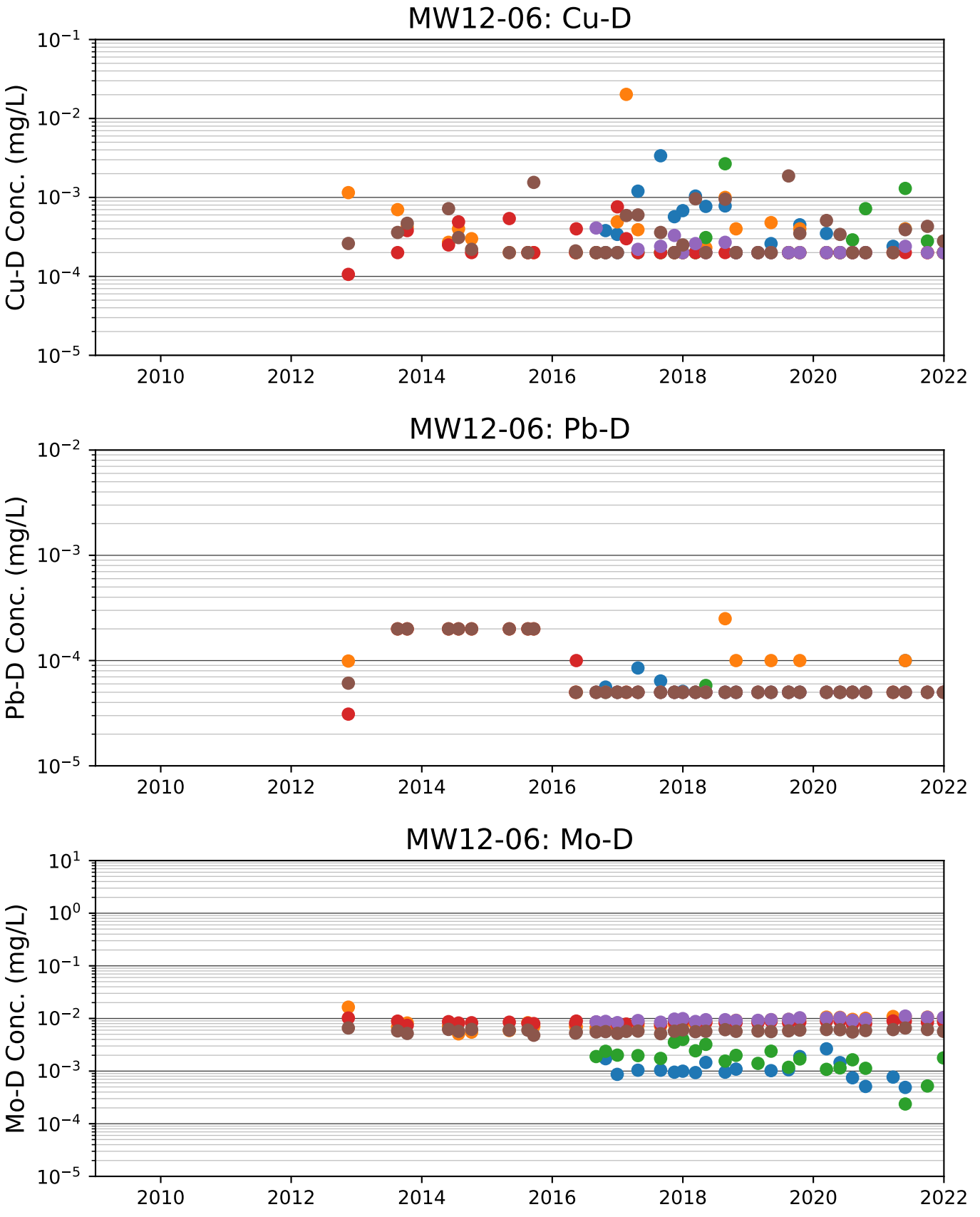

MW12-06: Ag-D
Ag-D Conc. (mg/L)
10^{-4}
10^{-5}
10^{-6}
2010
2012
2014
2016
2018
2020
2022

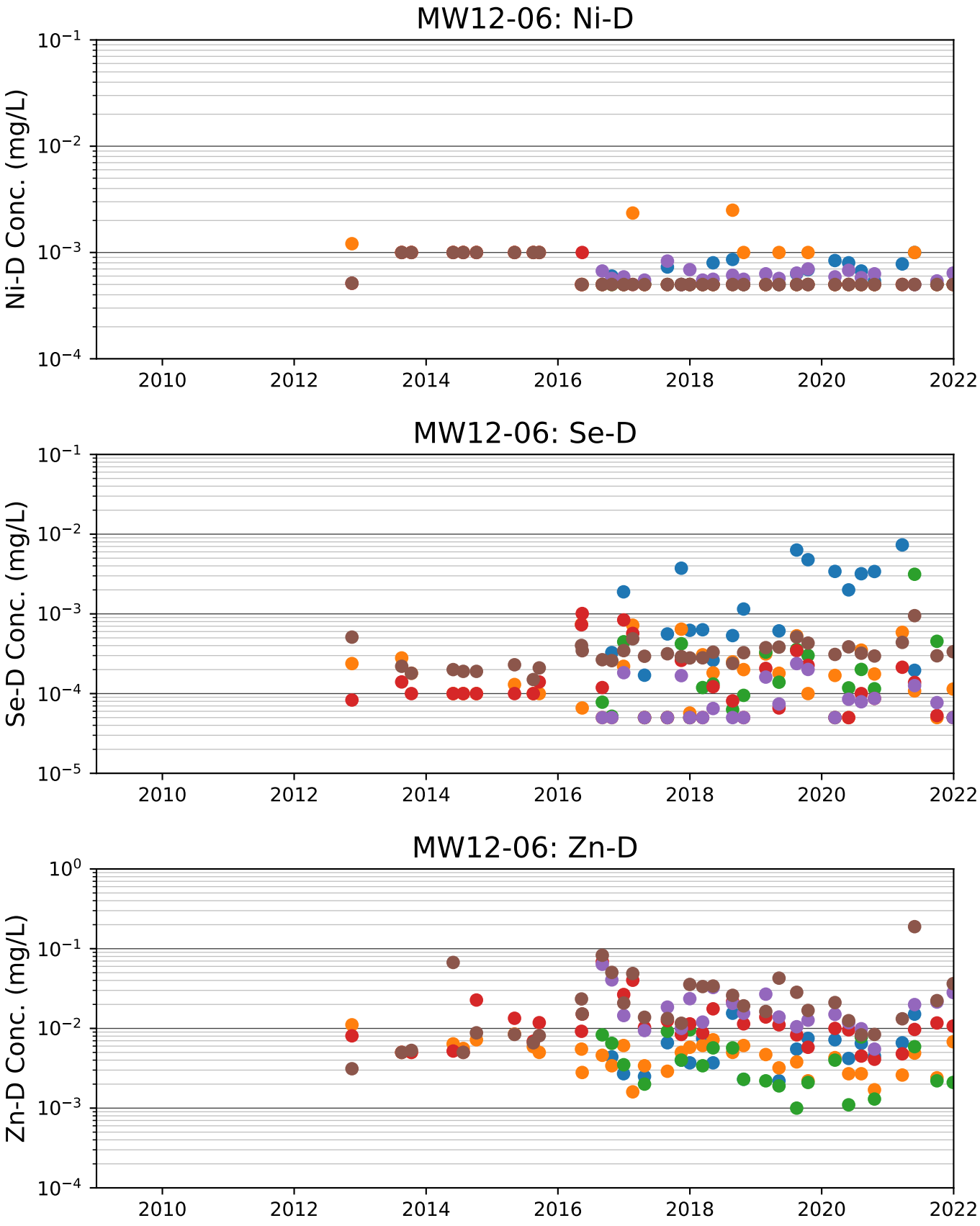

MW12-06: Al-D
Al-D Conc. (mg/L)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022

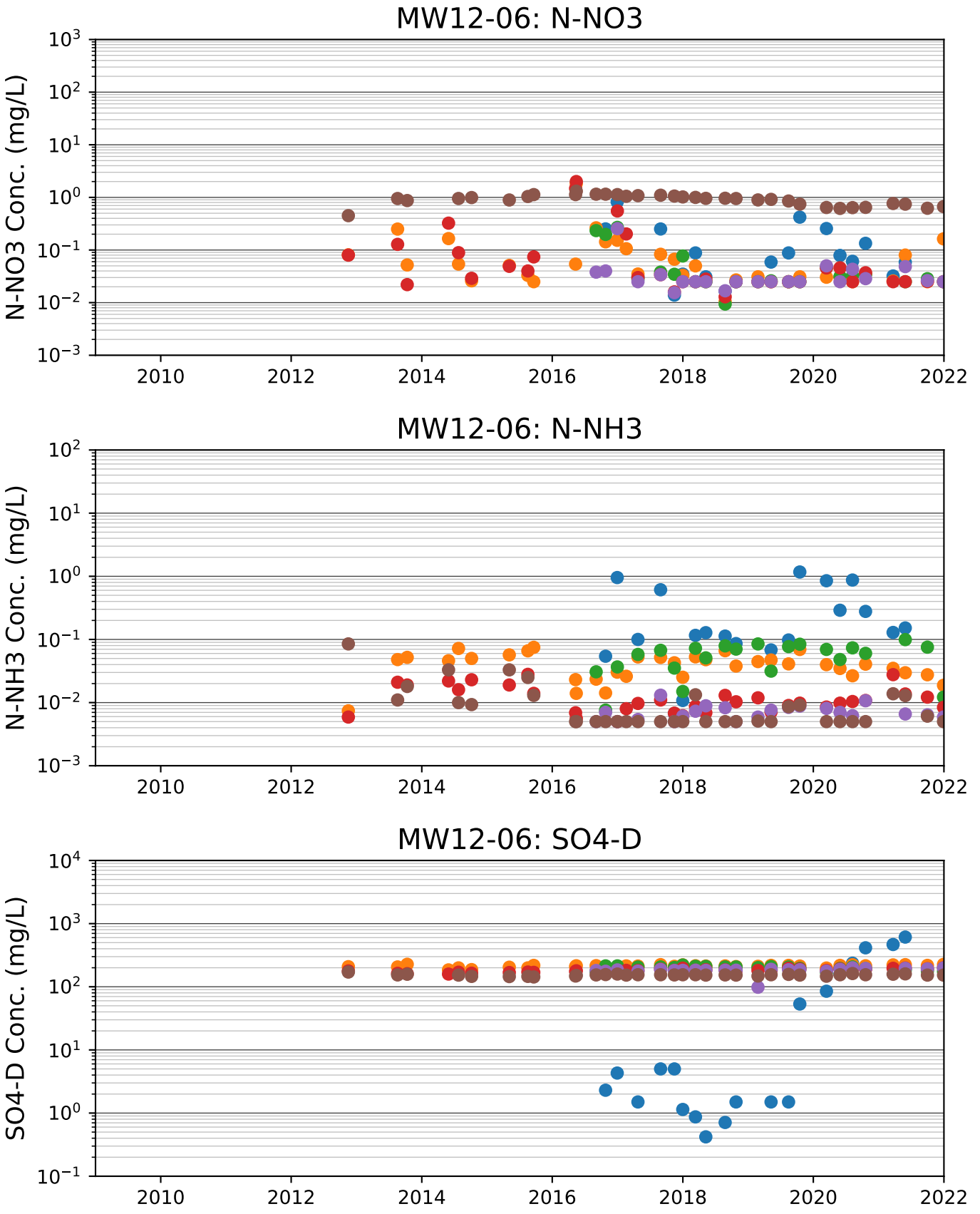

MW12-06: As-D
As-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

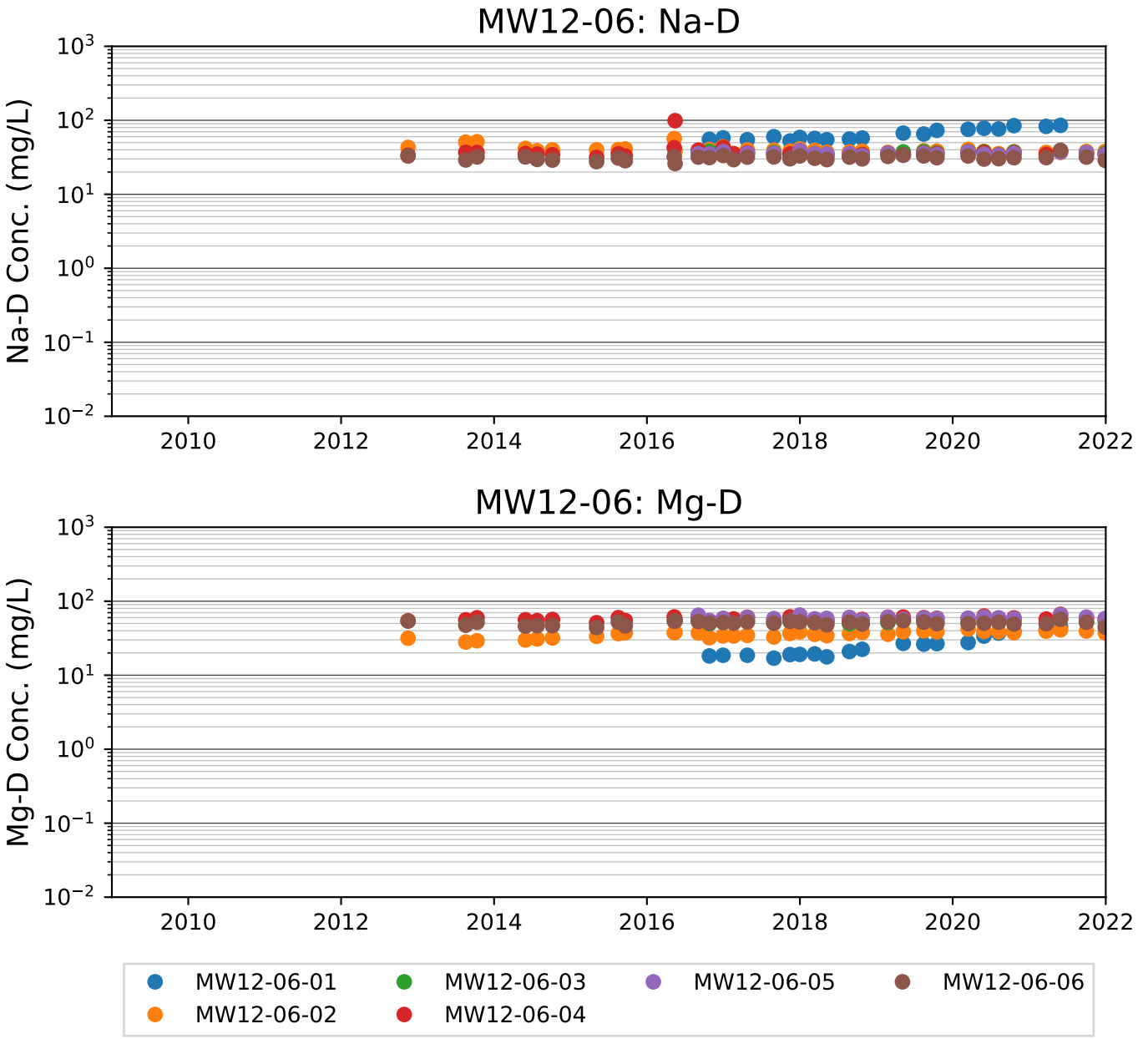

MW12-06-01
MW12-06-02
MW12-06-03
MW12-06-04
MW12-06-05
MW12-06-06

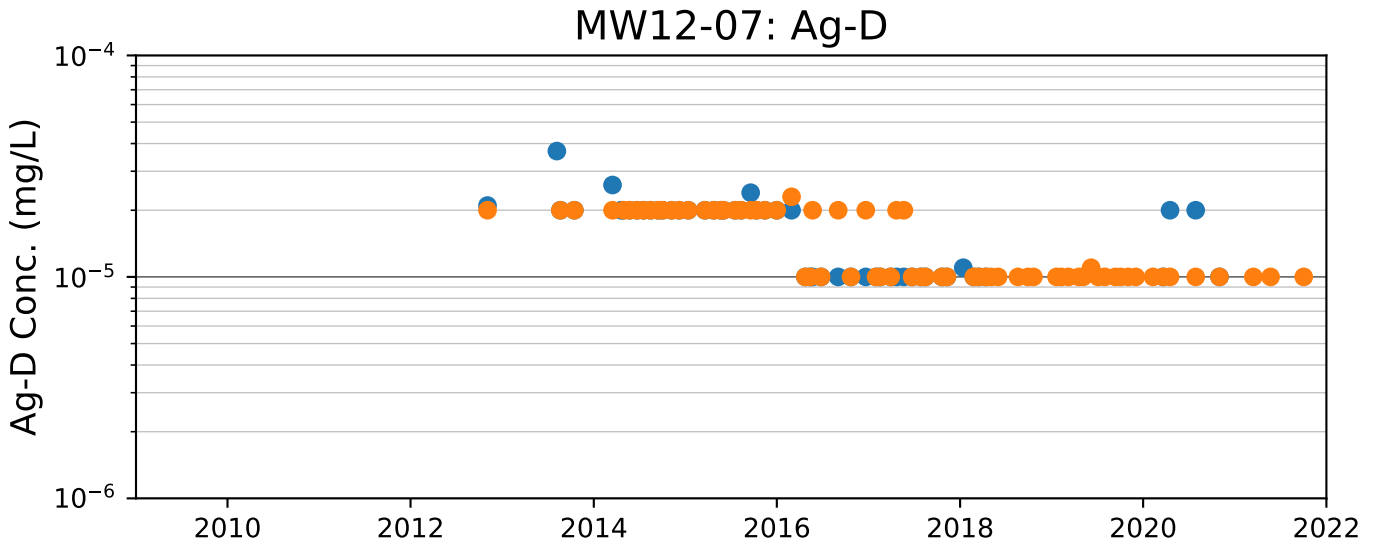

MW12-06: Chlord
Chlord Conc. (mg/L)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022
MW12-06: Cd-D
Cd-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
2010
2012
2014
2016
2018
2020
2022
MW12-06: Cr-D
Cr-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW12-06-01
MW12-06-02
MW12-06-03
MW12-06-04
MW12-06-05
MW12-06-06

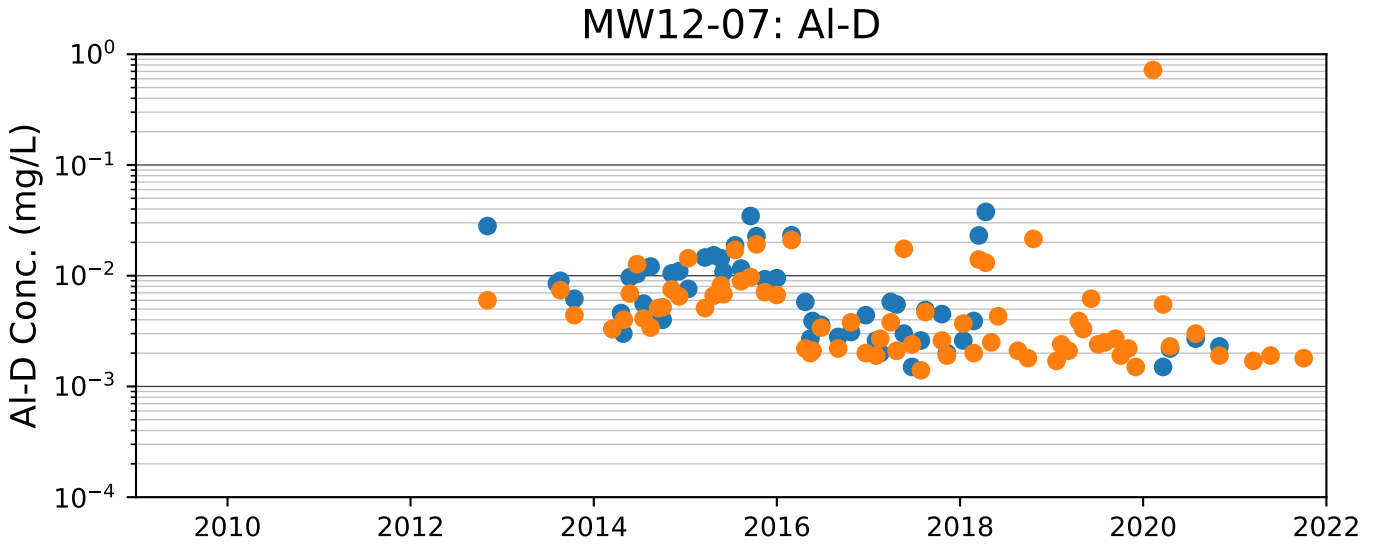

MW12-06: Cu-D
Cu-D Conc. (mg/L)
MW12-06: Pb-D
Pb-D Conc. (mg/L)
MW12-06: Mo-D
Mo-D Conc. (mg/L)
2010
2012
2014
2016
2018
2020
2022
MW12-06-01
MW12-06-02
MW12-06-03
MW12-06-04
MW12-06-05
MW12-06-06

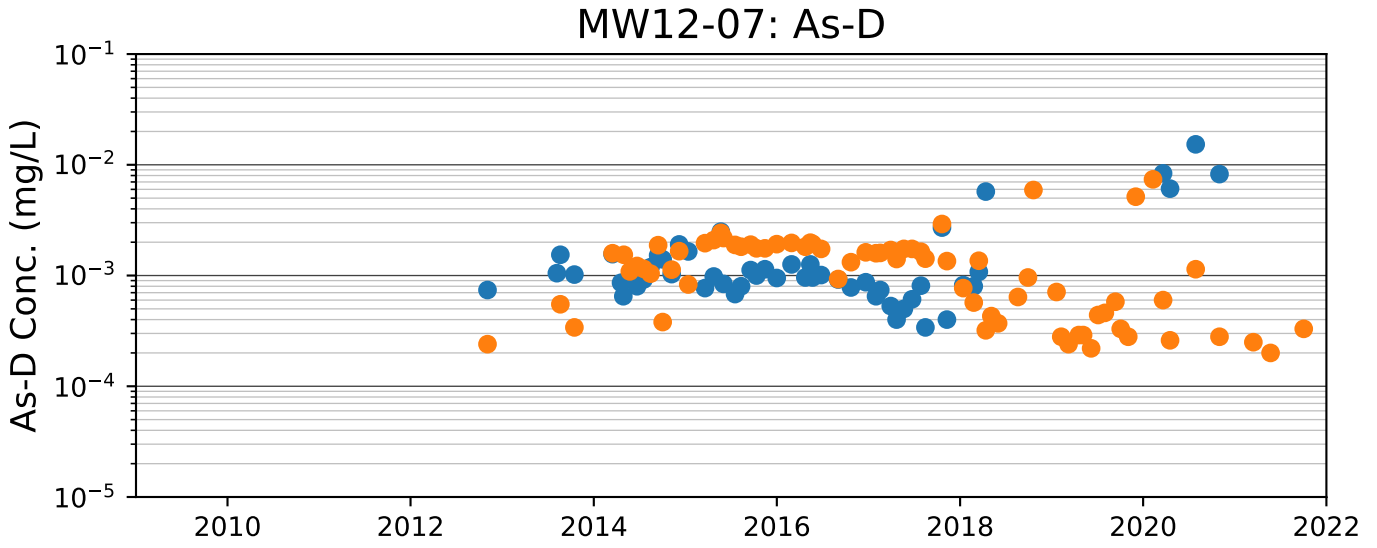

MW12-06: Ni-D
Ni-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022
MW12-06: Se-D
Se-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW12-06: Zn-D
Zn-D Conc. (mg/L)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022
MW12-06-01
MW12-06-02
MW12-06-03
MW12-06-04
MW12-06-05
MW12-06-06

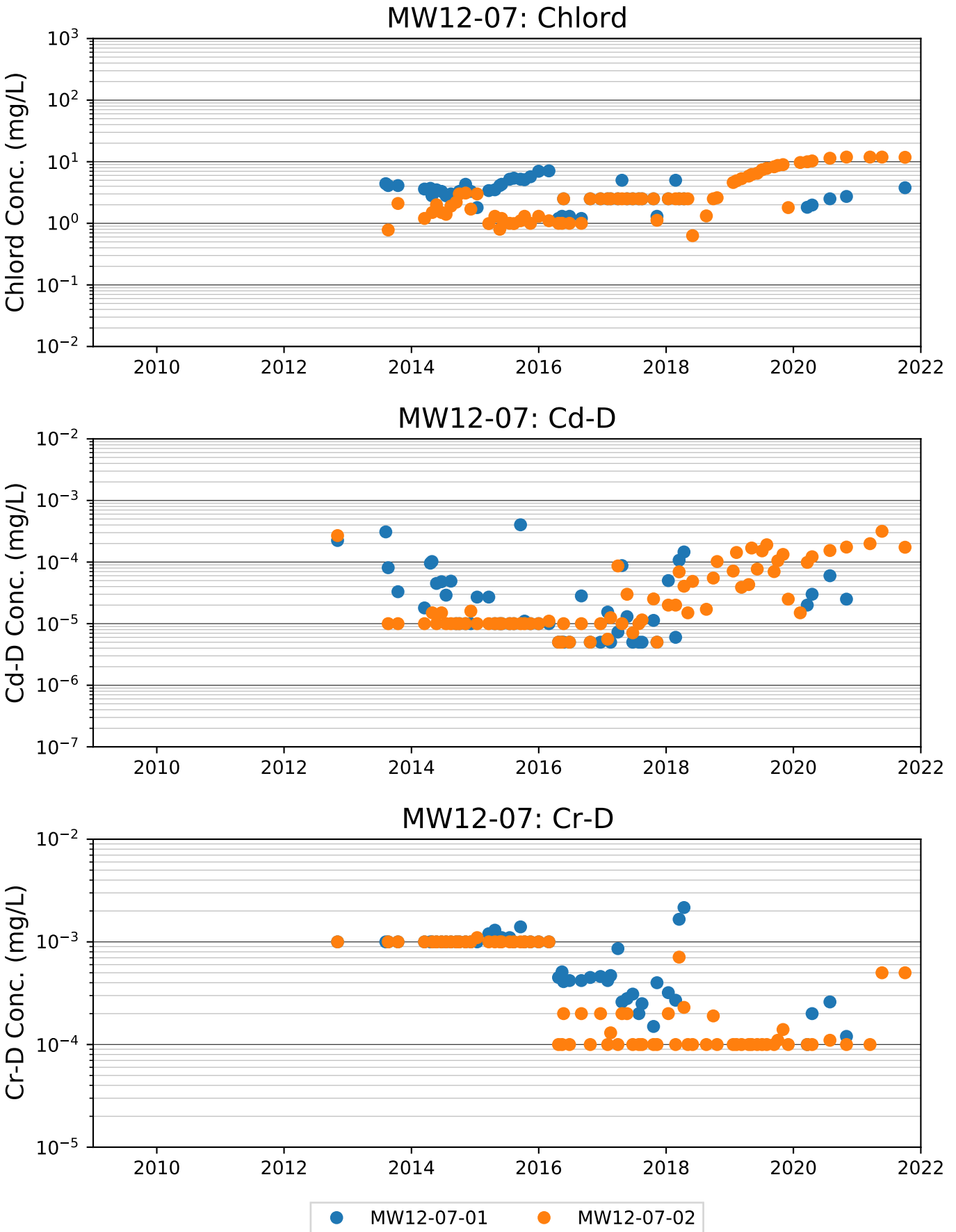

MW12-06: N-NO3
N-NO3 Conc. (mg/L)
MW12-06: N-NH3
N-NH3 Conc. (mg/L)
MW12-06: SO4-D
SO4-D Conc. (mg/L)
2010
2012
2014
2016
2018
2020
2022
MW12-06-01
MW12-06-02
MW12-06-03
MW12-06-04
MW12-06-05
MW12-06-06

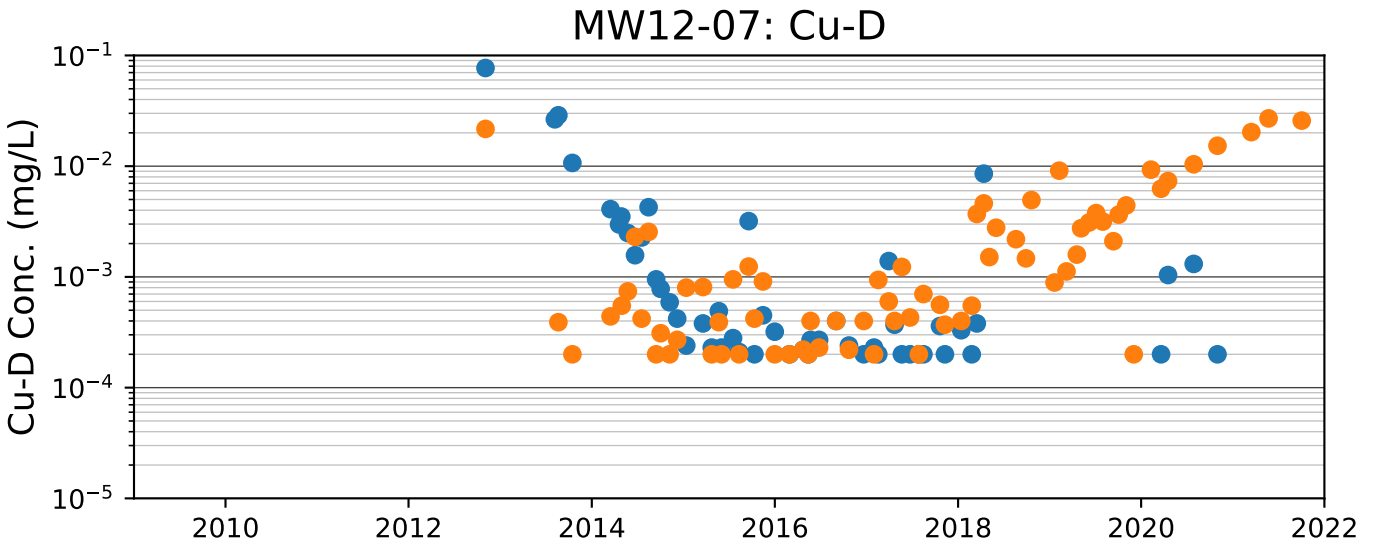

MW12-06: Na-D
Na-D Conc. (mg/L)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022
MW12-06: Mg-D
Mg-D Conc. (mg/L)
MW12-06-01
MW12-06-02
MW12-06-03
MW12-06-04
MW12-06-05
MW12-06-06

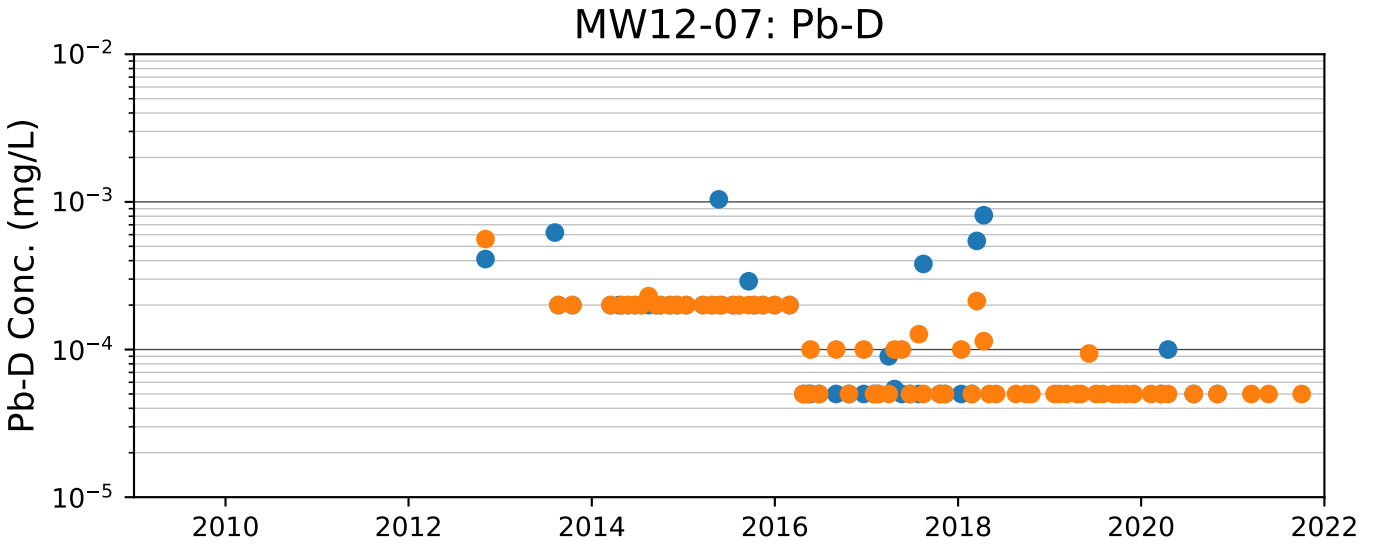

MW12-07: Ag-D
Ag-D Conc. (mg/L)
10^{-4}
10^{-5}
10^{-6}
2010
2012
2014
2016
2018
2020
2022

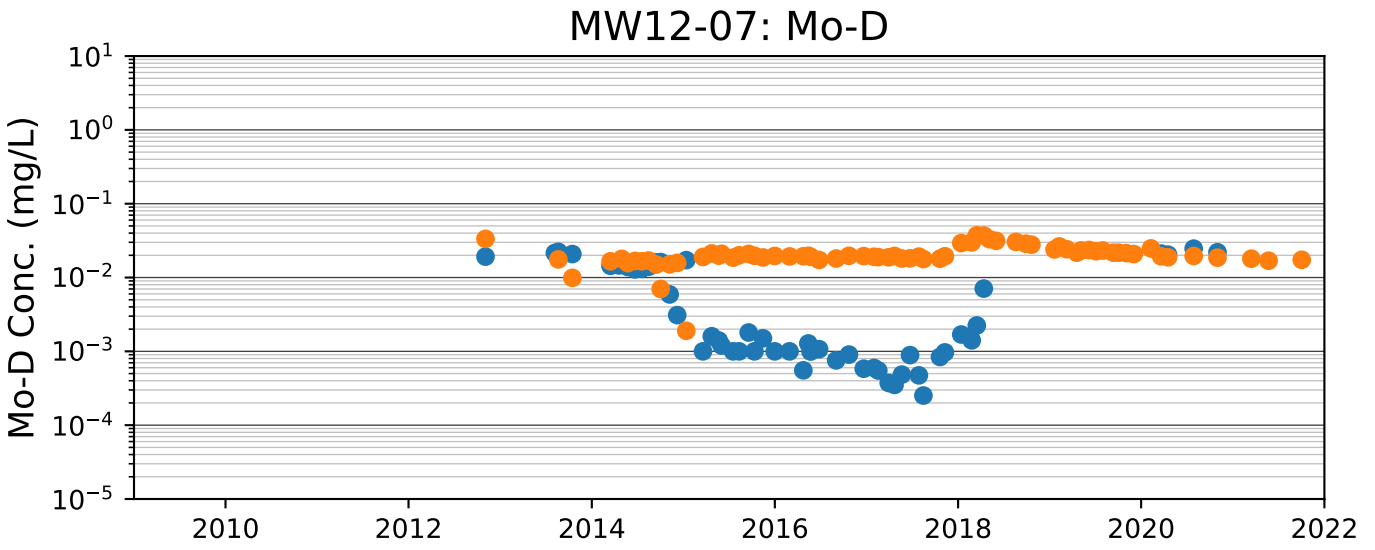

MW12-07: Al-D
Al-D Conc. (mg/L)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022

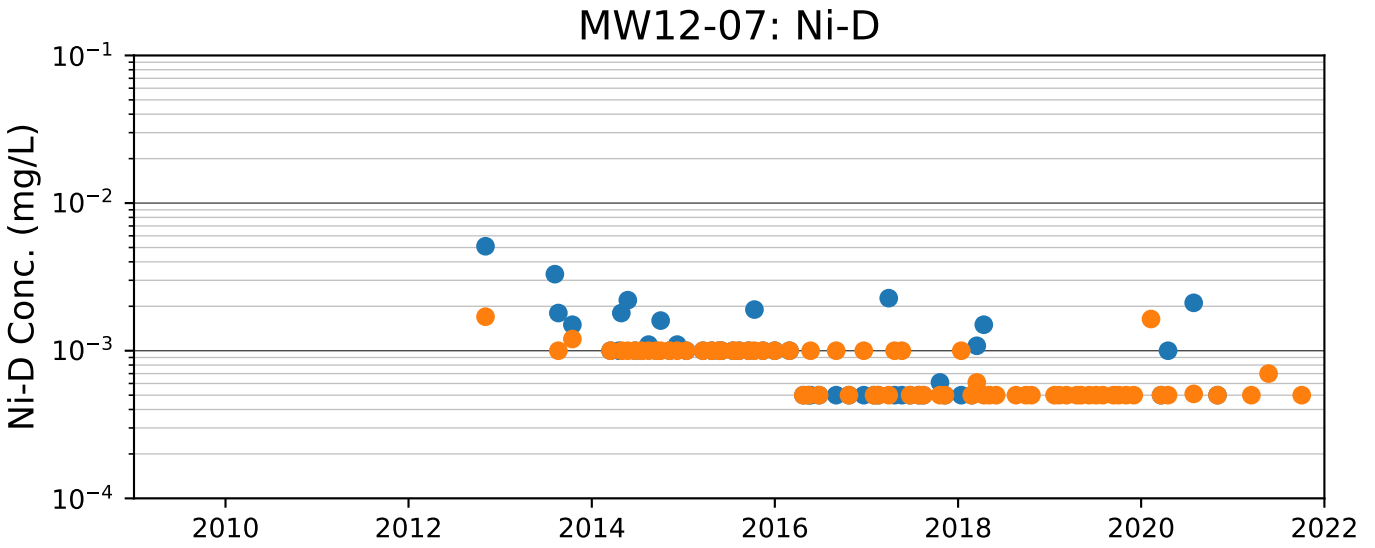

MW12-07: As-D
As-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW12-07-01
MW12-07-02

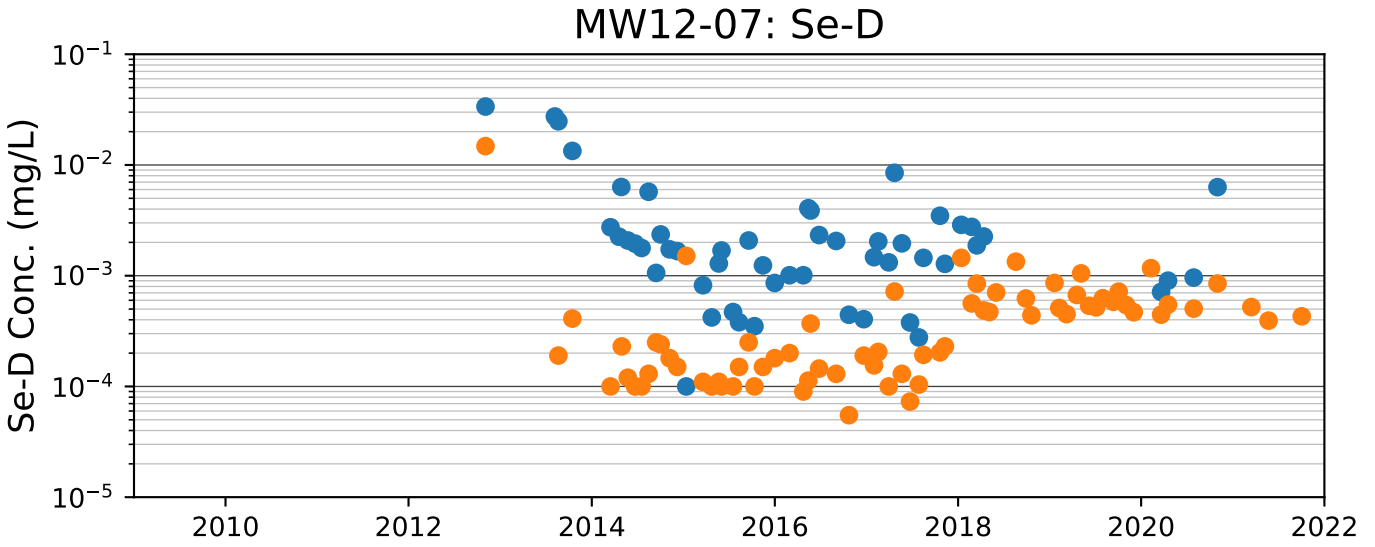

MW12-07: Chlord
Chlord Conc. (mg/L)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022
MW12-07: Cd-D
Cd-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
2010
2012
2014
2016
2018
2020
2022
MW12-07: Cr-D
Cr-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW12-07-01
MW12-07-02

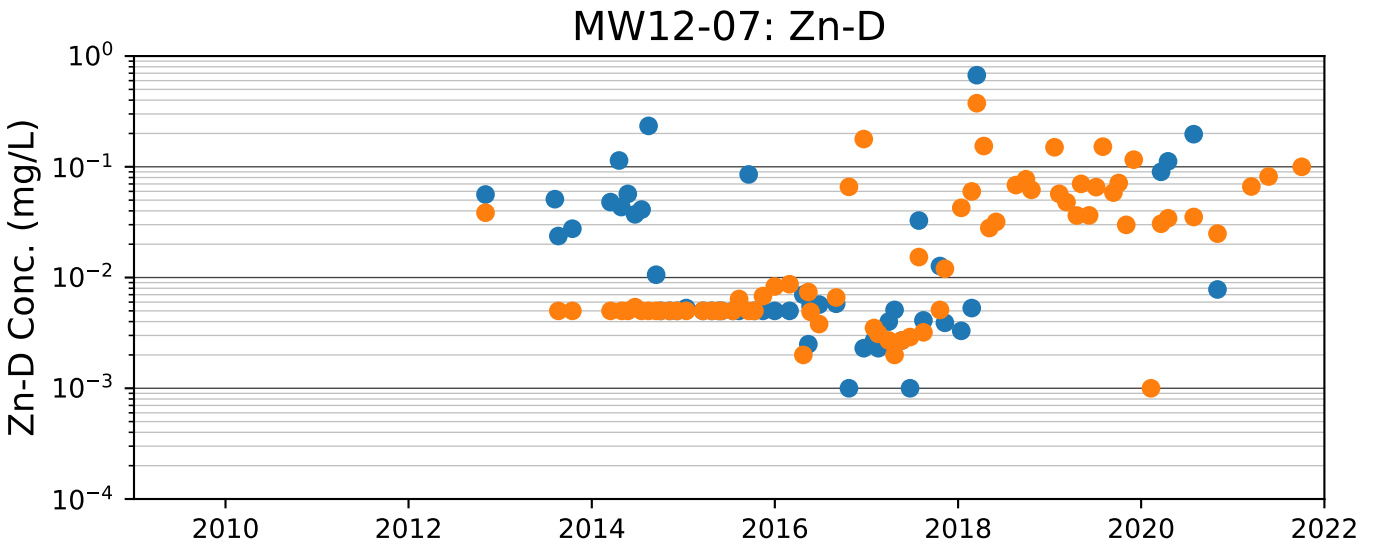

MW12-07: Cu-D
Cu-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

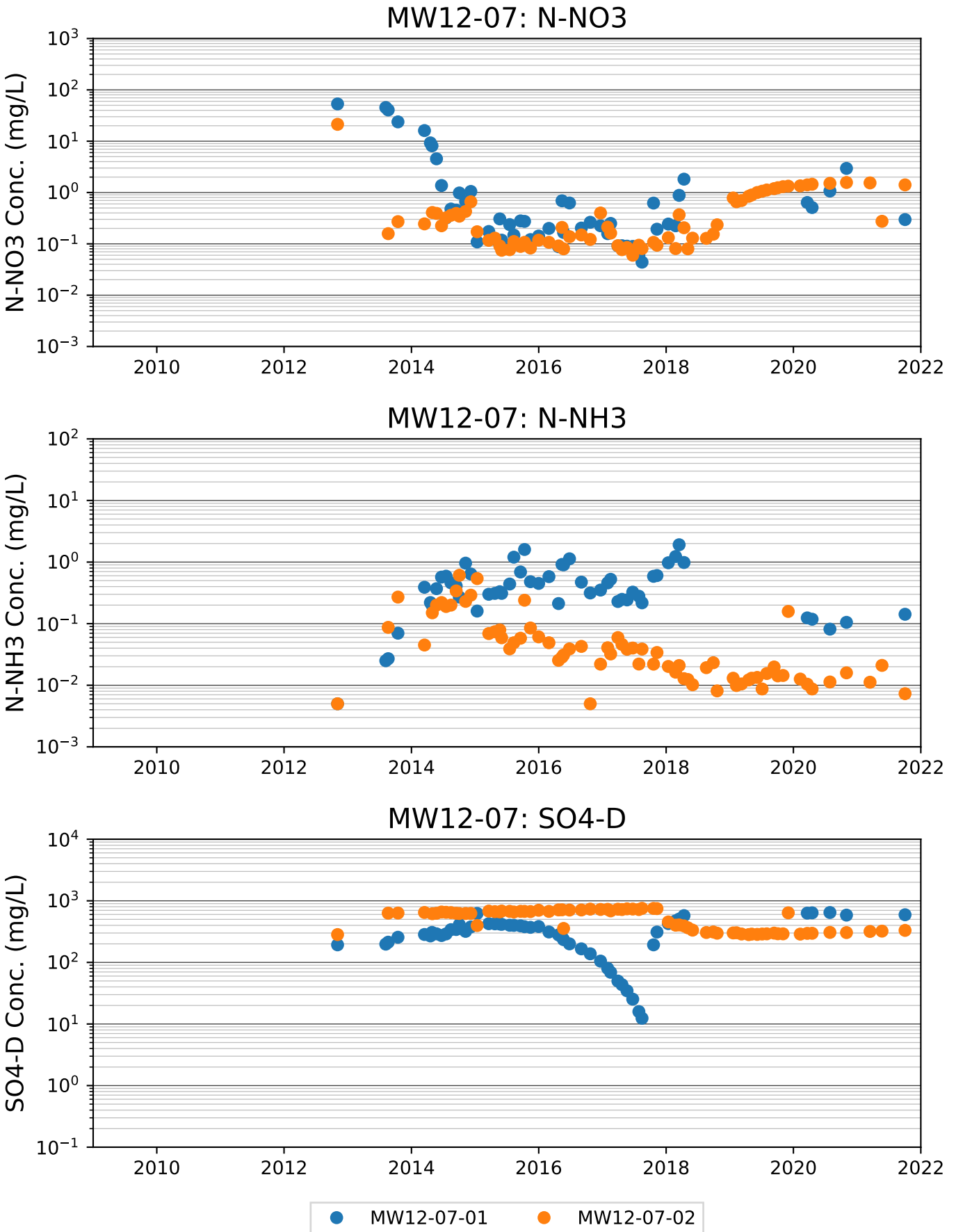

MW12-07: Pb-D
Pb-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

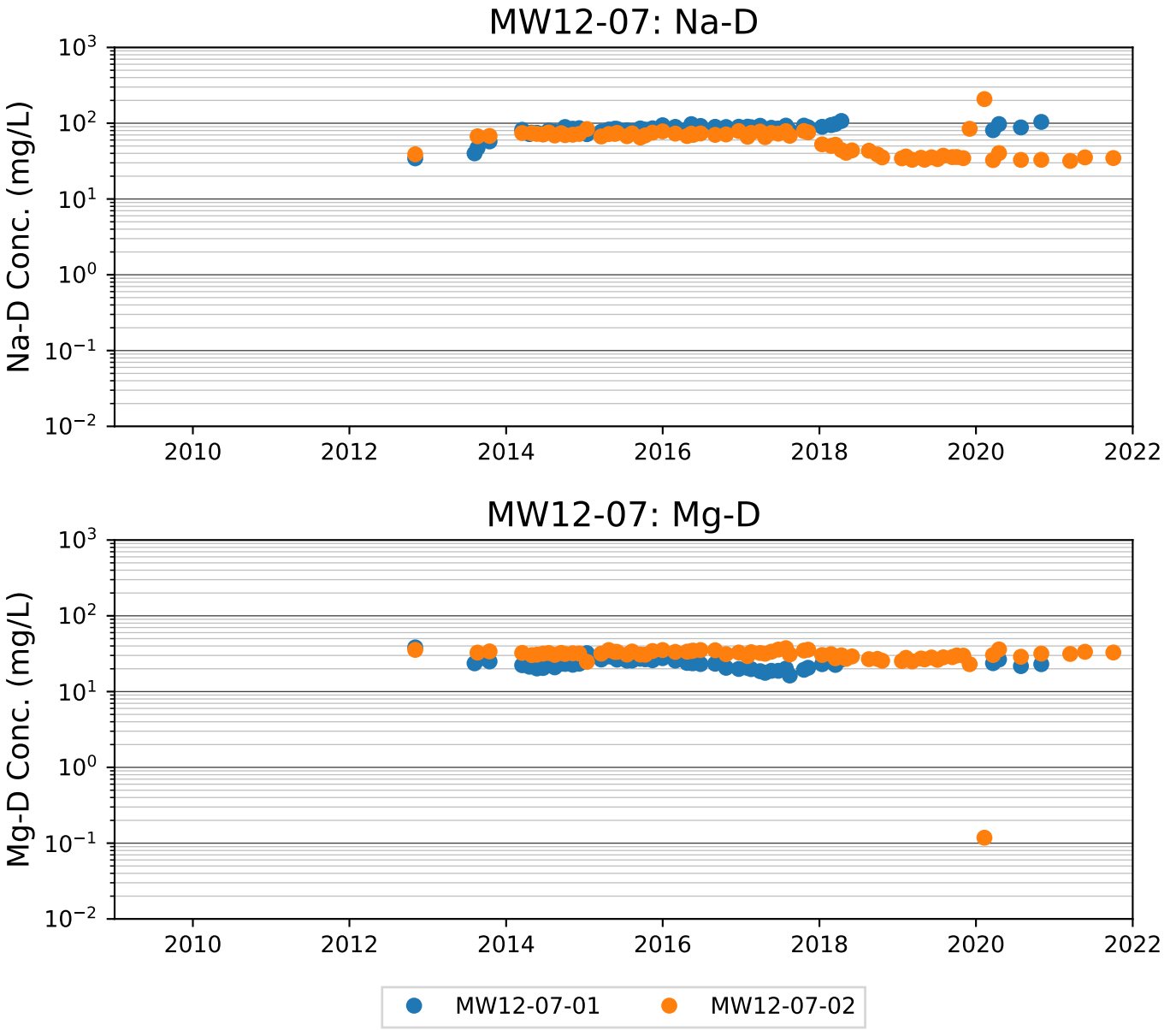

MW12-07: Mo-D
Mo-D Conc. (mg/L)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW12-07-01
MW12-07-02

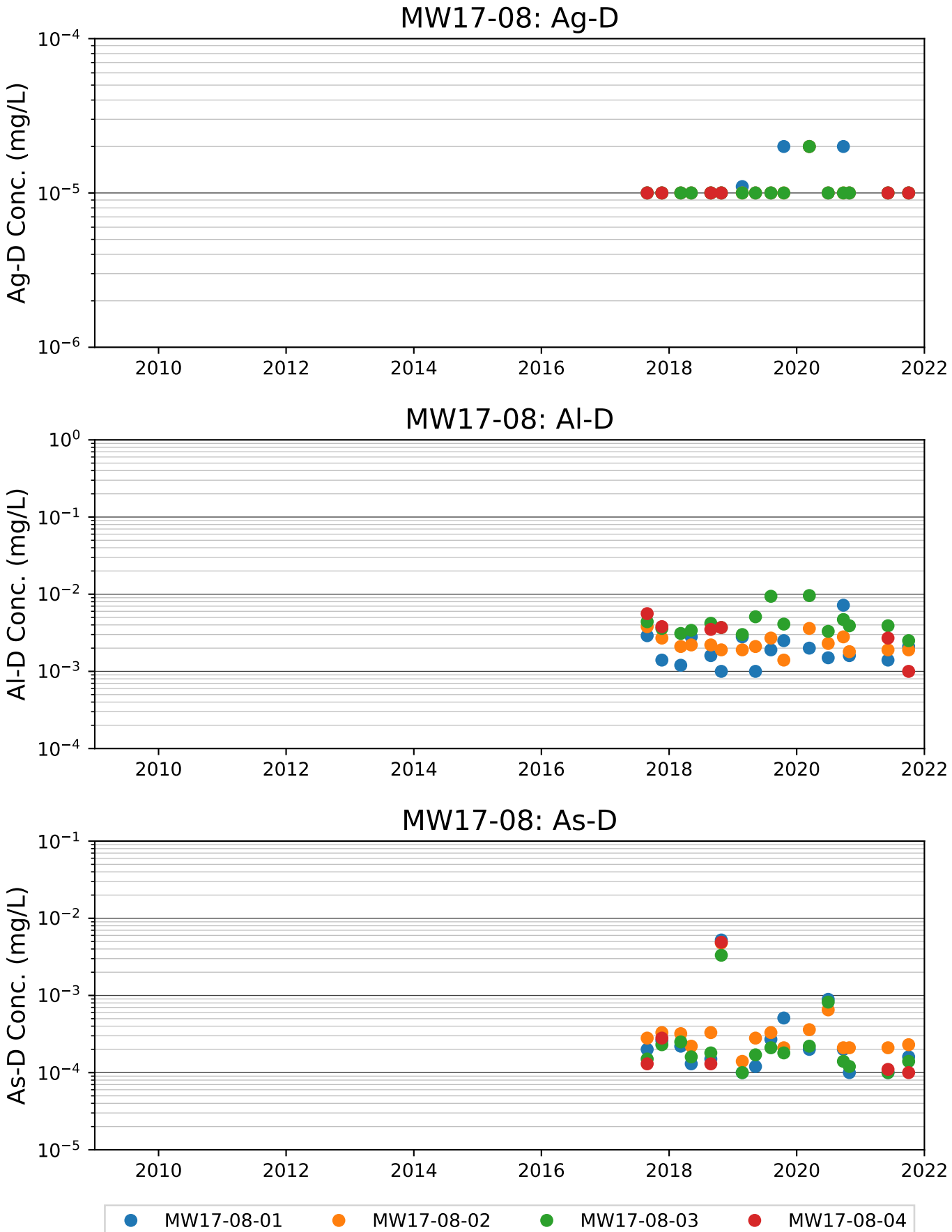

MW12-07: Ni-D
Ni-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022

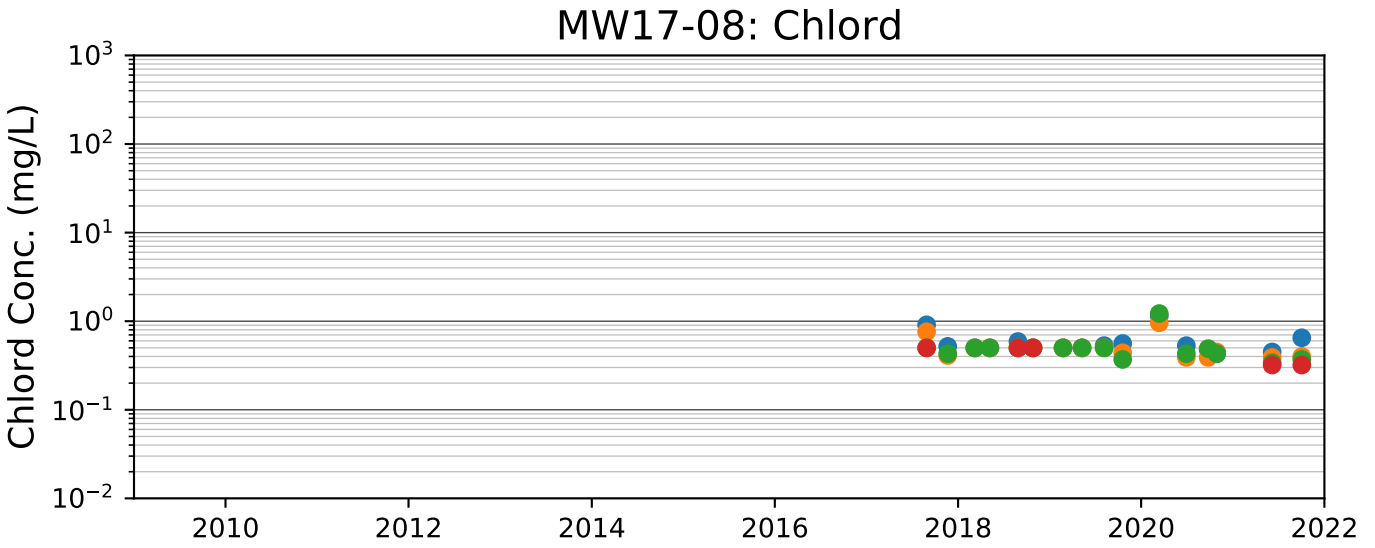

MW12-07: Se-D
Se-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

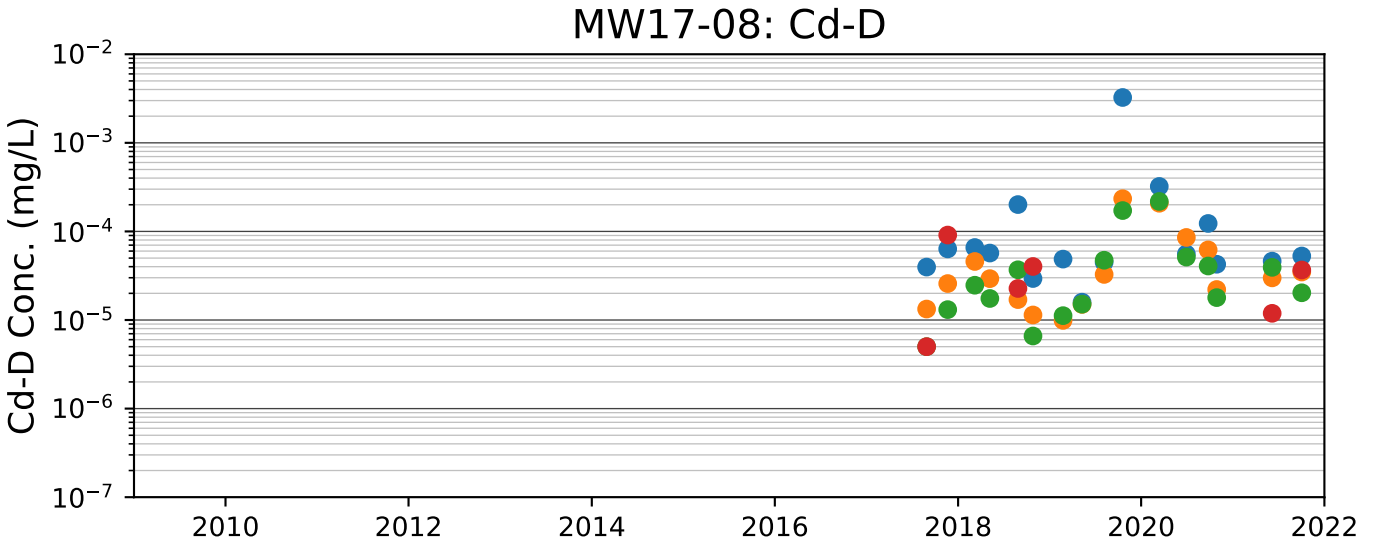

MW12-07: Zn-D
Zn-D Conc. (mg/L)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022
MW12-07-01
MW12-07-02

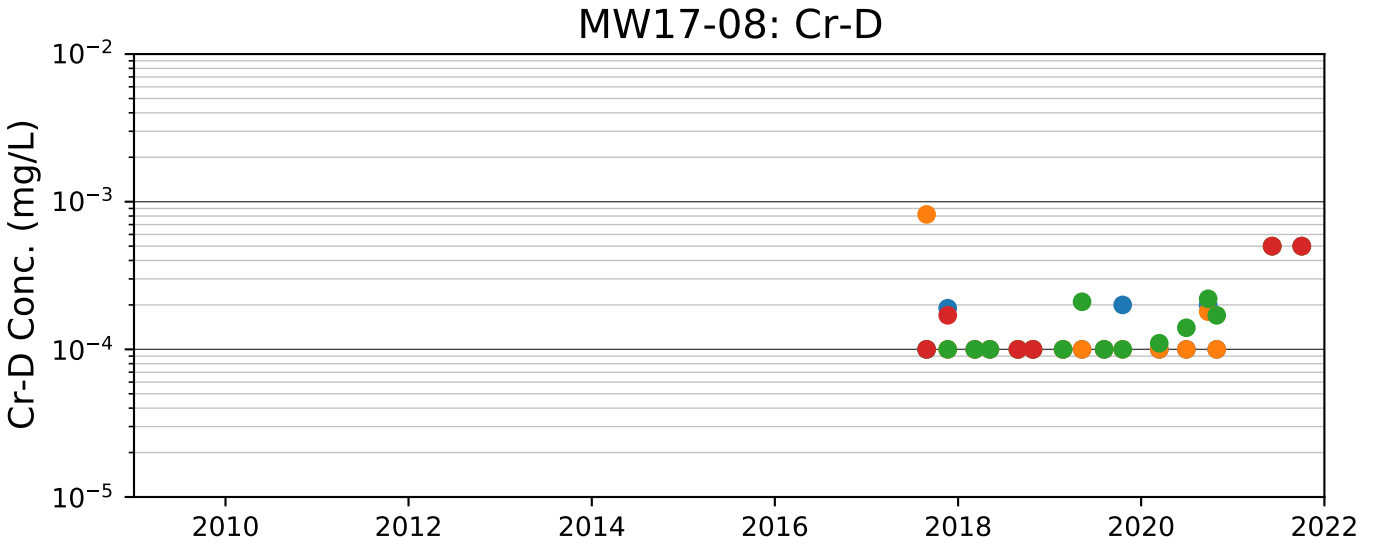

MW12-07: N-NO3
N-NO3 Conc. (mg/L)
MW12-07: N-NH3
N-NH3 Conc. (mg/L)
MW12-07: SO4-D
SO4-D Conc. (mg/L)
2010
2012
2014
2016
2018
2020
2022
MW12-07-01
MW12-07-02

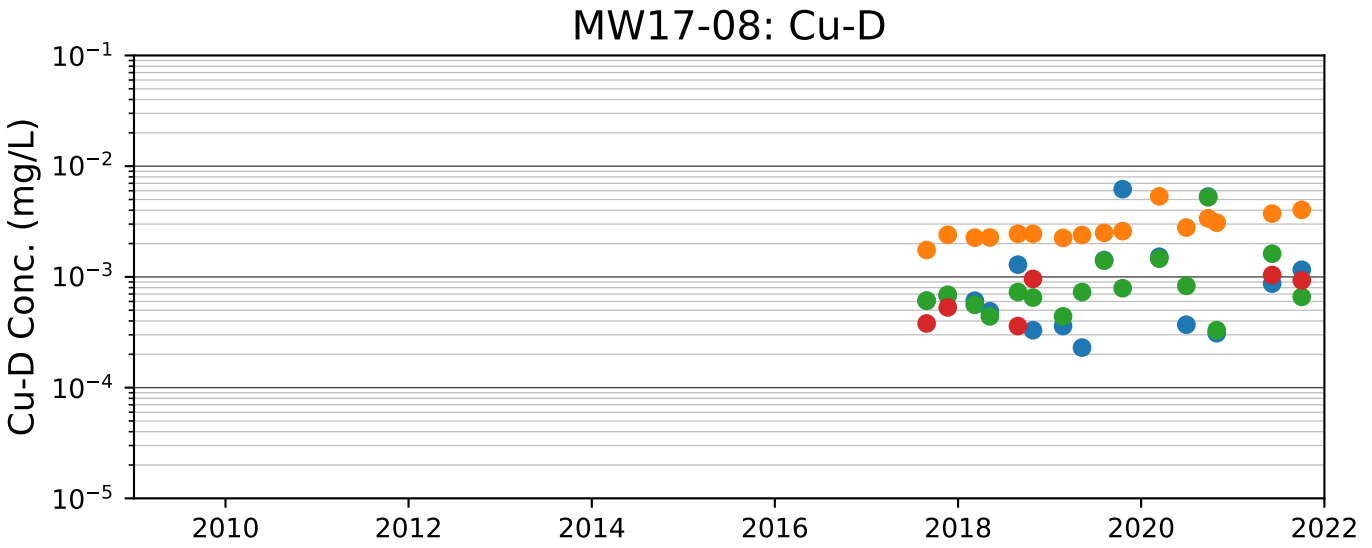

MW12-07: Na-D
Na-D Conc. (mg/L)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022
MW12-07: Mg-D
Mg-D Conc. (mg/L)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022
MW12-07-01
MW12-07-02

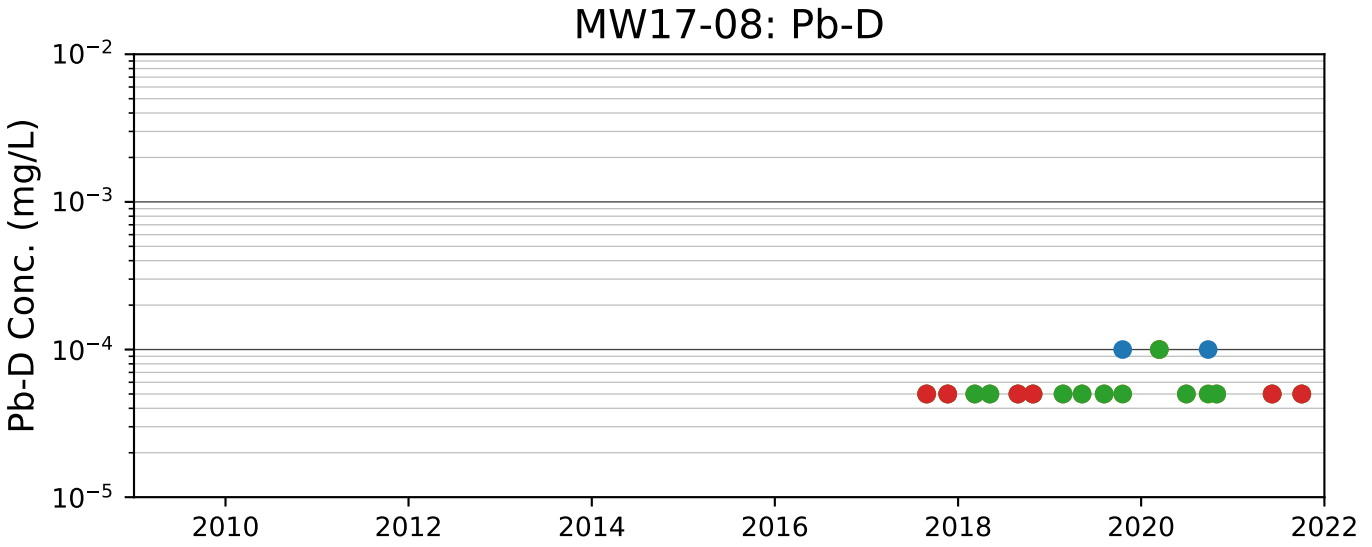

MW17-08: Ag-D
Ag-D Conc. (mg/L)
10^{-4}
10^{-5}
10^{-6}
2010
2012
2014
2016
2018
2020
2022
MW17-08: Al-D
Al-D Conc. (mg/L)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022
MW17-08: As-D
As-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW17-08-01
MW17-08-02
MW17-08-03
MW17-08-04

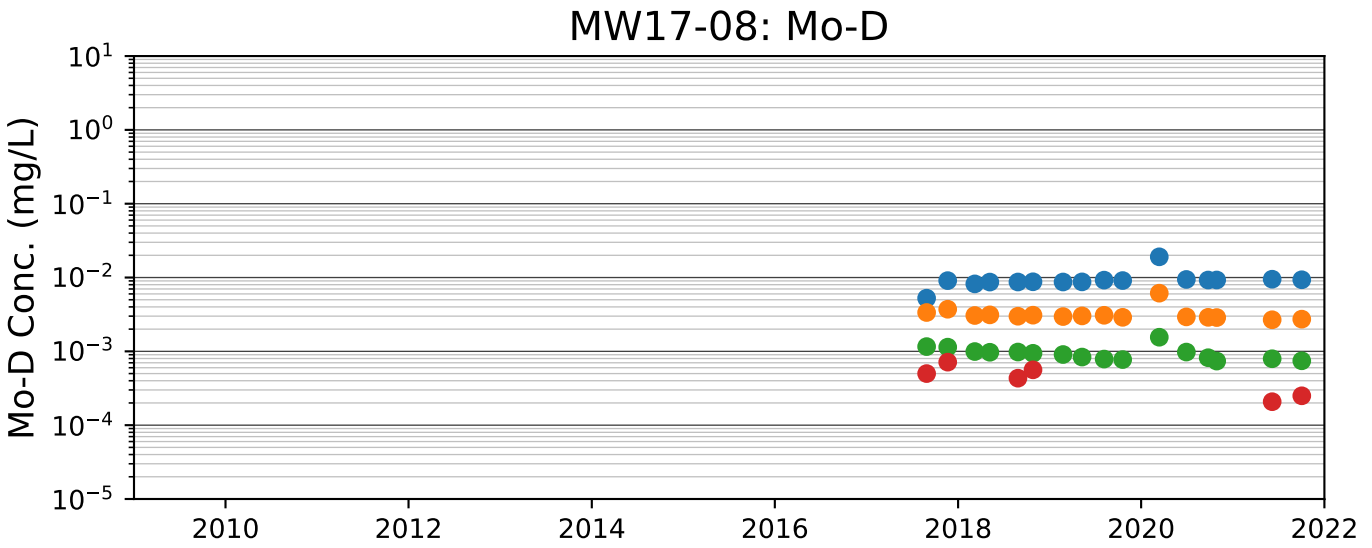

MW17-08: Chlord
Chlord Conc. (mg/L)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022

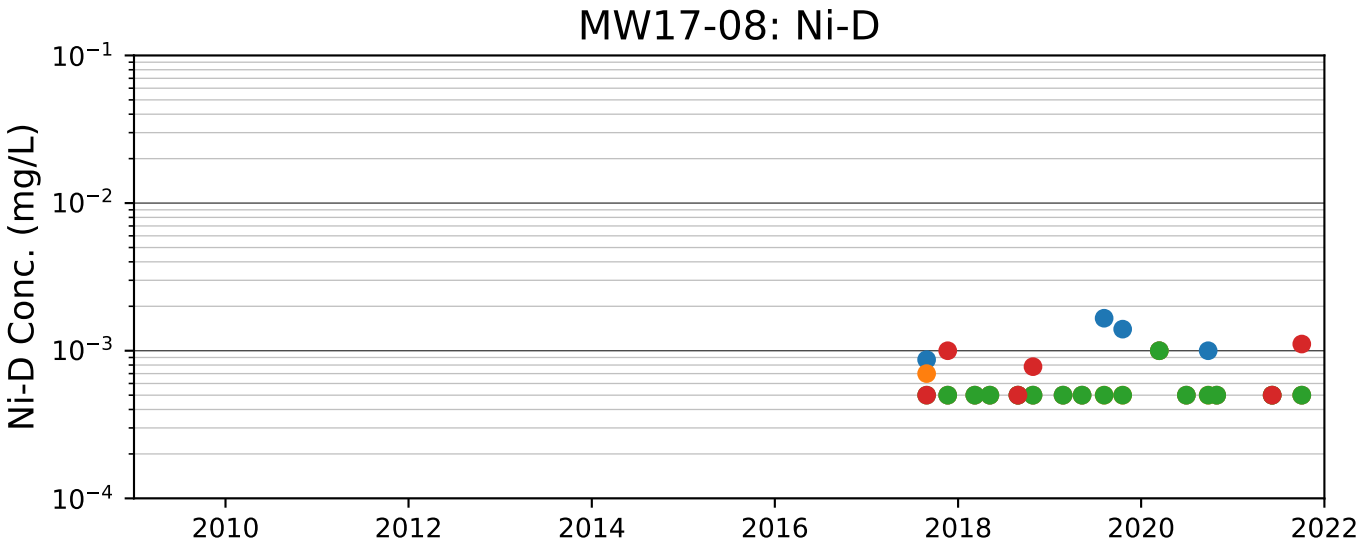

MW17-08: Cd-D
Cd-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
2010
2012
2014
2016
2018
2020
2022

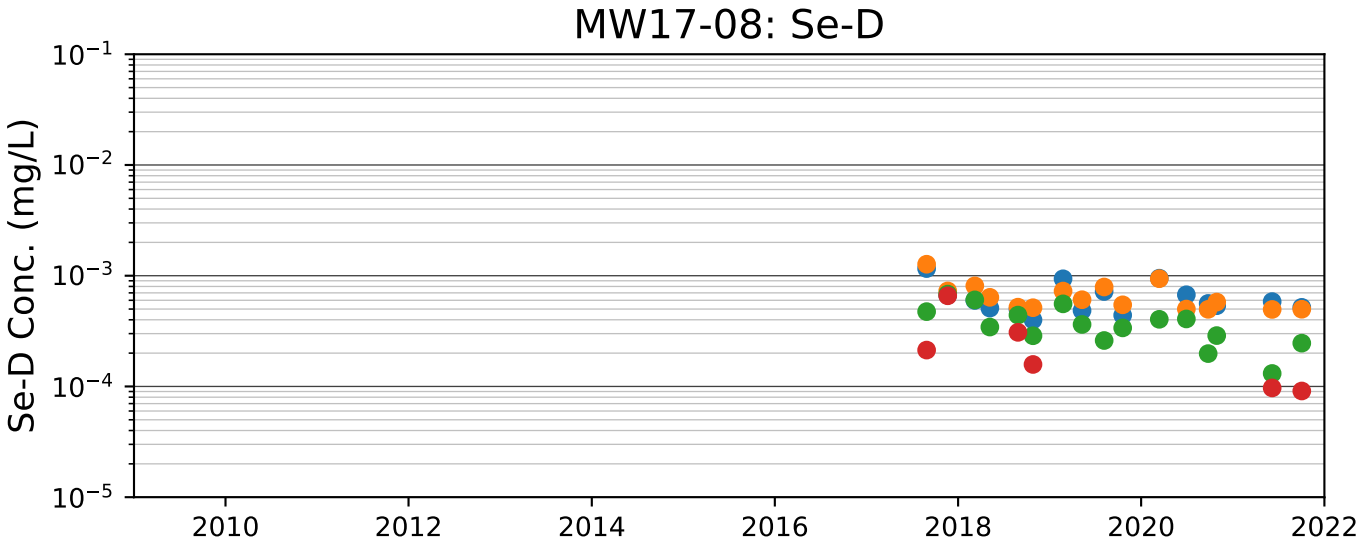

MW17-08: Cr-D
Cr-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW17-08-01
MW17-08-02
MW17-08-03
MW17-08-04

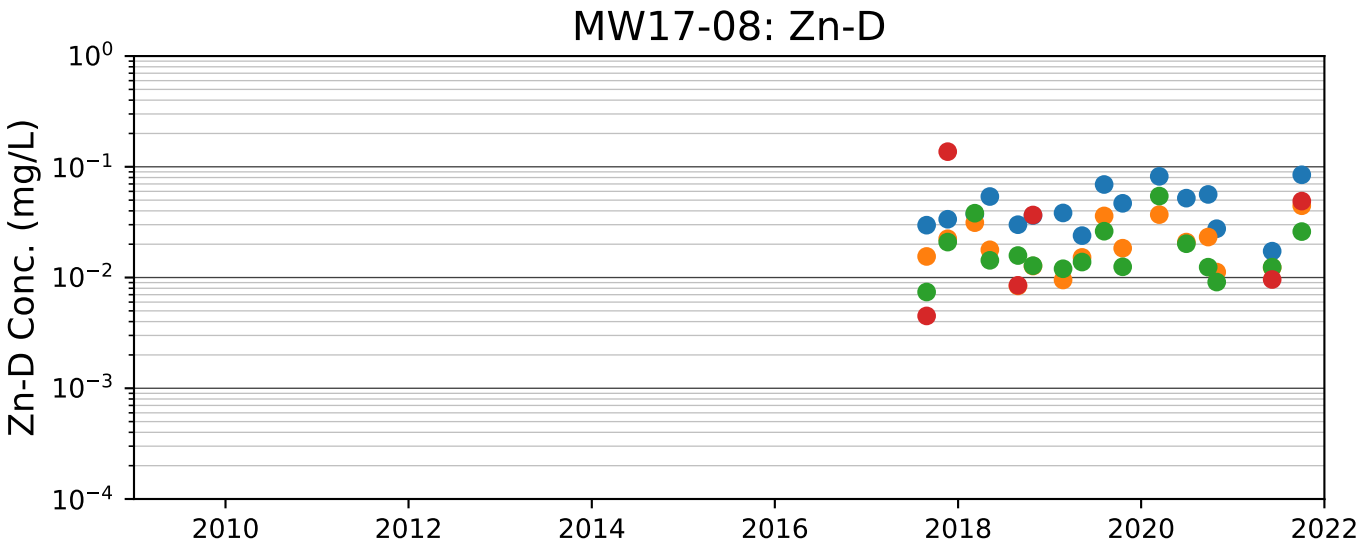

MW17-08: Cu-D
Cu-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022


MW17-08: Pb-D
Pb-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

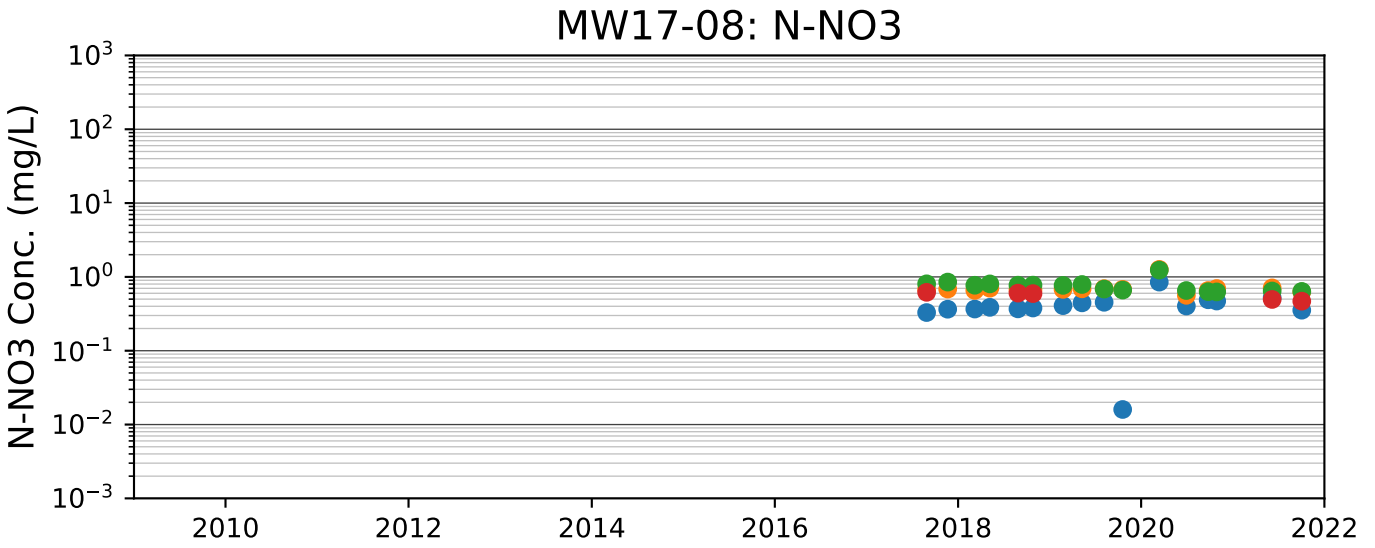

MW17-08: Mo-D
Mo-D Conc. (mg/L)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW17-08-01
MW17-08-02
MW17-08-03
MW17-08-04

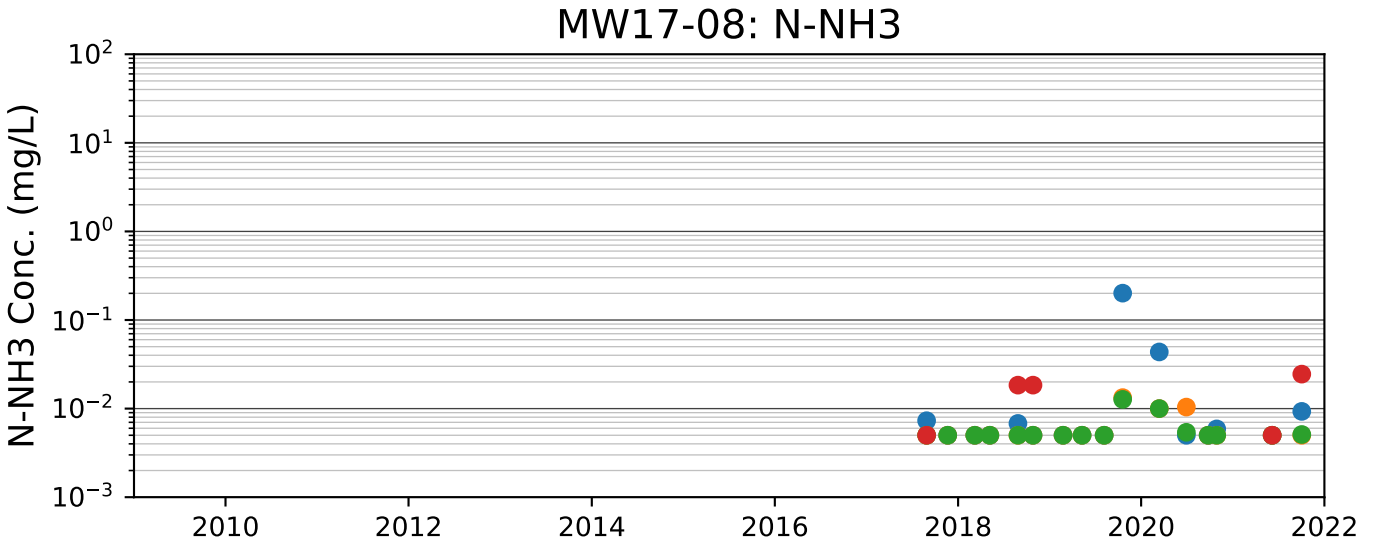

MW17-08: Ni-D
Ni-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022

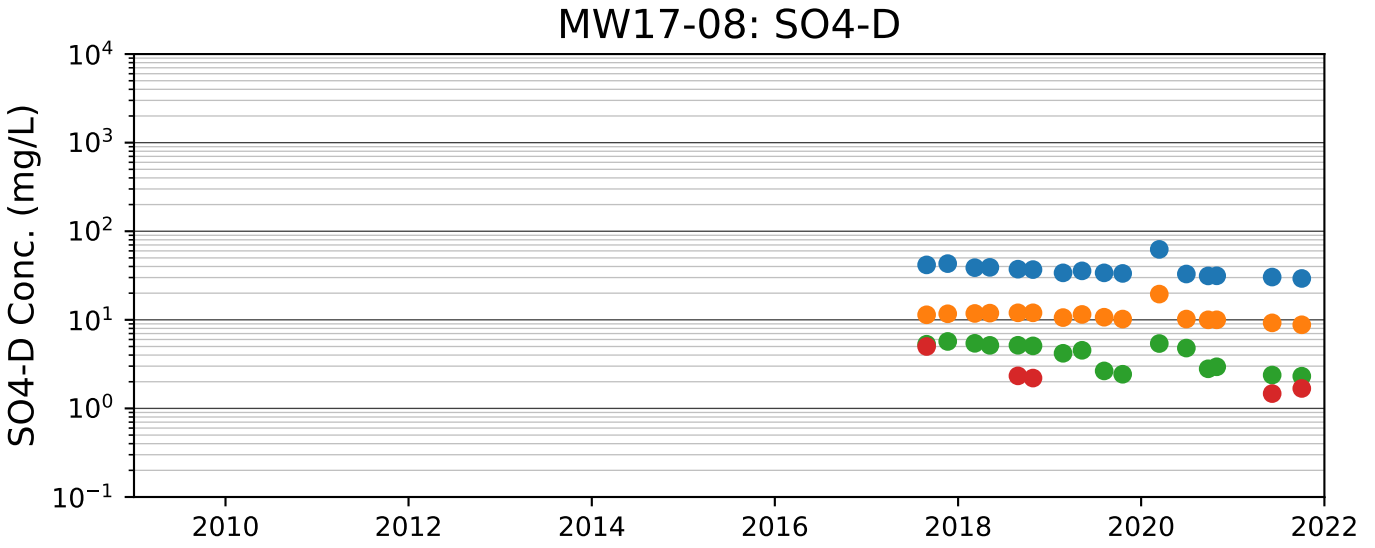

MW17-08: Se-D
Se-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

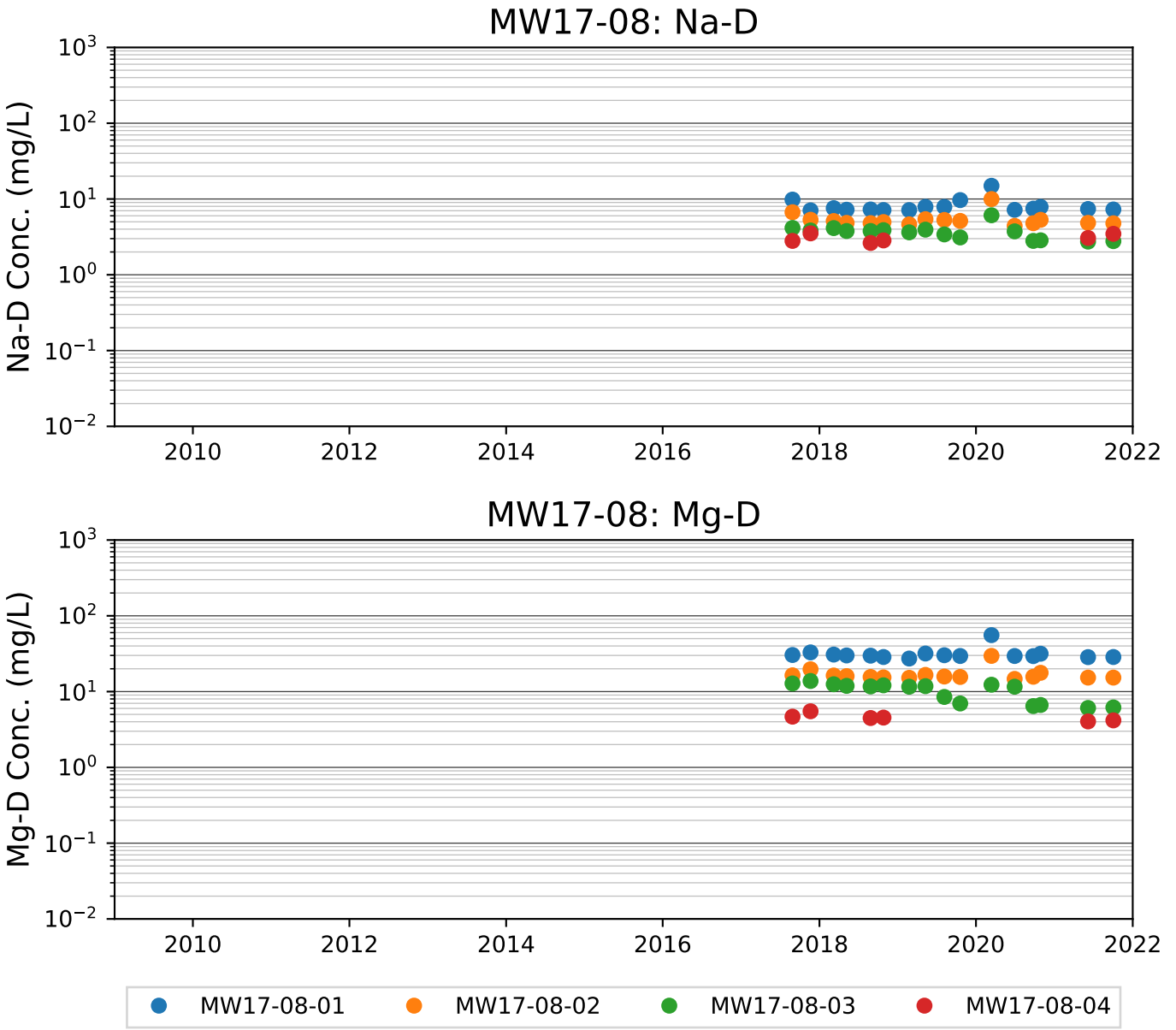

MW17-08: Zn-D
Zn-D Conc. (mg/L)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022

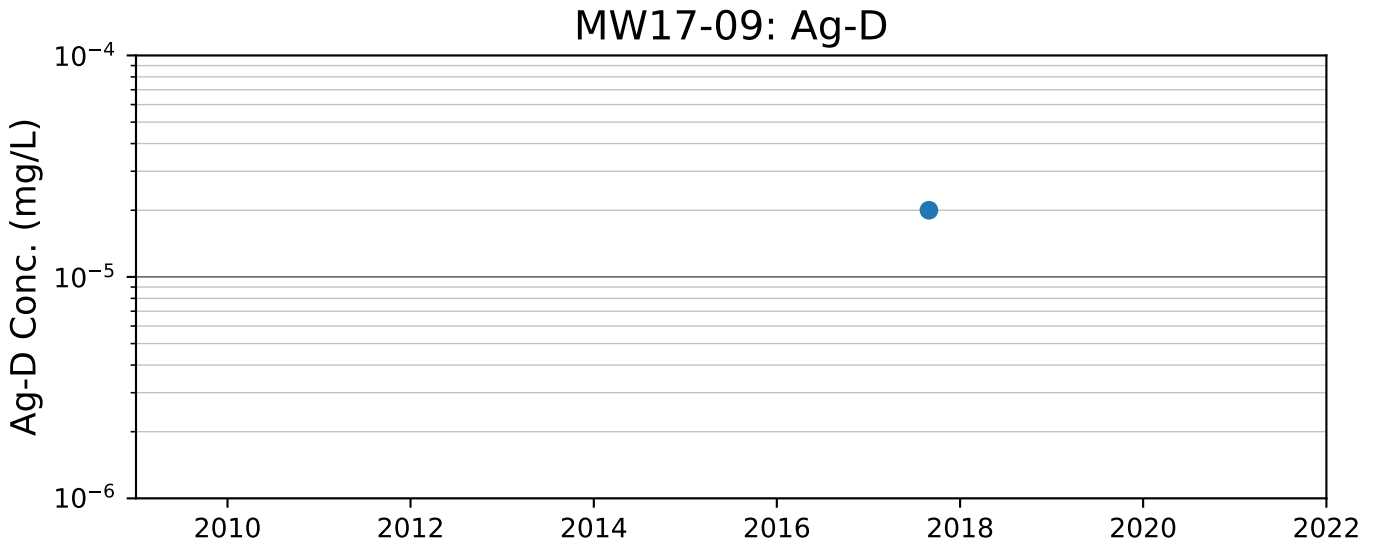
MW17-08-01
MW17-08-02
MW17-08-03
MW17-08-04

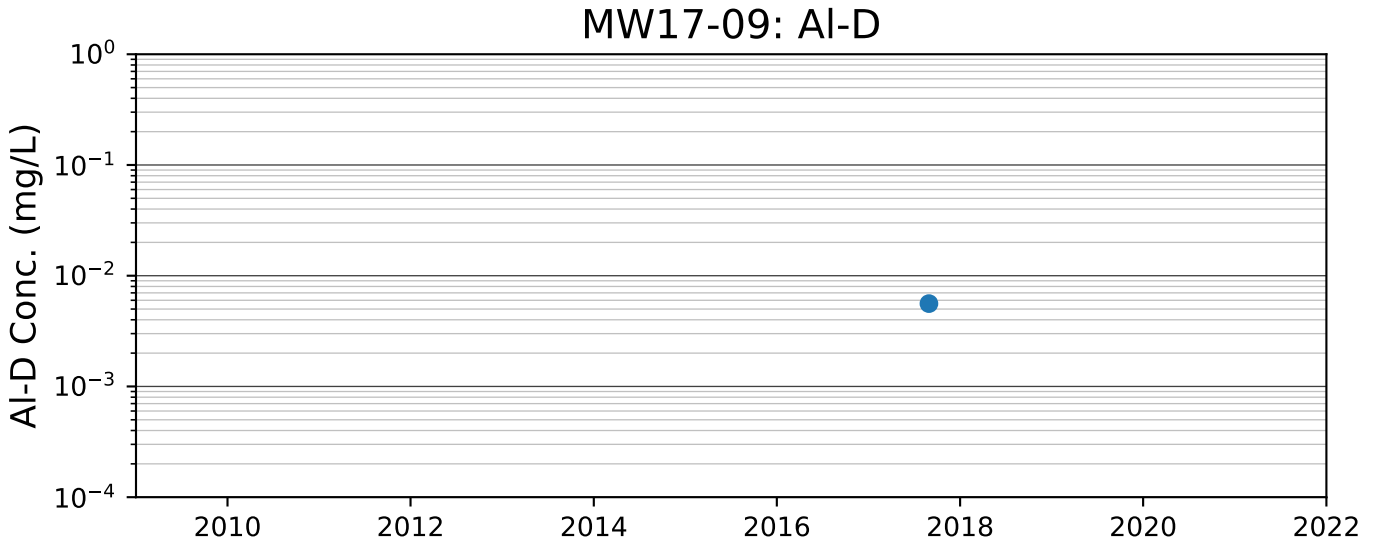

MW17-08: N-NO3
N-NO3 Conc. (mg/L)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
2010
2012
2014
2016
2018
2020
2022

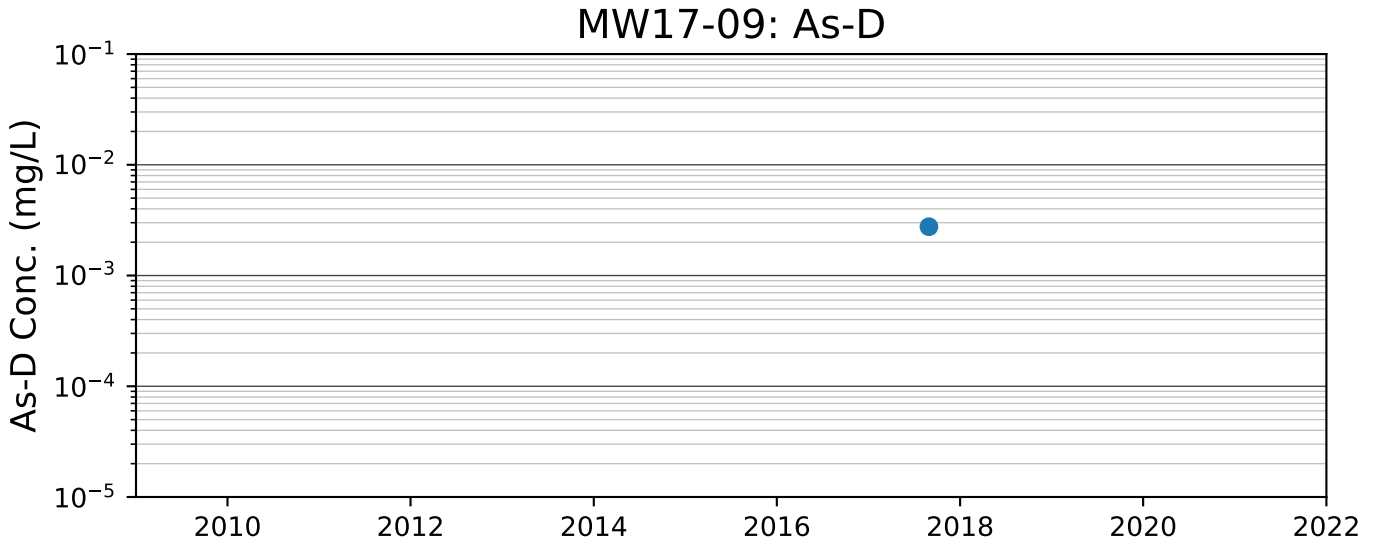

MW17-08: N-NH3
N-NH3 Conc. (mg/L)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
2010
2012
2014
2016
2018
2020
2022

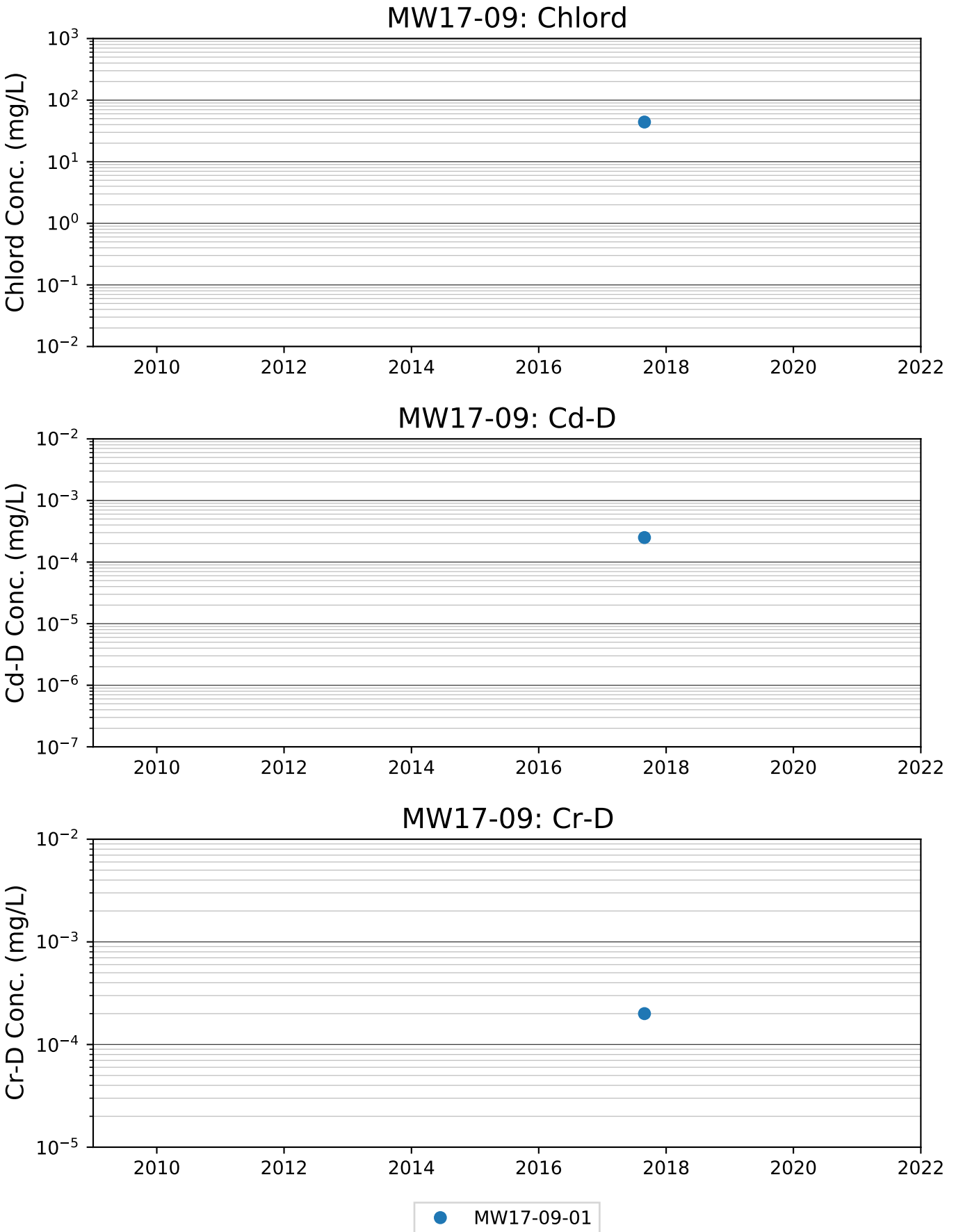

MW17-08: SO4-D
SO4-D Conc. (mg/L)
10^{4}
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
2010
2012
2014
2016
2018
2020
2022
MW17-08-01
MW17-08-02
MW17-08-03
MW17-08-04

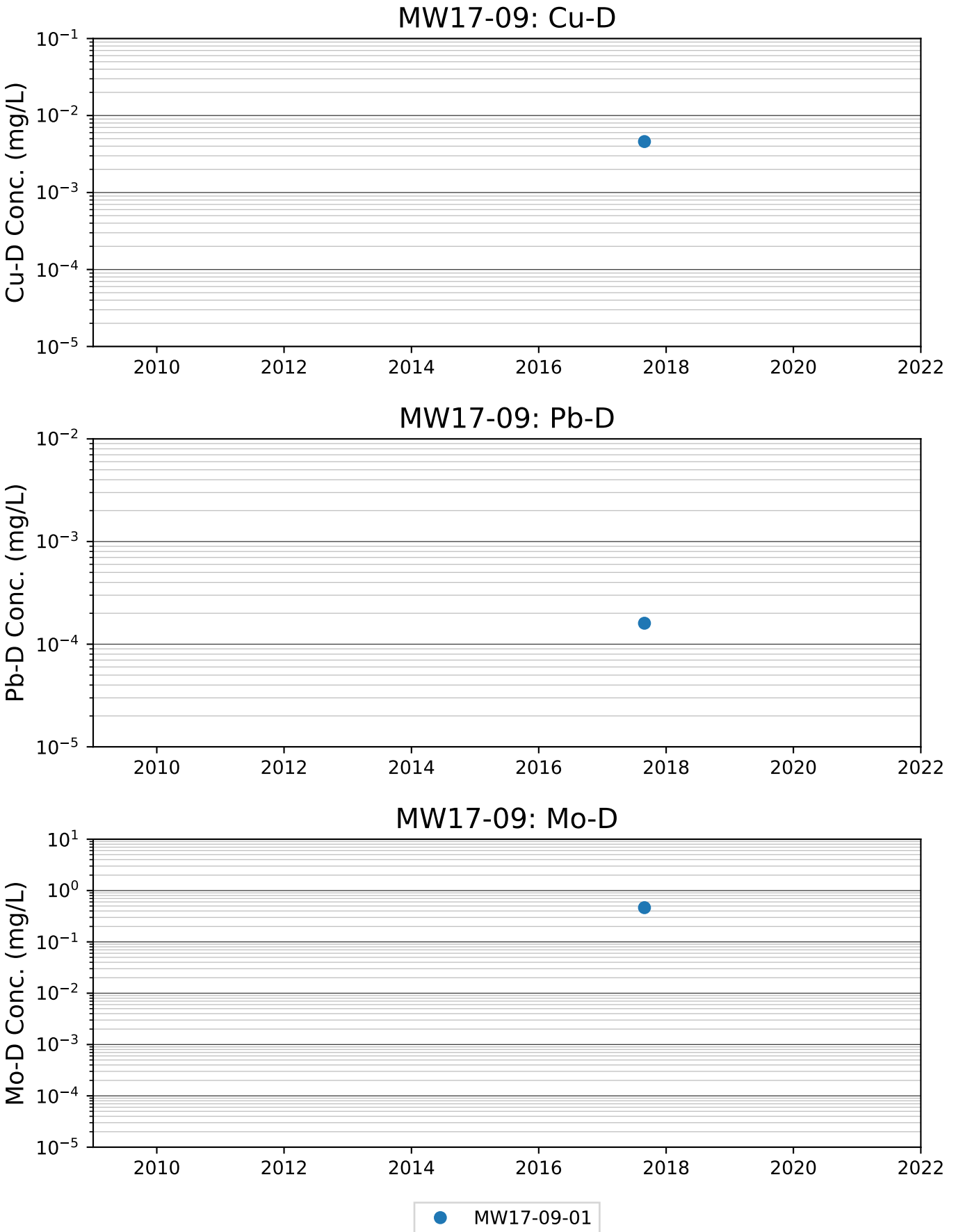

MW17-08: Na-D
Na-D Conc. (mg/L)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022
MW17-08: Mg-D
Mg-D Conc. (mg/L)
MW17-08-01
MW17-08-02
MW17-08-03
MW17-08-04

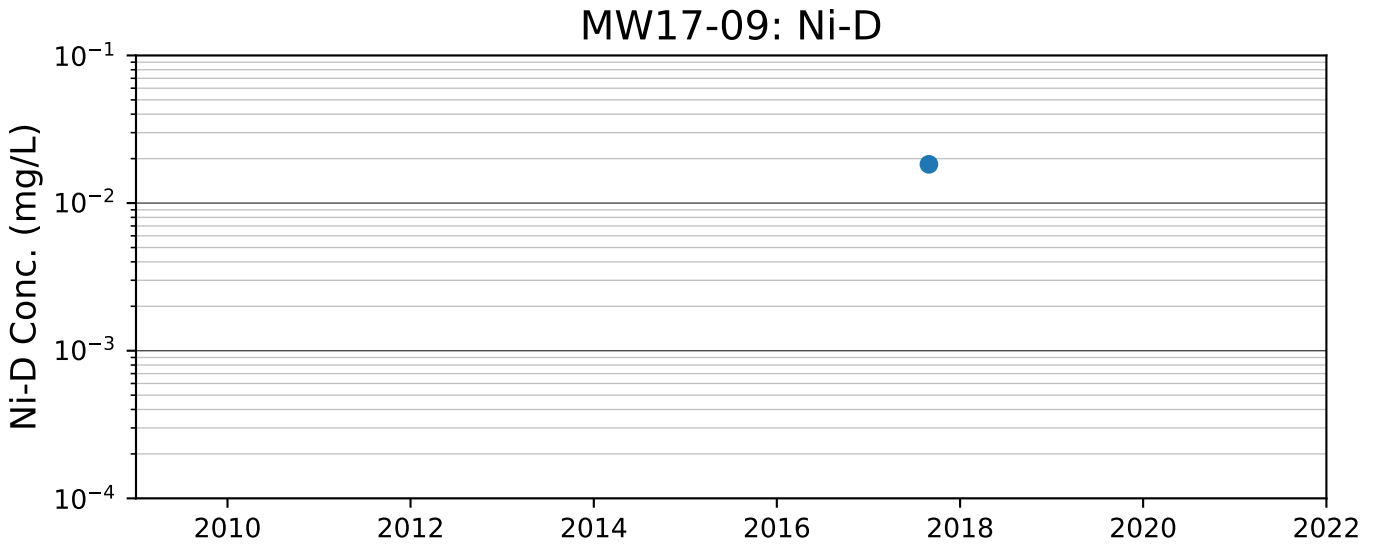

MW17-09: Ag-D
Ag-D Conc. (mg/L)
10^{-4}
10^{-5}
10^{-6}
2010
2012
2014
2016
2018
2020
2022

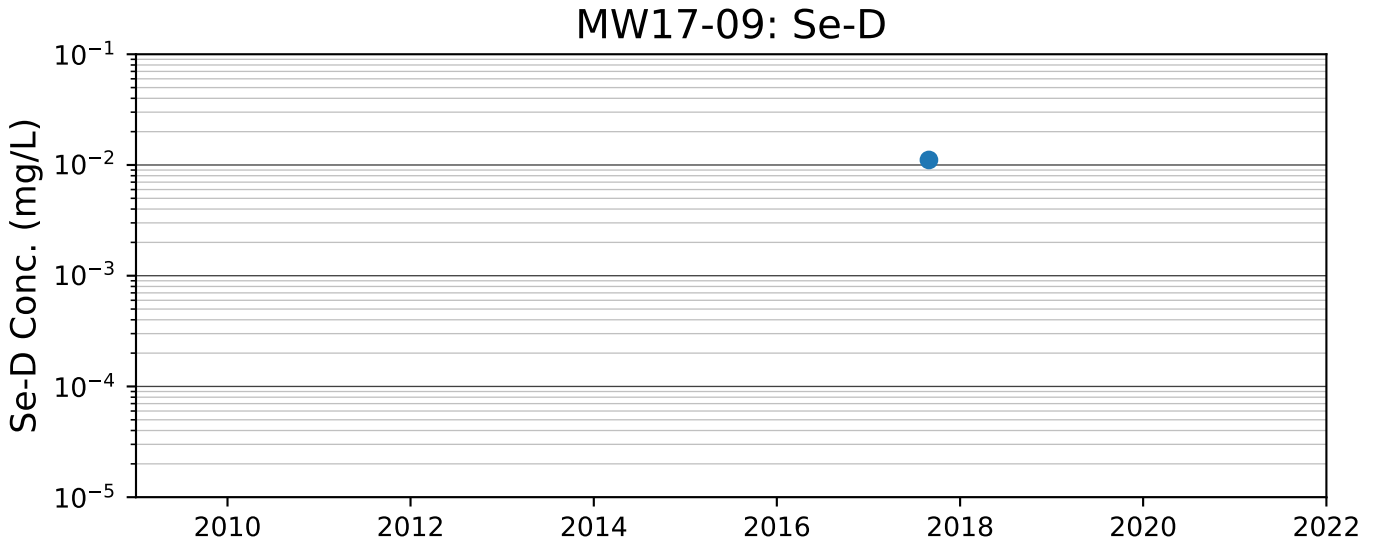

MW17-09: Al-D
Al-D Conc. (mg/L)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022

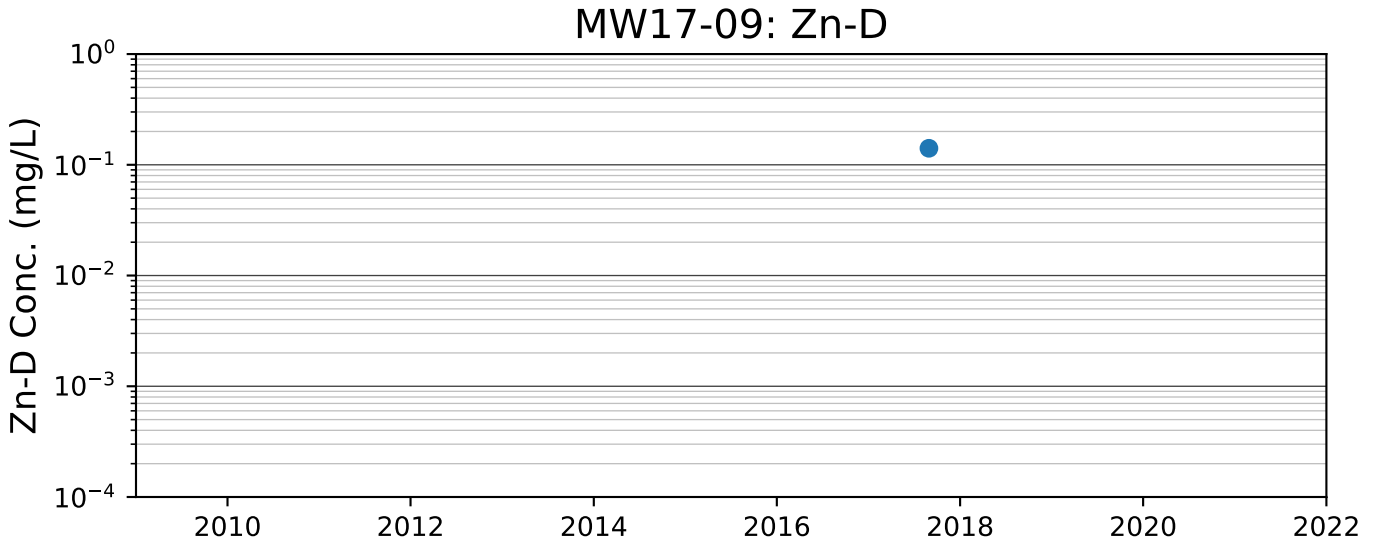

MW17-09: As-D
As-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW17-09-01

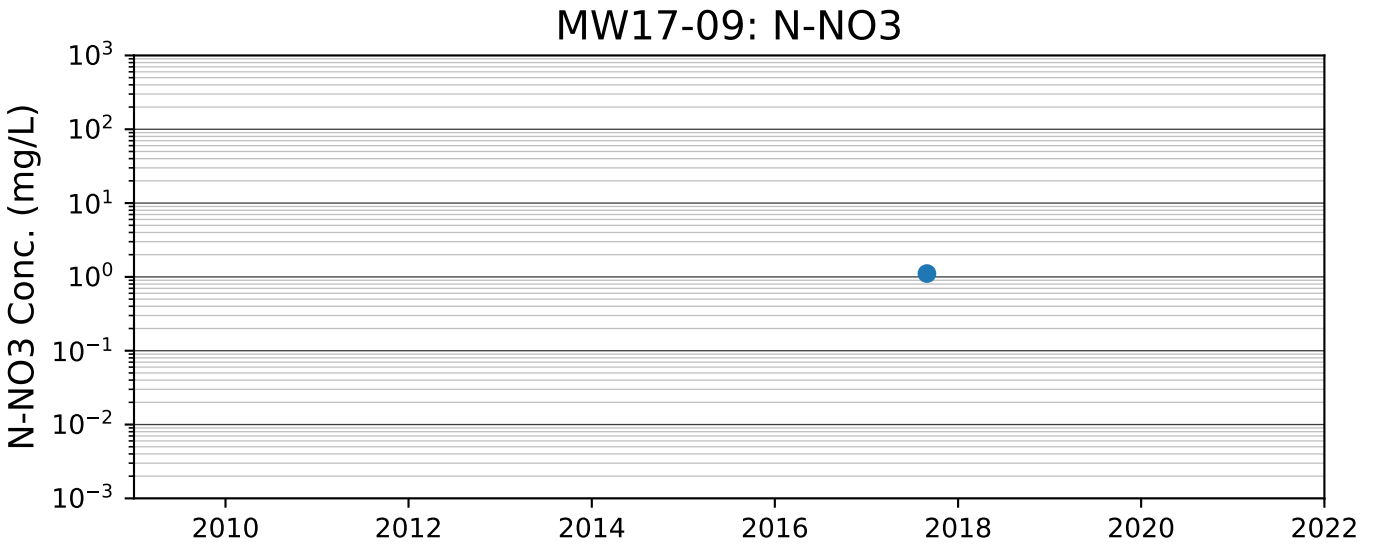

MW17-09: Chlord
Chlord Conc. (mg/L)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022
MW17-09: Cd-D
Cd-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
2010
2012
2014
2016
2018
2020
2022
MW17-09: Cr-D
Cr-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW17-09-01

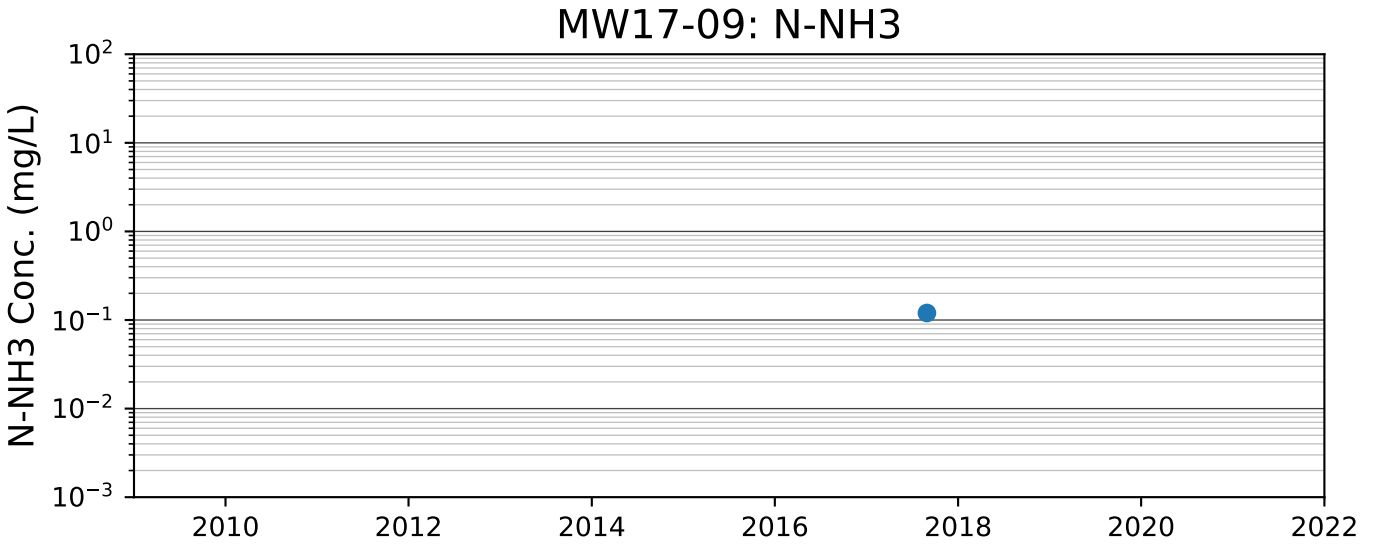

MW17-09: Cu-D
Cu-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW17-09: Pb-D
Pb-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW17-09: Mo-D
Mo-D Conc. (mg/L)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW17-09-01

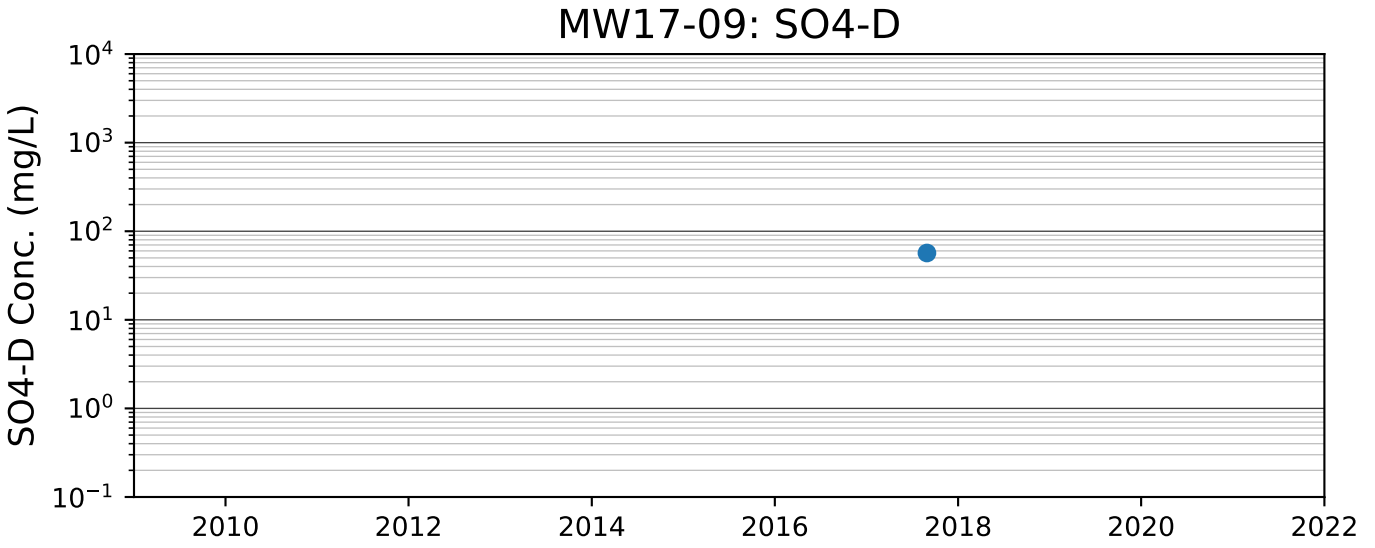

MW17-09: Ni-D
Ni-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022

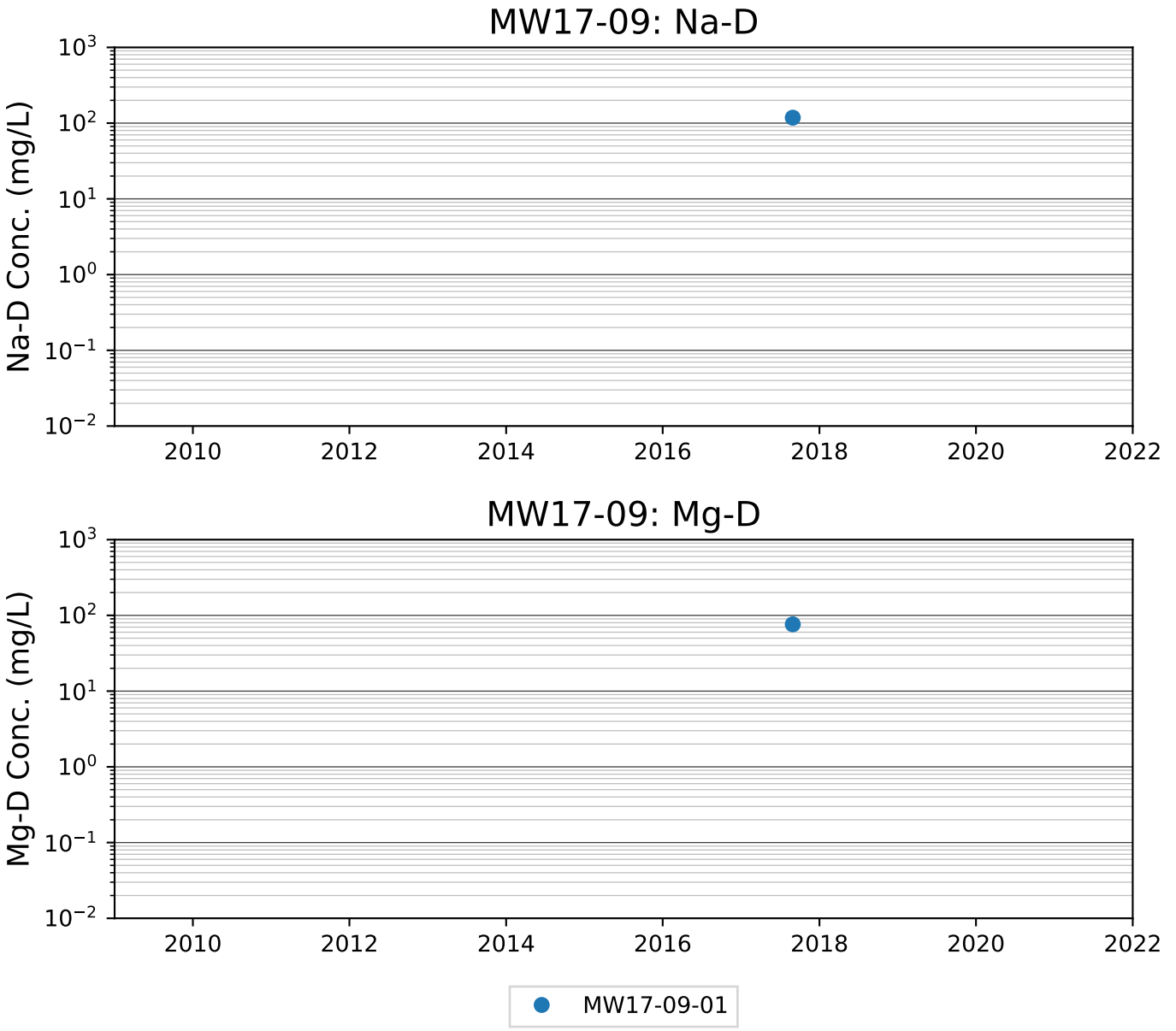

MW17-09: Se-D
Se-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

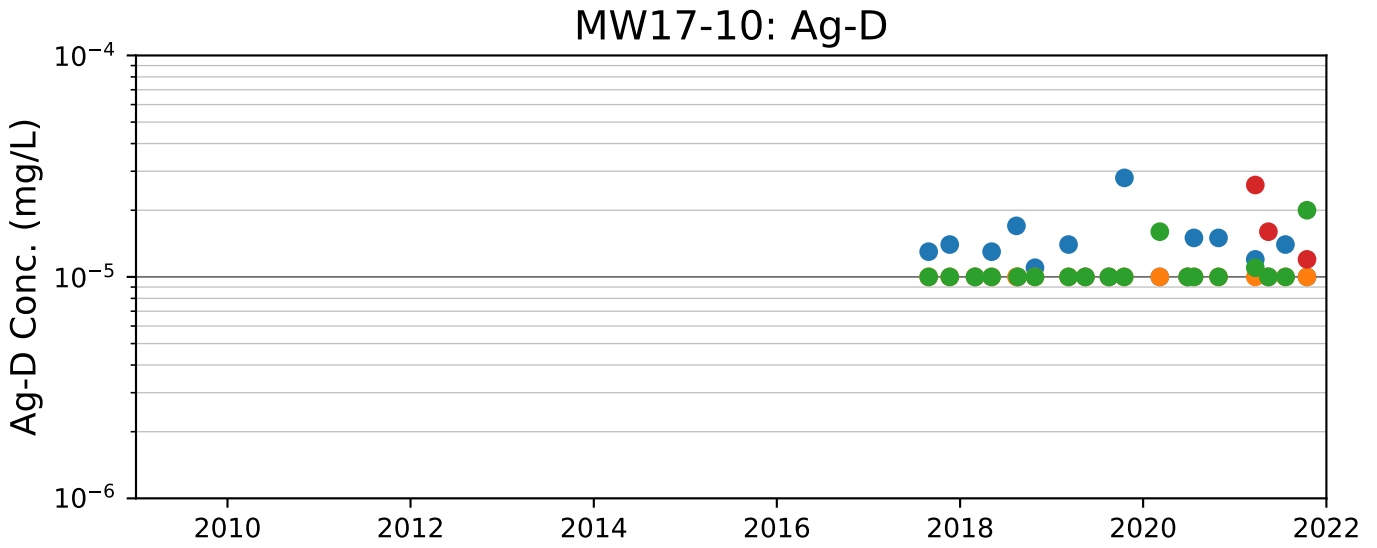

MW17-09: Zn-D
Zn-D Conc. (mg/L)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022
MW17-09-01

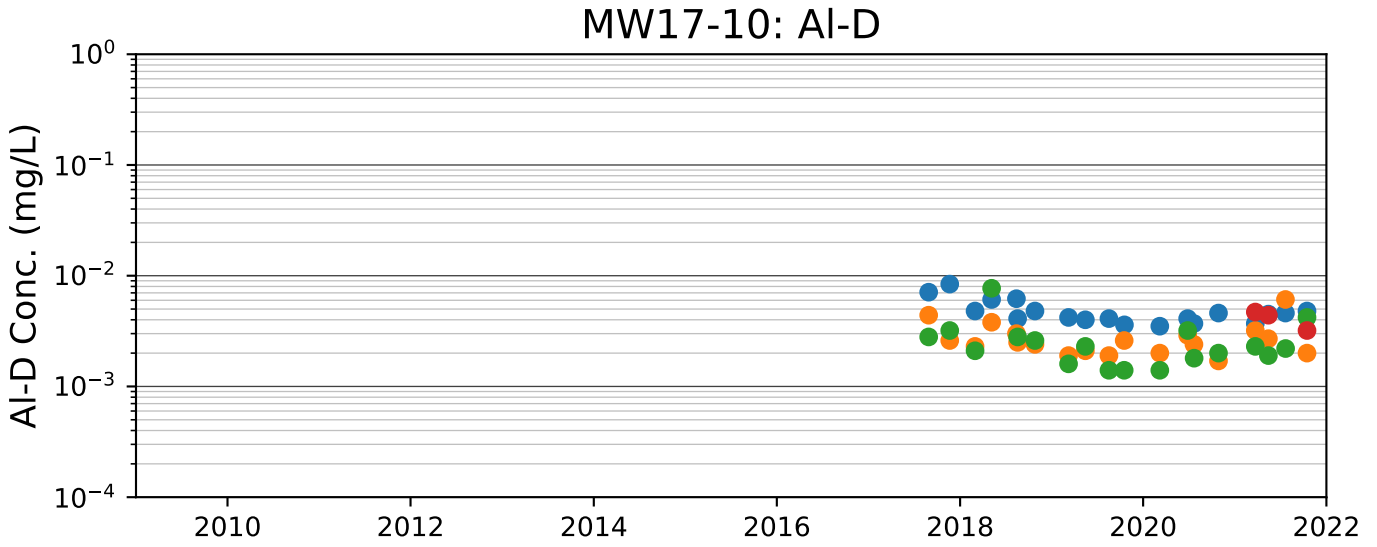

MW17-09: N-NO3
N-NO3 Conc. (mg/L)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
2010
2012
2014
2016
2018
2020
2022

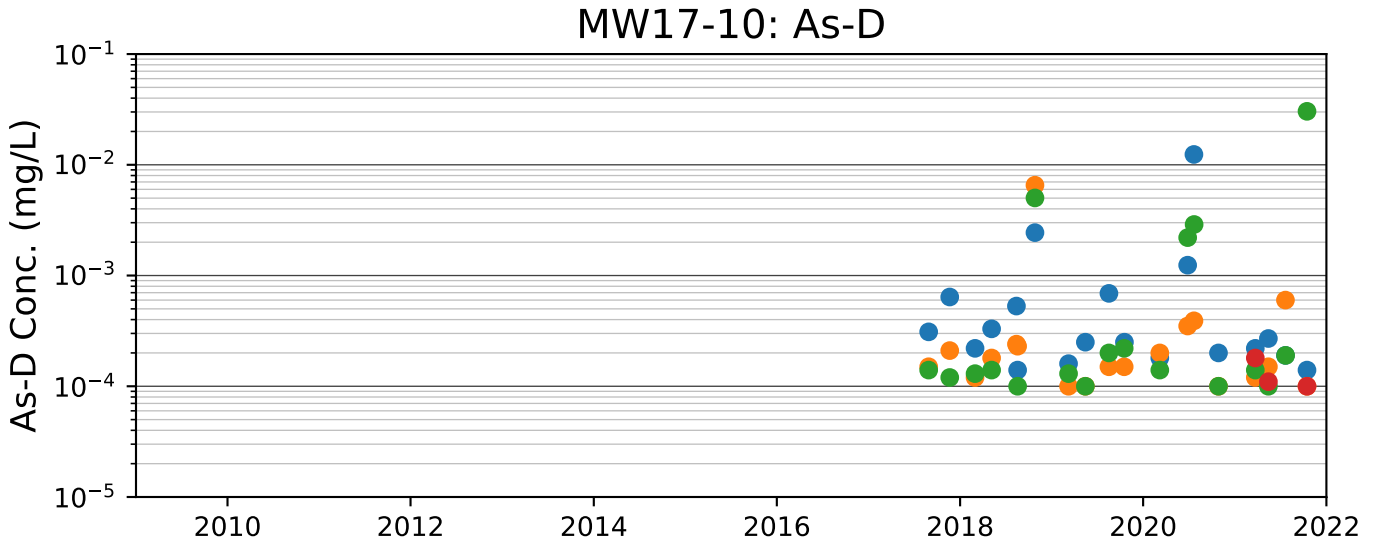

MW17-09: N-NH3
N-NH3 Conc. (mg/L)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
2010
2012
2014
2016
2018
2020
2022

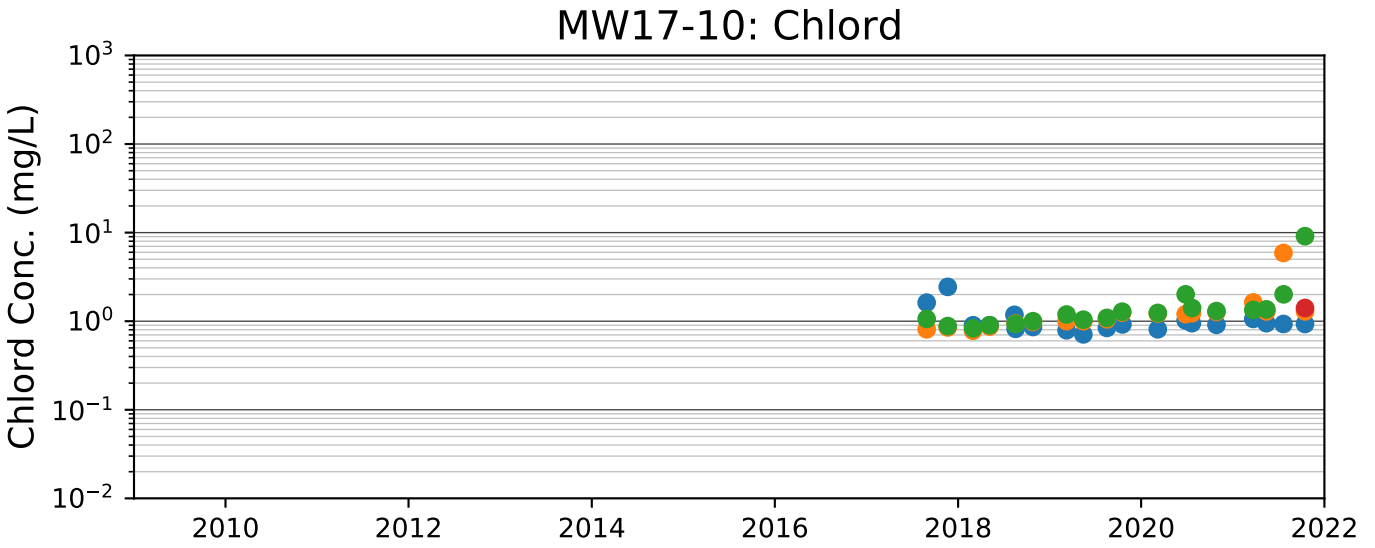

MW17-09: SO4-D
SO4-D Conc. (mg/L)
10^{4}
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
2010
2012
2014
2016
2018
2020
2022
MW17-09-01

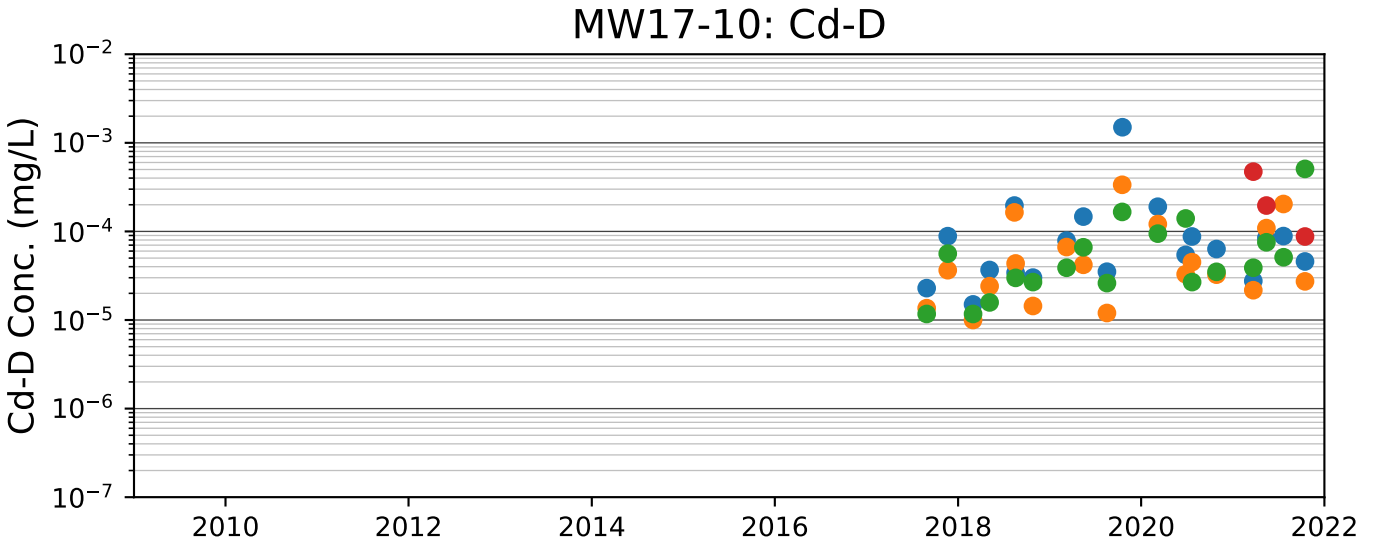

MW17-09: Na-D
Na-D Conc. (mg/L)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022
MW17-09: Mg-D
Mg-D Conc. (mg/L)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022
MW17-09-01

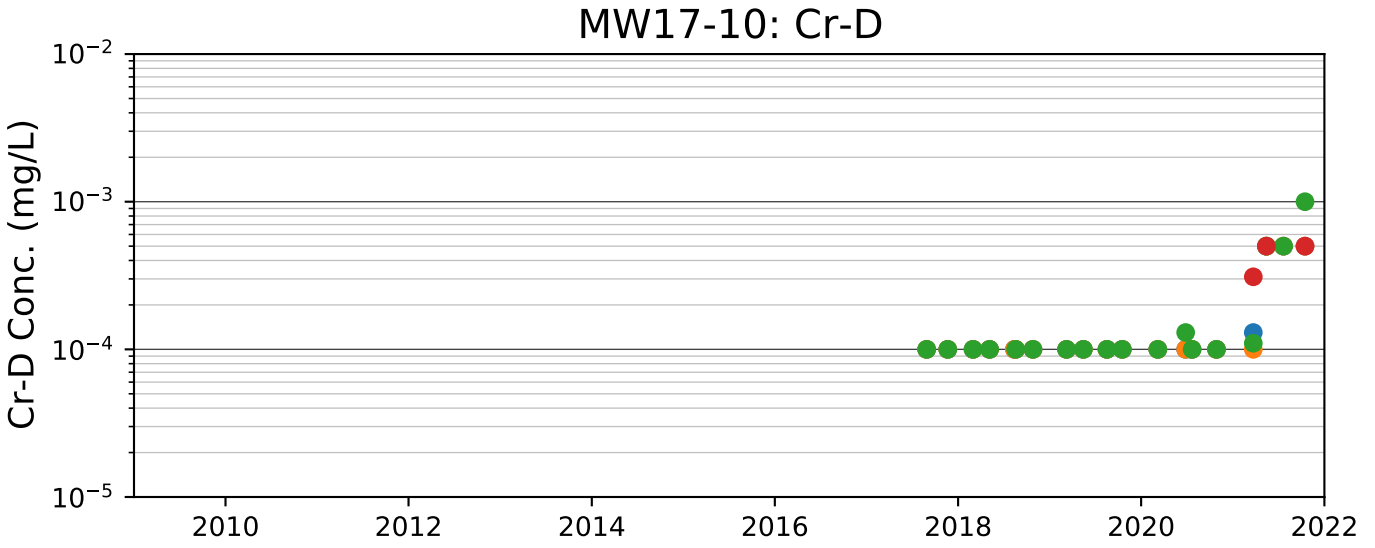

MW17-10: Ag-D
Ag-D Conc. (mg/L)
10^{-4}
10^{-5}
10^{-6}
2010
2012
2014
2016
2018
2020
2022

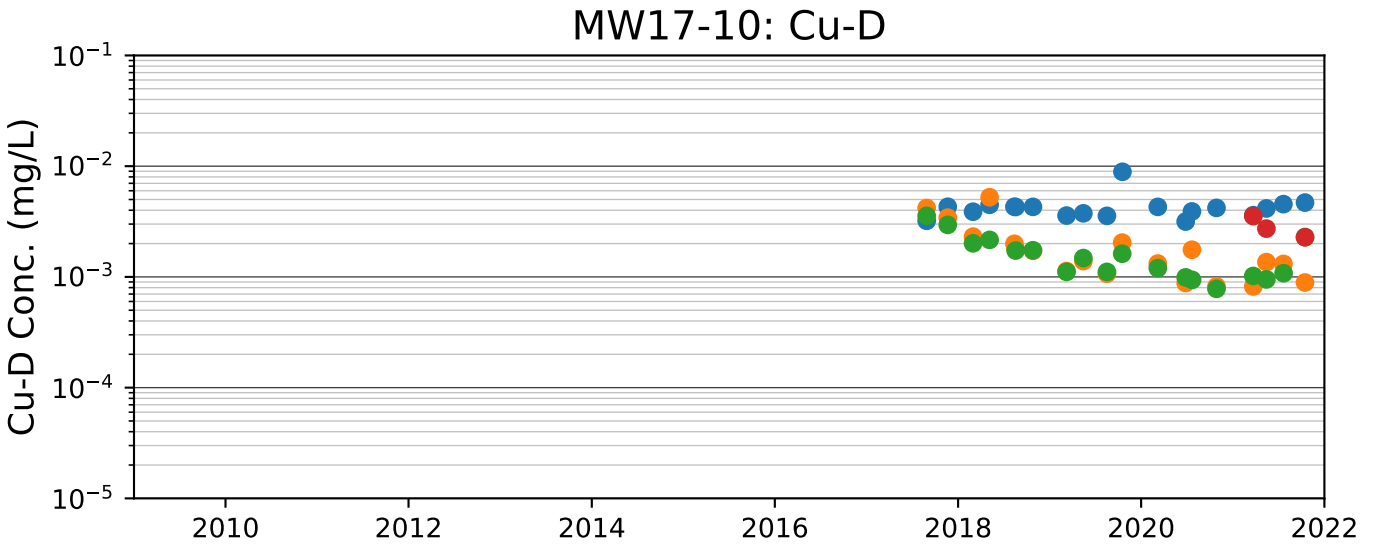

MW17-10: Al-D
Al-D Conc. (mg/L)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022

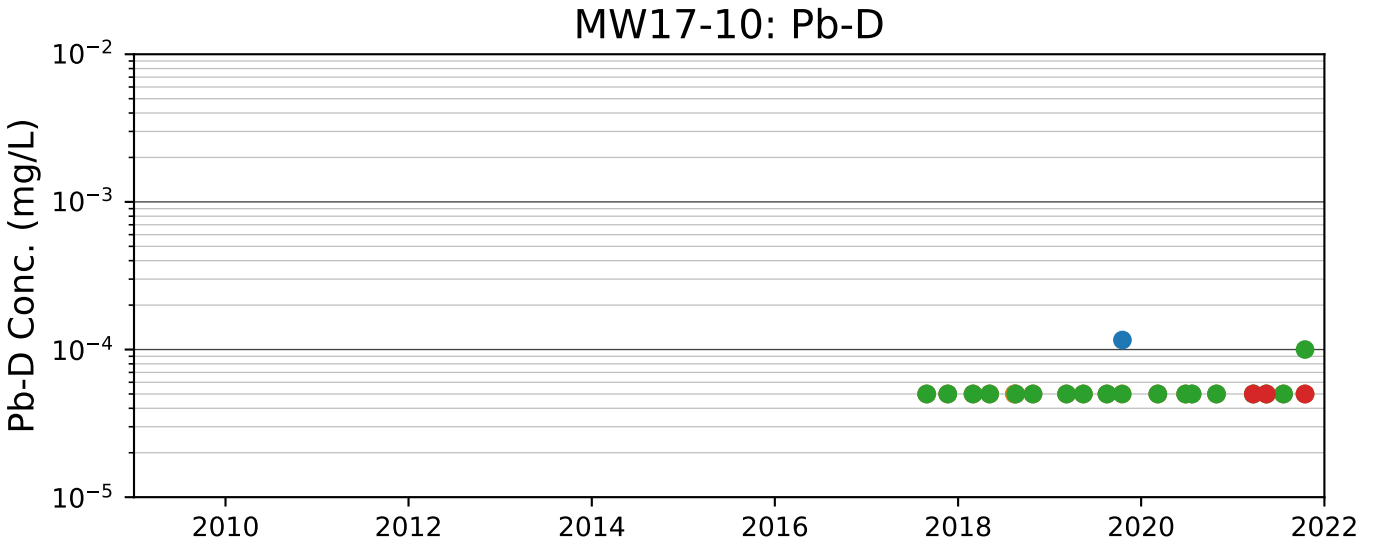

MW17-10: As-D
As-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW17-10-01
MW17-10-02
MW17-10-03
MW17-10-04

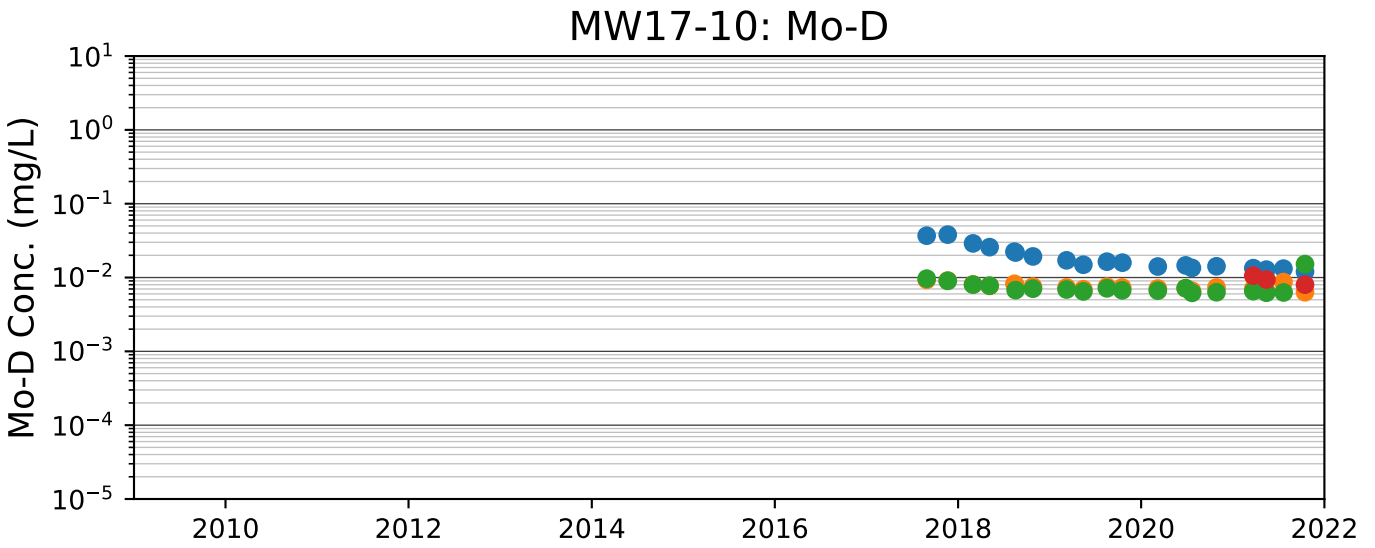

MW17-10: Chlord
Chlord Conc. (mg/L)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022

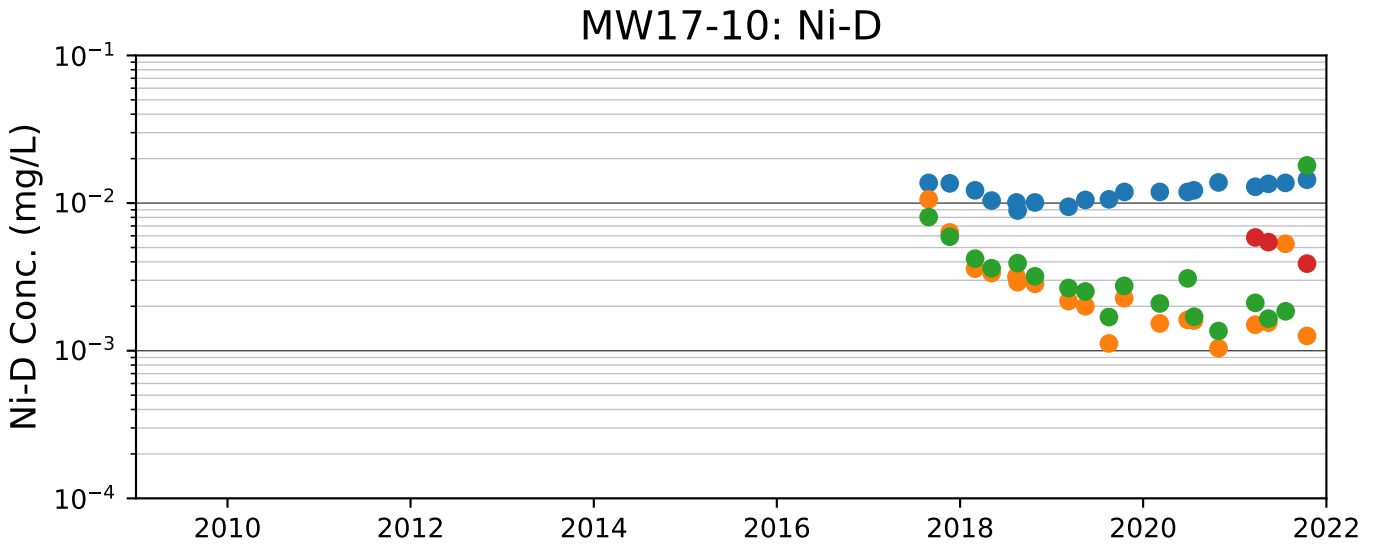

MW17-10: Cd-D
Cd-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
2010
2012
2014
2016
2018
2020
2022

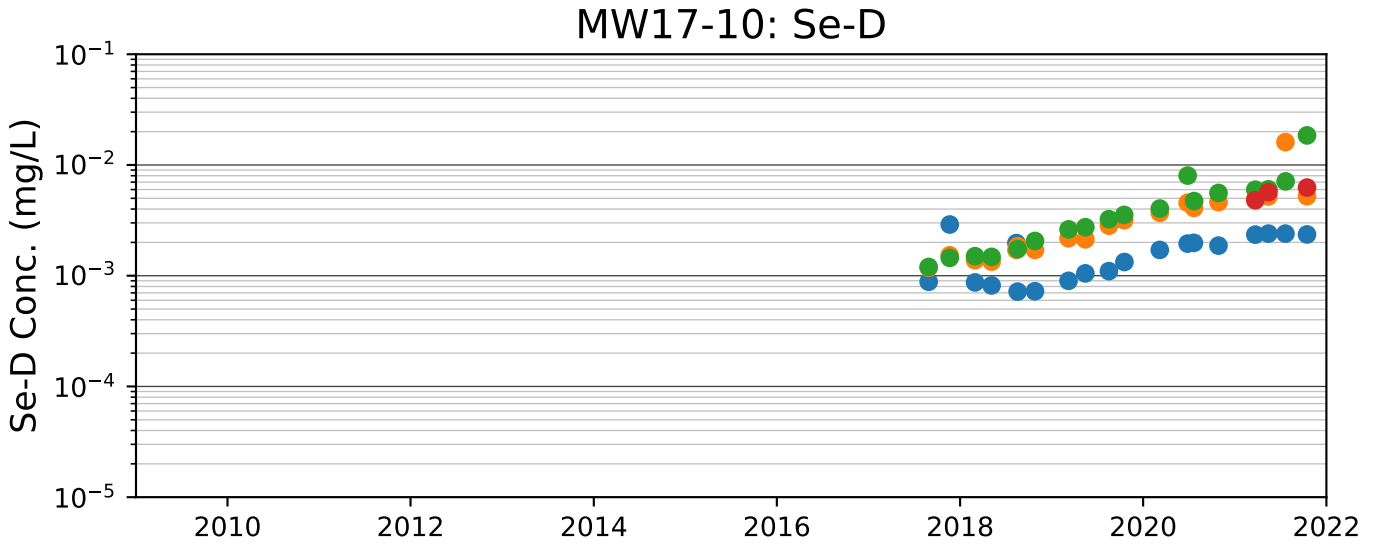

MW17-10: Cr-D
Cr-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW17-10-01
MW17-10-02
MW17-10-03
MW17-10-04

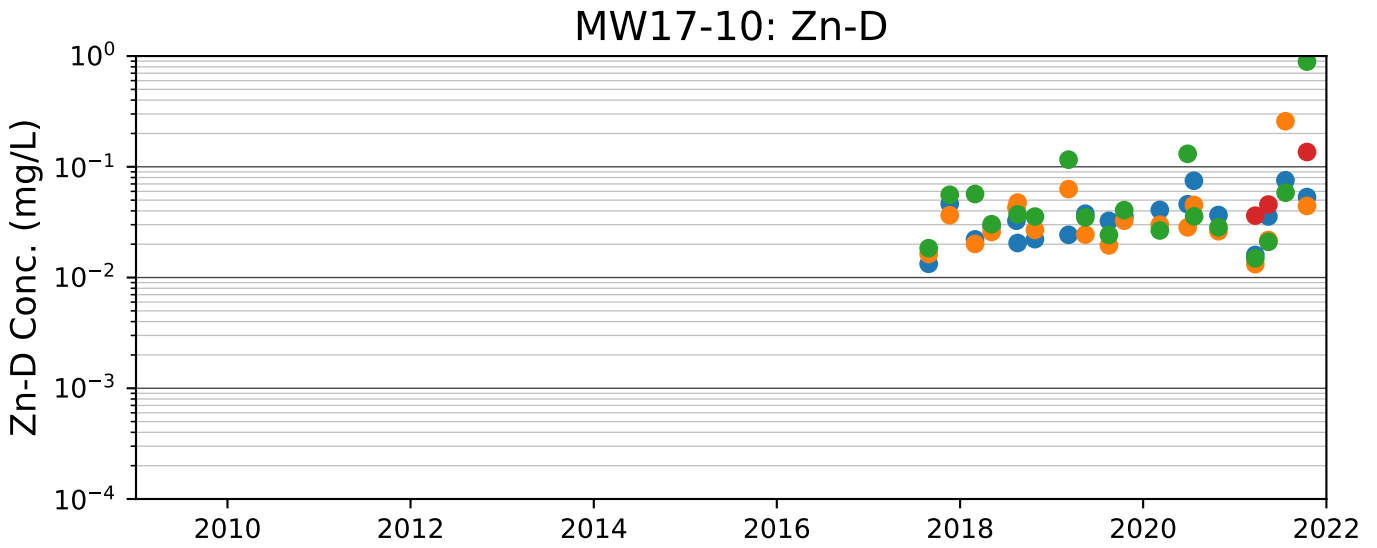

MW17-10: Cu-D
Cu-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

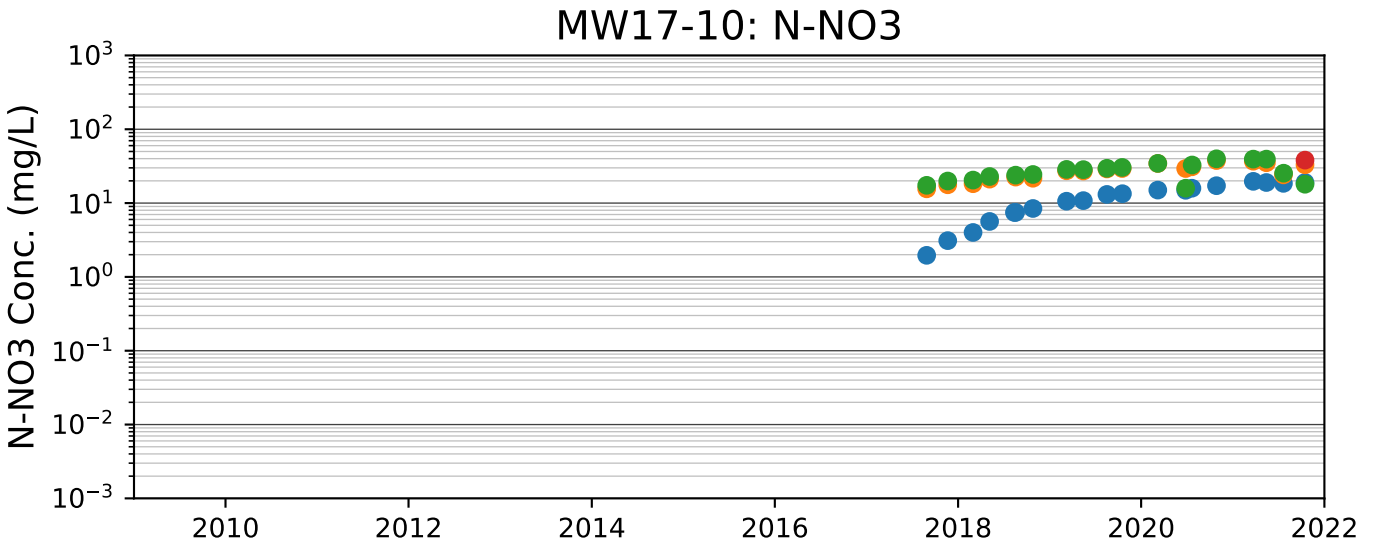

MW17-10: Pb-D
Pb-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

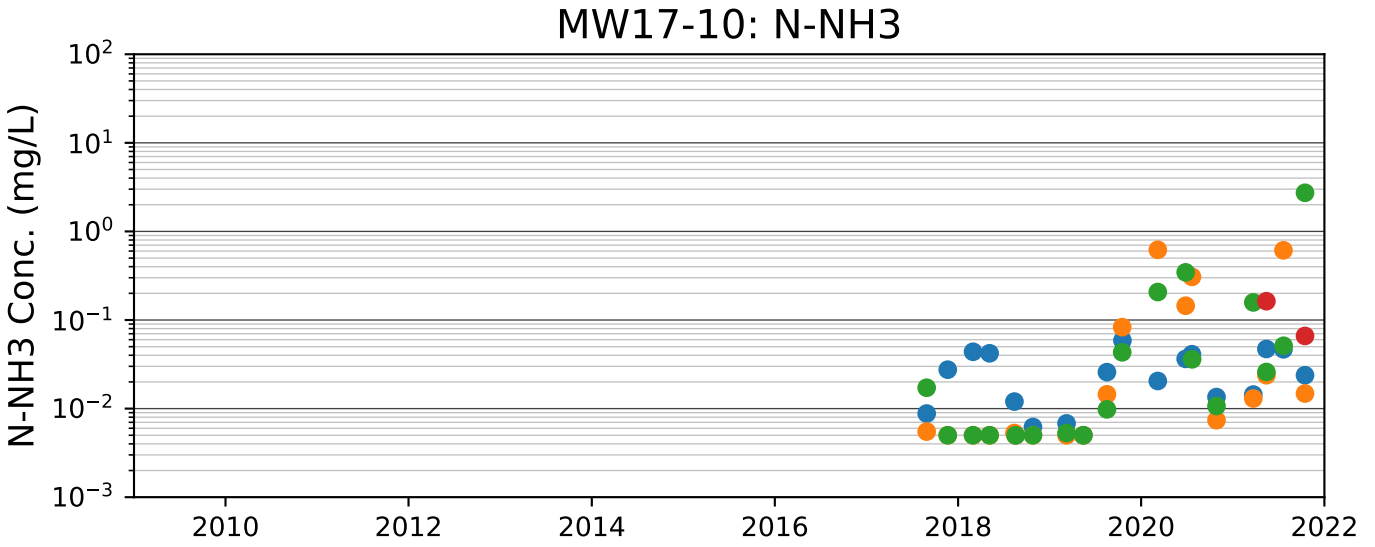

MW17-10: Mo-D
Mo-D Conc. (mg/L)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW17-10-01
MW17-10-02
MW17-10-03
MW17-10-04

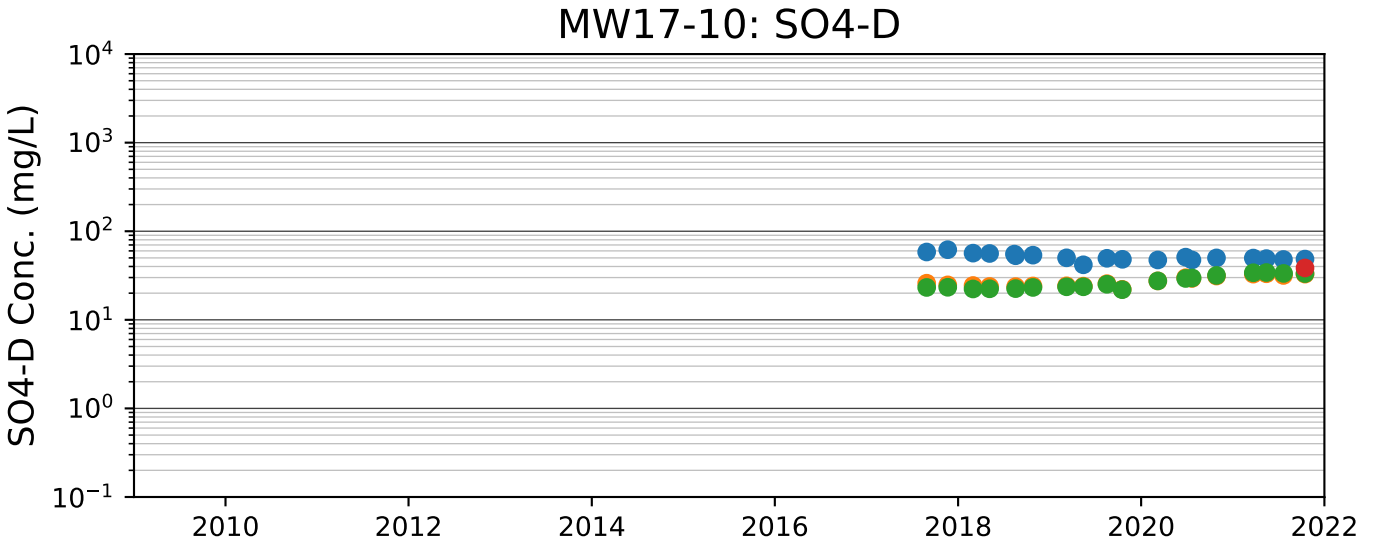

MW17-10: Ni-D
Ni-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022

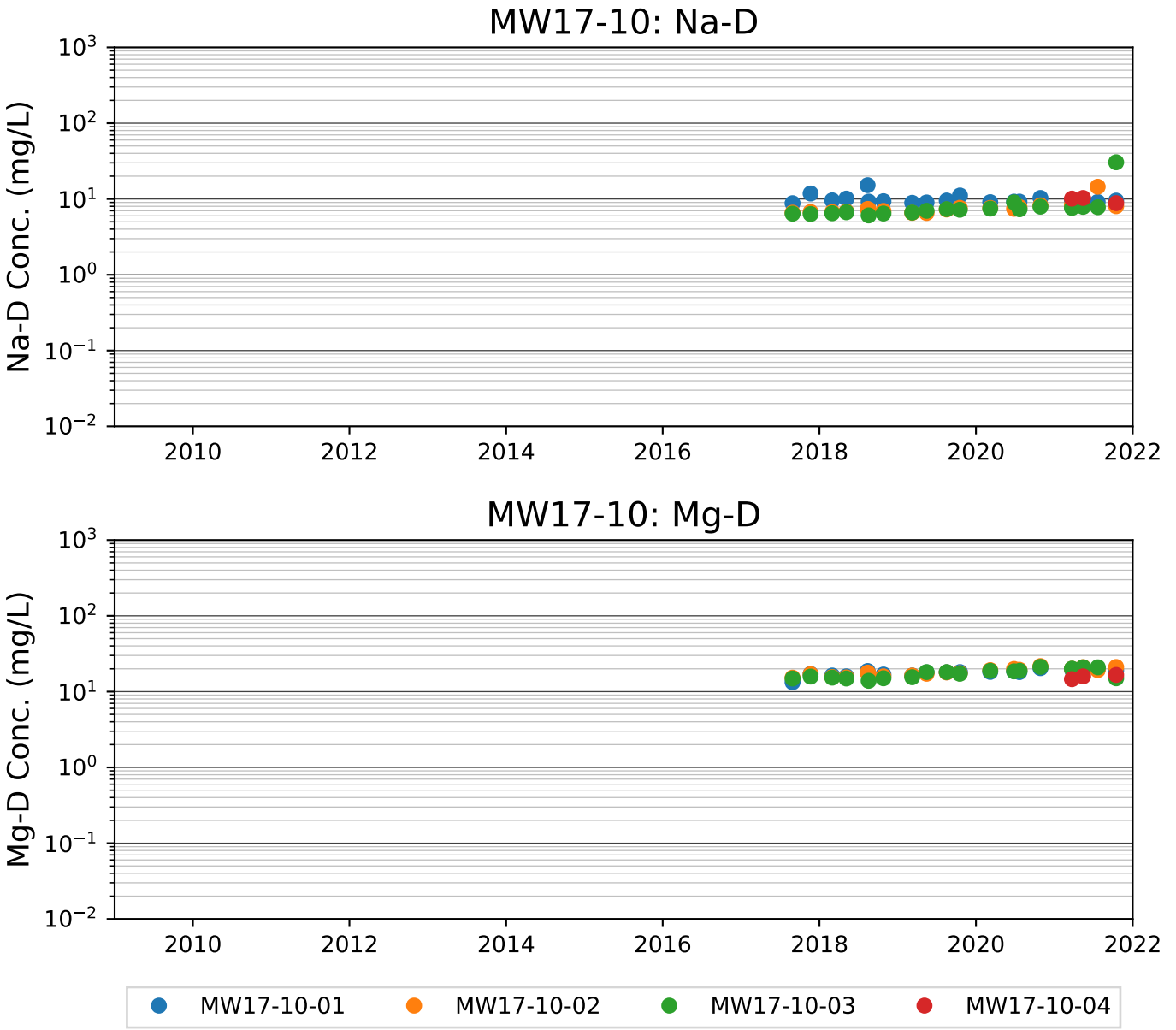

MW17-10: Se-D
Se-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

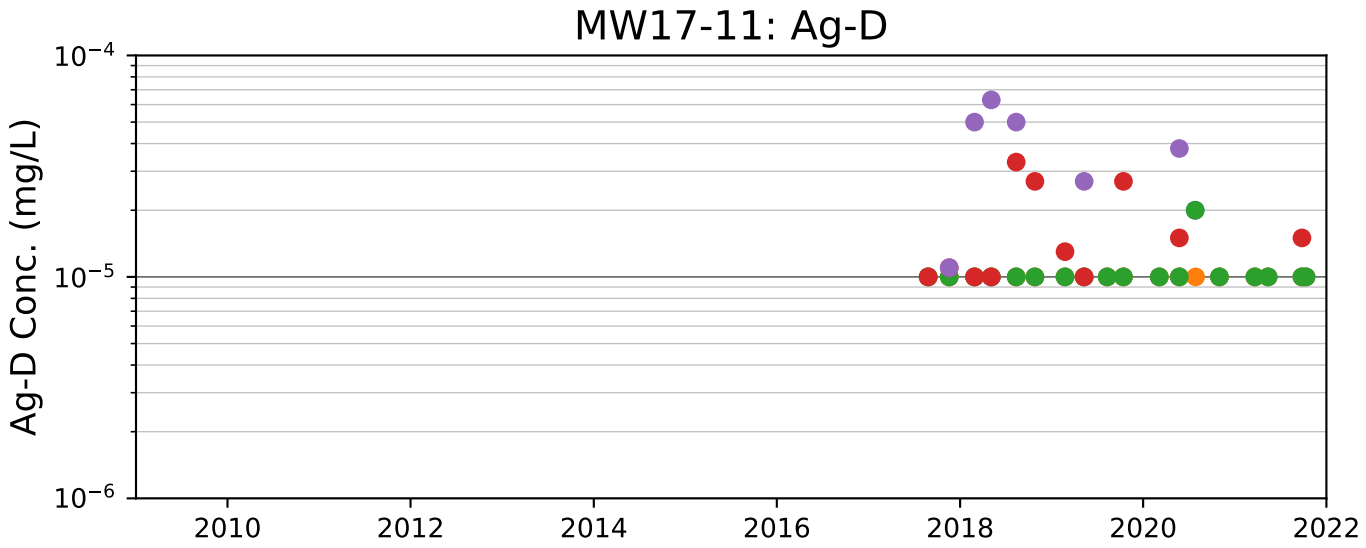

MW17-10: Zn-D
Zn-D Conc. (mg/L)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022
MW17-10-01
MW17-10-02
MW17-10-03
MW17-10-04

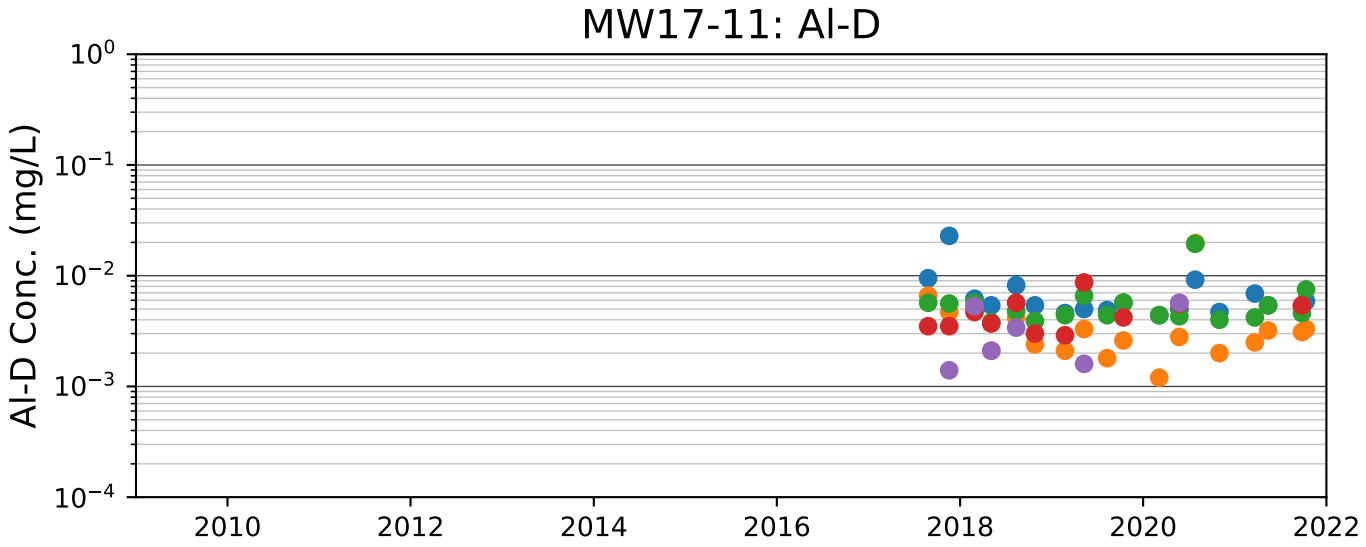

MW17-10: N-NO3
N-NO3 Conc. (mg/L)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
2010
2012
2014
2016
2018
2020
2022

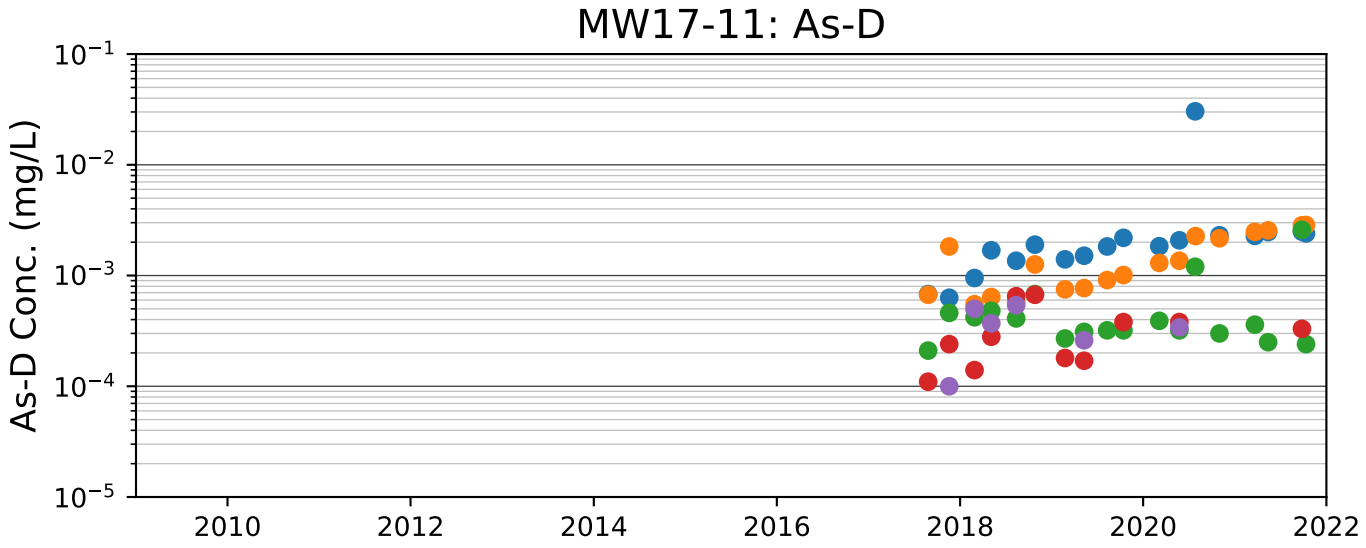

MW17-10: N-NH3
N-NH3 Conc. (mg/L)
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
2010
2012
2014
2016
2018
2020
2022

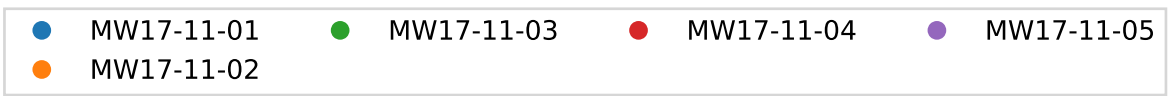

MW17-10: SO4-D
SO4-D Conc. (mg/L)
10^{4}
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
2010
2012
2014
2016
2018
2020
2022
MW17-10-01
MW17-10-02
MW17-10-03
MW17-10-04

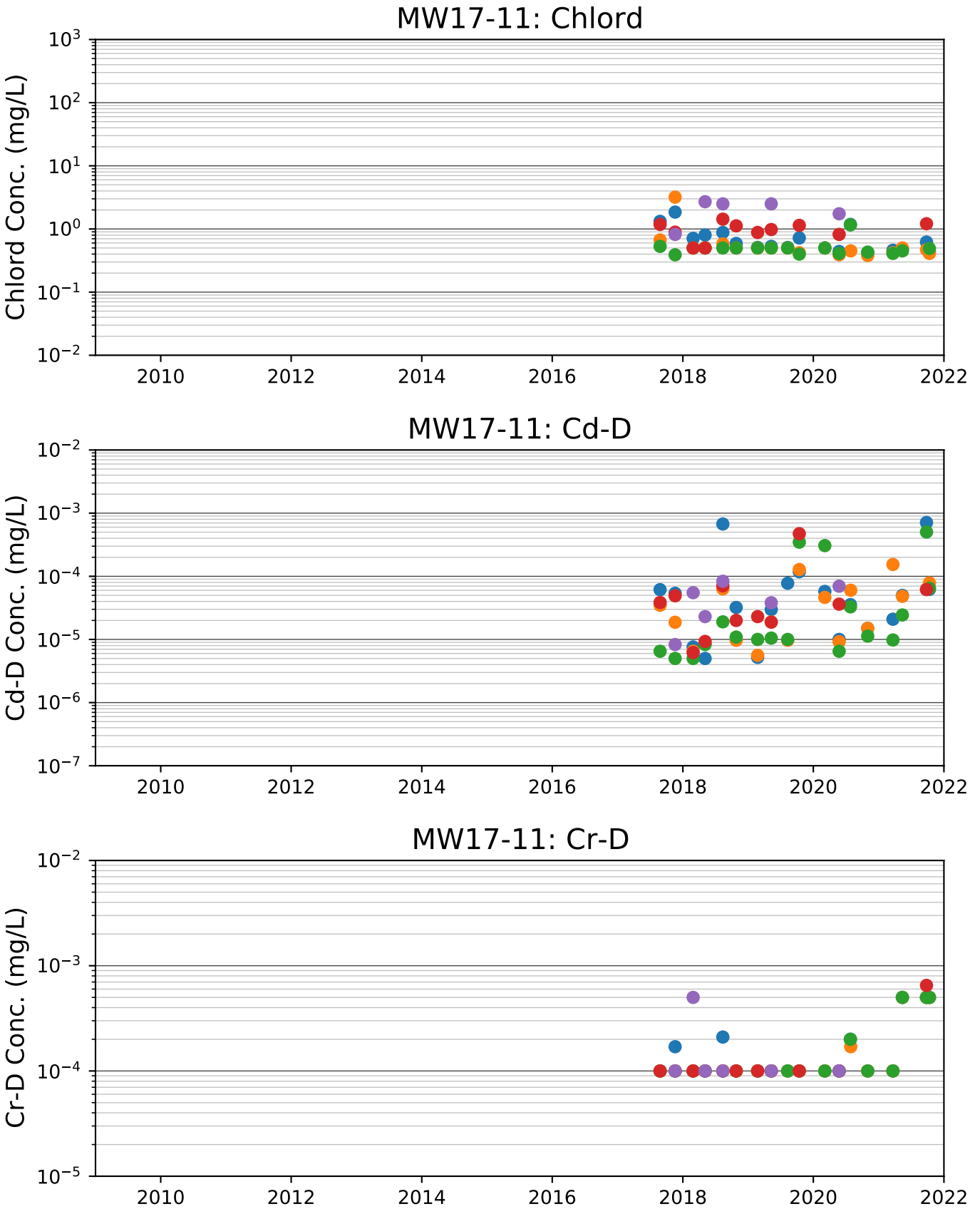

MW17-10: Na-D
Na-D Conc. (mg/L)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022
MW17-10: Mg-D
Mg-D Conc. (mg/L)
MW17-10-01
MW17-10-02
MW17-10-03
MW17-10-04

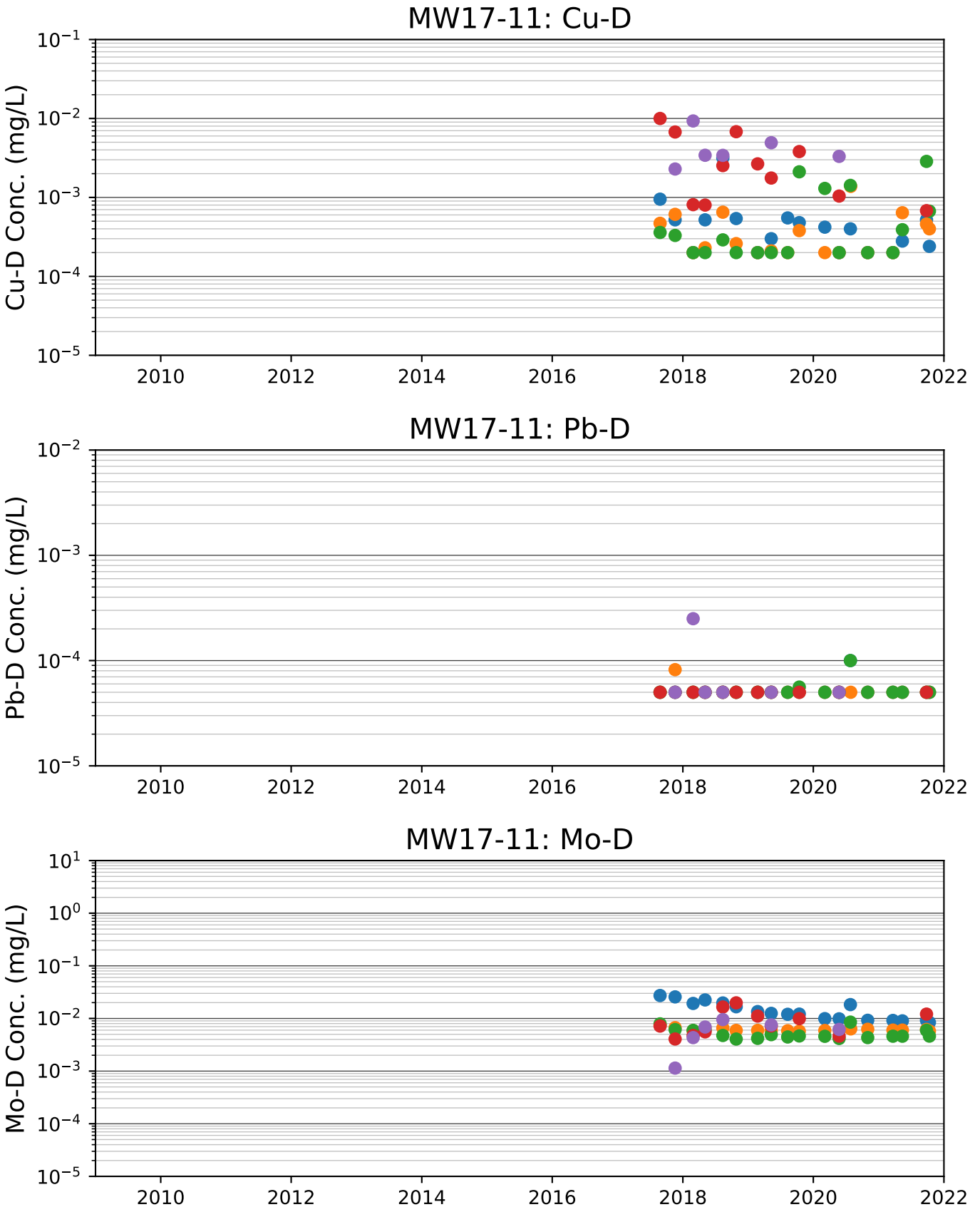

MW17-11: Ag-D
Ag-D Conc. (mg/L)
10^{-4}
10^{-5}
10^{-6}
2010
2012
2014
2016
2018
2020
2022

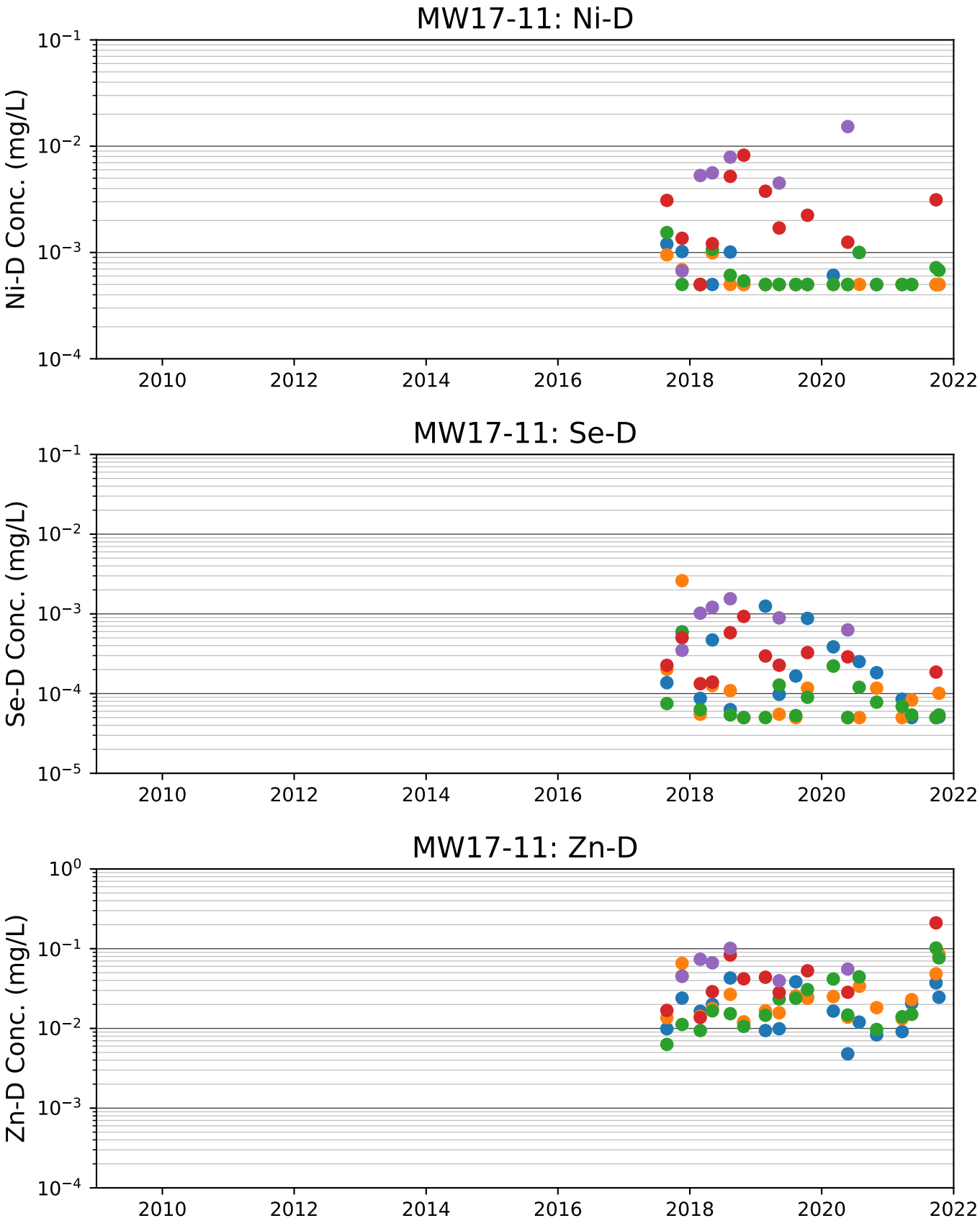

MW17-11: Al-D
Al-D Conc. (mg/L)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022

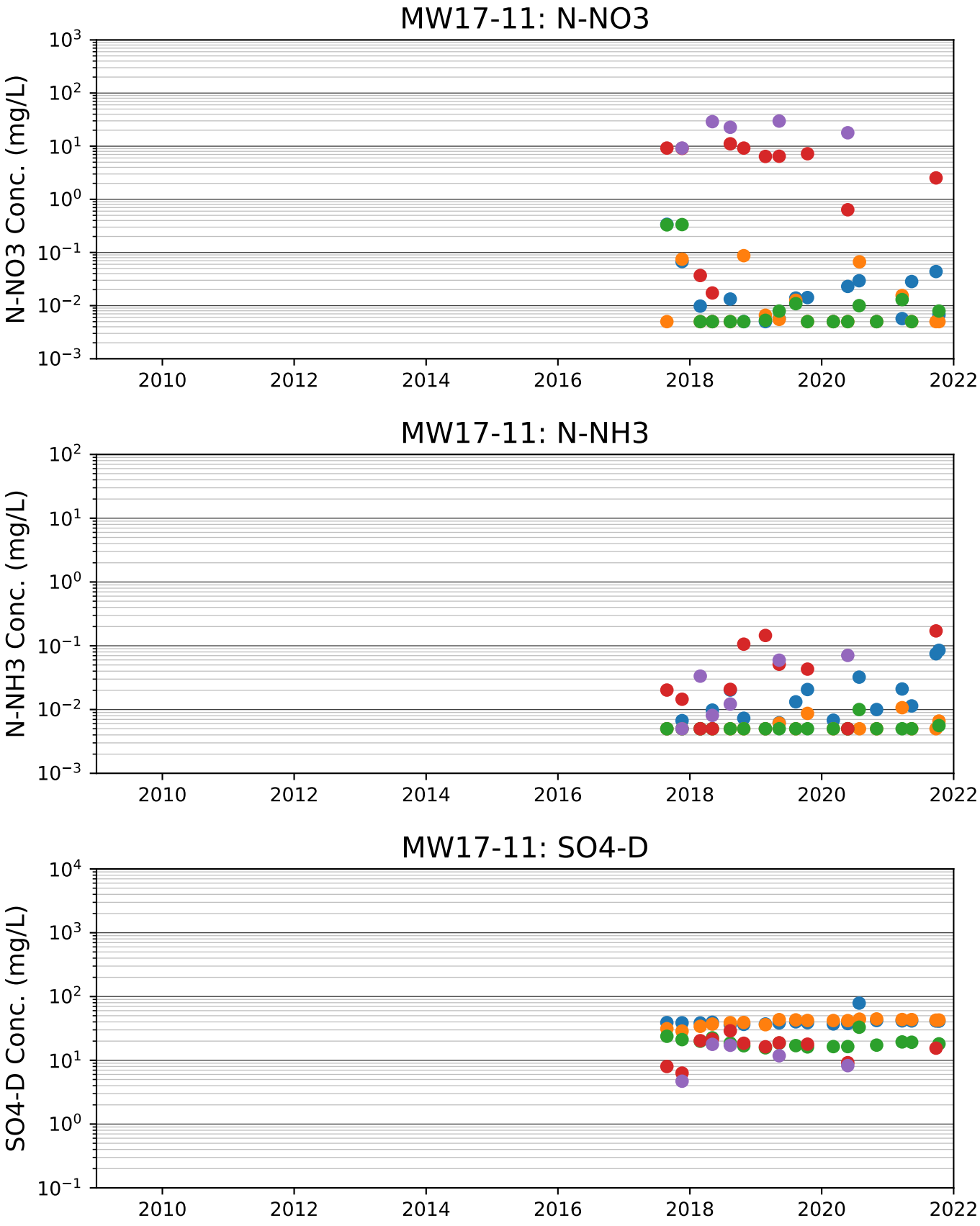

MW17-11: As-D
As-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

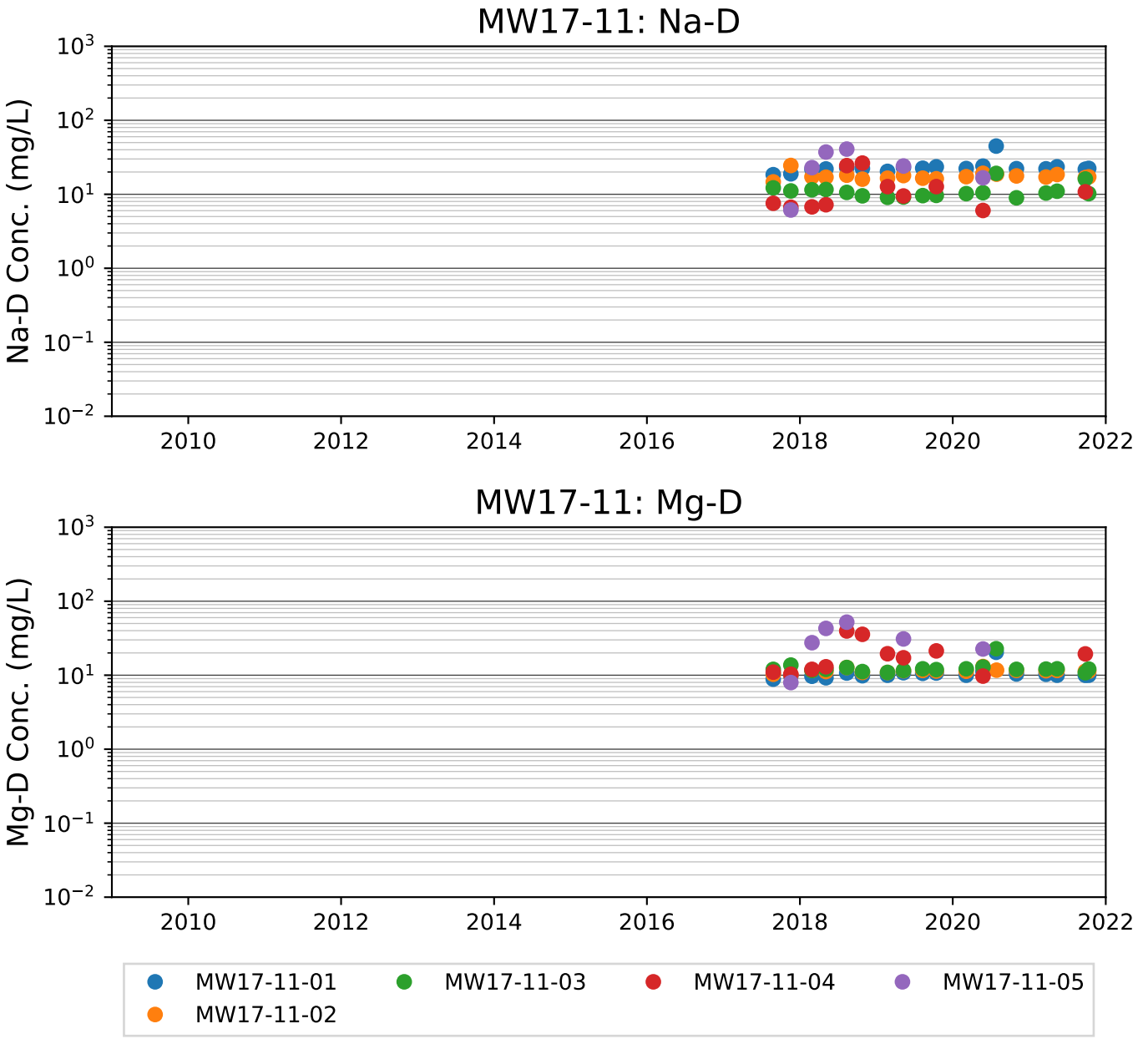

MW17-11-01
MW17-11-02
MW17-11-03
MW17-11-04
MW17-11-05

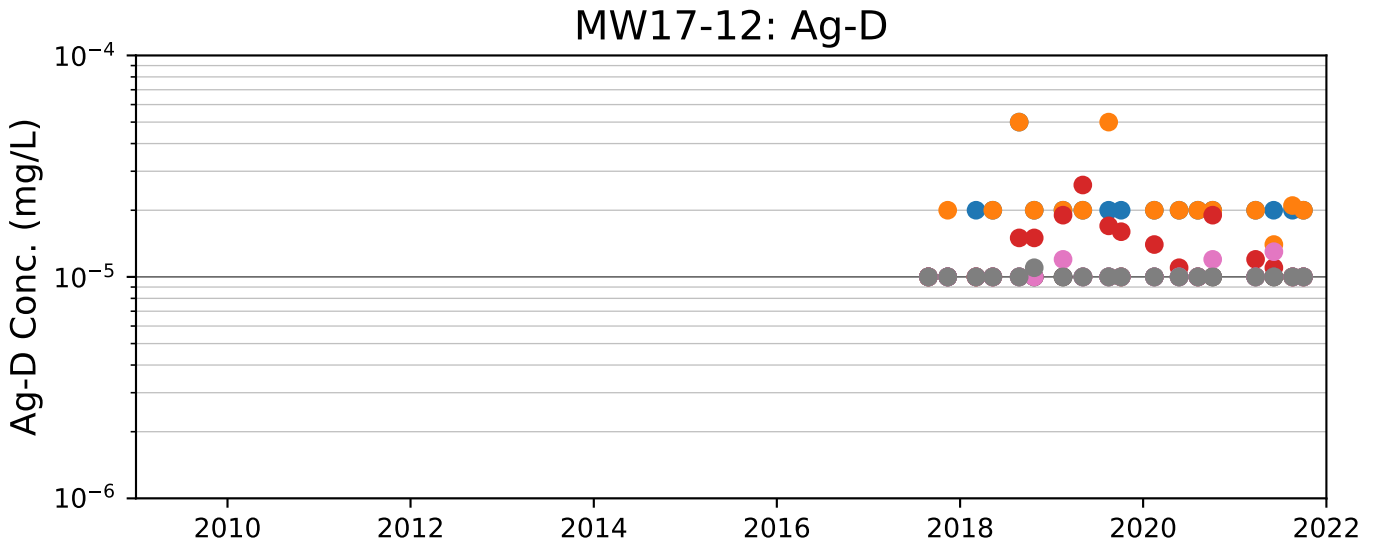

MW17-11: Chlord
Chlord Conc. (mg/L)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022
MW17-11: Cd-D
Cd-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
2010
2012
2014
2016
2018
2020
2022
MW17-11: Cr-D
Cr-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW17-11-01
MW17-11-02
MW17-11-03
MW17-11-04
MW17-11-05

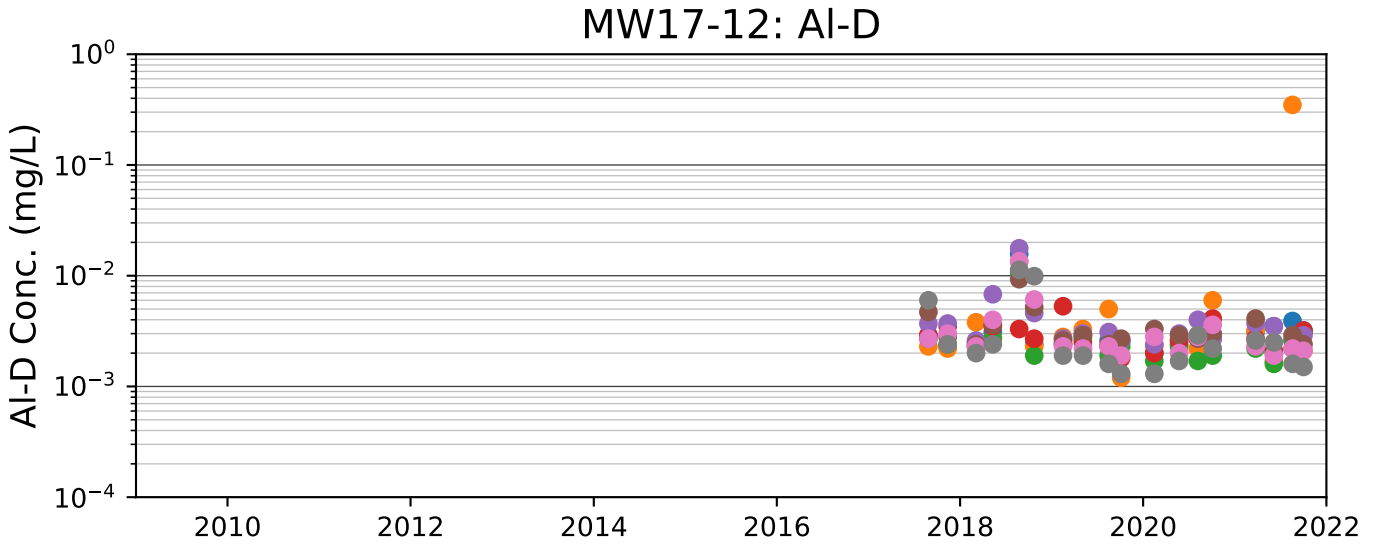

MW17-11: Cu-D
Cu-D Conc. (mg/L)
MW17-11: Pb-D
Pb-D Conc. (mg/L)
MW17-11: Mo-D
Mo-D Conc. (mg/L)
2010
2012
2014
2016
2018
2020
2022
MW17-11-01
MW17-11-02
MW17-11-03
MW17-11-04
MW17-11-05

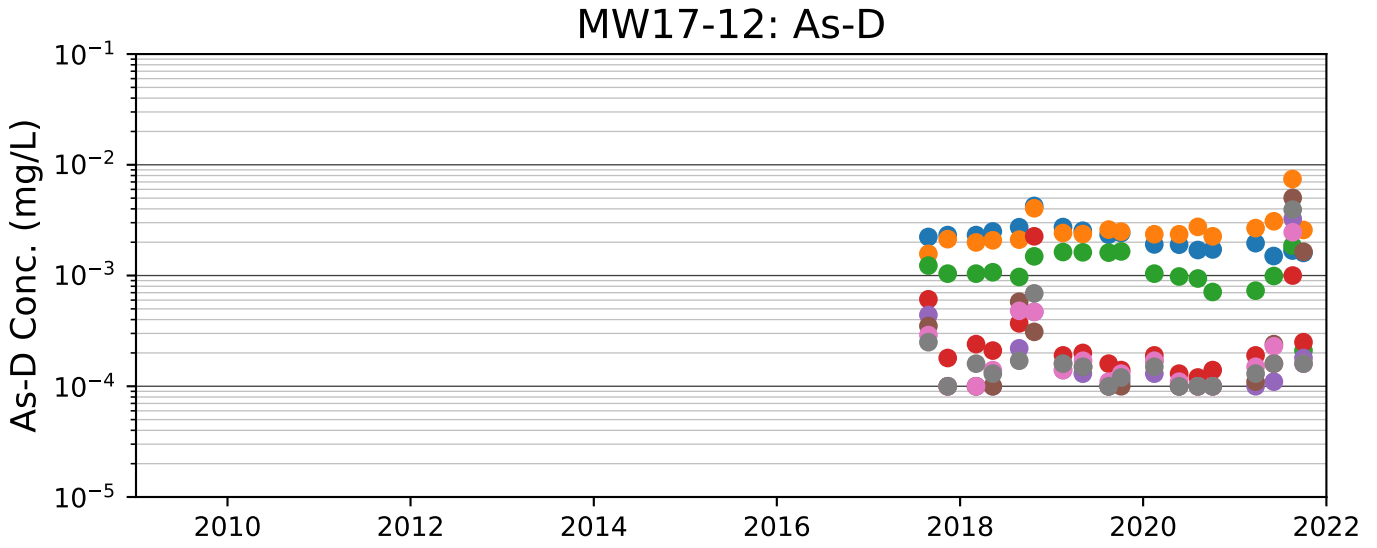

MW17-11: Ni-D
Ni-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022
MW17-11: Se-D
Se-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW17-11: Zn-D
Zn-D Conc. (mg/L)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022
MW17-11-01
MW17-11-02
MW17-11-03
MW17-11-04
MW17-11-05

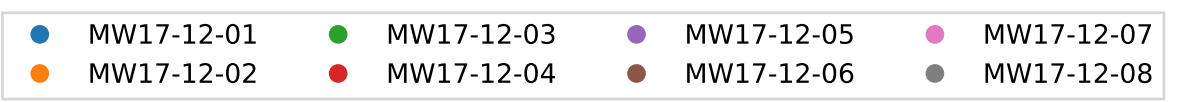

MW17-11: N-NO3
N-NO3 Conc. (mg/L)
MW17-11: N-NH3
N-NH3 Conc. (mg/L)
MW17-11: SO4-D
SO4-D Conc. (mg/L)
2010
2012
2014
2016
2018
2020
2022
MW17-11-01
MW17-11-02
MW17-11-03
MW17-11-04
MW17-11-05

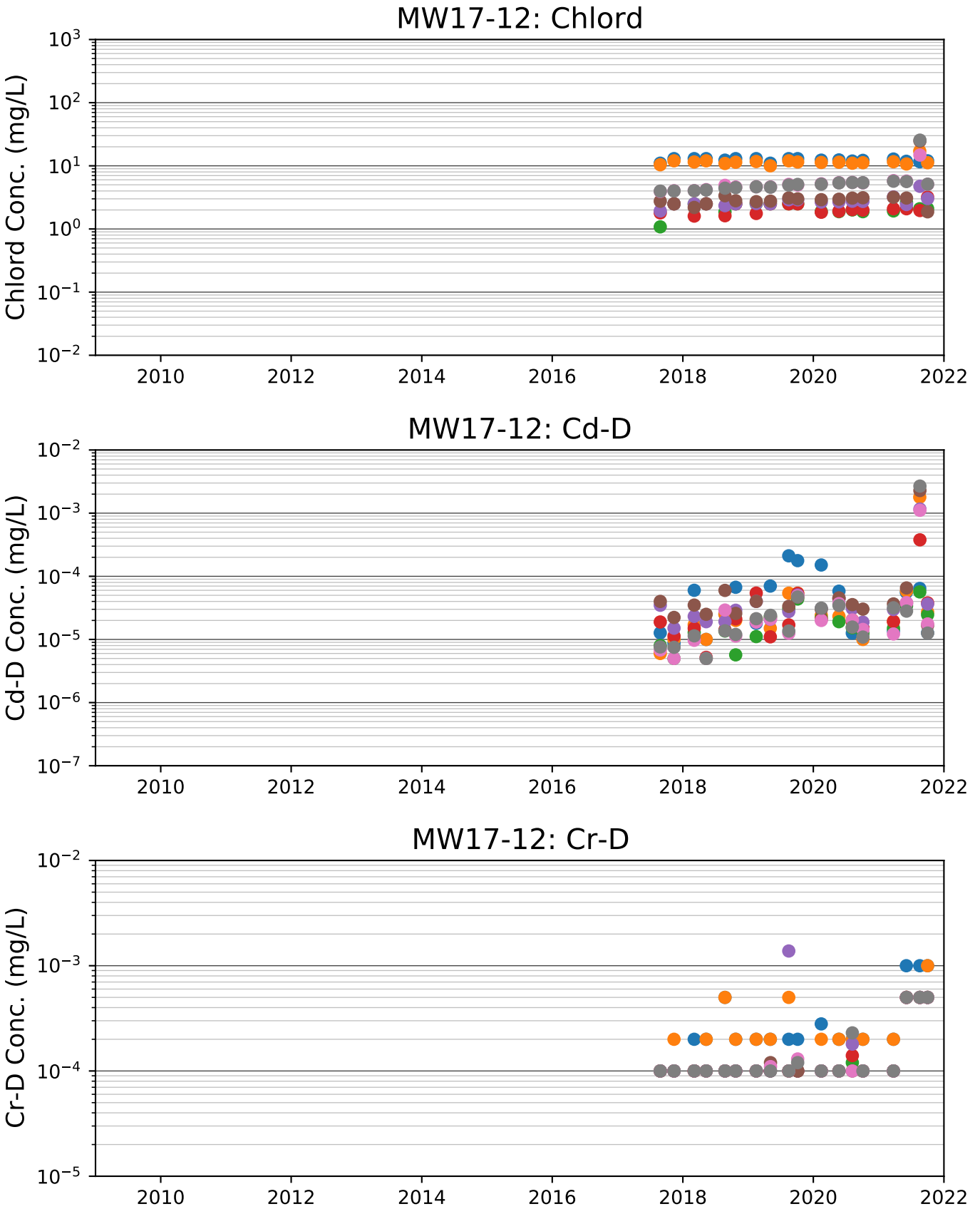

MW17-11: Na-D
Na-D Conc. (mg/L)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022
MW17-11: Mg-D
Mg-D Conc. (mg/L)
MW17-11-01
MW17-11-02
MW17-11-03
MW17-11-04
MW17-11-05

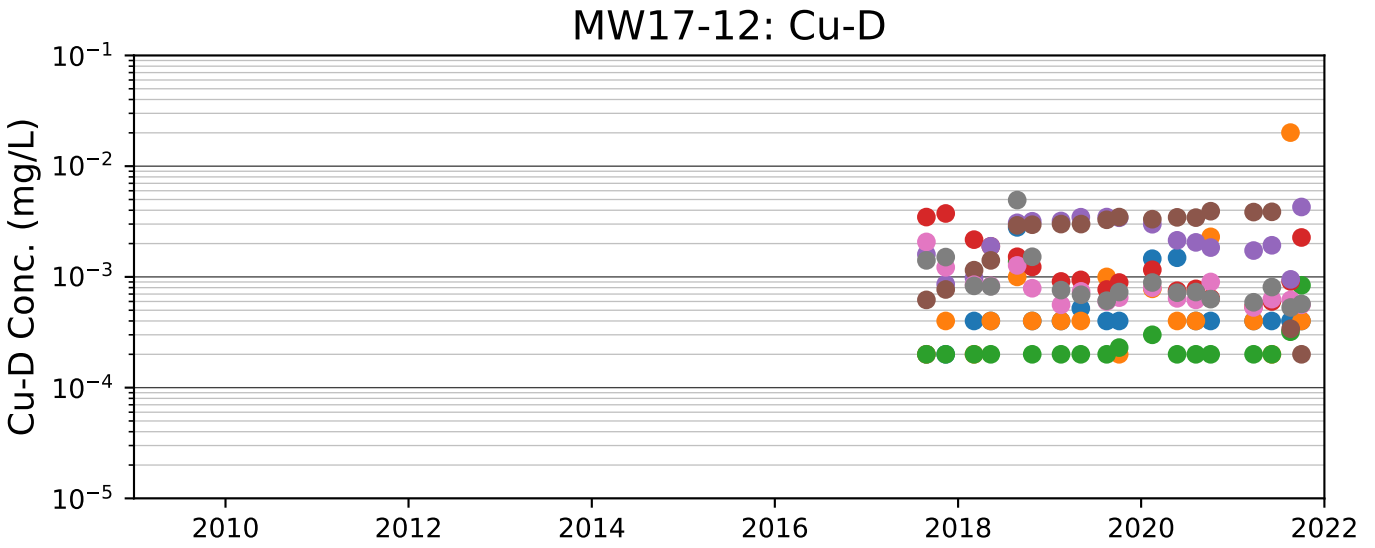

MW17-12: Ag-D
Ag-D Conc. (mg/L)
10^{-4}
10^{-5}
10^{-6}
2010
2012
2014
2016
2018
2020
2022

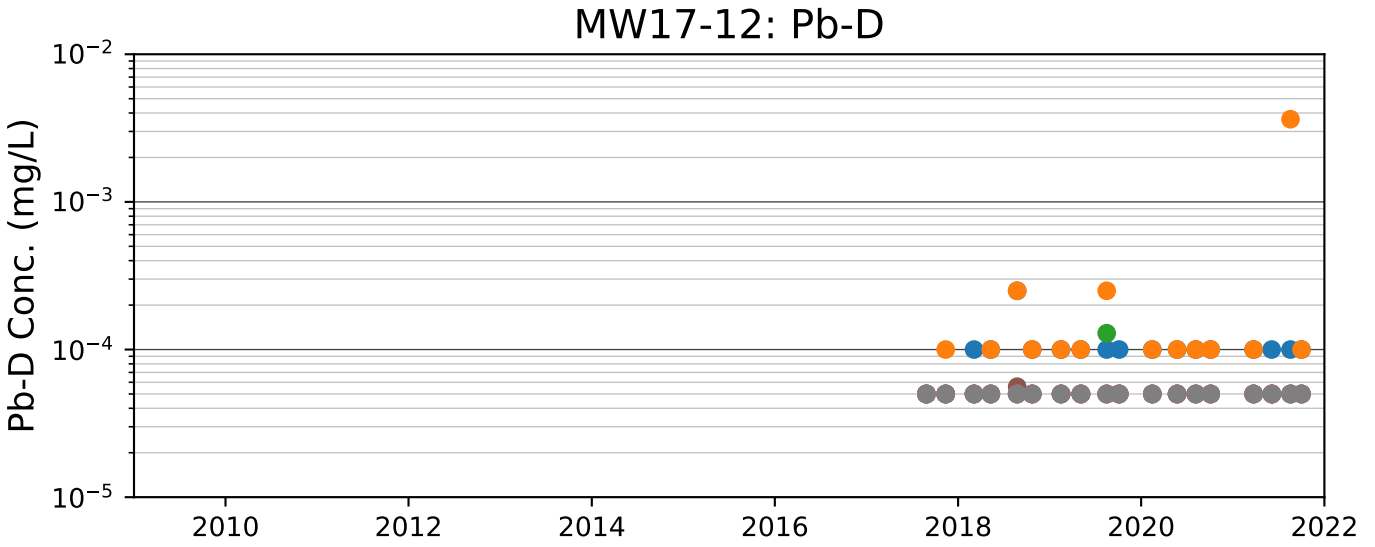

MW17-12: Al-D
Al-D Conc. (mg/L)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022

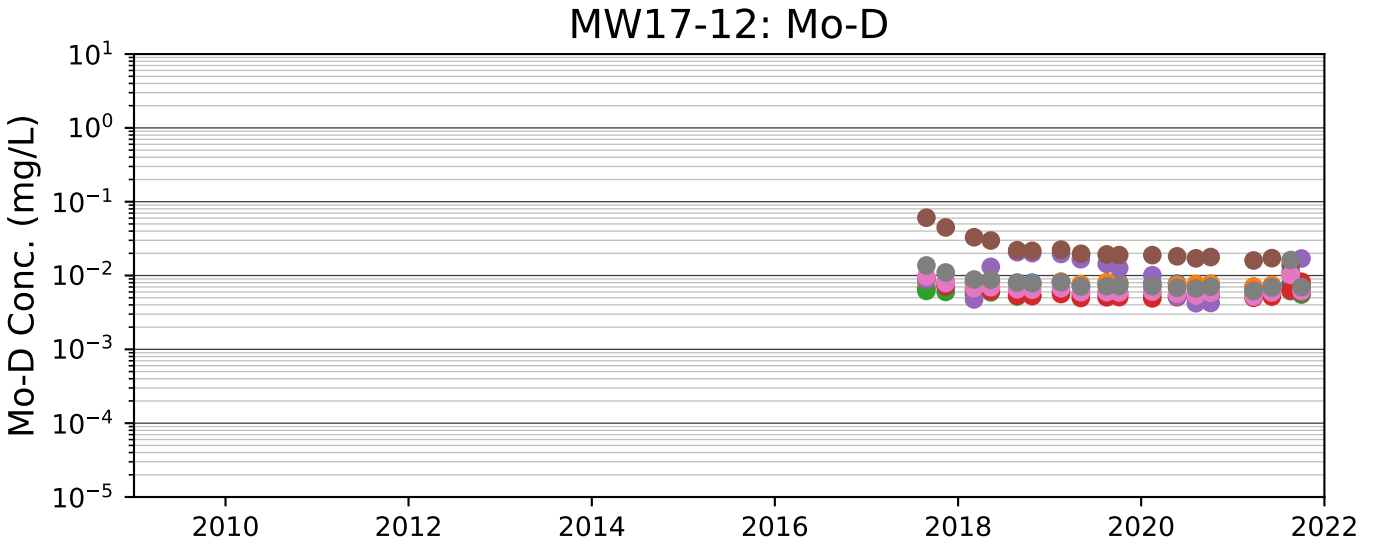

MW17-12: As-D
As-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

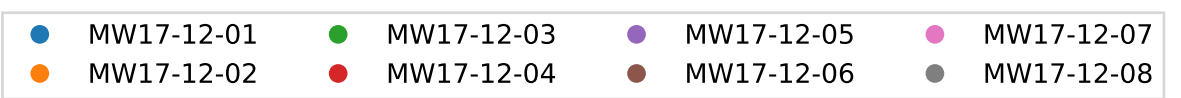

MW17-12-01
MW17-12-02
MW17-12-03
MW17-12-04
MW17-12-05
MW17-12-06
MW17-12-07
MW17-12-08

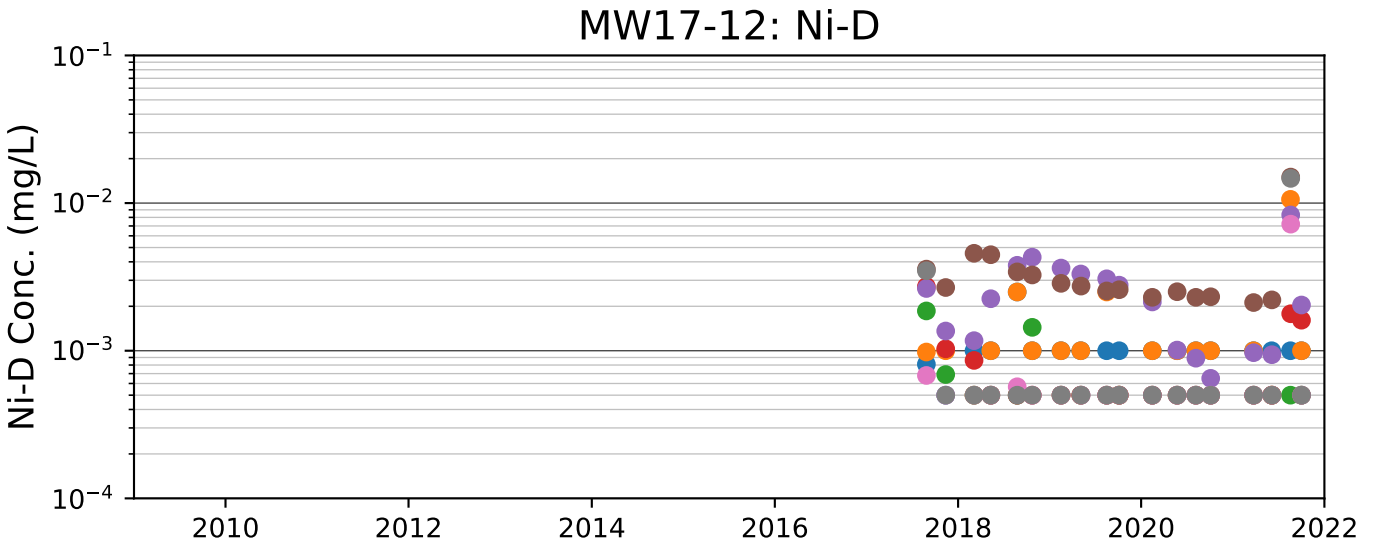

MW17-12: Chlord
Chlord Conc. (mg/L)
10^{3}
10^{2}
10^{1}
10^{0}
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022
MW17-12: Cd-D
Cd-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
10^{-6}
10^{-7}
2010
2012
2014
2016
2018
2020
2022
MW17-12: Cr-D
Cr-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022
MW17-12-01
MW17-12-02
MW17-12-03
MW17-12-04
MW17-12-05
MW17-12-06
MW17-12-07
MW17-12-08

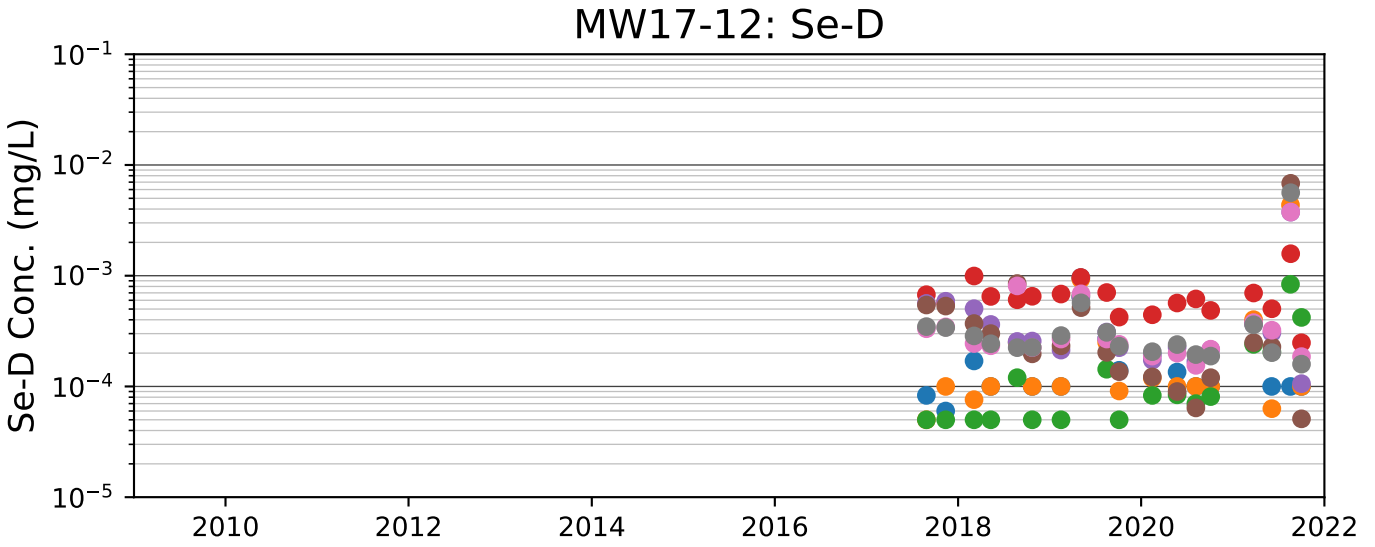

MW17-12: Cu-D
Cu-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

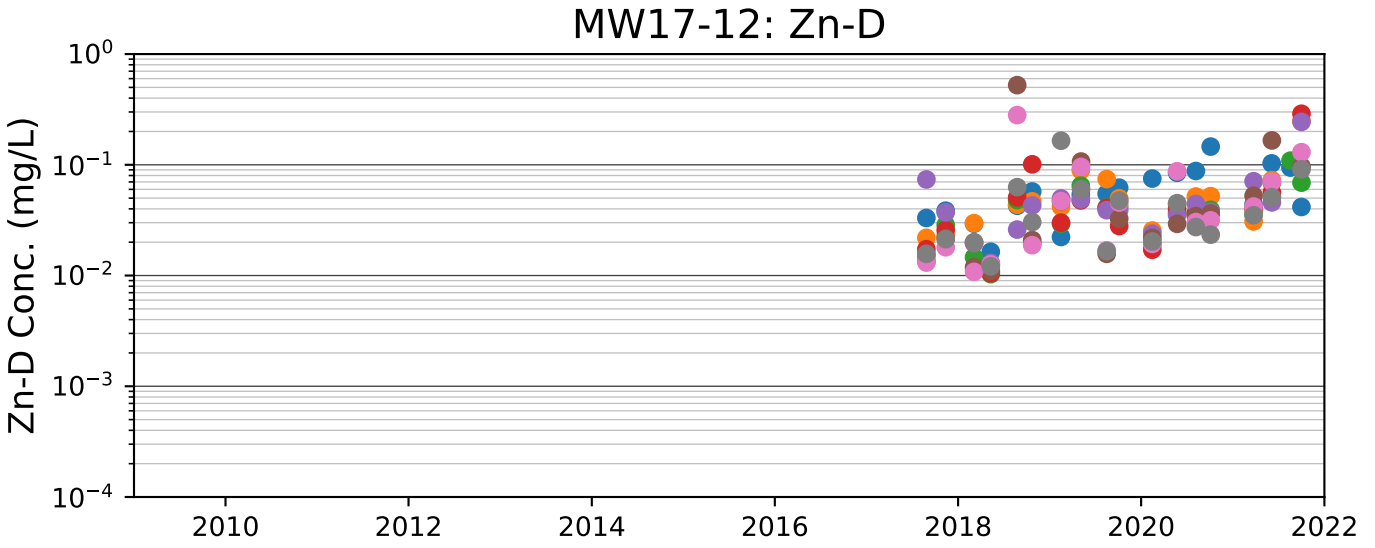

MW17-12: Pb-D
Pb-D Conc. (mg/L)
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

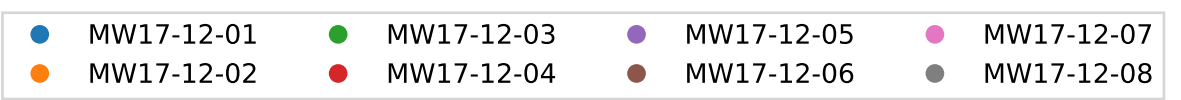

MW17-12: Mo-D
Mo-D Conc. (mg/L)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022

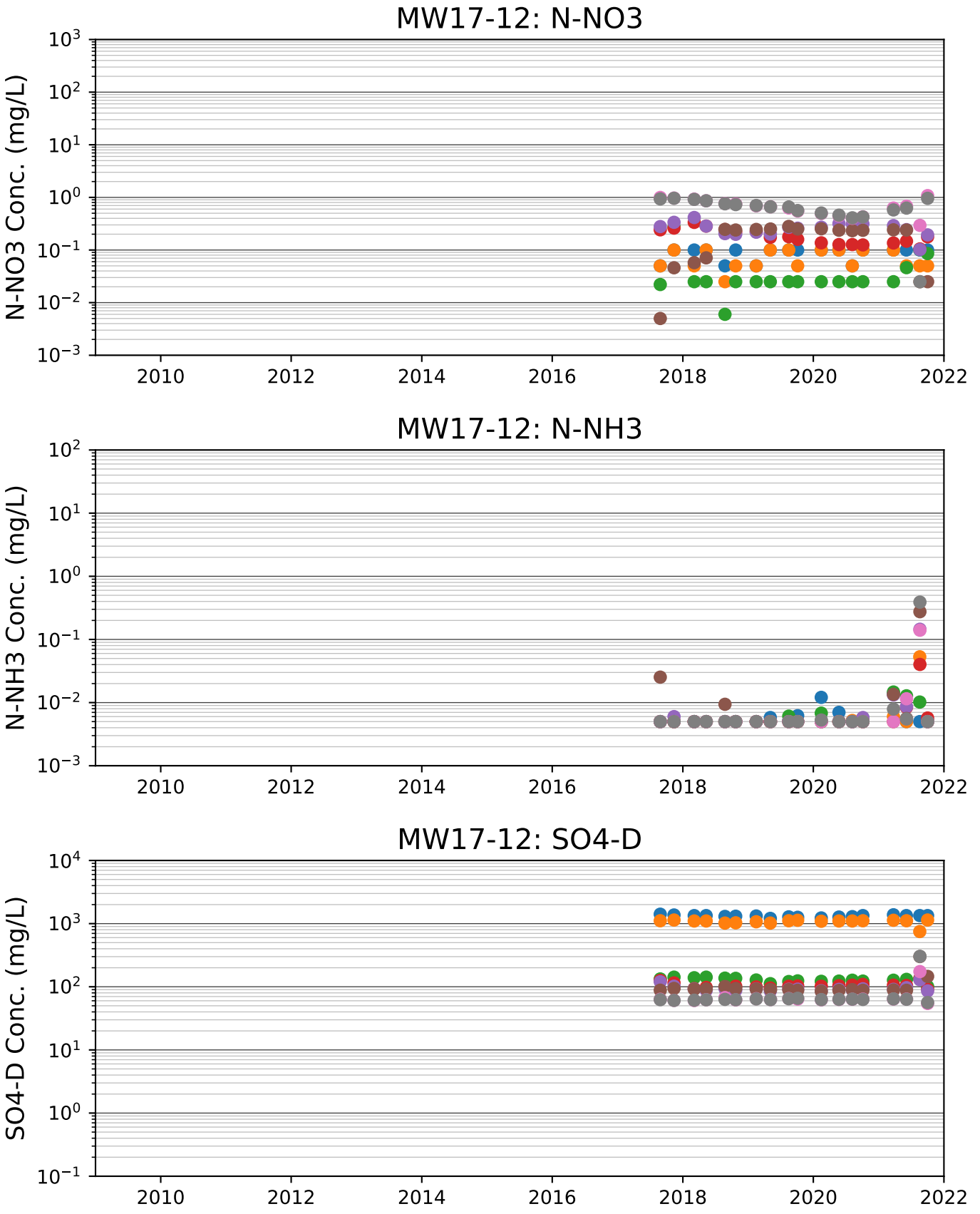

MW17-12-01
MW17-12-02
MW17-12-03
MW17-12-04
MW17-12-05
MW17-12-06
MW17-12-07
MW17-12-08

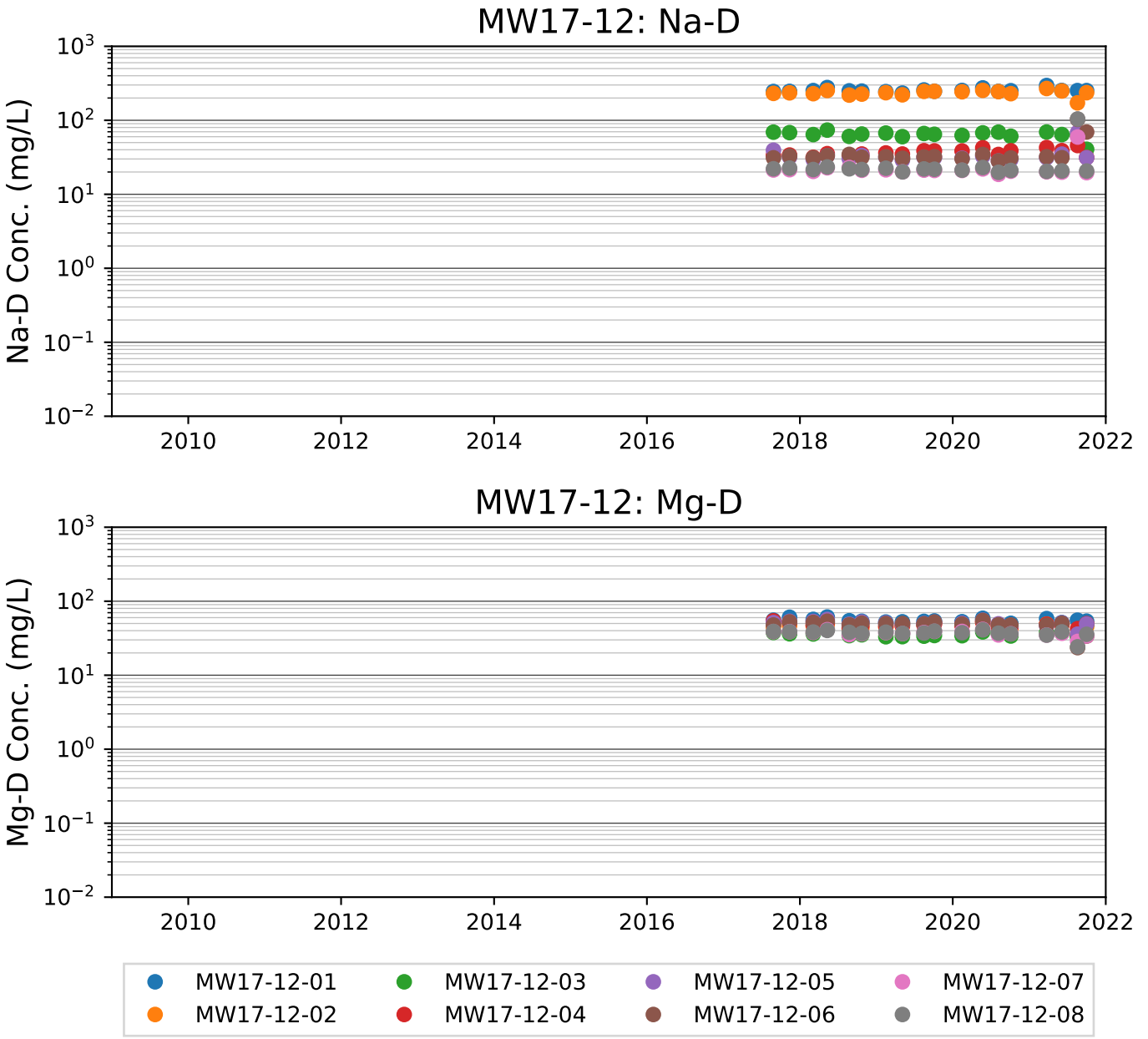

MW17-12: Ni-D
Ni-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022


MW17-12: Se-D
Se-D Conc. (mg/L)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
2010
2012
2014
2016
2018
2020
2022


MW17-12: Zn-D
Zn-D Conc. (mg/L)
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
2010
2012
2014
2016
2018
2020
2022


MW17-12-01
MW17-12-02
MW17-12-03
MW17-12-04
MW17-12-05
MW17-12-06
MW17-12-07
MW17-12-08


MW17-12: N-NO3
N-NO3 Conc. (mg/L)
MW17-12: N-NH3
N-NH3 Conc. (mg/L)
MW17-12: SO4-D
SO4-D Conc. (mg/L)
2010
2012
2014
2016
2018
2020
2022
MW17-12-01
MW17-12-02
MW17-12-03
MW17-12-04
MW17-12-05
MW17-12-06
MW17-12-07
MW17-12-08


MW17-12: Na-D
Na-D Conc. (mg/L)
10^3
10^2
10^1
10^0
10^{-1}
10^{-2}
2010
2012
2014
2016
2018
2020
2022
MW17-12: Mg-D
Mg-D Conc. (mg/L)
MW17-12-01
MW17-12-02
MW17-12-03
MW17-12-04
MW17-12-05
MW17-12-06
MW17-12-07
MW17-12-08

Attachment 3: Summary of Historic Chemistry Data

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species						Dissolved Elements	
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N\text{-}NO_2$	$N\text{-}NO_3$	$N\text{-}NH_3$	SO_4-D	Chlord	Fluord	Ag-D	Al-D
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MC1	2009-06-26 20:00		305			190	4			0.005	0.2	0.005				0.00002	0.008
MC1	2010-04-24 0:00	45	98			126	5						4.3	0.92		0.00001	0.052
MC1	2010-04-26 0:00	45	93		7.33	56	6	1.2		0.005	0.1	0.1	0.5	1.6	0.12	0.00002	0.059
MC1	2010-04-28 0:00	38	77		7.68	70	19	0.04	2.3		0.1	0.1	0.5	1.2	0.11	0.00002	0.07
MC1	2010-04-30 0:00	42	86			76	14				0.2	0.046	5	1.3	0.12	0.00002	0.064
MC1	2010-05-02 0:00	60	126			68	4			0.005	0.03	0.039	0.5	1.7	0.15	0.00002	0.039
MC1	2010-05-04 0:00	70	147			130	8			0.005	0.02	0.01	3.6	1.5	0.19	0.00002	0.029
MC1	2010-05-06 0:00	79	166			140	4			0.005	0.02	0.01	6.2	1.5	0.2	0.00002	0.021
MC1	2010-05-08 0:00	87	180			130	4			0.005	0.02	0.011	11	1.3	0.22	0.00002	0.019
MC1	2010-05-11 0:00	94	203			110	8			0.005	0.02	0.063	12	1.2	0.17	0.00002	0.013
MC1	2010-05-13 0:00	98	211			120	4			0.005	0.02	0.04	13	1	0.19	0.00002	0.013
MC1	2010-05-15 0:00	110	227		7.83	160	4	1.1		0.005	0.02	0.069	13	1.5	0.25	0.00002	0.011
MC1	2010-05-18 0:00	110	224		7.68	150	5	1.7		0.005	0.02	0.05	15	1	0.28	0.00002	0.007
MC1	2010-05-20 0:00	110	228		8	160	2	1		0.005	0.04	0.03	14	1.1	0.28	0.00002	0.008
MC1	2010-05-21 0:00	120	241		7.88	160	3	1.4		0.005	0.04	0.006	15	3.4	0.32		0.01
MC1	2010-05-22 0:00	120	240		7.91	170	2	1.5		0.005	0.06	0.005	14	1.4	0.32		0.01
MC1	2010-05-24 0:00	110	238		7.58	150	9	1.8		0.005	0.06	0.017	15	0.8	0.31		0.01
MC1	2010-05-26 0:00	120	265		7.54	150	6	1		0.005	0.08		17	1.6	0.32		0.012
MC1	2010-05-28 0:00	130	266		8.02	180	8	1.4		0.005	0.09	0.007	16	1.4	0.38		0.011
MC1	2010-05-30 0:00	130	276		8.06	180	4	2.2		0.005	0.11	0.012	17	1.4	0.36		0.01
MC1	2010-06-01 0:00	140	286			170	2			0.005	0.14	0.005	17	1.8	0.33		0.01
MC1	2010-06-03 0:00	140	296		7.86	180	2	1.8		0.005	0.15	0.016	19	2	0.34		0.01
MC1	2010-06-05 0:00	140	292		7.87	180	4	1.4		0.005	0.19		19	1.4	0.36		0.01
MC1	2010-06-11 0:00	130	295		7.9	190	2	4.2		0.005	0.19	0.038	20	1.8	0.38		0.01
MC1	2010-06-13 0:00	140	304		7.72	180	2	3.4		0.005	0.22	0.036	20	1.7	0.38		0.01
MC1	2010-06-14 0:00	130	301		7.45	180	1	5.6		0.005	0.19	0.04	28	2.8	0.39		0.013
MC1	2010-06-15 0:00	140	307		7.4	190	1	4.2		0.005	0.2	0.041	22	1.8	0.38		0.01
MC1	2010-06-16 0:00	150	308		7.28	170	1	4.3		0.005	0.21	0.016	22	1.4	0.12		0.01
MC1	2010-06-17 0:00	140	318		7.33	180	3	3.1		0.005	0.37	0.043	24	2.5	0.39		0.01
MC1	2010-06-19 0:00	140	300		7.42	180	16	3.9		0.005	0.52		21	1.8	0.34		0.012
MC1	2010-06-21 0:00	140	306		7.55	200	3	5		0.005	0.64		23	2	0.36		0.01
MC1	2010-06-23 0:00	120	268		8.04	170	14	3.89	111.7	0.005	0.43		17	1.3	0.32		0.014
MC1	2010-06-25 0:00	130	283		8.09	150	6	3.86	109.3	0.005	0.55	0.014	19	1.8	0.35		0.012
MC1	2010-06-27 0:00	140	289		8.12	180	2	4.35	107.4	0.005	0.29	0.014	18	1.3	0.34		0.01
MC1	2010-07-04 0:00	110	248		8.04	190	32	5.63	105.5	0.005	0.34	0.074	16	1.5	0.28		0.02
MC1	2010-07-11 0:00	150	327		8.25	210	2	6.74	99.3	0.005	0.82	0.005	29	2.3	0.34		0.01
MC1	2010-07-18 0:00	130	354		8.13	230	22	7.06	107.2	0.02	3.1		31	9	0.28		0.022
MC1	2010-07-25 0:00	120	324		8	230	22	7.06	77.5	0.013	2.7	0.02	29	7.7	0.34		0.02
MC1	2010-08-02 0:00	140	425		7.96	270	9	9.56	78	0.032	4.9	0.041	42	13	0.35		0.025
MC1	2010-08-08 0:00	130	418		8.06	270	11	8.54	81.7	0.009	5.2	0.2	48	14	0.34		0.017
MC1	2010-08-15 0:00	130	433		7.96	270	16	9.14	89.9	0.012	6.4	0.06	51	13	0.36		0.026
MC1	2010-08-22 0:00	120			8.27	240	33	7.3	89.6	0.011	4	0.022	40	11	0.32		0.025
MC1	2010-09-04 0:00	140	416		8.02	290	13	6.95	81.1	0.011	6.1	0.04	49	14	0.34		0.022
MC1	2010-09-10 0:00	120	406		8.13	270	31	6.52	82.6	0.014	5.4	0.1	42	12			0.025
MC1	2010-09-17 0:00	130	434		8.04	280	8	4.11	98.3	0.013	6.7	0.017	46	9.3	0.39		0.025
MC1	2010-10-08 0:00	140	448		8.19	290	6	0.14	104.2	0.012	7.3	0.005	53	11	0.32	0.00002	0.021
MC1	2010-11-07 0:00	160	426		7.85	250	1	-0.22		0.005	2.25	0.029	39	4.1	0.37	0.00002	0.01
MC1	2011-05-22 0:00	75	166			98	120			0.012	0.16	0.02	6.9	1.4	0.22	0.00002	0.026
MC1	2011-05-25 0:00	88	191			130	100			0.009	0.17	0.23	16	1.9	0.25	0.00002	0.025
MC1	2011-06-26 0:00	110	235			160	220			0.008	0.16	0.033	12			0.00002	0.031
MC1	2011-07-03 0:00	110	235			160	96			0.005	0.16	0.013	11			0.00002	0.026
MC1	2011-07-11 0:00	120	260			160	77			0.009	0.19	0.005	13			0.00002	0.028
MC1	2011-07-19 0:00	110	231			180	180			0.007	0.12	0.024	9.9			0.00002	0.029
MC1	2011-07-26 0:00	130	267			190	35			0.007	0.17	0.052	9.9			0.00002	0.024
MC1	2011-08-02 0:00	70	147			130	660			0.007	0.15			2.1	0.19	0.00002	0.053
MC1	2011-08-13 0:00	110	227			190	130			0.007	0.11	0.012				0.00002	0.034
MC1	2011-08-19 0:00	100	225			210	280			0.026	0.08	0.009				0.00002	0.028
MC1	2011-08-29 0:00	120	240			180	42			0.005	0.1	0.006				0.00002	0.028
MC1	2011-09-08 0:00	120	258		7.98	180	17	2.6	95.5	0.005	0.11	0.008		1.6		0.00002	0.03
MC1	2011-09-12 0:00	120	259		7.98	170	20	2.7	93.6	0.005	0.17	0.015	9.6	1.9		0.00002	0.028
MC1	2011-09-19 0:00	120	258		7.35	180	22	1.5	99.1	0.005	0.11	0.006	10	2		0.00002	0.021
MC1	2011-09-27 0:00	120	258		7.93	190	43	1.4	95.5	0.005	0.12	0.033	10	1.9		0.00002	0.033
MC1	2011-10-06 0:00	130	275		7.85	170	15	0	699.4	0.005	0.17	0.022		1.4		0.00002	0.018
MC1	2011-10-11 0:00	140	289			170	3	0	85.2			0.008	13	1.7		0.00002	0.023
MC1	2012-04-06 10:00	217	470		7.78	300	1	0	91.3	0.005	0.02	0.0094	24.8	2.7	0.5	0.00002	0.0043
MC1	2012-04-13 16:20	165	368			218	1			0.005	0.031	0.076	25.9	1.8	0.42	0.00002	0.0057
MC1	2012-04-14 15:25	154	340		7.98	190	1.7	0	90.5	0.005	0.02	0.0089	24.2	1.9	0.4	0.00002	0.007
MC1	2012-04-15 14:35	127	284		8.03	170	2.9	0	86.2	0.005	0.02	0.013	18.2	1.8	0.36	0.00002	0.0041
MC1	2012-04-16 14:46	109	240		8.04	154	1.4	0	94.7	0.005	0.02	0.0058	13.1	1.8	0.31	0.00002	0.0141
MC1	2012-04-17 17:20				8.15			0	97.8								
MC1	2012-04-18 17:45				8.03			0	101.4								
MC1	2012-04-19 9:00				7.89			0	93								
MC1	2012-04-20 7:44				7.74			0	88.1								
MC1	2012-04-21 9:30				7.53			0	93.6								
MC1	2012-04-22 9:41				7.62			0	100.1								
MC1	2012-04-23 13:52	61.2	145		7.65	128	10.6	0.1	106.7	0.005	0.496	0.017	0.5	1.9	0.15	0.00002	0.0393
MC1	2012-04-24 15:00				7.74			0	92.8								
MC1	2012-04-26 15:45			176.6	7.72			0	94.1								
MC1	2012-04-27 14:35			151.5	7.69			0	92.5								
MC1	2012-04-28 14:40			83.4	7.57			0.1	92.7								
MC1	2012-04-29 13:38			89.7	7.56			0.1	94.8								
MC1	2012-04-30 0:00	59.8	150	46.3	7.5	106	52.5	0.1	87.1	0.005	0.642	0.01	3.23	1.2	0.16	0.00002	0.0337
MC1	2012-05-01 10:25			70.3	7.47			0	88.4								
MC1	2012-05-02 14:00			64.2	7.52			0	88.2								
MC1	2012-05-03 9:50			89.6	7.4			0	90.4								
MC1	2012-05-06 8:00	85	211	105.1	7.31	148	55.8	0	75.7	0.0183	0.953	0.018	16.5	2.2	0.21	0.00002	0.0296
MC1	2012-05-10 15:19			77.7	7.89			0.1	97.5								
MC1	2012-05-12 15:00	71.4	156	70.4	7.66	120	430	0.1	96.4	0.005	0.124	0.0328	4.39	1.4	0.19	0.00002	0.0343
MC1	2012-05-19 16:30	86.8	187	17.4	7.67	140	544	0.8	90	0.015	0.132	0.031	6.6	1.7	0.21	0.00002	0.0431
MC1	2012-05-25 14:40	101	212	55.4	7.64	146	631	0.5	92	0.0244	0.123	0.12	9.44	1.8	0.23	0.00002	0.0229
MC1	2012-06-02 0:00	124	268		7.95	164	75.3	2.3	95.4	0.0107	0.192	0.063	12.2	1.3	0.29	0.00002	0.0199
MC1	2012-06-09 0:00	119	247	-36.9	7.88	158	148	5.5	94.3	0.0058	0.135	0.11	10.4	2	0.29	0.00002	0.0242
MC1	2012-06-15 10:50	96.7	210	7.8	7.78	160	465	3.6	92.5	0.005	0.109	0.049	8.53	1.4	0.23	0.00002	0.0244
MC1	2012-06-22 16:20	116	244		8.03	174	143	7.5	69.8	0.0139	0.158	0.027	9.59	1.5	0.28	0.00002	0.0256
MC1	2012-06-29 16:00	139	297		7.97	188	43.6	6.2	93.3	0.0055	0.22	0.093	13.1	1.5	0.31	0.00002	0.0309
MC1	2012-07-08 17:00	138	290	-19.3	7.99	184	51.8	6.4	93.8	0.005	0.166	0.018	11.9	1.6	0.3	0.00002	0.0217
MC1	2012-07-15 14:00	143	296	-25.9	8.15	192	45.3	7.1	101.6	0.005	0.163	0.017	13	1.6	0.31	0.00002	0.0207
MC1	2012-07-22 8:10	145	305		7.93	196	33.7	6.9	91.5	0.005	0.169	0.067	11.9	1.5	0.33	0.00002	0.0198
MC1	2012-07-29 10:30	154	307	28.1	8.01	210	39.3	7.1	94.6	0.008	0.155	0.084	11	1.8	0.33	0.00002	0.0232
MC1	2012-07-30 13:15	154	309	-0.9	8.01	206	34.3	6.6	99.3	0.0062	0.162	0.026	13.8	1.3	0.36	0.00002	0.0296
MC1	2012-08-08 16:25	157	317	-66	7.92	202	36.5	6.7	102.8	0.0064	0.156	0.014	11.9	1.6	0.37	0.00002	0.0238
MC1	2012-08-17 10:45	158	321	23.3	7.65	204	28.3	5.2	92.3	0.005	0.161	0.0085	12.1	1.5	0.34	0.00002	0.0172
MC1	2012-08-27 9:00	158	315	46.3	7.98	200	34.5	5.4	92.2	0.005	0.106	0.0084	11.7	1.8	0.33	0.00002	0.0189
MC1	2012-09-03 17:20	155	312	-3.5	8.16	158	76	4.3	93.4	0.005	0.067	0.0088	10.5	1.3	0.32	0.00002	0.0173
MC1	2012-09-13 16:50	131	275	78.4	7.83	178	88.7	2.2	95.1	0.005	0.102	0.008	11.2	1.8	0.26	0.00002	0.0196
MC1	2012-09-19 15:12	144	299	33.9	7.89	200	20.9	2.4	91.5	0.005	0.104	0.059	13.8	1.8	0.31	0.00002	0.0173
MC1	2012-09-24 14:52	150	313	45.9	7.91	208	10.3	3.6	97.2	0.005	0.078	0.12	12.1	1.4	0.28	0.00002	0.02
MC1	2012-10-04 15:30	141	299	62.2	7.44	206	130	0	95.23	0.005	0.15	0.074	13.1	1.5	0.28		
MC1	2012-10-12 13:20	149	306	94.8	7.74	230	7.1	0	97.4	0.005	0.122	0.018	15.3	2.2	0.29		
MC1	2012-10-20 14:20	155	318	78.9	8.6	214	1	0	119.9	0.0064	0.174	0.023	15.7	1.6	0.25	0.00002	0.011
MC1	2013-04-06 15:00	344	770	-399.3	7.99	526	1	0	89.9		0.2	0.083	96.2	6	0.68	0.000024	0.0146
MC1	2013-04-12 16:13	242	555		8	376	1	0.1		0.005	0.02		61.7	4.1	0.59	0.00002	0.0104
MC1	2013-04-18 14:00	264	595	-407.2	8.13	382	1	0.1		0.005	0.02	0.36	60.9	4.3	0.63	0.00002	0.0052
MC1	2013-04-25 11:25	192	452	-189.5	8.6	268	1	0	99.8	0.0123	0.843	0.015	43.9	4.4	0.51	0.00002	0.004
MC1	2013-05-05 14:15	98.1	230	17.6	7.57	158	2.4	0	106	0.005	0.586	0.034	16.8	2.7	0.23	0.00002	0.021

Station	Date / Time	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MC1	2009-06-26 20:00	0.0004	0.058	0.05	0.0001	0.001	38.1	0.00001	0.0005		0.0029	0.057	0.00002	1.36	0.005	12.6	0.003
MC1	2010-04-24 0:00	0.0004	0.024	0.004	0.00004	0.001	13.6	0.00001	0.00008		0.005	0.17	0.00001	1.6	0.001	4.3	0.0004
MC1	2010-04-26 0:00	0.0004	0.025	0.05	0.0001	0.001	12.7	0.00002	0.0005		0.0044	0.213	0.00002	1.32	0.005	3.87	0.001
MC1	2010-04-28 0:00	0.0004	0.025	0.05	0.0001	0.001	11.2	0.00001	0.0005		0.0037	0.23	0.00002	1.15	0.005	3.19	0.001
MC1	2010-04-30 0:00	0.0004	0.026	0.05	0.0001	0.001	11.5	0.00002	0.0005		0.0056	0.309	0.00002	0.98	0.005	3.41	0.001
MC1	2010-05-02 0:00	0.0005	0.033	0.05	0.0001	0.001	16.9	0.00005	0.0005		0.0039	0.27	0.00002	1.18	0.005	5.15	0.001
MC1	2010-05-04 0:00	0.0005	0.034	0.05	0.0001	0.001	19.4	0.00001	0.0005		0.0032	0.263	0.00002	1.14	0.005	5.6	0.001
MC1	2010-05-06 0:00	0.0005	0.038	0.05	0.0001	0.001	21.5	0.00001	0.0005		0.003	0.291	0.00002	1.11	0.005	6.55	0.001
MC1	2010-05-08 0:00	0.0005	0.039	0.05	0.0001	0.001	22.9	0.00006	0.0005		0.004	0.247	0.00002	1.14	0.005	7.12	0.001
MC1	2010-05-11 0:00	0.0005	0.045	0.05	0.0001	0.001	26.4	0.00001	0.0005		0.0022	0.14	0.00002	1.17	0.005	8.26	0.001
MC1	2010-05-13 0:00	0.0005	0.046	0.05	0.0001	0.001	27.7	0.00002	0.0005		0.0037	0.121	0.00002	1.25	0.005	8.68	0.001
MC1	2010-05-15 0:00	0.0005	0.047	0.05	0.0001	0.001	30	0.00001	0.0005		0.0019	0.108	0.0002	1.26	0.005	9.28	0.001
MC1	2010-05-18 0:00	0.0003	0.045	0.05	0.0001	0.001	29.1	0.00001	0.0005		0.0018	0.073	0.00002	1.18	0.005	9.89	0.001
MC1	2010-05-20 0:00	0.0004	0.046	0.05	0.0001	0.001	30.1	0.00001	0.0005		0.0019	0.098	0.00002	1.16	0.005	10.5	0.001
MC1	2010-05-21 0:00	0.0005	0.049	0.1	0.0002	0.001	31		0.0005		0.002	0.09	0.0002	1	0.01	10	0.001
MC1	2010-05-22 0:00	0.0005	0.049	0.1	0.0002	0.001	31		0.0005		0.002	0.083	0.0002	1	0.01	10	0.001
MC1	2010-05-24 0:00	0.0005	0.047	0.1	0.0002	0.001	30		0.0005		0.002	0.077	0.0002	1	0.01	9	0.001
MC1	2010-05-26 0:00		0.055	0.1	0.0005	0.001	35		0.0005		0.002	0.062	0.00002	1	0.01	13	0.001
MC1	2010-05-28 0:00	0.0005	0.055	0.1	0.0002	0.001	34		0.0005		0.002	0.049	0.00002	1	0.01	11	0.001
MC1	2010-05-30 0:00	0.0005	0.057	0.1	0.0002	0.001	35		0.0005		0.002	0.052	0.00002	1	0.01	11	0.011
MC1	2010-06-01 0:00	0.0004	0.055	0.1	0.0002	0.001	36		0.0005		0.003	0.04	0.0002	2	0.01	12	0.002
MC1	2010-06-03 0:00	0.0004	0.055	0.1	0.0002	0.001	35		0.0005		0.001	0.039	0.0002	1	0.01	11	0.004
MC1	2010-06-05 0:00	0.0004	0.058	0.1	0.0002	0.001	38		0.0005		0.002	0.045		1	0.01	12	0.023
MC1	2010-06-11 0:00	0.0004	0.058	0.1	0.0002	0.001	35		0.0005		0.002	0.024	0.0002	1	0.01	12	0.002
MC1	2010-06-13 0:00	0.0004	0.059	0.1	0.0002	0.001	37		0.0005		0.001	0.031	0.0002	1	0.01	12	0.001
MC1	2010-06-14 0:00	0.0004	0.058	0.1	0.0002	0.001	36		0.0005		0.001	0.044	0.0002	1	0.01	13	0.004
MC1	2010-06-15 0:00	0.0004	0.058	0.1	0.0002	0.001	37		0.0005		0.002	0.034	0.0002	1	0.01	13	0.007
MC1	2010-06-16 0:00	0.0004	0.059	0.1	0.0002	0.001	37		0.0005		0.001	0.035	0.0002	1	0.01	12	0.004
MC1	2010-06-17 0:00	0.0004	0.058	0.1	0.0002	0.001	37		0.0005		0.001	0.027	0.0002	1	0.01	12	0.001
MC1	2010-06-19 0:00	0.0004	0.061	0.1	0.0002	0.001	36		0.0005		0.002	0.048	0.0002	1	0.01	12	0.001
MC1	2010-06-21 0:00	0.0004	0.06	0.1	0.0002	0.001	37		0.0005		0.002	0.035	0.0002	1	0.01	12	0.001
MC1	2010-06-23 0:00	0.0005	0.054	0.1	0.0002	0.001	31		0.0005		0.002	0.059	0.0002	1	0.01	10	0.001
MC1	2010-06-25 0:00	0.0005	0.059	0.1	0.0002	0.001	34		0.0005		0.002	0.054	0.0002	1	0.01	11	0.003
MC1	2010-06-27 0:00	0.0005	0.056	0.1	0.0002	0.001	34		0.0005		0.002	0.045	0.0002	1	0.01	12	0.003
MC1	2010-07-04 0:00	0.0004	0.055	0.1	0.0002	0.001	29		0.0005		0.003	0.111	0.0002	1	0.01	10	0.004
MC1	2010-07-11 0:00	0.0005	0.065	0.1	0.0002	0.001	40		0.0005		0.002	0.055	0.0002	1	0.01	12	0.005
MC1	2010-07-18 0:00	0.0004	0.069	0.1	0.0002	0.001	46		0.0005		0.002	0.096	0.0002	2	0.01	12	0.003
MC1	2010-07-25 0:00	0.0005	0.069	0.1	0.0002	0.001	37		0.0005		0.002	0.106	0.0002	2	0.01	11	0.007
MC1	2010-08-02 0:00	0.0005	0.089	0.1	0.0002	0.001	47		0.0005		0.002	0.056	0.0002	3	0.01	15	0.005
MC1	2010-08-08 0:00	0.0005	0.084	0.1	0.0002	0.001	45		0.0005		0.002	0.066	0.0002	3	0.01	15	0.009
MC1	2010-08-15 0:00	0.0005	0.091	0.1	0.0002	0.001	50	0.0002	0.0005		0.003	0.089	0.0002	3	0.01	15	0.009
MC1	2010-08-22 0:00	0.0005	0.085	0.1	0.0002	0.001	40		0.0005		0.002	0.142	0.0002	2	0.01	13	0.01
MC1	2010-09-04 0:00	0.0005	0.081	0.1	0.0002	0.001	47		0.0005		0.002	0.124	0.0002	3	0.01	14	0.014
MC1	2010-09-10 0:00	0.0007	0.081	0.1	0.0002	0.001	43		0.0005		0.002	0.142	0.0002	3	0.01	13	0.014
MC1	2010-09-17 0:00	0.0005	0.084	0.1	0.0002	0.001	50		0.0005		0.002	0.123	0.0002	3	0.01	15	0.018
MC1	2010-10-08 0:00	0.0004	0.08	0.05	0.0001	0.001	51.5	0.00001	0.0005		0.0019	0.08	0.00002	3.27	0.005	14.5	0.024
MC1	2010-11-07 0:00	0.0004	0.079	0.05	0.0001	0.001	51.7	0.00001	0.0005		0.0015	0.071	0.00002	2.46	0.005	16.8	0.017
MC1	2011-05-22 0:00	0.0008	0.046	0.05	0.0001	0.001	20.1	0.00001	0.0005		0.0026	1.11	0.00002	1.02	0.005	6.57	0.125
MC1	2011-05-25 0:00	0.0007	0.049	0.05	0.0001	0.001	25.4	0.00002	0.0005		0.0023	0.753	0.00002	1.05	0.005	8.09	0.059
MC1	2011-06-26 0:00	0.0007	0.064	0.05	0.0001	0.001	31.8	0.00004	0.0005		0.0044	0.31	0.00002	0.93	0.005	10.2	0.022
MC1	2011-07-03 0:00	0.0007	0.06	0.05	0.0001	0.001	30.3	0.00001	0.0005		0.0031	0.291	0.00002	0.84	0.005	10.2	0.017
MC1	2011-07-11 0:00	0.0007	0.065	0.05	0.0001	0.001	36.5	0.00002	0.0005		0.003	0.33	0.00002	0.96	0.005	10.9	0.024
MC1	2011-07-19 0:00	0.0008	0.059	0.05	0.0001	0.001	30.7	0.00001	0.0005		0.0034	0.469	0.00005	0.66	0.005	9.1	0.033
MC1	2011-07-26 0:00	0.0009	0.063	0.05	0.0001	0.001	34.6	0.00001	0.0005		0.0035	0.455	0.00002	0.86	0.005	10.8	0.043
MC1	2011-08-02 0:00	0.0008	0.051	0.05	0.0001	0.001	19.7	0.00002	0.0005		0.005	0.621	0.00002	0.43	0.005	5.81	0.058
MC1	2011-08-13 0:00	0.0008	0.062	0.05	0.0001	0.001	29.9	0.00001	0.0005		0.0021	0.518	0.00002	0.61	0.005	9.06	0.065
MC1	2011-08-19 0:00	0.0009	0.059	0.05	0.0001	0.001	29.6	0.00001	0.0005		0.0023	0.485	0.00002	0.56	0.005	8.56	0.087
MC1	2011-08-29 0:00	0.0009	0.059	0.05	0.0001	0.001	31.5	0.00001	0.0005		0.0021	0.678	0.00002	0.67	0.005	9.31	0.08
MC1	2011-09-08 0:00	0.0009	0.066	0.05	0.0001	0.001	34.8	0.00001	0.0005		0.0022	0.7	0.00002	0.79	0.005	10.7	0.106
MC1	2011-09-12 0:00	0.0008	0.06	0.05	0.0001	0.001	32.8	0.00002	0.0005		0.0018	0.574	0.00002	0.81	0.005	10.8	0.112
MC1	2011-09-19 0:00	0.0007	0.063	0.05	0.0001	0.001	34.6	0.00002	0.0005		0.0018	0.564	0.00002	0.79	0.005	10.7	0.117
MC1	2011-09-27 0:00	0.0008	0.057	0.05	0.0001	0.001	37.9	0.00001	0.0005		0.0023	0.693	0.00002	0.76	0.005	11	0.091
MC1	2011-10-06 0:00	0.0006	0.064	0.05	0.0001	0.001	37.8	0.00001	0.0005		0.0017	0.437	0.00002	0.84	0.005	12.3	0.076
MC1	2011-10-11 0:00	0.0007	0.067	0.05	0.0001	0.001	37.6	0.00004	0.0005		0.0024	0.505	0.00002	0.87	0.005	11.8	0.105
MC1	2012-04-06 10:00	0.0004	0.0889	0.05	0.0001	0.001	53.8	0.00002	0.0005		0.00197	0.0318	0.00001	2.99	0.005	21.1	0.0031
MC1	2012-04-13 16:20	0.00042	0.0673	0.05	0.0001	0.001	42.9	0.000023	0.0005		0.00248	0.0588	0.00001	2.38	0.005	16.8	0.0162
MC1	2012-04-14 15:25	0.0004	0.06	0.05	0.0001	0.001	38.7	0.000023	0.0005		0.00292	0.0541	0.00001	2.42	0.005	15.2	0.0167
MC1	2012-04-15 14:35	0.00038	0.0505	0.05	0.0001	0.001	33.1	0.000016	0.0005		0.00281	0.0622	0.00001	2.37	0.005	12.4	0.0199
MC1	2012-04-16 14:46	0.0004	0.0454	0.05	0.0001	0.001	28.7	0.000023	0.0005		0.00416	0.0892	0.00001	2.42	0.005	10.6	0.0265
MC1	2012-04-17 17:20																
MC1	2012-04-18 17:45																
MC1	2012-04-19 9:00																
MC1	2012-04-20 7:44																
MC1	2012-04-21 9:30																
MC1	2012-04-22 9:41																
MC1	2012-04-23 13:52	0.00042	0.035	0.05	0.0001	0.001	18.2	0.000017	0.0005		0.00654	0.242	0.00001	1.78	0.005	5.63	0.0203
MC1	2012-04-24 15:00																
MC1	2012-04-26 15:45																
MC1	2012-04-27 14:35																
MC1	2012-04-28 14:40																
MC1	2012-04-29 13:38																
MC1	2012-04-30 0:00	0.00056	0.0471	0.05	0.0001	0.001	18.9	0.000021	0.0005		0.00525	0.369	0.00001	1.58	0.005	5.94	0.0587
MC1	2012-05-01 10:25																
MC1	2012-05-02 14:00																
MC1	2012-05-03 9:50																
MC1	2012-05-06 8:00	0.0006	0.0615	0.05	0.0001	0.001	26	0.00002	0.0005		0.00687	0.389	0.00001	1.64	0.005	8.22	0.0898
MC1	2012-05-10 15:19																
MC1	2012-05-12 15:00	0.00078	0.0528	0.05	0.0001	0.001	20.4	0.000013	0.0005		0.00269	0.761	0.00001	1.04	0.005	6.28	0.163
MC1	2012-05-19 16:30	0.00087	0.057	0.05	0.0001	0.001	23.7	0.000016	0.0005		0.00312	0.826	0.00001	0.96	0.005	7.7	0.157
MC1	2012-05-25 14:40	0.0008	0.0616	0.05	0.0001	0.001	26.3	0.000017	0.0005		0.00189	0.796	0.00001	0.982	0.005	8.72	0.226
MC1	2012-06-02 0:00	0.00072	0.062	0.05	0.0001	0.001	34	0.000016	0.0005		0.00359	0.441	0.00001	2.24	0.005	11.4	0.0432
MC1	2012-06-09 0:00	0.00085	0.0624	0.05	0.0001	0.001	32.1	0.00001	0.0005		0.00209	0.519	0.00001	1.03	0.005	10.2	0.037
MC1	2012-06-15 10:50	0.00075	0.0566	0.05	0.0001	0.001	27.2	0.000011	0.0005		0.0021	0.444	0.00001	0.757	0.005	8.52	0.0521
MC1	2012-06-22 16:20	0.00072	0.0644	0.05	0.0001	0.001	29.5	0.00001	0.0005		0.00211	0.39	0.00001	0.875	0.005	10.1	0.0312
MC1	2012-06-29 16:00	0.00078	0.0685	0.05	0.0001	0.001	37.9	0.000016	0.0005		0.00426	0.458	0.00001	1.08	0.005	12.4	0.0233
MC1	2012-07-08 17:00	0.00088	0.0662	0.05	0.0001	0.001	35.5	0.000013	0.0005		0.00207	0.538	0.00001	0.902	0.005	11.5	0.0247
MC1	2012-07-15 14:00	0.00087	0.0757	0.05	0.0001	0.001	38.8	0.00001	0.0005		0.0017	0.567	0.00001	1.02	0.005	12.8	0.0294
MC1	2012-07-22 8:10	0.00087	0.0714	0.05	0.0001	0.001	36.5	0.00001	0.0005		0.00168	0.509	0.00001	1.05	0.005	12.7	0.0288
MC1	2012-07-29 10:30	0.00095	0.0745	0.05	0.0001	0.001	38.9	0.00001	0.0005		0.00189	0.61	0.00001	0.998	0.005	13.4	0.035
MC1	2012-07-30 13:15	0.00094	0.0744	0.05	0.0001	0.001	39.3	0.00001	0.0005		0.00347	0.611	0.00001	1.03	0.005	13.4	0.0366
MC1	2012-08-08 16:25	0.00092	0.0756	0.05	0.0001	0.001	40.1	0.00001	0.0005		0.0016	0.594	0.00001	1.1	0.005	13.5	0.0545
MC1	2012-08-17 10:45	0.00092	0.0741	0.05	0.0001	0.001	40.1	0.00001	0.0005		0.00132	0.648	0.00001	1.05	0.005	13.6	0.0539
MC1	2012-08-27 9:00	0.00092	0.0747	0.05	0.0001	0.001	46.9	0.00001	0.0005		0.00149	0.801	0.00001	1.1	0.005	13.7	0.068
MC1	2012-09-03 17:20	0.00097	0.0729	0.05	0.0001	0.001	39.3	0.00001	0.0005		0.00147	0.78	0.00001	1.11	0.005	13.5	0.0646
MC1	2012-09-13 16:50	0.00079	0.0659	0.05	0.0001	0.001	35.6	0.00001	0.0005		0.00175	0.601	0.00001	0.796	0.005	11.7	0.074
MC1	2012-09-19 15:12	0.00086	0.069	0.05	0.0001	0.001	39.4	0.00001	0.0005		0.0019	0.684	0.00001	0.948	0.005	13.1	0.0751
MC1	2012-09-24 14:52	0.00082	0.0707	0.05	0.0001	0.001	40.6	0.00001	0.0005		0.0023	0.644	0.00001	1.07	0.005	12.7	0.0663
MC1	2012-10-04 15:30												0.00001				
MC1	2012-10-12 13:20												0.00001				
MC1	2012-10-20 14:20	0.00063	0.0679	0.05	0.0001	0.001	41.5	0.00001	0.0005		0.00148	0.436	0.00001	0.96	0.005	13.6	0.0672
MC1	2013-04-06 15:00	0.00109	0.148	0.05	0.0001	0.001	86.4	0.000027	0.0005		0.00694	0.0619	0.00001	8.17	0.005	36.9	0.0074
MC1	2013-04-12 16:13	0.0006	0.1	0.05	0.0001	0.001	59.3	0.00005	0.0005		0.00439	0.0463	0.00001	6.35	0.005	25.8	0.0099
MC1	2013-04-18 14:00	0.00055	0.0933	0.05	0.0001	0.001	56	0.000013	0.0005		0.00278	0.0383	0.00001	4.89	0.005	25.3	0.0073
MC1	2013-04-25 11:25	0.00042	0.0725	0.05	0.0001	0.001	46.3	0.000015	0.0005		0.00371	0.0366	0.00001	3.99	0.005	21.1	0.0149
MC1	2013-05-05 14:15	0.00034	0.0408	0.05	0.0001	0.001	26.5	0.000023	0.0005		0.00609	0.0856	0.00001	2.39	0.005	9.34	0.0156

Station	Date / Time	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MC1	2009-06-26 20:00	0.002	8.76	0.001	0.0002	0.0005	7	0.0002	6.21	0.005	0.328	0.005	0.00005	0.0013	0.005	0.005	0.0005
MC1	2010-04-24 0:00	0.0003	2.8	0.001	0.0002	0.0002	1.4		3.03	0.0001	0.103	0.01	0.00001	0.0004	0.0004	0.001	0.0004
MC1	2010-04-26 0:00	0.001	2.58	0.001	0.0002	0.0005	3	0.0001	3.51	0.005	0.091	0.005	0.00005	0.0001	0.005	0.005	0.0005
MC1	2010-04-28 0:00	0.001	2.12	0.001	0.0002	0.0005	3	0.0001	3.12	0.005	0.076	0.005	0.00005	0.0001	0.005	0.005	0.0005
MC1	2010-04-30 0:00	0.001	2.41	0.001	0.0002	0.0005	3	0.0001	2.96	0.005	0.084	0.005	0.00005	0.0001	0.005	0.005	0.0005
MC1	2010-05-02 0:00	0.001	3.53	0.001	0.0002	0.0005	3	0.0001	4.05	0.005	0.122	0.005	0.00005	0.0002	0.005	0.005	0.0005
MC1	2010-05-04 0:00	0.001	3.69	0.001	0.0002	0.0005	3	0.0001	4.33	0.005	0.145	0.005	0.00005	0.0002	0.005	0.005	0.0005
MC1	2010-05-06 0:00	0.001	4.37	0.004	0.0002	0.0005	3	0.0001	4.72	0.005	0.166	0.005	0.00005	0.0003	0.005	0.005	0.0005
MC1	2010-05-08 0:00	0.001	4.91	0.002	0.0002	0.0005	3	0.0001	4.77	0.005	0.178	0.005	0.00005	0.0004	0.005	0.005	0.0005
MC1	2010-05-11 0:00	0.001	5.55	0.001	0.0002	0.0005	4	0.0001	5.25	0.005	0.211	0.005	0.00005	0.0006	0.005	0.005	0.0005
MC1	2010-05-13 0:00	0.001	5.8	0.001	0.0002	0.0005	4	0.0001	5.21	0.005	0.216	0.005	0.00005	0.0006	0.005	0.005	0.0005
MC1	2010-05-15 0:00	0.001	6.22	0.001	0.0002	0.0005	5	0.0001	5.32	0.005	0.237	0.005	0.00005	0.0007	0.005	0.005	0.0005
MC1	2010-05-18 0:00	0.001	6.89	0.001	0.0002	0.0005	5	0.0002	4.99	0.005	0.217	0.005	0.00005	0.0007	0.005	0.005	0.0005
MC1	2010-05-20 0:00	0.001	7.22	0.001	0.0002	0.0005	5	0.0002	5.2	0.005	0.207	0.005	0.00005	0.0007	0.005	0.005	0.0005
MC1	2010-05-21 0:00	0.001	7	0.001	0.0002	0.0005	60		5.15	0.005	0.243	0.01	0.00005	0.0008	0.005		0.002
MC1	2010-05-22 0:00	0.001	7	0.001	0.0002	0.0005	60		5.2	0.005	0.245	0.01	0.00005	0.0008	0.005		0.002
MC1	2010-05-24 0:00	0.001	6	0.001	0.0002	0.0005	60		4.61	0.005	0.252	0.01	0.00005	0.0008	0.005		0.002
MC1	2010-05-26 0:00	0.002	9		0.0002	0.0005	60		5.48	0.005	0.316	0.01	0.00005	0.0009	0.005		0.002
MC1	2010-05-28 0:00	0.002	7	0.001	0.0002	0.0005	60		5.39	0.005	0.319	0.01	0.00005	0.0012	0.005		0.002
MC1	2010-05-30 0:00	0.002	7	0.001	0.0002	0.0005	60		5.4	0.005	0.331	0.01	0.00005	0.0013	0.005		0.002
MC1	2010-06-01 0:00	0.002	8	0.001	0.0002	0.0005	60		5.34	0.005	0.33	0.01	0.00005	0.0012	0.005		0.002
MC1	2010-06-03 0:00	0.002	7	0.001	0.0002	0.0005	60		4.7	0.005	0.326	0.01	0.00005	0.0013	0.005		0.002
MC1	2010-06-05 0:00	0.002	8	0.001	0.0002	0.0005	60		5.46	0.005	0.359	0.01	0.00005	0.0014	0.005		0.002
MC1	2010-06-11 0:00	0.002	9	0.001	0.0002	0.0005	60		5.59	0.005	0.343	0.01	0.00005	0.0014	0.005		0.002
MC1	2010-06-13 0:00	0.002	9	0.001	0.0002	0.0005	60		5.72	0.005	0.357	0.01	0.00005	0.0014	0.005		0.002
MC1	2010-06-14 0:00	0.002	10	0.001	0.0002	0.0005	60		5.65	0.005	0.359	0.01	0.00005	0.0015	0.005		0.002
MC1	2010-06-15 0:00	0.002	10	0.001	0.0002	0.0005	60		5.85	0.005	0.357	0.01	0.00005	0.0014	0.005		0.002
MC1	2010-06-16 0:00	0.002	9	0.001	0.0002	0.0005	60		5.36	0.005	0.378	0.01	0.00005	0.0014	0.005		0.002
MC1	2010-06-17 0:00	0.002	8	0.001	0.0002	0.0005	60		5.31	0.005	0.367	0.01	0.00005	0.0014	0.005		0.002
MC1	2010-06-19 0:00	0.002	8	0.001	0.0002	0.0005	60		5.74	0.005	0.358	0.01	0.00005	0.0012	0.005		0.002
MC1	2010-06-21 0:00	0.002	8	0.001	0.0002	0.0005	60		5.75	0.005	0.366	0.01	0.00005	0.0012	0.005		0.002
MC1	2010-06-23 0:00	0.002	7	0.001	0.0002	0.0005	60		5.47	0.005	0.305	0.01	0.00005	0.001	0.005		0.002
MC1	2010-06-25 0:00	0.002	8	0.001	0.0002	0.0005	60		6.12	0.005	0.352	0.01	0.00005	0.001	0.005		0.002
MC1	2010-06-27 0:00	0.002	8	0.001	0.0002	0.0005	60		6.63	0.005	0.347	0.01	0.00005	0.001	0.005		0.002
MC1	2010-07-04 0:00	0.001	7	0.002	0.0002	0.0005	60		5.71	0.005	0.296	0.01	0.00005	0.0007	0.005		0.002
MC1	2010-07-11 0:00	0.002	9	0.001	0.0002	0.0005	60		5.98	0.005	0.391	0.01	0.00005	0.0012	0.005		0.002
MC1	2010-07-18 0:00	0.005	12	0.001	0.0002	0.0005	60	0.001	7.14	0.005	0.434	0.01	0.00005	0.0007	0.005		0.002
MC1	2010-07-25 0:00	0.004	11	0.001	0.0002	0.0005	60	0.0009	5.67	0.005	0.402	0.01	0.00005	0.0006	0.005		0.002
MC1	2010-08-02 0:00	0.007	18	0.001	0.0002	0.0005	60	0.0014	6.05	0.005	0.579	0.01	0.00005	0.0008	0.005		0.002
MC1	2010-08-08 0:00	0.007	17	0.001	0.0002	0.0005	60	0.0016	5.43	0.005	0.597	0.01	0.00005	0.0008	0.005		0.002
MC1	2010-08-15 0:00	0.008	17	0.001	0.0002	0.0005	60	0.0021	5.52	0.005	0.672	0.01	0.00005	0.0009	0.005		0.002
MC1	2010-08-22 0:00	0.007	13	0.001	0.0002	0.0005	60	0.0015	5.52	0.005	0.599	0.01	0.00005	0.0007	0.005		0.002
MC1	2010-09-04 0:00	0.008	16	0.001	0.0002	0.0008	60	0.0021	5.56	0.005	0.7	0.01	0.00005	0.0008	0.005		0.002
MC1	2010-09-10 0:00	0.008	16	0.001	0.0002	0.0005	60	0.0022	5.27	0.005	0.668	0.01	0.00005	0.0007	0.005		0.002
MC1	2010-09-17 0:00	0.008	16	0.001	0.0002	0.0005	60	0.0022	5.73	0.005	0.736	0.01	0.00005	0.001	0.005		0.002
MC1	2010-10-08 0:00	0.008	15.3	0.001	0.0002	0.0005	19	0.002	5.61	0.005	0.726	0.005	0.00005	0.0011	0.005	0.005	0.0005
MC1	2010-11-07 0:00	0.004	14.5	0.001	0.0002	0.0005	16	0.0007	6.5	0.005	0.721	0.005	0.00005	0.0016	0.005	0.005	0.0005
MC1	2011-05-22 0:00	0.001	4.37	0.002	0.0002	0.0005	4	0.0001	4.28	0.005	0.179	0.005	0.00005	0.0005	0.005	0.005	0.0005
MC1	2011-05-25 0:00	0.001	5.36	0.002	0.0002	0.0005	4	0.0001	5.18	0.005	0.227	0.005	0.00005	0.0007	0.005	0.005	0.0005
MC1	2011-06-26 0:00	0.002	7.02	0.002	0.0002	0.0005	4	0.0002	6.23	0.005	0.26	0.005	0.00005	0.0008	0.005	0.012	0.0005
MC1	2011-07-03 0:00	0.001	6.94	0.002	0.0002	0.0005	5	0.0001	6.28	0.005	0.249	0.005	0.00005	0.0007	0.005	0.005	0.0005
MC1	2011-07-11 0:00	0.001	7.28	0.002	0.0002	0.0005	5	0.0001	6.99	0.005	0.277	0.005	0.00005	0.0007	0.005	0.005	0.0005
MC1	2011-07-19 0:00	0.001	5.86	0.002	0.0002	0.0005	4	0.0002	6.43	0.005	0.233	0.005	0.00005	0.0007	0.005	0.006	0.0005
MC1	2011-07-26 0:00	0.001	6.88	0.002	0.0002	0.0005	5	0.0002	6.56	0.005	0.279	0.005	0.00005	0.0009	0.005	0.005	0.0005
MC1	2011-08-02 0:00	0.001	4.26	0.002	0.0002	0.0005	3	0.0001	5.79	0.005	0.149	0.005	0.00005	0.0004	0.005	0.005	0.0005
MC1	2011-08-13 0:00	0.001	5.56	0.002	0.0002	0.0005	3	0.0001	6.69	0.005	0.223	0.005	0.00005	0.0006	0.005	0.005	0.0005
MC1	2011-08-19 0:00	0.001	5.2	0.002	0.0002	0.0005	3	0.0002	6.88	0.005	0.207	0.005	0.00005	0.0007	0.005	0.005	0.0005
MC1	2011-08-29 0:00	0.001	5.62	0.002	0.0002	0.0005	3	0.0001	6.94	0.005	0.237	0.005	0.00005	0.0006	0.005	0.005	0.0005
MC1	2011-09-08 0:00	0.001	6.29	0.002	0.0002	0.0005	4	0.0001	7.11	0.005	0.278	0.005	0.00005	0.0007	0.005	0.005	0.0005
MC1	2011-09-12 0:00	0.001	6.32	0.002	0.0002	0.0005	3	0.0001	6.58	0.005	0.273	0.005	0.00005	0.0007	0.005	0.005	0.0005
MC1	2011-09-19 0:00	0.001	6.32	0.002	0.0002	0.0005	4	0.0001	6.84	0.005	0.268	0.005	0.00005	0.0007	0.005	0.005	0.0005
MC1	2011-09-27 0:00	0.001	6.29	0.002	0.0002	0.0005	5	0.0001	6.98	0.005	0.249	0.005	0.00005	0.0007	0.005	0.005	0.0005
MC1	2011-10-06 0:00	0.001	7.01	0.002	0.0002	0.0005	5	0.0001	7.35	0.005	0.303	0.005	0.00005	0.0008	0.005	0.005	0.0005
MC1	2011-10-11 0:00	0.001	6.88	0.002	0.0002	0.0005	5	0.0001	7.26	0.005	0.315	0.005	0.00005	0.0009	0.005	0.005	0.0005
MC1	2012-04-06 10:00	0.001	14	0.001	0.0002	0.0005	12.8	0.00023	9.12	0.005	0.487	0.005	0.00005	0.00093	0.005	0.005	0.0005
MC1	2012-04-13 16:20	0.001	11.2	0.001	0.0002	0.0005	9.3	0.00019	6.89	0.005	0.424	0.005	0.00005	0.001	0.005	0.005	0.0005
MC1	2012-04-14 15:25	0.001	9.94	0.001	0.0002	0.0005	8.6	0.00017	6.4	0.005	0.379	0.005	0.00005	0.00082	0.005	0.005	0.0005
MC1	2012-04-15 14:35	0.001	7.99	0.001	0.0002	0.0005	6.4	0.00015	5.8	0.005	0.31	0.005	0.00005	0.00061	0.005	0.005	0.0005
MC1	2012-04-16 14:46	0.001	6.77	0.001	0.0002	0.0005	5.1	0.00017	5.3	0.005	0.259	0.005	0.00005	0.00049	0.005	0.005	0.0005
MC1	2012-04-17 17:20																
MC1	2012-04-18 17:45																
MC1	2012-04-19 9:00																
MC1	2012-04-20 7:44																
MC1	2012-04-21 9:30																
MC1	2012-04-22 9:41																
MC1	2012-04-23 13:52	0.001	3.97	0.0011	0.0002	0.0005	3.3	0.00026	3.44	0.005	0.148	0.005	0.00005	0.00031	0.005	0.005	0.0005
MC1	2012-04-24 15:00																
MC1	2012-04-26 15:45																
MC1	2012-04-27 14:35																
MC1	2012-04-28 14:40																
MC1	2012-04-29 13:38																
MC1	2012-04-30 0:00	0.0011	4.53	0.0013	0.0002	0.0005	3.7	0.00028	3.61	0.005	0.144	0.005	0.00005	0.00039	0.005	0.005	0.0005
MC1	2012-05-01 10:25																
MC1	2012-05-02 14:00																
MC1	2012-05-03 9:50																
MC1	2012-05-06 8:00	0.0017	6.3	0.0014	0.0002	0.0005	6.1	0.0004	4.36	0.005	0.211	0.005	0.00005	0.00066	0.005	0.005	0.0005
MC1	2012-05-10 15:19																
MC1	2012-05-12 15:00	0.001	4.14	0.0016	0.0002	0.0005	3	0.0001	4.58	0.005	0.155	0.005	0.00005	0.00049	0.005	0.005	0.0005
MC1	2012-05-19 16:30	0.0012	4.95	0.002	0.00048	0.0005	3	0.00013	4.99	0.005	0.193	0.005	0.00005	0.00071	0.005	0.0098	0.0005
MC1	2012-05-25 14:40	0.0013	5.57	0.0025	0.0002	0.0005	3.4	0.00019	4.68	0.005	0.218	0.005	0.00005	0.00083	0.005	0.005	0.0005
MC1	2012-06-02 0:00	0.0015	7.47	0.0015	0.0002	0.0005	4.7	0.00015	5.93	0.005	0.286	0.005	0.00005	0.00098	0.005	0.005	0.0005
MC1	2012-06-09 0:00	0.0013	6.73	0.0017	0.0002	0.0005	4.4	0.00015	6.1	0.005	0.255	0.005	0.00005	0.00091	0.005	0.005	0.0005
MC1	2012-06-15 10:50	0.0011	5.89	0.0019	0.0002	0.0005	3.2	0.00011	5.89	0.005	0.21	0.005	0.00005	0.0006	0.005	0.005	0.0005
MC1	2012-06-22 16:20	0.0013	6.62	0.0018	0.0002	0.0005	3.6	0.00011	5.8	0.005	0.264	0.005	0.00005	0.00082	0.005	0.005	0.0005
MC1	2012-06-29 16:00	0.0016	7.93	0.0015	0.0002	0.0005	4.8	0.00013	6.49	0.005	0.328	0.005	0.00005	0.00107	0.005	0.005	0.0005
MC1	2012-07-08 17:00	0.0015	7.35	0.0016	0.0002	0.0005	4.5	0.00017	6.88	0.005	0.305	0.005	0.00005	0.00091	0.005	0.005	0.0005
MC1	2012-07-15 14:00	0.0019	8.21	0.0017	0.0002	0.0005	4.8	0.00013	6.92	0.005	0.352	0.005	0.00005	0.00109	0.005	0.005	0.0005
MC1	2012-07-22 8:10	0.0017	8.07	0.0015	0.0002	0.0005	4.8	0.00012	6.54	0.005	0.341	0.005	0.00005	0.00109	0.005	0.005	0.0005
MC1	2012-07-29 10:30	0.0017	8.31	0.0017	0.0002	0.0005	4.8	0.00015	7.09	0.005	0.346	0.005	0.00005	0.0011	0.005	0.005	0.0005
MC1	2012-07-30 13:15	0.0016	8.12	0.0015	0.0002	0.0005	4.3	0.00014	6.75	0.005	0.35	0.005	0.00005	0.00114	0.005	0.005	0.0005
MC1	2012-08-08 16:25	0.0017	8.47	0.0016	0.0002	0.0005	5	0.00017	7.03	0.005	0.369	0.005	0.00005	0.00116	0.005	0.005	0.0005
MC1	2012-08-17 10:45	0.0016	8.07	0.0014	0.0002	0.0005	5	0.00013	6.79	0.005	0.373	0.005	0.00005	0.00113	0.005	0.005	0.0005
MC1	2012-08-27 9:00	0.0015	8.28	0.0017	0.0002	0.0005	4.4	0.0001	7.74	0.005	0.359	0.005	0.00005	0.0011	0.005	0.005	0.0005
MC1	2012-09-03 17:20	0.0015	8.21	0.0017	0.0002	0.0005	4.5	0.00016	6.93	0.005	0.354	0.005	0.00005	0.00104	0.005	0.005	0.0005
MC1	2012-09-13 16:50	0.0012	7.22	0.0019	0.0002	0.0005	4.4	0.0001	6.59	0.005	0.291	0.005	0.00005	0.00079	0.005	0.005	0.0005
MC1	2012-09-19 15:12	0.0013	7.93	0.0018	0.0002	0.0005	4.9	0.00013	6.88	0.005	0.327	0.005	0.00005	0.00094	0.005	0.005	0.0005
MC1	2012-09-24 14:52	0.0013	7.66	0.0019	0.0002	0.0005	4.6	0.00013	7.3	0.005	0.334	0.005	0.00005	0.00091	0.005	0.005	0.0005
MC1	2012-10-04 15:30																
MC1	2012-10-12 13:20																
MC1	2012-10-20 14:20	0.0013	8.02	0.0016	0.0002	0.0005	5.4	0.00013	7.09	0.005	0.344	0.005	0.00005	0.00103	0.005	0.005	0.0005
MC1	2013-04-06 15:00	0.001	30.8	0.0016	0.0002	0.0005	30.2	0.00027	17.6	0.005	0.682	0.005	0.00005	0.0017	0.005	0.005	0.0005
MC1	2013-04-12 16:13	0.001	20.8	0.0012	0.0002	0.0005	19.1	0.00013	13.3	0.005	0.498	0.005	0.00005	0.00074	0.005	0.0066	0.0005
MC1	2013-04-18 14:00	0.001	18.9	0.001	0.0002	0.0005	16.1	0.00017	11.6	0.005	0.494	0.005	0.00005	0.00076	0.005	0.005	0.0005
MC1	2013-04-25 11:25	0.001	15.2	0.001	0.0002	0.0005	15	0.00038	7.89	0.005	0.434	0.005	0.00005	0.00068	0.005	0.005	0.0005
MC1	2013-05-05 14:15	0.0013	7.45	0.001	0.0002	0.0005	7	0.0002	3.97	0.005	0.254	0.005	0.00005	0.00042	0.005	0.005	0.0005

Attachment 3: Sitewide Database

Station	Date / Time	Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	N-NO_2	N-NO_3	N-NH_3	SO_4-D	Chlord	Fluord
		General Parameters								Anions & Nitrogen Species					
		mg/L	μS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MC1	2013-05-07 16:00	81.7	197	55	8.17	168	4.3	0	92.3	0.006	0.408	0.018	7.54	3.4	0.18
MC1	2013-05-19 17:15	73.7	179	96.2	8.1	138	58	0	91	0.005	0.43	0.028	9.32	3.6	0.17
MC1	2013-05-24 17:00	63.4	151	-60	9.67	134	220	0.1	94.5	0.024	0.558	0.056	7.58	3.3	0.18
MC1	2013-05-31 15:40	91.8	233	33.9	7.91	180	660	4.1	95.3	0.0342	1.26	0.064	18.7	4.7	0.28
MC1	2013-06-08 16:10	108	230	59.9	7.57	172	564	3.6	86.6	0.0158	0.104	0.14	9.88	1.8	0.29
MC1	2013-06-16 13:40	125	266		8.5	186	194	4.5		0.0076	0.153	0.069	11.1	2.3	0.29
MC1	2013-06-20 10:45	136	290		8.6	200	109	7.4		0.0061	0.17	0.072	13.6	1.7	0.35
MC1	2013-06-25 11:15	143	306	78.6	8.08	184	73.4	5.5	102.9	0.005	0.192	0.057	15.6	1.7	0.36
MC1	2013-07-02 13:05	125	268	72.9	7.94	186	121	5.9	91.4	0.0084	0.154	0.13	11.9	1.5	0.3
MC1	2013-07-11 13:55	133	279	124.7	8.09	198	255	5.8	94.7	0.0066	0.15	0.069	14	1.7	0.32
MC1	2013-07-19 10:30	154	319	86	8.1	206	62	6.2	93.1	0.0057	0.162	0.046	14.6	1.6	0.36
MC1	2013-07-24 11:20	129	272	127.5	8	184	169	5.7	95.2		0.2	0.064	9.93	1.5	0.3
MC1	2013-07-30 13:30	133	281	90.4	8.09	178	75	6.9	102.3	0.005	0.132	0.11	11.6	1.6	0.31
MC1	2013-08-10 15:20	154	315	47.3	8.09	238	37.3	7	92.8		0.24	0.037	12.6	1.6	0.35
MC1	2013-08-15 13:30	159	320		8.6	214	38.6	8.7		0.0066	0.155	0.042	14	1.7	0.34
MC1	2013-08-22 13:40	154	318	143.8	8.04	214	60.1	5.5	104.7	0.005	0.142	0.037	12.7	1.8	0.33
MC1	2013-08-27 11:45	146	301	167.4	7.78	244	90.5	4.2	97.6	0.005	0.119	0.038	10.2	1.6	0.29
MC1	2013-09-06 16:15	151	314	115.2	7.9	190	52.2	4.3	96.2	0.005	0.101	0.02	11.7	2.2	0.32
MC1	2013-09-09 13:55	153	318	141.8	7.94	206	32.6	4.4	87.4	0.005	0.079	0.022	15.8	2.2	0.32
MC1	2013-09-18 11:35	139	286	195.1	7.66	168	181	1.5	113.1	0.005	0.075	0.037	12.2	2	0.28
MC1	2013-09-24 11:00	135	290	228.8	7.6	160	93.2	1.6	95.3	0.005	0.085	0.032	14.5	2	0.28
MC1	2013-10-03 11:30	142	303	140.7	7.64	278	79.6	0.2	91.3	0.005	0.117	0.049	14.6	2.3	0.27
MC1	2013-10-11 12:20	154	323	75.7	7.78	228	11.8	0.1	101.6	0.005	0.096	0.038	16.6	2	0.27
MC1	2013-10-18 10:30	153	316	150.4	7.65	234	3.3	-0.1	92.5	0.005	0.161	0.028	16.8	2.2	0.3
MC1	2013-10-22 10:00	173	361	93.9	7.75	232	4.6	0.1	98		0.2	0.06	17.9	1.8	0.35
MC1	2013-10-31 15:45	154	323	119.5	7.6	200	15.1	-0.1	100.9	0.005	0.174	0.02	16.1	1.8	0.32
MC1	2013-11-08 15:15	172	361	118.3	7.95	210	1.2	0.1	60.9	0.005	0.199	0.023	19.4	1.9	0.37
MC1	2013-11-14 15:00	180	386	176	7.82	216	1.7	0	93.5	0.005	0.229	0.022	21.8	2	0.39
MC1	2013-11-18 15:20	183	389	-232.7	7.96	238	5	0	98	0.005	0.32	0.025	24.8	2.3	0.39
MC1	2013-12-01 14:15	210	463	-7.5	8.7	244	29.2	0	4.6	0.005	0.291	0.021	27.6	2.9	0.41
MC1	2014-03-18 11:20	508	1050	151.5	8.35	746	1	-0.1	107.5	0.005	0.064	0.076	104	14	1.1
MC1	2014-03-25 12:50	408	862	125.9	8.26	572	1	0	126.6	0.005	0.021	0.02	77.7	9.5	0.96
MC1	2014-04-08 11:00	198	482	92.7	8.15	320	1	0	90.3	0.005	0.075	0.015	41.2	9.3	0.47
MC1	2014-04-17 16:10	155	370	143.8	8.21	222	1	0	92.9	0.005	0.241	0.033	28.4	6.7	0.34
MC1	2014-04-22 16:00	61.7	142	196.4	8.07	114	3	-0.1	94.7	0.005	0.065	0.019	0.5	2.9	0.16
MC1	2014-05-01 16:30	48.1	116	107.7	8.14	112	29.9	0	95.1	0.005	0.246	0.023	0.5	1.9	0.13
MC1	2014-05-06 12:25	76.3	203	116.5	8.23	160	73.3	0	97	0.0077	0.944	0.049	19.9	3.3	0.2
MC1	2014-05-17 18:00	108	269	109.6	7.31	176	310	4.2	91.9	0.0193	0.965	0.093	24.1	3.8	0.28
MC1	2014-05-19 16:40	105	267	111.6	7.44	190	385	2.9	92.2	0.0206	1.02	0.084	22.7	3.4	0.27
MC1	2014-05-28 12:00	110	242	103.2	8.35	171	95.8	2.3	98.2	0.0066	0.192	0.038	16.3	1.9	0.29
MC1	2014-06-08 13:50	133	286	71.8	7.53	174	17.2	3.7	98.6	0.005	0.162	0.033	14.7	1.8	0.35
MC1	2014-06-14 15:00	138	290	162	8.13	166	10.7	4.9	95.4	0.0053	0.166	0.034	15.1	2.1	0.36
MC1	2014-06-17 13:30	143	301	140.9	8.14	208	5.9	4.4	90.8	0.005	0.15	0.046	15.1	1.8	0.37
MC1	2014-06-26 16:45	151	318	201	8.32	184	11.8		96.5	0.005	0.125	0.04	16.2	1.1	0.4
MC1	2014-07-01 15:50	154	322	213.1	8.36	212	2.5	6.3	95.8	0.005	0.127	0.034	17.9	1.8	0.41
MC1	2014-07-10 11:20	154	326	199.2	8.47	178	2.3	6.3	94.3	0.005	0.111	0.024	18.4	1.8	0.42
MC1	2014-07-17 15:45	158	340	155.3	7.78	204	11.5	6.1	97.2	0.005	0.105	0.012	17.6	1.7	0.42
MC1	2014-07-23 15:25	148	303	101.6	8	176	22.4	5.7	95.6	0.005	0.096	0.024	14.5	2.4	0.37
MC1	2014-08-02 15:20	153	317	129.6	8.21	258	11.6	6.2	97.7	0.005	0.092	0.013	13.5	1.6	0.36
MC1	2014-08-14 13:30	169	346	141.3	8.2	196	3.5	4.8	95.2	0.005	0.102	0.015	16.7	2	0.4
MC1	2014-08-18 16:25	169	346	147.1	8.26	214	3.7	5.8	93.4	0.005	0.077	0.017	14.9	2	0.37
MC1	2014-08-26 10:30	163	346	179.6	8.21	210	9.3	4.6	98.2	0.005	0.07	0.023	15.3	1.7	0.39
MC1	2014-09-01 16:55	169	344	138	8.24	202	1.2	2.4	98.2	0.005	0.044	0.039	15.2	1.7	0.37
MC1	2014-09-11 16:45	166	334	193.5	8.15	228	2.7	2.6	109.3	0.005	0.022	0.013	14.7	2	0.37
MC1	2014-09-16 12:00	160	334	176.5	8.15	212	11.4	3	94.3	0.005	0.02	0.034	16.8	2	0.38
MC1	2014-09-22 15:50	151	318	186.4	8.11	194	55.9	2	93	0.005	0.02	0.016	14.1	1.9	0.37
MC1	2014-09-30 16:55	142	303	177.8	8.05	198	175	-0.7	97.9	0.005	0.062	0.018	15.9	2.1	0.33
MC1	2014-10-07 15:40	159	329	179.5	8.14	210	18.9	-1.3	99.1	0.005	0.085	0.026	16.6	1.9	0.34
MC1	2014-10-14 16:20	157	320	214.6	7.79	200	12.3	-1.4	94.5	0.005	0.108	0.016	16.3	1.8	0.32
MC1	2014-10-25 15:55	156	338	143	8.14	198	3.7	-1.5	96.2	0.005	0.138	0.035	17.6	1.5	0.38
MC1	2014-10-31 16:30	180	372	267.7	7.63	254	2.3	-1.6	84.4	0.005	0.176	0.024	21.3	2.7	0.39
MC1	2014-11-06 16:55	183	378	227.5	7.8	224	1	-1.7	95.5	0.005	0.168	0.0059	21.6	2.3	0.41
MC1	2014-11-11 15:00	180	386	205.2	7.47	220	1	-1.8	84.6	0.005	0.182	0.012	25.3	2.5	0.43
MC1	2014-11-22 15:30	246	530	182.6	7.71	346	86.5	-1.8	84.7	0.005	0.287	0.024	42.1	4.1	0.38
MC1	2014-11-28 14:50	212	1380	213.2	7.44	258	1	-1.9	139.9	0.005	0.332	0.007	46.4	3.8	0.43
MC1	2014-12-05 15:50	219	511	243.2	8.07	316	1	-1.9	28.5	0.005	0.459	0.016	49.1	5.1	0.43
MC1	2014-12-14 11:45	152	507	196.9	7.67	312	1	-1.9	94.8	0.0163	2.59	0.026	87.7	7.2	0.45
MC1	2015-03-14 15:00	291	618			368	2.8			0.005	0.339	0.036	56	4.7	0.64
MC1	2015-04-02 16:00	224	515	165.1	8.16	318	7.4	0	93.3	0.005	0.123	0.033	51.4	3.9	0.54
MC1	2015-04-10 15:45	136	413	190.4	8.29	254	8.4	0	98.7	0.0097	1.46	0.016	59.7	5.9	0.41
MC1	2015-04-17 15:45	148	449	210.2	8.16	262	3.7	-0.1	96.1	0.0133	2.12	0.01	61.2	8.1	0.37
MC1	2015-04-23 14:50	96.6	301	222.2	8.04	190	5.2	0	100.2	0.0236	1.38	0.032	39.5	5.1	0.27
MC1	2015-05-01 15:15	63.1	163	187	7.77	132	91.5	0	94.5		0.5	0.041	5.87	3.1	0.17
MC1	2015-05-09 16:10	80.7	203	130.6	7.65	128	586	0.1	101.5	0.0052	0.414	0.07	16.7	2.8	0.22
MC1	2015-05-14 16:00	93	247	117.1	7.73	160	727	6	91.5	0.0111	0.715	0.11	22.2	3.8	0.26
MC1	2015-05-21 11:30	120	314	150.8	7.96	210	146	6.4	95.3	0.0167	1	0.05	28.4	4.7	0.29
MC1	2015-05-28 16:20	145	369	143.5	7.82	232	33.4	5	93.6	0.005	0.845	0.026	34.5	4.5	0.36
MC1	2015-06-06 13:30	139	306	128.6	7.94	150	12.9	3	97.8	0.005	0.16	0.025	18.3	1.8	0.36
MC1	2015-06-10 17:20	141	320	124	7.96	194	7.4	4.5	96.1	0.005	0.144	0.033	20.5	2.2	0.4
MC1	2015-06-20 16:15	154	345	160.9	8	206	7.3	6	96.5	0.005	0.191	0.0056	24.8	1.8	0.45
MC1	2015-06-25 11:10	161	353	156.8	7.96	218	4	5.8	94.7	0.005	0.157	0.013	24.4	2	0.43
MC1	2015-07-02 15:50	157	343	113.4	8.01	220	10.6	5.1	94.27	0.005	0.134	0.037	21.7	2.4	0.42
MC1	2015-07-09 11:10	162	337	139.3	8.2	208	7.5	5.6	95.4	0.005	0.111	0.04	19.7	1.8	0.42
MC1	2015-07-17 11:05	165	347	145.2	8.19	208	4.1	5.4	88.5	0.005	0.143	0.018	19.5	1.7	0.41
MC1	2015-07-23 11:10	167	362	130.1	8.05	206	16.2	3.7	86.9	0.005	0.106	0.019	22.4	2.1	0.38
MC1	2015-07-27 11:35	165	357	150.1	8.05	186	2.3	6		0.005	0.126	0.067	21.6	1.9	0.5
MC1	2015-08-04 14:35	169	360	91	8.21	226	2.2	5.3	96.5	0.005	0.115	0.025	20	2	0.47
MC1	2015-08-13 14:15	164	342	134.5	8.13	208	8.3	-0.7	136.1	0.005	0.082	0.0091	16.1	1.5	0.41
MC1	2015-08-22 10:51	169	345	147	8.05	194	4	3.7	94.9	0.005	0.069	0.029	18.2	1.8	0.41
MC1	2015-08-25 14:20	160	337	155.3	8.21	206	45.9	4.4	100.5	0.005	0.071	0.04	17.9	1.5	0.4
MC1	2015-09-01 11:50	143	304	129.9	8	214	22.9	2.5	98.3	0.005	0.045	0.02	15.1	1.7	0.35
MC1	2015-09-08 15:15	153	323	157.3	8.13	188	2.6	2.4	97.4	0.005	0.035	0.013	16.5	2.1	0.38
MC1	2015-09-18 13:40	153	329	161.9	8.25	212	1.1	2.1	94.9	0.005	0.035	0.017	19.1	1.9	0.37
MC1	2015-09-25 14:55	158	329	125.3	7.98	210	5	0.7	94.8	0.005	0.081	0.037	18.1	1.7	0.38
MC1	2015-09-29 15:55	155	310	98.9	8.01	208	1.9	2.9	94.7	0.005	0.072	0.04	16.6	2	0.38
MC1	2015-10-08 11:45	169	365	180.2	7.78	218	3.1	-0.2	91.9	0.005	0.133	0.04	20.9	2.1	0.39
MC1	2015-10-13 16:55	147	319			206	9.2			0.005	0.087	0.028	15.2	1.9	0.37
MC1	2015-10-24 16:00	154	334	65.6	8.11	218	3.6	-0.1	92.9	0.005	0.118	0.027	17.2	2	0.38
MC1	2015-10-28 15:50	176	379	156.7	7.89	238	1	-0.1	73.5	0.005	0.145	0.026	22	2.5	0.42
MC1	2015-11-06 16:15	183	395	42.4	7.86	214	1	0.1	88.5	0.005	0.184	0.019	25.2	2	0.42
MC1	2015-11-11 13:20	202	422	149.2	7.68	246	1	0.1	78.5	0.005	0.188	0.048	25	2.4	0.43
MC1	2015-11-16 14:55	201	439	71	7.58	274	4.1	0	76.2	0.005	0.203	0.022	28.7	2.5	0.43
MC1	2015-11-25 15:20	195	442	81.6	7.67	274	4.2	0.9	67.1	0.005	0.217	0.015	28.3	2.2	0.4
MC1	2015-12-04 14:40	222	503	106.5	7.53	294	5	0.1	54.4	0.005	0.169	0.016	31.4	3	0.44
MC1	2015-12-09 14:45	220	465	10.4	8.2	262	4	0.3	67	0.005	0.211	0.025	35	2.8	0.45
MC1	2015-12-19 11:40	260	539		8.1	312	2.1	-0.1	67.7	0.005	0.299	0.026	32.3	3	0.51
MC1	2015-12-22 14:50	264	525	-505.6	8.8	288	10.9	-0.1	71.5	0.005	0.27	0.023	30.8	3.1	0.51
MC1	2016-01-02 14:15	345	687	110.1	7.91	408	6.1	0.4	84.5	0.005	0.234	0.0093	44	4.5	0.63
MC1	2016-04-01 16:00	180	407	118.2	8	227	3	0.1	113.7	0.001	0.005	0.005	35.5	2.61	
MC1	2016-04-02 16:00	180	407			227	3			0.001	0.005	0.005	35.5	2.61	
MC1	2016-04-10 11:10	80.3	177	147.9	7.62	96.6	3	0	82.9	0.001	0.005	0.006	8.53	1.18	
MC1	2016-04-16 15:00	69.3	158	144.3	7.44	86.6	4.7	0	99.4	0.001	0.0112	0.0066	9.44	1.46	
MC1	2016-04-21 11:15	90.6	209	99.4	7.9	112	7.3	0	111.2	0.001	0.005	0.0088	13	1.78	
MC1	2016-04-28 10:35	115	266	151.3	7.94	147	4	0	110.7	0.001	0.0953	0.0362	19.2	2.84	
MC1	2016-05-07 14:05	108	240	125.1	7.92	131	48.7	0	82.8	0.001	0.0184	0.0099	14.3	1.68	

Date / Time	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
	Dissolved Elements																			
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
2013-05-07 16:00	0.00002	0.0132	0.00037	0.0385	0.05	0.0001	0.001	23.6	0.00002	0.0005		0.00612	0.0946	0.00001	2.22	0.005	8.03	0.0219	0.0012	6.02
2013-05-19 17:15	0.00002	0.0322	0.00055	0.049	0.05	0.0001	0.001	22.5	0.00001	0.0005		0.00794	0.362	0.00001	1.49	0.005	7.05	0.102	0.0012	5.35
2013-05-24 17:00	0.00002	0.0239	0.00058	0.0433	0.05	0.0001	0.001	17.6	0.00001	0.0005		0.00992	0.401	0.00001	1.65	0.005	6.07	0.153	0.0016	5.41
2013-05-31 15:40	0.00002	0.0172	0.00075	0.0613	0.05	0.0001	0.001	26.6	0.00001	0.0005		0.00789	0.559	0.00001	2.21	0.005	8.48	0.207	0.003	7.98
2013-06-08 16:10	0.00002	0.0168	0.00124	0.0558	0.05	0.0001	0.001	28.6	0.00001	0.0005		0.0021	0.637	0.00001	1.03	0.005	8.59	0.102	0.0016	6.24
2013-06-16 13:40	0.00002	0.0164	0.00087	0.0619	0.05	0.0001	0.001	33	0.00001	0.0005		0.00181	0.387	0.00001	1.16	0.005	10.8	0.0655	0.0016	7.46
2013-06-20 10:45	0.00002	0.0117	0.00083	0.0658	0.05	0.0001	0.001	36.5	0.00001	0.0005		0.00151	0.269	0.00001	1.28	0.005	10.9	0.0548	0.0023	7.18
2013-06-25 11:15	0.00002	0.0126	0.00072	0.0646	0.05	0.0001	0.001	36.2	0.00001	0.0005		0.00146	0.201	0.00001	1.27	0.005	13	0.039	0.0018	8.67
2013-07-02 13:05	0.00002	0.0376	0.00095	0.0644	0.05	0.0001	0.001	34.2	0.00001	0.0005		0.00266	0.403	0.00001	1.02	0.005	11.1	0.053	0.0017	8.08
2013-07-11 13:55	0.00002	0.0225	0.00088	0.0606	0.05	0.0001	0.001	33	0.00001	0.0005		0.00163	0.405	0.00001	0.924	0.005	10.9	0.0475	0.0016	7.36
2013-07-19 10:30	0.00002	0.0237	0.00079	0.0701	0.05	0.0001	0.001	40.4	0.00001	0.0005		0.00158	0.359	0.00001	1.23	0.005	13.2	0.0315	0.0018	8.58
2013-07-24 11:20	0.00002	0.0239	0.00082	0.066	0.05	0.0001	0.001	35.2	0.00001	0.0005		0.00216	0.512	0.00001	0.833	0.005	11.3	0.0505	0.0014	7.59
2013-07-30 13:30	0.00002	0.0245	0.00091	0.068	0.05	0.0001	0.001	36.6	0.00001	0.0005		0.00213	0.575	0.00001	1.03	0.005	11.6	0.0388	0.0015	7.35
2013-08-10 15:20	0.00002	0.0194	0.00086	0.0695	0.05	0.0001	0.001	38.2	0.00001	0.0005		0.00161	0.397	0.00001	1.04	0.005	12.7	0.0448	0.0017	8.14
2013-08-15 13:30	0.00002	0.0158	0.0008	0.0728	0.05	0.0001	0.001	40.7	0.00001	0.0005		0.00151	0.352	0.00001	1.26	0.005	13.2	0.0484	0.0018	8.48
2013-08-22 13:40	0.00002	0.0185	0.00085	0.0673	0.05	0.0001	0.001	38.4	0.00001	0.0005		0.00154	0.357	0.00001	1.04	0.005	13.3	0.0606	0.0014	8.49
2013-08-27 11:45	0.00002	0.0228	0.00083	0.0712	0.05	0.0001	0.001	37.6	0.00001	0.0005		0.00149	0.526	0.00001	0.984	0.005	12.6	0.0632	0.0014	7.58
2013-09-06 16:15	0.00002	0.0181	0.00097	0.0709	0.05	0.0001	0.001	40.1	0.00001	0.0005	0.0021	0.00181	0.631	0.00001	1.09	0.005	13	0.0704	0.0014	8.05
2013-09-09 13:55	0.00002	0.0172	0.00093	0.0759	0.05	0.0001	0.001	43.3	0.00001	0.0005		0.00178	0.585	0.00001	1.17	0.005	14	0.0724	0.0017	8.89
2013-09-18 11:35	0.00002	0.0223	0.00085	0.065	0.05	0.0001	0.001	38.1	0.00001	0.0005		0.00178	0.482	0.00001	0.933	0.005	12	0.0958	0.0012	7.54
2013-09-24 11:00	0.00002	0.019	0.00079	0.0626	0.05	0.0001	0.001	38.4	0.00001	0.0005		0.0017	0.533	0.00001	0.827	0.005	12.4	0.0815	0.0011	7.51
2013-10-03 11:30	0.00002	0.017	0.00079	0.0636	0.05	0.0001	0.001	39.8	0.00001	0.0005		0.00174	0.615	0.00001	0.913	0.005	12.8	0.092	0.0012	7.82
2013-10-11 12:20	0.00002	0.0164	0.00076	0.0659	0.05	0.0001	0.001	43.1	0.00001	0.0005		0.00183	0.547	0.00001	0.927	0.005	14.1	0.0927	0.0011	8.57
2013-10-18 10:30	0.00002	0.0115	0.00067	0.0641	0.05	0.0001	0.001	40.5	0.00001	0.0005		0.00148	0.571	0.00001	0.972	0.005	13.5	0.0787	0.0013	8.09
2013-10-22 10:00	0.00002	0.0104	0.00072	0.0745	0.05	0.0001	0.001	50.4	0.00001	0.0005		0.0017	0.477	0.00001	1.18	0.005	16.1	0.0751	0.0014	9.78
2013-10-31 15:45	0.00002	0.0093	0.00053	0.0652	0.05	0.0001	0.001	40.8	0.00001	0.0005		0.00126	0.255	0.00001	1.07	0.005	14.1	0.0627	0.0013	8.55
2013-11-08 15:15	0.00002	0.0066	0.00047	0.0725	0.05	0.0001	0.001	43.4	0.00001	0.0005		0.00137	0.179	0.00001	1.2	0.005	15.5	0.0741	0.0014	9.48
2013-11-14 15:00	0.00002	0.0078	0.0005	0.0764	0.05	0.0001	0.001	46.6	0.00001	0.0005		0.00158	0.171	0.00001	1.23	0.005	16.1	0.0738	0.0015	9.89
2013-11-18 15:20	0.00002	0.0067	0.00047	0.0751	0.05	0.0001	0.001	53.5	0.00001	0.0005		0.00194	0.15	0.00001	1.44	0.005	18.4	0.0514	0.0015	12
2013-12-01 14:15	0.00002	0.005	0.00038	0.0945	0.05	0.0001	0.001	56.3	0.00001	0.0005		0.00205	0.105	0.00001	1.64	0.005	19	0.0751	0.0013	12.3
2014-03-18 11:20	0.00002	0.009	0.00125	0.22	0.05	0.0001	0.001	125	0.000028	0.0005		0.00792	0.0555	0.00001	9.14	0.0058	52.6	0.0648	0.002	39.5
2014-03-25 12:50	0.00002	0.0065	0.00095	0.165	0.05	0.0001	0.001	102	0.000026	0.0005		0.00475	0.0464	0.000012	6.08	0.0054	43.2	0.0389	0.0019	31.2
2014-04-08 11:00	0.00002	0.0051	0.00046	0.0757	0.05	0.0001	0.001	53	0.000018	0.0005		0.00519	0.0275	0.00001	4.22	0.005	20.1	0.0106	0.0017	15.5
2014-04-17 16:10	0.00002	0.0034	0.00034	0.0612	0.05	0.0001	0.001	41.8	0.000012	0.0005		0.00498	0.0324	0.00001	2.68	0.005	15.3	0.0085	0.0021	11.4
2014-04-22 16:00	0.00002	0.025	0.00036	0.0327	0.05	0.0001	0.001	17.8	0.00002	0.0005		0.00771	0.0855	0.00001	1.95	0.005	5.95	0.0265	0.001	4.13
2014-05-01 16:30	0.00002	0.0453	0.00046	0.0308	0.05	0.0001	0.001	14	0.000013	0.0005		0.00793	0.223	0.00001	1.59	0.005	4.48	0.053	0.001	3.79
2014-05-06 12:25	0.00002	0.0316	0.00055	0.0486	0.05	0.0001	0.001	23.1	0.00001	0.0005		0.00764	0.3	0.00005	1.65	0.005	7.65	0.102	0.0019	6.5
2014-05-17 18:00	0.00002	0.0168	0.00077	0.0655	0.05	0.0001	0.001	31.2	0.000029	0.0005		0.00812	0.358	0.00001	2.06	0.005	10	0.0887	0.0025	8.1
2014-05-19 16:40	0.00002	0.026	0.00064	0.0626	0.05	0.0001	0.001	30.9	0.00001	0.0005		0.00765	0.403	0.00001	1.88	0.005	9.9	0.0577	0.0024	7.71
2014-05-28 12:00	0.00002	0.014	0.00066	0.0546	0.05	0.0001	0.001	27.3	0.00001	0.0005		0.00276	0.375	0.00001	1.31	0.005	9.58	0.0337	0.0015	6.68
2014-06-08 13:50	0.00002	0.0182	0.00061	0.0593	0.05	0.0001	0.001	34.4	0.00003	0.0005		0.00245	0.199	0.00001	1.3	0.005	11.7	0.0236	0.0016	8.12
2014-06-14 15:00	0.00002	0.0106	0.00063	0.0603	0.05	0.0001	0.001	35.2	0.00001	0.0005		0.00199	0.183	0.00001	1.25	0.005	11.9	0.0239	0.0016	8.32
2014-06-17 13:30	0.00002	0.0123	0.00057	0.0602	0.05	0.0001	0.001	35.1	0.00001	0.0005		0.00195	0.186	0.00001	1.27	0.005	12.4	0.0235	0.0019	8.51
2014-06-26 16:45	0.00002	0.0086	0.00059	0.0615	0.05	0.0001	0.001	37.9	0.00001	0.0005		0.00149	0.126	0.00001	1.32	0.005	12.1	0.0197	0.0017	8.32
2014-07-01 15:50	0.00002	0.0087	0.00058	0.0656	0.05	0.0001	0.001	40.8	0.00001	0.0005		0.00182	0.142	0.00001	1.45	0.005	14.1	0.0175	0.0019	9.3
2014-07-10 11:20	0.00002	0.0082	0.0006	0.0662	0.05	0.0001	0.001	40.4	0.00001	0.0005		0.0016	0.141	0.00001	1.34	0.005	13.9	0.0177	0.0018	8.82
2014-07-17 15:45	0.00002	0.0093	0.00063	0.0632	0.05	0.0001	0.001	40.9	0.00001	0.0005		0.00194	0.201	0.00001	1.27	0.005	15.3	0.0207	0.0019	10.8
2014-07-23 15:25	0.00002	0.0108	0.00056	0.061	0.05	0.0001	0.001	36.8	0.00001	0.0005		0.00199	0.232	0.00001	1.03	0.005	13	0.0174	0.0015	8.52
2014-08-02 15:20	0.00002	0.012	0.00075	0.0685	0.05	0.0001	0.001	38	0.00001	0.0005		0.00195	0.226	0.00001	1.17	0.005	14.6	0.0195	0.0016	9.35
2014-08-14 13:30	0.00002	0.0063	0.00061	0.0598	0.05	0.0001	0.001	40.2	0.00001	0.0005		0.00167	0.219	0.00001	1.12	0.005	13.9	0.0237	0.0017	8.91
2014-08-18 16:25	0.00002	0.01	0.00071	0.0707	0.05	0.0001	0.001	40.4	0.00001	0.0005		0.0023	0.253	0.00001	1.37	0.005	15.6	0.0222	0.0016	9.77
2014-08-26 10:30	0.00002	0.0085	0.00067	0.0666	0.05	0.0001	0.001	40.1	0.00001	0.0005		0.00159	0.198	0.00001	1.31	0.005	14.8	0.0234	0.0017	9.12
2014-09-01 16:55	0.00002	0.0084	0.00058	0.065	0.05	0.0001	0.001	42.9	0.00001	0.0005		0.00131	0.22	0.00001	1.41	0.005	15	0.0302	0.0016	9.08
2014-09-11 16:45	0.00002	0.0065	0.00058	0.0648	0.05	0.0001	0.001	41.9	0.00001	0.0005		0.00148	0.202	0.00001	1.3	0.005	14.3	0.0245	0.0015	9.12
2014-09-16 12:00	0.00002	0.0074	0.00056	0.067	0.05	0.0001	0.001	40.6	0.00001	0.0005		0.00128	0.161	0.00001	1.42	0.005	14.6	0.0141	0.0016	9.36
2014-09-22 15:50	0.00002	0.0092	0.0006	0.0623	0.05	0.0001	0.001	35	0.00001	0.0005		0.00152	0.206	0.00001	1.37	0.005	13.2	0.0282	0.0014	8.46
2014-09-30 16:55	0.00002	0.0081	0.00058	0.0562	0.05	0.0001	0.001	35.3	0.00001	0.0005		0.0016	0.192	0.00001	0.987	0.005	12.9	0.0343	0.0013	8.2
2014-10-07 15:40	0.00002	0.0084	0.00055	0.0578	0.05	0.0001	0.001	40.4	0.00001	0.0005		0.00151	0.361	0.00001	1.04	0.005	13.9	0.0404	0.0012	8.45
2014-10-14 16:20	0.00002	0.0078	0.00055	0.0564	0.05	0.0001	0.001	40.1	0.00001	0.0005		0.00156	0.189	0.00001	1.15	0.005	13.7	0.0342	0.0013	8.79
2014-10-25 15:55	0.00002	0.0068	0.00052	0.0615	0.05	0.0001	0.001	42.6	0.00001	0.0005		0.00138	0.214	0.00001	1.11	0.005	14.6	0.0425	0.0014	8.92
2014-10-31 16:30	0.00002	0.0098	0.00044	0.074	0.05	0.0001	0.001	46.9	0.00001	0.0005		0.00151	0.123	0.00001	1.39	0.005	17.1	0.0439	0.0015	10.4
2014-11-06 16:55	0.00002	0.0067	0.00041	0.0704	0.05	0.0001	0.001	46.5	0.00001	0.0005		0.00127	0.104	0.00001	1.31	0.005	16.6	0.039	0.0014	10.5
2014-11-11 15:00	0.00002	0.0062	0.00036	0.0786	0.05	0.0001	0.001	51.8	0.00001	0.0005		0.00145	0.098	0.00001	1.38	0.005	17.2	0.0474	0.0015	10.9
2014-11-22 15:30	0.00002	0.0079	0.00046	0.107	0.05	0.0001	0.001	69.2	0.00001	0.0005		0.00218	0.101	0.00001	2.28	0.005	24.6	0.0263	0.0019	15.7
2014-11-28 14:50	0.00002	0.0087	0.00032	0.0895	0.05	0.0001	0.001	51.3	0.00001	0.0005		0.00185	0.0886	0.00001	1.77	0.005	20.1	0.0656	0.0018	12.8
2014-12-05 15:50	0.00002	0.0062	0.00034	0.108	0.05	0.0001	0.001	65.3	0.00001	0.0005		0.00175	0.0617	0.00001	2.02	0.005	22.1	0.0656	0.0021	14.6
2014-12-14 11:45	0.00002	0.0033	0.00039	0.0925	0.05	0.0001	0.001	58.2	0.00001	0.0005		0.0041	0.0481	0.00001	5.33	0.005	19.3	0.0342	0.0067	18.1
2015-03-14 15:00	0.00002	0.0052	0.00051	0.107	0.05	0.0001	0.001	73.3	0.00001	0.0005		0.00326	0.0714	0.00001	3.2	0.005	27.2	0.0872	0.0023	18.7
2015-04-02 16:00	0.00002	0.0036	0.00044	0.0915	0.05	0.0001	0.001	58.3	0.00001	0.0005		0.00214	0.0639	0.00001	2.58	0.005	23.5	0.0742	0.002	16.4
2015-04-10 15:45	0.00002	0.0058	0.00042	0.0755	0.05	0.0001	0.001	46.5	0.00001	0.0005		0.00414	0.0695	0.00001	4.23	0.005	15.2	0.117	0.005	14.2
2015-04-17 15:45	0.00002	0.0072	0.00042	0.0888	0.05	0.0001	0.001	50.3	0.00001	0.0005		0.00433	0.0629	0.00001	4.66	0.005	16.6	0.106	0.0052	16.7
2015-04-23 14:50	0.00002	0.0153	0.0005	0.0651	0.05	0.0001	0.001	33.3	0.00001	0.0005		0.00649	0.182	0.00001	3.45	0.005	10.6	0.0675	0.0041	13.6
2015-05-01 15:15	0.00002	0.0445	0.00052	0.0428	0.05	0.0001	0.001	20.4	0.00001	0.0005		0.00756	0.236	0.00001	1.77	0.005	6.24	0.0715	0.0014	5.6
2015-05-09 16:10	0.00002	0.0262	0.00056	0.0451	0.05	0.0001	0.001	23.5	0.00001	0.0005		0.00414	0.217	0.00001	1.64	0.005	7.98	0.0945	0.0013	6.34
2015-05-14 16:00	0.00002	0.0133	0.00056	0.0532	0.05	0.0001	0.001	26.7	0.00001	0.0005		0.00628	0.173	0.00001	2.12	0.005	9.14	0.017	0.0022	9.36
2015-05-21 11:30	0.00002	0.0105	0.00054	0.0634	0.05	0.0001	0.001	37.8	0.00001	0.0005		0.00554	0.172	0.00001	2.65	0.005	12.5	0.0088	0.0029	12.3
2015-05-28 16:20	0.00002	0.0196	0.00043	0.0671	0.05	0.0001	0.001	39.3	0.00001	0.0005		0.00262	0.0854	0.00001	2.13	0.005	13.1	0.0093	0.0026	10.9
2015-06-06 13:30	0.00002	0.0079	0.00051	0.0604	0.05	0.0001	0.001	38.4	0.00001	0.0005		0.00177	0.0881	0.00001	1.6	0.005	13.2	0.0112	0.0018	9.24
2015-06-10 17:20	0.00002	0.0081	0.00047	0.0597	0.05	0.0001	0.001	38.3	0.00001	0.0005		0.0016	0.0772	0.00001	1.6	0.005	14.2	0.0089	0.0018	9.53
2015-06-20 16:15	0.00002	0.006	0.00049	0.0614	0.05	0.0001	0.001	40	0.00001	0.0005		0.00146	0.0643	0.00001	1.51	0.005	13.9	0.0077	0.0019	10.1
2015-06-25 11:10	0.00002	0.0155	0.00053	0.0671	0.05	0.0001	0.001	46.1	0.00001	0.0005		0.00151	0.0808	0.00001	1.9	0.005	15.3	0.0086	0.002	10.5
2015-07-02 15:50	0.00002	0.008	0.00054	0.0621	0.05	0.0001	0.001	42.4	0.00001	0.0005		0.00158	0.0802	0.00001	1.47	0.005	14.8	0.0103	0.0018	9.37
2015-07-09 11:10	0.00002	0.0091	0.00054	0.0644	0.05	0.0001	0.001	38.7	0.00001	0.0005		0.00158	0.096	0.00001	1.34	0.005	14.6	0.0088	0.0017	9.67
2015-07-17 11:05	0.00002	0.0148	0.0005	0.0618	0.05	0.0001	0.001	41.6	0.00001	0.0005		0.00153	0.151	0.00001	1.34	0.005	14.8	0.0095	0.0017	9.42
2015-07-23 11:10	0.00002	0.0489	0.00066	0.0628	0.05	0.0001	0.001	48.4	0.00001	0.0005		0.0014	0.149	0.00001	1.37	0.005	14.4	0.0103	0.0017	9.49
2015-07-27 11:35	0.00002	0.012	0.00061	0.0646	0.05	0.0001	0.001	44.6	0.00001	0.0005		0.00128	0.143	0.00001	1.51	0.005	15.5	0.0086	0.0017	10.7
2015-08-04 14:35	0.00002	0.0105	0.00052	0.0629	0.05	0.0001	0.001	43.9	0.00001	0.0005		0.00135	0.126	0.00001	1.34	0.005	15.4	0.0094	0.0018	10.6
2015-08-13 14:15	0.00002	0.0122	0.00054	0.0622	0.05	0.0001	0.001	42.9	0.00001	0.0005		0.00157	0.141	0.00001	1.12	0.005	13.9	0.0098	0.0016	9.14
2015-08-22 10:51	0.00002	0.0093	0.00064	0.0643	0.05	0.0001	0.001	40.5	0.00001	0.0005		0.00145	0.164	0.00001	1.38	0.005	15.1	0.0108	0.0016	10.1
2015-08-25 14:20	0.00002	0.0109	0.0006	0.0645	0.05	0.0001	0.001	47.1	0.00001	0.0005		0.00158	0.148	0.00001	1.45	0.005	16.2	0.0105	0.0015	10.4
2015-09-01 11:50	0.00002	0.012	0.0005	0.0578	0.05	0.0001	0.001	36.8	0.00001	0.0005		0.00193	0.206	0.00001	1.02	0.005	12.6	0.0156	0.0012	8.3
2015-09-08 15:15	0.00002	0.0165	0.00058	0.059	0.05	0.0001	0.001	42.4	0.00001	0.0005		0.00191	0.174	0.00001	1.13	0.005	14.6	0.015	0.0014	9.73
2015-09-18 13:40	0.00002	0.018	0.00047	0.0566	0.05	0.0001	0.001	41.3	0.00001	0.0005		0.0018	0.153	0.00001	1.1	0.005	14.3	0.015	0.0014	9.27
2015-09-25 14:55	0.00002	0.0129	0.00061	0.059	0.05	0.0001	0.001	41.5	0.00001	0.0005		0.00183	0.153	0.00001	1.25	0.005	15.8	0.0174	0.0014	10.3
2015-09-29 15:55	0.00002	0.0107	0.00057	0.0619	0.05	0.0001	0.001	41.3	0.00001	0.0005		0.00195	0.159	0.00001	1.18	0.005	14.7	0.0155	0.0014	9.62
2015-10-08 11:45	0.00002	0.0108	0.00045	0.0613	0.05	0.0001	0.001	41.2	0.00001	0.0005		0.00142	0.0953	0.00001	1.11	0.005	14.7	0.0159	0.0013	9.82
2015-10-13 16:55	0.00002	0.0175	0.00056	0.0577	0.05	0.0001	0.001	40.9	0.000012	0.0005		0.0019	0.145	0.00001	1.11	0.005	14.9	0.0173	0.0013	9.14
2015-10-24 16:00	0.00002	0.0093	0.00053	0.0598	0.05	0.0001	0.001	43	0.00001	0.0005		0.00233	0.124	0.00001	1.09	0.005	13.9	0.0207	0.0016	9.61
2015-10-28 15:50	0.00002	0.0078	0.00047	0.0658	0.05	0.0001	0.001	46.4	0.00001	0.0005		0.00145	0.108	0.00001	1.3	0.005	16.8	0.0204	0.0014	10.8
2015-11-06 16:15	0.00002	0.0085	0.00038	0.0696	0.05	0.0001	0.001	48.2	0.00001	0.0005		0.00151	0.0799	0.00001	1.41	0.005	18.1	0.0186	0.0012	11.4
2015-11-11 13:20	0.00002	0.009	0.00033	0.0774	0.05	0.0001	0.001	48.1	0.00001	0.0005		0.00349	0.0695	0.00001	1.37	0.005	17.5	0.0193	0.0012	12
2015-11-16 14:55	0.00002	0.0077	0.00037	0.0822	0.05	0.0001	0.001	58.3	0.00001	0.0005		0.00245	0.0638	0.00001	1.82	0.005	20.3	0.0226	0.0012	12.6
2015-11-25 15:20	0.00002	0.0075	0.00037	0.0883	0.05	0.0001	0.001	54.1	0.00001	0.0005		0.0023	0.0657	0.00001	1.63	0.005	20.6	0.0218	0.0011	12.9
2015-12-04 14:40	0.00002	0.0304	0.00054	0.0995	0.05	0.0001	0.001	65	0.00001	0.0005		0.00341	0.0658	0.00001	2.41	0.005	25.1	0.0481	0.0014	16
2015-12-09 14:45	0.00002	0.0077	0.00035	0.09	0.05	0.0001	0.001	58.8	0.00001	0.0005		0.00149	0.0671	0.00001	1.82	0.005	21.8	0.0442	0.0013	13.3
2015-12-19 11:40	0.00002	0.0077	0.00042	0.107	0.05	0.0001	0.001	68.8	0.00001	0.0005		0.00265	0.0685	0.00001	2.37	0.005	25.2	0.041	0.0015	16
2015-12-22 14:50	0.00002	0.0116	0.00031	0.106	0.05	0.0001	0.001	70.4	0.000011	0.0005		0.00363	0.0785	0.00001	2.1	0.005	24.6	0.032	0.0013	15.4
2016-01-02 14:15	0.00002	0.0112	0.00062	0.121	0.05	0.0001	0.001	87.5	0.000028	0.0005		0.00523	0.117	0.00001	3.74	0.005	29.4	0.106	0.0014	18.8
2016-04-01 16:00	0.00001	0.004	0.00042	0.0638	0.01	0.00002	0.00005	47.1	0.0000117	0.0001	0.00013	0.00342	0.05	0.0000066	2.76	0.0018	18.8	0.0359	0.00095	12.3
2016-04-02 16:00	0.00001	0.004	0.00042	0.0638	0.01	0.00002	0.00005	47.1	0.0000117	0.0001	0.00013	0.00342	0.05	0.0000066	2.76	0.0018	18.8	0.0359	0.00095	12.3
2016-04-10 11:10	0.00001	0.0383	0.00043	0.0381	0.01	0.00002	0.00005	23.4	0.0000113	0.0001	0.00035	0.0084	0.131	0.0000114	1.79	0.001	7.96	0.00712	0.000654	5.35
2016-04-16 15:00	0.00001	0.0523	0.00045	0.0387	0.01	0.00002	0.00005	21.2	0.000005	0.0001	0.00035	0.00838	0.158	0.0000083	1.35	0.001	6.93	0.0115	0.00073	4.35
2016-04-21 11:15	0.00001	0.0253	0.00044	0.0441	0.01	0.00002	0.00005	26.4	0.000006	0.0001	0.00031	0.00593	0.143	0.0000108	1.37	0.001	9.04	0.0104	0.000924	5.87
2016-04-28 10:35	0.00001	0.0134	0.00058	0.0547	0.01	0.00002	0.00005	33.5	0.000005	0.00016	0.00027	0.00403	0.212	0.0000062	1.72	0.001	11.9	0.0464	0.00127	8.19
2016-05-07 14:05	0.00001	0.0093	0.00059	0.0479	0.01	0.000021	0.00005	31.3	0.0000064	0.00014	0.0002	0.00263	0.15	0.0000062	1.25	0.001	10.1	0.0655	0.00115	7.1

Date / Time	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
2013-05-07 16:00	0.001	0.0002	0.0005	4.8	0.00017	3.65	0.005	0.212	0.005	0.00005	0.00035	0.005	0.005	0.0005
2013-05-19 17:15	0.0014	0.0002	0.0005	4.2	0.00015	3.61	0.005	0.199	0.005	0.00005	0.00052	0.005	0.005	0.0005
2013-05-24 17:00	0.0011	0.0002	0.0005	3.5	0.00012	3	0.005	0.169	0.005	0.00005	0.00036	0.005	0.005	0.0005
2013-05-31 15:40	0.0013	0.0002	0.0005	6	0.00033	3.59	0.005	0.312	0.005	0.00005	0.0007	0.005	0.005	0.0005
2013-06-08 16:10	0.0014	0.0002	0.0005	3.3	0.00013	4.79	0.005	0.226	0.005	0.00005	0.00111	0.005	0.005	0.0005
2013-06-16 13:40	0.0015	0.0002	0.0005	4.5	0.00014	5.95	0.005	0.279	0.005	0.00005	0.00119	0.005	0.005	0.0005
2013-06-20 10:45	0.0012	0.0002	0.0005	5.4	0.00017	6.16	0.005	0.312	0.005	0.00005	0.00139	0.005	0.005	0.0005
2013-06-25 11:15	0.0012	0.0002	0.0005	6.4	0.00014	6.02	0.005	0.335	0.005	0.00005	0.00147	0.005	0.005	0.0005
2013-07-02 13:05	0.0016	0.0002	0.0005	4.2	0.00016	6.14	0.005	0.259	0.005	0.00005	0.00117	0.005	0.005	0.0005
2013-07-11 13:55	0.0014	0.0002	0.0005	5	0.00014	6.43	0.005	0.275	0.005	0.00005	0.00114	0.005	0.005	0.0005
2013-07-19 10:30	0.0013	0.0002	0.0005	5.9	0.00013	6.5	0.005	0.363	0.005	0.00005	0.00132	0.005	0.005	0.0005
2013-07-24 11:20	0.0017	0.0002	0.0005	4	0.00014	6.7	0.005	0.274	0.005	0.00005	0.00094	0.005	0.005	0.0005
2013-07-30 13:30	0.0018	0.0002	0.0005	5.4	0.00014	6.5	0.005	0.28	0.005	0.00005	0.00109	0.005	0.005	0.0005
2013-08-10 15:20	0.0014	0.0002	0.0005	5.6	0.00013	6.58	0.005	0.345	0.005	0.00005	0.00118	0.005	0.005	0.0005
2013-08-15 13:30	0.0014	0.0002	0.0005	5.4	0.00013	7.19	0.005	0.366	0.005	0.00005	0.00125	0.005	0.005	0.0005
2013-08-22 13:40	0.0015	0.0002	0.0005	4.4	0.00014	6.56	0.005	0.345	0.005	0.00005	0.0012	0.005	0.005	0.0005
2013-08-27 11:45	0.0015	0.0002	0.0005	4.3	0.00012	7.55	0.005	0.332	0.005	0.00005	0.00101	0.005	0.005	0.0005
2013-09-06 16:15	0.0018	0.0002	0.0005	4.4	0.00013	7.02	0.005	0.35	0.005	0.00005	0.00106	0.005	0.005	0.0005
2013-09-09 13:55	0.0018	0.0002	0.0005	5.5	0.00014	7.66	0.005	0.387	0.005	0.00005	0.00118	0.005	0.005	0.0005
2013-09-18 11:35	0.0017	0.0002	0.0005	4.8	0.00011	7.17	0.005	0.3	0.005	0.00005	0.00089	0.005	0.005	0.0005
2013-09-24 11:00	0.0017	0.0002	0.0005	5.1	0.00012	7.27	0.005	0.292	0.005	0.00005	0.00087	0.005	0.005	0.0005
2013-10-03 11:30	0.0018	0.0002	0.0005	4.9	0.00013	7.31	0.005	0.32	0.005	0.00005	0.00092	0.005	0.005	0.0005
2013-10-11 12:20	0.0025	0.0002	0.0005	6.1	0.00013	6.36	0.005	0.337	0.005	0.00005	0.00097	0.005	0.005	0.0005
2013-10-18 10:30	0.0014	0.0002	0.0005	5.5	0.00011	6.58	0.005	0.333	0.005	0.00005	0.00106	0.005	0.005	0.0005
2013-10-22 10:00	0.0015	0.0002	0.0005	7.2	0.00012	7.35	0.005	0.39	0.005	0.00005	0.00128	0.005	0.005	0.0005
2013-10-31 15:45	0.0013	0.0002	0.0005	5.5	0.00015	6.92	0.005	0.366	0.005	0.00005	0.00113	0.005	0.005	0.0005
2013-11-08 15:15	0.0013	0.0002	0.0005	6.2	0.00015	7.01	0.005	0.403	0.005	0.00005	0.00119	0.005	0.005	0.0005
2013-11-14 15:00	0.0014	0.0002	0.0005	7	0.00017	6.79	0.005	0.453	0.005	0.00005	0.00137	0.005	0.005	0.0005
2013-11-18 15:20	0.0012	0.0002	0.0005	8.8	0.00015	7.23	0.005	0.465	0.005	0.00005	0.00136	0.005	0.005	0.0005
2013-12-01 14:15	0.0011	0.0002	0.0005	10.6	0.0002	8.02	0.005	0.515	0.005	0.00005	0.00158	0.005	0.005	0.0005
2014-03-18 11:20	0.0016	0.0002	0.0005	36.3	0.00082	21	0.005	1.19	0.005	0.00005	0.00396	0.005	0.005	0.0005
2014-03-25 12:50	0.0011	0.0002	0.0005	25.7	0.00055	16.1	0.005	1.04	0.005	0.00005	0.00324	0.005	0.005	0.0005
2014-04-08 11:00	0.001	0.0002	0.0005	14.9	0.00035	7.69	0.005	0.435	0.005	0.00005	0.0011	0.005	0.005	0.0005
2014-04-17 16:10	0.001	0.0002	0.0005	9.2	0.00031	5.25	0.005	0.42	0.005	0.00005	0.00092	0.005	0.005	0.0005
2014-04-22 16:00	0.001	0.0002	0.0005	3.2	0.00013	3.34	0.005	0.157	0.005	0.00005	0.0002	0.005	0.005	0.0005
2014-05-01 16:30	0.0015	0.0002	0.0005	3	0.00013	2.81	0.005	0.131	0.005	0.00005	0.00019	0.005	0.005	0.0005
2014-05-06 12:25	0.0016	0.0002	0.0005	4.5	0.00031	3.74	0.005	0.251	0.005	0.00005	0.00055	0.005	0.005	0.0005
2014-05-17 18:00	0.0013	0.0002	0.0005	7.3	0.00042	4.17	0.005	0.376	0.005	0.00005	0.00094	0.005	0.005	0.0005
2014-05-19 16:40	0.0012	0.0002	0.0005	7.3	0.0004	4.29	0.005	0.362	0.005	0.00005	0.00086	0.005	0.005	0.0005
2014-05-28 12:00	0.0014	0.0002	0.0005	4.8	0.00015	4.83	0.005	0.316	0.005	0.00005	0.00084	0.005	0.005	0.0005
2014-06-08 13:50	0.0012	0.0002	0.0005	5.9	0.00016	5.82	0.005	0.342	0.005	0.00005	0.00112	0.005	0.005	0.0005
2014-06-14 15:00	0.0013	0.0002	0.0005	5.2	0.00014	5.43	0.005	0.368	0.005	0.00005	0.00117	0.005	0.005	0.0005
2014-06-17 13:30	0.0012	0.0002	0.0005	6.2	0.00011	5.44	0.005	0.362	0.005	0.00005	0.00132	0.005	0.005	0.0005
2014-06-26 16:45	0.001	0.0002	0.0005	6	0.00012	5.67	0.005	0.38	0.005	0.00005	0.0013	0.005	0.005	0.0005
2014-07-01 15:50	0.001	0.0002	0.0005	6.5	0.00011	6.3	0.005	0.411	0.005	0.00005	0.00141	0.005	0.005	0.0005
2014-07-10 11:20	0.001	0.0002	0.0005	5.2	0.00011	5.73	0.005	0.422	0.005	0.00005	0.00129	0.005	0.005	0.0005
2014-07-17 15:45	0.0013	0.0002	0.0005	3.8	0.0001	5.54	0.005	0.416	0.005	0.00005	0.0014	0.005	0.005	0.0005
2014-07-23 15:25	0.0013	0.0002	0.0005	3	0.00013	6	0.005	0.374	0.005	0.00005	0.00104	0.005	0.005	0.0005
2014-08-02 15:20	0.0013	0.0002	0.0005	7040	0.00013	5.97	0.005		0.005		0.00106	0.005	0.005	0.0005
2014-08-14 13:30	0.0012	0.0002	0.0005	5.1	0.00011	6.26	0.005	0.433	0.005	0.00005	0.00114	0.005	0.005	0.0005
2014-08-18 16:25	0.001	0.0002	0.0005	3.9	0.0001	5.77	0.005	0.422	0.005	0.00005	0.00131	0.005	0.005	0.0005
2014-08-26 10:30	0.0012	0.0002	0.0005	5.5	0.0001	5.56	0.005	0.44	0.005	0.00005	0.00129	0.005	0.005	0.0005
2014-09-01 16:55	0.0011	0.0002	0.0005	6.4	0.00011	6.39	0.005	0.43	0.005	0.00005	0.00124	0.005	0.005	0.0005
2014-09-11 16:45	0.0012	0.0002	0.0005	14.6	0.0001	6.05	0.005	0.388	0.005	0.00005	0.00117	0.005	0.005	0.0005
2014-09-16 12:00	0.0011	0.0002	0.0005	5.6	0.0001	6.14	0.005	0.423	0.005	0.00005	0.00113	0.005	0.005	0.0005
2014-09-22 15:50	0.0021	0.0002	0.0005	5.2	0.0001	5.24	0.005	0.383	0.005	0.00005	0.00112	0.005	0.005	0.0005
2014-09-30 16:55	0.0013	0.0002	0.0005	4.8	0.0001	5.55	0.005	0.343	0.005	0.00005	0.00102	0.005	0.005	0.0005
2014-10-07 15:40	0.0012	0.0002	0.0005	6.1	0.00018	6.44	0.005	0.364	0.005	0.00005	0.00114	0.005	0.005	0.0005
2014-10-14 16:20	0.0011	0.0002	0.0005	7.1	0.0001	6.69	0.005	0.37	0.005	0.00005	0.00114	0.005	0.005	0.0005
2014-10-25 15:55	0.0011	0.0002	0.0005	5.9	0.00011	6.64	0.005	0.383	0.005	0.00005	0.00128	0.005	0.005	0.0005
2014-10-31 16:30	0.0011	0.0002	0.0005	9.7	0.00014	6.89	0.005	0.458	0.005	0.00005	0.00144	0.005	0.0083	0.0005
2014-11-06 16:55	0.001	0.0002	0.0005	7.8	0.00013	6.57	0.005	0.463	0.005	0.00005	0.00141	0.005	0.005	0.0005
2014-11-11 15:00	0.001	0.0002	0.0005	7.3	0.00015	7.07	0.005	0.488	0.005	0.00005	0.00146	0.005	0.005	0.0005
2014-11-22 15:30	0.0011	0.0002	0.0005	17.3	0.0002	9.5	0.005	0.666	0.005	0.00005	0.00214	0.005	0.005	0.0005
2014-11-28 14:50	0.001	0.0002	0.0005	12.7	0.00013	6.39	0.005	0.571	0.005	0.00005	0.00152	0.005	0.005	0.0005
2014-12-05 15:50	0.001	0.0002	0.0005	19.8	0.00018	8.13	0.005	0.659	0.005	0.00005	0.0017	0.005	0.005	0.0005
2014-12-14 11:45	0.001	0.0002	0.0005	29	0.00071	3.24	0.005	0.911	0.005	0.00005	0.00158	0.005	0.005	0.0005
2015-03-14 15:00	0.001	0.0002	0.0005	20	0.00034	9.76	0.005	0.817	0.005	0.00005	0.00282	0.005	0.0334	0.0005
2015-04-02 16:00	0.001	0.0002	0.0005	15.6	0.00029	8.17	0.005	0.717	0.005	0.00005	0.00214	0.005	0.005	0.0005
2015-04-10 15:45	0.001	0.0002	0.0005	21.8	0.00047	3.93	0.005	0.649	0.005	0.00005	0.00143	0.005	0.005	0.0005
2015-04-17 15:45	0.001	0.0002	0.0005	21.2	0.00067	4.3	0.005	0.778	0.005	0.00005	0.00164	0.005	0.005	0.0005
2015-04-23 14:50	0.001	0.0002	0.0005	15	0.00048	3.77	0.005	0.521	0.005	0.00005	0.00094	0.005	0.005	0.0005
2015-05-01 15:15	0.0012	0.0002	0.0005	5.2	0.00021	4.04	0.005	0.237	0.005	0.00005	0.00039	0.005	0.005	0.0005
2015-05-09 16:10	0.0012	0.0002	0.0005	5.4	0.00024	4.26	0.005	0.246	0.005	0.00005	0.00055	0.005	0.005	0.0005
2015-05-14 16:00	0.001	0.0002	0.0005	7	0.00028	3.66	0.005	0.343	0.005	0.00005	0.00073	0.005	0.005	0.0005
2015-05-21 11:30	0.001	0.0002	0.0005	11.8	0.00034	3.71	0.005	0.445	0.005	0.00005	0.00091	0.005	0.005	0.0005
2015-05-28 16:20	0.001	0.0002	0.0005	11.4	0.00037	4.03	0.005	0.513	0.005	0.00005	0.00139	0.005	0.005	0.0005
2015-06-06 13:30	0.001	0.0002	0.0005	7.6	0.00012	5.94	0.005	0.442	0.005	0.00005	0.00133	0.005	0.005	0.0005
2015-06-10 17:20	0.001	0.0002	0.0005	7.3	0.00013	5.46	0.005	0.437	0.005	0.00005	0.00138	0.005	0.005	0.0005
2015-06-20 16:15	0.001	0.0002	0.0005	7.6	0.00011	5.72	0.005	0.473	0.005	0.00005	0.00152	0.005	0.005	0.0005
2015-06-25 11:10	0.001	0.0002	0.0005	9.1	0.00017	6.19	0.005	0.517	0.005	0.00005	0.00157	0.005	0.005	0.0005
2015-07-02 15:50	0.001	0.0002	0.0005	7.8	0.0001	6.25	0.005	0.457	0.005	0.00005	0.00145	0.005	0.005	0.0005
2015-07-09 11:10	0.001	0.0002	0.0005	7.1	0.00012	7.18	0.005	0.437	0.005	0.00005	0.00155	0.005	0.005	0.0005
2015-07-17 11:05	0.001	0.0002	0.0005	5.6	0.0001	6.3	0.005	0.442	0.005	0.00005	0.00135	0.005	0.005	0.0005
2015-07-23 11:10	0.001	0.0002	0.0005	5.5	0.00012	7.66	0.005	0.448	0.005	0.00005	0.00139	0.005	0.005	0.0005
2015-07-27 11:35	0.001	0.0002	0.0005	6.5	0.0001	6.55	0.005	0.471	0.005	0.00005	0.00135	0.005	0.005	0.0005
2015-08-04 14:35	0.001	0.0002	0.0005	5.3	0.0001	6.7	0.005	0.478	0.005	0.00005	0.00148	0.005	0.005	0.0005
2015-08-13 14:15	0.001	0.0002	0.0005	7.4	0.00013	6.53	0.005	0.422	0.005	0.00005	0.0011	0.005	0.005	0.0005
2015-08-22 10:51	0.001	0.0002	0.0005	7.7	0.00014	5.54	0.005	0.452	0.005	0.00005	0.00133	0.005	0.005	0.0005
2015-08-25 14:20	0.0012	0.0002	0.0005	7	0.0001	7.12	0.005	0.447	0.005	0.00005	0.00136	0.005	0.005	0.0005
2015-09-01 11:50	0.0013	0.0002	0.0005	6.6	0.00014	6.16	0.005	0.357	0.005	0.00005	0.00088	0.005	0.005	0.0005
2015-09-08 15:15	0.0011	0.0002	0.0005	7.8	0.0001	6.64	0.005	0.378	0.005	0.00005	0.00117	0.005	0.005	0.0005
2015-09-18 13:40	0.0012	0.0002	0.0005	6.1	0.0001	6.6	0.005	0.402	0.005	0.00005	0.00112	0.005	0.005	0.0005
2015-09-25 14:55	0.0011	0.0002	0.0005	7	0.00012	6.42	0.005	0.403	0.005	0.00005	0.00118	0.005	0.005	0.0005
2015-09-29 15:55	0.0011	0.0002	0.0005	7.1	0.00017	6.47	0.005	0.403	0.005	0.00005	0.00106	0.005	0.005	0.0005
2015-10-08 11:45	0.001	0.0002	0.0005	5.6	0.0001	5.77	0.005	0.437	0.005	0.00005	0.00134	0.005	0.005	0.0005
2015-10-13 16:55	0.0014	0.0002	0.0005	3	0.0001	7.61	0.005	0.398	0.005	0.00005	0.00116	0.005	0.005	0.0005
2015-10-24 16:00	0.0012	0.0002	0.0005	5	0.00011	6.92	0.005	0.423	0.005	0.00005	0.00121	0.005	0.005	0.0005
2015-10-28 15:50	0.001	0.0002	0.0005	9.3	0.0001	7	0.005	0.437	0.005	0.00005	0.00129	0.005	0.005	0.0005
2015-11-06 16:15	0.0011	0.0002	0.0005	7.8	0.0001	6.97	0.005	0.476	0.005	0.00005	0.00139	0.005	0.005	0.0005
2015-11-11 13:20	0.001	0.0002	0.0005	6.9	0.00014	5.84	0.005	0.519	0.005	0.00005	0.00178	0.005	0.005	0.0005
2015-11-16 14:55	0.001	0.0002	0.0005	8.4	0.00013	7.88	0.005	0.563	0.005	0.00005	0.00145	0.005	0.005	0.0005
2015-11-25 15:20	0.001	0.0002	0.0005	7.5	0.00015	8.35	0.005	0.564	0.005	0.00005	0.00141	0.005	0.005	0.0005
2015-12-04 14:40	0.001	0.0002	0.0005	9.1	0.00015	9.94	0.005	0.65	0.005	0.00005	0.00187	0.005	0.005	0.0005
2015-12-09 14:45	0.001	0.0002	0.0005	7	0.00012	8.74	0.005	0.598	0.005	0.00005	0.00155	0.005	0.005	0.0005
2015-12-19 11:40	0.0011	0.00022	0.0005	12.2	0.00016	9.92	0.005	0.704	0.005	0.00005	0.00173	0.005	0.005	0.0005
2015-12-22 14:50	0.001	0.0002	0.0005	9.8	0.00021	9.25	0.005	0.664	0.005	0.00005	0.00155	0.005	0.005	0.0005
2016-01-02 14:15	0.0013	0.0002	0.0005	12.9	0.00031	10.4	0.005	0.801	0.005	0.00005	0.00227	0.005	0.005	0.0005
2016-04-01 16:00	0.00055	0.00005	0.0001	12	0.000205	7.29	0.0001	0.51	0.0003	0.00001	0.00126	0.0005	0.0011	0.0003
2016-04-02 16:00	0.00055	0.00005	0.0001	12	0.000205	7.29	0.0001	0.51	0.0003	0.00001	0.00126	0.0005	0.0011	0.0003
2016-04-10 11:10	0.00127	0.00005	0.0001	3.06	0.000123	5.01	0.0001	0.194	0.00072	0.00001	0.000305	0.00051	0.0023	0.00033
2016-04-16 15:00	0.00144	0.00005	0.0001	3.37	0.000133	4.22	0.0001	0.168	0.00082	0.00001	0.000303	0.00057	0.0026	0.00039
2016-04-21 11:15	0.00138	0.00005	0.0001	4.8	0.00015	4.54	0.0001	0.225	0.0006	0.00001	0.000515	0.00064	0.0011	0.00033
2016-04-28 10:35	0.00121	0.00005	0.0001	3.65	0.000181	5.01	0.0001	0.297	0.00057	0.00001	0.000821	0.00083	0.001	0.0003
2016-05-07 14:05	0.00122	0.00005	0.0001	5.04	0.000125	4.74	0.0001	0.273	0.00045	0.00001	0.000813	0.0008	0.0014	0.0003

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N-NO_2$	$N-NO_3$	$N-NH_3$	SO_4-D	Chlord	Fluord
		mg/L	μS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MC1	2016-05-09 11:00			123.5	7.89			0	101.4						
MC1	2016-05-13 11:30	118	265	92.7	7.92	138	82.7	0.2	95.1	0.001	0.0276	0.0097	13.8	1.47	
MC1	2016-05-17 11:00	107	239	171.3	7.87	133	10.7	0.3	99.6	0.001	0.172	0.0089	15.1	1.77	
MC1	2016-05-19 10:25	96.9	204	94.9	7.82	114	128	0.2	99	0.0012	0.0427	0.013	11.2	1.27	
MC1	2016-05-24 10:55	128	276	147.4	7.89	157	30.7	0.4	94.6	0.0023	0.317	0.0067	17.1	1.92	
MC1	2016-06-03 10:30	146	310	103.1	8.08	179	28	1.7	94.1	0.0053	0.336	0.0124	21.4	2.21	
MC1	2016-06-07 10:50	135	290	92.3	8.01	167	98	2.1	94.6	0.0027	0.259	0.0127	19.1	1.91	
MC1	2016-06-16 10:55	147	315	128.2	8.09	181	27.3	3.8	98.6	0.001	0.32	0.0101	20.7	2.08	
MC1	2016-06-22 11:15	159	338	110.9	8.12	190	8.7	5.2	96.1	0.001	0.157	0.005	19.9	1.87	
MC1	2016-07-03 9:50	168	353	106.8	8.19	197	10	5.2	92.6	0.001	0.0564	0.005	19.5	1.66	
MC1	2016-07-07 13:35	172	345	122.5	8.13	196	6.7	6.1	96.1	0.001	0.0502	0.005	18.5	1.53	
MC1	2016-07-17 11:15	169	364	97.5	8.15	203	27.3	7.8	102.7	0.001	0.179	0.0067	21.1	1.98	
MC1	2016-07-20 10:30	177	368	98.8	8.24	207	12	7.3	100	0.001	0.157	0.0077	21.3	1.99	
MC1	2016-07-25 11:05	146	291	117.1	7.78	169	453	5.9	87.7	0.0014	0.144	0.0278	14.8	1.29	
MC1	2016-08-02 11:40	166	351	121.5	7.99	200	19.3	6.4	96.6	0.001	0.214	0.0072	20.3	1.99	
MC1	2016-08-11 11:10	166	374	112.2	7.89	262	34.1	6.1	92.5	0.001	0.575	0.0102	22.8	2.39	
MC1	2016-08-16 11:00	185	359	104.9	7.99	215	10	5.5	93.6	0.001	0.295	0.0081	21.4	2.11	
MC1	2016-08-26 11:30	178	365	113.1	7.86	210	51.3	6.8	98.3	0.001	0.325	0.0061	22.5	2.39	
MC1	2016-08-30 11:40	175	354	148.7	7.63	211	15.3	4.8	100.9	0.001	0.617	0.005	23.4	2.35	
MC1	2016-09-05 11:20	142	289	128.8	7.92	171	47.6	5.4	100.1	0.001	0.413	0.005	18.2	1.84	
MC1	2016-09-12 13:48	145	305	141.6	8.11	178	33.7	6.1	95.6	0.0012	0.861	0.0056	22.4	2.2	
MC1	2016-09-20 14:22	132	296	118.8	8.05	170	22	3.8	104	0.001	0.955	0.0084	22.6	2.23	
MC1	2016-09-26 11:30	144	298	140.9	7.63	173	13.8	1.9	97	0.001	0.849	0.0089	21	2	
MC1	2016-10-04 11:15	151	295	95.9	7.85	182	3	-0.1	103.8	0.0011	0.96	0.012	22.7	2.18	
MC1	2016-10-10 11:30	152	313	122.7	7.77	186	4.7	-0.1	93.9	0.001	1.06	0.0095	25.5	2.52	
MC1	2016-10-18 14:50	183	422	111.7	7.78	258	11.4	0.5	97.4	0.0025	2.55	0.0101	46.1	4.3	
MC1	2016-10-27 15:55	191	414	140.8	7.73	235	7.4	-0.1	95	0.001	0.896	0.0106	32.3	3.05	
MC1	2016-11-01 14:30	197	586	98.2	7.86	294	3	-0.1	102.3	0.001	0.333	0.0101	35.7	61.8	
MC1	2016-11-13 10:47	197	389	79.7	8.01	225	4.8	-0.1	98	0.001	0.254	0.0066	25.5	2.32	
MC1	2016-11-20 10:10	290	579	79.6	8.05	340	3	0.1	100.3	0.001	0.405	0.0113	38.7	3.51	
MC1	2017-04-04 14:15	269	567	92.5	8.34	409	5.1	0.1	110.2	0.001	0.0109	0.0102	65.3	5.16	
MC1	2017-04-11 16:05	193	411	151.9	7.51	282	3	0	101.8	0.001	0.005	0.005	39.7	3.37	
MC1	2017-04-18 15:25	190	391	158.4	7.48	282	3	0	101.2	0.001	0.005	0.0084	28	2.9	
MC1	2017-04-25 15:20	118	242	171.5	7.44	168	3.2	0	93.1	0.001	0.005	0.005	12.8	1.45	
MC1	2017-05-02 7:45	74.9	167	99	7.85	146	3	-0.1	91.1	0.001	0.005	0.0099	8.89	1.66	
MC1	2017-05-09 13:50	92.8	206	156.7	7.16	113	67	0	97.2	0.0013	0.109	0.0108	13.7	1.67	
MC1	2017-05-16 13:50	98	223	122.3	7.79	125	50.7	0.2	98.8	0.001	0.18	0.0086	15.9	1.84	
MC1	2017-05-23 11:05	116	253	158.1	7.53	146	31.6	0.3	94.4	0.0012	0.247	0.0071	19.3	2.01	
MC1	2017-05-30 10:55	121	284	99.4	8.01	155	6.6	0.1	89.1	0.0027	0.444	0.0349	23.1	2.46	
MC1	2017-06-06 11:30	111	246	121.6	7.79	141	231	0.5	93.6	0.0056	0.426	0.0572	21.5	2.34	
MC1	2017-06-13 11:15	105	224	130	7.36	132	793	3.4	78.4	0.0036	0.398	0.0838	19.1	1.96	
MC1	2017-06-20 14:35	128	282	103.4	8.01	160	55.1	4.2	91.8	0.0011	0.316	0.0206	20.9	1.81	
MC1	2017-06-27 11:30	150	310	118.7	8.1	178	17.8	4.5	89.2	0.0015	0.247	0.0183	21.8	1.82	
MC1	2017-07-04 8:40	165	336			189	10.9			0.0011	0.15	0.005	20.8	1.66	
MC1	2017-07-11 9:15	161	339	107.4	6.14	184	320	4.6	95.5	0.001	0.112	0.0218	19.3	1.36	
MC1	2017-07-18 8:40	173	347	273.4	7.35	198	19.6	5.4	96.4	0.0012	0.137	0.0118	20.9	1.69	
MC1	2017-07-25 14:30	168	359	171.4	7.62	197	19.7	6.5	96.8	0.0013	0.134	0.0092	22.4	1.73	
MC1	2017-08-01 9:15	163	351	123.9	7.88	193	56.2	5.2	92.1	0.0024	0.189	0.0161	21.8	1.69	
MC1	2017-08-08 10:35	150	347	157.4	7.76	187	6.7	5.5	108.4	0.0015	0.12	0.0117	22.3	1.75	
MC1	2017-08-15 13:45	186	363	158.9	7.8	207	10	5.3	93.4	0.0014	0.111	0.0073	22.8	1.8	
MC1	2017-08-22 13:50	179	354	178.5	8.02	200	3	5.1	94.4	0.001	0.102	0.0104	20.1	1.47	
MC1	2017-08-29 10:10	175	349			200	3			0.001	0.0717	0.005	20.8	1.54	
MC1	2017-09-05 8:35	185	374	153.1	7.57	206	4.7	4.2	90.3	0.001	0.0246	0.005	20.9	1.6	
MC1	2017-09-12 14:44	170	330	209.4	7.42	187	3	2.5	106.6	0.001	0.0327	0.005	17.8	1.38	
MC1	2017-09-19 16:40	181	344	180.1	7.62	200	3	3.4	110.7	0.001	0.0288	0.005	20.3	1.57	
MC1	2017-09-26 15:45	173	341	223.7	7.65	198	9.8	0.9	90.3	0.001	0.0396	0.005	19.4	1.48	0.454
MC1	2017-10-02 14:40	181	351	189	7.77	199	5.8	0	104.3	0.001	0.0705	0.0054	20.3	1.55	
MC1	2017-10-10 13:50	181	357	207.7	7.47	206	3.5	0.1	95.8	0.001	0.0848	0.0053	21.2	1.62	
MC1	2017-10-16 16:30	180	349	233.8	7.57	204	3	0	88.1	0.001	0.122	0.0059	21.2	1.63	
MC1	2017-10-24 10:40	186	367	217.6	7.64	219	3	0	62.5	0.001	0.151	0.0054	23.8	1.81	0.439
MC1	2017-10-31 10:20	189	368	176.1	7.76	215	5.7	0	90.9	0.001	0.187	0.009	24.1	1.84	
MC1	2017-11-06 14:35	215	422	244.7	7.64	244	8.7	0	74.4	0.001	0.165	0.0166	26.3	2.23	
MC1	2018-04-14 14:40	202	268	239	6.59	265	3	0		0.001	0.005	0.005	45.7	3.54	
MC1	2018-04-17 13:40	255	508	179.4	8.12	329	3	0.2	111.8	0.001	0.005	0.0144	51.7	3.89	
MC1	2018-04-24 14:00	129	279	195.1	7.82	160	3	0	105.9	0.001	0.005	0.0082	22.6	1.79	
MC1	2018-05-01 15:00	44.6	103	219.8	7.32	57.8	3.1	0	102.2	0.001	0.005	0.0122	5.11	0.98	
MC1	2018-05-08 14:50	52.4	123	179.1	7.59	159	4.2	0.1		0.001	0.005	0.0119	6.18	0.93	0.138
MC1	2018-05-15 8:10	89.7	191	154.1	8.08	107	3	0.2	105.1	0.001	0.005	0.0085	10.5	1.18	0.248
MC1	2018-05-21 13:50	114	234	166.9	8.19	131	3	0	98.9	0.001	0.025	0.0076	14.2	1.3	
MC1	2018-05-28 15:10	133	276	183.1	8.29	154	16.6	0	100.2	0.001	0.005	0.0063	18.1	1.49	
MC1	2018-06-05 15:50	116	247	210.4	8.06	137	90.5	0.3	66.8	0.001	0.0235	0.0117	15.4	1.36	
MC1	2018-06-12 14:35	139	312	161.8	8.15	175	22	0.8	115.6	0.001	0.21	0.0075	25.3	2.13	
MC1	2018-06-18 11:10	159	349	163.9	8.1	203	12	0.9	93.3	0.0052	0.439	0.0151	32.8	2.86	
MC1	2018-06-25 11:30	128	265	162.7	7.86	148	321	1.1	94.7	0.0021	0.131	0.005	15.8	1.18	
MC1	2018-07-03 10:45	144	302	169.4	8.03	175	86.2	4.5	75.4	0.0019	0.198	0.0144	23.4	1.66	
MC1	2018-07-10 9:55	166	353	159.7	8.19	198	5.3	4.6	83.1	0.0012	0.131	0.0062	23.3	1.76	
MC1	2018-07-17 13:45	173	354	150.1	8.17	199	12.9	11	103.7	0.001	0.099	0.0078	23.2	1.7	
MC1	2018-07-24 11:00	215	394	122.6	8.13	232	4.7	6.3	98.4	0.001	0.102	0.005	24.1	1.81	0.469
MC1	2018-07-31 10:45	187	384	121.5	8.14	211	3	5.8	97.4	0.001	0.0996	0.0098	24.4	1.83	
MC1	2018-08-07 13:50	180	350	185	8.04	201	15	5.5	98.5	0.001	0.063	0.0102	20.7	1.42	
MC1	2018-08-14 10:35	166	352	161	8.17	195	10.8	4.9	95	0.001	0.0749	0.0073	20.6	1.44	
MC1	2018-08-21 14:10	171	361	8.15	8.15	200	37.7	5.3	102.5	0.001	0.0847	0.005	21	1.51	
MC1	2018-08-27 13:50	160	307	142.1	7.93	182	17.2	4	108	0.001	0.0668	0.0057	17.8	1.19	
MC1	2018-09-04 11:30	168	339	142.5	8.05	192	3.5	2.6	95.9	0.001	0.0643	0.005	20.3	1.47	
MC1	2018-09-10 9:30	179	347	166.8	8.03	201	3	0.8	98.9	0.001	0.0487	0.005	21.1	1.53	
MC1	2018-09-18 14:15	174	346	177	7.94	192	3	0	104.5	0.001	0.005	0.005	19.8	1.47	
MC1	2018-09-25 15:20	161	335	237.3	8.26	190	6.6	0	102.6	0.001	0.0663	0.005	21.7	1.51	
MC1	2018-10-02 9:45	187	393	177	7.89	214	29.3	-0.1	106.2	0.0011	0.0782	0.0052	23.3	1.72	
MC1	2019-04-16 10:50	200	401	146.9	7.99	232	3	0	123.7	0.001	0.005	0.005	25.6	1.83	
MC1	2019-04-23 16:00	122	256			141	4.2			0.001	0.005	0.005	15.5	1.44	
MC1	2019-04-30 9:10	156	320	219.6	7.63	182	3	0	105.7	0.001	0.005	0.005	21.1	1.57	
MC1	2019-05-07 11:10	132	269	241.5	7.91	149	3	0	104.8	0.001	0.005	0.0055	14.8	1.11	
MC1	2019-05-14 10:05	122	252	227.9	7.79	172	3	0	97.3	0.001	0.005	0.005	13.8	1.42	
MC1	2019-05-21 8:25	136	256	220.6	7.91	152	3	0	108	0.001	0.005	0.005	11.8	1.03	
MC1	2019-05-28 8:40	127	268	205.7	7.79	179	9.8	0	100.6	0.001	0.005	0.006	13.9	1.26	
MC1	2019-06-04 10:15	84.5	180	159.2	7.7	97	202	0.1	95	0.001	0.0226	0.033	8.36	0.98	
MC1	2019-06-11 9:40	135	277	198.7	7.39	156	101	0.04	114.5	0.0025	0.0921	0.0254	17.3	1.51	
MC1	2019-06-18 8:25	157	312	217.5	7.75	181	9.7	1.9	97	0.001	0.11	0.0111	20.3	1.66	
MC1	2019-06-25 9:45	167	342	153.6	8.05	193	130	3.9	94.6	0.001	0.117	0.0077	21.8	1.8	
MC1	2019-07-02 8:50	180	361	198.1	7.99	210	4.2	5.8	87.2	0.001	0.119	0.0081	26.8	2.16	
MC1	2019-07-09 7:30	188	377	186.4	8.01	219	3	5.2	86.3	0.001	0.128	0.0053	26	2.01	
MC1	2019-07-16 8:00	182	382	164.7	8.39	208	12.4	4.1	87	0.0019	0.102	0.0078	25.9	1.91	
MC1	2019-07-22 9:50	199	398	-22.4	8.05	229	5.5	5.9	89.4	0.001	0.102	0.005	26.7	2	
MC1	2019-07-30 11:15	185	383	119.9	7.83	216	34.5	4.4	100.7	0.001	0.0808	0.0074	24	1.65	
MC1	2019-08-05 16:30	194		105.2	8.27	229	56.3	7.1	97.5	0.001	0.0775	0.0087	24.5	1.82	
MC1	2019-08-13 7:30	218	389	160.9	7.9	231	14	3.5	97.1	0.001	0.082	0.0071	25.4	1.9	0.555
MC1	2019-08-20 15:00	184	358	100.7	7.63	214	23.4	2.3	103.9	0.001	0.0991	0.0096	23	1.67	
MC1	2019-08-27 10:20	188	390	91	8.28	220	5.3	1.7	94.9	0.001	0.0664	0.009	24.1	1.77	
MC1	2019-09-01 9:45	228	389	171.3	8.05	245	3	2.7	90.7	0.001	0.0336	0.0065	24.7	1.93	
MC1	2019-09-10 10:10	199	411	208.5	8.24	225	3	0.9	96.7	0.001	0.005	0.0067	24.4	1.91	
MC1	2019-09-17 11:45	197	390	225.2	8.12	227	3	3.5	92.6	0.001	0.005	0.005	24.5	2.01	
MC1	2019-09-24 9:00	191	373	141.5	7.85	215	3	0.6	95.8	0.001	0.0257	0.005	23.1	1.73	
MC1	2019-10-01 10:50	212	358	144.2	8.04	229	3.8	1.3	95.4	0.001	0.0518	0.005	23.7	1.79	
MC1	2019-10-08 13:30	202	391	140.4	7.85	227	3	0	97	0.0015	0.0554	0.005	26.7	2.04	
MC1	2019-10-15 13:25	202	379	165.3	7.97	234	4.7	0	93.2	0.001	0.0932	0.0084	25.7	2.03	

Station	Date / Time	Dissolved Elements																			
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MC1	2016-05-09 11:00																				
MC1	2016-05-13 11:30	0.00001	0.0109	0.00057	0.0508	0.01	0.00002	0.00005	33.2	0.000005	0.00014	0.00026	0.00241	0.162	0.000005	1.19	0.001	10.6	0.0638	0.00132	6.92
MC1	2016-05-17 11:00	0.00001	0.0161	0.00065	0.0505	0.01	0.00002	0.00005	32.5	0.0000052	0.00015	0.0003	0.00302	0.27	0.000005	1.1	0.001	10.4	0.0538	0.00129	7.04
MC1	2016-05-19 10:25	0.00001	0.017	0.00067	0.0444	0.01	0.00002	0.00005	26.9	0.0000058	0.00016	0.00034	0.00288	0.343	0.000005	0.92	0.001	8.85	0.0481	0.001	6.35
MC1	2016-05-24 10:55	0.00001	0.011	0.00057	0.056	0.01	0.00002	0.00005	36.9	0.000005	0.00013	0.00022	0.00272	0.189	0.000005	1.26	0.0011	12.4	0.0854	0.00169	8.73
MC1	2016-06-03 10:30	0.00001	0.0075	0.00056	0.0645	0.01	0.00002	0.00005	41.2	0.000005	0.0001	0.0002	0.00223	0.099	0.000005	1.57	0.0012	13.5	0.0453	0.00192	10.2
MC1	2016-06-07 10:50	0.00001	0.0105	0.00057	0.0596	0.01	0.00002	0.00005	40.4	0.000005	0.0001	0.00021	0.00232	0.113	0.000005	1.38	0.001	12.7	0.0275	0.00172	9.01
MC1	2016-06-16 10:55	0.00001	0.011	0.00056	0.0635	0.01	0.00002	0.00005	42.7	0.000005	0.0001	0.00021	0.00285	0.101	0.000005	1.53	0.0013	14.3	0.0112	0.00193	10
MC1	2016-06-22 11:15	0.00001	0.0066	0.00054	0.0648	0.01	0.00002	0.00005	45.5	0.000005	0.0001	0.00016	0.00188	0.075	0.000005	1.6	0.0014	15.1	0.00634	0.00182	9.91
MC1	2016-07-03 9:50	0.00001	0.0081	0.00054	0.0659	0.01	0.00002	0.00005	47.5	0.000005	0.0001	0.00018	0.00221	0.067	0.000005	1.44	0.0014	15.7	0.0067	0.00179	10
MC1	2016-07-07 13:35	0.00001	0.0093	0.00053	0.0671	0.01	0.00002	0.00005	45.9	0.000005	0.0001	0.00023	0.00238	0.065	0.000005	1.36	0.0017	15.1	0.00553	0.00171	9.97
MC1	2016-07-17 11:15	0.00001	0.0074	0.00055	0.072	0.01	0.00002	0.00005	49.7	0.000005	0.0001	0.00015	0.00203	0.067	0.000005	1.47	0.0013	16.6	0.00598	0.0019	10.4
MC1	2016-07-20 10:30	0.00001	0.0073	0.00061	0.0711	0.01	0.00002	0.00005	48.2	0.000005	0.0001	0.00018	0.00194	0.067	0.000005	1.44	0.0015	16.2	0.00558	0.00192	11.3
MC1	2016-07-25 11:05	0.00001	0.0185	0.00066	0.0647	0.01	0.00002	0.00005	40.6	0.000005	0.00014	0.00034	0.00282	0.198	0.000005	1.16	0.0012	13.2	0.0637	0.00146	9.12
MC1	2016-08-02 11:40	0.00001	0.008	0.00057	0.0683	0.01	0.00002	0.00005	49.6	0.000005	0.0001	0.00021	0.00214	0.092	0.000005	1.43	0.0016	16.1	0.00778	0.00178	9.92
MC1	2016-08-11 11:10	0.00001	0.0092	0.00058	0.0694	0.01	0.00002	0.00005	49.2	0.000005	0.0001	0.00024	0.00281	0.142	0.000005	1.39	0.0014	15	0.0103	0.00167	9.78
MC1	2016-08-16 11:00	0.00001	0.0072	0.0006	0.0665	0.01	0.00002	0.00005	50.8	0.000005	0.0001	0.00022	0.00215	0.128	0.000005	1.47	0.0014	16.5	0.0107	0.0017	9.97
MC1	2016-08-26 11:30	0.00001	0.0079	0.00067	0.0789	0.013	0.00002	0.00005	48.8	0.000005	0.0001	0.00027	0.00257	0.12	0.000005	1.67	0.0016	15.8	0.0115	0.00183	10.8
MC1	2016-08-30 11:40	0.00001	0.0086	0.00058	0.0677	0.011	0.00002	0.00005	49.8	0.000005	0.0001	0.00027	0.00272	0.146	0.000005	1.46	0.0014	15.1	0.0135	0.00193	10.9
MC1	2016-09-05 11:20	0.00001	0.0085	0.00049	0.0634	0.014	0.00002	0.00005	40.1	0.000005	0.0001	0.00012	0.00243	0.134	0.000005	1.4	0.0014	13.2	0.00888	0.00176	9.14
MC1	2016-09-12 13:48	0.00001	0.0066	0.00052	0.0647	0.015	0.00002	0.00005	39.5	0.000005	0.0001	0.00016	0.00278	0.107	0.000005	1.4	0.001	12.3	0.0107	0.00176	9.07
MC1	2016-09-20 14:22	0.00001	0.0072	0.00043	0.0561	0.014	0.00002	0.00005	38.6	0.000005	0.0001	0.0002	0.00268	0.107	0.000005	1.39	0.001	12.9	0.0153	0.00173	9.24
MC1	2016-09-26 11:30	0.00001	0.0056	0.00041	0.0564	0.012	0.00002	0.00005	36.4	0.000005	0.0001	0.00015	0.00259	0.105	0.000005	1.21	0.0014	12.8	0.0165	0.00166	9.62
MC1	2016-10-04 11:15	0.00001	0.0048	0.0004	0.0559	0.013	0.00002	0.00005	38	0.000005	0.0001	0.00023	0.00215	0.107	0.000005	1.41	0.0012	13.1	0.0187	0.00161	10
MC1	2016-10-10 11:30	0.00001	0.0036	0.00036	0.0561	0.014	0.00002	0.00005	37.9	0.000005	0.0001	0.00016	0.00206	0.079	0.000005	1.38	0.001	12.6	0.00741	0.00157	10
MC1	2016-10-18 14:50	0.00001	0.0032	0.00041	0.0762	0.019	0.00002	0.00005	53.1	0.000005	0.0001	0.0001	0.00366	0.062	0.000005	2.15	0.0016	18.5	0.0126	0.00241	13.1
MC1	2016-10-27 15:55	0.00001	0.0032	0.00042	0.0685	0.016	0.00002	0.00005	49.8	0.000005	0.0001	0.00015	0.0021	0.076	0.000005	2.01	0.0013	17.1	0.0109	0.00182	11.6
MC1	2016-11-01 14:30	0.00001	0.0041	0.00042	0.0696	0.011	0.00002	0.00005	47.8	0.0000064	0.0001	0.00018	0.00175	0.072	0.000005	1.62	0.0016	16.3	0.0108	0.00165	10.6
MC1	2016-11-13 10:47	0.00001	0.0032	0.00039	0.0733	0.01	0.00002	0.00005	47.8	0.000005	0.0001	0.00017	0.00156	0.06	0.000005	1.7	0.0016	16.9	0.00806	0.00156	11.4
MC1	2016-11-20 10:10	0.00001	0.0043	0.00053	0.114	0.014	0.00002	0.00005	75.1	0.000005	0.0001	0.00025	0.00253	0.057	0.000005	2.58	0.0023	26.8	0.0174	0.00198	17.8
MC1	2017-04-04 14:15	0.00001	0.0127	0.00073	0.0886	0.01	0.00002	0.00005	63.8	0.0000162	0.0001	0.00033	0.00704	0.029	0.000005	7.3	0.0032	28.6	0.0126	0.00103	20.9
MC1	2017-04-11 16:05	0.00001	0.0103	0.0005	0.0641	0.01	0.00002	0.00005	43	0.0000221	0.0001	0.00018	0.0091	0.027	0.000005	3.77	0.0019	21.8	0.0148	0.00119	13.2
MC1	2017-04-18 15:25	0.00001	0.0159	0.00057	0.0714	0.01	0.00002	0.00005	47.7	0.0000213	0.0001	0.00031	0.0106	0.059	0.000005	3.72	0.0022	20.5	0.0209	0.00121	12.4
MC1	2017-04-25 15:20	0.00001	0.0139	0.00039	0.0438	0.01	0.00002	0.00005	26.4	0.0000098	0.0001	0.00026	0.00875	0.063	0.000005	2.74	0.0016	11.6	0.0283	0.000807	7.52
MC1	2017-05-02 7:45	0.00001	0.0412	0.00044	0.0394	0.01	0.00002	0.00005	21.6	0.0000131	0.0001	0.00038	0.0102	0.136	0.0000067	1.81	0.001	7.35	0.0077	0.000684	4.69
MC1	2017-05-09 13:50	0.00001	0.0174	0.00049	0.0444	0.01	0.00002	0.00005	24.2	0.000009	0.00014	0.0003	0.00609	0.151	0.000005	1.5	0.001	9.18	0.0568	0.000981	6.2
MC1	2017-05-16 13:50	0.00001	0.0146	0.00058	0.0507	0.014	0.00002	0.00005	29.5	0.0000077	0.00016	0.00026	0.00486	0.122	0.000005	1.36	0.001	9.45	0.057	0.0014	6.98
MC1	2017-05-23 11:05	0.00001	0.01	0.00057	0.0549	0.01	0.00002	0.00005	32.3	0.000005	0.00015	0.00027	0.00384	0.145	0.000005	1.42	0.001	11.3	0.0434	0.00147	8.41
MC1	2017-05-30 10:55	0.00001	0.0126	0.00071	0.0585	0.014	0.00002	0.00005	31.6	0.0000056	0.00021	0.00024	0.00471	0.24	0.000005	1.45	0.0015	11.8	0.192	0.00198	9.08
MC1	2017-06-06 11:30	0.00001	0.0169	0.0007	0.0553	0.011	0.00002	0.00005	28.7	0.000005	0.00022	0.00028	0.00474	0.242	0.000005	1.2	0.001	10.3	0.265	0.00165	8.01
MC1	2017-06-13 11:15	0.00001	0.0254	0.00076	0.0564	0.01	0.00002	0.00005	28.2	0.000005	0.00022	0.00036	0.00492	0.322	0.000005	0.95	0.001	9.15	0.0847	0.00151	7.18
MC1	2017-06-20 14:35	0.00001	0.0189	0.00061	0.0658	0.01	0.00002	0.00005	36.3	0.000005	0.0001	0.00031	0.00356	0.135	0.000005	1.25	0.001	12	0.0174	0.00161	9.06
MC1	2017-06-27 11:30	0.00001	0.0325	0.00058	0.0632	0.01	0.00002	0.00005	38.9	0.0000051	0.0001	0.00027	0.00271	0.143	0.000005	1.35	0.0013	13.1	0.0158	0.00175	9.58
MC1	2017-07-04 8:40	0.00001	0.0068	0.00053	0.0642	0.01	0.00002	0.00005	40.2	0.000005	0.0001	0.00016	0.00171	0.081	0.000005	1.4	0.001	14.7	0.00921	0.00176	10.3
MC1	2017-07-11 9:15	0.00001	0.0084	0.00052	0.0634	0.01	0.00002	0.00005	40.7	0.000005	0.0001	0.00018	0.00184	0.065	0.000005	1.23	0.001	14.7	0.0168	0.00165	9.7
MC1	2017-07-18 8:40	0.00001	0.0156	0.00053	0.0687	0.01	0.00002	0.00005	42.5	0.000005	0.0001	0.00021	0.00191	0.083	0.000005	1.4	0.0012	16.5	0.00954	0.00172	10.6
MC1	2017-07-25 14:30	0.00001	0.0056	0.0005	0.0648	0.01	0.00002	0.00005	43.4	0.000005	0.0001	0.00015	0.00121	0.067	0.000005	1.77	0.001	15.5	0.00842	0.00175	10.4
MC1	2017-08-01 9:15	0.00001	0.0097	0.00064	0.0718	0.01	0.00002	0.00005	42.9	0.000005	0.0001	0.00024	0.00284	0.089	0.000005	1.35	0.0017	15.7	0.0155	0.00182	10.5
MC1	2017-08-08 10:35	0.00001	0.0402	0.00055	0.0699	0.01	0.00002	0.00005	43.7	0.0000065	0.0001	0.00019		0.157	0.000005	1.46	0.0019	15.7	0.015	0.00173	11
MC1	2017-08-15 13:45	0.00001	0.0064	0.00055	0.0688	0.01	0.00002	0.00005	43.3	0.000005	0.0001	0.00014	0.00166	0.115	0.000005	1.39	0.0015	15.1	0.0138	0.00175	10.4
MC1	2017-08-22 13:50	0.00001	0.0044	0.00052	0.065	0.01	0.00002	0.00005	44.2	0.000005	0.0001	0.00014	0.00139	0.119	0.000005	1.34	0.002	15.3	0.0164	0.00169	9.84
MC1	2017-08-29 10:10	0.00001	0.0059	0.00059	0.0671	0.01	0.00002	0.00005	43.9	0.000005	0.0001	0.00019	0.00145	0.142	0.000005	1.49	0.0016	15.8	0.0179	0.0017	10.4
MC1	2017-09-05 8:35	0.00001	0.0042	0.00054	0.066	0.01	0.00002	0.00005	44.6	0.000005	0.0001	0.00017	0.00148	0.108	0.000005	1.54	0.0016	16.3	0.0135	0.00167	10.4
MC1	2017-09-12 14:44	0.00001	0.0062	0.00051	0.0599	0.01	0.00002	0.00005	41.9	0.000005	0.0001	0.00023	0.00167	0.088	0.000005	1.29	0.0011	13.7	0.0135	0.00153	9.42
MC1	2017-09-19 16:40	0.00001	0.0054	0.00048	0.0636	0.01	0.00002	0.00005	42.9	0.000005	0.0001	0.00018	0.00145	0.075	0.000005	1.35	0.0015	15.1	0.0106	0.00157	9.96
MC1	2017-09-26 15:45	0.00001	0.0042	0.00049	0.0621	0.01	0.00002	0.00005	45.7	0.000005	0.0001	0.00019	0.00139	0.077	0.000005	1.44	0.0015	15.3	0.0162	0.00153	10.1
MC1	2017-10-02 14:40	0.00001	0.0064	0.00049	0.0599	0.01	0.00002	0.00005	41.7	0.0000085	0.0001	0.00012	0.00202	0.136	0.000005	1.25	0.0011	15.5	0.0229	0.00146	9.74
MC1	2017-10-10 13:50	0.00001	0.0036	0.00051	0.0602	0.01	0.00002	0.00005	45.7	0.000005	0.0001	0.00017	0.00135	0.07	0.000005	1.36	0.0016	16.3	0.00785	0.00154	10.5
MC1	2017-10-16 16:30	0.00001	0.0039	0.00045	0.0617	0.01	0.00002	0.00005	44.2	0.000005	0.0001	0.00011	0.00167	0.067	0.000005	1.38	0.002	16.6	0.0205	0.00142	10.6
MC1	2017-10-24 10:40	0.00001	0.0033	0.00038	0.0645	0.01	0.00002	0.00005	49.7	0.000005	0.0001	0.00014	0.00141	0.052	0.000005	1.41	0.0017	18.8	0.0206	0.00141	11
MC1	2017-10-31 10:20	0.00001	0.0029	0.00038	0.0682	0.01	0.00002	0.00005	45.8	0.000005	0.0001	0.00013	0.00127	0.049	0.000005	1.35	0.0012	17.2	0.0224	0.00144	10.5
MC1	2017-11-06 14:35	0.00001	0.0031	0.00034	0.0801	0.01	0.00002	0.00005	52.5	0.000005	0.0001	0.0001	0.00135	0.045	0.000005	1.54	0.002	18.8	0.0257	0.00131	12.3
MC1	2018-04-14 14:40	0.00001	0.0113	0.00042	0.0705	0.01	0.00002	0.00005	51.3	0.0000158	0.0001	0.00019	0.00542	0.025	0.000005	3.77	0.0028	22.8	0.0121	0.00105	16.6
MC1	2018-04-17 13:40	0.00001	0.0076	0.00051	0.0859	0.01	0.00002	0.00005	68.4	0.0000166	0.0001	0.00021	0.00567	0.018	0.0000058	4.57	0.0037	27.5	0.0123	0.0013	19.3
MC1	2018-04-24 14:00	0.00001	0.0066	0.00031	0.0405	0.01	0.00002	0.00005	32.3	0.000013	0.0001	0.00013	0.00783	0.021	0.000005	2.85	0.0016	13.5	0.0112	0.000856	8.91
MC1	2018-05-01 15:00	0.00001	0.0678	0.00041	0.0275	0.01	0.00002	0.00005	15	0.0000138	0.00011	0.00036	0.0138	0.107	0.0000088	1.74	0.001	4.92	0.0155	0.000365	3.1
MC1	2018-05-08 14:50	0.00001	0.05	0.00047	0.0317	0.01		0.00005	17.5	0.0000094	0.00012	0.0004	0.00988	0.157	0.0000095	1.38	0.001	5.6	0.0182	0.000584	3.53
MC1	2018-05-15 8:10	0.00001	0.0255	0.00056	0.0437	0.01	0.00002	0.00005	24.8	0.0000069	0.0002	0.00039	0.00599	0.173	0.000005	1.21	0.001	9.05	0.0373	0.000791	5.74
MC1	2018-05-21 13:50	0.00001	0.014	0.00058	0.0511	0.01	0.00002	0.00005	28	0.0000077	0.00015	0.00015	0.004	0.098	0.000005	1.41	0.0011	10.2	0.0776	0.00106	7.43
MC1	2018-05-28 15:10	0.00001	0.0079	0.00051	0.0524	0.01	0.00002	0.00005	32.3	0.0000069	0.00013	0.00018	0.00251	0.07	0.000005	1.45	0.0013	11.9	0.0787	0.00148	8.4
MC1	2018-06-05 15:50	0.00001	0.0208	0.00062	0.0541	0.01	0.00002	0.00005	29.4	0.0000056	0.00019	0.0002	0.00445	0.159	0.000005	1.22	0.0011	11	0.15	0.00128	8.16
MC1	2018-06-12 14:35	0.00001	0.0078	0.00065	0.064	0.01	0.00002	0.00005	36.9	0.000005	0.00014	0.00012	0.00357	0.096	0.0000135	1.52	0.0014	14.5	0.1	0.00213	9.94
MC1	2018-06-18 11:10	0.00001	0.0052	0.00057	0.0689	0.01	0.00002	0.00005	40.6	0.000005	0.00013	0.00015	0.00338	0.097	0.000005	1.69	0.0014	16.5	0.121	0.00249	10.8
MC1	2018-06-25 11:30	0.00001	0.0133	0.00057	0.0587	0.01	0.00002	0.00005	31.9	0.0000059	0.00015	0.00028	0.00244	0.119	0.000005	1.36	0.0021	12.1	0.107	0.00182	8.8
MC1	2018-07-03 10:45	0.00001	0.0098	0.00056	0.0681	0.01	0.00002	0.00005	37.8	0.000005	0.0001	0.00023	0.00317	0.092	0.000005	1.4	0.0013	13.9	0.0146	0.00192	9.44
MC1	2018-07-10 9:55	0.00001	0.0062	0.00054	0.0701	0.01	0.00002	0.00005	44.6	0.000006	0.0001	0.00015	0.00193	0.057	0.000005	1.46	0.0014	16	0.00923	0.00202	10.9
MC1	2018-07-17 13:45	0.00001	0.0061	0.00051	0.0643	0.01	0.00002	0.00005	42	0.0000301	0.0001	0.00019	0.00266	0.041	0.000005	1.42	0.0016	15.5	0.0137	0.00181	10.7
MC1	2018-07-24 11:00	0.00001	0.005	0.00055	0.07	0.01	0.00002	0.00005	45.7	0.000005	0.0001	0.0002	0.00182	0.057	0.000005	1.53	0.0017	16.8	0.00593	0.002	11.8
MC1	2018-07-31 10:45	0.00001	0.0053	0.00053	0.07	0.01	0.00002	0.00005	42.1	0.000005	0.0001	0.0001	0.00283	0.061	0.000005	1.55	0.0014	16.6	0.0057	0.00203	12.2
MC1	2018-08-07 13:50	0.00001	0.006	0.00054	0.0666	0.01	0.00002	0.00005	44.1	0.000005	0.0001	0.00018	0.00165	0.067	0.000005	1.34	0.0016	15.5	0.0117	0.00185	10.2
MC1	2018-08-14 10:35	0.00001	0.0066	0.00057	0.0679	0.01	0.00002	0.00005	44.4	0.000005	0.0001	0.00017	0.00211	0.093	0.000005	1.36	0.0015	16.8	0.00981	0.00188	10.8
MC1	2018-08-21 14:10	0.00001	0.0043	0.00054	0.068	0.01	0.00002	0.00005	44.5	0.000005	0.0001	0.0002	0.00171	0.087	0.000005	1.46	0.0016	17	0.00975	0.00189	11.2
MC1	2018-08-27 13:50	0.00001	0.0143	0.00058	0.0655	0.01	0.00002	0.00005	40.8	0.000005	0.0001	0.00023	0.002	0.134	0.000005	1.22	0.0014	14.5	0.0162	0.0016	9.78
MC1	2018-09-04 11:30	0.00001	0.0065	0.00049	0.0592	0.01	0.00002	0.00005	42.9	0.000005	0.0001	0.00018	0.00234	0.12	0.000005	1.25	0.0014	14.5	0.016	0.00159	9.89
MC1	2018-09-10 9:30	0.00001	0.0045	0.00047	0.063	0.01	0.00002	0.00005	44.8	0.000005	0.0001	0.00021	0.00157	0.119	0.000005	1.34	0.0016	15.3	0.0177	0.00175	9.75
MC1	2018-09-18 14:15	0.00001	0.0049	0.00055	0.0561	0.01	0.00002	0.00005	40.6	0.000005	0.0001	0.00019	0.00173	0.121	0.000005	1.12	0.0013	14.9	0.022	0.00152	9.58
MC1	2018-09-25 15:20	0.00001	0.0053	0.00045	0.0568	0.01	0.00002	0.00005	43.2	0.000005	0.0001	0.0001	0.00167	0.082	0.000005	1.28	0.0015	15.8	0.012	0.00155	9.77
MC1	2018-10-02 9:45	0.00001	0.0051	0.00041	0.0664	0.01	0.00002	0.00005	45.8	0.000005	0.0001	0.00017	0.00149	0.062	0.000005	1.31	0.0016	17.6	0.0114	0.00146	11.2
MC1	2019-04-16 10:50	0.00001	0.0042	0.00048	0.0635	0.01	0.00002	0.00005	47.1	0.000006	0.0001	0.00022	0.00224	0.021	0.000005	2.94	0.0022	21.3	0.0069	0.00167	13.1
MC1	2019-04-23 16:00	0.00001	0.0049	0.00036	0.0468	0.01	0.00002	0.00005	30.4	0.0000057	0.0001	0.00017	0.00323	0.042	0.000005	2.78	0.0013	11	0.0102	0.000917	7.04
MC1	2019-04-30 9:10	0.00001	0.0034	0.00039	0.0558	0.01	0.00002	0.00005	37.5	0.000005	0.0001	0.00015	0.00213	0.028	0.000005	2.25	0.0018	16.7	0.00428	0.00139	9.63
MC1	2019-05-07 11:10	0.00001	0.0046	0.00061	0.0454	0.01	0.00002	0.00005	31.3	0.000005	0.0001	0.00017	0.0021	0.123	0.000005	1.77	0.0016	12.8	0.00677	0.00103	8
MC1	2019-05-14 10:05	0.00001	0.0065	0.00052	0.0461	0.01	0.00002	0.00005	28.5	0.000005	0.0001	0.00023	0.00275	0.077	0.000005	1.43	0.0012	11.1	0.00642	0.00108	6.73
MC1	2019-05-21 8:25	0.00001	0.004	0.00065	0.05	0.01	0.00002	0.00005	36.2	0.000005	0.0001	0.00026	0.00195	0.081	0.000005	1.48	0.0013	12.2	0.0173	0.00117	7.08
MC1	2019-05-28 8:40	0.00001	0.0059	0.00059	0.0522	0.01	0.00002	0.00005	28.5	0.0000052	0.00012	0.00013	0.00206	0.119	0.0000069	1.44	0.0011	12	0.077	0.00138	7.65
MC1	2019-06-04 10:15	0.00001	0.0222	0.00067	0.038	0.01	0.00002	0.00005	21.8	0.0000056	0.00018	0.00039	0.0041	0.201	0.000005	0.69	0.001	7.98	0.088	0.000968	6.01
MC1	2019-06-11 9:40	0.00001	0.0068	0.00051	0.0552	0.01	0.00002	0.00005	33.4	0.000005	0.00015	0.00018	0.00193	0.099	0.000005	1.14	0.0012	12.1	0.165	0.00179	8.43
MC1	2019-06-18 8:25	0.00001	0.0058	0.00049	0.0609	0.01	0.00002	0.00005	39.4	0.0000082	0.0001	0.00015	0.00167	0.052	0.000005	1.26	0.0015	14.1	0.0151	0.00207	9.47
MC1	2019-06-25 9:45	0.00001	0.0036	0.00047	0.0638	0.01	0.00002	0.00005	40.5	0.000005	0.0001	0.00014	0.00153	0.044	0.000005	1.45	0.0014	15.7	0.00988	0.00187	10.7
MC1	2019-07-02 8:50	0.00001	0.0082	0.00048	0.0696	0.01	0.00002	0.00005	43.9	0.000005	0.0001	0.00016	0.0017	0.037	0.000005	1.57	0.0016	15.7	0.00486	0.00212	11.5
MC1	2019-07-09 7:30	0.00001	0.0046	0.00049	0.0677	0.01	0.00002	0.00005	46.2	0.000005	0.0001	0.00015	0.0018	0.034	0.000005	1.67	0.0017	18	0.00408	0.00214	11.9
MC1	2019-07-16 8:00	0.00001	0.0032	0.00051	0.0608	0.01	0.00002	0.00005	40.8	0.000005	0.0001	0.00013	0.00142	0.02	0.000005	1.57	0.0015	16.9	0.00581	0.00196	11.8
MC1	2019-07-22 9:50	0.00001	0.0037	0.0005	0.0642	0.011	0.00002	0.00005	52.1	0.000005	0.0001	0.0001	0.00139	0.024	0.000005	1.56	0.002	15.7	0.00431	0.00224	11
MC1	2019-07-30 11:15	0.00001	0.0046	0.00059	0.0677	0.01	0.00002	0.00005	46.3	0.000005	0.0001	0.00017	0.00154	0.031	0.000005	1.48	0.0018	18.6	0.0135	0.00207	12.2
MC1	2019-08-05 16:30	0.00001	0.0109	0.00061	0.0647	0.01	0.00002	0.00005	51.8	0.000005	0.0001	0.00029	0.00255	0.031	0.000005	1.59	0.0018	19.4	0.00882	0.00223	12.9
MC1	2019-08-13 7:30	0.00001	0.006	0.00059	0.0662	0.01	0.00002	0.00005	45	0.000005	0.0001	0.00015	0.00136	0.048	0.000005	1.4	0.0016	16.5	0.011	0.00222	11.1
MC1	2019-08-20 15:00	0.00001	0.005	0.00059	0.0639	0.01	0.00002	0.00005	46.9	0.000005	0.0001	0.00012	0.00131	0.043	0.000005	1.39	0.0017	18.5	0.0202	0.00207	11.4
MC1	2019-08-27 10:20	0.00001	0.0062	0.00054	0.0669	0.01	0.00002	0.00005	48.5	0.000005	0.0001	0.00016	0.0016	0.093	0.000005	1.58	0.0018	18.5	0.0182	0.00201	12
MC1	2019-09-01 9:45	0.00001	0.0047	0.00054	0.069	0.01	0.00002	0.00005	49.4	0.000005	0.0001	0.00012	0.00126	0.084	0.000005	1.65	0.0016	18	0.0175	0.00199	12.3
MC1	2019-09-10 10:10	0.00001	0.0037	0.00051	0.064	0.01	0.00002	0.00005	47.8	0.000005	0.0001	0.00014	0.00124	0.079	0.000005	1.76	0.0017	18.1	0.0167	0.00191	11.9
MC1	2019-09-17 11:45	0.00001	0.0035	0.00053	0.0664	0.01	0.00002	0.00005	50.6	0.000005	0.0001	0.00014	0.00135	0.051	0.000005	1.79	0.0018	17.9	0.00833	0.00184	11.3
MC1	2019-09-24 9:00	0.00001	0.0036	0.00054	0.0633	0.01	0.00002	0.00005	45.3	0.000005	0.0001		0.00132	0.056	0.000005	1.47	0.0016	17.2	0.0102	0.00187	11.4
MC1	2019-10-01 10:50	0.00001	0.0041	0.00053	0.0668	0.01	0.00002	0.00005	45.1	0.000005	0.0001	0.00017	0.00138	0.061	0.000005	1.49	0.0016	17.9	0.0136	0.00183	11.6
MC1	2019-10-08 13:30	0.00001	0.0043	0.00045	0.0606	0.01	0.00002	0.00005	46.8	0.000005	0.0001	0.00017	0.00127	0.064	0.000005	1.41	0.0016	16.6	0.00984	0.00183	11.7
MC1	2019-10-15 13:25	0.00001	0.0033	0.00044	0.0636	0.01	0.00002	0.00005	52.2	0.000005	0.0001	0.0001	0.00121	0.053	0.000005	1.53	0.0018	18.9	0.00925	0.00178	12.2

Station	Date / Time	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MC1	2016-05-09 11:00														
MC1	2016-05-13 11:30	0.00122	0.00005	0.0001	4.84	0.000139	5.05	0.0001	0.283	0.00052	0.00001	0.000821	0.00077	0.001	0.0003
MC1	2016-05-17 11:00	0.00146	0.00005	0.0001	5.27	0.000162	5.12	0.0001	0.271	0.00084	0.00001	0.000821	0.001	0.0044	0.0003
MC1	2016-05-19 10:25	0.00159	0.00005	0.0001	3.87	0.00014	5.15	0.0001	0.225	0.00089	0.00001	0.00059	0.00107	0.0052	0.00034
MC1	2016-05-24 10:55	0.0013	0.00005	0.0001	6.52	0.000217	5.1	0.0001	0.33	0.0005	0.00001	0.0011	0.00086	0.001	0.0003
MC1	2016-06-03 10:30	0.00105	0.00005	0.0001	7.01	0.000206	5.35	0.0001	0.365	0.00038	0.00001	0.0014	0.00095	0.0014	0.0003
MC1	2016-06-07 10:50	0.0012	0.00005	0.0001	6.61	0.000156	5.4	0.0001	0.352	0.00049	0.00001	0.00127	0.00089	0.001	0.0003
MC1	2016-06-16 10:55	0.001	0.00007	0.0001	7.56	0.000198	5.62	0.0001	0.391	0.00062	0.00001	0.00138	0.00082	0.001	0.0003
MC1	2016-06-22 11:15	0.00094	0.00005	0.0001	7.16	0.000152	5.94	0.0001	0.418	0.00036	0.00001	0.00147	0.00078	0.0012	0.0003
MC1	2016-07-03 9:50	0.00095	0.00005	0.0001	6.83	0.000108	6.2	0.0001	0.442	0.0003	0.00001	0.0016	0.00076	0.0075	0.0003
MC1	2016-07-07 13:35	0.00097	0.000063	0.0001	6.35	0.000139	6.1	0.0001	0.437	0.0004	0.00001	0.00157	0.00076	0.0021	0.0003
MC1	2016-07-17 11:15	0.00101	0.00005	0.0001	7.17	0.000106	6.42	0.0001	0.476	0.0003	0.00001	0.00151	0.00079	0.001	0.0003
MC1	2016-07-20 10:30	0.00091	0.00005	0.0001	7.32	0.000144	6.27	0.0001	0.482	0.0003	0.00001	0.00162	0.00082	0.001	0.0003
MC1	2016-07-25 11:05	0.00148	0.00005	0.0001	5.34	0.000149	6.18	0.0001	0.378	0.00099	0.00001	0.00105	0.00121	0.0024	0.0003
MC1	2016-08-02 11:40	0.00108	0.00005	0.0001	6.79	0.000161	6.57	0.0001	0.452	0.0003	0.00001	0.00128	0.00079	0.001	0.0003
MC1	2016-08-11 11:10	0.00126	0.00005	0.0001	8.13	0.000252	6.17	0.0001	0.39	0.00047	0.00001	0.00101	0.00076	0.001	0.0003
MC1	2016-08-16 11:00	0.00111	0.00005	0.0001	7.57	0.00016	6.63	0.0001	0.446	0.00038	0.00001	0.00126	0.00075	0.001	0.0003
MC1	2016-08-26 11:30	0.00124	0.00005	0.0001	7.77	0.000186	6.27	0.0001	0.451	0.00046	0.00001	0.00123	0.00082	0.001	0.0003
MC1	2016-08-30 11:40	0.00129	0.00005	0.0001	7.69	0.000255	6.12	0.0001	0.446	0.00039	0.00001	0.00108	0.00071	0.0011	0.0003
MC1	2016-09-05 11:20	0.00116	0.00005	0.0001	6.24	0.000161	5.72	0.0001	0.37	0.00043	0.00001	0.000777	0.00067	0.0016	0.0003
MC1	2016-09-12 13:48	0.00107	0.00005	0.0001	7.37	0.000241	5.02	0.0001	0.38	0.00039	0.00001	0.000722	0.00063	0.001	0.0003
MC1	2016-09-20 14:22	0.00105	0.00005	0.0001	7.27	0.000238	4.83	0.0001	0.371	0.00036	0.00001	0.000786	0.00056	0.001	0.0003
MC1	2016-09-26 11:30	0.00107	0.00005	0.0001	7.27	0.000216	4.84	0.0001	0.361	0.0003	0.00001	0.000823	0.00053	0.001	0.0003
MC1	2016-10-04 11:15	0.00089	0.00005	0.0001	7.54	0.000268	4.92	0.0001	0.365	0.0003	0.00001	0.000911	0.0005	0.001	0.0003
MC1	2016-10-10 11:30	0.00077	0.00005	0.0001	8.53	0.000297	4.81	0.0001	0.381	0.0003	0.00001	0.00085	0.0005	0.0021	0.0003
MC1	2016-10-18 14:50	0.00075	0.00005	0.0001	15	0.00066	5.1	0.0001	0.549	0.0003	0.00001	0.00148	0.0005	0.001	0.0003
MC1	2016-10-27 15:55	0.00088	0.00005	0.0001	11	0.000319	5.78	0.0001	0.49	0.0003	0.00001	0.00141	0.00055	0.001	0.0003
MC1	2016-11-01 14:30	0.00073	0.00005	0.0001	8.65	0.000186	5.95	0.0001	0.491	0.0003	0.00001	0.0015	0.0005	0.0081	0.0003
MC1	2016-11-13 10:47	0.00083	0.00005	0.0001	9.17	0.000172	6.4	0.0001	0.494	0.0003	0.00001	0.00153	0.0005	0.001	0.0003
MC1	2016-11-20 10:10	0.00119	0.00005	0.00034	12.4	0.000241	9.62	0.0001	0.744	0.0003	0.00001	0.00205	0.0006	0.001	0.0003
MC1	2017-04-04 14:15	0.00088	0.00005	0.0001	22.7	0.000715	12.2	0.0001	0.579	0.00045	0.00001	0.00245	0.0005	0.0014	0.0003
MC1	2017-04-11 16:05	0.00064	0.00005	0.0001	12.2	0.000343	7.36	0.0001	0.472	0.00032	0.00001	0.00157	0.0005	0.0016	0.0003
MC1	2017-04-18 15:25	0.00108	0.00005	0.0001	10.5	0.000283	9.06	0.0001	0.474	0.0006	0.00001	0.00171	0.0005	0.0019	0.0003
MC1	2017-04-25 15:20	0.0008	0.00005	0.0001	4.41	0.000153	5.15	0.0001	0.263	0.00037	0.00001	0.000725	0.0005	0.0024	0.0003
MC1	2017-05-02 7:45	0.00146	0.00005	0.0001	3.08	0.000139	4.39	0.0001	0.182	0.00077	0.00001	0.000358	0.0005	0.0032	0.00038
MC1	2017-05-09 13:50	0.00132	0.00005	0.0001	5	0.000155	4.58	0.0001	0.233	0.0006	0.00001	0.000642	0.00069	0.0017	0.0003
MC1	2017-05-16 13:50	0.00149	0.00005	0.0001	5.21	0.000191	4.46	0.0001	0.259	0.0006	0.00001	0.000743	0.00072	0.001	0.0003
MC1	2017-05-23 11:05	0.00136	0.00005	0.0001	6.53	0.00021	5.05	0.0001	0.307	0.00047	0.00001	0.00104	0.0008	0.001	0.0003
MC1	2017-05-30 10:55	0.00144	0.00005	0.0001	7.91	0.000246	4.36	0.0001	0.313	0.0009	0.00001	0.00118	0.00136	0.0011	0.0003
MC1	2017-06-06 11:30	0.00154	0.00005	0.0001	6.37	0.000237	4.01	0.0001	0.281	0.00097	0.00001	0.00093	0.00132	0.001	0.0003
MC1	2017-06-13 11:15	0.00173	0.00005	0.00013	6.3	0.000215	4.68	0.0001	0.254	0.0013	0.00001	0.000854	0.00167	0.001	0.00038
MC1	2017-06-20 14:35	0.00154	0.00005	0.0001	6.59	0.00018	5.42	0.0001	0.343	0.00074	0.00001	0.00108	0.00108	0.0013	0.0003
MC1	2017-06-27 11:30	0.00124	0.00005	0.0001	7.58	0.000175	5.81	0.0001	0.373	0.002	0.00001	0.00146	0.0011	0.001	0.0003
MC1	2017-07-04 8:40	0.00106	0.00005	0.0001	6.97	0.00019	6.03	0.0001	0.407	0.00041	0.00001	0.00187	0.00087	0.001	0.0003
MC1	2017-07-11 9:15	0.00117	0.00005	0.0001	6.35	0.000159	5.95	0.0001	0.388	0.00033	0.00001	0.00179	0.00092	0.001	0.0003
MC1	2017-07-18 8:40	0.00112	0.00005	0.0001	6.95	0.000157	5.96	0.0001	0.421	0.0006	0.00001	0.0017	0.00092	0.001	0.0003
MC1	2017-07-25 14:30	0.0009	0.00005	0.0001	7.45	0.000135	5.69	0.0001	0.463	0.0003	0.00001	0.0019	0.00079	0.001	0.0003
MC1	2017-08-01 9:15	0.00135	0.00005	0.0001	7.01	0.000147	5.88	0.0001	0.429	0.00046	0.00001	0.00154	0.00109	0.001	0.0003
MC1	2017-08-08 10:35	0.00107	0.000077	0.0001	7.19	0.000158	6.07	0.0001	0.442	0.002	0.00001	0.00165	0.00101		0.00076
MC1	2017-08-15 13:45	0.00102	0.00005	0.0001	7.27	0.000157	6.06	0.00129	0.455	0.00039	0.00001	0.00177	0.00074	0.0064	0.0003
MC1	2017-08-22 13:50	0.00089	0.00005	0.0001	6.87	0.000123	6.06	0.0001	0.439	0.0003	0.00001	0.00157	0.00068	0.001	0.0003
MC1	2017-08-29 10:10	0.00091	0.00005	0.0001	7.11	0.000122	6.11	0.0001	0.458	0.0003	0.00001	0.00151	0.00072	0.0012	0.0003
MC1	2017-09-05 8:35	0.00091	0.00005	0.0001	6.96	0.000129	6.32	0.0001	0.468	0.0003	0.00001	0.00152	0.00073	0.001	0.0003
MC1	2017-09-12 14:44	0.00097	0.00005	0.0001	6.08	0.000095	5.87	0.0001	0.431	0.0003	0.00001	0.00141	0.00065	0.001	0.0003
MC1	2017-09-19 16:40	0.00082	0.00005	0.0001	7.07	0.000091	6.27	0.0001	0.437	0.0003	0.00001	0.00147	0.00059	0.0023	0.0003
MC1	2017-09-26 15:45	0.00096	0.00005	0.0001	6.59	0.000095	6.48	0.0001	0.438	0.0003	0.00001	0.00147	0.00056	0.001	0.0003
MC1	2017-10-02 14:40	0.00091	0.000059	0.0001	6.89	0.000101	6.15	0.0001	0.414	0.0003	0.00001	0.00163	0.00057	0.001	0.0003
MC1	2017-10-10 13:50	0.00091	0.00005	0.0001	7.54	0.000117	6.42	0.0001	0.454	0.0003	0.00001	0.0015	0.00051	0.001	0.0003
MC1	2017-10-16 16:30	0.00088	0.00005	0.0001	7.15	0.000099	6.29	0.0001	0.439	0.0003	0.00001	0.00154	0.00051	0.001	0.0003
MC1	2017-10-24 10:40	0.00081	0.00005	0.0001	7.44	0.00014	6.3	0.0001	0.442	0.0003	0.00001	0.00135	0.0005	0.0011	0.0003
MC1	2017-10-31 10:20	0.00083	0.00005	0.0001	7.12	0.000122	6.26	0.0001	0.491	0.0003	0.00001	0.0015	0.0005	0.001	0.0003
MC1	2017-11-06 14:35	0.00077	0.00005	0.0001	8.63	0.000174	6.94	0.0001	0.538	0.0003	0.00001	0.00152	0.0005	0.001	0.0003
MC1	2018-04-14 14:40	0.00052	0.00005	0.0001	14.8	0.000335	8.34	0.0001	0.55	0.0007	0.00001	0.00178	0.0005	0.0023	0.0003
MC1	2018-04-17 13:40	0.00062	0.00005	0.0001	17.3	0.00042	10	0.0001	0.688	0.0003	0.00001	0.00209	0.0005	0.0023	0.0003
MC1	2018-04-24 14:00	0.0005	0.00005	0.0001	7.02	0.000196	4.75	0.0001	0.333	0.0003	0.00001	0.000867	0.0005	0.0022	0.0003
MC1	2018-05-01 15:00	0.00122	0.00005	0.0001	1.67	0.000082	3.11	0.0001	0.117	0.00114	0.00001	0.000112	0.00055	0.0029	0.00037
MC1	2018-05-08 14:50	0.00165	0.00005	0.0001	2	0.00015	3.45	0.0001	0.137	0.00093	0.00001	0.000204	0.00056	0.0012	0.0004
MC1	2018-05-15 8:10	0.00168	0.00005	0.0001	3.57	0.000156	4.34	0.0001	0.219	0.00088	0.00001	0.000567	0.00083	0.007	0.00038
MC1	2018-05-21 13:50	0.0011	0.00005	0.0001	4.55	0.000134	4.49	0.0001	0.274	0.00082	0.00001	0.000914	0.00087	0.001	0.0003
MC1	2018-05-28 15:10	0.00087	0.00005	0.0001	6.43	0.000145	4.93	0.0001	0.343	0.00043	0.00001	0.00145	0.00091	0.004	0.0003
MC1	2018-06-05 15:50	0.00131	0.00005	0.0001	4.34	0.000157	4.47	0.0001	0.292	0.00172	0.00001	0.00123	0.0011	0.0012	0.0003
MC1	2018-06-12 14:35	0.00133	0.00005	0.0001	8.04	0.000258	4.87	0.0001	0.378	0.0005	0.00001	0.00171	0.00096	0.001	0.0003
MC1	2018-06-18 11:10	0.00103	0.00005	0.0001	10.9	0.000268	4.83	0.0001	0.431	0.0004	0.00001	0.00213	0.00088	0.001	0.0003
MC1	2018-06-25 11:30	0.0013	0.00005	0.00011	4.95	0.000139	4.75	0.0001	0.334	0.00087	0.00001	0.00143	0.00108	0.001	0.0003
MC1	2018-07-03 10:45	0.00144	0.00005	0.00011	7.87	0.000182	5.5	0.0001	0.393	0.00059	0.00001	0.00146	0.00103	0.001	0.0003
MC1	2018-07-10 9:55	0.00097	0.00005	0.0001	7.76	0.000176	5.63	0.0001	0.457	0.0003	0.00001	0.00186	0.00085	0.001	0.0003
MC1	2018-07-17 13:45	0.0009	0.00005	0.0001	8.06	0.000177	6.01	0.0001	0.434	0.00037	0.00001	0.00198	0.00079	0.0033	0.0003
MC1	2018-07-24 11:00	0.00092	0.00005	0.0001	8.75	0.000191	6.05	0.0001	0.47	0.0003	0.00001	0.00202	0.00079	0.001	0.0003
MC1	2018-07-31 10:45	0.00096	0.00005	0.0001	7.33	0.000178	5.53	0.00031	0.471	0.00034	0.00001	0.00212	0.00078	0.0016	0.0003
MC1	2018-08-07 13:50	0.00091	0.00005	0.00011	6.39	0.000177	5.73	0.0001	0.471	0.00036	0.00001	0.00184	0.00076	0.001	0.0003
MC1	2018-08-14 10:35	0.00105	0.00005	0.0001	6.68	0.000121	5.92	0.0001	0.465	0.00033	0.00001	0.00153	0.00083	0.001	0.0003
MC1	2018-08-21 14:10	0.00093	0.00005	0.0001	7.25	0.000169	6.18	0.0001	0.485	0.0003	0.00001	0.00173	0.00082	0.001	0.0003
MC1	2018-08-27 13:50	0.00108	0.00005	0.0001	5.95	0.000141	6.16	0.0001	0.403	0.00135	0.00001	0.00138	0.00079	0.001	0.0003
MC1	2018-09-04 11:30	0.00122	0.00005	0.0001	6.32	0.000144	6.05	0.0001	0.39	0.00035	0.00001	0.00152	0.00068	0.001	0.0003
MC1	2018-09-10 9:30	0.00092	0.00005	0.0001	6.97	0.000091	5.89	0.0001	0.466	0.0003	0.00001	0.00166	0.00057	0.001	0.0003
MC1	2018-09-18 14:15	0.00101	0.00005	0.0001	6.78	0.000138	6.24	0.0001	0.401	0.00037	0.00001	0.00137	0.00065	0.001	0.0003
MC1	2018-09-25 15:20	0.00095	0.00005	0.0001	6.91	0.000114	6.05	0.0001	0.424	0.00038	0.00001	0.00149	0.00061	0.001	0.0003
MC1	2018-10-02 9:45	0.00083	0.00005	0.0001	7.99	0.00016	6.56	0.0001	0.433	0.0003	0.00001	0.00148	0.0005	0.001	0.0003
MC1	2019-04-16 10:50	0.0005	0.00005	0.0001	9.1	0.000332	7.26	0.0001	0.535	0.0003	0.00001	0.00203	0.0005	0.001	0.0003
MC1	2019-04-23 16:00	0.0005	0.00005	0.0001	5.17	0.000146	4.96	0.0001	0.294	0.0003	0.00001	0.000949	0.0005	0.001	0.0003
MC1	2019-04-30 9:10	0.0005	0.00005	0.0001	7.87	0.000279	5.76	0.0001	0.415	0.0003	0.00001	0.00133	0.0005	0.001	0.0003
MC1	2019-05-07 11:10	0.00055	0.00005	0.0001	5.53	0.00015	5.44	0.0001	0.371	0.0003	0.00001	0.00146	0.00051	0.001	0.0003
MC1	2019-05-14 10:05	0.00098	0.00005	0.0001	4.8	0.000167	4.81	0.0001	0.32	0.0003	0.00001	0.00106	0.00057	0.001	0.0003
MC1	2019-05-21 8:25	0.00073	0.00005	0.0001	4.19	0.000183	4.83	0.0001	0.346	0.0003	0.00001	0.00128	0.00067	0.001	0.0003
MC1	2019-05-28 8:40	0.00082	0.00005	0.0001	4.75	0.000146	4.3	0.0001	0.341	0.00034	0.00001	0.00131	0.00082	0.001	0.0003
MC1	2019-06-04 10:15	0.00171	0.00005	0.00012	3.23	0.000118	5.15	0.0001	0.221	0.00116	0.00001	0.000608	0.00114	0.001	0.00038
MC1	2019-06-11 9:40	0.00109	0.00005	0.0001	5.45	0.000168	5.13	0.0001	0.377	0.00037	0.00001	0.00148	0.00094	0.001	0.0003
MC1	2019-06-18 8:25	0.00088	0.00005	0.0001	7.49	0.00021	5.59	0.0001	0.422	0.00044	0.00001	0.00193	0.00071	0.001	0.0003
MC1	2019-06-25 9:45	0.00089	0.00005	0.0001	7.86	0.000192	5.81	0.0001	0.439	0.0003	0.00001	0.00213	0.00079	0.001	0.0003
MC1	2019-07-02 8:50	0.0007	0.00005	0.0001	8.75	0.000159	5.88	0.0001	0.444	0.00072	0.00001	0.00241	0.00078	0.001	0.0003
MC1	2019-07-09 7:30	0.00074	0.00005	0.0001	9.75	0.000184	5.94	0.0001	0.511	0.0003	0.00001	0.00274	0.00079	0.001	0.0003
MC1	2019-07-16 8:00	0.00074	0.00005	0.0001	9.38	0.000194	6.11	0.0001	0.468	0.0003	0.00001	0.00245	0.0007	0.001	0.0003
MC1	2019-07-22 9:50	0.00065	0.00005	0.0001	8.5	0.000161	5.82	0.0001	0.563	0.0003	0.00001	0.00251	0.00071	0.001	0.0003
MC1	2019-07-30 11:15	0.001	0.00005	0.0001	8.65	0.000173	6.14	0.0001	0.488	0.00039	0.00001	0.00265	0.00086	0.001	0.0003
MC1	2019-08-05 16:30	0.0007	0.00005	0.0001	8.57	0.000158	6.65	0.0001	0.502	0.00141	0.00001	0.00239	0.00101	0.001	0.0003
MC1	2019-08-13 7:30	0.00077	0.00005	0.0001	8.62	0.000158	5.93	0.0001	0.504	0.0006	0.00001	0.00247	0.0008	0.001	0.0003
MC1	2019-08-20 15:00	0.00077	0.00005	0.0001	8.49	0.000187	6.32	0.0001	0.493	0.00034	0.00001	0.00232	0.00081	0.001	0.0003
MC1	2019-08-27 10:20	0.00075	0.00005	0.0001	9.03	0.000162	6.4	0.0001	0.543	0.00033	0.00001	0.00242	0.00076	0.001	0.0003
MC1	2019-09-01 9:45	0.00073	0.00005	0.0001	8.36	0.00017	6.17	0.0001	0.558	0.0003	0.00001	0.00233	0.00074	0.001	0.0003
MC1	2019-09-10 10:10	0.00076	0.00005	0.0001	8.37	0.000142	5.94	0.0001	0.535	0.0003	0.00001	0.00236	0.00063	0.001	0.0003
MC1	2019-09-17 11:45	0.00071	0.00005	0.0001	8.84	0.000115	6.05	0.0001	0.498	0.0003	0.00001	0.00204	0.00059	0.001	0.0003
MC1	2019-09-24 9:00	0.00084	0.00005	0.0001	7.69	0.000119	6.22	0.0001	0.477	0.0003	0.00001	0.00198	0.00062	0.001	0.0003
MC1	2019-10-01 10:50	0.0008	0.00005	0.0001	8.04	0.000132	5.74	0.0001	0.494	0.0003	0.00001	0.00198	0.00056	0.001	0.0003
MC1	2019-10-08 13:30	0.00068	0.00005	0.0001	9.05	0.000153	6.07	0.0001	0.511	0.0003	0.00001	0.00219	0.00052	0.001	0.0003
MC1	2019-10-15 13:25	0.00053	0.00005	0.0001	8.73	0.00017	6.32	0.0001	0.515	0.0003	0.00001	0.00217	0.00059	0.001	0.0003

Attachment 3: Sitewide Database

Station	Date / Time	Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	N-NO$_2$	N-NO$_3$	N-NH$_3$	SO$_4$-D	Chlord	Fluord
		General Parameters								Anions & Nitrogen Species					
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MC1	2019-10-22 13:35	226	406	187.8	8.09	241	3	0.2	105.2	0.001	0.105	0.016	25.7	1.97	
MC1	2019-10-28 13:50	233	434			259	4.2			0.001	0.123	0.0173	27.4	2.2	
MC1	2020-04-26 9:20	53.7	142	130	7.68	146	3	0	96.7	0.001	0.005	0.0155	6.46	1.33	
MC1	2020-05-03 11:05	38.8	81.3	196.2	6.86	105	3	0.1	128.3	0.001	0.005	0.0112	3.02	0.52	
MC1	2020-05-10 10:45	57.9	120	129.8	7.76	107	15.7	0.1	94.1	0.001	0.0097	0.0117	5.29	0.81	
MC1	2020-05-17 13:05	109	222	164	8.16	163	7.2	0.3	100.6	0.001	0.005	0.0062	13.8	1.38	
MC1	2020-05-25 9:15	135	277	145	7.88	171	9.4	0.2	92.5	0.001	0.005	0.005	17.7	1.53	
MC1	2020-06-01 9:05	131	285	135.8	7.65	182	19.7	0.2	90.1	0.001	0.005	0.005	19.2	1.52	
MC1	2020-06-08 16:35	128	276	209.7	7.96	180	30.5	1.1	88.9	0.001	0.0128	0.0067	18.1	1.36	
MC1	2020-06-15 9:00	161	319	157.2	8.12	205	10.8	0.5	82.5	0.001	0.0556	0.0099	19.9	1.7	
MC1	2020-06-24 11:20	149	312	213.4	7.88	199	10.6	1.7	109.6	0.001	0.0928	0.0151	18.3	1.28	
MC1	2020-07-01 10:50	170	359	210.6	7.78	221	3	3.1	95.6	0.001	0.109	0.0082	22.7	1.87	
MC1	2020-07-08 8:55	158	340	189.3	7.95	210	62.8	2.3	86.9	0.001	0.0571	0.0117	19.9	1.39	
MC1	2020-07-13 9:50	162	317	171.4	7.78	205	14	3.4	87.9	0.001	0.0485	0.008	16.1	1.14	
MC1	2020-07-20 8:00	140	297	150.7	8	196	88	5.1	91.5	0.001	0.05	0.0102	16.2	1.11	
MC1	2020-07-27 7:50	158	333	155	7.71	209	53.7	4.3	90.3	0.001	0.0901	0.0075	18.5	1.67	
MC1	2020-08-03 9:00	160	328	253.6		208	4.8	4.2	91.8	0.001	0.0638	0.0126	18.8	1.37	
MC1	2020-08-10 14:15	175	341	244.9		222	12.9	4.7	84.5	0.001	0.0425	0.0076	19	1.34	
MC1	2020-08-17 14:45	159	316	145.6	7.84	208	59.7	4.8	93.8	0.0013	0.0252	0.0115	16.5	1.07	
MC1	2020-08-24 15:15	152	301	190.9	7.87	202	101	5.1	93.6	0.001	0.0186	0.0091	15	1.06	
MC1	2020-08-31 10:50	137	295	188.9	7.92	204	19	4.1	89.5	0.001	0.0131	0.0246	15.2	1.1	
MC1	2020-09-07 14:15	144	298	198.7	7.48	197	4.4	3.4	85.7	0.001	0.005	0.0053	16.6	1.23	
MC1	2020-09-14 11:55	138	290	217.6	8.3	190	12.3	0.4	107.8	0.001	0.025	0.0082	17	1.31	
MC1	2020-09-21 8:45	144	284	170.9	7.91	196	7.5	0	84.8	0.0016	0.0122	0.0224	17.2	1.31	
MC1	2020-09-28 10:00	142	290	171.9	7.74	190	7.8	0.8	86.7	0.001	0.0241	0.0061	16.9	1.28	
MC1	2020-10-07 12:12	127	263	231.2	7.57	180	41.1	0.8	95.7	0.001	0.0265	0.0132	15.7	1.29	
MC1	2020-10-12 9:35	143	316	202.1	8.04	212	3	0.4	101.3	0.001	0.147	0.0129	26.8	2	
MC1	2021-04-30 17:00	37.6	98			109	1.7			0.001	0.005	0.0121	2.97	0.61	
MC1	2021-05-04 9:45	27.2	70.2	217	6.95	90.5	2.3	0	100.3	0.001	0.005	0.0109	1.57	0.33	
MC1	2021-05-10 9:05	35.9	82.9	143.4	7.25	85.2	15.1	0	98.4	0.001	0.005	0.0122	2.56	0.38	
MC1	2021-05-21 8:00	71.6	159	134.4	7.57	121	10.6	0	90	0.001	0.005	0.0121	7.3	0.72	
MC1	2021-05-25 16:55	54.1	121	183.4	7.27		130	0.2	91.7	0.001	0.0164	0.0461	5.17	0.58	
MC1	2021-05-31 9:15	78.7	180	212.4	7.14	134	127	0.3	94.9	0.0081	0.138	0.0217	8.82	0.84	
MC1	2021-06-07 15:00	97.4	208	159.4	7.31	149	11.7	2.5	121.7	0.001	0.0317	0.0121	12	1.1	
MC1	2021-06-16 16:25	128	272	124.7	8.13	175	15.1	4.6	93.3	0.001	0.0542	0.0076	16.3	1.27	
MC1	2021-06-22 14:15	140	291	164.1	8.12	190	6.7	4.1	92.7	0.001	0.0728	0.0073	17.1	1.35	
MC1	2021-06-28 14:40	146	317	137.5	7.79	201	14.3	5.7	90.3	0.001	0.0713	0.0091	18.5	1.52	0.394
MC1	2021-07-08 9:35	161	331	102.1	8.17	218	14.6	5.2	92	0.001	0.0839	0.0067	21.6	1.86	
MC1	2021-07-13 8:40	161	333	151.7	7.6	209	3.3	4	93.6	0.001	0.0808	0.0063	21.1	1.78	
MC1	2021-07-20 10:25	180	342	105.9	8.16	224	5.7	5.6	96	0.001	0.0718	0.0069	21.2	1.92	
MC1	2021-07-28 8:50	162	317	89.7	8.11	221	2.9	5.7	103.3	0.001	0.0691	0.0061	20.1	1.65	
MC1	2021-08-03 10:55	173	370	133.4	7.9	222	2.1	7.2	88.4	0.001	0.0675	0.0063	21.5	1.76	
MC1	2021-08-10 15:20	155	310	144.1	7.78	198	14	5.7	109.6	0.001	0.0356	0.0065	14.6	1.11	
MC1	2021-08-16 10:40	158	324	121.8	7.76	199	3.9	4.1	93.2	0.001	0.0436	0.0063	15.2	1.16	
MC1	2021-08-24 9:50	158	337	117.5	8.21	202	1.1	3.4	91.8	0.001	0.0501	0.0051	16.8	1.34	
MC1	2021-08-29 9:30	162	334	118.3	8.26	212	1.2	4.3	101.1	0.001	0.0404	0.0058	17.3	1.4	
MC1	2021-09-07 8:40	165	334	113.4	8.14	210	1	3.2	97.3	0.001	0.005	0.005	17.7	1.44	
MC1	2021-09-13 15:25	168	340	181.4	7.62	211	1	2.8	95	0.001	0.005	0.005	16.7	1.39	
MC1	2021-09-20 10:30	163	321	129.3	8.18	204	6.8	0	104.1	0.001	0.0151	0.005	17.5	1.46	
MC1	2021-09-26 9:50	142	307	105.5	8.05	182	7.5	1.5	101.1	0.001	0.0304	0.005	14.5	1.84	
MC1	2021-10-09 15:00			64.7	7.98			0	105.6			0.005			
MC1	2021-10-11 9:00	153	328	94.1	7.73	200	3.4	0.1	106.3	0.001	0.0611	0.0051	17.4	1.39	
MC1	2021-10-17 14:15	162	333	12.8	7.44	211	1	0	89	0.001	0.0713	0.0054	18.4	1.51	
MN	2015-11-12 14:30	223	1990	49.6	8.13	1550	142	0.2	92.8	11.9	183	6.4	27.9	16	0.27
MN	2015-12-28 16:50	140	3250	49	7.74	2190	101	1.8	98.7	8.17	342	51	90.7	6.6	0.82
MN	2016-02-27 15:27	83.8	1030	65.6	7.69	854	134	1.4	96.1	2.32	97.1	6.2	32.3	2	1.7
MN	2016-03-31 9:15	171	2900	202.9	7.58	2020	29.3	2.3	60.8	7.55	300	23.4	59.7	5	
MN	2016-04-29 17:15	122	2010		8.6	1350	24	1.9		6.94	183	10.1	76.9	4.7	
MN	2016-05-27 13:10	132	1370		8.3	953	10.7	8.8		3.81	122	8.68	63.8	2.5	
MN	2016-06-30 9:00	127	1410	146.2	7.72	998	111	17.2	62.2	1.52	105	9.49	173	3.2	
MN	2016-07-28 11:00	56	984	124.4	7.73		115	8	82.2	1.4	77.1	3.93	118	4.9	2.48
MN	2016-08-25 15:15	112	790	131.4	7.26	537	3	18.4	80.8	0.644	49.5	5.91	92.2	2.41	
MN	2016-09-25 14:00	231	1860	191.3	7.03	1550	8.3	9.8	85.4	14.7	173	25.2	193	9.1	
MN	2016-10-01 12:30	94.9	333	166.9	7.8	219	6	6.7	97.7	0.345	14.2	1.45	26.7	1.07	
MN	2017-10-09 15:00	80.3	556	173	7.9	362	29.7	4	90.2	0.105	25.9	0.612	89.7	1.81	
MN	2018-05-26 10:50	64.5	398		7.6	259	3.4	11.6		0.055	15.7	0.209	70.2	1.17	
MN	2018-06-18 9:40	96.5	593	177.6	7.84	398	1040	16.3	67.2	0.03	26.5	0.166	100	1.88	
MN	2018-07-15 15:15	72.2	438	175.2	8.01	277	3.3	15.8	102.3	0.0712	17	0.175	76.1	1.25	
MN	2018-08-21 16:40	142	524	-54	7.71	314	55.9	15.3	42.4	0.318	7.71	7.1	86.3	2.22	
MN	2018-09-25 16:10	89	481	240.4	7.96	299	14.8	7.5	61.7	0.303	14.9	1.47	85.3	1.66	
MN	2019-05-20 14:30	99.7	544	173.4	7.49	368	10.8	16.1	68.6	0.0221	20.2	0.0508	101	1.72	
MN	2019-06-30 11:15	76.8	402	191.1	8.42	287	3	18.9	87.9	0.0674	14	0.0386	77.9	1.17	
MN	2019-07-17 9:20	78.4	454	159.3	8.22	280	3	15.7	80	0.0598	14.6	0.0383	81	1.23	
MN	2019-08-05 13:30	81.7	480	97.6	8.44	294	3	15.4	79.5	0.0494	15.9	0.0245	86	1.25	
MN	2019-09-19 11:30	89.6	500	245.5	7.82	324	4.1	9.4	68.8	0.0199	16.8	0.0204	96.8	1.34	
MN	2019-10-12 11:00	93.4	498	159.6	7.27	346	3	3.7	73.2	0.0126	16.9	0.029	101	1.37	
MN	2020-05-17 15:00	62.2	303	152	8.02	200	3	5.6	78.8	0.042	6.48	0.0947	63.7	0.6	
MN	2020-06-07 14:15	64.1	358	1521	7.6	226	3	12.8	73.7	0.0496	8.79	0.0633	71.3	0.9	
MN	2020-07-19 9:35	76.2	395	166.7	7.78	260	3	14.6	64	0.0578	9.7	0.0141	77.5	0.9	
MN	2020-08-31 14:10	82.5	443	192.7	7.84	294	3	11.4	74.6	0.0221	11	0.0257	87.3	1.03	
MN	2020-09-23 13:45	87.6	453	144.3	8.34	296	3.4	6.8	68.7	0.0155	11.9	0.016	92.2	1.1	
MN	2021-05-21 14:00	57.9	275	193.3	7.55	173	8.8	3.7	81.1	0.0273	5.43	0.0276	51.3	0.51	
MN	2021-06-13 11:00	69.3	326	172.8	7.59	207	1.2	12.7	90.3	0.0319	6.86	0.0155	61.6	0.69	
MN	2021-07-22 16:30	80.1	338	101.6	8.21	214	1	15.9	57.8	0.0517	6.79	0.0156	62.2	0.71	
MN	2021-08-14 15:40	80.2	380	133.1	8.39	220	1.2	14.8	77.4	0.0361	7.18	0.0118	66.1	0.76	
MN	2021-09-16 15:10	86.5	394	960	8.23	248	1	9.3	82.1	0.0169	8.42	0.0084	76	0.87	
MN	2021-10-09 14:25	92	438	80.4	8.46	264	1	5	93.6	0.0077	9.14	0.007	81.9	1.21	
MN	2021-11-07 16:00	97.4	455	54.7	8.28	294	3	0.7	93.3	0.0202	9.95	0.0127	88.9	1.02	
MN-0.2	2012-04-19 0:00	11.3	54.6			90	1.7			0.005	0.02	0.0071	0.5	1.6	0.057
MN-0.2	2012-05-24 0:00	30.6	64.4			70	1.7				0.23	0.032	0.5	1.4	0.12
MN-0.2	2012-06-14 0:00	16	49.4			42	155					0.02	5	5	0.11
MN-0.2	2012-07-12 0:00	32.2	68.7			64	10.4					0.034	0.5	0.75	0.12
MN-0.2	2012-08-06 0:00	43.8	87			88	15.3			0.005	0.02	0.011	0.5	1	0.13
MN-0.2	2012-09-07 0:00	42.9	84.2			86	7.2			0.005	0.02	0.007	0.5	1.1	0.13
MN-0.2	2012-10-01 0:00	34.1	72.9			78	1			0.005	0.02	0.012	0.5	0.72	0.11
MN-0.2	2013-05-27 0:00	24.4	54.7			52	2.9			0.005	0.02	0.019	0.5	1.2	0.09
MN-0.2	2013-06-17 0:00	27	59.5			62	1.9			0.005	0.02	0.019	0.5	0.72	0.085
MN-0.2	2013-07-15 0:00	32.5	65.9			62	42.1			0.005	0.02	0.022	0.5	0.66	0.12
MN-0.2	2013-08-28 0:00	32.2	71.5			48	1.6			0.002	0.002	0.034	0.5	0.7	0.12
MN-0.2	2013-09-11 10:45	38.1	80			70	2.2					0.037	0.5	0.88	0.12
MN-0.2	2013-10-16 13:20	38.3	78.1	-27.2	6.78	64	2.1	0.1	54.4	0.005	0.02	0.016	0.5	0.79	0.097
MN-0.2	2014-05-16 16:30	23.9	51.9	161.7	7.2	52	4.2	2.8	53.6	0.005	0.02	0.041	0.5	0.83	0.12
MN-0.2	2014-06-03 11:00	25.9	56.7	88.5	6.23	66	21.8	1.3	63.2	0.005	0.02	0.024	0.5	0.78	0.098
MN-0.2	2014-07-26 16:30	30.1	65.4	65.6	7.64	57	2.6	6.3	66.3	0.005	0.02	0.012	0.5	0.5	0.11
MN-0.2	2014-08-18 10:05				7.8			6.6							
MN-0.2	2014-09-20 15:45	34.1	67.4	88.6	7.1	52	1	3.6	60.9	0.005	0.02	0.0081	0.5	0.55	0.1
MN-0.2	2014-10-11 16:00	32.1	69.2	79.1	7.33	58	100	-1.3	66.2	0.005	0.02	0.019	0.5	1.1	0.097
MN-0.2	2015-05-30 10:20	28.2	56.9	140.9	6.5	55	9.1	4.4	66.8	0.005	0.02	0.026	0.5	0.75	0.1
MN-0.2	2015-06-30 14:30	30.9	79.9			80	4			0.005	0.02	0.023	0.5	0.73	0.11
MN-0.2	2015-07-13 17:30	27.3	58.8	138.6	6.66	56	1	6.5	69.2	0.005	0.02	0.066	0.5	0.5	0.11
MN-0.2	2015-08-31 11:35	24.7	61.8	104.1	8.57	80	14.5	2.4	86.7	0.005	0.02	0.02	0.57	0.94	0.11
MN-0.2	2015-09-21 11:00	30.6	76	16.9	8.07	76	1.9	0.9	95.5	0.005	0.02	0.057	0.5	1	0.12
MN-0.2	2015-10-19 10:55	31.8	84.1	-33.8	7.81	80	1.2	0		0.005	0.02	0.03	2.9	0.9	0.11
MN-0.2	2015-12-06 12:00	52.9	112	-66.3	7.57	90	60	0	34.7			0.11	0.5	1.3	0.092
MN-0.2	2016-04-30 17:00	31.2	114.6	97.6	7.34	56.8	9.4	0.2	94.4	0.002	0.01	0.0164	10.9	1	

Station	Date / Time	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
		Dissolved Elements																			
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MC1	2019-10-22 13:35	0.00001	0.0027	0.00046	0.0655	0.01	0.00002	0.00005	45.6	0.000005	0.0001	0.00014	0.00115	0.06	0.000005	1.48	0.0016	17.5	0.0101	0.0018	12.2
MC1	2019-10-28 13:50	0.00001	0.0029	0.00034	0.0745	0.01	0.00002	0.00005	54.5	0.0000359	0.0001	0.0001	0.00142	0.039	0.000005	1.69	0.0018	20.6	0.0115	0.00311	12.4
MC1	2020-04-26 9:20	0.00001	0.0934	0.00054	0.0331	0.01	0.00002	0.00005	19.2	0.0000343	0.0001	0.00053	0.019	0.157	0.0000127	1.86	0.001	7.14	0.00546	0.000438	4.02
MC1	2020-05-03 11:05	0.00001	0.121	0.00048	0.0276	0.01	0.00002	0.00005	13.8	0.0000118	0.00011	0.00064	0.0138	0.169	0.0000131	1.09	0.001	4.48	0.00378	0.000282	2.53
MC1	2020-05-10 10:45	0.00001	0.0492	0.00049	0.0326	0.01	0.00002	0.00005	16	0.0000067	0.00013	0.00053	0.00764	0.212	0.000005	0.899	0.001	5.35	0.00998	0.000496	3.7
MC1	2020-05-17 13:05	0.00001	0.0161	0.0006	0.0448	0.01	0.00002	0.00005	28.3	0.000007	0.00012	0.00034	0.00451	0.097	0.000005	1.19	0.001	11.2	0.0295	0.00111	7.8
MC1	2020-05-25 9:15	0.00001	0.0079	0.00066	0.0529	0.01	0.00002	0.00005	33.4	0.0000062	0.0001	0.00021	0.00255	0.103	0.000005	1.5	0.0014	13.1	0.0325	0.00137	9.28
MC1	2020-06-01 9:05	0.00001	0.0075	0.00066	0.0498	0.01	0.00002	0.00005	33.1	0.000005	0.0001	0.00023	0.00284	0.105	0.000005	1.24	0.0013	12.4	0.0222	0.00146	8.67
MC1	2020-06-08 16:35	0.00001	0.0082	0.00067	0.0489	0.01	0.00002	0.00005	33.6	0.000005	0.00012	0.00022	0.00255	0.122	0.000005	1.12	0.0012	12	0.0611	0.0016	8.8
MC1	2020-06-15 9:00	0.00001	0.0062	0.00059	0.0565	0.01	0.00002	0.00005	38.9	0.000005	0.0001	0.00016	0.00175	0.125	0.000005	1.24	0.0014	13.9	0.0731	0.00188	9.34
MC1	2020-06-24 11:20	0.00001	0.006	0.00056	0.0556	0.01	0.00002	0.00005	39	0.000005	0.0001	0.00024	0.00199	0.069	0.000005	1.22	0.0013	14.7	0.0239	0.0018	9.64
MC1	2020-07-01 10:50	0.00001	0.0036	0.0005	0.0604	0.01	0.00002	0.00005	41.4	0.000005	0.0001	0.00021	0.00154	0.048	0.000005	1.43	0.0016	16.1	0.00627	0.00203	11.2
MC1	2020-07-08 8:55	0.00001	0.0096	0.00053	0.0625	0.01	0.00002	0.00005	41.3	0.000005	0.0001	0.00019	0.00235	0.079	0.000005	1.27	0.0016	14.5	0.0157	0.00196	10.1
MC1	2020-07-13 9:50	0.00001	0.0088	0.00053	0.0557	0.01	0.00002	0.00005	40.1	0.000005	0.0001	0.00025	0.00244	0.077	0.000005	1.13	0.0015	13.8	0.00864	0.00182	9.15
MC1	2020-07-20 8:00	0.00001	0.008	0.00061	0.059	0.01	0.00002	0.00005	40.7	0.000005	0.0001	0.00029	0.00232	0.083	0.000005	1.15	0.0014	13.5	0.00513	0.0018	9.68
MC1	2020-07-27 7:50	0.00001	0.0077	0.0006	0.0616	0.01	0.00002	0.00005	38	0.000005	0.0001	0.00024	0.00224	0.078	0.000005	1.26	0.0015	15.2	0.00666	0.00163	10.1
MC1	2020-08-03 9:00	0.00001	0.0916	0.0007	0.0616	0.01	0.00002	0.00005	37.9	0.0000056	0.00015	0.00044	0.00256	0.288	0.000005	1.14	0.0015	13.6	0.0256	0.0017	9.32
MC1	2020-08-10 14:15	0.00001	0.0071	0.00065	0.062	0.011	0.00002	0.00005	42.1	0.000005	0.0001	0.00026	0.00192	0.087	0.000005	1.23	0.0016	15	0.00857	0.00174	10.3
MC1	2020-08-17 14:45	0.00001	0.0093	0.00059	0.0579	0.01	0.00002	0.00005	40.1	0.000005	0.0001	0.00033	0.00216	0.095	0.000005	1.05	0.0014	13.2	0.0109	0.00156	9.53
MC1	2020-08-24 15:15	0.00001	0.0085	0.00057	0.0594	0.01	0.00002	0.00005	39.1	0.000005	0.0001	0.00028	0.00207	0.104	0.000005	1.08	0.0013	14.5	0.0088	0.00147	8.96
MC1	2020-08-31 10:50	0.00001	0.0109	0.00054	0.0594	0.01	0.00002	0.00005	45.8	0.000005	0.0001	0.0004	0.00256	0.109	0.000005	1.03	0.0013	16.2	0.0112	0.00146	11
MC1	2020-09-07 14:15	0.00001	0.0074	0.00058	0.0582	0.01	0.00002	0.00005	38.4	0.000005	0.0001	0.0003	0.00213	0.128	0.000005	1.12	0.0012	13.8	0.0143	0.00146	8.89
MC1	2020-09-14 11:55	0.00001	0.0089	0.00056	0.0527	0.01	0.00002	0.00005	35.9	0.000005	0.0001	0.00028	0.0021	0.134	0.000005	0.92	0.0012	12.7	0.0158	0.00133	8.33
MC1	2020-09-21 8:45	0.00001	0.0076	0.00056	0.0521	0.01	0.00002	0.00005	38.4	0.000005	0.0001	0.00036	0.00192	0.125	0.000005	0.971	0.0013	13.6	0.0195	0.00138	8.66
MC1	2020-09-28 10:00	0.00001	0.0068	0.00059	0.0513	0.01	0.00002	0.00005	34.7	0.000005	0.0001	0.00029	0.00181	0.107	0.000005	1.01	0.0012	13.7	0.0179	0.00137	8.47
MC1	2020-10-07 12:12	0.00001	0.0106	0.00053	0.0455	0.01	0.00002	0.00005	34.1	0.000005	0.0001	0.00036	0.00225	0.111	0.000005	0.873	0.0011	12.7	0.0144	0.00117	7.62
MC1	2020-10-12 9:35	0.00001	0.0082	0.00056	0.0566	0.01	0.00002	0.00005	40.7	0.0000076	0.0001	0.00026	0.00283	0.108	0.000005	1.13	0.0013	15.7	0.0147	0.00167	8.9
MC1	2021-04-30 17:00	0.00001	0.0694	0.00036	0.0251	0.01	0.00002	0.00005	14.1	0.0000228	0.0001		0.0125	0.106	0.0000057	1.84	0.001	4.84	0.00871	0.000325	2.24
MC1	2021-05-04 9:45	0.00001	0.116	0.00031	0.0215	0.01	0.00002	0.00005	10.9	0.0000139	0.0001	0.00052	0.0145	0.142	0.000005	1.55	0.001	3.65	0.00494	0.000232	1.41
MC1	2021-05-10 9:05	0.00001	0.0842	0.00044	0.0248	0.01	0.00002	0.00005	12.4	0.0000072	0.00013		0.0102	0.212	0.0000061	1.18	0.001	3.76	0.00743	0.000314	2.18
MC1	2021-05-21 8:00	0.00001	0.0297	0.00059	0.0359	0.01	0.00002	0.00005	20.5	0.0000078	0.00013		0.00608	0.194	0.000005	0.863	0.001	7.58	0.0146	0.000807	4.89
MC1	2021-05-25 16:55	0.00001	0.0606	0.00069	0.0342	0.01	0.00002	0.00005	16.7	0.0000066	0.00022		0.00738	0.399	0.0000052	0.589	0.001	6.11	0.0726	0.000594	3.71
MC1	2021-05-31 9:15	0.00001	0.0294	0.00065	0.0418	0.01	0.00002	0.00005	22.8	0.0000077	0.00022		0.00491	0.289	0.000005	0.756	0.001	7.96	0.108	0.00104	6.82
MC1	2021-06-07 15:00	0.00001	0.0176	0.00056	0.0437	0.01	0.00002	0.00005	26.1	0.000005	0.00011		0.00364	0.143	0.000005	0.81	0.001	8.68	0.0198	0.00121	6.31
MC1	2021-06-16 16:25	0.00001	0.0082	0.00057	0.0505	0.01	0.00002	0.00005	31.7	0.000005	0.0001	0.0005	0.0026	0.086	0.000005	1.02	0.0012	11.6	0.00707	0.00152	7.68
MC1	2021-06-22 14:15	0.00001	0.01	0.00055	0.0614	0.01	0.00002	0.00005	35.6	0.000005	0.0001	0.0005	0.0024	0.085	0.000005	1.22	0.0012	13.9	0.00615	0.00161	8.87
MC1	2021-06-28 14:40	0.00001	0.0134	0.00061	0.0606	0.01	0.00002	0.00005	39.9	0.000005	0.0001	0.0005	0.00253	0.088	0.000005	1.23	0.0014	14.8	0.00624	0.00166	9.53
MC1	2021-07-08 9:35	0.00001	0.0067	0.00059	0.0679	0.01	0.00002	0.00005	42.7	0.000005	0.0001	0.0005	0.00198	0.067	0.000005	1.42	0.0016	16.4	0.0055	0.00202	10.3
MC1	2021-07-13 8:40	0.00001	0.005	0.00056	0.0595	0.01	0.00002	0.00005	39.9	0.000005	0.0001	0.0005	0.00161	0.061	0.000005	1.26	0.0014	14.7	0.00387	0.00182	9.46
MC1	2021-07-20 10:25	0.00001	0.0084	0.00056	0.0644	0.01	0.00002	0.00005	39.3	0.0000122	0.0001	0.0005	0.0021	0.068	0.000005	1.37	0.0015	16.1	0.00357	0.00176	10.1
MC1	2021-07-28 8:50	0.00001	0.0056	0.0006	0.0689	0.01	0.00002	0.00005	45.1	0.000005	0.0001	0.0005	0.00229	0.065	0.000005	1.46	0.0016	17.8	0.0044	0.00179	10.8
MC1	2021-08-03 10:55	0.00001	0.0047	0.00068	0.062	0.01	0.00002	0.00005	41.6	0.000005	0.0001	0.0005	0.00159	0.061	0.000005	1.4	0.0016	15.3	0.00307	0.00193	10.4
MC1	2021-08-10 15:20	0.00001	0.0068	0.00059	0.0545	0.01	0.00002	0.00005	38.2	0.000005	0.0001	0.0005	0.00186	0.079	0.000005	1.08	0.0014	14	0.00762	0.00169	8.97
MC1	2021-08-16 10:40	0.00001	0.0096	0.00053	0.056	0.01	0.00002	0.00005	35.8	0.000005	0.0001	0.0005	0.0023	0.097	0.000005	1.1	0.0013	14.4	0.00719	0.00156	8.93
MC1	2021-08-24 9:50	0.00001	0.0072	0.00058	0.0568	0.01	0.00002	0.00005	38	0.000005	0.0001	0.0005	0.0016	0.089	0.000005	1.19	0.0014	14.3	0.0071	0.00175	9.66
MC1	2021-08-29 9:30	0.00001	0.0069	0.00058	0.0574	0.01	0.00002	0.00005	43	0.000005	0.0001	0.0005	0.0019	0.089	0.000005	1.27	0.0015	14.5	0.00685	0.00161	9.65
MC1	2021-09-07 8:40	0.00001	0.005	0.00058	0.062	0.01	0.00002	0.00005	39.7	0.000005	0.0001	0.0005	0.00164	0.083	0.000005	1.35	0.0014	15.4	0.00675	0.00165	9.46
MC1	2021-09-13 15:25	0.00001	0.0125	0.00056	0.0585	0.01	0.00002	0.00005	41.1	0.000005	0.0001	0.0005	0.00211	0.078	0.000005	1.37	0.0015	14.8	0.00696	0.00176	9.4
MC1	2021-09-20 10:30	0.00001	0.0045	0.00049	0.0556	0.01	0.00002	0.00005	36.9	0.000005	0.0001	0.0005	0.0014	0.064	0.000005	1.28	0.0013	14.3	0.00654	0.00163	9.43
MC1	2021-09-26 9:50	0.00001	0.0068	0.0005	0.0482	0.01	0.00002	0.00005	33.4	0.000005	0.0001	0.0005	0.00138	0.07	0.000005	1.22	0.0016	12.2	0.0065	0.0016	9.89
MC1	2021-10-09 15:00	0.00001	0.0058	0.00054	0.0594	0.01	0.00002	0.00005	36.7	0.000005	0.0001	0.0005	0.00159	0.076	0.000005	1.16	0.0012	14.7	0.0108	0.00146	9.57
MC1	2021-10-11 9:00	0.00001	0.0058	0.0005	0.0535	0.01	0.00002	0.00005	37.6	0.000005	0.0001	0.0005	0.00155	0.064	0.000005	1.17	0.0014	14.9	0.00542	0.00151	9.39
MC1	2021-10-17 14:15	0.00001	0.0042	0.00048	0.0571	0.01	0.00002	0.00005	40.9	0.000005	0.0001	0.0005	0.00176	0.068	0.000005	1.26	0.0014	14.6	0.00898	0.00153	9.79
MN	2015-11-12 14:30	0.00483	0.009	0.0002	0.225	0.809	0.0001	0.001	278	0.000035	0.00427		0.0945	0.241	0.000348	5.52	0.005	45.3	1.51	0.0077	24.7
MN	2015-12-28 16:50	0.000124	0.0241	0.00036	0.359	0.605	0.0001	0.001	392	0.00001	0.00743		0.276	0.449	0.00001	7.85	0.0139	67.7	0.643	0.0164	36.9
MN	2016-02-27 15:27		0.0266	0.00041	0.0708	0.177	0.0001	0.001	130	0.00001	0.00086		0.199	0.0601	0.00001	3.39	0.0077	16.6	0.0765	0.0384	21.2
MN	2016-03-31 9:15		0.0044	0.00051	0.355	0.444	0.00004	0.0001	359	0.000283	0.00176		0.327	0.087	0.0000146	11.6	0.0175	50.8	0.522	0.0112	56.7
MN	2016-04-29 17:15		0.0035	0.00047	0.277	0.591	0.00004	0.0001	229	0.000013	0.00105		0.158	0.03	0.000005	9.75	0.0161	22	0.0878	0.0213	87
MN	2016-05-27 13:10	0.00001	0.0032	0.00077	0.107	0.346	0.00002	0.00005	178	0.000071	0.00046	0.0001	0.0407	0.012	0.000005	7.09	0.0143	20.5	0.0765	0.0136	44.3
MN	2016-06-30 9:00	0.00001	0.0025	0.0008	0.0718	0.356	0.00002	0.00005	188	0.0000404	0.00046	0.0001	0.0156	0.019	0.000005	5.98	0.0146	23.6	0.127	0.0201	47.6
MN	2016-07-28 11:00	0.00001	0.0091	0.00096	0.0853	0.168	0.00002	0.00005	114	0.0000271	0.00022	0.0001	0.0119	0.01		6.83	0.0083	14	0.0618	0.0319	52
MN	2016-08-25 15:15	0.00001	0.0033	0.00046	0.0422	0.13	0.00002	0.00005	96.9	0.000137	0.00047	0.0001	0.0594	0.01	0.000005	4.12	0.0098	12.8	0.111	0.0219	33.2
MN	2016-09-25 14:00	0.000015	0.0031	0.00142	0.187	1.47	0.000022	0.00005	262	0.0000271	0.00122	0.0001	0.562	0.221	0.000005	6.2	0.0234	41.4	0.13	0.0134	51.9
MN	2016-10-01 12:30	0.00001	0.0069	0.00064	0.0247	0.152	0.00002	0.00005	40.1	0.0000162	0.00012	0.0001	0.0243	0.01	0.000005	2.14	0.0029	5.9	0.0097	0.0316	20
MN	2017-10-09 15:00	0.00001	0.0031	0.00043	0.0349	0.103	0.00002	0.00005	65.7	0.0000733	0.0001	0.00047	0.0314	0.01	0.000005	3.82	0.005	9.56	0.0351	0.0228	26.3
MN	2018-05-26 10:50	0.00001	0.0018	0.00041	0.0288	0.059	0.00002	0.00005	50.1	0.000061	0.0001	0.0001	0.0199	0.01	0.000005	3.07	0.0036	7.67	0.0213	0.0176	18.3
MN	2018-06-18 9:40	0.00001	0.0098	0.00038	0.0441	0.103	0.00002	0.00005	75.5	0.000118	0.00021	0.0001	0.1	0.015	0.000005	4.5	0.0059	11.1	0.08	0.0259	29
MN	2018-07-15 15:15	0.00001	0.0049	0.0004	0.0236	0.067	0.00002	0.00005	51.4	0.0000505	0.0001	0.0001	0.0196	0.01	0.000005	3.4	0.0042	7.5	0.0214	0.0187	18.8
MN	2018-08-21 16:40	0.00001	0.0196	0.00035	0.0337	0.083	0.00002	0.00005	58.7	0.0000312	0.0001	0.0001	0.00837	0.046	0.0000083	4.48	0.0047	9.19	0.0493	0.0165	23.7
MN	2018-09-25 16:10	0.00001	0.0039	0.00047	0.0294	0.075	0.00002	0.00005	57.5	0.0000713	0.0001	0.0001	0.0117	0.01	0.000005	4.3	0.0045	8.54	0.0192	0.0193	19.8
MN	2019-05-20 14:30	0.00001	0.0114	0.00046	0.0339	0.08	0.00002	0.00005	75.1	0.000152	0.0001	0.0001	0.0373	0.013	0.000005	4.94	0.0052	11	0.0155	0.0239	24.8
MN	2019-06-30 11:15	0.00001	0.0046	0.00047	0.0343	0.073	0.00002	0.00005	62	0.0000941	0.0001	0.0001	0.0206	0.01	0.000005	4.75	0.0047	9.3	0.0214	0.0219	23.5
MN	2019-07-17 9:20	0.00001	0.0139	0.00051	0.0245	0.064	0.00002	0.00005	57.4	0.0000329	0.0001	0.0001	0.0104	0.014	0.000005	4.09	0.0044	7.15	0.00151	0.0225	17.1
MN	2019-08-05 13:30	0.00001	0.0061	0.00057	0.0254	0.06	0.00002	0.00005	54.8	0.0000361	0.0001	0.0001	0.0123	0.01	0.000005	4.3	0.004	8.62	0.001	0.0213	19.7
MN	2019-09-19 11:30	0.00001	0.0054	0.00048	0.0286	0.071	0.00002	0.00005	62.2	0.0000386	0.0001	0.0001	0.0132	0.01	0.000005	4.57	0.0047	8.9	0.00303	0.0223	22
MN	2019-10-12 11:00	0.00001	0.0048	0.00049	0.033	0.069	0.00002	0.00005	72.7	0.0000562	0.0001	0.0001	0.0176	0.01	0.000005	4.98	0.005	11	0.00719	0.0238	23.5
MN	2020-05-17 15:00	0.00001	0.0075	0.00041	0.0215	0.028	0.00002	0.00005	41.6	0.0000303	0.0001	0.0001	0.0106	0.013	0.000005	2.85	0.0028	6.78	0.00591	0.0116	13
MN	2020-06-07 14:15	0.00001	0.0028	0.00039	0.0184	0.04	0.00002	0.00005	47	0.00004	0.0001	0.0001	0.00953	0.01	0.000005	2.96	0.003	6.36	0.00118	0.0141	14.3
MN	2020-07-19 9:35	0.00001	0.0078	0.00046	0.0244	0.039	0.00002	0.00005	58.3	0.0000237	0.0001	0.0001	0.00772	0.01	0.000005	3.92	0.0038	7.32	0.00144	0.0174	16.5
MN	2020-08-31 14:10	0.00001	0.0138	0.0004	0.0275	0.047	0.00002	0.00005	63.8	0.0000369	0.0001	0.0001	0.00976	0.012	0.000005	4.21	0.0042	9.91	0.00304	0.0218	22.2
MN	2020-09-23 13:45	0.00001	0.0062	0.00044	0.0273	0.051	0.00002	0.00005	57.9	0.0000391	0.0001	0.00015	0.0115	0.01	0.000005	4.19	0.0043	8.66	0.00326	0.0207	19.4
MN	2021-05-21 14:00	0.00001	0.0038	0.00035	0.0199	0.024	0.00002	0.00005	38.1	0.00003	0.0001		0.00859	0.01	0.000005	2.35	0.0023	5.84	0.00554	0.0127	10.7
MN	2021-06-13 11:00	0.00001	0.003	0.00038	0.0216	0.031	0.00002	0.00005	43.2	0.000023	0.0001	0.0005	0.00915	0.01	0.000005	3.13	0.003	6.38	0.00172	0.0167	13.3
MN	2021-07-22 16:30	0.00001	0.0061	0.00049	0.0194	0.031	0.00002	0.00005	43.4	0.0000173	0.0001	0.0005	0.00559	0.01	0.000005	3.43	0.0032	6.28	0.00074	0.0197	12.9
MN	2021-08-14 15:40	0.00001	0.0125	0.00044	0.0205	0.032	0.00002	0.00005	42.4	0.0000184	0.0001	0.0005	0.00562	0.01	0.000005	3.59	0.003	6.72	0.00084	0.0196	13.5
MN	2021-09-16 15:10	0.00001	0.0079	0.00046	0.0242	0.037	0.00002	0.00005	47.8	0.000025	0.0001	0.0005	0.00681	0.01	0.000005	4.21	0.0036	6.99	0.00067	0.021	15.7
MN	2021-10-09 14:25	0.00001	0.0212	0.00044	0.0236	0.038	0.00002	0.00005	49.5	0.0000355	0.0001	0.0005	0.0106	0.017	0.000005	3.89	0.0039	7.54	0.0042	0.0208	16.8
MN	2021-11-07 16:00	0.00001	0.0067	0.00049	0.0273	0.042	0.00002	0.00005	60.6	0.000055	0.0001	0.0005	0.0107	0.01	0.000005	4.94	0.004	8.98	0.00185	0.0231	19.4
MN-0.2	2012-04-19 0:00	0.000005	0.0765	0.000262	0.0222	0.05	0.000011	0.000005	6.19	0.0000387	0.000185	0.00026	0.00504	0.222	0.00001	1.86	0.0005	2.34	0.0473	0.000055	1.91
MN-0.2	2012-05-24 0:00	0.000005	0.0445	0.000515	0.0362	0.05	0.000015	0.000005	7.43	0.000016	0.000319	0.00032	0.00251	0.435	0.00001	0.835	0.0005	2.43	0.137	0.000506	2.43
MN-0.2	2012-06-14 0:00	0.000005	0.134	0.000503	0.0339	0.05	0.00002	0.000005	6.43	0.0000305	0.000618	0.00055	0.00288	0.811	0.00001	0.421	0.0005	2.01	0.116	0.000175	2.43
MN-0.2	2012-07-12 0:00	0.000005	0.058	0.000462	0.0361	0.05	0.000016	0.000005	8.43	0.000018	0.000296	0.0004	0.0025	0.269	0.00001	0.399	0.0005	2.77	0.105	0.000664	3.05
MN-0.2	2012-08-06 0:00	0.000005	0.0512	0.000747	0.0426	0.05	0.000016	0.000005	11	0.000005	0.000414	0.00049	0.00245	0.504		0.493	0.0005	3.75	0.193	0.000295	3.47
MN-0.2	2012-09-07 0:00	0.00002	0.0415	0.00062	0.0369	0.05	0.0001	0.001	10.4	0.00001	0.0005	0.001	0.00225	0.464	0.00001	0.509	0.005	3.56	0.146	0.001	3.53
MN-0.2	2012-10-01 0:00	0.00002	0.0434	0.00048	0.0313	0.05	0.0001	0.001	8.8	0.000018	0.0005	0.001	0.00279	0.322	0.00001	0.456	0.005	3.13	0.102	0.001	3.08
MN-0.2	2013-05-27 0:00	0.00002	0.0432	0.00056	0.0308	0.05	0.0001	0.001	6.12	0.00001	0.00054	0.001	0.00292	0.47	0.00001	1.82	0.005	2.08	0.211	0.001	2.09
MN-0.2	2013-06-17 0:00	0.00002	0.0377	0.00046	0.0292	0.05	0.0001	0.001	6.7	0.00001	0.0005	0.001	0.00235	0.237	0.00001	0.72	0.005	2.17	0.0383	0.001	2.94
MN-0.2	2013-07-15 0:00	0.00002	0.0389	0.00041	0.0316	0.05	0.0001	0.001	7.69	0.00001	0.0005	0.001	0.0022	0.162	0.00001	0.44	0.005	2.42	0.0523	0.001	3.16
MN-0.2	2013-08-28 0:00	0.000011	0.0349	0.000495	0.0308	0.05	0.000014	0.000005	8.47	0.000005	0.000056	0.00036	0.00197	0.185	0.00001	0.477	0.0005	2.98	0.00298	0.000249	3.1
MN-0.2	2013-09-11 10:45	0.00002	0.0428	0.00069	0.0348	0.05	0.0001	0.001	8.99	0.00001	0.0005	0.001	0.00185	0.371	0.00001	0.536	0.005	3.39	0.117	0.001	3.26
MN-0.2	2013-10-16 13:20	0.00002	0.0337	0.0004	0.031	0.05	0.0001	0.001	8.97	0.00001	0.0005	0.001	0.00178	0.179	0.00001	0.405	0.005	2.94	0.0454	0.001	3.06
MN-0.2	2014-05-16 16:30	0.00002	0.0422	0.00047	0.0267	0.05	0.0001	0.001	5.61	0.000018	0.0005	0.001	0.00254	0.361	0.00001	1.04	0.005	1.93	0.0779	0.001	2.24
MN-0.2	2014-06-03 11:00	0.00002	0.0396	0.00036	0.0295	0.05	0.0001	0.001	6.01	0.00001	0.0005	0.001	0.00295	0.228	0.00001	0.554	0.005	2.02	0.0368	0.001	2.7
MN-0.2	2014-07-26 16:30	0.00002	0.0357	0.00037	0.0302	0.05	0.0001	0.001	7	0.00001	0.0005	0.001	0.00227	0.124	0.00001	0.439	0.005	2.64	0.0259	0.001	3.22
MN-0.2	2014-08-18 10:05																				
MN-0.2	2014-09-20 15:45	0.00002	0.0649	0.00044	0.03	0.05	0.0001	0.001	7.57	0.00001	0.0005	0.001	0.0029	0.22	0.00001	0.465	0.005	2.73	0.0379	0.001	3.09
MN-0.2	2014-10-11 16:00	0.00002	0.0361	0.0005	0.0291	0.05	0.0001	0.001	7.58	0.00001	0.0005	0.001	0.00194	0.365	0.00001	0.368	0.005	2.86	0.0588	0.001	3.14
MN-0.2	2015-05-30 10:20	0.00002	0.035	0.00037	0.026	0.05	0.0001	0.001	5.99	0.00001	0.0005	0.001	0.00244	0.247	0.00001	0.702	0.005	2.01	0.0289	0.001	2.74
MN-0.2	2015-06-30 14:30	0.00002	0.0904	0.00066	0.0347	0.05	0.0001	0.001	10.1	0.00001	0.00051	0.001	0.00201	0.743	0.00001	0.215	0.005	3	0.0885	0.001	3.16
MN-0.2	2015-07-13 17:30	0.00002	0.0394	0.00032	0.0279	0.05	0.0001	0.001	6.49	0.00001	0.0005	0.001	0.00236	0.104	0.00001	0.421	0.005	2.27	0.0109	0.001	3.33
MN-0.2	2015-08-31 11:35	0.00002	0.0715	0.0004	0.027	0.05	0.0001	0.001	7.61	0.00001	0.0005	0.001	0.00323	0.208	0.00001	0.415	0.005	2.45	0.0138	0.001	3.05
MN-0.2	2015-09-21 11:00	0.00002	0.123	0.00055	0.0333	0.05	0.0001	0.001	10.4	0.00001	0.0005	0.001	0.00186	0.711	0.00001	0.184	0.005	3.18	0.0636	0.001	3.28
MN-0.2	2015-10-19 10:55	0.00002	0.0985	0.00042	0.0337	0.05	0.0001	0.001	9.81	0.00001	0.0005	0.001	0.00168	0.515	0.00001	0.165	0.005	3.28	0.0518	0.001	2.88
MN-0.2	2015-12-06 12:00	0.00002	0.137	0.00388	0.0737	0.05	0.0001	0.001	13.1	0.00001	0.00306	0.0011	0.00202	10.3	0.00001	0.335	0.005	4.16	0.876	0.001	3.28
MN-0.2	2016-04-30 17:00	0.00002	0.274	0.0007	0.0586	0.02	0.000052	0.0001	15.78	0.00001	0.0007	0.00086	0.00908	0.734	0.0000206	1.18	0.002	4.96	0.1174	0.000286	4.12

Station	Date / Time	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MC1	2019-10-22 13:35	0.00061	0.00005	0.0001	10.3	0.000205	7.03	0.0001	0.512	0.0003	0.00001	0.00208	0.0005	0.001	0.0003
MC1	2019-10-28 13:50	0.00064	0.00005	0.0001	8.83	0.000109	6.82	0.0001	0.565	0.0003	0.00001	0.00222	0.0005	0.0021	0.0003
MC1	2020-04-26 9:20	0.00192	0.00005	0.0001	2.98	0.000146	4.18	0.0001	0.166	0.00146	0.00001	0.000212	0.00051	0.0073	0.00066
MC1	2020-05-03 11:05	0.0017	0.00005	0.0001	1.4	0.000099	3.37	0.0001	0.0923	0.00158	0.00001	0.000104	0.00051	0.0023	0.00062
MC1	2020-05-10 10:45	0.00171	0.00005	0.0001	2.16	0.000122	3.68	0.0001	0.143	0.00127	0.00001	0.000208	0.00078	0.001	0.00051
MC1	2020-05-17 13:05	0.00148	0.00005	0.0001	4.67	0.000212	5.1	0.0001	0.275	0.0007	0.00001	0.00079	0.00085	0.001	0.00031
MC1	2020-05-25 9:15	0.00104	0.00005	0.0001	6.23	0.000169	4.71	0.0001	0.362	0.00048	0.00001	0.00157	0.0009	0.001	0.0002
MC1	2020-06-01 9:05	0.00117	0.00005	0.0001	6.46	0.000184	5.08	0.0001	0.334	0.0004	0.00001	0.00133	0.00085	0.001	0.00021
MC1	2020-06-08 16:35	0.00113	0.00005	0.0001	6.06	0.00016	4.99	0.0001	0.356	0.00037	0.00001	0.00139	0.00103	0.001	0.00023
MC1	2020-06-15 9:00	0.00093	0.00005	0.0001	6.98	0.000219	5.02	0.0001	0.394	0.00033	0.00001	0.00185	0.00093	0.001	0.0002
MC1	2020-06-24 11:20	0.00104	0.00005	0.0001	5.96	0.000162	5.3	0.0001	0.392	0.00034	0.00001	0.00172	0.00097	0.001	0.0002
MC1	2020-07-01 10:50	0.00081	0.00005	0.0001	7.93	0.000172	5.93	0.0001	0.427	0.0003	0.00001	0.00202	0.00079	0.001	0.0002
MC1	2020-07-08 8:55	0.0009	0.000062	0.0001	7.41	0.00011	5.51	0.0001	0.407	0.00062	0.00001	0.00204	0.00087	0.0031	0.0002
MC1	2020-07-13 9:50	0.00101	0.00005	0.0001	6.28	0.000136	5.61	0.0001	0.367	0.00045	0.00001	0.00139	0.00081	0.001	0.0002
MC1	2020-07-20 8:00	0.001	0.00005	0.0001	5.48	0.000131	5.94	0.0001	0.412	0.00034	0.00001	0.0013	0.00116	0.0021	0.00024
MC1	2020-07-27 7:50	0.00098	0.00005	0.0001	6.61	0.000149	6.23	0.0001	0.406	0.00044	0.00001	0.0016	0.00085	0.001	0.00021
MC1	2020-08-03 9:00	0.00107	0.000075	0.0001	5.89	0.000151	6.26	0.0001	0.408	0.00472	0.00001	0.00139	0.00135	0.001	0.00025
MC1	2020-08-10 14:15	0.001	0.00005	0.0001	6.88	0.000136	6.28	0.0001	0.458	0.00045	0.00001	0.00149	0.00079	0.001	0.0002
MC1	2020-08-17 14:45	0.00107	0.00005	0.0001	5.49	0.000133	6.29	0.0001	0.375	0.00042	0.00001	0.0012	0.00086	0.001	0.00025
MC1	2020-08-24 15:15	0.00106	0.00005	0.0001	5.68	0.000153	6.2	0.0001	0.372	0.00046	0.00001	0.00117	0.00097	0.0013	0.00024
MC1	2020-08-31 10:50	0.00137	0.00005	0.0001	4.68	0.000096	6.34	0.0001	0.431	0.00059	0.00001	0.000958	0.00088	0.001	0.00027
MC1	2020-09-07 14:15	0.00112	0.00005	0.0001	5.37	0.000131	6.23	0.0001	0.368	0.00041	0.00001	0.00106	0.00076	0.001	0.00022
MC1	2020-09-14 11:55	0.0012	0.00005	0.0001	5.92	0.000114	6.25	0.0001	0.347	0.00044	0.00001	0.00104	0.0007	0.001	0.00024
MC1	2020-09-21 8:45	0.00106	0.00005	0.0001	5.62	0.000126	5.81	0.0001	0.379	0.00042	0.00001	0.00105	0.00062	0.001	0.00021
MC1	2020-09-28 10:00	0.00111	0.00005	0.0001	5.76	0.000143	5.9	0.0001	0.349	0.00034	0.00001	0.00103	0.00064	0.001	0.00021
MC1	2020-10-07 12:12	0.00088	0.00005	0.0001	5.15	0.000093	6.07	0.0001	0.309	0.00052	0.00001	0.000781	0.00062	0.001	0.00025
MC1	2020-10-12 9:35	0.00081	0.00005	0.0001	9.07	0.000206	6.31	0.0001	0.412	0.00043	0.00001	0.00107	0.00063	0.001	0.00022
MC1	2021-04-30 17:00	0.0012	0.00005	0.0001	1.22	0.000102	3.28	0.0001	0.116	0.001	0.00001	0.000097	0.0005	0.0034	0.00041
MC1	2021-05-04 9:45	0.00133	0.00005	0.0001	0.65	0.000096	2.65	0.0001	0.0797	0.00148	0.00001	0.000082	0.0005	0.0029	0.00052
MC1	2021-05-10 9:05	0.00162	0.00005	0.0001	0.91	0.000101	2.94	0.0001	0.084	0.00132	0.00001	0.000133	0.00058	0.0014	0.00056
MC1	2021-05-21 8:00	0.00179	0.00005	0.0001	2.68	0.00013	4.68	0.0001	0.206	0.00093	0.00001	0.000451	0.00077	0.001	0.00048
MC1	2021-05-25 16:55	0.00212	0.00005	0.0001	1.99	0.000149	4.48	0.0001	0.14	0.00178	0.00001	0.000248	0.00121	0.001	0.0007
MC1	2021-05-31 9:15	0.00186	0.00005	0.0001	3.26	0.000175	4.84	0.0001	0.197	0.00122	0.00001	0.000506	0.00133	0.001	0.00047
MC1	2021-06-07 15:00	0.00151	0.00005	0.0001	4.19	0.000218	5.54	0.0001	0.24	0.00079	0.00001	0.000656	0.00106	0.001	0.00037
MC1	2021-06-16 16:25	0.00121	0.00005	0.0001	4.97	0.000152	5.38	0.0001	0.318	0.00043	0.00001	0.0011	0.00087	0.001	0.00024
MC1	2021-06-22 14:15	0.00108	0.00005	0.0001	6.17	0.00018	6.04	0.0001	0.355	0.00032	0.00001	0.00129	0.00084	0.001	0.0002
MC1	2021-06-28 14:40	0.00113	0.00005	0.0001	6.74	0.000276	6.49	0.0001	0.378	0.0008	0.00001	0.00137	0.00083	0.001	0.0002
MC1	2021-07-08 9:35	0.00097	0.00005	0.0001	8.04	0.000128	6.49	0.0001	0.462	0.0003	0.00001	0.00168	0.00086	0.001	0.0002
MC1	2021-07-13 8:40	0.00082	0.00005	0.0001	7.12	0.000132	5.93	0.0001	0.402	0.0003	0.00001	0.00148	0.00067	0.001	0.0002
MC1	2021-07-20 10:25	0.00086	0.00005	0.0001	7.26	0.000104	6.15	0.0001	0.412	0.00049	0.00001	0.00137	0.0008	0.001	0.0002
MC1	2021-07-28 8:50	0.0009	0.00005	0.0001	6.57	0.000138	6.74	0.0001	0.468	0.00034	0.00001	0.00124	0.00079	0.001	0.0002
MC1	2021-08-03 10:55	0.00087	0.00005	0.0001	6.93	0.000202	6.41	0.0001	0.458	0.0003	0.00001	0.00147	0.00074	0.001	0.0002
MC1	2021-08-10 15:20	0.00097	0.00005	0.0001	4.97	0.000138	6.31	0.0001	0.382	0.00033	0.00001	0.00129	0.00084	0.001	0.0002
MC1	2021-08-16 10:40	0.00099	0.00005	0.0001	5.15	0.000128	5.96	0.0001	0.404	0.0006	0.00001	0.00121	0.00072	0.0011	0.0002
MC1	2021-08-24 9:50	0.00091	0.00005	0.0001	6.25	0.00014	6.31	0.0001	0.436	0.00043	0.00001	0.0013	0.00069	0.0012	0.0002
MC1	2021-08-29 9:30	0.00091	0.00005	0.0001	6.01	0.000132	6.41	0.0001	0.423	0.00042	0.00001	0.00126	0.00068	0.0029	0.0002
MC1	2021-09-07 8:40	0.00089	0.00005	0.0001	5.92	0.00014	6.41	0.0001	0.413	0.0003	0.00001	0.00138	0.00066	0.001	0.0002
MC1	2021-09-13 15:25	0.00087	0.00005	0.0001	6.12	0.000114	6.33	0.0001	0.419	0.00072	0.00001	0.00133	0.00065	0.0012	0.0002
MC1	2021-09-20 10:30	0.00081	0.00005	0.0001	6.31	0.000116	6.23	0.0001	0.398	0.0003	0.00001	0.00135	0.00055	0.001	0.0002
MC1	2021-09-26 9:50	0.00074	0.00005	0.0001	4.88	0.000089	5.74	0.0001	0.353	0.00058	0.00001	0.00097	0.00065	0.001	0.0002
MC1	2021-10-09 15:00	0.00091	0.00005	0.0001	5.67	0.000132	6.22	0.0001	0.382	0.0003	0.00001	0.00115	0.00061	0.001	0.0002
MC1	2021-10-11 9:00	0.00084	0.00005	0.0001	6.12	0.000137	6.09	0.0001	0.382	0.00031	0.00001	0.00122	0.00055	0.001	0.0002
MC1	2021-10-17 14:15	0.00084	0.00005	0.0001	6.21	0.000162	6.51	0.0001	0.402	0.0003	0.00001	0.00143	0.00057	0.001	0.0002
MN	2015-11-12 14:30	0.0014		0.0005	6.2	0.00421	7.36	0.005	2.77	0.005	0.00005	0.00374	0.005	0.0066	0.0005
MN	2015-12-28 16:50	0.0041		0.0005	31	0.0134	6.58	0.005	12.9	0.005	0.00005	0.00236	0.005	0.005	0.0005
MN	2016-02-27 15:27			0.0005	8.9	0.00466	2.53	0.005	4.58	0.005	0.00005	0.00146	0.005	0.005	0.0005
MN	2016-03-31 9:15	0.0012		0.001	20.5	0.0136	4.35	0.0002	13.1	0.0006	0.00002	0.00293	0.001	0.002	0.0006
MN	2016-04-29 17:15	0.002		0.00056	27.8	0.00797	3.3	0.0002	12.4	0.0006	0.00002	0.0021	0.001	0.002	0.0006
MN	2016-05-27 13:10	0.0005	0.00005	0.00028	21.7	0.00957	2.91	0.0001	7.69	0.0003	0.000011	0.00255	0.0005	0.001	0.0003
MN	2016-06-30 9:00	0.0006	0.00005	0.00012	58.1	0.00961	3.77	0.0001	5.6	0.0003	0.00001	0.00168	0.0005	0.0159	0.0003
MN	2016-07-28 11:00	0.0005	0.00005	0.00038	40	0.0627	2.25	0.0001	5.35	0.00075	0.00001	0.00167	0.0005	0.0021	0.0003
MN	2016-08-25 15:15	0.0005	0.00005	0.00018	31.2	0.0235	2.55	0.0001	2.74	0.0003	0.00001	0.00128	0.0005	0.0021	0.0003
MN	2016-09-25 14:00	0.00261	0.00005	0.00013	28.1	0.0138	6.95	0.00013	7.12	0.0003	0.00001	0.00193	0.0005	0.0118	0.0003
MN	2016-10-01 12:30	0.0005	0.00005	0.00028	9.32	0.00385	3.31	0.0001	1.13	0.0003	0.00001	0.00111	0.00064	0.001	0.0003
MN	2017-10-09 15:00	0.0005	0.00005	0.00024	31.7	0.0199	2.67	0.00012	1.68	0.0003	0.00001	0.000882	0.0005	0.0027	0.0003
MN	2018-05-26 10:50	0.0005	0.00005	0.00014	22.4	0.0119	2.15	0.0001	1.24	0.0003	0.00001	0.000719	0.0005	0.001	0.0003
MN	2018-06-18 9:40	0.0005	0.00225	0.00022	29.6	0.0175	2.61	0.0001	2	0.00058	0.00001	0.000929	0.0005	0.0884	0.0003
MN	2018-07-15 15:15	0.0005	0.00005	0.00016	27.2	0.0133	2.43	0.0001	1.26	0.0003	0.00001	0.000863	0.0005	0.0019	0.0003
MN	2018-08-21 16:40	0.0005	0.00005	0.00038	29.8	0.00957	2.38	0.0001	1.64	0.00077	0.00001	0.000733	0.0005	0.001	0.0003
MN	2018-09-25 16:10	0.0005	0.00005	0.0005	27.8	0.0129	2.5	0.0001	1.38	0.0003	0.00001	0.000816	0.0005	0.017	0.0003
MN	2019-05-20 14:30	0.0005	0.00005	0.00027	34.8	0.0191	2.92	0.0001	1.92	0.0009	0.00001	0.00104	0.0005	0.0065	0.0003
MN	2019-06-30 11:15	0.0005	0.000089	0.00047	33.7	0.0178	2.96	0.0001	1.55	0.0003	0.00001	0.000996	0.0005	0.0067	0.0003
MN	2019-07-17 9:20	0.0005	0.00005	0.00017	24.1	0.0136	2.64	0.0001	1.49	0.00104	0.00001	0.00091	0.00063	0.0012	0.0003
MN	2019-08-05 13:30	0.0005	0.00005	0.00016	30.7	0.0163	3.13	0.0001	1.42	0.0003	0.00001	0.00101	0.0006	0.001	0.0003
MN	2019-09-19 11:30	0.0005	0.00005	0.00014	32.1	0.017	2.98	0.0001	1.61	0.0003	0.00001	0.00102	0.00056	0.001	0.0003
MN	2019-10-12 11:00	0.0005	0.00005	0.00015	33.2	0.0178	2.86	0.0001	1.94	0.0003	0.00001	0.001	0.00054	0.001	0.0003
MN	2020-05-17 15:00	0.0005	0.00005	0.0001	21.4	0.00992	1.87	0.0001	1.14	0.00039	0.00001	0.000601	0.0005	0.001	0.0002
MN	2020-06-07 14:15	0.0005	0.00005	0.0001	22.6	0.0114	1.98	0.0001	1.17	0.0003	0.00001	0.000743	0.0005	0.001	0.0002
MN	2020-07-19 9:35	0.0005	0.00005	0.00011	24.8	0.012	2.36	0.0001	1.35	0.0003	0.00001	0.000918	0.00073	0.001	0.0002
MN	2020-08-31 14:10	0.0005	0.00005	0.00013	28.8	0.014	2.65	0.0001	1.71	0.00034	0.00001	0.000854	0.00056	0.001	0.0002
MN	2020-09-23 13:45	0.0005	0.00005	0.00012	31.6	0.014	2.52	0.0001	1.47	0.0003	0.00001	0.000982	0.0005	0.0035	0.0002
MN	2021-05-21 14:00	0.0005	0.00005	0.0001	16.8	0.00752	1.83	0.0001	0.975	0.0003	0.00001	0.000708	0.0005	0.001	0.0002
MN	2021-06-13 11:00	0.0005	0.00005	0.0001	21.4	0.00939	2.28	0.0001	1.16	0.0003	0.00001	0.000729	0.0005	0.001	0.0002
MN	2021-07-22 16:30	0.0005	0.00005	0.0001	21.2	0.00993	2.61	0.0001	1.07	0.0003	0.00001	0.000895	0.00062	0.001	0.0002
MN	2021-08-14 15:40	0.0005	0.00005	0.00011	21.1	0.00993	2.39	0.0001	1.13	0.0003	0.00001	0.000928	0.00066	0.001	0.0002
MN	2021-09-16 15:10	0.0005	0.00005	0.00012	26	0.011	2.71	0.0001	1.23	0.0003	0.00001	0.000976	0.00064	0.001	0.0002
MN	2021-10-09 14:25	0.0005	0.00005	0.00011	28.2	0.0129	2.61	0.0001	1.32	0.00084	0.00001	0.001	0.00055	0.001	0.0002
MN	2021-11-07 16:00	0.0005	0.00005	0.00011	29.9	0.0133	2.92	0.0001	1.57	0.0003	0.00001	0.00112	0.00066	0.001	0.0002
MN-0.2	2012-04-19 0:00	0.00105	0.0000184	0.00002	10	0.00004	3.12	0.0002	0.0356	0.00093	0.000002	0.000013	0.00027	0.00774	0.00016
MN-0.2	2012-05-24 0:00	0.00205	0.0000251	0.000076	10	0.00005	5.74	0.0002	0.0487	0.00086	0.000002	0.0000151	0.00061	0.00161	0.00029
MN-0.2	2012-06-14 0:00	0.00184	0.000038	0.000087	10	0.000069	5.23	0.0002	0.0394	0.00273	0.000002	0.0000262	0.0012	0.00157	0.00062
MN-0.2	2012-07-12 0:00	0.00197	0.00001	0.000066	10	0.000066	7.23	0.0002	0.055	0.00077	0.000002	0.00002	0.00055	0.00047	0.00039
MN-0.2	2012-08-06 0:00	0.00246	0.000016	0.000094	10	0.000062	8.07	0.0002	0.0697	0.00125	0.000002	0.00002	0.00065	0.0009	0.00044
MN-0.2	2012-09-07 0:00	0.002	0.0002	0.0005	3	0.0001	7.89	0.005	0.0701	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-0.2	2012-10-01 0:00	0.002	0.0002	0.0005	3	0.0001	7.46	0.005	0.0603	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-0.2	2013-05-27 0:00	0.0014	0.0002	0.0005	3	0.0001	4.05	0.005	0.0435	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-0.2	2013-06-17 0:00	0.0016	0.0002	0.0005	3	0.0001	6.72	0.005	0.0447	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-0.2	2013-07-15 0:00	0.0016	0.0002	0.0005	3	0.0001	8.31	0.005	0.0509	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-0.2	2013-08-28 0:00	0.00161	0.000009	0.00006	3	0.000066	7.68	0.0002	0.0637	0.00098	0.000002	0.000015	0.00063	0.0005	0.00041
MN-0.2	2013-09-11 10:45	0.0018	0.0002	0.0005	3	0.0001	7.3	0.005	0.0649	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-0.2	2013-10-16 13:20	0.0014	0.0002	0.0005	3	0.0001	8.08	0.005	0.061	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-0.2	2014-05-16 16:30	0.0017	0.0002	0.0005	3	0.0001	4.19	0.005	0.0387	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-0.2	2014-06-03 11:00	0.0017	0.0002	0.0005	3	0.0001	5.52	0.005	0.0409	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-0.2	2014-07-26 16:30	0.0013	0.0002	0.0005	3	0.0001	6.8	0.005	0.0475	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-0.2	2014-08-18 10:05														
MN-0.2	2014-09-20 15:45	0.0014	0.0002	0.0005	3	0.0001	7.73	0.005	0.05	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-0.2	2014-10-11 16:00	0.0012	0.0002	0.0005	3	0.0001	7.22	0.005	0.0509	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-0.2	2015-05-30 10:20	0.0015	0.0002	0.0005	3	0.0001	5.63	0.005	0.0391	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-0.2	2015-06-30 14:30	0.0014	0.0002	0.0005	3	0.0001	5.24	0.005	0.0613	0.005	0.00005	0.0001	0.005	0.005	0.00055
MN-0.2	2015-07-13 17:30	0.0013	0.0002	0.0005	3	0.0001	6.6	0.005	0.0466	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-0.2	2015-08-31 11:35	0.0016	0.0002	0.0005	3	0.00012	6.84	0.005	0.0488	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-0.2	2015-09-21 11:00	0.0015	0.0002	0.0005	3	0.0001	7.02	0.005	0.0608	0.005	0.00005	0.0001	0.005	0.005	0.00066
MN-0.2	2015-10-19 10:55	0.0012	0.0002	0.0005	3.1	0.0001	6.99	0.005	0.0621	0.005	0.00005	0.00016	0.005	0.005	0.0005
MN-0.2	2015-12-06 12:00	0.0019	0.0002	0.0005	3	0.0001	6.99	0.005	0.0859	0.005	0.00005	0.0001	0.005	0.005	0.00082
MN-0.2	2016-04-30 17:00	0.0033	0.0001	0.0002	4.08	0.000162	7.36	0.0002	0.0926	0.0027	0.00002	0.000062	0.001	0.002	0.00102

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	N-NO_2	N-NO_3	N-NH_3	SO_4-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MN-0.2	2016-05-26 16:25	25.2	66.5	84	7.32	35.7	3	3.6	88	0.001	0.005	0.0056	5.98	0.5	
MN-0.2	2016-06-20 15:35	35.7	85	8.7	7.53	45.8	6.7	5.6	89.4	0.001	0.005	0.0052	5.15	0.5	
MN-0.2	2016-07-30 16:10	36	84.5	-4.4	7.32		4	6.9	95.3	0.001	0.005	0.007	5.71	0.5	0.149
MN-0.2	2016-08-15 15:10	42.9	92.3	7.4	6.95	52.5	3	7.9	90.5	0.001	0.005	0.012	4.99	0.5	
MN-0.2	2016-09-05 15:15	37.8	87.2	33.4	7.08	48.1	5	4.3	93.6	0.001	0.005	0.008	5.57	0.5	
MN-0.2	2016-10-07 15:30	45.7	93.6	49.2	7.4	52.3	13.6	-0.1	58.2	0.001	0.0056	0.0192	3.57	0.5	
MN-0.2	2017-05-27 15:20	19.6	57.1	156.4	6.87	31.5	50.7	2.9	87.4	0.001	0.005	0.0085	5.14	0.5	
MN-0.2	2017-06-25 9:05	29.8	68.1	80.5	7.78	37.6	3	3.7	87.3	0.001	0.0069	0.0132	3.36	0.5	
MN-0.2	2017-07-06 15:30	28.8	68.6	91.7	7.69	36.5	3	7	108.5	0.001	0.005	0.0079	3.38	0.5	
MN-0.2	2017-08-16 11:10			66.7	7.53			3.6	85.3						
MN-0.2	2017-08-16 11:10	50.9	105			53.3	3			0.001	0.005	0.0074	5	0.15	
MN-0.2	2017-09-18 17:24	41.8	97.9	113.2	7.25	52.2	3	3.5	86	0.001	0.005	0.0057	7.15	0.5	
MN-0.2	2017-10-22 14:35	45.5	111	82	7.93	57.7	3	0	86.7	0.001	0.0175	0.0177	8.85	0.5	0.125
MN-0.2	2018-04-30 10:25	20.7	82.5	218.8	7.69	45.5	3	0	118.7	0.001	0.005	0.0088	13	0.78	
MN-0.2	2018-05-26 10:45	26.7	71.2	111.2	7.4	41.3		1.2	102	0.001	0.005	0.0059	8.62	0.2	
MN-0.2	2018-06-11 10:10	24.8	74.3	119.3	7.92	38.4	3	3	123.7	0.001	0.0067	0.0101	7.24	0.5	
MN-0.2	2018-07-05 11:40	26.1	71.1	81.8	7.04	38.2	3	4.7	106.3	0.001	0.005	0.005	6.69	0.1	
MN-0.2	2018-08-30 15:35	29.4	78.4	89.2	7.12	41.6	5.9	3.4	94.2	0.001	0.005	0.0064	7.35	0.5	
MN-0.2	2018-09-08 14:50	34.1	82.1	78.2	7.01	45.5	3.2	3.5	107.8	0.001	0.005	0.0052	6.8	0.5	
MN-0.2	2019-04-30 15:10	31.6	111			61.1	3			0.001	0.005	0.005	20	0.5	
MN-0.2	2019-05-19 10:20	31.6	83.9	120.4	7.6	48.3	3	0.1	93.7	0.001	0.005	0.005	11.5	0.5	
MN-0.2	2019-06-08 10:00	18.9	63	152.7	6.08	116	3	2.5	92.6	0.001	0.005	0.0147	4.47	1.42	
MN-0.2	2019-07-22 8:50	52.4	118	-10	7.88	60.7	3.7	6.7	69.5	0.001	0.005	0.0119	4.69	0.5	
MN-0.2	2019-08-19 10:20	41.5	106	39.4	7.58	56.4	4.6	1.7	87.2	0.001	0.005	0.0107	8.3	0.5	
MN-0.2	2019-09-21 9:50	43.2	105	95.7	7.02	56.7	4.1	2.6	84.5	0.001	0.005	0.0061	8.67	0.31	
MN-0.2	2019-10-12 10:15	45.9	106	118.6	6.54	62	3	0	71.6	0.001	0.0072	0.0282	9.64	0.39	
MN-0.2	2020-05-14 16:05	12.2	46.4	160.6	7.21	66.3	3	0.9	92.7	0.001	0.005	0.0064	3.69	0.17	
MN-0.2	2020-06-27 12:40	24.8	90.3	121.4	7.31	81.3	3	4.6	89.7	0.001	0.005	0.0098	15.2	0.1	
MN-0.2	2020-07-19 8:30	25.8	79.4	105.8	7.36	84.2	42.2	4.1	91.7	0.001	0.0056	0.0106	8.99	0.1	
MN-0.2	2020-08-21 17:45	25	75.2	163.7		86.1	3.6	5	94	0.001	0.005	0.0136	9.26	0.15	
MN-0.2	2020-09-09 15:45	27.4	77.9	141.2	7.3	84.6	3	4.3	91.4	0.001	0.005	0.0055	8.32	0.14	
MN-0.2	2020-10-11 11:15	21.4	73.7	165.1	7.96	83.8	3	0.1	91.5	0.001	0.005	0.0091	10.3	0.17	
MN-0.2	2021-06-13 10:10	16.2	66.3	135.8	7.06	71.9	1	2.8	99.2	0.001	0.0284	0.0106	9.96	0.1	
MN-0.2	2021-07-17 14:35	27.8	113	93.2	6.88	94.2	1	6.2	97.1	0.001	0.005	0.0073	24	0.1	
MN-0.2	2021-08-22 16:30	30.9	116	44	7.16	98.5	1	4.8	95.6	0.001	0.005	0.0053	23.4	0.1	
MN-0.2	2021-09-25 16:10	30.7	128	104.3	6.82	98.7	1	0.8		0.001	0.005	0.0054	26	0.24	
MN-0.5	2012-04-19 0:00	43.9	102			116	4.5			0.005	0.02	0.0097	0.5	1.4	0.15
MN-0.5	2012-05-24 0:00	59.7	131			120	68.5			0.05		0.017	2.3	1	0.26
MN-0.5	2012-06-14 0:00	39.2	88.8			66	673			0.05		0.019	0.5	1.2	0.19
MN-0.5	2012-07-12 0:00	78.7	171			112	201			0.05		0.058	3.1	0.95	0.3
MN-0.5	2012-08-06 0:00	96.8	203			144	278			0.0137	0.064	0.03	5.68	1.2	0.34
MN-0.5	2012-09-07 0:00	88.6	186			124	114			0.005	0.057	0.0094	4.67	1.2	0.29
MN-0.5	2012-10-01 0:00	88.3	187			146	23.1			0.005	0.077	0.011	6.17	1.1	0.29
MN-0.5	2013-05-27 0:00	52.9	117			102	25.2			0.005	0.02	0.021	0.5	1.2	0.21
MN-0.5	2013-06-17 0:00	78.4	171			126	83.4			0.005	0.058	0.021	7.27	1.1	0.29
MN-0.5	2013-07-15 0:00	93.6	203			122	732			0.005	0.14	0.048	8.28	1.1	0.37
MN-0.5	2013-08-28 0:00	73.5	162			116	55			0.002	0.0576	0.038	4.11	0.8	0.26
MN-0.5	2013-09-11 12:15	82.7	183			128	32			0.05		0.046	7.55	0.81	0.29
MN-0.5	2013-10-16 13:55	85.4	184	-16.6	7.1	150	4.2	0	96.9	0.005	0.087	0.018	8.17	1.3	0.29
MN-0.5	2014-05-16 12:00	70.3	155	173.1	8.11	120	2.4	0.1	96.2	0.005	0.02	0.037	5.43	1	0.31
MN-0.5	2014-06-03 13:00	80.1	175	81.2	7.21	128	17.8	0.3	115.1	0.005	0.063	0.02	7.59	1	0.32
MN-0.5	2014-07-26 11:45	89.2	198	125.5	8.67	114	36.6	4.3	94.6	0.005	0.071	0.013	8.9	0.85	0.34
MN-0.5	2014-08-17 11:50	110	239	94	7.9	132	2.5	3.7	98.9	0.005	0.086	0.012	12	1.7	0.4
MN-0.5	2014-09-20 12:00	97.9	214	215.1	7.87	146	1	1.4	94.7	0.005	0.046	0.012	10.1	1.4	0.35
MN-0.5	2014-10-10 16:00	82	190	179.8	7.04	125	46	-1.4	94.7	0.005	0.076	0.013	9.62	1	0.3
MN-0.5	2015-03-02 12:40	196	425	184.2	8.53	264	7.4	-0.1	34	0.005	0.02	0.01	31.5	1.8	0.89
MN-0.5	2015-05-26 12:45	92	214	116.4	7.94	120	34	0	98.1	0.005	0.02	0.016	12.4	1.1	0.36
MN-0.5	2015-06-23 15:00	107	235	140.5	7.69	140	14.8	2.3	92.4	0.005	0.112	0.034	13.6	0.87	0.43
MN-0.5	2015-07-13 13:00	68.6	150	139.2	7.9	106	48.9	5.4	94.4	0.005	0.032	0.11	4.4	0.69	0.28
MN-0.5	2015-08-30 13:35	51.4	120	125.7	7.79	110	106	2.3	93.9	0.005	0.021	0.024	0.5	1.2	0.22
MN-0.5	2015-09-20 12:45	83.7	183	162.5	8.11	130	14.5	2	96.6	0.005	0.048	0.011	9.08	1.2	0.33
MN-0.5	2015-10-18 13:55	86.5	194	79.3	7.75	126	4.1	0	90.6	0.005	0.082	0.017	8.16	1.2	0.33
MN-0.5	2015-11-26 13:25	105	226	112.4	8.5	146	13	-0.1	54.7	0.005	0.053	0.043	5.43	1	0.18
MN-0.5	2016-04-29 17:10	74.1	165	121.8	7.76	88.4	3	0	95	0.001	0.005	0.0065	8.41	0.5	
MN-0.5	2016-05-28 15:55	79.1	174	140.5	7.89	92.5	43.3	0.2	98	0.001	0.0246	0.0142	8.85	0.5	
MN-0.5	2016-06-21 15:30	92	198	121.4	7.84	110	6	4.8	95	0.001	0.0643	0.0061	10.9	0.5	
MN-0.5	2016-07-04 12:40	108	227	124.6	7.92	127	6.7	5	95.1	0.001	0.0595	0.005	12.7	0.5	
MN-0.5	2016-08-04 15:38	98.6	205		7.9	116	3	6.6		0.001	0.0473	0.005	10.3	0.5	
MN-0.5	2016-09-03 15:45	84.5	175	151.6	7.32	95.6	6.4	4.3	93.1	0.001	0.0236	0.005	8.13	0.5	
MN-0.5	2016-10-10 16:00	125	231	177.1	7.43	138	21.3	-0.1	76.7	0.001	0.116	0.005	12.6	0.52	
MN-0.5	2016-11-10 12:47	132	266	152.8	7.56	149	3	-0.1	97.7	0.001	0.14	0.005	15.4	0.5	
MN-0.5	2016-12-02 14:50	159	338	40.1	7.78	184	3	0	67.1	0.001	0.115	0.005	19.4	0.74	
MN-0.5	2017-05-26 15:30	45.7	102	95.3	7.67	54.4	64.7	-0.1	98	0.001	0.005	0.0115	4.85	0.5	
MN-0.5	2017-06-24 15:15	76.8	165	116.8	7.75	91	7.2	3.9	126.7	0.001	0.075	0.0068	9.36	0.5	
MN-0.5	2017-07-07 12:30	77.3	166	145.9	7.74	134	13.6	4.9	102.3	0.001	0.0547	0.005	7.9	0.5	
MN-0.5	2017-08-21 15:15	118	237	150.4	7.98	130	3	4	112.4	0.001	0.0657	0.005	12.3	0.5	
MN-0.5	2017-09-16 12:10	110	217	191.3	7.26	120	3	0.9	98.9	0.001	0.0354	0.005	11.8	0.5	
MN-0.5	2017-10-21 13:00	118	233			132	59			0.001	0.105	0.005	14.3	0.5	0.406
MN-0.5	2017-11-10 15:45	154	297	133.8	7.56	180	3	0	58.9	0.001	0.159	0.005	18.4	0.67	
MN-0.5	2018-04-30 13:50	56.4	132	213.9	7.43	72.4	3	0	123.5	0.001	0.005	0.005	7.88	0.68	
MN-0.5	2018-05-26 16:20	74.5	157	136.9	8.03	88.2	15.4	0	106.8	0.001	0.005	0.0074	8.31	0.38	
MN-0.5	2018-06-11 15:10	89	197	170	7.97	105	14.6	0	117	0.001	0.005	0.0052	10.8	0.5	
MN-0.5	2018-07-06 15:45	80.8	178	151.5	7.83	94.8	10.3	3.8	90.9	0.001	0.0562	0.005	10.7	0.25	
MN-0.5	2018-08-29 16:00	76.1	168	145.4	7.66	87.8	8.9	4.3	125	0.001	0.0306	0.005	9.34	0.5	
MN-0.5	2018-09-08 12:15	93.7	196	160.9	7.8	108	3.6	2	120.2	0.001	0.0389	0.005	10.8	0.5	
MN-0.5	2018-10-13 12:05	114	252	84	7.57	139	4	0	83.9	0.001	0.116	0.005	15.6	0.5	
MN-0.5	2019-04-29 16:20	115	249			138	12.9			0.001	0.0119	0.005	17.2	0.5	
MN-0.5	2019-05-17 15:10	85.5	169	171.1	7.84	99.8	10.6	0	96.2	0.001	0.005	0.005	10.3	0.5	
MN-0.5	2019-06-08 15:00	63.5	147	165.1	7.5	146	43.9	0.1	95.8	0.001	0.005	0.0132	8.06	0.5	
MN-0.5	2019-07-21 14:30	130	276	153.4	7.69	150	3	6.9	95	0.001	0.0845	0.005	16.9	0.5	
MN-0.5	2019-08-18 9:55	116	243	163	7.61	133	5.4	2	95.6	0.001	0.0475	0.005	13.5	0.5	
MN-0.5	2019-09-21 14:50	129	260	194.3	7.88	145	3	2.7	95.6	0.001	0.0215	0.005	15.9	0.45	
MN-0.5	2019-10-12 14:05	123	244	213.2	7.75	150	3	0.1	94	0.001	0.0889	0.005	15.8	0.47	
MN-0.5	2020-05-15 12:50	52.5	112	173.3	7.59	108	3	0.2	96	0.001	0.005	0.0068	5.85	0.26	
MN-0.5	2020-06-27 10:00	87.3	197	200.8	7.83	133	3.2	1.9	94.6	0.001	0.0524	0.0056	13.1	0.22	
MN-0.5	2020-07-17 12:10	53	127	156.1	7.48	107	26	4.9	93.1	0.001	0.0086	0.0102	8.19	0.13	
MN-0.5	2020-08-21 15:00	62.4	138	180.2	7.43	115	6.8	4.7	96.5	0.001	0.0055	0.016	7.56	0.19	
MN-0.5	2020-09-09 12:40	73.5	161	200.6	7.57	121	3	3.3	95.5	0.001	0.0183	0.0051	8.64	0.24	
MN-0.5	2020-10-10 14:05	60.2	144	219.6	7.32	113	4.5	0.4	93.9	0.001	0.021	0.0077	8.98	0.3	
MN-0.5	2021-05-19 11:15	33.5	85.9	180.4	7.08	96.8	1.2	0	99.6	0.001	0.005	0.0092	4.63	0.2	
MN-0.5	2021-06-14 11:30	57.3	132	162	7.81	106	4.1	2.8	97	0.001	0.0185	0.074	7.88	0.18	
MN-0.5	2021-07-17 10:40	83.7	191	141.9	7.24	132	1	3.6	97.3	0.001	0.0383	0.0062	13.8	0.21	
MN-0.5	2021-08-22 12:00	81.9	190	76.2	7.58	130	1	2.8	98.6	0.001	0.0282	0.0058	14	0.23	
MN-0.5	2021-09-25 12:25	86	198	169.9	7.34	131	1	0.7	106.7	0.001	0.0223	0.005	14.8	0.3	
MN-1.5	2012-04-19 0:00	34.4	78.5			106	13.7			0.005	0.039	0.041	0.5	1.6	0.067
MN-1.5	2012-05-24 0:00	25.1	57.4			38	193					0.059	0.5	1.1	0.11
MN-1.5	2012-06-14 0:00	20.1	50.2			36	822					0.062	0.5	1.1	0.12
MN-1.5	2012-07-12 0:00	30.4	76.7			66	379					0.093	0.5	0.96	0.13
MN-1.5	2012-08-06 0:00	43.8	92.3			104	743			0.0147	0.041	0.068	0.5	0.8	0.13
MN-1.5	2012-09-07 0:00	47.6	96.6			80	47.5			0.005	0.049	0.005	5.2	1.3	0.12
MN-1.5	2012-10-01 0:00	47.4	97.3			104	8.3			0.005	0.051	0.058	0.5	0.9	0.11
MN-1.5	2013-05-27 0:00	14	39.3			60	506			0.005	0.02	0.024	0.5	1	0.097
MN-1.5	2013-06-17 0:00	26.5	62.6			66	82.1			0.005	0.063	0.064	0.5	1.1	0.081
MN-1.5	2013-07-15 0:00	32.5	73.9			64	44.9			0.0053	0.078	0.043	0.5	0.75	0.12
MN-1.5	2013-08-28 0:00	35.9	77.3			40	45.7				0.049	0.06	0.5	0.67	0.11

Station	Date / Time	Dissolved Elements																			
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MN-0.2	2016-05-26 16:25	0.00001	0.0814	0.00043	0.0292	0.01	0.00002	0.00005	8.42	0.000005	0.0002	0.00047	0.00239	0.335	0.000005	0.26	0.001	2.69	0.0266	0.000202	2.82
MN-0.2	2016-06-20 15:35	0.00001	0.0794	0.00069	0.0406	0.01	0.00002	0.00005	11.2	0.000005	0.00047	0.00058	0.0021	0.659	0.000005	0.23	0.001	3.47	0.0823	0.00024	3.45
MN-0.2	2016-07-30 16:10	0.00001	0.0884	0.00067	0.0411	0.01	0.00002	0.00005	11.5	0.0000054	0.00047	0.00071	0.00277	0.575		0.17	0.001	3.5	0.0751	0.000209	3.78
MN-0.2	2016-08-15 15:10	0.00001	0.0714	0.00072	0.039	0.01	0.00002	0.00005	13.2	0.0000051	0.00048	0.00069	0.00252	0.867	0.000005	0.22	0.001	4.03	0.0886	0.000223	3.28
MN-0.2	2016-09-05 15:15	0.00001	0.0903	0.00066	0.0397	0.01	0.00002	0.00005	11.6	0.0000056	0.00046	0.00054	0.00257	0.765	0.000005	0.25	0.001	3.62	0.0784	0.000352	3.45
MN-0.2	2016-10-07 15:30	0.00001	0.0726	0.00095	0.0426	0.01	0.00002	0.00005	12.1	0.000005	0.00088	0.00063	0.00142	1.36	0.000005	0.25	0.001	3.81	0.204	0.000112	3.39
MN-0.2	2017-05-27 15:20	0.00001	0.152	0.0004	0.0323	0.01	0.000023	0.00005	8.51	0.000005	0.00024	0.00051	0.00465	0.363	0.000005	0.35	0.001	2.52	0.025	0.000154	2.68
MN-0.2	2017-06-25 9:05	0.00001	0.119	0.00063	0.0367	0.01	0.000022	0.00005	9.54	0.0000054	0.00043	0.00068	0.00286	0.614	0.000005	0.17	0.001	3	0.0698	0.000207	2.77
MN-0.2	2017-07-06 15:30	0.00001	0.13	0.00063	0.0362	0.01	0.000024	0.00005	9.33	0.000005	0.00035	0.00062	0.00332	0.601	0.000005	0.14	0.001	2.86	0.0566	0.000211	2.67
MN-0.2	2017-08-16 11:10																				
MN-0.2	2017-08-16 11:10	0.00001	0.0586	0.00081	0.0429	0.01	0.00002	0.00005	13.5	0.000005	0.00074	0.00061	0.00133	0.995	0.000005	0.21	0.001	4.31	0.157	0.000243	3.31
MN-0.2	2017-09-18 17:24	0.00001	0.0517	0.00067	0.0373	0.01	0.00002	0.00005	11.5	0.000005	0.00043	0.00055	0.00148	0.743	0.000005	0.23	0.001	4.03	0.0868	0.000235	3.27
MN-0.2	2017-10-22 14:35	0.00001	0.0506	0.00054	0.041	0.01	0.00002	0.00005	12.3	0.000005	0.00052	0.00046	0.00129	0.697	0.000005	0.22	0.001	4.48	0.121	0.000239	3.49
MN-0.2	2018-04-30 10:25	0.00001	0.0984	0.00025	0.0289	0.01	0.00002	0.00005	9.65	0.0000137	0.0001	0.00026	0.00842	0.158	0.0000104	2.76	0.001	3.65	0.00933	0.000121	2.99
MN-0.2	2018-05-26 10:45	0.00001	0.0713	0.00034	0.0295	0.01	0.00002	0.00005	9.39	0.000005	0.00012	0.00039	0.00283	0.225	0.000005	0.47	0.001	3.24	0.00768	0.000243	3.03
MN-0.2	2018-06-11 10:10	0.00001	0.0864	0.00043	0.0313	0.01	0.00002	0.00005	9.39	0.000005	0.00017	0.00046	0.00268	0.298	0.0000267	0.26	0.001	3.07	0.0193	0.000208	3.14
MN-0.2	2018-07-05 11:40	0.00001	0.122	0.00051	0.0343	0.01	0.00002	0.00005	9.03	0.000005	0.00024	0.0007	0.00274	0.442	0.000005	0.1	0.001	2.94	0.0307	0.0002	3.14
MN-0.2	2018-08-30 15:35	0.00001	0.101	0.00052	0.0316	0.01	0.00002	0.00005	9.59	0.000005	0.00024	0.00064	0.00251	0.444	0.000005	0.14	0.001	3.13	0.0324	0.000151	3.2
MN-0.2	2018-09-08 14:50	0.00001	0.0789	0.00053	0.0324	0.01	0.00002	0.00005	10.6	0.000005	0.00027	0.00062	0.00204	0.496	0.000005	0.19	0.001	3.49	0.0427	0.000183	3.34
MN-0.2	2019-04-30 15:10	0.00001	0.0178	0.00018	0.0256	0.01	0.00002	0.00005	11.3	0.0000116	0.00015	0.00021	0.00299	0.126	0.000005	2.61	0.001	4.25	0.0551	0.000176	3.79
MN-0.2	2019-05-19 10:20	0.00001	0.0402	0.00031	0.0289	0.01	0.00002	0.00005	9.9	0.000006	0.00017	0.00029	0.00236	0.126	0.000005	0.7	0.001	3.59	0.0218	0.000255	3.42
MN-0.2	2019-06-08 10:00	0.00001	0.152	0.00042	0.0323	0.01	0.000031	0.00005	9.05	0.000005	0.00017	0.00052	0.00416	0.433	0.000005	0.21	0.001	2.68	0.0112	0.000143	2.68
MN-0.2	2019-07-22 8:50	0.00001	0.0539	0.00067	0.0469	0.01	0.00002	0.00005	15.2	0.000005	0.00057	0.00053	0.00136	0.799	0.000005	0.22	0.001	4.38	0.1	0.000249	3.71
MN-0.2	2019-08-19 10:20	0.00001	0.0536	0.00059	0.0402	0.01	0.00002	0.00005	13.4	0.000005	0.00042	0.00051	0.00159	0.641	0.000005	0.21	0.001	4.82	0.0808	0.000232	3.96
MN-0.2	2019-09-21 9:50	0.00001	0.0404	0.00053	0.0362	0.01	0.00002	0.00005	12.6	0.000005	0.00032	0.0004	0.00165	0.504	0.000005	0.25	0.001	4.34	0.0674	0.000254	3.96
MN-0.2	2019-10-12 10:15	0.00001	0.147	0.00078	0.0477	0.01	0.00002	0.00005	13.8	0.0000067	0.00065	0.00056	0.00213	1.65	0.0000061	0.25	0.001	4.58	0.117	0.000246	3.82
MN-0.2	2020-05-14 16:05	0.00001	0.178	0.00037	0.0283	0.01	0.000024	0.00005	6.97	0.000005	0.00019	0.00049	0.00657	0.313	0.0000078	0.505	0.001	2.26	0.0109	0.000102	2.11
MN-0.2	2020-06-27 12:40	0.00001	0.0594	0.00037	0.0327	0.01	0.00002	0.00005	10.8	0.000005	0.00015	0.00048	0.00202	0.28	0.000005	0.126	0.001	3.31	0.0208	0.000178	3.68
MN-0.2	2020-07-19 8:30	0.00001	0.123	0.00042	0.0359	0.01	0.00002	0.00005	10.3	0.000005	0.00016	0.00066	0.00322	0.315	0.000005	0.1	0.001	2.94	0.0143	0.000144	3.49
MN-0.2	2020-08-21 17:45	0.00001	0.123	0.00043	0.0342	0.01	0.00002	0.00005	10.2	0.000005	0.00014	0.00071	0.00295	0.308	0.000005	0.1	0.001	3.09	0.0118	0.00015	3.25
MN-0.2	2020-09-09 15:45	0.00001	0.112	0.00044	0.0342	0.01	0.00002	0.00005	9.85	0.000005	0.00016	0.00073	0.00278	0.358	0.000005	0.132	0.001	3.26	0.0171	0.00016	3.3
MN-0.2	2020-10-11 11:15	0.00001	0.159	0.00037	0.0319	0.01	0.00002	0.00005	9.62	0.0000142	0.00016	0.00073	0.0106	0.444	0.000005	0.112	0.001	3.26	0.0153	0.000158	3.13
MN-0.2	2021-06-13 10:10	0.00001	0.147	0.00036	0.0301	0.01	0.00002	0.00005	8.37	0.000005	0.00012	0.00054	0.00371	0.276	0.0000064	0.251	0.001	2.77	0.00681	0.000154	2.78
MN-0.2	2021-07-17 14:35	0.00001	0.0543	0.0004	0.044	0.01	0.00002	0.00005	13.1	0.000005	0.00018	0.0005	0.00212	0.259	0.000005	0.134	0.001	4.33	0.0225	0.000159	4.34
MN-0.2	2021-08-22 16:30	0.00001	0.054	0.0004	0.0433	0.01	0.00002	0.00005	13.4	0.000005	0.00019	0.0005	0.00191	0.304	0.000005	0.166	0.001	4.33	0.0258	0.000194	4.22
MN-0.2	2021-09-25 16:10	0.00001	0.0475	0.00033	0.0377	0.01	0.00002	0.00005	13.6	0.000005	0.00017	0.0005	0.00158	0.269	0.000005	0.192	0.001	4.45	0.026	0.000201	4.13
MN-0.5	2012-04-19 0:00	0.000005	0.0418	0.000454	0.031	0.05	0.000011	0.000005	14.9	0.0000186	0.0000723	0.00024	0.0029	0.15	0.00001	2.07	0.0006	3.41	0.0079	0.00037	2.13
MN-0.5	2012-05-24 0:00	0.000005	0.0281	0.000557	0.0368	0.05	0.00001	0.000005	17.9	0.0000091	0.000113	0.00026	0.00181	0.462	0.00001	0.726	0.00058	4.65	0.0246	0.00078	3.36
MN-0.5	2012-06-14 0:00	0.000005	0.0569	0.000637	0.0292	0.05	0.000012	0.000005	12.4	0.0000251	0.000203	0.00045	0.0025	0.716	0.00001	0.444	0.0005	3.2	0.0224	0.000515	2.85
MN-0.5	2012-07-12 0:00	0.000005	0.0266	0.000713	0.047	0.05	0.00001	0.000005	23.2	0.000014	0.000172	0.00042	0.00179	0.356	0.00001	0.572	0.00059	6.06	0.038	0.000928	4.55
MN-0.5	2012-08-06 0:00	0.000005	0.0236	0.000625	0.0491	0.05	0.00001	0.000005	28	0.000005	0.000169	0.00035	0.00158	0.398		0.678	0.00084	6.96	0.0425	0.0011	5.03
MN-0.5	2012-09-07 0:00	0.00002	0.0253	0.00062	0.0462	0.05	0.0001	0.001	27.2	0.00001	0.0005	0.001	0.00226	0.528	0.00001	0.613	0.005	6.8	0.0417	0.001	4.78
MN-0.5	2012-10-01 0:00	0.00002	0.0367	0.00057	0.0457	0.05	0.0001	0.001	25.5	0.00001	0.0005	0.001	0.00261	0.433	0.00001	0.616	0.005	6.54	0.0393	0.001	4.59
MN-0.5	2013-05-27 0:00	0.00002	0.0316	0.00043	0.0332	0.05	0.0001	0.001	16.3	0.00001	0.0005	0.001	0.00175	0.335	0.00001	0.868	0.005	4.06	0.0507	0.001	2.96
MN-0.5	2013-06-17 0:00	0.00002	0.0164	0.00061	0.0446	0.05	0.0001	0.001	22.6	0.00001	0.0005	0.001	0.00146	0.212	0.00001	0.722	0.005	5.71	0.0573	0.0011	4.38
MN-0.5	2013-07-15 0:00	0.00002	0.0144	0.00049	0.0415	0.05	0.0001	0.001	28.4	0.00001	0.0005	0.001	0.00166	0.133	0.00001	0.72	0.005	6.55	0.0357	0.0012	5.14
MN-0.5	2013-08-28 0:00	0.000007	0.0291	0.000637	0.0448	0.05	0.000012	0.000005	21.4	0.000006	0.00008	0.00041	0.00196	0.338	0.00001	0.506	0.00059	5.68	0.00179	0.000895	4.34
MN-0.5	2013-09-11 12:15	0.00002	0.0225	0.00064	0.0453	0.05	0.0001	0.001	23.8	0.00001	0.0005	0.001	0.00181	0.429	0.00001	0.645	0.005	6.75	0.0264	0.001	4.73
MN-0.5	2013-10-16 13:55	0.00002	0.0221	0.00048	0.0446	0.05	0.0001	0.001	25.2	0.00001	0.0005	0.001	0.00183	0.239	0.00001	0.571	0.005	6.22	0.0223	0.001	4.63
MN-0.5	2014-05-16 12:00	0.00002	0.0216	0.00041	0.0395	0.05	0.0001	0.001	20.5	0.00001	0.0005	0.001	0.00193	0.154	0.00001	0.82	0.005	5.69	0.011	0.001	4.13
MN-0.5	2014-06-03 13:00	0.00002	0.0132	0.00039	0.0417	0.05	0.0001	0.001	22.5	0.00001	0.0005	0.001	0.0016	0.104	0.00001	0.7	0.005	5.97	0.033	0.001	4.65
MN-0.5	2014-07-26 11:45	0.00002	0.0114	0.00043	0.0438	0.05	0.0001	0.001	25	0.00001	0.0005	0.001	0.00137	0.1	0.00001	0.669	0.005	6.85	0.0049	0.001	5.09
MN-0.5	2014-08-17 11:50	0.00002	0.0093	0.00039	0.0528	0.05	0.0001	0.001	32.6	0.00001	0.0005	0.001	0.00132	0.0488	0.00001	0.881	0.005	8.04	0.0079	0.0012	6.07
MN-0.5	2014-09-20 12:00	0.00002	0.0099	0.00039	0.0476	0.05	0.0001	0.001	28.5	0.00001	0.0005	0.001	0.00116	0.0736	0.000011	0.811	0.005	7.33	0.0106	0.0011	5.4
MN-0.5	2014-10-10 16:00	0.00002	0.0136	0.00039	0.0418	0.05	0.0001	0.001	25.5	0.00001	0.0005	0.001	0.00155	0.119	0.00001	0.631	0.005	6.96	0.0097	0.001	4.98
MN-0.5	2015-03-02 12:40	0.00002	0.003	0.00045	0.0689	0.05	0.0001	0.001	49.8	0.00001	0.0005	0.001	0.0009	0.0062	0.00001	2.96	0.005	14.5	0.0018	0.001	16
MN-0.5	2015-05-26 12:45	0.00002	0.0066	0.00037	0.0504	0.05	0.0001	0.001	29	0.00001	0.0005	0.001	0.00071	0.0533	0.00001	1.07	0.005	7.1	0.0411	0.001	5.37
MN-0.5	2015-06-23 15:00	0.00002	0.0062	0.00037	0.0537	0.05	0.0001	0.001	33.6	0.00001	0.0005	0.001	0.00072	0.0204	0.00001	0.995	0.005	7.69	0.0103	0.0014	5.81
MN-0.5	2015-07-13 13:00	0.00002	0.0198	0.00042	0.037	0.05	0.0001	0.001	19.2	0.00001	0.0005	0.001	0.0019	0.107	0.00001	0.543	0.005	5.18	0.0036	0.001	4.23
MN-0.5	2015-08-30 13:35	0.00002	0.0652	0.00061	0.033	0.05	0.0001	0.001	16	0.00001	0.0005	0.001	0.00403	0.254	0.00001	0.39	0.005	4.29	0.0081	0.001	3.58
MN-0.5	2015-09-20 12:45	0.00002	0.0194	0.0004	0.041	0.05	0.0001	0.001	24.4	0.00001	0.0005	0.001	0.00154	0.128	0.00001	0.6	0.005	6.05	0.0067	0.0011	4.68
MN-0.5	2015-10-18 13:55	0.00002	0.0209	0.00038	0.0436	0.05	0.0001	0.001	26.8	0.00001	0.0005	0.001	0.00139	0.104	0.00001	0.668	0.005	6.78	0.0065	0.001	5.25
MN-0.5	2015-11-26 13:25	0.00002	0.0101	0.00037	0.0528	0.05	0.0001	0.001	30.1	0.00001	0.0005	0.001	0.00441	0.104	0.00001	0.995	0.005	8.92	0.128	0.001	5.45
MN-0.5	2016-04-29 17:10	0.00001	0.026	0.0004	0.0414	0.01	0.00002	0.00005	24.3	0.000005	0.0001	0.00025	0.00212	0.132	0.000005	1.01	0.001	6.12	0.0114	0.000798	3.95
MN-0.5	2016-05-28 15:55	0.00001	0.0131	0.00041	0.0443	0.01	0.00002	0.00005	24.2	0.0000091	0.0001	0.00016	0.00141	0.085	0.000005	0.85	0.001	5.99	0.0491	0.00107	4.86
MN-0.5	2016-06-21 15:30	0.00001	0.0114	0.00042	0.0505	0.01	0.00002	0.00005	29.7	0.000005	0.0001	0.00018	0.00173	0.031	0.000005	0.88	0.001	6.86	0.00356	0.00124	5.79
MN-0.5	2016-07-04 12:40	0.00001	0.0067	0.0004	0.0536	0.01	0.00002	0.00005	34.7	0.000005	0.0001	0.00013	0.00115	0.02	0.000005	0.95	0.001	8	0.00332	0.00134	6.13
MN-0.5	2016-08-04 15:38	0.00001	0.0111	0.00049	0.0566	0.01	0.00002	0.00005	31.9	0.000005	0.0001	0.00025	0.0016	0.043	0.000005	0.84	0.001	7.46	0.00449	0.00117	6.31
MN-0.5	2016-09-03 15:45	0.00001	0.0176	0.00046	0.0432	0.01	0.00002	0.00005	24.9	0.000005	0.0001	0.00036	0.00162	0.12	0.000005	0.65	0.001	6.45	0.00825	0.000818	4.5
MN-0.5	2016-10-10 16:00	0.00001	0.0069	0.00034	0.0547	0.01	0.00002	0.00005	33.1	0.000005	0.0001	0.00017	0.00121	0.032	0.000005	0.86	0.001	8.36	0.00621	0.00105	6.28
MN-0.5	2016-11-10 12:47	0.00001	0.0041	0.00029	0.0634	0.01	0.00002	0.00005	36	0.000005	0.0001	0.00014	0.00084	0.023	0.000005	1.04	0.0014	9.22	0.00926	0.00122	7.17
MN-0.5	2016-12-02 14:50	0.00001	0.0047	0.00036	0.0747	0.01	0.00002	0.00005	44.9	0.000005	0.0001	0.00015	0.00119	0.016	0.000005	1.58	0.0014	12	0.00429	0.000905	9.99
MN-0.5	2017-05-26 15:30	0.00001	0.0397	0.00043	0.0281	0.01	0.00002	0.00005	14.6	0.0000069	0.00015	0.00031	0.00262	0.171	0.000005	0.68	0.001	3.75	0.0372	0.000423	2.82
MN-0.5	2017-06-24 15:15	0.00001	0.0175	0.00039	0.0438	0.01	0.00002	0.00005	23.6	0.000005	0.0001	0.00025	0.00202	0.066	0.000005	0.7	0.001	5.89	0.00377	0.00112	4.91
MN-0.5	2017-07-07 12:30	0.000011	0.58	0.00089	0.0845	0.022	0.00006	0.00005	64.1	0.000186	0.00086	0.00126	0.0264	0.929	0.000005	1.37	0.0013	6.6	0.087	0.000859	6.02
MN-0.5	2017-08-21 15:15	0.00001	0.0074	0.00033	0.052	0.01	0.00002	0.00005	31.5	0.000005	0.0001	0.00013	0.00101	0.018	0.000005	0.79	0.0015	8.2	0.00179	0.00118	6.03
MN-0.5	2017-09-16 12:10	0.00001	0.0084	0.00038	0.047	0.01	0.00002	0.00005	28.6	0.000005	0.0001	0.0002	0.00117	0.028	0.000005	0.75	0.001	7.64	0.00268	0.00111	5.4
MN-0.5	2017-10-21 13:00	0.00001	0.0059	0.00026	0.0527	0.01	0.00002	0.00005	29.7	0.000005	0.0001	0.00012	0.00095	0.018	0.000005	0.89	0.001	8.98	0.00185	0.00125	6.34
MN-0.5	2017-11-10 15:45	0.00001	0.0041	0.00031	0.0698	0.01	0.00002	0.00005	44.6	0.000005	0.0001	0.00017	0.00102	0.014	0.000005	1.26	0.0016	12	0.00358	0.000933	9.93
MN-0.5	2018-04-30 13:50	0.00001	0.0334	0.0003	0.035	0.01	0.00002	0.00005	19.3	0.0000146	0.0001	0.00021	0.00371	0.084	0.000007	2.04	0.001	5.11	0.0124	0.000479	3.35
MN-0.5	2018-05-26 16:20	0.00001	0.0102	0.00034	0.0396	0.01	0.00002	0.00005	23.1	0.000007	0.00011	0.00012	0.00111	0.065	0.000005	1.23	0.001	5.98	0.0708	0.000772	4.39
MN-0.5	2018-06-11 15:10	0.00001	0.0127	0.00045	0.0469	0.01	0.00002	0.00005	27.2	0.0000059	0.00011	0.00014	0.00186	0.139	0.0000159	0.96	0.001	7.04	0.0463	0.000967	5.19
MN-0.5	2018-07-06 15:45	0.00001	0.0146	0.00039	0.045	0.01	0.00002	0.00005	22.9	0.000005	0.0001	0.0003	0.0018	0.042	0.000005	0.76	0.001	6.19	0.00246	0.00106	5.22
MN-0.5	2018-08-29 16:00	0.00001	0.0202	0.00042	0.0395	0.01	0.00002	0.00005	21.8	0.0000082	0.0001	0.00041	0.00203	0.078	0.000005	0.5	0.001	5.74	0.00218	0.000776	4.54
MN-0.5	2018-09-08 12:15	0.00001	0.0117	0.00038	0.0426	0.01	0.00002	0.00005	27.2	0.000005	0.0001	0.00029	0.00158	0.045	0.000005	0.66	0.001	7.28	0.00175	0.00104	5.48
MN-0.5	2018-10-13 12:05	0.00001	0.0108	0.00031	0.0604	0.01	0.00002	0.00005	35.9	0.000005	0.0001	0.00013	0.00221	0.025	0.000005	0.93	0.0012	9.67	0.00144	0.00113	7.72
MN-0.5	2019-04-29 16:20	0.00001	0.0046	0.00026	0.0437	0.01	0.00002	0.00005	32.8	0.000005	0.0001	0.0001	0.0008	0.023	0.000005	1.77	0.0012	9.66	0.0135	0.00113	7.06
MN-0.5	2019-05-17 15:10	0.00001	0.0071	0.00031	0.0411	0.01	0.00002	0.00005	26.1	0.000008	0.0001	0.00012	0.00091	0.038	0.000005	1.17	0.001	6.37	0.013	0.000852	4.49
MN-0.5	2019-06-08 15:00	0.00001	0.0287	0.00041	0.0348	0.01	0.00002	0.00005	20.8	0.0000058	0.00011	0.00047	0.00247	0.147	0.000005	0.66	0.001	5.28	0.0281	0.000884	4.26
MN-0.5	2019-07-21 14:30	0.00001	0.004	0.00032	0.0567	0.01	0.00002	0.00005	38.4	0.000005	0.0001	0.0001	0.00074	0.01	0.000005	1.06	0.0014	8.28	0.00043	0.00169	7.34
MN-0.5	2019-08-18 9:55	0.00001	0.0063	0.00038	0.0518	0.01	0.00002	0.00005	32.7	0.000005	0.0001	0.00017	0.00101	0.017	0.000005	0.85	0.001	9.3	0.0009	0.00144	6.57
MN-0.5	2019-09-21 14:50	0.00001	0.0032	0.00033	0.0521	0.01	0.00002	0.00005	34.1	0.000005	0.0001	0.00012	0.00081	0.013	0.000005	0.98	0.001	9.25	0.00087	0.00145	7.29
MN-0.5	2019-10-12 14:05	0.00001	0.0052	0.00035	0.0567	0.01	0.00002	0.00005	40.5	0.0000061	0.0001	0.00017	0.00098	0.011	0.000005	1.03	0.0011	10.4	0.00124	0.00155	7.81
MN-0.5	2020-05-15 12:50	0.00001	0.0904	0.00042	0.0334	0.01	0.00002	0.00005	17.6	0.0000077	0.00013	0.0004	0.00452	0.225	0.0000065	0.869	0.001	4.99	0.021	0.000547	3.68
MN-0.5	2020-06-27 10:00	0.00001	0.0076	0.00033	0.0415	0.01	0.00002	0.00005	28.4	0.000005	0.0001	0.00021	0.00138	0.02	0.000005	0.757	0.001	7.08	0.00055	0.00122	5.69
MN-0.5	2020-07-17 12:10	0.00001	0.0423	0.00043	0.0354	0.01	0.00002	0.00005	18.6	0.0000053	0.0001	0.0005	0.00334	0.101	0.000005	0.392	0.001	4.59	0.00206	0.000626	4.23
MN-0.5	2020-08-21 15:00	0.00001	0.0335	0.00039	0.0364	0.01	0.00002	0.00005	20.6	0.000005	0.0001	0.00049	0.00265	0.093	0.000005	0.409	0.001	5.86	0.00162	0.000721	4.22
MN-0.5	2020-09-09 12:40	0.00001	0.0256	0.00038	0.0396	0.01	0.00002	0.00005	22	0.0000075	0.0001	0.00046	0.00293	0.074	0.000005	0.505	0.001	5.8	0.00193	0.000852	4.5
MN-0.5	2020-10-10 14:05	0.00001	0.0324	0.00038	0.0342	0.01	0.00002	0.00005	20.2	0.000005	0.0001	0.00043	0.0025	0.092	0.000005	0.429	0.001	5.9	0.00205	0.000698	4.24
MN-0.5	2021-05-19 11:15	0.00001	0.119	0.00041	0.0307	0.01	0.000023	0.00005	14.3	0.0000053	0.00013	0.0005	0.00476	0.262	0.000005	0.826	0.001	3.76	0.00531	0.000413	2.54
MN-0.5	2021-06-14 11:30	0.00001	0.0411	0.0004	0.0342	0.01	0.00002	0.00005	17.5	0.000005	0.0001	0.0005	0.00302	0.11	0.000005	0.59	0.001	5	0.00149	0.000736	4.02
MN-0.5	2021-07-17 10:40	0.00001	0.012	0.00036	0.0451	0.01	0.00002	0.00005	26.1	0.000005	0.0001	0.0005	0.00154	0.029	0.000005	0.673	0.001	7.09	0.00083	0.00106	5.53
MN-0.5	2021-08-22 12:00	0.00001	0.0139	0.00037	0.0434	0.01	0.00002	0.00005	24.6	0.000005	0.0001	0.0005	0.00145	0.041	0.000005	0.63	0.001	6.67	0.00208	0.00105	5.37
MN-0.5	2021-09-25 12:25	0.00001	0.0103	0.00031	0.0398	0.01	0.00002	0.00005	24.6	0.000005	0.0001	0.0005	0.00107	0.033	0.000005	0.673	0.001	6.61	0.00158	0.00101	5.19
MN-1.5	2012-04-19 0:00	0.000005	0.081	0.000265	0.0287	0.05	0.000012	0.000005	10.2	0.0000415	0.000482	0.00038	0.00734	0.296	0.00001	1.97	0.00051	3.24	0.0938	0.000145	2.03
MN-1.5	2012-05-24 0:00	0.0000141	0.12	0.000595	0.0323	0.05	0.00002	0.000005	7.5	0.000046	0.000673	0.0005	0.00672	0.891	0.00001	0.828	0.0005	2.16	0.0974	0.000354	1.9
MN-1.5	2012-06-14 0:00	0.0000063	0.136	0.000555	0.035	0.05	0.000021	0.000005	6.84	0.0000331	0.00116	0.00055	0.00687	1.19	0.00001	0.507	0.0005	1.99	0.121	0.000421	2.22
MN-1.5	2012-07-12 0:00	0.000005	0.115	0.000718	0.044	0.05	0.000013	0.000005	9.94	0.000031	0.00133	0.00063	0.00645	1.01	0.00001	0.39	0.0005	2.9	0.155	0.000619	2.92
MN-1.5	2012-08-06 0:00	0.000005	0.103	0.000774	0.048	0.05	0.00002	0.000005	13.8	0.000005	0.00143	0.00075	0.00584	1.19		0.43	0.0005	3.97	0.206	0.000924	3.17
MN-1.5	2012-09-07 0:00		0.121	0.00076	0.044	0.05	0.0001	0.001	13.5	0.00001	0.00138		0.00619	1.2	0.00001	0.425	0.005	4.03	0.181		3.26
MN-1.5	2012-10-01 0:00		0.0911	0.00065	0.039	0.05	0.0001	0.001	12.7	0.00001	0.00095		0.00532	0.908	0.00001	0.396	0.005	3.84	0.129		2.98
MN-1.5	2013-05-27 0:00		0.0867	0.00031	0.0229	0.05	0.0001	0.001	6.94	0.00001	0.00057		0.00573	0.34	0.00001	1.05	0.005	2.22	0.0919		1.65
MN-1.5	2013-06-17 0:00		0.121	0.00064	0.0334	0.05	0.0001	0.001	8.02	0.00001	0.00085		0.00726	0.947	0.00001	0.513	0.005	2.27	0.0997		2.47
MN-1.5	2013-07-15 0:00		0.111	0.00072	0.0376	0.05	0.0001	0.001	9.95	0.00001	0.00104		0.00655	1.25	0.00001	0.329	0.005	2.63	0.137		2.93
MN-1.5	2013-08-28 0:00	0.000007	0.101	0.00064	0.0343	0.05	0.00002	0.000005	9.53	0.000005	0.000091	0.00074	0.00669	0.914	0.00001	0.321	0.0005	2.82	0.00322	0.000669	2.85

Station	Date / Time	Dissolved Elements (cont.)													
		Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MN-0.2	2016-05-26 16:25	0.00132	0.00005	0.0001	2.29	0.000082	4.71	0.0001	0.0511	0.00119	0.00001	0.00002	0.0005	0.001	0.0005
MN-0.2	2016-06-20 15:35	0.00163	0.00005	0.0001	1.97	0.000093	5.78	0.0001	0.068	0.00138	0.00001	0.000022	0.00067	0.0027	0.00062
MN-0.2	2016-07-30 16:10	0.00169	0.00005	0.0001	2.23	0.00009	6.59	0.0001	0.0707	0.00182	0.00001	0.000029	0.00074	0.001	0.00072
MN-0.2	2016-08-15 15:10	0.00164	0.00005	0.0001	1.97	0.000095	7.1	0.0001	0.0744	0.00149	0.00001	0.00003	0.00072	0.0018	0.00067
MN-0.2	2016-09-05 15:15	0.00183	0.00005	0.0001	2.09	0.000107	7.15	0.0001	0.071	0.00188	0.00001	0.00003	0.00075	0.0018	0.00079
MN-0.2	2016-10-07 15:30	0.00143	0.00005	0.0001	1.14	0.000074	7.2	0.0001	0.0735	0.00175	0.00001	0.000022	0.00077	0.0012	0.00072
MN-0.2	2017-05-27 15:20	0.00177	0.00005	0.0001	1.91	0.000091	3.86	0.0001	0.0508	0.00157	0.00001	0.000033	0.00062	0.0011	0.00067
MN-0.2	2017-06-25 9:05	0.00161	0.00005	0.0001	1.26	0.000096	5.64	0.0001	0.0576	0.00149	0.00001	0.000027	0.00081	0.001	0.00076
MN-0.2	2017-07-06 15:30	0.00164	0.00005	0.0001	1.1	0.000092	5.57	0.0001	0.0586	0.00197	0.00001	0.000032	0.00077	0.0053	0.00087
MN-0.2	2017-08-16 11:10														
MN-0.2	2017-08-16 11:10	0.00147	0.00005	0.0001	1.26	0.000082	6.42	0.0001	0.0825	0.0013	0.00001	0.000031	0.00075	0.0014	0.00066
MN-0.2	2017-09-18 17:24	0.00131	0.00005	0.0001	2.43	0.000068	6.21	0.0001	0.0731	0.0012	0.00001	0.000021	0.00057	0.001	0.00058
MN-0.2	2017-10-22 14:35	0.00111	0.00005	0.0001	2.76	0.00005	6.66	0.0001	0.0761	0.00116	0.00001	0.000017	0.0005	0.005	0.00048
MN-0.2	2018-04-30 10:25	0.00102	0.00005	0.0001	4.39	0.000069	3.12	0.0001	0.0551	0.0012	0.00001	0.000032	0.0005	0.0043	0.0003
MN-0.2	2018-05-26 10:45	0.0013	0.00005	0.0001	2.88	0.00006	3.98	0.0001	0.0569	0.00085	0.00001	0.000028	0.0005	0.001	0.0004
MN-0.2	2018-06-11 10:10	0.00128	0.00005	0.0001	2.24	0.0001	4.35	0.0001	0.0545	0.00134	0.00001	0.000022	0.0005	0.001	0.00049
MN-0.2	2018-07-05 11:40	0.00145	0.00005	0.0001	1.94	0.000103	5.31	0.0001	0.0571	0.00174	0.00001	0.000027	0.00059	0.001	0.00074
MN-0.2	2018-08-30 15:35	0.00125	0.00005	0.0001	2.54	0.00008	6.05	0.0001	0.0621	0.00157	0.00001	0.000023	0.00056	0.001	0.00075
MN-0.2	2018-09-08 14:50	0.0013	0.00005	0.0001	2.27	0.000078	5.98	0.0001	0.0643	0.00147	0.00001	0.000021	0.00055	0.001	0.00066
MN-0.2	2019-04-30 15:10	0.00052	0.00005	0.0001	7.43	0.00005	3.45	0.0001	0.0729	0.00032	0.00001	0.00001	0.0005	0.002	0.0003
MN-0.2	2019-05-19 10:20	0.00114	0.00005	0.0001	3.74	0.00007	3.69	0.0001	0.063	0.00051	0.00001	0.000023	0.0005	0.001	0.00031
MN-0.2	2019-06-08 10:00	0.00158	0.00005	0.0001	2.02	0.000109	4.52	0.0001	0.0598	0.00166	0.00001	0.000035	0.0006	0.001	0.00076
MN-0.2	2019-07-22 8:50	0.00147	0.00005	0.0001	1.43	0.000068	5.92	0.0001	0.0904	0.00132	0.00001	0.000021	0.00071	0.001	0.00056
MN-0.2	2019-08-19 10:20	0.00133	0.00005	0.0001	2.89	0.00007	6.22	0.0001	0.0836	0.00129	0.00001	0.000018	0.00054	0.001	0.00052
MN-0.2	2019-09-21 9:50	0.00134	0.00005	0.0001	2.74	0.00005	6.15	0.0001	0.0748	0.00113	0.00001	0.000017	0.0005	0.001	0.00045
MN-0.2	2019-10-12 10:15	0.00133	0.000103	0.0001	3.31	0.000123	6.37	0.0001	0.0854	0.00558	0.00001	0.000028	0.0014	0.0013	0.00045
MN-0.2	2020-05-14 16:05	0.00172	0.00005	0.0001	1.09	0.000111	2.7	0.0001	0.0455	0.00164	0.00001	0.00003	0.00052	0.001	0.00061
MN-0.2	2020-06-27 12:40	0.00104	0.00005	0.0001	4.62	0.000077	4.9	0.0001	0.0689	0.00089	0.00001	0.000016	0.00053	0.001	0.00047
MN-0.2	2020-07-19 8:30	0.00113	0.00005	0.0001	3.05	0.000104	5.55	0.0001	0.0717	0.00144	0.00001	0.000025	0.00087	0.001	0.00073
MN-0.2	2020-08-21 17:45	0.00118	0.00005	0.0001	3.3	0.000111	6	0.00045	0.0604	0.00169	0.00001	0.000028	0.0005	0.001	0.00083
MN-0.2	2020-09-09 15:45	0.00135	0.00005	0.0001	2.98	0.000092	6.54	0.0001	0.0636	0.00162	0.00001	0.000026	0.00052	0.001	0.00082
MN-0.2	2020-10-11 11:15	0.00113	0.00005	0.0001	3.31	0.00005	6.76	0.0001	0.0646	0.00444	0.00001	0.000028	0.00055	0.0024	0.00088
MN-0.2	2021-06-13 10:10	0.00144	0.00005	0.0001	3.3	0.000069	4.63	0.0001	0.0518	0.00159	0.00001	0.000028	0.00053	0.001	0.00061
MN-0.2	2021-07-17 14:35	0.00116	0.00005	0.0001	7.82	0.00005	5.52	0.0001	0.0844	0.00115	0.00001	0.000016	0.0005	0.001	0.00041
MN-0.2	2021-08-22 16:30	0.0011	0.00005	0.0001	7.55	0.000069	6.17	0.0001	0.092	0.00097	0.00001	0.000018	0.0005	0.0021	0.00048
MN-0.2	2021-09-25 16:10	0.00088	0.00005	0.0001	8.09	0.00005	6.12	0.0001	0.0887	0.00081	0.00001	0.000015	0.0005	0.001	0.00044
MN-0.5	2012-04-19 0:00	0.00104	0.0000095	0.000032	10	0.000099	3.65	0.0002	0.102	0.0005	0.000002	0.0000963	0.00038	0.00256	0.00019
MN-0.5	2012-05-24 0:00	0.00119	0.0000305	0.000066	10	0.000166	4.86	0.0002	0.118	0.00091	0.000002	0.000252	0.00106	0.00073	0.00028
MN-0.5	2012-06-14 0:00	0.00167	0.000083	0.000107	10	0.000129	5.33	0.0002	0.078	0.00164	0.000002	0.0000848	0.0014	0.00136	0.0005
MN-0.5	2012-07-12 0:00	0.00133	0.00005	0.000085	10	0.000195	6.1	0.00024	0.153	0.00119	0.000002	0.000352	0.00125	0.00045	0.00038
MN-0.5	2012-08-06 0:00	0.00132	0.000031	0.000086	10	0.000218	6.38	0.00034	0.178	0.00083	0.000002	0.000498	0.00108	0.00073	0.00034
MN-0.5	2012-09-07 0:00	0.0012	0.0002	0.0005	3	0.00024	6.23	0.005	0.186	0.005	0.00005	0.00036	0.005	0.005	0.0005
MN-0.5	2012-10-01 0:00	0.0016	0.0002	0.0005	3	0.00017	6.27	0.005	0.176	0.005	0.00005	0.00039	0.005	0.005	0.0005
MN-0.5	2013-05-27 0:00	0.001	0.0002	0.0005	3	0.00013	3.76	0.005	0.12	0.005	0.00005	0.00019	0.005	0.005	0.0005
MN-0.5	2013-06-17 0:00	0.001	0.0002	0.0005	3	0.00016	5.36	0.005	0.158	0.005	0.00005	0.00041	0.005	0.005	0.0005
MN-0.5	2013-07-15 0:00	0.0012	0.0002	0.0005	3.6	0.00021	6.59	0.005	0.18	0.005	0.00005	0.00058	0.005	0.005	0.0005
MN-0.5	2013-08-28 0:00	0.0015	0.000034	0.000083	3	0.000192	5.9	0.0002	0.151	0.00107	0.000002	0.000315	0.00133	0.00016	0.00043
MN-0.5	2013-09-11 12:15	0.0012	0.0002	0.0005	3	0.00023	5.68	0.005	0.169	0.005	0.00005	0.00039	0.005	0.005	0.0005
MN-0.5	2013-10-16 13:55	0.0011	0.0002	0.0005	3.3	0.00019	6.61	0.005	0.172	0.005	0.00005	0.00038	0.005	0.005	0.0005
MN-0.5	2014-05-16 12:00	0.0012	0.0002	0.0005	3.4	0.00023	4.36	0.005	0.158	0.005	0.00005	0.00035	0.005	0.005	0.0005
MN-0.5	2014-06-03 13:00	0.001	0.0002	0.0005	3	0.0002	4.62	0.005	0.175	0.005	0.00005	0.00049	0.005	0.005	0.0005
MN-0.5	2014-07-26 11:45	0.001	0.0002	0.0005	3	0.00016	5.58	0.005	0.185	0.005	0.00005	0.00039	0.005	0.005	0.0005
MN-0.5	2014-08-17 11:50	0.001	0.0002	0.0005	5	0.00018	6.22	0.005	0.227	0.005	0.00005	0.00059	0.005	0.005	0.0005
MN-0.5	2014-09-20 12:00	0.001	0.0002	0.0005	3.3	0.00017	5.95	0.005	0.205	0.005	0.00005	0.00046	0.005	0.005	0.0005
MN-0.5	2014-10-10 16:00	0.001	0.0002	0.0005	3.5	0.00017	5.99	0.005	0.18	0.005	0.00005	0.00037	0.005	0.005	0.0005
MN-0.5	2015-03-02 12:40	0.001	0.0002	0.0005	11.9	0.00063	9.22	0.005	0.354	0.005	0.00005	0.00112	0.005	0.005	0.0005
MN-0.5	2015-05-26 12:45	0.001	0.0002	0.0005	3.4	0.00028	4.78	0.005	0.256	0.005	0.00005	0.00074	0.005	0.005	0.0005
MN-0.5	2015-06-23 15:00	0.001	0.0002	0.0005	6	0.00021	6.03	0.005	0.243	0.005	0.00005	0.00083	0.005	0.005	0.0005
MN-0.5	2015-07-13 13:00	0.0011	0.0002	0.0005	3	0.00015	5.64	0.005	0.149	0.005	0.00005	0.0002	0.005	0.005	0.0005
MN-0.5	2015-08-30 13:35	0.0017	0.0002	0.0005	3	0.0001	6.27	0.005	0.109	0.005	0.00005	0.00013	0.005	0.005	0.0005
MN-0.5	2015-09-20 12:45	0.001	0.0002	0.0005	3	0.00021	5.86	0.005	0.174	0.005	0.00005	0.00035	0.005	0.005	0.0005
MN-0.5	2015-10-18 13:55	0.001	0.0002	0.0005	3.4	0.00015	6.57	0.005	0.197	0.005	0.00005	0.0004	0.005	0.005	0.0005
MN-0.5	2015-11-26 13:25	0.001	0.0002	0.0005	3	0.0001	7.46	0.005	0.151	0.005	0.00005	0.00025	0.005	0.005	0.0005
MN-0.5	2016-04-29 17:10	0.00096	0.00005	0.0001	3.1	0.000184	4.84	0.0001	0.174	0.00069	0.00001	0.000295	0.00062	0.0021	0.0003
MN-0.5	2016-05-28 15:55	0.00101	0.00005	0.0001	3.17	0.00025	4.82	0.0001	0.175	0.00043	0.00001	0.000411	0.00086	0.001	0.0003
MN-0.5	2016-06-21 15:30	0.00092	0.00005	0.0001	3.84	0.000188	5.42	0.0001	0.204	0.00035	0.00001	0.000499	0.00081	0.0019	0.0003
MN-0.5	2016-07-04 12:40	0.00069	0.00005	0.0001	4.43	0.00016	5.8	0.0001	0.227	0.0003	0.00001	0.000643	0.00072	0.0013	0.0003
MN-0.5	2016-08-04 15:38	0.00102	0.00005	0.0001	3.84	0.00019	6.21	0.0001	0.227	0.00044	0.00001	0.000419	0.00079	0.001	0.0003
MN-0.5	2016-09-03 15:45	0.00108	0.00005	0.0001	2.87	0.000197	6.45	0.0001	0.171	0.00063	0.00001	0.000248	0.0006	0.0011	0.00033
MN-0.5	2016-10-10 16:00	0.00087	0.00005	0.0001	4.19	0.000198	6.63	0.0001	0.24	0.0003	0.00001	0.000536	0.0005	0.001	0.0003
MN-0.5	2016-11-10 12:47	0.00058	0.00005	0.0001	5.28	0.000244	6.19	0.0001	0.266	0.0003	0.00001	0.000672	0.0005	0.001	0.0003
MN-0.5	2016-12-02 14:50	0.00069	0.00005	0.0001	6.88	0.000256	7.66	0.0001	0.304	0.0003	0.00001	0.000938	0.0005	0.0012	0.0003
MN-0.5	2017-05-26 15:30	0.00138	0.00005	0.0001	1.5	0.000148	3.7	0.0001	0.106	0.0008	0.00001	0.000143	0.00067	0.001	0.00043
MN-0.5	2017-06-24 15:15	0.00122	0.00005	0.0001	2.96	0.000249	5.31	0.0001	0.173	0.0007	0.00001	0.000357	0.00085	0.001	0.00034
MN-0.5	2017-07-07 12:30	0.00432	0.000991	0.00025	10.3	0.000189	6.16	0.00192	0.208	0.018	0.00001	0.000365	0.0032	0.0459	0.00387
MN-0.5	2017-08-21 15:15	0.0007	0.00005	0.0001	4.12	0.000177	5.61	0.0001	0.233	0.0003	0.00001	0.000676	0.00058	0.001	0.0003
MN-0.5	2017-09-16 12:10	0.00077	0.00005	0.0001	3.88	0.000168	5.69	0.0001	0.218	0.0003	0.00001	0.000481	0.0005	0.0011	0.0003
MN-0.5	2017-10-21 13:00	0.00073	0.00005	0.0001	4.8	0.000227	6.14	0.0001	0.248	0.0003	0.00001	0.000568	0.0005	0.0015	0.0003
MN-0.5	2017-11-10 15:45	0.00063	0.00005	0.0001	5.91	0.00024	7.26	0.0001	0.319	0.0003	0.00001	0.000817	0.0005	0.0016	0.0003
MN-0.5	2018-04-30 13:50	0.00088	0.00005	0.0001	2.45	0.000168	3.67	0.0001	0.166	0.00079	0.00001	0.000151	0.0005	0.0026	0.0003
MN-0.5	2018-05-26 16:20	0.00077	0.00005	0.0001	2.66	0.000197	3.79	0.0001	0.193	0.00034	0.00001	0.000407	0.00057	0.001	0.0003
MN-0.5	2018-06-11 15:10	0.00091	0.00005	0.0001	3.36	0.000168	4.43	0.0001	0.216	0.00053	0.00001	0.000645	0.00068	0.0026	0.0003
MN-0.5	2018-07-06 15:45	0.00105	0.00005	0.0001	3.21	0.000212	5.19	0.0001	0.188	0.00046	0.00001	0.000361	0.00071	0.001	0.0003
MN-0.5	2018-08-29 16:00	0.00124	0.00005	0.0001	3.13	0.000167	5.5	0.0001	0.165	0.00064	0.00001	0.000212	0.00062	0.001	0.00038
MN-0.5	2018-09-08 12:15	0.00095	0.00005	0.0001	3.5	0.000202	5.56	0.0001	0.202	0.00052	0.00001	0.000342	0.00054	0.001	0.0003
MN-0.5	2018-10-13 12:05	0.00063	0.00005	0.0001	5.24	0.000186	6.02	0.0001	0.277	0.00066	0.00001	0.000594	0.0005	0.0011	0.0003
MN-0.5	2019-04-29 16:20	0.0005	0.00005	0.0001	6.56	0.000372	5.03	0.0001	0.303	0.0003	0.00001	0.000813	0.00053	0.001	0.0003
MN-0.5	2019-05-17 15:10	0.0005	0.00005	0.0001	3.31	0.000209	4	0.0001	0.234	0.0003	0.00001	0.000475	0.0005	0.001	0.0003
MN-0.5	2019-06-08 15:00	0.00125	0.00005	0.0001	2.51	0.000148	4.37	0.0001	0.171	0.00089	0.00001	0.000374	0.00082	0.001	0.00039
MN-0.5	2019-07-21 14:30	0.0005	0.00005	0.0001	5.48	0.00023	5.32	0.0001	0.323	0.0003	0.00001	0.00104	0.0006	0.001	0.0003
MN-0.5	2019-08-18 9:55	0.00067	0.00005	0.0001	4.63	0.000216	5.71	0.0001	0.262	0.0003	0.00001	0.000692	0.00051	0.001	0.0003
MN-0.5	2019-09-21 14:50	0.0007	0.00005	0.0001	5.31	0.000227	5.59	0.0001	0.262	0.0003	0.00001	0.000825	0.0005	0.001	0.0003
MN-0.5	2019-10-12 14:05	0.00066	0.00005	0.0001	5.1	0.000254	5.39	0.0001	0.304	0.0003	0.00001	0.000765	0.0005	0.002	0.0003
MN-0.5	2020-05-15 12:50	0.00157	0.00005	0.0001	1.95	0.000207	4.05	0.0001	0.135	0.00529	0.00001	0.000263	0.0008	0.0019	0.00053
MN-0.5	2020-06-27 10:00	0.00084	0.00005	0.0001	4.35	0.000199	4.94	0.0001	0.227	0.00032	0.00001	0.000511	0.0007	0.001	0.0002
MN-0.5	2020-07-17 12:10	0.00126	0.00005	0.0001	2.89	0.000147	5.41	0.0001	0.146	0.0009	0.00001	0.00014	0.00097	0.0031	0.00051
MN-0.5	2020-08-21 15:00	0.00126	0.00005	0.0001	3.25	0.000147	5.72	0.00129	0.148	0.00108	0.00001	0.000157	0.00062	0.001	0.00052
MN-0.5	2020-09-09 12:40	0.00117	0.00005	0.0001	3.09	0.000208	6.18	0.0001	0.166	0.00076	0.00001	0.000227	0.00055	0.001	0.00045
MN-0.5	2020-10-10 14:05	0.00095	0.00005	0.0001	2.76	0.000186	6.13	0.0001	0.147	0.00086	0.00001	0.000168	0.0005	0.001	0.00051
MN-0.5	2021-05-19 11:15	0.002	0.00005	0.0001	1.51	0.000162	3.7	0.0001	0.099	0.00159	0.00001	0.000176	0.00071	0.0015	0.0007
MN-0.5	2021-06-14 11:30	0.0015	0.00005	0.0001	2.87	0.000221	5.19	0.0001	0.134	0.00096	0.00001	0.000183	0.00075	0.001	0.00048
MN-0.5	2021-07-17 10:40	0.00079	0.00005	0.0001	4.81	0.000167	5.95	0.0001	0.2	0.00036	0.00001	0.000345	0.00055	0.001	0.00024
MN-0.5	2021-08-22 12:00	0.00083	0.00005	0.0001	4.72	0.000157	6.25	0.0001	0.2	0.00043	0.00001	0.000318	0.0005	0.001	0.00028
MN-0.5	2021-09-25 12:25	0.00064	0.00005	0.0001	4.58	0.000128	5.81	0.0001	0.192	0.00036	0.00001	0.00032	0.0005	0.001	0.00022
MN-1.5	2012-04-19 0:00	0.00106	0.0000191	0.000038	10	0.00005	4.27	0.0002	0.051	0.00095	0.000002	0.0000179	0.00044	0.00565	0.00029
MN-1.5	2012-05-24 0:00	0.00124	0.000111	0.000072	10	0.000103	4.25	0.0002	0.0389	0.00242	0.000002	0.0000359	0.00135	0.00505	0.00045
MN-1.5	2012-06-14 0:00	0.00141	0.0000712	0.00008	10	0.000092	5.28	0.0002	0.0362	0.00223	0.000002	0.0000294	0.00146	0.00193	0.00059
MN-1.5	2012-07-12 0:00	0.00143	0.000021	0.000069	10	0.000093	5.79	0.0002	0.0534	0.00228	0.000002	0.000047	0.00157	0.00066	0.00057
MN-1.5	2012-08-06 0:00	0.00155	0.00002	0.000085	10	0.000078	6.5	0.0002	0.0697	0.00218	0.000002	0.000061	0.00158	0.00099	0.00065
MN-1.5	2012-09-07 0:00	0.0017		0.0005	3		6.97	0.005	0.0716	0.005	0.00005	0.0001	0.005	0.005	0.00072
MN-1.5	2012-10-01 0:00	0.0018		0.0005	3		6.62	0.005	0.0665	0.005	0.00005	0.0001	0.005	0.005	0.00061
MN-1.5	2013-05-27 0:00	0.001		0.0005	3		3.06	0.005	0.0371	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-1.5	2013-06-17 0:00	0.0013		0.0005	3		5.32	0.005	0.0433	0.005	0.00005	0.0001	0.005	0.005	0.0006
MN-1.5	2013-07-15 0:00	0.0014		0.0005	3		6.55	0.005	0.0521	0.005	0.00005	0.0001	0.005	0.005	0.00069
MN-1.5	2013-08-28 0:00	0.00138	0.000013	0.000075	3	0.000132	5.86	0.0002	0.0542	0.00225	0.000002	0.000047	0.00158	0.0003	0.0007

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species						Dissolved Elements																																	
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	N-NO$_2$	N-NO$_3$	N-NH$_3$	SO$_4$-D	Chlord	Fluord	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MN-1.5	2013-09-11 9:25	40.5	88.8			100	49.4					0.1	0.5	0.81	0.12		0.111	0.00072	0.041	0.05	0.0001	0.001	11	0.00001	0.00125		0.00581	0.985	0.00001	0.39	0.005	3.6	0.159		3.14	0.0015		0.0005	3	0.00012	5.87	0.005	0.0598	0.005	0.00005	0.0001	0.005	0.005	0.00083
MN-1.5	2013-10-16 12:50	42	89.5	-7.1	6.78	74	13.3	0	90.5	0.005	0.049	0.056	0.5	0.82	0.1		0.0853	0.00057	0.0342	0.05	0.0001	0.001	11.9	0.00001	0.00064		0.00514	0.771	0.00001	0.303	0.005	3.3	0.085		2.83	0.0012		0.0005	3		7.25	0.005	0.0599	0.005	0.00005	0.0001	0.005	0.005	0.00067
MN-1.5	2014-05-16 15:05	26	59.2	86.9	7.73	66	75	0.6	89.4	0.005	0.02	0.04		1.1	0.11		0.0966	0.00033	0.0273	0.05	0.0001	0.001	7.73	0.000013	0.00058		0.00709	0.338	0.00001	0.753	0.005	2.43	0.0915		1.85	0.0013		0.0005	3		3.36	0.005	0.0403	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-1.5	2014-06-03 10:00	36	97.6	75.9	6.62	76	23.6	0.4	120.1	0.005	0.045	0.025	0.5	0.88	0.1		0.0922	0.00034	0.0298	0.05	0.0001	0.001	9.1	0.00001	0.0005		0.00647	0.376	0.00001	0.455	0.005	2.66	0.0297		2.32	0.0011		0.0005	3	0.00011	4.73	0.005	0.048	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-1.5	2014-07-26 15:00	40.1	87.1	35.7	7.99	78	10.2	4.2	89.3	0.005	0.02	0.034	0.5	0.59	0.11		0.116	0.00047	0.0336	0.05	0.0001	0.001	10.8	0.00001	0.0005		0.00769	0.543	0.00001	0.29	0.005	3.13	0.0438		2.66	0.0012		0.0005	3		5.98	0.005	0.0548	0.005	0.00005	0.0001	0.005	0.005	0.00071
MN-1.5	2014-08-17 15:00	51.2	105	28.1	7.25	88	167	4.6	93.3	0.005	0.034	0.049	0.5	0.54	0.12		0.0812	0.00051	0.0438	0.05	0.0001	0.001	14.9	0.00001	0.0005		0.00578	0.587	0.00001	0.287	0.005	3.92	0.0635		3.19	0.0014		0.0005	3		7.11	0.005	0.072	0.005	0.00005	0.0001	0.005	0.005	0.00066
MN-1.5	2014-09-20 14:20	45.8	95.6	19.2	7.44	80	4.4	2.1	90.3	0.005	0.036	0.05	0.5	0.63	0.11		0.0782	0.00061	0.0351	0.05	0.0001	0.001	12.7	0.00001	0.0005		0.00472	0.764	0.00001	0.324	0.005	3.49	0.0672		3.01	0.0012		0.0005	3		6.73	0.005	0.0615	0.005	0.00005	0.0001	0.005	0.005	0.00061
MN-1.5	2014-10-11 14:00	42.7	89.9	35.9	7.66	72	56.8	-1.4	84.5	0.005	0.031	0.056	0.5	1.3	0.11		0.0733	0.00055	0.0284	0.05	0.0001	0.001	11.6	0.00001	0.0005		0.00438	0.608	0.00001	0.256	0.005	3.4	0.0465		2.88	0.001		0.0005	3		6.74	0.005	0.0561	0.005	0.00005	0.0001	0.005	0.005	0.00051
MN-1.5	2015-05-30 11:30	43.6	87.9	133.9	6.78	65	58.9	3.2	89.7	0.005	0.039	0.018	0.5	1.4	0.11		0.0691	0.00034	0.031	0.05	0.0001	0.001	10.9	0.00001	0.0005		0.00546	0.335	0.00001	0.4	0.005	3.4	0.0331		2.54	0.0011		0.0005	3		4.78	0.005	0.0553	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-1.5	2015-06-30 16:10	37.1	76.4	54.4	7.31	74	46.5	4	97.4	0.005	0.02	0.025	0.5	0.64	0.11		0.0888	0.00043	0.0302	0.05	0.0001	0.001	10.2	0.00001	0.0005		0.00617	0.462	0.00001	0.217	0.005	2.97	0.0381		3.16	0.0012		0.0005	3		5.7	0.005	0.051	0.005	0.00005	0.0001	0.005	0.005	0.00056
MN-1.5	2015-07-13 15:40	32.7	71.1	52	7.12	68	49.3	5.7	81.6	0.005	0.02	0.033	0.5	0.5	0.11		0.111	0.00044	0.0303	0.05	0.0001	0.001	9.81	0.00001	0.0005		0.00687	0.445	0.00001	0.177	0.005	2.72	0.0333		2.69	0.0012		0.0005	3		5.93	0.005	0.0518	0.005	0.00005	0.0001	0.005	0.005	0.00069
MN-1.5	2015-08-29 15:00	16.8	51.1	3.9	7.96	122	157	2.2	100.4	0.05		0.051	2.34	3	0.11		0.236	0.00113	0.0296	0.05	0.0001	0.001	6.7	0.00001	0.00081		0.00938	1.18	0.00001	0.249	0.005	1.94	0.083		2.53	0.0013		0.0005	3		6.2	0.005	0.0351	0.0116	0.00005	0.0001	0.005	0.005	0.00104
MN-1.5	2015-09-20 15:00	34.4	76.5	22.3	7.6	76	9.6	2	88.7	0.005	0.024	0.058	0.5	1.2	0.11		0.102	0.00064	0.0298	0.05	0.0001	0.001	9.7	0.000011	0.00061		0.00609	0.769	0.00001	0.272	0.005	2.85	0.0705		3.05	0.0014		0.0005	3		6.34	0.005	0.0498	0.005	0.00005	0.0001	0.005	0.005	0.00058
MN-1.5	2015-10-19 14:15	42.4	94	16.5	7.32	70	26.8	0	85.9	0.005	0.02	0.081	0.5	0.63	0.098		0.0835	0.00037	0.0308	0.05	0.0001	0.001	11.2	0.00001	0.0005		0.00468	0.56	0.00001	0.218	0.005	3.34	0.0458		2.67	0.001		0.0005	3		6.99	0.005	0.0571	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-1.5	2016-04-30 14:30	34.5	76.5	103.6	7.7	40.5	3	0	93.4	0.001	0.005	0.0095	0.97	0.5			0.142	0.00034	0.0332	0.01	0.00003	0.00005	12.1	0.000005	0.00018	0.00053	0.00983	0.314	0.0000084	0.9	0.001	3.35	0.0144	0.000195	1.98	0.00145	0.00005	0.0001	0.59	0.000111	4.57	0.0001	0.0556	0.00131	0.00001	0.000042	0.00054	0.0019	0.00061
MN-1.5	2016-05-29 10:25	41.7	84.9	44.6	7.34	44.8	3.3	1.7	81.5	0.001	0.0299	0.0128	1.24	0.5			0.0623	0.00033	0.0318	0.01	0.00002	0.00005	11.4	0.000005	0.00028	0.00048	0.00557	0.311	0.000005	0.34	0.001	3.45	0.0316	0.000319	2.79	0.00118	0.00005	0.0001	0.62	0.000078	5.56	0.0001	0.0548	0.00088	0.00001	0.000026	0.00063	0.001	0.0005
MN-1.5	2016-06-21 17:20	53.4	105	15.9	7.44	55.9	11.3	6.7	87	0.001	0.0134	0.0077	0.8	0.5			0.048	0.00057	0.0418	0.01	0.00002	0.00005	14.4	0.000006	0.00055	0.00051	0.00476	0.531	0.000005	0.3	0.001	4.17	0.1	0.000435	3.37	0.00119	0.00005	0.0001	0.5	0.000062	6.28	0.0001	0.072	0.00122	0.00001	0.000024	0.0007	0.0015	0.00048
MN-1.5	2016-07-04 15:05	66.3	127	13.2	7.34	67.3	4	9.3	82	0.001	0.005	0.005	0.88	0.5			0.0313	0.00055	0.046	0.01	0.00002	0.00005	17.2	0.000005	0.00065	0.00041	0.00326	0.543	0.000005	0.27	0.001	5.08	0.11	0.000477	3.39	0.00114	0.00005	0.0001	0.5	0.000079	6.52	0.0001	0.0858	0.00094	0.00001	0.000034	0.00058	0.0028	0.00042
MN-1.5	2016-08-07 15:45	61.1	116	36	7.98	63.1	8	9	85	0.001	0.0152	0.0182	1.1	0.5			0.0675	0.00061	0.0458	0.01	0.00002	0.00005	16.1	0.0000051	0.00061	0.00062	0.00513	0.771	0.000005	0.33	0.001	4.5	0.0919	0.000457	3.35	0.00134	0.00005	0.0001	0.58	0.000098	6.95	0.0001	0.0808	0.00178	0.00001	0.000045	0.00088	0.001	0.00066
MN-1.5	2016-09-03 17:45	49.8	95.6	16.3	7.27	52.9	89.4	4.7	82.9	0.001	0.0144	0.0176	1.27	0.5			0.0672	0.00056	0.0357	0.01	0.00002	0.00005	13.8	0.000005	0.00049	0.00073	0.00515	0.606	0.000005	0.28	0.001	3.94	0.0682	0.000438	2.88	0.00133	0.00005	0.0001	0.63	0.000127	7.28	0.0001	0.0649	0.00152	0.00001	0.000035	0.0007	0.002	0.00069
MN-1.5	2017-05-26 17:25	25.6	59.3	91	7.01	31.7	56.7	0.8	90.3	0.001	0.005	0.0161	1.93	0.5		0.00001	0.129	0.00041	0.0273	0.01	0.000025	0.00005	8.44	0.0000103	0.00044	0.00062	0.00918	0.413	0.0000057	0.62	0.001	2.46	0.0856	0.000218	2.27	0.00139	0.00005	0.0001	0.78	0.000122	3.8	0.0001	0.0414	0.0013	0.00001	0.000036	0.00067	0.001	0.0006
MN-1.5	2017-06-24 17:30	47.8	92.4	92.7	7.41	50.8	12.2	5.3	108.3	0.001	0.0241	0.0143	1.46	0.5		0.00001	0.0675	0.00043	0.0367	0.01	0.00002	0.00005	12.7	0.000005	0.00036	0.00052	0.00542	0.465	0.000005	0.3	0.001	3.83	0.05	0.000328	3.04	0.0012	0.00005	0.0001	0.5	0.000078	5.94	0.0001	0.0637	0.00123	0.00001	0.00003	0.00066	0.001	0.00057
MN-1.5	2017-07-07 15:25	61.3	117			61.8	3.4			0.001	0.0101	0.0074	1.32	0.5		0.00001	0.0439	0.0005	0.0408	0.01	0.00002	0.00005	14.7	0.000005	0.00044	0.00043	0.00377	0.558	0.000005	0.27	0.001	4.81	0.0764	0.000421	3.18	0.00104	0.00005	0.0001	0.5	0.000078	6.2	0.0001	0.0759	0.0008	0.00001	0.000032	0.00061	0.001	0.0005
MN-1.5	2017-08-19 14:10	62.7	119	102.8	7.78	62.3	3.8	5.2	89.3	0.001	0.0106	0.0068	0.94	0.5		0.00001	0.0354	0.00052	0.0386	0.01	0.00002	0.00005	15	0.000005	0.00058	0.00047	0.00318	0.563	0.000005	0.24	0.001	4.57	0.122	0.000405	3.1	0.00114	0.00005	0.0001	0.5	0.000056	6.07	0.0001	0.0788	0.0009	0.00001	0.00003	0.00053	0.001	0.00048
MN-1.5	2017-09-16 14:10	52.8	102	112.6	7.17	54.2	8.6	3.1	89.8	0.001	0.0224	0.0207	1.66	0.5		0.00001	0.0449	0.0005	0.0341	0.01	0.00002	0.00005	13.1	0.000005	0.00036	0.00054	0.00408	0.52	0.000005	0.26	0.001	3.93	0.0561	0.000359	2.83	0.00112	0.00005	0.0001	0.61	0.000064	6.45	0.0001	0.0666	0.00118	0.00001	0.000028	0.00056	0.0017	0.00055
MN-1.5	2017-10-21 14:35	70.7	130	88.2	7.42	70.7	4.8	0	48.3	0.001	0.0434	0.0239	2.41	0.5	0.119	0.00001	0.0282	0.00032	0.0413	0.01	0.00002	0.00005	16	0.000005	0.00034	0.00036	0.00278	0.414	0.000005	0.27	0.001	5.4	0.0553	0.000353	3.31	0.00084	0.00005	0.0001	0.72	0.000051	7	0.0001	0.0849	0.0008	0.00001	0.000032	0.0005	0.0015	0.00036
MN-1.5	2018-05-26 11:45	48.1	93	121.3	7.53	52.3	6.6	2.2	107.2	0.001	0.0144	0.0067	1.94	0.21		0.00001	0.0595	0.00031	0.032	0.01	0.00002	0.00005	13.3	0.000005	0.00013	0.00043	0.00622	0.126	0.000005	0.66	0.001	4.19	0.00955	0.000264	2.86	0.00108	0.00005	0.0001	0.75	0.000087	4.84	0.0001	0.0642	0.0008	0.00001	0.000034	0.0005	0.001	0.00042
MN-1.5	2018-06-16 13:45	49.6	95.1	81	7.16	52.8	3.2	5.5	68.7	0.001	0.0129	0.0105	1.56	0.5		0.00001	0.0502	0.00035	0.0348	0.01	0.00002	0.00005	13.6	0.000005	0.00021	0.00042	0.00519	0.24	0.000005	0.31	0.001	4.11	0.0236	0.000343	3.09	0.00107	0.00005	0.0001	0.84	0.000064	5.13	0.0001	0.0692	0.00095	0.00001	0.000029	0.0005	0.0015	0.00045
MN-1.5	2018-07-05 15:20	46	91.9	74.9	7.2	48.9	20.1	6.2	103.5	0.001	0.0096	0.005	1.37	0.1		0.00001	0.0717	0.00047	0.0355	0.01	0.00002	0.00005	12.3	0.000005	0.00034	0.0006	0.00567	0.451	0.000005	0.2	0.001	3.78	0.0426	0.0004	3.06	0.00114	0.00005	0.0001	0.5	0.000078	5.63	0.0001	0.0631	0.00114	0.00001	0.00003	0.00068	0.001	0.00059
MN-1.5	2018-08-29 17:20	35.3	80.8	72.1	7.01	42	3	4.8	111.1	0.001	0.005	0.0062	4.36	0.5		0.00001	0.072	0.00036	0.0269	0.01	0.00002	0.00005	10.1	0.000005	0.00017	0.00068	0.00589	0.279	0.000005	0.17	0.001	3.04	0.0158	0.00029	2.82	0.00104	0.00005	0.0001	1.57	0.000063	6.09	0.0001	0.0542	0.00143	0.00001	0.000025	0.00053	0.001	0.00064
MN-1.5	2018-09-08 13:55	44.4	89.3	70.3	7.17	48.9	3	3.6	98.9	0.001	0.008	0.0064	2.77	0.5		0.00001	0.0559	0.00041	0.0301	0.01	0.00002	0.00005	11.9	0.000005	0.00025	0.00064	0.00472	0.349	0.000005	0.18	0.001	3.81	0.0272	0.000306	3.11	0.00109	0.00005	0.0001	0.82	0.000091	6.07	0.0001	0.0596	0.00102	0.00001	0.000024	0.0005	0.001	0.00057
MN-1.5	2018-10-13 14:40	59.1	136	163	7.88	72	6.7	0.3	96.3	0.001	0.005	0.0105	3.69	0.82		0.00001	0.035	0.00036	0.0355	0.01	0.00002	0.00005	17.1	0.0000249	0.00019	0.00071	0.0051	0.074	0.000005	2.69	0.001	6.64	0.0655	0.000295	5.39	0.00113	0.00005	0.0001	1.07	0.000069	8.4	0.0001	0.088	0.00127	0.00001	0.000016	0.0005	0.004	0.00051
MN-1.5	2019-05-19 9:25	44.3	83.8	163.6	6.74	46.8	5.4	0.1	85.4	0.001	0.005	0.0073	1.72	0.51		0.00001	0.0366	0.00027	0.0249	0.01	0.00002	0.00005	10.9	0.0000144	0.0001	0.00036	0.00515	0.083	0.000005	0.75	0.001	3.53	0.00774	0.000226	2.61	0.00081	0.00005	0.0001	0.55	0.000068	4.02	0.0001	0.0568	0.00065	0.00001	0.000024	0.0005	0.001	0.0003
MN-1.5	2019-06-08 16:50	32.7	76.4	146.7	6.98	95	30.5	3.4	83.2	0.001	0.005	0.0124	1.65	0.5		0.00001	0.105	0.00038	0.0307	0.01	0.00002	0.00005	11.2	0.0000054	0.00013	0.00057	0.00877	0.265	0.000005	0.28	0.001	3.13	0.00817	0.000215	2.72	0.0013	0.00005	0.0001	0.78	0.000085	4.76	0.0001	0.0588	0.00145	0.00001	0.000038	0.00054	0.001	0.00064
MN-1.5	2019-07-21 16:05	69.3	137	45.7	7.2	70.8	9.7	11.9	49.5	0.001	0.005	0.0067	0.61	0.5		0.00001	0.0311	0.00057	0.0532	0.01	0.00002	0.00005	18.9	0.000005	0.0009	0.00035	0.00281	0.637	0.000005	0.22	0.001	4.92	0.227	0.000484	3.67	0.00113	0.00005	0.0001	0.5	0.000074	6.14	0.0001	0.1	0.00072	0.00001	0.00002	0.00052	0.001	0.0004
MN-1.5	2019-08-19 11:15	67	134	112	7.45	70.9	6	1.8	69.3	0.001	0.0077	0.0158	1.23	0.5		0.00001	0.0277	0.00052	0.0435	0.01	0.00002	0.00005	18.6	0.000005	0.00037	0.00035	0.00342	0.481	0.000005	0.24	0.001	6.1	0.0615	0.000416	3.85	0.00098	0.00005	0.0001	0.52	0.000053	6.43	0.0001	0.0921	0.00074	0.00001	0.000034	0.0005	0.001	0.00037
MN-1.5	2019-09-21 11:00	64.2	124	206.9	7.14	66.3	9.3	2.6	74.7	0.001	0.0126	0.0115	1.9	0.28		0.00001	0.0253	0.0004	0.0361	0.01	0.00002	0.00005	16.5	0.000005	0.00026	0.00038	0.00308	0.283	0.000005	0.19	0.001	5.06	0.035	0.000382	3.47	0.00107	0.00005	0.0001	0.7	0.000075	6.41	0.0001	0.0786	0.00068	0.00001	0.000032	0.0005	0.0011	0.0004
MN-1.5	2019-10-12 15:15	67.7	123	216.9	7.41	69.9	69.9	0.1	52	0.001	0.005	0.0081	1.98	0.3		0.00001	0.0232	0.00026	0.0361	0.01	0.00002	0.00005	17.4	0.000005	0.00017	0.0003	0.00284	0.109	0.000005	0.19	0.001	5.37	0.0194	0.000284	3.88	0.00083	0.00005	0.0001	0.98	0.00005	6.18	0.0001	0.0862	0.00053	0.00001	0.000014	0.0005	0.001	0.00073
MN-1.5	2020-05-15 14:55	20.5	48.6	166.3	7.17	74.2	3	2.1	90.7	0.001	0.005	0.0098	1.42	0.22		0.00001	0.193	0.00039	0.0303	0.01	0.00003	0.00005	8.44	0.0000068	0.00031	0.0007	0.016	0.334	0.0000096	0.73	0.001	2.43	0.0372	0.000134	1.72	0.00167	0.00005	0.0001	0.5	0.000094	3.45	0.0001	0.0427	0.00167	0.00001	0.000038	0.0006	0.001	0.00075
MN-1.5	2020-06-27 11:50	52.9	113	44.8	7.18	90.3	3	5	68.5	0.001	0.005	0.0068	2.96	0.1		0.00001	0.0377	0.00028	0.0335	0.01	0.00002	0.00005	16.2	0.000005	0.00012	0.00043	0.00423	0.132	0.000005	0.145	0.001	4.44	0.0118	0.000263	3.22	0.00081	0.00005	0.0001	0.99	0.000067	5.51	0.0001	0.0772	0.00061	0.00001	0.000026	0.0005	0.001	0.0004
MN-1.5	2020-07-17 14:20	34.1	78	159.6	6.98	79.8	112	5.2	81.5	0.001	0.005	0.0242	3.64	0.1		0.00001	0.0906	0.00031	0.0296	0.01	0.00002	0.00005	11.7	0.000005	0.0001	0.00061	0.00718	0.161	0.000005	0.103	0.001	3.03	0.00291	0.000194	2.84	0.00088	0.00005	0.0001	1.26	0.000068	5.49	0.0001	0.0615	0.00124	0.00001	0.000028	0.0007	0.0012	0.00062
MN-1.5	2020-08-21 16:55	31.8	76.8	102.1		79.4	3	4.4	90.5	0.001	0.005	0.0118	5.6	0.1		0.00001	0.105	0.0003	0.0309	0.01	0.00002	0.00005	11.1	0.000005	0.00014	0.00065	0.00701	0.248	0.000005	0.13	0.001	3.18	0.00916	0.000211	2.94	0.00091	0.00005	0.0001	1.98	0.000092	5.73	0.0001	0.053	0.00139	0.00001	0.00003	0.0005	0.001	0.00065
MN-1.5	2020-09-09 14:45	39	86.7	154.4	7.47	81.4	5.1	3.7	89.2	0.001	0.0065	0.0058	4.12	0.12		0.00001	0.0796	0.00031	0.0309	0.01	0.00002	0.00005	11.8	0.000008	0.00012	0.00064	0.0062	0.228	0.000005	0.169	0.001	3.44	0.0105	0.000253	2.93	0.00102	0.00005	0.0001	1.7	0.000066	6.63	0.0001	0.0601	0.00119	0.00001	0.000027	0.0005	0.001	0.00062
MN-1.5	2020-10-10 16:00	35.1	84.5	213.5	7.33	78.2	3.3	0.2	89.6	0.001	0.005	0.0082	5.12	0.21		0.00001	0.0691	0.00024	0.0274	0.01	0.00002	0.00005	11.4	0.000005	0.00011	0.00048	0.00518	0.18	0.000005	0.136	0.001	3.45	0.0082	0.000262	2.88	0.00054	0.00005	0.0001	1.57	0.00005	6.48	0.0001	0.0584	0.00111	0.00001	0.000024	0.0005	0.001	0.00057
MN-1.5	2021-05-16 10:00			270.1	5.21			0.1	97.6			0.0103				0.00001	0.21	0.00036	0.0274	0.01	0.000029	0.00005	7.54	0.0000082	0.00027	0.00061	0.0151	0.41	0.0000077	1.34	0.001	2.08	0.0161	0.00015	1.2	0.00162	0.00005	0.0001	0.62	0.0001	2.69	0.0001	0.038	0.00183	0.00001	0.000037	0.00061	0.002	0.00069
MN-1.5	2021-06-14 13:30	40.7	86.4	163.6	7.3	77.2	5.8	2.1	96.1	0.001	0.005	0.0252	2.32	0.1		0.00001	0.0823	0.00028	0.0302	0.01	0.00002	0.00005	11.3	0.0000052	0.0001	0.0005	0.00604	0.143	0.000005	0.449	0.001	3.41	0.00409	0.000239	2.74	0.00106	0.00005	0.0001	0.6	0.000103	5.22	0.0001	0.0561	0.00103	0.00001	0.000028	0.0005	0.001	0.00047
MN-1.5	2021-07-17 13:15	55.2	113	96.3	6.91	90.6	3.1	4.9	91.2	0.001	0.0068	0.0086	2.66	0.1		0.00001	0.0511	0.0003	0.0394	0.01	0.00002	0.00005	16.1	0.0000073	0.00016	0.0005	0.00458	0.191	0.000005	0.221	0.001	4.76	0.017	0.000296	3.45	0.00096	0.00005	0.0001	0.74	0.00005	6.2	0.0001	0.0753	0.00092	0.00001	0.000034	0.00056	0.001	0.00041
MN-1.5	2021-08-22 14:30	50.8	106	79.2	7.58	86.7	1.6	3.9	99.5	0.001	0.005	0.0071	2.41	0.1		0.00001	0.0519	0.00028	0.035	0.01	0.00002	0.00005	13.9	0.000005	0.00014	0.0005	0.00458	0.182	0.000005	0.237	0.001	4.08	0.0149	0.000311	3.29	0.00099	0.00005	0.0001	0.82	0.000095	6.46	0.0001	0.0718	0.00072	0.00001	0.000028	0.0005	0.0012	0.00047
MN-1.5	2021-09-25 15:00	51.5	111	90.6	7.01	85.5	1	0.5	95	0.001	0.005	0.005	2.67	0.17		0.00001	0.0465	0.00027	0.0301	0.01	0.00002	0.00005	13.5	0.000005	0.00013	0.0005	0.00385	0.192	0.000005	0.203	0.001	3.89	0.0123	0.00029	3.2	0.00082	0.00005	0.0001	0.83	0.000066	6.34	0.0001	0.0681	0.0009	0.00001	0.000027	0.0005	0.001	0.00048
MN-2.5	2012-04-19 0:00	52.7	115			104	1			0.005	0.02	0.0074	0.5	1.8	0.1	0.000006	0.0147	0.000426	0.0254	0.05	0.00001	0.000005	14.8	0.0000238	0.0000768	0.00022	0.00175	0.12	0.00001	2.18	0.00052	4.62	0.0192	0.000221	2.46	0.000784	0.0000183	0.000033	10	0.00006	4.68	0.0002	0.0665	0.0005	0.000002	0.0000203	0.0002	0.00287	0.00012
MN-2.5	2012-05-24 0:00	59.5	119			102	105			0.05	0.2	0.036	0.5	1	0.15	0.000005	0.0268	0.000534	0.0352	0.05	0.000012	0.000005	16.5	0.000017	0.000202	0.00031	0.00254	0.543	0.00001	0.709	0.0005	4.67	0.0542	0.00054	2.78	0.00147	0.0000286	0.000084	10	0.000128	5.53	0.0002	0.0729	0.00115	0.000002	0.0000886	0.00089	0.00211	0.0003
MN-2.5	2012-06-14 0:00	56.9	116			94	260			0.05	0.2	0.029	5	5	0.16	0.000005	0.0283	0.000547	0.035	0.05	0.00001	0.000005	16.3	0.000012	0.000209	0.00036	0.00264	0.469	0.00001	0.453	0.0005	4.7	0.0365	0.000585	3.1	0.00147	0.0000335	0.000084	10	0.000094	5.78	0.0002	0.0736	0.00061	0.000002	0.0000747	0.00099	0.00097	0.00034
MN-2.5	2012-07-12 0:00	80	163			104	6.7			0.05	0.2	0.036	0.5	1.1	0.18	0.000005	0.0215	0.000656	0.0392	0.05	0.00001	0.000005	22.1	0.000018	0.000224	0.00036	0.0021	0.632	0.00001	0.466	0.00056	6.33	0.0937	0.000759	3.97	0.00132	0.000032	0.000079	10	0.000102	6.27	0.0002	0.105	0.00086	0.000002	0.000117	0.00082	0.00083	0.00032
MN-2.5	2012-08-06 0:00	94.3	186			136	3.8			0.005	0.034	0.017	0.5	1.3	0.18	0.000005	0.0204	0.000777	0.045	0.05	0.000012	0.000005	25.8	0.000005	0.00031	0.00037	0.0017	0.867		0.55	0.00069	6.99	0.174	0.000859	4.21	0.00155	0.000019	0.00007	10	0.00013	6.85	0.00038	0.119	0.00088	0.000002	0.000149	0.00087	0.00092	0.00032
MN-2.5	2012-09-07 0:00	92.1	180			120	8.7			0.005	0.032	0.0098	0.5	1.5	0.18	0.00002	0.025	0.00073	0.0454	0.05	0.0001	0.001	25.1	0.00001	0.0005	0.001	0.00279	0.733	0.00001	0.508	0.005	7.35	0.157	0.001	4.63	0.0015	0.0002	0.0005	3	0.0001	6.82	0.005	0.116	0.005	0.00005	0.00017	0.005	0.005	0.0005
MN-2.5	2012-10-01 0:00	89	177			242	3.1			0.005	0.033	0.015	0.5	1.2	0.16	0.00002	0.0169	0.00068	0.0405	0.05	0.0001	0.001	23.2	0.00001	0.0005	0.001	0.00193	0.553	0.00001	0.496	0.005	6.91	0.146	0.001	4.2	0.0016	0.0002	0.0005	3	0.0001	6.42	0.005	0.113	0.005	0.00005	0.00018	0.005	0.005	0.0005
MN-2.5	2013-05-27 0:00	43.4	90.7			90	61.7			0.005	0.02	0.039	0.5	1.3	0.12	0.00002	0.0306	0.00038	0.0264	0.05	0.0001	0.001	12.3	0.00001	0.0005	0.001	0.00259	0.223	0.00001	1.13	0.005	3.6	0.0813	0.001	2.13	0.0011	0.0002	0.0005	3	0.0001	3.47	0.005	0.0608	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-2.5	2013-06-17 0:00	70.2	140			126	46.9			0.005	0.022	0.018	0.5	0.98	0.15	0.00002	0.0142	0.00044	0.0353	0.05	0.0001	0.001	18.7	0.00001	0.0005	0.001	0.00191	0.341	0.00001	0.648	0.005	5.36	0.0327	0.001	3.48	0.0013	0.0002	0.0005	3	0.0001	5.7	0.005	0.0887	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-2.5	2013-07-15 0:00	85.3	171			98	3.6			0.005	0.036	0.022	0.63	1	0.18	0.00002	0.0139	0.00042	0.0387	0.05	0.0001	0.001	23.7	0.00001	0.0005	0.001	0.00164	0.262	0.00001	0.661	0.005	6.26	0.0488	0.001	3.81	0.0019	0.0002	0.0005	3	0.0001	6.96	0.005	0.11	0.005	0.00005	0.00013	0.005	0.005	0.0005
MN-2.5	2013-08-28 0:00	78.5	161			114	10.1			0.002	0.0299	0.028	0.5	1.1	0.17	0.000005	0.0217	0.000561	0.0392	0.05	0.00001	0.000005	22.2	0.00001	0.000055	0.00038	0.00309	0.334	0.00001	0.477	0.00057	6.04	0.00131	0.000741	3.91	0.00164	0.000039	0.000092	3	0.000099	6.57	0.0002	0.105	0.00107	0.000002	0.000134	0.00083	0.00227	0.00038
MN-2.5	2013-09-11 14:00	85.3	171			128	2.4			0.05	0.2	0.039	1.04	1.3	0.17	0.00002	0.0197	0.00063	0.0418	0.05	0.0001	0.001	22.3	0.00001	0.0005	0.001	0.00201	0.543	0.00001	0.582	0.005	6.53	0.115	0.001	3.96	0.0015	0.0002	0.0005	3	0.0001	5.97	0.005	0.108	0.005	0.00005	0.00015	0.005	0.005	0.0005
MN-2.5	2013-10-16 14:45	82.7	167	12.5	7.48	144	3	0	94.7	0.005	0.041	0.022	0.93	1.4	0.16	0.00002	0.0148	0.0005	0.0361	0.05	0.0001	0.001	22.4	0.00001	0.0005	0.001	0.00178	0.322	0.00001	0.488	0.005	6.08	0.105	0.001	3.94	0.0013	0.0002	0.0005	3	0.0001	6.49	0.005	0.103	0.005	0.00005	0.00015	0.005	0.005	0.0005
MN-2.5	2014-05-16 13:50	52.5	112	64.5	8	82	120	0	96.2	0.005	0.02	0.037	0.5	0.98	0.16	0.00002	0.0182	0.00039	0.0314	0.05	0.0001	0.001	14.5	0.00001	0.0005	0.001	0.00253	0.194	0.00001	0.891	0.005	4.38	0.057	0.001	2.67	0.0014	0.0002	0.0005	3	0.00012	4.1	0.005	0.0722	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-2.5	2014-06-03 11:30	66.3	136	41.3	6.86	114	11.5	0.5	117.9	0.005	0.036	0.014	0.5	1	0.17	0.00002	0.0139	0.00042	0.0302	0.05	0.0001	0.001	17.9	0.00001	0.0005	0.001	0.00222	0.218	0.00001	0.592	0.005	5.32	0.026	0.001	3.54	0.0014	0.0002	0.0005	3	0.0001	4.98	0.005	0.0839	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-2.5	2014-07-26 12:45	85.4	177	24.2	8.24	112	15.1	3.6	92.7	0.005	0.035	0.013	0.5	0.78	0.18	0.00002	0.0104	0.00039	0.036	0.05	0.0001	0.001	21.9	0.00001	0.0005	0.001	0.00147	0.214	0.00001	0.611	0.005	6.77	0.048	0.001	4.05	0.0011	0.0002	0.0005	3	0.0001	5.99	0.005	0.105	0.005	0.00005	0.00012	0.005	0.005	0.0005
MN-2.5	2014-08-17 13:15	90	182	37.3	7.64	124	3.3	3.3	94.3	0.005	0.043	0.021	1.7	0.95	0.19	0.00002	0.0083	0.00037	0.0394	0.05	0.0001	0.001	25.3	0.00001	0.0005	0.001	0.00129	0.166	0.00001	0.841	0.005	6.61	0.0683	0.001	3.81	0.001	0.0002	0.0005	3	0.0001	6.72	0.005	0.123	0.005	0.00005	0.00017	0.005	0.005	0.0005
MN-2.5	2014-09-20 13:10	91.8	181	57.5	7.63	111	1	1.6	92	0.005	0.02	0.02	0.92	0.95	0.17	0.00002	0.0102	0.00038	0.0375	0.05	0.0001	0.001	23.5	0.00001	0.0005	0.001	0.00137	0.187	0.00001	0.757	0.005	6.69	0.0728	0.001	4.13	0.0011	0.0002	0.0005	3	0.0001	6.28	0.005	0.115	0.005	0.00005	0.00015	0.005	0.005	0.0005
MN-2.5	2014-10-11 11:45	84.4	175	67.8	7.94	116	1.3	-1.3	81.4	0.005	0.045	0.018	1.17	1.6	0.17	0.00002	0.011	0.00043	0.0347	0.05	0.0001	0.001	22.9	0.00001	0.0005	0.001	0.00151	0.193	0.00001	0.542	0.005	6.7	0.0672	0.001	4.17	0.0011	0.0002	0.0005	3	0.0001	6.07	0.005	0.109	0.005	0.00005	0.00015	0.005	0.005	0.0005
MN-2.5	2014-12-04 14:45	129	255			172	1			0.005	0.079	0.011	3.8	1.6	0.22	0.00002	0.0086	0.00029	0.0629	0.05	0.0001	0.001	35.1	0.000011	0.0005	0.001	0.00174	0.023	0.00001	1.84	0.005	10.1	0.0155	0.001	5.86	0.001	0.0002	0.0005	3	0.0001	8.32	0.005	0.194	0.005	0.00005	0.0003	0.005	0.005	0.0005
MN-2.5	2015-05-26 14:15	64.5	137	138.4	7.79	92	3.6	0.8	96.7	0.005	0.02	0.055	0.5	1.5	0.16	0.00002	0.0097	0.00029	0.0295	0.05	0.0001	0.001	18.6	0.00001	0.0005	0.001	0.00161	0.0665	0.00001	0.865	0.005	4.99	0.0532	0.001	3.48	0.0011	0.0002	0.0005	3	0.0001	4.59	0.005	0.0862	0.005	0.00005	0.00013	0.005	0.005	0.0005
MN-2.5	2015-06-23 16:25	100	200	78	7.48	122	3.5	4.2	85.7	0.005	0.041	0.017	3.78	1	0.21	0.00002	0.0065	0.0003	0.0426	0.05	0.0001	0.001	27.9	0.00001	0.0005	0.001	0.00107	0.054	0.00001	0.889	0.005	7.02	0.0186	0.001	3.92	0.001	0.0002	0.0005	3	0.0001	6.93	0.005	0.133	0.005	0.00005	0.00025	0.005	0.005	0.0005
MN-2.5	2015-07-13 13:50	82.1	165	112.8	7.72	98	2.6	4.9	91.8	0.005	0.025	0.14	0.87	0.68	0.17	0.00002	0.0099	0.00032	0.0324	0.05	0.0001	0.001	22.1	0.00001	0.0005	0.001	0.00166	0.0838	0.00001	0.65	0.005	6.07	0.0207	0.001	3.88	0.001	0.0002	0.0005	3	0.0001	6.32	0.005	0.103	0.005	0.00005	0.00012	0.005	0.005	0.0005
MN-2.5	2015-08-30 14:30	63.5	136	51.9	7.36	116	341	2.1	91	0.005	0.02	0.04	0.5	1.5	0.17	0.00002	0.0351	0.00049	0.0376	0.05	0.0001	0.001	18.3	0.00001	0.0005	0.001	0.00338	0.288	0.00001	0.363	0.005	5.6	0.0862	0.001	3.95	0.0015	0.0002	0.0005	3	0.0001	6.29	0.005	0.0844	0.005	0.00005	0.0001	0.005	0.005	0.0005
MN-2.5	2015-09-20 13:48	86	173	44.3	7.63	122	2.3	1.8	90.1	0.005	0.02	0.025	0.58	1.4	0.18	0.00002	0.0147	0.0004	0.0341	0.05	0.0001	0.001	22.8	0.00001	0.0005	0.001	0.00191	0.194	0.00001	0.578	0.005	6.55	0.0621	0.001	4.14	0.0012	0.0002	0.0005	3	0.0001	6.28	0.005	0.107	0.005	0.00005	0.00014	0.005	0.005	0.0005
MN-2.5	2015-10-18 15:15	85.5	176	-0.2	7.52	96	10.1	0	88.5	0.005	0.034	0.021	0.58	1.4	0.17	0.00002	0.0171	0.00039	0.0344	0.05	0.0001	0.001	24.6	0.00001	0.0005	0.001	0.00159	0.187	0.00001	0.57	0.005	6.5	0.0649	0.001	4.24	0.001	0.0002	0.0005	3	0.0001	6.9	0.005	0.109	0.005	0.00005	0.00017	0.005	0.005	0.0005
MN-2.5	2015-11-26 13:55	121	277	98.6	8.58	172	2.5	-0.1	6.6	0.005	0.122	0.0098	15	0.57	0.39	0.00002	0.0091	0.00032	0.0622	0.05	0.0001	0.001	37.9	0.00001	0.0005	0.001	0.00071	0.0225	0.00001	0.98	0.005	9.73	0.0054	0.0011	7.53	0.001	0.0002	0.0005	3.6	0.00019	7	0.005	0.275	0.005	0.00005	0.0007	0.005	0.005	0.0005
MN-2.5	2015-12-19 15:40	129	253		8.6	134	44.7	-0.1	4.9	0.005	0.046	0.013	5.04	1.3	0.21	0.00002	0.0121	0.0003	0.0618	0.05	0.0001	0.001	32.8	0.00001	0.0005	0.001	0.00208	0.0228	0.00001	1.22	0.005	9.96	0.0071	0.001	5.76	0.001	0.0002	0.0005	3	0.0001	7.7	0.005	0.162	0.005	0.00005	0.00014	0.005	0.005	0.0005
MN-2.5	2016-04-29 17:45	48.5	101	122.9	7.57	53.3	60	0	92.3	0.001	0.005	0.0126	1.44	0.5		0.00001	0.0357	0.00041	0.0264	0.01	0.00002	0.00005	15	0.0000064	0.00012	0.00036	0.00349	0.158	0.0000073	0.96	0.001	4.27	0.0214	0.000412	2.27	0.00135	0.00005	0.0001	0.7	0.000093	4.88	0.0001	0.064	0.00095	0.00001	0.000049	0.0005	0.0013	0.00035
MN-2.5	2016-05-28 16:35	74.9	149	43.1	7.76	79.1	24	1.9	94.9	0.001	0.0204	0.0158	2.33	0.57		0.00001	0.0127	0.00035	0.0357	0.01	0.00002	0.00005	20.7	0.000005	0.00014	0.00026	0.00183	0.124	0.000005	0.64	0.001	5.76	0.0359	0.000625	3.82	0.00138	0.00005	0.0001	0.99	0.000087	5.27	0.0001	0.0961	0.00043	0.00001	0.000126	0.0005	0.0031	0.0003
MN-2.5	2016-06-21 16:10	95.3	189	9.3	7.71	101	72	4.5	95.1	0.001	0.0211	0.0174	3.55	0.6		0.00001	0.0112	0.0004	0.0478	0.01	0.00002	0.00005	26.8	0.000005	0.00017	0.0002	0.00181	0.121	0.000005	0.74	0.001	7.23	0.0488	0.000765	4.62	0.00119	0.00005	0.0001	1.36	0.000083	5.87	0.0001	0.126	0.00037	0.00001	0.000211	0.0007	0.0019	0.0003
MN-2.5	2016-07-04 13:25	100	198	40.4	7.73	108	24	4	92.3	0.001	0.0179	0.0083	4.21	0.51		0.00001	0.0071	0.00032	0.0433	0.01	0.00002	0.00005	30.4	0.000005	0.00011	0.00017	0.00121	0.06	0.000005	0.87	0.001	7.64	0.0448	0.000868	4.13	0.00086	0.00005	0.0001	1.64	0.000065	6.33	0.0001	0.133	0.0003	0.00001	0.000225	0.0005	0.001	0.0003
MN-2.5	2016-08-04 16:05	97.1	190		7.9	102	71.3	5.3		0.001	0.022	0.0165	2.71	0.64		0.00001	0.0115	0.00042	0.0472	0.01	0.00002	0.00005	26.9	0.000005	0.00021	0.00024	0.00147	0.106	0.000005	0.76	0.0011	7.29	0.0801	0.000802	4.77	0.00119	0.00005	0.0001	1.16	0.000072	6.42	0.0001	0.131	0.00032	0.00001	0.000178	0.00055	0.001	0.0003
MN-2.5	2016-09-03 16:30	97.7	184	71.8	7.26	102	165	3.9	90.9	0.001	0.0091	0.016	2.34	0.95		0.00001	0.0128	0.00046	0.0459	0.01	0.00002	0.00005	26.9	0.000005	0.00019	0.00029	0.0016	0.159	0.000005	0.59	0.001	7.54	0.0652	0.000679	4.59	0.00132	0.00005	0.0001	1	0.000113	6.51	0.0001	0.12	0.00043	0.00001	0.000168	0.00064	0.0016	0.0003
MN-2.5	2016-10-10 16:25	114	199	60.2	7.43	113	22	-0.1	78.8	0.001	0.0596	0.015	3.81	0.77		0.00001	0.0086	0.00032	0.0486	0.01	0.00002	0.00005	26.9	0.0000052	0.00014	0.00022	0.002	0.112	0.000005	0.95	0.001	7.34	0.104	0.000757	4.31	0.00111	0.00005	0.0001	1.25	0.000083	6.73	0.0001	0.136	0.00042	0.00001	0.00015	0.0005	0.001	0.0003
MN-2.5	2016-11-12 11:05	117	218	14.3	7.93	117	3	0	91	0.001	0.049	0.0483	4.49	0.73		0.00001	0.006	0.00055	0.061	0.01	0.00002	0.00005	26.9	0.000007	0.00041	0.0002	0.00131	0.332	0.000005	0.95	0.001	8.16	0.421	0.000949	4.92	0.00143	0.00005	0.0001	1.6	0.000056	6.74	0.0001	0.139	0.0003	0.00001	0.000172	0.0005	0.001	0.0003
MN-2.5	2017-05-26 16:20	51	102	70.3	7.62	55.1	226	0.5	96.2	0.001	0.005	0.0248	1.15	0.62		0.00001	0.028	0.00044	0.031	0.01	0.00002	0.00005	14.5	0.0000066	0.00023	0.00032	0.00341	0.208	0.000005	0.63	0.001	4.46	0.0485	0.000417	2.86	0.00171	0.00005	0.0001	0.5	0.000102	3.97	0.0001	0.0651	0.00065	0.00001	0.000056	0.00051	0.001	0.00037
MN-2.5	2017-06-24 16:10	78.1	150	103.6	7.66	81.6	11.2	4.6	124	0.001	0.026	0.0122	2.7	0.5		0.00001	0.0131	0.00037	0.0377	0.01	0.00002	0.00005	21.4	0.000005	0.0001	0.00026	0.0022	0.076	0.000005	0.56	0.001	5.87	0.0159	0.000627	3.98	0.00134	0.00005	0.0001	0.88	0.000095	5.65	0.0001	0.0997	0.0003	0.00001	0.000099	0.00059	0.001	0.0003
MN-2.5	2017-07-07 13:45	94.9	179	149.9	7.67	95	21.6	4.9	116.9	0.001	0.0247	0.0106	3.01	0.57		0.00001	0.0099	0.00034	0.0409	0.01	0.00002	0.00005	22.6	0.0000062	0.00011	0.00022	0.00173	0.058	0.000005	0.57	0.0015	7.06	0.0192	0.000669	4.08	0.00133	0.00005	0.0001	0.94	0.00008	5.55	0.0001	0.11	0.0003	0.00001	0.000148	0.00055	0.001	0.0003
MN-2.5	2017-08-21 15:50	105	200			108	3			0.001	0.0293	0.005	4	0.51		0.00001	0.005	0.00029	0.0419	0.01	0.00002	0.00005	27.5	0.000005	0.0001	0.00013	0.00117	0.039	0.000005	0.82	0.0015	7.27	0.0276	0.000772	4.08	0.00086	0.00005	0.0001	1.36	0.000065	5.89	0.0001	0.131	0.0003	0.00001	0.000205	0.0005	0.001	0.0003
MN-2.5	2017-09-16 12:50	104	191	180.8	7.1	103	11.8	1.2	93.3	0.001	0.0167	0.0067	3.29	0.85		0.00001	0.0081	0.00035	0.0385	0.01	0.00002	0.00005	24.4	0.000005	0.0001	0.0002	0.00128	0.044	0.000005	0.76	0.001	7.04	0.0249	0.000691	3.94	0.00101	0.00005	0.0001	1.16	0.000062	5.91	0.0001	0.121	0.00037	0.00001	0.000166	0.0005	0.001	0.0003
MN-2.5	2017-10-21 13:30	108	202	192	7.45	111	29.6	0	87.5	0.001	0.0455	0.0073	4.38	0.81	0.195	0.00001	0.0052	0.00016	0.0416	0.01	0.00002	0.00005	27.1	0.000005	0.0001	0.00017	0.00118	0.032	0.000005	0.92	0.001	7.68	0.0573	0.000865	4.36	0.00085	0.00005	0.0001	1.44	0.00005	6.44	0.0001	0.138	0.0003	0.00001	0.00019	0.0005	0.001	0.0003
MN-2.5	2017-11-10 16:10	127	228	161.4	7.64	127	3	0	42.4	0.001	0.0276	0.005	5	0.96		0.00001	0.0076	0.00029	0.0557	0.01	0.00002	0.00005	32.9	0.00001	0.0001	0.00021	0.00173	0.039	0.000005	1.26	0.0011	9.84	0.0413	0.000685	5.7	0.00104	0.00005	0.0001	1.59	0.000078	7.26	0.0001	0.154	0.0003	0.00001	0.00018	0.0005	0.0019	0.0003
MN-2.5	2018-04-30 14:30	50.7	109	204.7	7.34	60	3	0	102.8	0.001	0.005	0.0093	2.74	1.26		0.00001	0.0185	0.00038	0.024	0.01	0.00002	0.00005	15	0.000013	0.0001	0.00022	0.00263	0.063	0.0000068	2.47	0.001	4.8	0.0062	0.000289	3.15	0.00107	0.00005	0.0001	0.96	0.00009	4.04	0.0001	0.064	0.00044	0.00001	0.000022	0.0005	0.0021	0.0003
MN-2.5	2018-05-26 17:00	60.8	120	132.7	7.83	65.4	45.8	0.8	102.8	0.001	0.005	0.0097	2.19	0.51		0.00001	0.0178	0.00034	0.0287	0.01	0.00002	0.00005	16.9	0.000005	0.0001	0.00018	0.00234	0.047	0.000005	0.9	0.001	5.08	0.0178	0.00057	3.28	0.0012	0.00005	0.0001	0.78	0.000076	4.47	0.0001	0.0775	0.00069	0.00001	0.000072	0.0005	0.001	0.0003
MN-2.5	2018-06-11 15:50	71.4	146	162.7	7.82	76.1	10.6	2.3	100.3	0.001	0.0123	0.0081	2.6	0.52		0.00001	0.0106	0.00031	0.0326	0.01	0.00002	0.00005	19.7	0.000005	0.0001	0.00013	0.00218	0.04	0.0000196	0.66	0.001	5.78	0.00716	0.000622	3.82	0.00136	0.00005	0.0001	0.91	0.000092	4.81	0.0001	0.0911	0.00039	0.00001	0.000101	0.0005	0.001	0.0003
MN-2.5	2018-07-06 16:25	96.7	191	148.6	7.69	99.6	41.9	4.2	94.1	0.001	0.0201	0.005	3.73	0.88		0.00001	0.0083	0.00032	0.0444	0.01	0.00002	0.00005	24.5	0.000005	0.00013	0.0002	0.00162	0.048	0.000005	0.68	0.001	7.2	0.0285	0.000674	4.51	0.0012	0.00005	0.0001	0.93	0.000083	5.5	0.0001	0.12	0.0003	0.00001	0.000161	0.0005	0.001	0.0003
MN-2.5	2018-08-29 15:30	87.8	175	131	7.51	89.7	55.9	3.7	123.6	0.001	0.0086	0.0106	2.58	0.71		0.00001	0.017	0.00035	0.035	0.01	0.00002	0.00005	22.7	0.000005	0.00014	0.0003	0.00211	0.085	0.000005	0.47	0.001	6.37	0.0206	0.000614	4.02	0.00116	0.00005	0.0001	1.16	0.000096	5.54	0.0001	0.109	0.0008	0.00001	0.000109	0.0005	0.001	0.0003
MN-2.5	2018-09-08 13:05	98.2	184	130.8	7.58	101	11.6	2	106.6	0.001	0.0147	0.0061	3.31	0.69		0.00001	0.0076	0.00031	0.0351	0.01	0.00002	0.00005	26	0.000005	0.0001	0.00023	0.00145	0.052	0.000005	0.7	0.001	7.45	0.0221	0.000738	4.23	0.00107	0.00005	0.0001	1.01	0.000097	5.67	0.0001	0.121	0.0003	0.00001	0.000143	0.0005	0.001	0.0003
MN-2.5	2018-10-13 12:40	97.3	197	63.8	7.84	105	40.7	3.2	88.7	0.001	0.043	0.008	4.77	0.54		0.00001	0.0068	0.00024	0.0448	0.01	0.00002	0.00005	27.7	0.000005	0.0001	0.00015	0.00139	0.043	0.000005	0.94	0.001	7.99	0.0452	0.000774	4.33	0.0007	0.00005	0.0001	1.41	0.000067	6.48	0.0001	0.145	0.0003	0.00001	0.000205	0.0005	0.0026	0.0003
MN-2.5	2019-04-29 16:40	78.3	163			85.8	3			0.001	0.005	0.005	4.37	0.64		0.00001	0.0065	0.00025	0.0271	0.01	0.00002	0.00005	20.8	0.0000052	0.0001	0.0002	0.00111	0.019		2.12	0.001	7.09	0.0112	0.000502	3.77	0.0005	0.00005	0.0001	1.78	0.000105	5.28	0.0001	0.104	0.0003	0.00001	0.000068	0.0005	0.001	0.0003
MN-2.5	2019-05-17 15:25	61.2	112	176	7.72	63	51.8	0.1	94.4	0.001	0.005	0.0087	2.22	0.63		0.00001	0.007	0.00031	0.0246	0.01	0.00002	0.00005	15.1	0.0000053	0.0001	0.00016	0.00143	0.037	0.000005	1	0.001	4.43	0.0148	0.000606	2.83	0.0008	0.00005	0.0001	0.74	0.000085	3.92	0.0001	0.0733	0.0003	0.00001	0.000067	0.0005	0.001	0.0003
MN-2.5	2019-06-08 15:35	62	130	165.3	7.47	130	3.9	2.5	92.4	0.001	0.005	0.0123	1.89	0.62		0.00001	0.0196	0.00037	0.0284	0.01	0.00002	0.00005	17.2	0.000005	0.0001	0.00029	0.00314	0.075	0.000005	0.51	0.001	5.01	0.00447	0.000557	3.49	0.00146	0.00005	0.0001	0.99	0.000083	5.02	0.0001	0.0887	0.00083	0.00001	0.00007	0.0005	0.001	0.00032
MN-2.5	2019-07-21 15:05	109	211	101.9	7.52	112	4.1	6.5	87.8	0.001	0.0211	0.005	4.83	0.5		0.00001	0.007	0.00026	0.0454	0.01	0.00002	0.00005	28.9	0.000005	0.0001	0.0001	0.00104	0.041	0.000005	1	0.001	7.05	0.0151	0.000897	4.04	0.00069	0.00005	0.0001	1.65	0.000066	6.03	0.0001	0.15	0.0003	0.00001	0.000201	0.0005	0.001	0.0003
MN-2.5	2019-08-18 10:35	107	203	93.4	7.6	110	3	2.1	93.5	0.001	0.0151	0.006	3.27	0.72		0.00001	0.0065	0.00032	0.0418	0.01	0.00002	0.00005	27.5	0.000005	0.0001	0.0002	0.00135	0.042	0.000005	0.83	0.001	8.44	0.0148	0.000758	4.9	0.00109	0.00005	0.0001	1.28	0.000083	6.12	0.0001	0.137	0.0003	0.00001	0.00016	0.0005	0.001	0.0003
MN-2.5	2019-09-21 15:30	115	212	190.9	7.5	117	3.1	2.4	88.7	0.001	0.0081	0.005	4.2	0.92		0.00001	0.0053	0.0003	0.0441	0.01	0.00002	0.00005	28.4	0.000005	0.0001	0.00016	0.00124	0.043	0.000005	0.93	0.001	8.34	0.0205	0.000711	5.04	0.00114	0.00005	0.0001	1.36	0.00007	6.24	0.0001	0.137	0.0003	0.00001	0.000215	0.0005	0.001	0.0003
MN-2.5	2019-10-12 14:30	110	193	213.6	7.47	115	3	0	87.8	0.001	0.0203	0.005	4.7	0.72		0.00002	0.0393	0.00035	0.0528	0.02	0.00004	0.0001	30	0.000109	0.0002	0.00046	0.0122	0.129	0.0000057	1.02	0.002	7.86	0.0283	0.00074	4.53	0.001	0.0003	0.0002	588	0.00011	5.97	0.00033	0.14	0.0006	0.00002	0.000244	0.001	0.0088	0.0004
MN-2.5	2020-05-15 13:20	40.4	79.4	168.4	7.46	88.4	26.8	0.5	95.8	0.001	0.005	0.0104	1.01	0.33		0.00001	0.0518	0.00043	0.0258	0.01	0.00002	0.00005	12.7	0.0000062	0.00016	0.00054	0.00598	0.168	0.0000077	0.824	0.001	4	0.0248	0.00034	2.36	0.00242	0.00005	0.0001	0.5	0.000148	4.11	0.0001	0.0591	0.00132	0.00001	0.000049	0.0006	0.0036	0.00056
MN-2.5	2020-06-27 10:40	85.7	176	200.1	7.62	119	7	2.5	92.6	0.001	0.011	0.0068	4.38	0.36		0.00001	0.0075	0.00031	0.0347	0.01	0.00002	0.00005	24.4	0.000005	0.0001	0.0002	0.00154	0.038	0.000005	0.608	0.001	6.99	0.0101	0.00058	4.14	0.00103	0.00005	0.0001	1.6	0.000086	5.27	0.0001	0.115	0.0003	0.00001	0.000126	0.00051	0.001	0.0002
MN-2.5	2020-07-17 12:50	65.9	134	158	7.4	105	78	4.5	94	0.001	0.005	0.0127	2.4	0.32		0.00001	0.0242	0.00035	0.0322	0.01	0.00002	0.00005	20	0.000005	0.0001	0.00038	0.00281	0.072	0.000005	0.376	0.001	5.27	0.0068	0.000465	3.78	0.00122	0.00005	0.0001	1.01	0.00005	5.27	0.0001	0.0988	0.00087	0.00001	0.000054	0.00073	0.001	0.00034
MN-2.5	2020-08-21 15:40	73.6	144	157.7	7.41	111	78	3.9	97.5	0.001	0.005	0.0148	2.42	0.4		0.00001	0.0162	0.00035	0.034	0.01	0.00002	0.00005	20.6	0.000005	0.0001	0.00035	0.00228	0.072	0.000005	0.381	0.001	6.36	0.0126	0.000499	3.81	0.00111	0.00005	0.0001	1.06	0.000081	5.47	0.0001	0.0918	0.00056	0.00001	0.000068	0.0005	0.001	0.00034
MN-2.5	2020-09-09 13:25	79.4	158	192.9	7.62	116	14.5	3	94.4	0.001	0.0065	0.01	3.19	0.48		0.00001	0.0144	0.00037	0.0364	0.01	0.00002	0.00005	22.6	0.000005	0.00011	0.00036	0.00263	0.081	0.000005	0.543	0.001	6.28	0.015	0.000614	4.06	0.00116	0.00005	0.0001	1.3	0.000083	6.16	0.0001	0.11	0.00048	0.00001	0.000105	0.0005	0.001	0.00032
MN-2.5	2020-10-10 14:40	71	150	222.5	7.28	110	13.3	0.5	91.6	0.001	0.0092	0.0091	3.78	0.66		0.00001	0.0169	0.00028	0.0316	0.01	0.00002	0.00005	20.7	0.000005	0.0001	0.0003	0.00229	0.071	0.000005	0.475	0.001	6.62	0.0101	0.000585	3.9	0.00084	0.00005	0.0001	1	0.000083	5.72	0.0001	0.106	0.00075	0.00001	0.000084	0.0005	0.001	0.00032
MN-2.5	2021-05-19 11:45	29.6	69.1	193.5	6.91	86.6	36.5	0.2	100.2	0.001	0.005	0.0132	0.64	0.22		0.00001	0.096	0.00042	0.0266	0.01	0.00002	0.00005	12.1	0.000008	0.00017	0.00055	0.00591	0.258	0.0000054	0.96	0.001	3.39	0.00965	0.000266	1.81	0.00216	0.00005	0.0001	0.5	0.000132	4.1	0.0001	0.0546	0.00142	0.00001	0.000054	0.00057	0.001	0.00074
MN-2.5	2021-06-14 12:30	62.7	126	147.9	7.79	99.4	18	3	95.5	0.001	0.0076	0.0253	1.56	0.29		0.00001	0.0235	0.00035	0.0314	0.01	0.00002	0.00005	16.3	0.000005	0.00011	0.0005	0.00267	0.092		0.521	0.001	5.3	0.00637	0.000468	3.41	0.0015	0.00005	0.0001	0.61	0.000105	5.28	0.0001	0.0797	0.00061	0.00001	0.000067	0.00059	0.001	0.00033
MN-2.5	2021-07-17 11:50	83.8	164	138.2	7.2	116	3.2	3.2	93.2	0.001	0.0147	0.0088	2.38	0.26		0.00001	0.0103	0.00031	0.0364	0.01	0.00002	0.00005	23.3	0.000005	0.0001	0.0005	0.00165	0.054	0.000005	0.633	0.001	6.79	0.0111	0.000666	4.2	0.00102	0.00005	0.0001	0.81	0.00005	5.99	0.0001	0.113	0.00034	0.00001	0.000129	0.0005	0.001	0.00024

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species						Dissolved Elements																																	
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	N-NO_2	N-NO_3	N-NH_3	SO_4-D	Chlord	Fluord	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MN-2.5	2021-08-22 12:45	84.8	170	50.6	7.45	117	10.7	2.8	99.7	0.001	0.0179	0.0082	2.42	0.44		0.00001	0.0128	0.00029	0.0356	0.01	0.00002	0.00005	22.7	0.000005	0.0001	0.0005	0.00164	0.076	0.000005	0.598	0.001	6.7	0.0139	0.000718	4.22	0.00107	0.00005	0.0001	0.92	0.000084	6.29	0.0001	0.116	0.00052	0.00001	0.000119	0.0005	0.0033	0.00024
MN-2.5	2021-09-25 13:25	84.5	182	133.8	7.3	116	6.5	0.8	98.6	0.001	0.0243	0.0055	2.62	0.7		0.00001	0.0103	0.0003	0.0318	0.01	0.00002	0.00005	22.6	0.000005	0.0001	0.0005	0.00136	0.063	0.000005	0.604	0.001	6.45	0.0152	0.000659	4.15	0.00096	0.00005	0.0001	0.84	0.000062	5.9	0.0001	0.112	0.00046	0.00001	0.000119	0.0005	0.01	0.00023
MN-4.5	2012-04-19 0:00	49.5	111			110	2.9			0.005	0.02	0.0098	0.5	1.4	0.15	0.000005	0.0288	0.000325	0.0316	0.05	0.00001	0.000005	15.9	0.0000228	0.0000752	0.00022	0.00258	0.129	0.00001	2.19	0.00057	3.78	0.00685	0.000383	2.26	0.000892	0.0000411	0.000043	10	0.000096	3.93	0.0002	0.0994	0.0005	0.000002	0.000116	0.00038	0.00284	0.00019
MN-4.5	2012-05-24 0:00	61.3	133			106	67.7					0.028	0.5	1.2	0.22	0.000005	0.0245	0.000465	0.0362	0.05	0.00001	0.000005	17.1	0.000013	0.000137	0.00031	0.00193	0.403	0.00001	0.74	0.00056	4.62	0.0282	0.000667	3.09	0.00114	0.0000209	0.00007	10	0.000131	4.81	0.0002	0.102	0.00057	0.000002	0.000237	0.00099	0.0007	0.00027
MN-4.5	2012-06-14 0:00	45.3	101			74	560					0.013	5		0.19	0.0000063	0.0448	0.000601	0.0311	0.05	0.000015	0.000005	14.2	0.0000428	0.000143	0.00039	0.00269	0.562	0.00001	0.516	0.0005	3.86	0.0132	0.00057	3.12	0.00165	0.000155	0.000112	10	0.000139	5.43	0.0002	0.0824	0.00192	0.000002	0.000109	0.00132	0.00215	0.00045
MN-4.5	2012-07-12 0:00	81.2	173			114	55.7					0.024	1.24	1.2	0.27	0.000005	0.0216	0.000607	0.0429	0.05	0.00001	0.000005	23.2	0.000014	0.000119	0.00035	0.00204	0.34	0.00001	0.572	0.00063	6.08	0.0149	0.000873	4.35	0.0013	0.000043	0.000087	10	0.00015	6.02	0.0002	0.138	0.00097	0.000002	0.000297	0.00104	0.00085	0.00035
MN-4.5	2012-08-06 0:00	98.7	201			134	55.9			0.005	0.065	0.015	3.41	1.1	0.29	0.000005	0.0178	0.000584	0.0476	0.05	0.000011	0.000005	27.9	0.000005	0.000121	0.00031	0.00165	0.404		0.71	0.00086	7.14	0.0204	0.000994	4.89	0.00123	0.000028	0.000077	10	0.000183	6.37	0.00022	0.162	0.00053	0.000002	0.000412	0.00096	0.00115	0.00029
MN-4.5	2012-09-07 0:00	93	190			128	57.1			0.005	0.033	0.0077	2.61	1.4	0.26		0.0213	0.00055	0.045	0.05	0.0001	0.001	28.2	0.00001	0.0005		0.00165	0.482	0.00001	0.634	0.005	7.18	0.0325		4.72	0.0012		0.0005	3	0.00016	6.35	0.005	0.169	0.005	0.00005	0.00033	0.005		0.0005
MN-4.5	2012-10-01 0:00	91.7	190			154	7.8			0.005	0.067	0.0075	4.04	1	0.26		0.0208	0.00056	0.0442	0.05	0.0001	0.001	25.7	0.00001	0.0005		0.0023	0.338	0.00001	0.658	0.005	7.14	0.0275		4.81	0.0014		0.0005	3	0.00017	6.29	0.005	0.161	0.005	0.00005	0.00037	0.005		0.0005
MN-4.5	2013-05-27 0:00	51.6	109			98	39.5			0.005	0.02	0.032	0.5	1.2	0.18		0.026	0.00037	0.03	0.05	0.0001	0.001	15.1	0.00001	0.0005		0.0019	0.249	0.00001	0.954	0.005	3.81	0.0458		2.58	0.001		0.0005	3	0.0001	3.54	0.005	0.0989	0.005	0.00005	0.00014	0.005		0.0005
MN-4.5	2013-06-17 0:00	80.4	171			130	10.6			0.005	0.037	0.024	4.46	1.2	0.27		0.0124	0.00049	0.0414	0.05	0.0001	0.001	22.5	0.00001	0.0005		0.00152	0.168	0.00001	0.745	0.005	5.92	0.0163		4.3	0.001		0.0005	3.1	0.00017	5.52	0.005	0.142	0.005	0.00005	0.0004	0.005		0.0005
MN-4.5	2013-08-28 0:00	78.4	169			76	31.3			0.002	0.0581	0.019	2.1	0.83	0.24	0.000005	0.0257	0.000576	0.0434	0.05	0.000012	0.000005	23.3	0.000007	0.000062	0.00043	0.00223	0.269	0.00001	0.592	0.0006	5.96	0.000722	0.000862	4.49	0.00145	0.000032	0.000092	3	0.000126	6.32	0.0002	0.145	0.00115	0.000002	0.000299	0.00115	0.00096	0.00038
MN-4.5	2013-09-11 15:15	87.7	188			134	8.3					0.035	5.4	1	0.26		0.0193	0.00058	0.0438	0.05	0.0001	0.001	24.2	0.00001	0.0005		0.00184	0.354	0.00001	0.747	0.005	6.99	0.0146		4.89	0.0013		0.0005	3	0.00016	5.84	0.005	0.154	0.005	0.00005	0.00039	0.005		0.0005
MN-4.5	2013-10-16 15:30	88.5	188	-17.5	7.74	158	23.1	0	99.3	0.005	0.089	0.016	6.92	1.4	0.26		0.0161	0.00047	0.0432	0.05	0.0001	0.001	25.4	0.00001	0.0005		0.00185	0.186	0.00001	0.648	0.005	6.79	0.0101		4.9	0.0012		0.0005	3.3	0.00013	6.57	0.005	0.155	0.005	0.00005	0.00036	0.005		0.0005
MN-4.5	2014-05-16 10:10	67.4	147	210.4	8.28	108	4.7	0.6	100	0.005	0.02	0.036	0.76	0.99	0.26		0.0203	0.00039	0.0359	0.05	0.0001	0.001	19	0.00001	0.0005		0.00224	0.155	0.00001	0.877	0.005	5.33	0.0065		3.75	0.0012		0.0005	3	0.00017	4.23	0.005	0.131	0.005	0.00005	0.00029	0.005		0.0005
MN-4.5	2014-06-03 14:00	80.9	175	112.1	7.42	124	4.4	2.9	109.9	0.005	0.072	0.014	5.88	0.69	0.29		0.0137	0.00038	0.0394	0.05	0.0001	0.001	22.9	0.00001	0.0005		0.0019	0.097	0.00001	0.758	0.005	6.1	0.0035	0.001	4.61	0.001		0.0005	3	0.0002	5.01	0.005	0.153	0.005	0.00005	0.00046	0.005		0.0005
MN-4.5	2014-07-26 10:00	94	201	92.2	8.43	120	6.3	4.2	98.8	0.005	0.061	0.019	6.94	0.79	0.31		0.0094	0.00038	0.044	0.05	0.0001	0.001	25.7	0.00001	0.0005		0.00164	0.067	0.00001	0.769	0.005	6.95	0.0016		4.96	0.001		0.0005	3	0.00014	5.61	0.005	0.17	0.005	0.00005	0.00043	0.005		0.0005
MN-4.5	2014-08-17 10:30	107	227	118.4	7.98	146	8.2	4.1	98.3	0.005	0.09	0.02	9.38	0.77	0.35		0.0168	0.00034	0.051	0.05	0.0001	0.001	31.4	0.00001	0.0005	0.001	0.00149	0.0472	0.00001	0.893	0.005	7.67	0.0031	0.0011	5.45	0.001		0.0005	3	0.00015	6.34	0.005	0.199	0.005	0.00005	0.00067	0.005		0.0005
MN-4.5	2014-09-20 10:50	96.1	212	200.1	7.93	132	1	2	96.1	0.005	0.02	0.014	8.07	0.72	0.32		0.0107	0.00033	0.0459	0.05	0.0001	0.001	28.7	0.00001	0.0005		0.00202	0.0588	0.00001	0.911	0.005	7.18	0.0038		5.06	0.001		0.0005	3.3	0.00012	6.09	0.005	0.178	0.005	0.00005	0.00053	0.005		0.0005
MN-4.5	2014-10-10 13:30	87.9	192	185.5	7.62	124	2	-1.2	97.5	0.005	0.076	0.011	8.03	1.3	0.28		0.0105	0.00036	0.0404	0.05	0.0001	0.001	26	0.00001	0.0005		0.00152	0.0765	0.00001	0.705	0.005	7.04	0.0024		4.74	0.001		0.0005	3	0.00015	5.7	0.005	0.166	0.005	0.00005	0.0004	0.005		0.0005
MN-4.5	2015-05-26 10:45	85.3	196	133.6	7.63	122	3.3	1.6	100.3	0.005	0.02	0.023	9.81	1.8	0.29		0.0081	0.00035	0.0434	0.05	0.0001	0.001	26.7	0.00001	0.0005		0.0012	0.0507	0.00001	1.04	0.005	6.89	0.0035		5.13	0.001		0.0005	3.3	0.00021	4.9	0.005	0.193	0.005	0.00005	0.00059	0.005		0.0005
MN-4.5	2015-06-23 12:50	102	220	169.8	7.37	136	11.5	3.9	83.4	0.005	0.232	0.027	10.6	0.98	0.35		0.0067	0.00029	0.0524	0.05	0.0001	0.001	31.2	0.00001	0.0005		0.00121	0.0133	0.00001	0.919	0.005	6.97	0.0018		4.99	0.001		0.0005	4.6	0.00017	6.2	0.005	0.199	0.005	0.00005	0.00105	0.005		0.0005
MN-4.5	2015-07-13 11:10	77.7	167	143.2	7.78	114	9.9	4.8	90.3	0.005	0.048	0.042	5.07	0.56	0.29		0.0152	0.00042	0.0381	0.05	0.0001	0.001	22.2	0.00001	0.0005		0.00174	0.082	0.00001	0.668	0.005	5.96	0.0014		4.55	0.001		0.0005	3	0.00013	5.8	0.005	0.149	0.005	0.00005	0.0003	0.005		0.0005
MN-4.5	2015-08-30 12:10	59.4	130	115.9	7.96	120	94.6	2.3	95.7	0.005	0.027	0.037	0.5	1.7	0.22		0.0494	0.0006	0.0339	0.05	0.0001	0.001	16.9	0.00001	0.0005		0.00377	0.234	0.00001	0.403	0.005	4.86	0.0113		3.89	0.0017		0.0005	3	0.00012	5.94	0.005	0.109	0.005	0.00005	0.00015	0.005		0.0005
MN-4.5	2015-09-20 11:10	87.4	186	133.1	8.04	146	1	2	95.1	0.005	0.031	0.011	6.85	1.2	0.31		0.0162	0.00034	0.0416	0.05	0.0001	0.001	25.1	0.00001	0.0005		0.00177	0.0853	0.00001	0.699	0.005	6.62	0.0026	0.0011	5.11	0.001		0.0005	3	0.00023	6.1	0.005	0.166	0.005	0.00005	0.00036	0.005		0.0005
MN-4.5	2015-10-18 12:20	88.5	195	36	7.8	118	1.9	0.1	91.2	0.005	0.081	0.013	6.29	1.2	0.3		0.0163	0.0003	0.0399	0.05	0.0001	0.001	27.6	0.000013	0.0005		0.00142	0.0681	0.00001	0.744	0.005	6.77	0.0012		4.8	0.001		0.0005	3	0.00015	6.55	0.005	0.171	0.005	0.00005	0.00041	0.005		0.0005
MN-4.5	2016-04-29 16:05	68.5	147	128.7	7.84	78.9	8.7	1.3	97	0.001	0.005	0.0087	5.69	0.5		0.00001	0.0229	0.00039	0.0362	0.01	0.00002	0.00005	21.7	0.000005	0.0001	0.00025	0.0024	0.109	0.000005	1	0.001	5.7	0.00689	0.000611	3.51	0.00114	0.00005	0.0001	2.19	0.000122	4.98	0.0001	0.134	0.00053	0.00001	0.000237	0.00058	0.0021	0.0003
MN-4.5	2016-05-28 14:30	85.9	183	103.3	7.99	97.2	3	2.8	97.5	0.0014	0.0473	0.0054	8.03	0.5		0.00001	0.0104	0.00037	0.0421	0.01	0.00002	0.00005	25.5	0.000005	0.0001	0.00016	0.00146	0.048	0.000005	0.87	0.001	6.5	0.00116	0.000957	4.47	0.00099	0.00005	0.0001	2.9	0.000141	5.2	0.0001	0.17	0.00037	0.00001	0.000442	0.00058	0.001	0.0003
MN-4.5	2016-06-21 14:30	96.6	203	101.7	7.8	112	3.3	5.3	94.1	0.001	0.071	0.0052	9.28	0.5		0.00001	0.0107	0.00034	0.0496	0.01	0.00002	0.00005	30.7	0.0000093	0.0001	0.00016	0.00178	0.025	0.000005	0.92	0.001	7.15	0.00165	0.000999	5.52	0.0009	0.00005	0.0001	3.3	0.000144	5.51	0.0001	0.189	0.00054	0.00001	0.000664	0.00063	0.0011	0.0003
MN-4.5	2016-07-04 11:25	109	224	122.3	7.56	125	3	5.2	85.4	0.001	0.101	0.005	10.5	0.52		0.00001	0.0066	0.00029	0.053	0.01	0.00002	0.00005	34	0.000005	0.0001	0.00014	0.0015	0.013	0.000005	0.96	0.001	7.9	0.00114	0.00097	5.48	0.0016	0.00005	0.0001	3.72	0.000163	5.74	0.0001	0.2	0.0003	0.00001	0.000984	0.0005	0.0033	0.0003
MN-4.5	2016-08-04 14:40	106	207	95.5	7.72	119	3	6.6	104	0.001	0.0522	0.005	8.29	0.5		0.00001	0.009	0.00042	0.0553	0.01	0.00002	0.00005	32.3	0.000005	0.0001	0.0002	0.00173	0.026	0.000005	0.95	0.001	7.55	0.00122	0.00096	6.08	0.00091	0.00005	0.0001	3.11	0.000147	6.18	0.0001	0.195	0.0003	0.00001	0.000525	0.0007	0.0021	0.0003
MN-4.5	2016-09-03 14:30	94.5	191	152.1	7.27	105	5.2	4.5	94.8	0.001	0.0264	0.005	6.97	0.59		0.00001	0.0155	0.00039	0.0477	0.01	0.00002	0.00005	28	0.000005	0.0001	0.00027	0.00191	0.092	0.000005	0.74	0.001	7.1	0.0032	0.000803	4.9	0.00108	0.00005	0.0001	2.51	0.000162	6.45	0.0001	0.165	0.00061	0.00001	0.000336	0.00065	0.0013	0.0003
MN-4.5	2016-10-10 14:45	122	228	157.9	7.47	131	3	0.8	82.6	0.001	0.183	0.0052	10.4	0.92		0.00001	0.0061	0.0003	0.0531	0.01	0.00002	0.00005	31.7	0.000005	0.0001	0.00019	0.00182	0.016	0.000005	0.96	0.001	7.83	0.00117	0.000892	5.52	0.00082	0.00005	0.0001	3.54	0.000158	6.25	0.0001	0.207	0.0003	0.00001	0.00113	0.0005	0.001	0.0003
MN-4.5	2016-11-10 11:55	120	242	125	7.76	135	3	0.7	94.4	0.001	0.323	0.005	12.8	0.94		0.00001	0.0044	0.00025	0.0598	0.01	0.00002	0.00005	33.3	0.000005	0.0001	0.00013	0.00148	0.01	0.000005	0.97	0.0012	8.37	0.00053	0.000869	5.74	0.00054	0.00005	0.0001	4.38	0.000214	5.69	0.0001	0.215	0.0003	0.00001	0.0019	0.0005	0.001	0.0003
MN-4.5	2017-05-26 14:25	50.8	107	88.4	7.73	59.1	201	1.2	106.5	0.001	0.005	0.0167	3.6	0.52		0.00001	0.0363	0.00046	0.0301	0.01	0.00002	0.00005	15.7	0.00001	0.00016	0.00032	0.00333	0.179	0.000005	0.75	0.001	4.55	0.0146	0.000474	3.22	0.00182	0.00005	0.0001	1.57	0.000162	4.09	0.0001	0.0968	0.00069	0.00001	0.000162	0.00074	0.0015	0.00041
MN-4.5	2017-06-24 14:15	79	168	117.6	7.77	90.4	3	5.2	131.2	0.001	0.0768	0.0065	7.85	0.5		0.00001	0.0169	0.00038	0.042	0.01	0.00002	0.00005	23.5	0.000005	0.0001	0.00028	0.00216	0.054	0.000005	0.71	0.001	5.86	0.00135	0.000965	4.68	0.00128	0.00005	0.0001	2.61	0.000195	5.46	0.0001	0.156	0.00047	0.00001	0.000357	0.0007	0.001	0.00032
MN-4.5	2017-07-07 10:30	83.2	173	114.8	7.93	91.8	4.8	5.1	98.5	0.001	0.0704	0.0074	7.2	0.5		0.00001	0.0194	0.00041	0.0403	0.01	0.00002	0.00005	23.1	0.000005	0.0001	0.00029	0.00238	0.056	0.000005	0.64	0.0013	6.19	0.00089	0.000936	4.33	0.00118	0.00005	0.00011	2.37	0.000176	5.55	0.0001	0.161	0.0006	0.00001	0.00037	0.0007	0.0012	0.00038
MN-4.5	2017-08-21 14:15	115	233	152.9	7.8	127	3	5.2	111.1	0.001	0.109	0.005	10.3	0.58		0.00001	0.0054	0.00032	0.0534	0.01	0.00002	0.00005	32.4	0.000005	0.0001	0.0001	0.00133	0.016	0.000005	0.88	0.0017	7.85	0.00314	0.000959	5.6	0.00063	0.00005	0.0001	3.28	0.000155	5.43	0.0001	0.209	0.0003	0.00001	0.00094	0.0005	0.002	0.0003
MN-4.5	2017-09-16 11:10	111	224	165.6	7.62	120	3	1.4	99	0.001	0.0454	0.005	9.83	0.72		0.00001	0.006	0.00034	0.0489	0.01	0.00002	0.00005	28.5	0.000005	0.0001	0.00017	0.00132	0.018	0.000005	0.9	0.001	7.47	0.00161	0.000908	5.18	0.00076	0.00005	0.0001	3.2	0.00013	5.51	0.0001	0.198	0.0003	0.00001	0.000668	0.0005	0.001	0.0003
MN-4.5	2017-10-21 11:45	116	229	232.6	7.56	129	3	0.4	89	0.001	0.134	0.005	12	0.81	0.369	0.00001	0.0051	0.00019	0.0527	0.01	0.00002	0.00005	30.6	0.000005	0.0001	0.00012	0.00133	0.013	0.000005	0.94	0.001	8.6	0.00074	0.00102	5.62	0.00063	0.00005	0.0001	4.21	0.000167	5.89	0.0001	0.213	0.0003	0.00001	0.000906	0.0005	0.001	0.0003
MN-4.5	2017-11-10 14:50	155	293	154.7	8.01	174	3	0	95	0.001	0.262	0.005	14	1.09		0.00001	0.0044	0.00034	0.0673	0.01	0.00002	0.00005	44.4	0.0000172	0.0001	0.00016	0.00222	0.011	0.000005	1.24	0.0014	11.7	0.00124	0.000981	7.57	0.00062	0.00005	0.0001	4.69	0.000366	6.48	0.0001	0.281	0.0003	0.00001	0.00251	0.00052	0.0037	0.0003
MN-4.5	2018-05-26 14:55	87.6	181	162	8.15	102	3	3.6	108.8	0.001	0.005	0.0082	9.64	0.54		0.00001	0.0115	0.00038	0.044	0.01	0.00002	0.00005	26	0.000005	0.0001	0.00021	0.00174	0.046	0.000005	1.23	0.001	7.1	0.00291	0.000932	5.22	0.00104	0.00005	0.0001	3.01	0.000194	4.68	0.0001	0.191	0.0003	0.00001	0.000505	0.00055	0.001	0.0003
MN-4.5	2018-06-11 14:15	83.5	185	187.8	7.96	96.6	3	3.3	113.2	0.001	0.0243	0.005	9.42	0.5		0.00001	0.0105	0.00036	0.0423	0.01	0.00002	0.00005	24.4	0.000005	0.0001	0.00015	0.00172	0.053	0.0000195	0.9	0.001	6.68	0.0009	0.00094	4.99	0.00096	0.00005	0.0001	2.98	0.000157	4.64	0.0001	0.174	0.0004	0.00001	0.000558	0.00052	0.0017	0.0003
MN-4.5	2018-07-06 14:45	86.7	187	148	7.76	98.6	3	5.3	98.7	0.001	0.0692	0.005	9.52	0.37		0.00001	0.0105	0.00037	0.0446	0.01	0.00002	0.00005	23.8	0.000005	0.0001	0.0003	0.00182	0.025	0.000005	0.83	0.001	6.52	0.00089	0.001	5.15	0.00105	0.00005	0.0001	3.05	0.000169	5.08	0.0001	0.175	0.00038	0.000012	0.000527	0.00057	0.001	0.0003
MN-4.5	2018-08-29 14:15	84.5	182	141	7.71	93.8	3.1	4.3	114.5	0.001	0.0312	0.0074	7.63	0.52		0.00001	0.0149	0.00038	0.0392	0.01	0.00002	0.00005	23.2	0.000005	0.0001	0.00028	0.00202	0.051	0.000005	0.58	0.001	6.42	0.00086	0.000752	4.5	0.00109	0.00005	0.0001	2.65	0.00012	5.53	0.0001	0.16	0.0005	0.00001	0.000301	0.00059	0.001	0.00032
MN-4.5	2018-09-08 11:15	98.5	201			111	5.6			0.001	0.0394	0.005	9.18	0.55		0.00001	0.0093	0.00036	0.0425	0.01	0.00002	0.00005	28.3	0.000005	0.0001	0.00025	0.00158	0.028	0.000005	0.8	0.001	7.67	0.00059	0.000915	5.46	0.00091	0.00005	0.0001	3.11	0.000147	5.61	0.0001	0.188	0.0003	0.00001	0.000367	0.0005	0.001	0.0003
MN-4.5	2018-10-13 11:10	108	216	157.1	7.5	124	30.7	0.3	52.8	0.001	0.123	0.0067	10.9	0.71		0.00001	0.0241	0.00027	0.0505	0.01	0.00002	0.00005	31.7	0.0000089	0.0001	0.00014	0.00511	0.052	0.000005	0.84	0.001	8.19	0.00228	0.000903	5.83	0.00068	0.000146	0.00016	3.36	0.000213	5.38	0.0001	0.215	0.00246	0.00001	0.00116	0.0005	0.0017	0.0003
MN-4.5	2019-04-29 15:40	122	258			144	3			0.001	0.005	0.005	17.3	0.61		0.00001	0.0057	0.00028	0.0463	0.01	0.00002	0.00005	34	0.0000064	0.0001	0.0001	0.00105	0.022	0.000005	2.04	0.0012	10.2	0.0108	0.00117	6.91	0.0005	0.00005	0.0001	6.59	0.000444	5.87	0.0001	0.301	0.0003	0.00001	0.000812	0.0005	0.001	0.0003
MN-4.5	2019-05-17 14:15	85.9	169	175.4	7.7	98.1	3.2	1.9	96.2	0.001	0.005	0.0061	8.86	0.54		0.00001	0.0072	0.00031	0.0375	0.01	0.00002	0.00005	25.3	0.0000053	0.0001	0.00011	0.00112	0.034	0.000005	1.22	0.001	6.18	0.00194	0.000814	4.39	0.00066	0.00005	0.0001	2.93	0.00018	4.13	0.0001	0.196	0.0003	0.00001	0.000429	0.0005	0.001	0.0003
MN-4.5	2019-06-08 14:05	63.8	145	177.6	7.32	147	3.9	2.5	99.8	0.001	0.0101	0.011	6.81	0.5		0.00001	0.0253	0.0004	0.0335	0.01	0.00002	0.00005	20.1	0.0000053	0.0001	0.00031	0.00336	0.124	0.000005	0.64	0.001	5.24	0.00144	0.000791	4.14	0.00143	0.00005	0.0001	2.38	0.00027	4.66	0.0001	0.147	0.00081	0.00001	0.000292	0.00069	0.001	0.00039
MN-4.5	2019-08-18 9:10	121	249	182.5	6.99	136	3	2.7	95.2	0.001	0.0651	0.005	12.5	0.5		0.00001	0.0041	0.00036	0.0493	0.01	0.00002	0.00005	33.3	0.000005	0.0001	0.00013	0.00108	0.01	0.000005	0.97	0.0012	9.34	0.00141	0.00114	6.42	0.00061	0.00005	0.0001	4.67	0.000158	5.93	0.0001	0.231	0.0003	0.00001	0.000808	0.0005	0.001	0.0003
MN-4.5	2019-10-12 13:40	120	233	198.8	7.39	144	10.9	1.8	77.5	0.001	0.127	0.0054	13.1	0.75		0.00001	0.0065	0.00027	0.0599	0.01	0.00002	0.00005	40.4	0.000005	0.0001	0.00016	0.00191	0.01	0.000005	1.1	0.0012	9.89	0.00039	0.00103	6.31	0.00059	0.00005	0.0001	5.06	0.000197	5.53	0.0001	0.253	0.00035	0.00001	0.00159	0.0005	0.001	0.00107
MN-4.5	2020-05-15 11:15	48.9	101	179.7	7.67	105	3	0.8	101.1	0.001	0.005	0.008	4.28	0.31		0.00001	0.0786	0.0005	0.0326	0.01	0.00002	0.00005	16	0.0000055	0.00014	0.0005	0.00512	0.211	0.000008	0.845	0.001	4.63	0.0042	0.000508	3.34	0.00188	0.00005	0.0001	1.43	0.000194	4.19	0.0001	0.108	0.00204	0.00001	0.000191	0.00076	0.001	0.00062
MN-4.5	2020-06-27 9:00	86.7	194	212.8	7.71	126	3.8	2.4	90.3	0.001	0.0931	0.006	10.2	0.4		0.00001	0.0062	0.00027	0.0426	0.01	0.00002	0.00005	26.7	0.000005	0.0001	0.00023	0.00175	0.012	0.000005	0.79	0.001	6.93	0.00092	0.000965	5.09	0.00073	0.00005	0.0001	3.5	0.000216	4.63	0.0001	0.183	0.0003	0.00001	0.000892	0.00055	0.0015	0.0002
MN-4.5	2020-07-17 10:55	61.7	139	149.3	7.52	110	6.4	4.5	97.3	0.001	0.0163	0.0102	7.04	0.22		0.00001	0.0305	0.0004	0.0344	0.01	0.00002	0.00005	20.1	0.0000051	0.0001	0.00042	0.0028	0.077	0.000005	0.468	0.001	4.92	0.00094	0.000654	4.34	0.00116	0.00005	0.0001	2.3	0.000149	5.3	0.0001	0.141	0.00078	0.00001	0.000174	0.00089	0.001	0.00042
MN-4.5	2020-08-21 14:05	71.5	150	156	7.79	118	7.4	4.6	99.6	0.001	0.0059	0.011	6.16	0.3		0.00001	0.0242	0.00039	0.0381	0.01	0.00002	0.00005	23	0.000005	0.0001	0.0004	0.00246	0.07	0.000005	0.511	0.001	6.32	0.00113	0.000614	4.34	0.00116	0.00005	0.0001	2.19	0.000181	5.42	0.0001	0.136	0.00071	0.00001	0.000208	0.0006	0.001	0.0004
MN-4.5	2020-09-09 11:15	79.2	168	179.4	7.56	123	3	3.4	98.4	0.001	0.019	0.0064	7.38	0.37		0.00001	0.0191	0.00037	0.0397	0.01	0.00002	0.00005	23.5	0.000005	0.0001	0.00038	0.00232	0.055	0.000005	0.633	0.001	6.15	0.00084	0.000799	4.59	0.00119	0.00005	0.0001	2.85	0.000184	6.09	0.0001	0.158	0.00054	0.00001	0.00028	0.00052	0.001	0.00038
MN-4.5	2020-10-10 12:40	70.3	155	207.8	7.41	117	3.9	0.6	97.6	0.001	0.0191	0.008	7.76	0.45		0.00001	0.0231	0.00035	0.0361	0.01	0.00002	0.00005	21.2	0.000005	0.0001	0.00035	0.00233	0.068	0.000005	0.532	0.001	6.29	0.00085	0.000652	4.17	0.00085	0.00005	0.0001	2.44	0.000128	6.03	0.0001	0.133	0.00061	0.00001	0.000212	0.0005	0.001	0.00043
MN-4.5	2021-05-19 10:15	33.6	83	179.2	7.15	93.1	13.7	0.3	107.7	0.001	0.005	0.0102	3.17	0.23		0.00001	0.11	0.00045	0.0303	0.01	0.000024	0.00005	13.6	0.0000068	0.00014	0.00054	0.00531	0.266	0.0000061	0.945	0.001	3.64	0.00332	0.00037	2.34	0.00213	0.00005	0.0001	0.93	0.000426	3.86	0.0001	0.0848	0.00139	0.00001	0.000136	0.00069	0.001	0.00071
MN-4.5	2021-06-13 10:15	63	137	152.1	7.94	107	2.3	2.9	101	0.001	0.022	0.0106	5.76	0.31		0.00001	0.0434	0.00039	0.0334	0.01	0.00002	0.00005	17.8	0.000005	0.0001	0.0005	0.00289	0.109	0.000005	0.618	0.001	5.1	0.00148	0.000634	3.92	0.00145	0.00005	0.0001	1.89	0.000146	5.23	0.0001	0.116	0.00138	0.00001	0.000197	0.00068	0.001	0.00043
MN-4.5	2021-07-17 9:25	88	190	144.4	7.29	130	1	3.4	98.7	0.001	0.0335	0.0071	10	0.27		0.00001	0.0114	0.00034	0.045	0.01	0.00002	0.00005	26.7	0.000005	0.0001	0.0005	0.00192	0.026	0.000005	0.804	0.0011	7.31	0.00081	0.0009	5.33	0.00085	0.00005	0.0001	3.42	0.00015	5.77	0.0001	0.178	0.00044	0.00001	0.000472	0.0006	0.001	0.00023
MN-4.5	2021-08-22 10:25	85.8	192			128	1			0.001	0.0275	0.005	10.2	0.35		0.00001	0.0112	0.00033	0.0435	0.01	0.00002	0.00005	25	0.000005	0.0001	0.0005	0.00161	0.028	0.000005	0.758	0.001	6.7	0.00086	0.000896	5.25	0.00086	0.00005	0.0001	3.53	0.00021	6.26	0.0001	0.178	0.0003	0.00001	0.000371	0.00052	0.0013	0.00023
MN-4.5	2021-09-25 11:00	93.5	205	143.6	7.37	131	1	1.1		0.001	0.0053	0.005	10.9	0.46		0.00001	0.0073	0.00029	0.0398	0.01	0.00002	0.00005	25.7	0.000005	0.0001	0.0005	0.0012	0.024	0.000005	0.779	0.0012	6.73	0.00097	0.000883	4.99	0.00062	0.00005	0.0001	3.28	0.000121	5.66	0.0001	0.179	0.0003	0.00001	0.000392	0.0005	0.001	0.0002
MW09-01-02	2009-11-30 0:00	112	729			528	7						77.4	7.22		0.00019	0.006	0.0002	0.034	0.045	0.00004	0.001	89.7	0.00005	0.00102	0.0004	0.012	0.05	0.00003	3.2	0.001	22.9	0.0802	0.0341	16.8	0.004	0.0001	0.0053	25.8	0.0028	4.37	0.0001	1.04	0.01	0.00001	0.0029	0.0002	0.009	0.0001
MW09-01-03	2009-11-30 0:00	100	725			364	92						82.5	7.28		0.00001	0.007	0.0002	0.1	0.052	0.00004	0.001	75.4	0.00008	0.00076	0.0004	0.02	0.04	0.00001	6.6	0.003	18	0.228	0.0892	28	0.002	0.0001	0.0032	27.5	0.0028	2.87	0.0001	1.51	0.01	0.00001	0.0004	0.0001	0.006	0.0001
MW09-01-03	2010-03-30 0:00	184	941			630	70						169	18.5		0.00001	0.048	0.0007	0.142	0.095	0.00004	0.001	93.7	0.00015	0.00045	0.0004	0.021	0.18	0.00001	7	0.003	24.7	0.168	0.148	53.3	0.002	0.0003	0.0011	56.2	0.0018	3.39	0.0003	1.41	0.01	0.00001	0.0004	0.0003	0.016	0.0002
MW09-01-03	2013-10-14 15:00	711	4090			3220				4.99	124	31				0.00002	0.0087	0.00312	0.0295	0.485	0.0001	0.001	436	0.000163	0.00119	0.001	0.0056	0.0246	0.00001	41.3	0.0159	155	0.0445	0.935	342	0.008	0.0002	0.00571	387	0.0146	24.6	0.005	7.87	0.005	0.00005	0.00135	0.005	0.0186	0.0005
MW09-01-03	2014-07-24 14:15															0.00003	0.0041	0.00367	0.033	0.658	0.0001	0.001	444	0.000603	0.00189	0.001	0.199	0.0196	0.00001	43	0.0168	158	0.0962	1.09	363	0.0507	0.0002	0.00607	404	0.0139	24	0.005	8.6	0.005	0.00005	0.0016	0.005	0.08	0.0005
MW09-01-04	2009-11-30 0:00	100	728			442	66						83.3	7.27		0.00002	0.005	0.0003	0.095	0.044	0.00004	0.001	78.2	0.00007	0.00078	0.0004	0.018	0.04	0.00001	5.8	0.003	19.1	0.189	0.0733	26.2	0.002	0.0001	0.0008	27.8	0.003	3.36	0.0001	1.39	0.01	0.00001	0.0008	0.0001	0.004	0.0001
MW09-01-05	2010-03-30 0:00	5	2			32	3						0.6	0.24		0.00001	0.005	0.0002	0.001	0.007	0.00004	0.001	0.1	0.00002	0.00004	0.0004	0.001	0.01	0.00001	0.7	0.001	0.1	0.0003	0.0001	0.1	0.001	0.0001	0.0007	0.2	0.0006	3.38	0.0001	0.001	0.01	0.00001	0.0004	0.0001	0.004	0.0001
MW09-02-01	2009-12-02 0:00	329	1090			814	30						166	5.52		0.00001	0.01	0.0041	0.11	5.37	0.00004	0.001	98.2	0.00009	0.00065	0.0036	0.004	0.11	0.00001	8.2	0.011	62.6	0.27	0.0442	70.4	0.004	0.0002	0.0136	55.4	0.0067	6.88	0.0001	2.11	0.01	0.00001	0.0038	0.0011	0.01	0.0001
MW09-02-03	2009-12-02 0:00	333	1090			812	31						170	5.73		0.00001	0.005	0.0047	0.111	6.09	0.00004	0.001	99.2	0.00006	0.00062	0.0038	0.003	0.09	0.00001	8.4	0.01	63.1	0.261	0.0487	74.2	0.003	0.0002	0.003	56.7	0.0068	6.94	0.0001	2.14	0.01	0.00001	0.0039	0.0012	0.007	0.0001
MW09-03-01	2009-12-01 0:00	93	976			652	399						117	17.9		0.00005	0.01	0.0009	0.106	0.32	0.00004	0.001	74.1	0.0002	0.00045	0.0004	0.019	0.03	0.00001	27	0.012	16.5	0.161	0.0806	70.5	0.008	0.0002	0.002	39	0.008	2.49	0.0002	2.21	0.01	0.00001	0.001	0.0002	0.022	0.0001
MW09-03-01	2010-03-29 0:00	137	315			196	4						23	0.4		0.00001	0.005	0.0002	0.047	0.106	0.00004	0.001	41.2	0.00012	0.00014	0.001	0.004	0.04	0.00001	4.4	0.003	9.9	0.109	0.0052	5.7	0.005	0.0011	0.0009	7.6	0.0006	4	0.0001	0.863	0.01	0.00001	0.0015	0.0001	0.014	0.0001
MW09-03-01	2012-05-10 0:00	133	302			162				0.182	0.109	0.073	21.4	0.5	0.87	0.00002	0.0054	0.0001	0.0445	0.143	0.0001	0.001	42	0.000085	0.0005	0.001	0.00281	0.005	0.00001	2.7	0.005	10	0.0852	0.0054	5.59	0.0021	0.0002	0.0005	8.3	0.0001	4.56	0.005	0.798	0.005	0.00005	0.00158	0.005	0.0171	0.0005
MW09-03-01	2012-11-17 0:00	134	310			160				0.118	0.069	0.12	22.2			0.000005	0.00492	0.000037	0.0485	0.12	0.00001	0.000005	46.9	0.000683	0.000205	0.00014	0.00182	0.0116		3.08	0.00284	10.3	0.0961	0.00516	5.52	0.00562	0.000036	0.000181	9.4	0.000052	5.55	0.0002	0.809	0.0005	0.000003	0.00155	0.0002	0.0108	0.0001
MW09-03-01	2013-03-12 12:30	133	304	-412	7.84	188	2.8	1	28.2	0.161	0.052	0.065	24.4	1	0.85	0.00002	0.0032	0.0001	0.0449	0.104	0.0001	0.001	38.8	0.000028	0.0005	0.001	0.00031	0.005	0.00001	2.69	0.005	9.69	0.0732	0.0045	5.26	0.0013	0.0002	0.0005	7.9	0.0001	4.33	0.005	0.738	0.005	0.00005	0.0015	0.005	0.005	0.0005
MW09-03-01	2013-08-18 9:00	141	324	198.3	8.07	184	4	5.2	43	1.63	0.669	0.053	21.9	0.55	0.87	0.00002	0.0086	0.0001	0.044	1.58	0.0001	0.001	40.6	0.000022	0.0005	0.001	0.00075	0.0065	0.00001	2.72	0.005	9.77	0.0687	0.0087	13.2	0.0017	0.0002	0.00052	7	0.0001	4.87	0.005	0.701	0.005	0.00005	0.00141	0.005	0.0059	0.0005
MW09-03-01	2013-10-12 11:30	130	299			196	1			0.174	0.02	0.05	22.1	0.64	0.84	0.00002	0.0033	0.0001	0.0474	0.152	0.0001	0.001	44.2	0.000018	0.0005	0.001	0.00028	0.005	0.00001	2.82	0.005	10.2	0.077	0.0039	5.74	0.0028	0.0002	0.0005	8.3	0.0001	4.75	0.005	0.764	0.005	0.00005	0.00137	0.005	0.005	0.0005
MW09-03-01	2014-06-02 10:30	508	912		8.1	610		5		0.0742	0.02	0.17	0.53	4.3	0.75	0.00002	0.003	0.00079	0.678	0.371	0.0001	0.001	152	0.000046	0.00112	0.001	0.00364	23.5	0.00001	3.67	0.005	25.3	19.2	0.0169	15.9	0.001	0.0002	0.0005	3.4	0.0001	10.4	0.005	1.54	0.005	0.00005	0.00019	0.005	0.0135	0.0005
MW09-03-01	2014-07-24 9:30	127	299		9.4	154		4.6		0.0967	0.064	0.027	23.6	0.62	0.88	0.00002	0.0034	0.0001	0.0416	0.12	0.0001	0.001	40.3	0.00002	0.0005	0.001	0.00033	0.005	0.00001	2.57	0.005	9.48	0.0621	0.0037	5.19	0.0011	0.0002	0.0005	9.5	0.0001	4.53	0.005	0.696	0.005	0.00005	0.00149	0.005	0.0062	0.0005
MW09-03-01	2014-10-06 10:10	135	299	85.5	8.24	162		-0.3	50.8	0.12	0.024	0.035	22.7	0.6	0.82	0.00002	0.003	0.0001	0.0517	0.064	0.0001	0.001	41.5	0.00015	0.0005	0.001	0.00021	0.005	0.00001	2.54	0.005	9.04	0.0721	0.004	4.78	0.0018	0.0002	0.0005	6.6	0.0001	4.82	0.005	0.706	0.005	0.00005	0.00159	0.005	0.005	0.0005
MW09-03-01	2015-06-02 14:15	134	304	98.2	7.42	168		5.4	48.3	0.147	0.064	0.025	23.6	0.58	0.83	0.00002	0.0044	0.0001	0.0439	0.161	0.0001	0.001	42.2	0.000019	0.0005	0.001	0.00021	0.009	0.00001	2.53	0.005	9.28	0.0664	0.0042	5.53	0.0018	0.0002	0.0005	7.3	0.0001	4.96	0.005	0.726	0.005	0.00005	0.00145	0.005	0.0054	0.0005
MW09-03-01	2015-08-18 13:45	127	292		8.3	146		7.9		0.119	0.134	0.076	21.6	0.5	0.85	0.00002	0.0082	0.0001	0.0399	0.097	0.0001	0.001	41.4	0.00001	0.0005	0.001	0.0002	0.007	0.00001	2.37	0.005	9.35	0.0595	0.0043	5.24	0.001	0.0002	0.0005	6.3	0.0001	4.21	0.005	0.684	0.005	0.00005	0.00174	0.005	0.0059	0.0005
MW09-03-01	2015-09-19 16:30	131	296		8.5	166		2.6		0.246	0.146	0.024	21.7	0.86	0.88	0.00002	0.0059	0.00013	0.0391	0.135	0.0001	0.001	40.1	0.000021	0.0005	0.001	0.00021	0.005	0.00001	2.34	0.005	9.04	0.0583	0.0035	5.42	0.001	0.0002	0.0005	5.3	0.00012	4.62	0.005	0.663	0.005	0.00005	0.00151	0.005	0.005	0.0005
MW09-03-01	2016-05-15 9:00				8.4			3.9																																									
MW09-03-01	2016-05-21 15:35	186	439		9.1	264	4.7	13.2		9.27	0.0455	0.124	21.9	0.51		0.00002	0.0067	0.0009	0.0583	6.94	0.00004	0.0001	43	0.000029	0.0002	0.0002	0.00155	0.16	0.000005	2.84	0.0035	10.3	0.109	0.0275	42.8	0.002	0.0001	0.00169	7.5	0.00077	7.6	0.00033	0.811	0.0006	0.00002	0.000955	0.001	0.0268	0.00066
MW09-03-01	2016-06-11 15:15	156	353			189	3			1.57	0.014	0.063	11.3	0.5		0.00001	0.0035	0.00097	0.063	2.21	0.00002	0.00005	44.9	0.0000258	0.0001	0.0001	0.00033	0.11	0.000005	2.79	0.0037	11.1	0.109	0.0121	19.8	0.00181	0.00005	0.00059	7.85	0.000225	6.06	0.0001	0.885	0.0003	0.00001	0.000972	0.0005	0.0132	0.0003
MW09-03-01	2016-09-02 11:00	154	331		8.2	187	3	5		1.56	0.005	0.0473	22.4	0.5		0.00001	0.003	0.00062	0.0656	0.31	0.00002	0.00005	43.5	0.000005	0.0001	0.0001	0.0002	0.324	0.000005	2.25	0.0035	11.3	0.0977	0.00498	9.19	0.00106	0.00005	0.00011	7.74	0.000065	5.62	0.0001	0.917	0.0003	0.00001	0.000944	0.0005	0.0051	0.0003
MW09-03-01	2016-10-22 11:30	151	326		8.5	180	3	2.1		0.816	0.0089	0.0396	21.8	0.5		0.00001	0.0014	0.0006	0.0688	0.659	0.00002	0.00005	40.4	0.000005	0.0001	0.0001	0.0002	0.01	0.000005	2.26	0.0037	10.9	0.0888	0.00617	11.1	0.00128	0.00005	0.00045	7.09	0.00005	5.5	0.0001	0.935	0.0003	0.00001	0.000967	0.0005	0.0182	0.0003
MW09-03-01	2016-12-19 14:20	154	320		9	179	3	3.6		0.155	0.005	0.0392	20.9	0.5		0.00001	0.0026	0.00069	0.0678	0.171	0.00002	0.00005	42.8	0.000005	0.0001	0.0001	0.0007	0.175	0.000005	2.28	0.0047	10.9	0.0929	0.00479	8.79	0.00111	0.00005	0.00019	9.49	0.00005	5.36	0.0001	0.974	0.0003	0.00001	0.00106	0.0005	0.0106	0.0003
MW09-03-01	2016-12-19 14:20				9			3.6																																									
MW09-03-01	2017-02-15 14:50	150	316		8.4	177	4.5	2.6		0.273	0.0172	0.042	20.9	0.5		0.00001	0.0033	0.00079	0.0695	0.286	0.00002	0.00005	42.5	0.000005	0.0001	0.0001	0.00068	0.103	0.000005	2.2	0.0039	11.5	0.0861	0.00509	8.92	0.0011	0.00005	0.00035	7.06	0.00005	5.24	0.0003	0.992	0.0003	0.00001	0.000935	0.0005	0.0172	0.0003
MW09-03-01	2017-03-14 15:55	145	313		8.6	202	5	8.4		0.116	0.005	0.038	20.2	0.5		0.00001	0.0026	0.00078	0.071	0.125	0.00002	0.00005	39	0.000005	0.0001	0.0001	0.0004	0.242	0.000005	2.17	0.0033	11.4	0.0842	0.00448	8.39	0.00107	0.00005	0.00012	6.58	0.00005	5.3	0.0001	0.96	0.0003	0.00001	0.00094	0.0005	0.0057	0.0003
MW09-03-01	2017-04-21 14:14	143	314		8.7	201	3	2.6		0.191	0.0051	0.0401	19.4	0.5		0.00001	0.0021	0.00064	0.062	0.111	0.00002	0.00005	38.3	0.0000057	0.0001	0.0001	0.0002	0.303	0.000005	1.87	0.0038	10.4	0.0763	0.00441	7.35	0.00085	0.00005	0.0001	5.86	0.00005	4.94	0.00033	0.92	0.0003	0.00001	0.000901	0.0005	0.0067	0.0003
MW09-03-01	2017-05-20 14:30	140	299		8.6	170	3	5.5		0.273	0.013	0.0445	20.4	0.5		0.00001	0.0028	0.0002	0.0534	0.787	0.00002	0.00005	46.5	0.000089	0.00056	0.00039	0.00133	0.021	0.000005	2.65	0.0011	6.16	0.149	0.0124	9.33	0.00128	0.00005	0.00058	3.93	0.000239	5.02	0.00118	0.321	0.0003	0.00001	0.00218	0.0005	0.0593	0.0003
MW09-03-01	2017-06-22 16:30	144	314		7.9	173	3	7.4		0.306	0.0053	0.0466	20.5	0.5		0.00001	0.0027	0.00106	0.0676	0.253	0.00002	0.00005	41.3	0.0000205	0.0001	0.0001	0.00032	0.292	0.000005	2.23	0.0039	11.9	0.0894	0.00478	9.3	0.0013	0.00005	0.00019	6.62	0.000067	5.6	0.0025	1	0.0003	0.00001	0.000874	0.0005	0.0092	0.0003
MW09-03-01	2017-07-29 10:55	148	319	87.8	8.12	178	3	3.9	26.4	0.249	0.0211	0.0853	21.9	0.42	1.76	0.00001	0.0026	0.00085	0.0695	0.216	0.00002	0.00005	40.2	0.000005	0.0001	0.0001	0.00029	0.01	0.000005	2.48	0.0039	12.3	0.0859	0.00491	9.69	0.00122	0.00005	0.00041	7.85	0.00005	5.45	0.0002	1.01	0.0003	0.00001	0.000981	0.0005	0.0228	0.0003
MW09-03-01	2017-08-13 9:20	147	310			169	3			0.0654	0.005	0.0404	20	0.5		0.00001	0.0031	0.00095	0.0717	0.234	0.00002	0.00005	37.3	0.0000136	0.0001	0.00012	0.0004	0.339	0.000005	2.18	0.004	11.4	0.0873	0.00448	8.98	0.00102	0.00005	0.00033	6.94	0.000082	5.25	0.00016	0.909	0.0003	0.00001	0.000982	0.0005	0.0304	0.0003
MW09-03-01	2017-10-20 14:05	145	297		8.7	171	3	1.4		0.196	0.005	0.0327	20.4	0.5		0.00001	0.0021	0.00074	0.0645	0.206	0.00002	0.00005	37.7	0.000005	0.0001	0.0001	0.0002	0.321	0.000005	2.07	0.0039	11.1	0.0805	0.00461	9.81	0.00102	0.00005	0.00012	6.22	0.000056	5.25	0.0001	0.937	0.0003	0.00001	0.000961	0.0005	0.0174	0.0003
MW09-03-01	2017-11-08 15:30	150	298		9.2	180	3	2.3		0.944	0.0117	0.0371	20.3	0.37		0.00001	0.0024	0.00077	0.0617	0.26	0.00002	0.00005	42.7	0.0000066	0.0001	0.0001	0.0002	0.35	0.000005	2.16	0.0041	11.9	0.0863	0.00512	9.45	0.00093	0.00005	0.00016	6.49	0.000112	5.62	0.0002	0.972	0.0003	0.00001	0.000962	0.0005	0.013	0.0003
MW09-03-01	2017-12-07 15:00	148	303		8.8	175	4	2		0.151	0.0231	0.036	19.7	0.5	1.7	0.00001	0.0029	0.00075	0.0643	0.165	0.00002	0.00005	41.8	0.000005	0.0001	0.0001	0.0002	0.34	0.000005	2.04	0.0037	11.2	0.0802	0.00442	8.51	0.00073	0.00005	0.00012	5.98	0.00005	5.33	0.0001	0.944	0.0003	0.00001	0.000876	0.0005	0.0103	0.0003
MW09-03-01	2018-01-13 15:30	149	312		8.4	174	7.6	1		0.237	0.0094	0.0341	19.5	0.5		0.000013	0.0021	0.00069	0.0603	0.231	0.00002	0.00005	41.2	0.000005	0.0001	0.0001	0.0002	0.136		2.02	0.0034	11.1	0.0844	0.00462	9.47	0.00079	0.00005	0.00011	6.4	0.000308	5.25	0.0001	0.945	0.0003	0.00001	0.000812	0.0005	0.0033	0.0003
MW09-03-01	2018-02-24 11:20	150	313		8.2	177	3	1.5		0.314	0.0183	0.0412	20.2	0.5	1.65	0.00001	0.0024	0.00076	0.0644	0.208	0.00002	0.00005	39.5	0.0000104	0.0001	0.0001	0.00024	0.379	0.000005	2.26	0.0025	11.7	0.0932	0.00449	9.59	0.00072	0.00005	0.00016	6.43	0.000183	5.65	0.0001	0.989	0.0003	0.00001	0.000831	0.0005	0.0138	0.0003
MW09-03-01	2018-03-16 15:20	138	310		8.5	172	3	2.6		0.401	0.0088	0.0443	19.5	0.5		0.00001	0.0198	0.00073	0.0652	0.513	0.00002	0.00005	46.6	0.00011	0.0001	0.00073	0.00392	0.413	0.000005	2.16	0.0035	10.8	0.0838	0.00672	10.8	0.00132	0.000088	0.00036	5.76	0.000116	5.19	0.00028	1.06	0.0015	0.00001	0.000863	0.0005	0.0913	0.0003
MW09-03-01	2018-04-13 14:00	151	308		8.2	171	3.3	3		0.157	0.013	0.0368	18.6	0.5		0.00001	0.0193	0.00084	0.0677	0.214	0.00002	0.00005	38	0.0000837	0.0001	0.00045	0.00411	0.418	0.000005	2.25	0.0036	12.1	0.0915	0.00499	8.87	0.0012	0.000082	0.00016	6.53	0.000093	5.7	0.0001	0.988	0.00121	0.00001	0.000933	0.0005	0.0648	0.0003
MW09-03-01	2018-05-04 16:20	150	315		8.3	175	5.8	4.4		0.156	0.0079	0.0403	18.9	0.5		0.00001	0.0022	0.00087	0.0632	0.154	0.00002	0.00005	43.1	0.0000342	0.0001	0.0001	0.00042	0.408	0.000005	2.28	0.0037	11.2	0.0975	0.00499	8.61	0.00086	0.00005	0.0001	5.49	0.00005	5.19	0.0001	1.01	0.0003	0.00001	0.00073	0.0005	0.013	0.0003
MW09-03-01	2018-06-01 14:40	141	314		8.1	172	4.2	5		0.16	0.0092	0.0414	19.4	0.5		0.00001	0.0066	0.00092	0.0736	0.118	0.00002	0.00005	42.5	0.0000233	0.0001	0.0001	0.00088	0.455	0.000005	2.37	0.0038	12.1	0.1	0.00478	9.76	0.00087	0.00005	0.00014	6.99	0.000187	5.57	0.0001	1.09	0.0003	0.00001	0.000726	0.0005	0.0096	0.0003
MW09-03-01	2018-08-10 17:20	141	325	78.8	8.44	179	4.8	4.3	99.5	0.53	0.0091	0.0454	18.7	0.74		0.00001	0.0062	0.00116	0.0659	1.59	0.00002	0.00005	41	0.000028	0.0001	0.00023	0.00243	0.3	0.000005	2.44	0.0036	12.4	0.0988	0.0096	16.9	0.00067	0.00005	0.00052	5.7	0.000972	5.63	0.00014	0.987	0.0003	0.00001	0.00057	0.0005	0.0137	0.0003
MW09-03-01	2018-09-28 15:05	157	333	-25.8	7.8	175	3	1.5	84.4	0.0261	0.005	0.0544	18.2	0.5		0.00001	0.0033	0.00099	0.0585	0.253	0.00002	0.00005	39.7	0.0000627	0.0001	0.00017	0.00213	0.401	0.000005	2.25	0.0036	11.2	0.1	0.00517	8.82	0.00119	0.00005	0.00017	6.06	0.000076	5.28	0.00012	0.9	0.0003	0.00001	0.000789	0.0005	0.034	0.0003
MW09-03-01	2018-10-19 14:30	139	301	-24.3	7.62	165	7.6	2.7	81.1	0.0392	0.0094	0.0441	17.9	0.54		0.00001	0.0147	0.00933	0.0699	0.09	0.00002	0.00005	40.5	0.0000786	0.0001	0.0001	0.00313	0.411	0.000005	2.3	0.0036	11.1	0.0954	0.00445	8.17	0.00102	0.00005	0.0001	6.06	0.00005	5.29	0.0001	0.911	0.00096	0.00001	0.000993	0.0005	0.039	0.0003
MW09-03-01	2019-01-19 15:10	157	329	159.6	7.69	180	3.6	0.1	65.3	2.04	0.0063	0.0359	18.8	0.5		0.00001	0.0018	0.00068	0.0603	0.325	0.00002	0.00005	38.6	0.000005	0.0001	0.0001	0.0002	0.01	0.000005	1.99	0.0034	10.6	0.0809	0.00513	8.71	0.00071	0.00005	0.00015	5.73	0.000128	5.19	0.0001	0.901	0.0003	0.00001	0.000902	0.0005	0.0392	0.0003
MW09-03-01	2019-02-08 13:55	140	295	212	7.06	165	24.9	2.9	94.3	0.141	0.0123	0.0414	18.6	0.5		0.00001	0.0013	0.00089	0.0638	0.42	0.00002	0.00005	38.7	0.000005	0.0001	0.0001	0.0002	0.138	0.000005	1.98	0.0036	11.6	0.0825	0.00574	9.35	0.00082	0.00005	0.00017	6.12	0.000082	5.34	0.0001	0.957	0.0003	0.00001	0.000908	0.0005	0.0327	0.0003
MW09-03-01	2019-03-09 15:45	142	304	26.9	8.16	162	3.4	1.2	87.8	0.307	0.0154	0.0377	17.6	0.5		0.00001	0.0052	0.00084	0.0623	0.362	0.00002	0.00005	36.3	0.000009	0.0001	0.0001	0.00067	0.255	0.000005	1.97	0.0034	10.7	0.0752	0.00525	9.14	0.00113	0.00005	0.00016	5.86	0.000073	5.15	0.0001	0.937	0.0003	0.00001	0.000892	0.0005	0.0317	0.0003
MW09-03-01	2019-04-19 15:40	152	318	0.4	7.99	173	3	2	86.9	0.651	0.0178	0.0476	17.9	0.5		0.00001	0.0019	0.0009	0.066	0.483	0.00002	0.00005	38.5	0.0000115	0.0001	0.00016	0.0002	0.284	0.000005	1.99	0.0037	10.9	0.0813	0.00574	9.69	0.00052	0.00005	0.0002	5.96	0.000237	5.32	0.0001	0.943	0.0003	0.00001	0.000784	0.0005	0.0072	0.0003

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N\text{-}NO_2$	$N\text{-}NO_3$	$N\text{-}NH_3$	SO_4-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW09-03-01	2019-05-11 15:05	147	315	12.9	7.25	169	3	5.1	59.9	0.0563	0.0127	0.0349	17.9	0.5	
MW09-03-01	2019-06-07 10:05	149	297	9.4	7.76	170	3	4.1	74.6	0.322	0.005	0.0402	18.1	0.5	
MW09-03-01	2019-07-05 10:25	144	307	-0.8	7.85	169	3	6.8	58.8	0.276	0.0103	0.0379	17.9	0.5	
MW09-03-01	2019-08-01 13:45	164	315	20.1	8.1	183	3	3.7	95.8	0.211	0.018	0.0351	17.9	0.5	
MW09-03-01	2019-09-13 16:40	148	311	-5.9	7.59	170	3	5.9	52.1	0.0743	0.0164	0.0312	18	0.45	
MW09-03-01	2019-10-03 8:00	150	308	-8.6	8.26	172	3	1.2	92.5	0.0531	0.0129	0.0393	17.6	0.5	
MW09-03-01	2019-11-02 11:00	150	308	58.1	7.28	186	3.2	1.1	74.7	0.0378	0.005	0.0453	19	0.78	1.79
MW09-03-01	2019-12-02 9:00	152	302	21.7	7.83	188	5.5	1.9	60.1	0.16	0.0397	0.0422	18.8	1.3	
MW09-03-01	2020-02-23 9:10	154	309	37	7.51		3.5	2.3	59.2	0.0463	0.0149	0.0356	17.4	0.43	
MW09-03-01	2020-03-19 15:40	154	316	20.9	8.16		3	1	57.8	0.126	0.0277	0.0391	17.9	0.34	
MW09-03-01	2020-04-17 11:15	149	307	-15.2	8.04	195	3	2.5	60.2	0.0676	0.0058	0.0363	17.3	0.34	
MW09-03-01	2020-05-24 9:30	142	290	-35	7.23	174	3	2.6	54.5	0.0153	0.005	0.0274	12.7	0.39	
MW09-03-01	2020-06-26 9:50	145	310	65.4	8	179	113	4.6	52.2	0.001	0.0082	0.0627	15.4	0.61	
MW09-03-01	2020-07-15 14:10	142	308	160.9	7.08	181	6.9	7	77.7	0.0088	0.0116	0.0282	17.3	0.41	
MW09-03-01	2020-08-01 11:10	144	307	6.4	7.3	180	3.3	8.3	58.4	0.0424	0.0403	0.0291	17.4	0.36	
MW09-03-01	2020-09-18 14:55	145	277	26.4	7.95	183	3	4.5	56.8	0.0134	0.0136	0.0358	18.2	0.37	
MW09-03-01	2020-10-16 15:00	147	305	93.5	8.31	181	31	3.9	61.4	0.0049	0.006	0.0383	17.7	0.51	
MW09-03-01	2020-11-27 15:00	144	272	286.8	6.43	182	3	1.6	43.6	0.015	0.0059	0.0309	17.8	0.31	
MW09-03-01	2020-12-05 10:45	144	275	243.2	7.06	177	3	2.4	63.4	0.0134	0.005	0.0259	17.3	0.34	
MW09-03-01	2021-02-27 15:45	143	304	16.9	6.79	178	3	3.6	48.6	0.0048	0.013	0.0225	17.6	0.37	
MW09-03-01	2021-04-24 15:30	143	304			181	1			0.001	0.005	0.0308	18.1	0.38	
MW09-03-01	2021-05-12 14:50	145	322	48	7.3	178	2.1	3.8	78.4	0.001	0.0073	0.0284	17.2	0.4	
MW09-03-01	2021-06-13 10:10	140	303	238		174	3	6.5	62.3	0.001	0.0117	0.0173	17	0.37	
MW09-03-01	2021-07-05 15:30	143	313	-21.8	7.87	182	2.1	6.1	75.4	0.001	0.0104	0.0267	17.9	0.37	
MW09-03-01	2021-08-13 15:30	143	310	58.6	8.19	181	1.1	4.2	120.4	0.001	0.0059	0.0209	18.4	0.71	
MW09-03-01	2021-09-24 14:35	171	319	90.7	7.14	200	3.1	4.3	98.3	0.419	0.205	0.0344	19	0.61	
MW09-03-01	2021-10-10 15:15	142	306	125.5	6.33	175	10.9	2.4	96.7	0.001	0.005	0.016	18.2	0.46	
MW09-03-01	2021-11-07 15:00	142	299	463.9	8.11	183	3	1.2	145.4	0.0023	0.0112	0.0186	17.8	0.37	
MW09-03-01	2021-12-27 16:15	153	314	1.6	8.54	188	1	1	136.6	0.0028	0.0052	0.0212	19.6	0.53	
MW09-03-02	2009-12-01 0:00	85	932			626	146						110	16	
MW09-03-02	2010-03-29 0:00	130	502			324	7						48.9	3.82	
MW09-03-02	2012-05-10 0:00	464	965			716				0.171	0.1	0.23	0.5	4.3	0.75
MW09-03-02	2012-11-17 0:00	491	979			648				0.0924	0.035	0.23	0.5		
MW09-03-02	2013-03-12 14:30	524	991	-416.8	7.29	670	54.2	0.4	12	0.0915	0.021	0.33	0.53	5.1	0.78
MW09-03-02	2013-06-28 12:00			-97	7.18			6.4	27.5						
MW09-03-02	2013-08-18 10:30	535	965	-102.9	7.2	622	53	6.1	28.6	0.0888	0.02	0.24	9.2	4.5	0.77
MW09-03-02	2013-10-12 12:30	518	970			598	60			0.0805	0.02	0.21	0.98	4.4	0.74
MW09-03-02	2014-06-02 10:00	135	301		7.4	172		4.5		0.149	0.047	0.031	21.6	0.5	0.87
MW09-03-02	2014-07-24 11:00	487	916		8	572		4.6		0.053	0.02	0.2	0.5	4.1	0.75
MW09-03-02	2014-10-06 10:45	500	893	-98.5	7.29	577		-1.1	45.5	0.0429	0.02	0.15	0.5	4.2	0.69
MW09-03-02	2015-06-02 14:40	462	842	-101.6	7.26	520		3.9	41.5	0.0464	0.02	0.18	0.5	4	0.64
MW09-03-02	2015-08-18 14:30	434	790		7.6	458		6.3		0.0507	0.02	0.21	0.5	3.8	0.65
MW09-03-02	2015-09-19 16:45	434	785		7.7	496		1.8		0.215	0.02	0.18	0.5	3.9	0.66
MW09-03-02	2016-05-15 9:00				7.9			4.4							
MW09-03-02	2016-05-21 16:25	327	588		7.8	351	34	9.9		0.152	0.005	0.149	4.4	2.2	
MW09-03-02	2016-06-11 15:40	321	575			350	25.3			0.776	0.01	0.142	9.08	4.5	
MW09-03-02	2016-09-02 11:45	261	487		8	280	24.6	3.5		0.0873	0.005	0.105	2.08	1.79	
MW09-03-02	2016-10-22 14:00	215	414		8	236	3	1.8		0.198	1.77	0.0267	9.82	0.5	
MW09-03-02	2016-12-19 15:35	178	347		8.7	199	7.4	3.1		0.344	1.73	0.0116	9.08	0.5	
MW09-03-02	2016-12-19 15:35				8.7			3.1							
MW09-03-02	2017-02-15 15:30	160	318		8.3	187	9.7	2.5		0.406	1.99	0.0122	10.2	0.5	
MW09-03-02	2017-03-14 16:15	150	321		8.4	196	3	9.4		0.286	2.02	0.0116	10.4	0.5	
MW09-03-02	2017-04-21 17:07	157	332		8.6	219	4.8	1		0.803	1.91	0.0319	11.1	0.5	
MW09-03-02	2017-05-20 17:45	142	315		8.7	178	5.3	3.8		1.93	1.99	0.0355	11.7	0.54	
MW09-03-02	2017-06-22 16:45	149	311		8	177	7	6.4		1.08	2.27	0.0165	9.11	0.53	
MW09-03-02	2017-07-29 11:50	179	352		8.5	202	9.1	3.3		0.145	2.18	0.0088	7.1	0.57	0.427
MW09-03-02	2017-08-13 10:00	196	379			213	15.3			0.0683	2.69	0.005	6.5	0.7	
MW09-03-02	2017-10-20 14:40	187	371		8.4	213	3	0.5		0.0596	3.21	0.005	6.96	0.81	
MW09-03-02	2017-11-08 16:20	183	346		8.2	213	3	2.8		0.155	3.26	0.005	6.4	0.67	
MW09-03-02	2017-12-07 15:30	197	377		8.3	225	3.4	1.6		0.136	3.72	0.005	6.97	0.66	0.35
MW09-03-02	2018-01-13 16:10	175	345		8.8	204	5	1.3		0.226	3.39	0.005	7.58	0.58	
MW09-03-02	2018-02-24 12:10	136	288		8.2	161	3.4	1.4		0.245	2.55	0.0073	8	0.5	0.476
MW09-03-02	2018-03-16 15:55	119	269		8.5	152	3	5.9		0.297	2.49	0.0107	8.25	0.5	
MW09-03-02	2018-04-13 14:25	125	260		8.2	146	4.7	1.9		0.177	2.36	0.0145	8.28	0.5	
MW09-03-02	2018-05-04 16:40	124	260		8.3	150	3	4.1		0.169	2.25	0.005	8.86	0.5	
MW09-03-02	2018-06-01 14:50	155	332		7.7	185	4.2	5		0.197	3.3	0.005	8.83	0.57	
MW09-03-02	2018-08-10 17:40	156	335	127.4	7.86	185	4.8	4.6	120.7	0.0599	3.21	0.005	6.17	0.83	
MW09-03-02	2018-09-28 15:40	268	547	122.9	7.58	301	3	1.4	109.9	0.0339	8.02	0.0056	5.64	0.89	
MW09-03-02	2018-10-19 14:55	186	385	110.1	7.58	222	4.8	1.9	109.4	0.0383	4.85	0.005	5.77	0.86	
MW09-03-02	2019-01-19 17:10	150	303	125	7.8	177	3	-0.1	99.9	0.194	3.79	0.017	4.8	0.64	
MW09-03-02	2019-02-08 14:30	140	296	195.3	7.46	168	3.9	3.2	108.8	0.189	3.55	0.0101	4.65	0.61	
MW09-03-02	2019-03-09 16:30	135	279	133	8.79	158	3.2	1.5	97.5	0.27	3.29	0.0093	5.2	0.63	
MW09-03-02	2019-04-19 16:40	128	276	115.6	7.31	154	3	1.4	23.7	0.244	3.56	0.0061	6.28	0.67	
MW09-03-02	2019-05-11 15:40	122	277	68.6	7.4	154	3	3	81.6	0.0857	4	0.005	6.25	0.83	
MW09-03-02	2019-06-07 11:05	116	241	142.5	7.93	145	3.7	4.7	100.1	0.248	3.72	0.0104	6.61	0.76	
MW09-03-02	2019-07-05 10:50	121	273	57.6	7.86	152	3	6.4	78.5	0.321	3.75	0.0085	6.69	1.06	
MW09-03-02	2019-08-01 15:15	136	298	160.4	8	170	3	2.5	130.7	0.273	4.12	0.0125	6.53	0.78	
MW09-03-02	2019-09-13 16:50	226	524	98.2	7.53	307	3	4	89.4	0.0656	13.9	0.0063	4.84	1.25	
MW09-03-02	2019-10-03 8:40	229	561	122.2	7.87	342	3	0.8	110.1	0.0271	19.1	0.005	4.61	1.36	
MW09-03-02	2019-11-02 11:25	219	526	141.6	7.21	354	3	0.5	92	0.026	18.3	0.0065	4.93	1.29	0.334
MW09-03-02	2019-12-02 9:15	214	428	150.2	7.57	288	3	1.1	89.6	0.0432	11	0.006	5.39	1.01	
MW09-03-02	2020-02-22 17:35	138	314	249.1	7.23		7.7	1.6	88.1	0.134	6.79	0.01	6.4	0.9	
MW09-03-02	2020-03-19 16:10	126	291	125.2	8.01		3	1.1	91.8	0.0348	5.96	0.0078	6.22	0.84	
MW09-03-02	2020-04-17 12:00	118	273	108.7	7.98	183	3	2.6	76.2	0.0135	5.67	0.0056	6.08	0.85	
MW09-03-02	2020-05-24 9:55	205	457	74.9	7.34	301	3	2.3	80.1	0.0023	12.9	0.005	6.15	1.08	
MW09-03-02	2020-06-26 10:50	137	319	188.9	7.74	192	3	4.2	125.7	0.0084	6.26	0.005	5.48	1.15	
MW09-03-02	2020-07-15 15:20	132	309	185.8	7.26	193	3	3.7	124.5	0.0011	6.17	0.005	4.94	1.12	
MW09-03-02	2020-08-01 11:35	126	310	118.5	7.49	186	4.9	5.4	92.5	0.001	6.58	0.005	4.9	1.18	
MW09-03-02	2020-09-18 15:25	117	284	122.6	7.75	201	3	3.7	98.1	0.0017	10.4	0.005	5.1	1.7	
MW09-03-02	2020-10-16 15:45	114	346	115	8.03	221	4.8	1.4	87.3	0.001	14.8	0.005	5.32	2.28	
MW09-03-02	2020-11-27 15:25	108	307	246.9	7.52	225	3	1.6	78.5	0.0028	15.8	0.005	5.34	2.3	
MW09-03-02	2020-12-05 11:15	107	308	202.1	6.88	214	3	1.5	91.1	0.0026	15.3	0.005	5.24	2.22	
MW09-03-02	2021-02-27 16:20	98	295	118.9	7.08	187	3	2.2	92.9	0.046	11.6	0.005	5.28	1.8	
MW09-03-02	2021-03-21 12:20	109	295	186.9	7.21	190	2.4	0.6	101	0.0374	10.7	0.0151	5.23	1.49	
MW09-03-02	2021-04-24 16:00	105	281			182	1			0.0056	9.31	0.005	5.4	1.27	
MW09-03-02	2021-05-12 15:30	97	373	149.8	7.12	234	1.4	5.4	106	0.0019	19.6	0.005	6.76	2.33	
MW09-03-02	2021-06-13 10:30	110	264	155	7.07	165	3	4.3	109.8	0.0029	5.93	0.005	4.56	1.07	
MW09-03-02	2021-07-05 16:00	103	280	158.2	7.92	171	1	6.9	120.2	0.0012	8.09	0.007	4.51	1.23	
MW09-03-02	2021-08-13 15:50	98.2	279	74.3	7.98	169	1.1	4.1	105.7	0.007	7.11	0.005	10.4	1.24	
MW09-03-02	2021-09-24 15:30	124	306	84.1	8.33	209	1	2.5	109.1	0.0168	11.3	0.0059	8.73	1.75	
MW09-03-02	2021-10-10 16:00	108	299	105.6	6.95	186	1.3	1.3	99.6	0.0023	9.32	0.0093	7.95	1.62	
MW09-03-02	2021-11-07 15:20	111	313	31.8	8.24	206	3	0.8	105.3	0.0086	11.5	0.005	7.68	2.06	
MW09-03-02	2021-12-27 16:50	118	314	44.9	8.13	200	1.7	0.8	103.2	0.0011	10.1	0.005	7.54	1.18	
MW09-03-03	2009-12-01 0:00	55	158			110	21						10	0.93	
MW09-03-03	2010-03-29 0:00	63	158			114	4						10	0.61	
MW09-03-03	2012-05-10 0:00	78.6	181			106				0.0145	0.302	0.005	11.2	0.54	0.3
MW09-03-03	2012-11-17 0:00	89	200			114				0.0058	0.248	0.0054	9.79		
MW09-03-03	2013-03-12 16:00	82.2	189	-412.9	7.68	130	1	2.2	55.1	0.01	0.366	0.025	12.8	1.1	0.37
MW09-03-03	2013-06-28 13:00			-8.3	7.83			7.6	89						
MW09-03-03	2013-08-18 12:00	80.9	181	57.5	8.08	104	4	6.6	71.3	0.0239	0.426	0.013	9.4	0.59	0.49
MW09-03-03	2013-10-14 10:45	80.5	184			128				0.005	0.412	0.063	11.2	0.95	0.52
MW09-03-03	2014-06-02 11:00	87.5	203		8.1	138		4.9		0.0183	0.53	0.012	12.8	0.68	0.47
MW09-03-03	2014-07-24 11:20	77.2	180		9.1	94		5.9		0.0079	0.484	0.015	10.9	0.54	0.47
MW09-03-03	2014-10-06 11:10	87.3	193	-23.6	8.04	106		-1.3	69.3	0.0051	0.507	0.009	10.3	0.57	0.44
MW09-03-03	2015-06-02 15:15	91.8	218	14.3	7.85	120		5.5	64.7	0.0284	0.545	0.0075	12.6	0.92	0.45

Station	Date / Time	Dissolved Elements																	
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW09-03-01	2019-05-11 15:05	0.00001	0.0031	0.0009	0.0682	0.133	0.00002	0.00005	40.4	0.0000085	0.0001	0.0001	0.0002	0.351	0.000005	1.98	0.0036	11.2	0.0827
MW09-03-01	2019-06-07 10:05	0.00001	0.0028	0.00089	0.062	0.53	0.00002	0.00005	38.1	0.0000274	0.0001	0.0001	0.0007	0.215	0.000005	2.03	0.0036	10.9	0.086
MW09-03-01	2019-07-05 10:25	0.00001	0.0015	0.0009	0.066	0.413	0.00002	0.00005	40.1	0.000107	0.0001	0.0001	0.00064	0.336	0.000005	2.22	0.0036	11	0.0877
MW09-03-01	2019-08-01 13:45	0.00001	0.0025	0.00091	0.0648	0.229	0.00002	0.00005	42	0.000127	0.0001	0.0001	0.0013	0.347	0.000005	2.24	0.0036	11.7	0.0966
MW09-03-01	2019-09-13 16:40	0.00001	0.0021	0.00407	0.0691	0.079	0.00002	0.00005	37	0.000336	0.0001	0.0001	0.00079	0.37	0.000005	2.76	0.0038	12.6	0.0936
MW09-03-01	2019-10-03 8:00	0.00001	0.002	0.00085	0.0651	0.112	0.00002	0.00005	39.9	0.0000217	0.0001	0.0001	0.00022	0.429	0.000005	2.25	0.0037	12.5	0.0891
MW09-03-01	2019-11-02 11:00	0.00001	0.0022	0.00099	0.0634	0.129	0.00002	0.00005	38.1	0.000038	0.0001	0.0001	0.00024	0.456	0.000005	2.01	0.0036	11.9	0.09
MW09-03-01	2019-12-02 9:00	0.00001	0.0023	0.00097	0.0632	0.167	0.00002	0.00005	39	0.0000112	0.0001	0.0001	0.0002	0.41	0.000005	2.12	0.0037	11.3	0.0865
MW09-03-01	2020-02-23 9:10	0.00001	0.0018	0.00094	0.0674	0.1	0.00002	0.00005	45.4	0.00104	0.0001	0.0001	0.0011	0.323	0.000005	2.09	0.0039	12.4	0.0789
MW09-03-01	2020-03-19 15:40	0.00001	0.0012	0.00125	0.0655	0.177	0.00002	0.00005	37.6	0.00001	0.0001	0.0001	0.0002	0.301	0.000005	2	0.0038	11.8	0.0788
MW09-03-01	2020-04-17 11:15	0.00001	0.0019	0.00091	0.0696	0.125	0.00002	0.00005	47.6	0.0000178	0.0001	0.0001	0.0002	0.332	0.000005	2.16	0.0035	13.9	0.0916
MW09-03-01	2020-05-24 9:30	0.00001	0.0028	0.00117	0.0622	0.061	0.00002	0.00005	40	0.000005	0.0001	0.0001	0.0002	0.546	0.000005	2.12	0.0024	11.6	0.214
MW09-03-01	2020-06-26 9:50	0.00001	0.0026	0.00258	0.0633	0.104	0.00002	0.00005	38.8	0.000124	0.0001	0.0001	0.0013	0.279	0.000005	2.17	0.0036	11.6	0.0984
MW09-03-01	2020-07-15 14:10	0.00001	0.0021	0.00093	0.0687	0.045	0.00002	0.00005	41.8	0.0000113	0.0001	0.0001	0.00029	0.253	0.000005	2.12	0.0038	11.2	0.0991
MW09-03-01	2020-08-01 11:10	0.00001	0.0027	0.00114	0.0686	0.109	0.00002	0.00005	39.1	0.0000665	0.0001	0.0001	0.0002	0.386	0.000005	2.06	0.0038	11	0.0948
MW09-03-01	2020-09-18 14:55	0.00001	0.0024	0.00091	0.0681	0.063	0.00002	0.00005	40.7	0.000228	0.0001	0.00014	0.00025	0.429	0.000005	2.04	0.0037	11.9	0.0951
MW09-03-01	2020-10-16 15:00	0.00001	0.0013	0.00088	0.0666	0.058	0.00002	0.00005	37.9	0.0000155	0.0001	0.0001	0.0002	0.272	0.000005	1.96	0.0035	11	0.0854
MW09-03-01	2020-11-27 15:00	0.00001	0.0077	0.00087	0.0659	0.08	0.00002	0.00005	42.2	0.0000617	0.0001	0.0001	0.00023	0.347	0.000005	2.08	0.004	10.6	0.0873
MW09-03-01	2020-12-05 10:45	0.00001	0.0016	0.00095	0.0718	0.089	0.00002	0.00005	37	0.0000442	0.0001	0.0001	0.0002	0.352	0.000005	2.05	0.0035	10.9	0.0818
MW09-03-01	2021-02-27 15:45	0.00001	0.0023	0.00089	0.0716	0.085	0.00002	0.00005	38.6	0.000142	0.0001	0.0001	0.00084	0.313	0.000005	2.12	0.0036	10.9	0.0808
MW09-03-01	2021-04-24 15:30	0.00001	0.0018	0.00089	0.0682	0.094	0.00002	0.00005	40.5	0.000187	0.0001	0.0005	0.0002	0.342	0.000005	2.08	0.0039	10.9	0.0821
MW09-03-01	2021-05-12 14:50	0.00001	0.0028	0.00093	0.0654	0.06	0.00002	0.00005	37.2	0.0000574	0.0001	0.0005	0.0002	0.376	0.000005	2	0.0034	11	0.0869
MW09-03-01	2021-06-13 10:10	0.00001	0.0018	0.00093	0.0724	0.053	0.00002	0.00005	36.6	0.0000129	0.0001	0.0005	0.0002	0.351	0.000005	2.2	0.0036	11.3	0.0843
MW09-03-01	2021-07-05 15:30	0.00001	0.0019	0.00097	0.069	0.06	0.00002	0.00005	40.9	0.0000298	0.0001	0.0005	0.0002	0.361	0.000005	2.08	0.0039	11	0.0816
MW09-03-01	2021-08-13 15:30	0.00002	0.0015	0.00087	0.0679	0.065	0.00002	0.00005	40.1	0.0000661	0.0001	0.0005	0.0005	0.342	0.000005	2.1	0.0038	11.2	0.0765
MW09-03-01	2021-09-24 14:35	0.00001	0.0017	0.00095	0.0742	0.258	0.00002	0.00005	38.3	0.0000452	0.0001	0.0005	0.0009	0.228	0.000005	2.08	0.0041	11.2	0.0791
MW09-03-01	2021-10-10 15:15	0.00001	0.0026	0.0009	0.0699	0.039	0.00002	0.00005	36.9	0.0001	0.0001	0.0005	0.001	0.317	0.000005	2.24	0.0034	11	0.0741
MW09-03-01	2021-11-07 15:00	0.00001	0.0018	0.00101	0.0773	0.036	0.00002	0.00005	41	0.0000123	0.0001	0.0005	0.00023	0.357	0.000005	2.29	0.0037	12.5	0.0814
MW09-03-01	2021-12-27 16:15	0.00001	0.0058	0.00089	0.072	0.185	0.00002	0.00005	38.8	0.000016	0.0001	0.0005	0.00048	0.154	0.000005	2.39	0.004	11.2	0.0783
MW09-03-02	2009-12-01 0:00	0.00004	0.008	0.0008	0.088	0.218	0.00004	0.001	73.7	0.00008	0.00057	0.0004	0.022	0.02	0.00001	26	0.011	14.2	0.135
MW09-03-02	2010-03-29 0:00	0.00001	0.005	0.0012	0.035	1.99	0.00004	0.001	56.3	0.00072	0.0002	0.0013	0.006	0.01	0.0001	6.6	0.004	9.2	0.0616
MW09-03-02	2012-05-10 0:00	0.00002	0.013	0.00072	0.774	0.375	0.0001	0.001	154	0.000028	0.00244	0.001	0.00107	19.2	0.00001	4.44	0.005	23.4	22.1
MW09-03-02	2012-11-17 0:00	0.000025	0.0041	0.00076	0.692	0.387	0.00005	0.000025	161	0.000025	0.00123	0.00058	0.00073	19.4		4.66	0.0025	23.4	17.8
MW09-03-02	2013-03-12 14:30	0.00002	0.0038	0.00038	0.631	0.409	0.0001	0.001	158	0.000011	0.00105	0.001	0.0002	14.7	0.00001	4.25	0.005	26.3	20.4
MW09-03-02	2013-06-28 12:00																		
MW09-03-02	2013-08-18 10:30	0.00003	0.007	0.00069	0.753	0.35	0.0001	0.001	149	0.000026	0.0016	0.001	0.00066	19.3	0.00001	3.93	0.005	24.9	20.7
MW09-03-02	2013-10-12 12:30	0.00002	0.0077	0.00077	0.665	0.392	0.0001	0.001	166	0.00001	0.0011	0.001	0.00119	23.8	0.00001	4.05	0.005	25.4	20.3
MW09-03-02	2014-06-02 10:00	0.00002	0.0067	0.0001	0.053	0.108	0.0001	0.001	40.5	0.00006	0.0005	0.001	0.00071	0.0531	0.00001	2.5	0.005	9.91	0.139
MW09-03-02	2014-07-24 11:00	0.000031	0.003	0.0007	0.592	0.318	0.0001	0.001	136	0.00001	0.00077	0.001	0.00318	20.3	0.00001	3.45	0.005	22.7	17.6
MW09-03-02	2014-10-06 10:45	0.00002	0.003	0.00051	0.544	0.321	0.0001	0.001	147	0.000032	0.0005	0.001	0.00207	19.2	0.00001	3.75	0.005	22.3	16.3
MW09-03-02	2015-06-02 14:40	0.00002	0.0059	0.00039	0.471	0.278	0.0001	0.001	141	0.00001	0.0005	0.001	0.00219	15.7	0.00001	3.53	0.005	19.9	14
MW09-03-02	2015-08-18 14:30	0.00002	0.0076	0.00038	0.402	0.285	0.0001	0.001	133	0.00001	0.0005	0.001	0.00222	14.7	0.00001	3.5	0.005	21.9	12.4
MW09-03-02	2015-09-19 16:45	0.00002	0.0068	0.00054	0.37	0.662	0.0001	0.001	120	0.00001	0.0005	0.001	0.00122	12.8	0.00001	3.25	0.005	19.9	12.1
MW09-03-02	2016-05-15 9:00																		
MW09-03-02	2016-05-21 16:25	0.00001	0.0026	0.00058	0.341	0.869	0.00002	0.00005	96.3	0.0000056	0.00068	0.0001	0.00138	10.8	0.000005	3.02	0.001	15.1	7.96
MW09-03-02	2016-06-11 15:40	0.00001	0.0026	0.00043	0.323	0.546	0.00002	0.00005	96	0.0000175	0.00063	0.0001	0.00056	6.66	0.000005	3.3	0.0013	15.1	7.49
MW09-03-02	2016-09-02 11:45	0.000019	0.0026	0.00022	0.293	0.306	0.00002	0.00005	77.3	0.000005	0.0002	0.0001	0.00245	10.7	0.0000051	2.6	0.001	11.9	6.48
MW09-03-02	2016-10-22 14:00	0.00001	0.0011	0.00029	0.119	0.221	0.00002	0.00005	70.5	0.0000267	0.00577	0.0001	0.00115	0.01	0.000005	2.83	0.0012	8.53	0.449
MW09-03-02	2016-12-19 15:35	0.00001	0.0021	0.00029	0.0309	0.382	0.00002	0.00005	59.1	0.000021	0.00051	0.0001	0.00158	0.011	0.000005	2.35	0.0016	6.62	0.0567
MW09-03-02	2016-12-19 15:35																		
MW09-03-02	2017-02-15 15:30	0.00001	0.0026	0.00021	0.0323	0.49	0.00002	0.00005	54.3	0.0000679	0.00031	0.00026	0.00279	0.016	0.000005	2.38	0.0013	6.66	0.0882
MW09-03-02	2017-03-14 16:15	0.00001	0.0036	0.00014	0.0368	0.298	0.00002	0.00005	49.6	0.0000414	0.0004	0.00019	0.00214	0.019	0.000005	2.47	0.001	6.64	0.113
MW09-03-02	2017-04-21 17:07	0.00001	0.0018	0.00028	0.0462	0.477	0.00002	0.00005	47.7	0.000037	0.00087	0.00023	0.00105	0.084	0.000005	2.23	0.0014	5.92	0.281
MW09-03-02	2017-05-20 17:45	0.00001	0.0021	0.00078	0.0664	0.423	0.00002	0.00005	40.2	0.0000083	0.0001	0.0001	0.0002	0.299	0.000005	2.19	0.0035	11.8	0.0982
MW09-03-02	2017-06-22 16:45	0.00001	0.0026	0.00031	0.0257	0.431	0.00002	0.00005	49.2	0.0000916	0.00015	0.00017	0.00225	0.014	0.000005	2.29	0.0013	6.08	0.0513
MW09-03-02	2017-07-29 11:50	0.00001	0.0028	0.00021	0.169	0.153	0.00002	0.00005	58.5	0.0000732	0.0001	0.00013	0.00229	0.01	0.000005	3.16	0.0013	8.86	0.0111
MW09-03-02	2017-08-13 10:00	0.00001	0.004	0.00012	0.0674	0.093	0.00002	0.00005	60	0.0000194	0.0001	0.0001	0.0034	0.015	0.000005	2.51	0.0014	8.05	0.0178
MW09-03-02	2017-10-20 14:40	0.00001	0.0015	0.0001	0.02	0.079	0.00002	0.00005	61.3	0.0000132	0.0001	0.0001	0.00271	0.01	0.000005	2.3	0.0016	7.53	0.00263
MW09-03-02	2017-11-08 16:20	0.00001	0.0016	0.0001	0.0191	0.126	0.00002	0.00005	65.2	0.0000201	0.0001	0.0001	0.0025	0.01	0.000005	2.4	0.0012	7.67	0.0019
MW09-03-02	2017-12-07 15:30	0.00001	0.001	0.0001	0.0219	0.146	0.00002	0.00005	66.1	0.0000167	0.0001	0.0001	0.00266	0.01	0.000005	2.61	0.0011	7.96	0.00208
MW09-03-02	2018-01-13 16:10	0.000012	0.001	0.00011	0.0249	0.415	0.00002	0.00005	59.2	0.00006	0.0001	0.00018	0.00143	0.01		2.23	0.001	7.02	0.00301
MW09-03-02	2018-02-24 12:10	0.00001	0.004	0.0001	0.0222	0.278	0.00002	0.00005	44.2	0.0000253	0.0001	0.0001	0.00135	0.01	0.000005	2.22	0.001	6.21	0.00233
MW09-03-02	2018-03-16 15:55	0.000016	0.0187	0.00011	0.024	0.337	0.00002	0.00005	47.4	0.0000963	0.00014	0.00064	0.0038	0.056	0.000005	2.05	0.0011	5.59	0.00999
MW09-03-02	2018-04-13 14:25	0.00001	0.0136	0.00013	0.0203	0.398	0.00002	0.00005	37.4	0.0000774	0.0001	0.00041	0.00494	0.038	0.000005	2.08	0.0012	5.62	0.0048
MW09-03-02	2018-05-04 16:40	0.00001	0.0017	0.00036	0.0182	0.693	0.00002	0.00005	40.7	0.0000342	0.0001	0.00022	0.00127	0.01	0.000005	2.11	0.0014	5.2	0.00303
MW09-03-02	2018-06-01 14:50	0.00001	0.0091	0.00013	0.0292	0.143	0.00002	0.00005	52.9	0.0000453	0.0001	0.0001	0.00384	0.023	0.000005	2.35	0.0014	6.99	0.00546
MW09-03-02	2018-08-10 17:40	0.00001	0.0017	0.00013	0.0345	0.119	0.00002	0.00005	55.5	0.000055	0.0001	0.0001	0.0021	0.01	0.000005	2.43	0.0012	7.35	0.0166
MW09-03-02	2018-09-28 15:40	0.00001	0.0017	0.00025	0.0356	0.15	0.00002	0.00005	79.9	0.0000561	0.0001	0.00021	0.00326	0.01	0.000005	2.57	0.0014	9.85	0.0115
MW09-03-02	2018-10-19 14:55	0.00001	0.0081	0.0004	0.0286	0.045	0.00002	0.00005	66.2	0.0000372	0.0001	0.0001	0.00362	0.027	0.000005	2.91	0.0014	8.12	0.00418
MW09-03-02	2019-01-19 17:10	0.00001	0.0021	0.00024	0.0192	0.634	0.00002	0.00005	48.7	0.000136	0.0001	0.00017	0.00203	0.01	0.000005	2.12	0.0012	5.73	0.00298
MW09-03-02	2019-02-08 14:30	0.00001	0.0013	0.0001	0.0189	0.178	0.00002	0.00005	50.1	0.000085	0.0001	0.0001	0.0021	0.01	0.000005	2.08	0.0012	5.76	0.00235
MW09-03-02	2019-03-09 16:30	0.00001	0.0021	0.0001	0.019	0.344	0.00002	0.00005	42.5	0.0000476	0.0001	0.0002	0.00173	0.01	0.000005	1.94	0.0011	5.4	0.0025
MW09-03-02	2019-04-19 16:40	0.00001	0.001	0.0001	0.0163	0.296	0.00002	0.00005	41.7	0.0000372	0.0001	0.0001	0.00137	0.01	0.000005	1.96	0.0012	5.3	0.00188
MW09-03-02	2019-05-11 15:40	0.00001	0.0012	0.0001	0.018	0.113	0.00002	0.00005	43.9	0.000459	0.0001	0.0001	0.00143	0.01	0.000005	1.99	0.0012	5.9	0.0014
MW09-03-02	2019-06-07 11:05	0.00001	0.004	0.0001	0.0171	0.335	0.00002	0.00005	37.9	0.0000695	0.0001	0.0001	0.00169	0.01	0.000005	1.93	0.0012	5.49	0.00293
MW09-03-02	2019-07-05 10:50	0.00001	0.002	0.00017	0.0195	0.302	0.00002	0.00005	41.1	0.00021	0.0001	0.00014	0.00171	0.01	0.000005	2.08	0.0012	5.42	0.00218
MW09-03-02	2019-08-01 15:15	0.00001	0.003	0.00014	0.0209	0.373	0.00002	0.00005	47.4	0.000179	0.0001	0.00013	0.00203	0.01	0.000005	2.27	0.0012	6.27	0.00481
MW09-03-02	2019-09-13 16:50	0.00001	0.0013	0.0014	0.0309	0.096	0.00002	0.00005	82.7	0.000229	0.0001	0.0001	0.00321	0.01	0.000005	3.14	0.0015	11.1	0.00387
MW09-03-02	2019-10-03 8:40	0.00001	0.001	0.00012	0.031	0.041	0.00002	0.00005	93.2	0.0000275	0.0001	0.0001	0.00239	0.016	0.000005	3.11	0.0016	11.8	0.00516
MW09-03-02	2019-11-02 11:25	0.00001	0.0119	0.00014	0.0293	0.097	0.00002	0.00005	80.3	0.0000551	0.0001	0.0001	0.00438	0.037	0.000005	2.72	0.0015	10.6	0.00499
MW09-03-02	2019-12-02 9:15	0.00001	0.001	0.00012	0.0268	0.048	0.00002	0.00005	72.5	0.0000324	0.0001	0.0001	0.00193	0.02	0.000005	2.67	0.0015	8.66	0.00701
MW09-03-02	2020-02-22 17:35	0.00001	0.0014	0.0001	0.015	0.299	0.00002	0.00005	56.7	0.000185	0.0001	0.00029	0.00149	0.01	0.000005	2.05	0.0014	7.19	0.00185
MW09-03-02	2020-03-19 16:10	0.00001	0.0198	0.00026	0.0174	0.159	0.00002	0.00005	41.8	0.0000759	0.0001	0.0001	0.00732	0.043	0.000005	2.01	0.0014	6.01	0.00497
MW09-03-02	2020-04-17 12:00	0.00001	0.0018	0.00011	0.0171	0.102	0.00002	0.00005	51.9	0.000161	0.0001	0.0001	0.00131	0.01	0.000005	2.2	0.0012	7.23	0.00425
MW09-03-02	2020-05-24 9:55	0.00001	0.0015	0.0001	0.0262	0.041	0.00002	0.00005	79.1	0.0000965	0.0001	0.0001	0.00235	0.01	0.000005	2.74	0.0015	10.5	0.00249
MW09-03-02	2020-06-26 10:50	0.00001	0.0019	0.00027	0.0183	0.057	0.00002	0.00005	49	0.0000567	0.0001	0.00011	0.00134	0.01	0.000005	2.09	0.0012	6.46	0.00245
MW09-03-02	2020-07-15 15:20	0.00001	0.0023	0.0001	0.0185	0.031	0.00002	0.00005	53.5	0.0000346	0.0001	0.0001	0.0017	0.01	0.000005	2.24	0.0013	6.25	0.00447
MW09-03-02	2020-08-01 11:35	0.00001	0.0012	0.00012	0.0183	0.029	0.00002	0.00005	47.2	0.0000379	0.0001	0.0001	0.00148	0.01	0.000005	2.14	0.0013	6.27	0.00397
MW09-03-02	2020-09-18 15:25	0.00001	0.0015	0.0001	0.0177	0.026	0.00002	0.00005	51.6	0.0000673	0.0001	0.0001	0.00137	0.01	0.000005	2.13	0.0013	6.56	0.00244
MW09-03-02	2020-10-16 15:45	0.00001	0.0013	0.0001	0.0182	0.03	0.00002	0.00005	51.6	0.0000368	0.0001	0.0001	0.00115	0.01	0.000005	2.17	0.0013	6.82	0.0023
MW09-03-02	2020-11-27 15:25	0.00001	0.001	0.0001	0.0169	0.057	0.00002	0.00005	56	0.000139	0.0001	0.0001	0.0014	0.01	0.000005	2.32	0.0014	6.56	0.00213
MW09-03-02	2020-12-05 11:15	0.00001	0.001	0.0001	0.0176	0.048	0.00002	0.00005	48	0.0000579	0.0001	0.0001	0.00113	0.01	0.000005	2.2	0.0013	6.23	0.00138
MW09-03-02	2021-02-27 16:20	0.00001	0.0022	0.0001	0.0165	0.074	0.00002	0.00005	44	0.0000874	0.0001	0.0001	0.00127	0.01	0.000005	2.15	0.0013	6.15	0.00301
MW09-03-02	2021-03-21 12:20	0.00001	0.0015	0.0001	0.0138	0.123	0.00002	0.00005	44.2	0.0000613	0.0001	0.0001	0.00095	0.01	0.000005	1.97	0.0013	5.87	0.00274
MW09-03-02	2021-04-24 16:00	0.00001	0.0021	0.0001	0.016	0.09	0.00002	0.00005	45.8	0.0000913	0.0001	0.0005	0.00122	0.01	0.000005	2.19	0.0014	5.6	0.00209
MW09-03-02	2021-05-12 15:30	0.00001	0.0016	0.0001	0.0211	0.059	0.00002	0.00005	51.6	0.000429	0.00011	0.0005	0.00155	0.01	0.000005	2.24	0.0014	7.02	0.00186
MW09-03-02	2021-06-13 10:30	0.00001	0.0014	0.0001	0.0166	0.036	0.00002	0.00005	41.6	0.0000252	0.0001	0.0005	0.0014	0.01	0.000005	2.22	0.0012	5.26	0.00244
MW09-03-02	2021-07-05 16:00	0.00001	0.0016	0.0001	0.0132	0.03	0.00002	0.00005	42.7	0.0000201	0.0001	0.0005	0.00127	0.01	0.000005	2	0.0012	4.82	0.00161
MW09-03-02	2021-08-13 15:50	0.00001	0.0012	0.00012	0.0143	0.088	0.00002	0.00005	41.5	0.00011	0.0001	0.0005	0.00215	0.01	0.000005	2.07	0.0012	5.25	0.00327
MW09-03-02	2021-09-24 15:30	0.00001	0.017	0.0001	0.0155	0.034	0.00002	0.00005	47.8	0.0000745	0.0001	0.0005	0.00328	0.03	0.000005	2.21	0.0016	6.03	0.00519
MW09-03-02	2021-10-10 16:00	0.00001	0.0029	0.0001	0.0137	0.051	0.00002	0.00005	44.5	0.000391	0.0001	0.0005	0.00281	0.01	0.000005	2.16	0.0012	6	0.003
MW09-03-02	2021-11-07 15:20	0.00001	0.0027	0.0001	0.0171	0.042	0.00002	0.00005	50.3	0.000119	0.0001	0.0005	0.00194	0.011	0.000005	2.37	0.0012	6.63	0.00304
MW09-03-02	2021-12-27 16:50	0.00001	0.0074	0.0001	0.0169	0.047	0.00002	0.00005	47.9	0.0000502	0.0001	0.0005	0.00159	0.01	0.000005	2.19	0.0016	5.98	0.00355
MW09-03-03	2009-12-01 0:00	0.00001	0.007	0.0002	0.011	0.044	0.00004	0.001	19.9	0.00007	0.00024	0.0004	0.005	0.02	0.00001	2.6	0.001	2.4	0.0184
MW09-03-03	2010-03-29 0:00	0.00001	0.005	0.0002	0.013	0.04	0.00004	0.001	23.4	0.00002	0.00009	0.0004	0.005	0.01	0.0001	2.3	0.001	2.4	0.0129
MW09-03-03	2012-05-10 0:00	0.00002	0.0035	0.0001	0.0396	0.05	0.0001	0.001	28.1	0.000069	0.0005	0.001	0.0032	0.0164	0.00001	1.8	0.005	3.36	0.234
MW09-03-03	2012-11-17 0:00	0.000009	0.00187	0.000103	0.0687	0.05	0.00001	0.000005	31.9	0.000023	0.000149	0.00013	0.00174	0.0113		2.18	0.00086	3.8	0.385
MW09-03-03	2013-03-12 16:00	0.00002	0.003	0.0001	0.0573	0.05	0.0001	0.001	28.1	0.000015	0.0005	0.001	0.00139	0.0195	0.00001	1.89	0.005	3.79	0.0573
MW09-03-03	2013-06-28 13:00																		
MW09-03-03	2013-08-18 12:00	0.00002	0.0047	0.0001	0.0388	0.05	0.0001	0.001	30.3	0.00001	0.0005	0.001	0.00222	0.157	0.00001	1.79	0.005	3.83	0.277
MW09-03-03	2013-10-14 10:45	0.00002	0.003	0.0001	0.0282	0.05	0.0001	0.001	28.7	0.0001	0.0005	0.001	0.00217	0.0068	0.00001	1.7	0.005	3.71	0.0146
MW09-03-03	2014-06-02 11:00	0.00002	0.003	0.0001	0.0336	0.05	0.0001	0.001	30.7	0.000015	0.0005	0.001	0.00172	0.0059	0.00001	1.67	0.005	4.3	0.0064
MW09-03-03	2014-07-24 11:20	0.00002	0.003	0.0001	0.0249	0.05	0.0001	0.001	26.7	0.00001	0.0005	0.001	0.00247	0.0838	0.00001	1.54	0.005	3.5	0.0965
MW09-03-03	2014-10-06 11:10	0.00002	0.0062	0.0001	0.0415	0.06	0.0001	0.001	33.5	0.000022	0.0005	0.001	0.00154	0.483	0.00001	1.63	0.005	4.25	0.592
MW09-03-03	2015-06-02 15:15	0.00002	0.0046	0.0001	0.022	0.05	0.0001	0.001	33.6	0.00001	0.0005	0.001	0.00139	0.0363	0.00001	1.69	0.005	4.22	0.0705

Station	Date / Time	Dissolved Elements (continued)															
		Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW09-03-01	2019-05-11 15:05	0.00466	8.25	0.00062	0.00005	0.0001	5.45	0.00005	5.11	0.0001	0.977	0.0003	0.00001	0.00081	0.0005	0.0062	0.0003
MW09-03-01	2019-06-07 10:05	0.00596	9.92	0.00062	0.00005	0.00023	6.18	0.000326	5.37	0.0001	0.995	0.0003	0.00001	0.000717	0.0005	0.0245	0.0003
MW09-03-01	2019-07-05 10:25	0.00582	10.2	0.00054	0.00005	0.00019	6.28	0.000162	5.6	0.0001	0.987	0.0003	0.00001	0.00077	0.0005	0.016	0.0003
MW09-03-01	2019-08-01 13:45	0.00522	9.73	0.00069	0.00005	0.00014	6.63	0.000111	5.68	0.0001	1.07	0.0003	0.00001	0.000791	0.0005	0.071	0.0003
MW09-03-01	2019-09-13 16:40	0.00492	8.96	0.00066	0.00005	0.0001	6.37	0.000063	5.32	0.0001	0.975	0.0003	0.00001	0.000668	0.0005	0.0219	0.0003
MW09-03-01	2019-10-03 8:00	0.00448	8.5	0.00063	0.00005	0.00011	5.98	0.000096	5.72	0.0001	0.958	0.0003	0.00001	0.00074	0.0005	0.0839	0.0003
MW09-03-01	2019-11-02 11:00	0.00469	8.2	0.00077	0.00005	0.00012	6.47	0.000078	5.56	0.0001	0.93	0.0003	0.00001	0.000641	0.0005	0.0964	0.0003
MW09-03-01	2019-12-02 9:00	0.00456	9.27	0.0005	0.00005	0.00011	5.97	0.000153	5.39	0.0001	0.991	0.0003	0.00001	0.000662	0.0005	0.0282	0.0002
MW09-03-01	2020-02-23 9:10	0.00489	8.63	0.00061	0.00005	0.0001	5.7	0.00005	5.37	0.0001	1.15	0.0003	0.00001	0.000926	0.0005	0.0161	0.0002
MW09-03-01	2020-03-19 15:40	0.00436	8.2	0.0005	0.00005	0.0001	5.53	0.000079	5.22	0.0001	0.932	0.0003	0.00001	0.000758	0.0005	0.0074	0.0002
MW09-03-01	2020-04-17 11:15	0.00445	9.88	0.0005	0.00005	0.0001	5.2	0.000067	5.21	0.0001	1.11	0.0003	0.00001	0.000691	0.0005	0.0036	0.0002
MW09-03-01	2020-05-24 9:30	0.0098	7.69	0.0005	0.00005	0.0001	4.63	0.000069	5.17	0.0001	1.01	0.0003	0.00001	0.000517	0.0005	0.0035	0.0002
MW09-03-01	2020-06-26 9:50	0.0052	8.41	0.00126	0.00005	0.00013	6.08	0.000223	5.45	0.0001	1.01	0.0003	0.00001	0.000601	0.0005	0.0066	0.0002
MW09-03-01	2020-07-15 14:10	0.00464	7.96	0.0005	0.00005	0.0001	5.75	0.00005	5.17	0.0001	1.13	0.0003	0.00001	0.000783	0.0005	0.0143	0.0002
MW09-03-01	2020-08-01 11:10	0.00485	8.42	0.00082	0.00005	0.0001	5.83	0.00005	5.53	0.0001	1	0.0003	0.00001	0.000871	0.0005	0.0113	0.0002
MW09-03-01	2020-09-18 14:55	0.00419	8.56	0.00108	0.00005	0.0001	6.15	0.00005	5.03	0.0001	1.04	0.0003	0.00001	0.000883	0.0005	0.183	0.0002
MW09-03-01	2020-10-16 15:00	0.0043	7.96	0.00055	0.00005	0.0001	6.03	0.00005	5.55	0.0001	0.994	0.0003	0.00001	0.000947	0.0005	0.0153	0.0002
MW09-03-01	2020-11-27 15:00	0.00453	8.31	0.00051	0.00005	0.0001	6.01	0.000079	5.18	0.0001	1.05	0.00092	0.00001	0.000963	0.0005	0.025	0.0002
MW09-03-01	2020-12-05 10:45	0.00454	7.9	0.0005	0.00005	0.0001	6.36	0.00005	5.47	0.0001	0.965	0.0003	0.00001	0.000893	0.0005	0.019	0.0002
MW09-03-01	2021-02-27 15:45	0.0048	7.96	0.0005	0.00005	0.0001	6.15	0.00005	5.31	0.0001	1.08	0.0003	0.00001	0.00101	0.0005	0.0116	0.0002
MW09-03-01	2021-04-24 15:30	0.0046	7.98	0.0006	0.00005	0.0001	5.8	0.000055	5.3	0.0001	1.04	0.0003	0.00001	0.000909	0.0005	0.0958	0.0002
MW09-03-01	2021-05-12 14:50	0.00435	7.64	0.0005	0.00005	0.0001	6.05	0.000139	5.54	0.0001	0.958	0.0003	0.00001	0.000728	0.0005	0.033	0.0002
MW09-03-01	2021-06-13 10:10	0.0042	8.17	0.00062	0.00005	0.0001	5.73	0.000063	5.04	0.00012	0.942	0.0003	0.00001	0.0009	0.0005	0.0801	0.0002
MW09-03-01	2021-07-05 15:30	0.00438	8.13	0.00055	0.00005	0.0001	5.81	0.000064	5.51	0.0001	1.02	0.0003	0.00001	0.000985	0.0005	0.0556	0.0002
MW09-03-01	2021-08-13 15:30	0.00448	8.04	0.00068	0.00005	0.0001	5.64	0.00005	5.18	0.0001	0.97	0.0003	0.00001	0.000991	0.0005	0.0613	0.0002
MW09-03-01	2021-09-24 14:35	0.00488	10.1	0.00058	0.00005	0.00018	5.88	0.000157	5.07	0.0001	1.06	0.0003	0.00001	0.000993	0.0005	0.0156	0.0002
MW09-03-01	2021-10-10 15:15	0.00436	7.74	0.00054	0.00005	0.0001	5.85	0.00005	4.85	0.0001	0.939	0.0003	0.00001	0.000865	0.0005	0.038	0.0002
MW09-03-01	2021-11-07 15:00	0.00443	8.7	0.0006	0.00005	0.0001	5.71	0.00009	5.33	0.0001	1.08	0.0003	0.00001	0.0011	0.0005	0.021	0.0002
MW09-03-01	2021-12-27 16:15	0.00491	8.74	0.0005	0.00005	0.00011	6.32	0.00005	5.51	0.0001	0.986	0.0003	0.00001	0.00102	0.0005	0.0118	0.0002
MW09-03-02	2009-12-01 0:00	0.101	63	0.004	0.0001	0.0021	36.7	0.0067	2.54	0.0002	1.86	0.01	0.00001	0.0008	0.0001	0.01	0.0001
MW09-03-02	2010-03-29 0:00	0.045	24.9	0.002	0.0003	0.0018	16.3	0.0028	3.7	0.0001	0.739	0.01	0.00001	0.0014	0.0004	0.005	0.0001
MW09-03-02	2012-05-10 0:00	0.0172	15.8	0.001	0.0002	0.0005	3	0.0002	9.03	0.005	1.58	0.005	0.00005	0.00016	0.005	0.0053	0.0005
MW09-03-02	2012-11-17 0:00	0.0167	15.5	0.00123	0.000152	0.00024	15	0.0002	10.9	0.001	1.57	0.0025	0.00001	0.000208	0.001	0.00795	0.0005
MW09-03-02	2013-03-12 14:30	0.0176	17.2	0.001	0.0002	0.0005	3	0.00017	10.2	0.005	1.61	0.005	0.00005	0.00022	0.005	0.005	0.0005
MW09-03-02	2013-06-28 12:00																
MW09-03-02	2013-08-18 10:30	0.0182	15.7	0.001	0.0002	0.0005	3	0.00011	9.48	0.005	1.57	0.005	0.00005	0.00025	0.005	0.005	0.0005
MW09-03-02	2013-10-12 12:30	0.0168	16.3	0.001	0.0002	0.0005	3	0.0001	10.4	0.005	1.53	0.005	0.00005	0.00025	0.005	0.007	0.0005
MW09-03-02	2014-06-02 10:00	0.0041	5.56	0.0019	0.0002	0.0005	8.9	0.0001	4.67	0.005	0.73	0.005	0.00005	0.0014	0.005	0.0073	0.0005
MW09-03-02	2014-07-24 11:00	0.0158	14.5	0.001	0.0002	0.0005	3.4	0.00013	9.5	0.005	1.46	0.005	0.00005	0.00019	0.005	0.0154	0.0005
MW09-03-02	2014-10-06 10:45	0.0143	14	0.001	0.0002	0.0005	3	0.00079	10.2	0.005	1.39	0.005	0.00005	0.00022	0.005	0.0104	0.00055
MW09-03-02	2015-06-02 14:40	0.0123	12.7	0.001	0.0002	0.0005	3	0.001	10	0.005	1.43	0.005	0.00005	0.00019	0.005	0.0082	0.0005
MW09-03-02	2015-08-18 14:30	0.0111	13.8	0.001	0.0002	0.0005	3	0.00018	8.35	0.005	1.38	0.005	0.00005	0.00031	0.005	0.0095	0.0005
MW09-03-02	2015-09-19 16:45	0.0117	14.4	0.001	0.0002	0.0005	3	0.00024	8.57	0.005	1.17	0.005	0.00005	0.00023	0.005	0.0151	0.0005
MW09-03-02	2016-05-15 9:00																
MW09-03-02	2016-05-21 16:25	0.0192	14.2	0.0005	0.00005	0.00035	1.83	0.000233	10.4	0.0001	0.873	0.0003	0.00001	0.000274	0.0005	0.0158	0.0003
MW09-03-02	2016-06-11 15:40	0.0165	12.5	0.0005	0.00005	0.00019	1.83	0.00013	9.92	0.0001	0.857	0.0003	0.00001	0.00027	0.0005	0.0112	0.0003
MW09-03-02	2016-09-02 11:45	0.00917	9.99	0.0005	0.00005	0.0001	1.2	0.00006	9.1	0.0001	0.731	0.0003	0.00001	0.000039	0.00058	0.0066	0.0003
MW09-03-02	2016-10-22 14:00	0.0356	6.11	0.00308	0.00005	0.00039	3.46	0.000279	5.41	0.0001	0.453	0.0003	0.00001	0.00448	0.0005	0.0348	0.0003
MW09-03-02	2016-12-19 15:35	0.00715	6.44	0.0005	0.00005	0.00047	3.42	0.000222	5.09	0.0001	0.347	0.0003	0.00001	0.00305	0.0005	0.0563	0.0003
MW09-03-02	2016-12-19 15:35																
MW09-03-02	2017-02-15 15:30	0.00732	6.74	0.00066	0.00005	0.00044	3.32	0.000163	5.06	0.00025	0.342	0.0003	0.00001	0.00255	0.0005	0.0727	0.0003
MW09-03-02	2017-03-14 16:15	0.00807	6.26	0.00064	0.00005	0.00022	3.76	0.000193	5.27	0.0001	0.32	0.0003	0.00001	0.00266	0.0005	0.0446	0.0003
MW09-03-02	2017-04-21 17:07	0.0118	6.67	0.00072	0.00005	0.00035	3.66	0.000238	4.85	0.00034	0.32	0.0003	0.00001	0.00264	0.0005	0.0283	0.0003
MW09-03-02	2017-05-20 17:45	0.00528	10.5	0.00107	0.00005	0.00036	7.02	0.000109	5.6	0.00014	0.96	0.0003	0.00001	0.000902	0.0005	0.0067	0.0003
MW09-03-02	2017-06-22 16:45	0.00769	6.38	0.0005	0.00005	0.00032	2.7	0.000216	5	0.00091	0.309	0.0003	0.00001	0.00207	0.0005	0.024	0.0003
MW09-03-02	2017-07-29 11:50	0.0106	6.1	0.00084	0.00005	0.00016	2.72	0.000202	5.32	0.00011	0.405	0.0003	0.00001	0.00341	0.0005	0.0291	0.0003
MW09-03-02	2017-08-13 10:00	0.00511	5.15	0.0005	0.00005	0.0001	2.38	0.000211	5.04	0.00027	0.378	0.0003	0.00001	0.00358	0.0005	0.0179	0.0003
MW09-03-02	2017-10-20 14:40	0.00329	7.64	0.0005	0.00005	0.0001	1.93	0.000254	5.4	0.00184	0.347	0.0003	0.00001	0.00301	0.0005	0.0137	0.0003
MW09-03-02	2017-11-08 16:20	0.00382	5.51	0.0005	0.00005	0.0001	2.05	0.000219	5.59	0.0002	0.376	0.0003	0.00001	0.00316	0.0005	0.0266	0.0003
MW09-03-02	2017-12-07 15:30	0.00345	5.64	0.0005	0.00005	0.00012	2.22	0.000209	5.35	0.0001	0.384	0.0003	0.00001	0.00327	0.0005	0.0195	0.0003
MW09-03-02	2018-01-13 16:10	0.00484	6.7	0.0005	0.00005	0.00027	2.56	0.000566	5.23	0.0001	0.362	0.0003	0.00001	0.00282	0.0005	0.0789	0.0003
MW09-03-02	2018-02-24 12:10	0.00454	6.27	0.0005	0.00005	0.00023	2.74	0.000417	5.21	0.0001	0.317	0.0003	0.00001	0.00208	0.0005	0.0368	0.0003
MW09-03-02	2018-03-16 15:55	0.00568	6.08	0.00054	0.000087	0.00034	2.78	0.000376	4.75	0.0001	0.337	0.0014	0.00001	0.00192	0.0005	0.105	0.0003
MW09-03-02	2018-04-13 14:25	0.00571	6.52	0.00066	0.000073	0.00033	3.11	0.000531	5.29	0.0001	0.314	0.0012	0.00001	0.00188	0.0005	0.0809	0.0003
MW09-03-02	2018-05-04 16:40	0.00625	8.06	0.0005	0.00005	0.0004	2.51	0.000481	4.73	0.00012	0.303	0.0003	0.00001	0.00158	0.0005	0.0329	0.0003
MW09-03-02	2018-06-01 14:50	0.00428	5.58	0.0005	0.00005	0.00012	3.03	0.000363	5.28	0.0001	0.387	0.00073	0.00001	0.00256	0.0005	0.0191	0.0003
MW09-03-02	2018-08-10 17:40	0.00779	5.3	0.0005	0.00005	0.0001	1.72	0.000246	4.98	0.00028	0.353	0.0003	0.00001	0.00243	0.0005	0.0199	0.0003
MW09-03-02	2018-09-28 15:40	0.00393	5.99	0.0005	0.00005	0.00011	1.96	0.000163	5.19	0.0001	0.461	0.0003	0.00001	0.00367	0.0005	0.0452	0.0003
MW09-03-02	2018-10-19 14:55	0.00322	5.03	0.0005	0.00005	0.0001	1.43	0.000184	5.42	0.0001	0.397	0.00108	0.00001	0.00311	0.0005	0.0306	0.0003
MW09-03-02	2019-01-19 17:10	0.00577	7.39	0.0005	0.00005	0.00041	1.39	0.000316	5.21	0.00016	0.293	0.0003	0.00001	0.00208	0.0005	0.164	0.0003
MW09-03-02	2019-02-08 14:30	0.00427	4.93	0.0005	0.00005	0.00011	1.62	0.000194	5.17	0.0001	0.301	0.0003	0.00001	0.00222	0.0005	0.0493	0.0003
MW09-03-02	2019-03-09 16:30	0.00456	5.69	0.0005	0.00005	0.00018	1.7	0.00022	4.85	0.0001	0.291	0.0003	0.00001	0.00183	0.0005	0.0449	0.0003
MW09-03-02	2019-04-19 16:40	0.00476	5.48	0.0005	0.00005	0.00016	2.17	0.000443	4.89	0.0001	0.289	0.0003	0.00001	0.00157	0.0005	0.023	0.0003
MW09-03-02	2019-05-11 15:40	0.00418	4.7	0.0005	0.00005	0.0001	1.93	0.00033	4.7	0.0001	0.29	0.0003	0.00001	0.00161	0.0005	0.0194	0.0003
MW09-03-02	2019-06-07 11:05	0.00535	5.63	0.0005	0.00005	0.00021	2.06	0.000635	4.75	0.0001	0.311	0.0003	0.00001	0.00139	0.0005	0.0382	0.0003
MW09-03-02	2019-07-05 10:50	0.00495	5.68	0.0005	0.00005	0.00019	2.58	0.000401	5.19	0.0001	0.308	0.0003	0.00001	0.00179	0.0005	0.0383	0.0003
MW09-03-02	2019-08-01 15:15	0.00513	6.62	0.0005	0.00005	0.00025	2.39	0.000566	5.28	0.0001	0.334	0.0003	0.00001	0.00188	0.0005	0.0745	0.0003
MW09-03-02	2019-09-13 16:50	0.00332	6.31	0.0005	0.00005	0.0001	1.88	0.000225	5.77	0.0001	0.513	0.0003	0.00001	0.00375	0.0005	0.0525	0.0003
MW09-03-02	2019-10-03 8:40	0.00266	5.99	0.0005	0.00005	0.0001	1.53	0.000151	6.1	0.0001	0.551	0.0003	0.00001	0.00426	0.0005	0.0343	0.0003
MW09-03-02	2019-11-02 11:25	0.0028	5.86	0.0005	0.000184	0.0001	1.93	0.000186	6.03	0.0001	0.499	0.00115	0.00001	0.00352	0.0005	0.0489	0.0003
MW09-03-02	2019-12-02 9:15	0.00316	5.55	0.0005	0.00005	0.0001	2.02	0.000189	5.63	0.0001	0.457	0.0003	0.00001	0.00304	0.0005	0.0488	0.0002
MW09-03-02	2020-02-22 17:35	0.005	6.22	0.0005	0.00005	0.00017	2.26	0.000324	5.24	0.0001	0.394	0.0003	0.00001	0.00192	0.0005	0.0524	0.0002
MW09-03-02	2020-03-19 16:10	0.00393	4.78	0.0005	0.000066	0.00013	1.77	0.000315	4.94	0.0001	0.32	0.00132	0.00001	0.00165	0.0005	0.0363	0.0002
MW09-03-02	2020-04-17 12:00	0.00416	5.71	0.0005	0.00005	0.0001	1.87	0.000336	4.79	0.0001	0.396	0.0003	0.00001	0.00156	0.0005	0.0294	0.0002
MW09-03-02	2020-05-24 9:55	0.00321	5.85	0.0005	0.00005	0.0001	2.47	0.00018	5.63	0.0001	0.533	0.0003	0.00001	0.00336	0.0005	0.0252	0.0002
MW09-03-02	2020-06-26 10:50	0.00379	4.43	0.0005	0.00005	0.0001	2.13	0.000239	5.2	0.0001	0.341	0.0003	0.00001	0.00193	0.0005	0.0326	0.0002
MW09-03-02	2020-07-15 15:20	0.00358	4.45	0.0005	0.00005	0.0001	1.56	0.000172	5.09	0.0001	0.385	0.0003	0.00001	0.002	0.00054	0.0267	0.0002
MW09-03-02	2020-08-01 11:35	0.00369	4.58	0.0005	0.00005	0.0001	1.58	0.000251	5.42	0.0001	0.347	0.0003	0.00001	0.00185	0.0005	0.0258	0.0002
MW09-03-02	2020-09-18 15:25	0.00308	4.4	0.0005	0.00005	0.0001	1.54	0.000284	4.91	0.0001	0.356	0.0003	0.00001	0.00145	0.0005	0.036	0.0002
MW09-03-02	2020-10-16 15:45	0.00304	4.34	0.0005	0.00005	0.0001	1.87	0.000404	5.34	0.0001	0.363	0.0003	0.00001	0.00149	0.0005	0.0332	0.0002
MW09-03-02	2020-11-27 15:25	0.00339	4.68	0.0005	0.00005	0.0001	1.54	0.000384	4.98	0.0001	0.39	0.0003	0.00001	0.00141	0.0005	0.0287	0.0002
MW09-03-02	2020-12-05 11:15	0.00342	4.31	0.0005	0.00005	0.0001	1.83	0.000366	5.14	0.0001	0.358	0.0003	0.00001	0.00134	0.0005	0.022	0.0002
MW09-03-02	2021-02-27 16:20	0.0038	4.41	0.0005	0.00005	0.0001	1.8	0.000339	4.87	0.0001	0.365	0.0003	0.00001	0.00134	0.0005	0.0225	0.0002
MW09-03-02	2021-03-21 12:20	0.00392	4.76	0.0005	0.00005	0.0001	2.03	0.000391	5.2	0.0001	0.335	0.0003	0.00001	0.0012	0.0005	0.0271	0.0002
MW09-03-02	2021-04-24 16:00	0.00374	4.41	0.0005	0.00005	0.0001	1.6	0.000302	4.99	0.0001	0.322	0.0003	0.00001	0.00134	0.0005	0.0528	0.0002
MW09-03-02	2021-05-12 15:30	0.00349	4.57	0.0005	0.00005	0.0001	2.16	0.000365	5.16	0.0001	0.389	0.0003	0.00001	0.00133	0.0005	0.0408	0.0002
MW09-03-02	2021-06-13 10:30	0.00367	4.07	0.0005	0.00005	0.0001	1.37	0.000239	5.01	0.0001	0.284	0.0003	0.00001	0.00129	0.0005	0.0428	0.0002
MW09-03-02	2021-07-05 16:00	0.00331	3.74	0.0005	0.00005	0.0001	1.3	0.000238	5.22	0.0001	0.277	0.0003	0.00001	0.00114	0.0005	0.0329	0.0002
MW09-03-02	2021-08-13 15:50	0.00311	4.11	0.0005	0.00005	0.0001	3.48	0.00141	5.12	0.0001	0.273	0.0003	0.00001	0.00114	0.0005	0.0429	0.0002
MW09-03-02	2021-09-24 15:30	0.00358	4.16	0.0005	0.00005	0.0001	2.67	0.000745	5.06	0.0001	0.346	0.00161	0.00001	0.00129	0.0005	0.0537	0.0002
MW09-03-02	2021-10-10 16:00	0.00345	4.21	0.00056	0.00005	0.0001	2.89	0.000617	4.96	0.0001	0.306	0.0003	0.00001	0.00112	0.0005	0.0859	0.0002
MW09-03-02	2021-11-07 15:20	0.00326	4.48	0.00053	0.00005	0.0001	2.36	0.000708	5.29	0.0001	0.342	0.0003	0.00001	0.00136	0.0005	0.0925	0.0002
MW09-03-02	2021-12-27 16:50	0.00342	4.47	0.0005	0.00005	0.0001	2.53	0.000589	5.5	0.0001	0.304	0.0003	0.00001	0.00137	0.0005	0.0984	0.0002
MW09-03-03	2009-12-01 0:00	0.0267	5.5	0.002	0.0001	0.0021	3.4	0.0006	4.2	0.0001	0.168	0.01	0.00001	0.0004	0.0002	0.012	0.0001
MW09-03-03	2010-03-29 0:00	0.0064	2.6	0.001	0.0007	0.0009	3.4	0.0006	3.85	0.0001	0.125	0.01	0.00001	0.0004	0.0002	0.005	0.0001
MW09-03-03	2012-05-10 0:00	0.0061	3.13	0.001	0.0002	0.0005	4.1	0.00031	4.31	0.005	0.158	0.005	0.00005	0.00069	0.005	0.0078	0.0005
MW09-03-03	2012-11-17 0:00	0.0113	3.33	0.000266	0.000016	0.000077	3.7	0.000414	4.96	0.0002	0.2	0.0005	0.000003	0.000842	0.00028	0.00136	0.0001
MW09-03-03	2013-03-12 16:00	0.0128	3.32	0.001	0.0002	0.0005	5	0.00036	4.27	0.005	0.174	0.005	0.00005	0.00108	0.005	0.005	0.0005
MW09-03-03	2013-06-28 13:00																
MW09-03-03	2013-08-18 12:00	0.0049	3.5	0.001	0.0002	0.0005	3.4	0.00029	4.71	0.005	0.177	0.005	0.00005	0.0009	0.005	0.005	0.0005
MW09-03-03	2013-10-14 10:45	0.0044	3.31	0.001	0.0002	0.0005	3.8	0.0003	4.3	0.005	0.162	0.005	0.00005	0.00091	0.005	0.005	0.0005
MW09-03-03	2014-06-02 11:00	0.0053	3.51	0.001	0.0002	0.0005	4	0.00028	4.54	0.005	0.191	0.005	0.00005	0.001	0.005	0.005	0.0005
MW09-03-03	2014-07-24 11:20	0.0045	3.33	0.001	0.0002	0.0005	5	0.00024	4.47	0.005	0.173	0.005	0.00005	0.00078	0.005	0.005	0.0005
MW09-03-03	2014-10-06 11:10	0.005	3.69	0.001	0.0002	0.0005	3.2	0.0004	4.82	0.005	0.212	0.005	0.00005	0.00093	0.005	0.0105	0.0005
MW09-03-03	2015-06-02 15:15	0.005	3.75	0.001	0.0002	0.0005	5.1	0.0003	4.89	0.005	0.216	0.005	0.00005	0.00115	0.005	0.005	0.0005

Attachment 3: Sitewide Database

		General Parameters								Anions & Nitrogen Species					
Station	Date / Time	Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N-NO_2$	$N-NO_3$	$N-NH_3$	SO_4-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW09-03-03	2015-08-18 16:00	82.1	189		8.2	92		7.2		0.0117	0.501	0.04	11.9	1.7	0.46
MW09-03-03	2015-09-19 18:00	81.6	183		8.1	118		2.1		0.0073	0.484	0.075	9.99	0.89	0.48
MW09-03-04	2009-12-01 0:00	81	947			672	96						115	16.3	
MW09-03-04	2010-03-29 0:00	67	161			112	4						10	0.61	
MW09-03-04	2012-11-17 0:00	88.4	201			108				0.005	0.248	0.027	10.2		
MW09-03-05	2012-05-10 0:00	0.83	1.9			10				0.005	0.02	0.0069	0.5	0.5	0.01
MW09-03-05	2012-11-17 0:00	1.47	2.2			10				0.005	0.02	0.005	0.5		
MW09-04-04	2010-03-29 0:00	5	1			12	3						0.6	0.02	
MW12-05-01	2012-11-11 0:00	183	1030			706				0.0517	0.368	0.005	350		
MW12-05-01	2013-06-29 13:40			-2.79	7.79			7.7	63.5						
MW12-05-01	2013-08-21 15:00	211	1290	-161.4	7.79	912	4.7	3.95	49.1	0.0581	0.021	0.078	483	14	1
MW12-05-01	2013-10-10 12:15	210	1320	-159.4	7.88	1030	1.2	2.9	47.2	0.195	0.02	0.37	532	13	1.1
MW12-05-01	2014-05-29 9:00	189	1530		7.9	1190		6.67		0.161	0.03	0.079	643	12	1.2
MW12-05-01	2014-07-25 9:00	180	1580		8.7	1230		6.5		0.0608	0.02	0.088	702	14	1.2
MW12-05-01	2014-10-04 11:00	187	1620	-100.4	7.81	1280		1	67.5	0.139	0.023	0.11	728	12	1.1
MW12-05-01	2015-01-01 10:35	176	1700	-138.9	7.79	1290		0.7	63.6	0.0608	0.02	0.16	757	13	1.1
MW12-05-01	2015-01-11 10:40	163	1700	-138.9	7.79	1310		0.7	63.6	0.0282	0.02	0.092	817	14	1.2
MW12-05-01	2015-05-04 14:00	164	1810	-131.1	7.56	1380		6.9	79.3	0.0416	0.02	0.15	822	13	1.2
MW12-05-01	2015-08-08 11:10	164	1870		7.9	1540		8.8		0.0505	0.021	0.059	849	16	1.2
MW12-05-01	2015-09-19 9:00	156	1850		8.2	1480		3.2		0.0277	0.02	0.088	895	13	1.3
MW12-05-01	2016-05-09 14:50	148	1970		8.3	1550	3.3	6.1		0.0844	0.01	0.0646	958	10.9	
MW12-05-01	2016-05-14 7:40	152	1970		8	1580	6	4.7		0.427	0.025	0.602	998	11.2	
MW12-05-01	2016-07-06 8:50	149	2000		8.4	1570	3.3	6.6		0.069	0.025	0.0751	992	11.3	
MW12-05-01	2016-09-05 11:10	143	1980		8.4	1660	3.4	5.1		0.0764	0.025	0.0597	1070	11.5	
MW12-05-01	2016-10-21 11:35	143	2010		7.7	1670	3.1	5.6		0.053	0.05	0.0117	1080	11.9	
MW12-05-01	2016-12-23 11:15	147	2100		8.3	1700	3	4.1		0.086	0.05	0.026	1090	12	
MW12-05-01	2016-12-23 11:15				8.3			4.1							
MW12-05-01	2017-02-20 13:50	145	2080		8.1	1760	3	2.7		0.068	0.05	0.011	1170	12.6	
MW12-05-01	2017-04-23 11:00	140	2180		8.2	1740	5.8	3.7		0.032	0.05	0.0447	1120	12	
MW12-05-01	2017-08-24 14:15	130	2010			1820	4			0.0309	0.025	0.0387	1200	12.8	
MW12-05-01	2017-11-11 10:45	133	2110		8.7	1780	9	2.6		0.043	0.05	0.0249	1170	13	
MW12-05-01	2018-03-02 10:15	129	2160		8	1810	5.9	2.7		0.02	0.05	0.0246	1190	12.3	
MW12-05-01	2018-05-10 10:40	124	2130		8.2	1840	7.6	5.4		0.02	0.1	0.0215	1200	13	
MW12-05-01	2018-08-23 15:00	117	2230	-104	7.58	1830	3.1	4.7	103	0.0082	0.025	0.0673	1190	12.7	
MW12-05-01	2018-10-22 10:45	90.9	2170	-94	7.88	1810	5.6	3.8	87.4	0.02	0.1	0.047	1240	14	
MW12-05-01	2019-02-14 10:45	125	2270	-75.7	7.86	1940	6.6	1.6	131	0.042	0.05	0.0133	1270	14.1	
MW12-05-01	2019-05-04 9:45	124	2270	-113.9	7.75	1860	3.8	3.2	101.21	0.025	0.1	0.0131	1210	12	
MW12-05-01	2019-05-16 8:05	125	2220	-99.2	7.7	1920	3	6.5	93.5	0.02	0.05	0.0692	1250	13.5	
MW12-05-01	2019-08-02 8:45	123	2330	7.6	7.61	1970	3	7.9	69.8	0.02	0.1	0.174	1300	14	
MW12-05-01	2019-10-04 9:30	125	2330	-93	8.25	1990	4	1.5	108.3	0.02	0.1	0.0706	1330	13	
MW12-05-01	2020-02-13 10:55	114	2470	-1.3	7.72		3	0.3	91.7	0.029	0.1	0.044	1270	14.1	
MW12-05-01	2020-04-25 9:00	120	2460	-112.1	7.16	1980	7.4	4.6	96.4	0.01	0.05	0.021	1340	13.8	
MW12-05-01	2020-07-24 9:00	114	2380	-29.9	7.56	2020	3.7	5.8	79.1	0.02	0.1	0.0146	1330	14.2	
MW12-05-01	2020-10-02 9:00	110	2330	-13.8	7.37	2070	3	4.1	91	0.02	0.1	0.0142	1350	14.1	
MW12-05-01	2021-03-20 10:25	118	2410	-0.9	7.86	2080	1	2	120.9	0.02	0.1	0.0128	1420	15.1	
MW12-05-01	2021-06-06 9:55	113	2400	47.8	6.43	2060	3	5.3	114.4	0.02	0.107	0.0126	1400	15.5	
MW12-05-01	2021-08-21 16:40	108	2380	-91.2	7.23	2040	3	6.3	195	0.02	0.1	0.0073	1390	14.9	
MW12-05-01	2021-11-15 10:50	109	2350	-25.2	6.96	2040	40.3	1.8	152.8	0.02	0.166	0.015	1360	36.6	
MW12-05-02	2016-05-14 8:15	309	651		8.6	389	5.3	6.3		0.377	0.005	0.642	41.2	4.93	
MW12-05-02	2016-07-06 9:20	296	801		8.3	548	3	6.4		0.167	0.005	0.0248	151	5.67	
MW12-05-02	2016-09-05 11:45	209	1660		8.2	1410	3	4.3		0.047	0.025	0.0634	802	9.3	
MW12-05-02	2016-10-21 13:10	190	2000		7.8	1640	3.1	4		0.02	0.05	0.0095	1030	10.9	
MW12-05-02	2016-12-23 11:35	191	2080		8.4	1750	3	2.7		0.065	0.05	0.0162	1090	11.3	
MW12-05-02	2017-02-20 14:15	181	2110		8.4	1730	4.4	2.3		0.0531	0.05	0.0121	1110	11.1	
MW12-05-02	2017-04-23 14:20	173	2200		7.9	1870	5.2	3.7		0.025	0.05	0.0334	1140	11.7	
MW12-05-02	2017-08-24 14:55	173	2010			1780	3			0.0162	0.025	0.0367	1160	12.1	
MW12-05-02	2017-11-11 11:15	184	2060		8.6	1700	4.6	2.5		0.035	0.05	0.0175	1070	11.7	
MW12-05-02	2018-03-02 10:50	191	2070		7.8	1740	6.7	2.9		0.058	0.05	0.0321	1080	11.4	
MW12-05-02	2018-05-10 11:10	178	2050		8.2	1800	8.4	5.4		0.02	0.1	0.0203	1140	13	
MW12-05-02	2018-08-23 15:15	166	2200	-127.5	7.12	1760	5.9	5	115.2	0.0114	0.025	0.0779	1150	12	
MW12-05-02	2018-10-22 11:15	156	2150	-104.1	7.98	1810	8.2	3.7	88	0.02	0.1	0.0418	1210	14	
MW12-05-02	2019-02-14 11:45	184	2130	-51.8	8.01	1830	9.4	0.3	108.7	0.0227	0.025	0.0262	1120	12.5	
MW12-05-02	2019-05-16 8:40	170	2170	-90.3	7.96	1850	3	5.6	81.7	0.01	0.05	0.0273	1190	12.5	
MW12-05-02	2019-08-02 10:20	177	2240	-129.4	7.86	1880	3	4.6	68.6	0.02	0.1	0.029	1190	14	
MW12-05-02	2019-10-04 10:30	172	2250	-65.8	8.07	3080	5	1.5	101.2	0.02	0.1	0.0177	2400	25	
MW12-05-02	2020-02-13 14:15	178	2270	97	7.78		3	2	89	0.02	0.1	0.0176	1180	12.9	
MW12-05-02	2020-04-25 9:30	159	2390	-63.3	7.57	1880	3	6.5	101.5	0.02	0.1	0.0143	1240	12.7	
MW12-05-02	2020-07-24 11:35	165	2270			1880	3			0.02	0.1	0.0142	1210	12.8	
MW12-05-02	2020-10-02 9:30	154	2240	32.8	7.69	1980	3	3.8	69.1	0.02	0.1	0.012	1280	13.3	
MW12-05-02	2021-03-20 11:10	183	2290	-48	7.96	1870	1.7	1.5	108.8	0.0326	0.1	0.0235	1220	13.7	
MW12-05-02	2021-06-06 10:40	175	2270	109.8	5.54	1920	3	5.6	132.4	0.02	0.1	0.0129	1260	14.4	
MW12-05-02	2021-08-21 17:09	159	2270	-123.1	7.45	1900	3	5.1	70.1	0.01	0.05	0.005	1220	12.8	
MW12-05-02	2021-11-15 11:30	176	2240	-97.3	7.38	1890	4.1	1.2	139.1	0.02	0.1	0.0124	1230	14	
MW12-05-03	2012-11-12 0:00	193	1240			880				0.109	0.03	0.019	456		
MW12-05-03	2013-08-21 16:00	307	1620	-142.8	7.61	1240	7.3	3.54	34.9	0.0252	0.035	0.051	633	9	1.1
MW12-05-03	2013-10-10 13:15	301	1630	-100.2	7.37	1330	5.4	3.6	37.5	0.0565	0.02	0.066	686	8.5	1.1
MW12-05-03	2014-05-29 10:30	275	1730		8.3	1400		2.86		0.132	0.02	0.033	717	9.3	1.2
MW12-05-03	2014-07-25 10:00	267	1750		8.2	1370		6.3		0.0354	0.02	0.037	754	9.7	1.2
MW12-05-03	2014-10-04 11:50	288	1750	-97.1	7.63	1400		0.7	46.7	0.0404	0.02	0.04	736	9.2	1.2
MW12-05-03	2015-01-01 11:10	273	1780	-49.9	7.52	1350		1.1	52.8	0.0345	0.02	0.058	756	8.7	1.2
MW12-05-03	2015-01-11 11:15	257	1750	-56.7	7.39	1360		0.7	76	0.0335	0.02	0.047	788	9.9	1.2
MW12-05-03	2015-05-04 15:00	242	1840	-68.1	7.29	1490		6	64.6	0.0276	0.02	0.04	812	9.4	1.2
MW12-05-03	2015-08-08 13:25	249	1840		7.7	1570		6.9		0.0555	0.02	0.059	783	9.9	1.2
MW12-05-03	2015-09-19 9:30	246	1820		8	1420		2.5		0.0392	0.02	0.033	806	9	1.3
MW12-05-03	2016-05-09 15:35				7.9			4							
MW12-05-03	2016-05-10 15:35	252	1790			1360	4			0.0602	0.01	0.04	773	8.9	
MW12-05-03	2016-05-14 8:40	252	1770		7.7	1360	7.3	6.6		0.372	0.01	0.043	783	9	
MW12-05-03	2016-07-06 9:50	265	1800		7.7	1340	3	7.7		0.241	0.025	0.0189	776	9.2	
MW12-05-03	2016-09-05 14:15				8			9.8				0.0205			
MW12-05-03	2016-10-21 13:45	242	1780		7.8	1390	4.8	3.7		0.054	0.05	0.005	828	9.1	
MW12-05-03	2016-12-23 13:30	268	1770		8.4	1360	3	3.7		0.075	0.05	0.015	786	8.9	
MW12-05-03	2016-12-23 13:30				8.4			3.7							
MW12-05-03	2017-02-20 14:40	255	1670		8	1270	3	2.1		0.049	0.05	0.015	749	7.9	
MW12-05-03	2017-04-23 11:30	234	1710		7.7	1350	5.6	2.7		0.028	0.05	0.0296	751	7.6	
MW12-05-03	2017-08-24 15:15	206	1720			1440	3.3			0.0193	0.025	0.0283	879	9.1	
MW12-05-03	2017-11-11 11:35	234	1800		8.1	1430	9	2.1		0.036	0.05	0.0122	883	9.7	
MW12-05-03	2018-03-02 11:10	252	1660		8.4	1280	4.1	3.2		0.0156	0.025	0.032	742	8	
MW12-05-03	2018-05-10 11:30	251	1590		8.1	1300	5.2	5.7		0.032	0.05	0.0145	730	8.3	
MW12-05-03	2018-08-23 15:30	227	1820	-63	7.5	1330	3.9	6	110	0.0119	0.025	0.0268	838	8.9	
MW12-05-03	2018-10-22 13:30	214	1760	-62	7.62	1370	4.6	3.9	76.2	0.038	0.105	0.0413	844	9.6	
MW12-05-03	2019-02-14 14:05	249	1800	-27	7.78	1450	7.8	1.7	113.4	0.005	0.025	0.0189	846	9.2	
MW12-05-03	2019-05-04 11:50	247	1780	-73	7.72	1350	3.6	2.8	117.2	0.044	0.05	0.0184	782	8	
MW12-05-03	2019-05-16 9:20	242	1750	-70.5	7.67	1410	3	4.6	90.1	0.0071	0.025	0.0162	834	9	
MW12-05-03	2019-08-02 11:20	219	1830	-77	7.87	1450	3	4.3	71.5	0.013	0.05	0.0316	871	9.7	
MW12-05-03	2019-10-04 10:40	243	1840	-52.9	7.93	1440	3	1.2	118.2	0.02	0.1	0.0166	868	10	
MW12-05-03	2020-02-13 14:35	221	1650	97.2	7.74		3	0	97	0.01	0.05	0.0118	728	7.08	
MW12-05-03	2020-04-25 10:15	195	1670	-65.5	7.48	1220	3	5.4	96.1	0.005	0.025	0.0155	735	6.74	
MW12-05-03	2020-07-24 13:55	237	1810	6.5	7.34	1400	4.5	6.2	111.2	0.01	0.05	0.0183	829	8.95	
MW12-05-03	2020-10-02 10:15	234	1780	21.9	7.67	1450	3	3.3	87	0.01	0.05	0.0169	847	8.98	
MW12-05-03	2021-03-20 11:20	206	1640	-8.3	7.79	1320	1.6	1.7	25.7	0.01	0.05	0.0175	769	7.52	
MW12-05-03	2021-06-06 10:55	240	1780	57.6	5.99	1450	3	4.6	113.3	0.01	0.05	0.0136	863	9.54	
MW12-05-03	2021-08-23 14:30	237	1820	-50.7	7.57	1410	3	6	77.2	0.01	0.062	0.0154	847	9.26	
MW12-05-03	2021-11-15 11:45	245	1770	-39.3	7.59	1430	8.5	1.3	80	0.01	0.05	0.019	862	9.22	
MW12-05-04	2016-05-14 9:00	246	522		8.1	290	4	6		0.32	0.0526	0.144	32.5	5.28	
MW12-05-04	2016-07-06 10:05	232	509		8	289	3	5.9		0.204	0.0569	0.0173	43.7	5.47	

		Dissolved Elements																			
Station	Date / Time	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW09-03-03	2015-08-18 16:00	0.00002	0.0082	0.0001	0.0246	0.064	0.0001	0.001	31.3	0.00001	0.0005	0.001	0.00178	0.107	0.00001	1.52	0.005	4.14	0.354	0.0057	3.56
MW09-03-03	2015-09-19 18:00	0.00002	0.003	0.0001	0.0149	0.05	0.0001	0.001	27.9	0.00001	0.0005	0.001	0.00163	0.043	0.00001	1.54	0.005	3.81	0.0493	0.0047	3.29
MW09-03-04	2009-12-01 0:00	0.00005	0.007	0.0005	0.091	0.2	0.00004	0.001	77.6	0.0001	0.00054	0.0004	0.022	0.02	0.00001	25	0.011	14.9	0.137	0.104	66.8
MW09-03-04	2010-03-29 0:00	0.00001	0.013	0.0002	0.01	0.042	0.00004	0.001	24.2	0.00001	0.00008	0.0004	0.004	0.03	0.00001	2.2	0.001	2.6	0.0087	0.0049	2.7
MW09-03-04	2012-11-17 0:00	0.000012	0.0018	0.000102	0.0647	0.05	0.00001	0.000005	31.1	0.000015	0.000183	0.00013	0.00205	0.008		2.19	0.0008	3.72	0.364	0.0118	3.23
MW09-03-05	2012-05-10 0:00	0.00002	0.003	0.0001	0.001	0.05	0.0001	0.001	0.05	0.00001	0.0005	0.001	0.00022	0.005	0.00001	0.05	0.005	0.05	0.001	0.001	0.222
MW09-03-05	2012-11-17 0:00	0.000005	0.00125	0.00002	0.00136	0.05	0.00001	0.000005	0.05	0.000005	0.000005	0.0001	0.000107	0.0016		0.05	0.0005	0.05	0.000227	0.000578	0.05
MW09-04-04	2010-03-29 0:00	0.00001	0.005	0.0002	0.001	0.004	0.00004	0.001	0.1	0.00001	0.00002	0.0004	0.001	0.01	0.00001	0.6	0.001	0.1	0.0002	0.0001	0.1
MW12-05-01	2012-11-11 0:00	0.00002	0.0154	0.00117	0.463	0.146	0.0001	0.001	117	0.00014	0.00379	0.001	0.00737	0.0085	0.00001	3.57	0.0063	27.8	0.11	0.012	64.2
MW12-05-01	2013-06-29 13:40																				
MW12-05-01	2013-08-21 15:00	0.00002	0.0182	0.00093	0.098	0.088	0.0001	0.001	160	0.000012	0.0005	0.001	0.0002	0.0323	0.00001	2.95	0.0058	25.3	0.0946	0.001	86.1
MW12-05-01	2013-10-10 12:15	0.00002	0.0064	0.00185	0.0928	0.276	0.0001	0.001	168	0.00001	0.0005	0.001	0.0002	0.0218	0.00001	3.1	0.0064	27.8	0.101	0.001	96.3
MW12-05-01	2014-05-29 9:00	0.00002	0.0094	0.00083	0.07	0.177	0.0001	0.001	189	0.00001	0.0005	0.001	0.00034	0.0179	0.00001	2.95	0.007	28.5	0.0952	0.001	111
MW12-05-01	2014-07-25 9:00	0.00002	0.0054	0.00075	0.0675	0.103	0.0001	0.001	206	0.000019	0.0005	0.001	0.00028	0.0266	0.00001	3.07	0.007	30.1	0.0999	0.0021	114
MW12-05-01	2014-10-04 11:00	0.00002	0.0068	0.00087	0.0651	0.739	0.0001	0.001	221	0.00001	0.0005	0.001	0.00021	0.0183	0.00001	3.17	0.0067	29.9	0.1	0.001	117
MW12-05-01	2015-01-01 10:35	0.00002	0.0083	0.0007	0.0585	0.121	0.0001	0.001	228	0.00001	0.0005	0.001	0.00048	0.022	0.00001	3.04	0.007	31.2	0.104	0.001	123
MW12-05-01	2015-01-11 10:40	0.00002	0.005	0.00081	0.0605	0.104	0.0001	0.001	222	0.00001	0.0005	0.001	0.0002	0.0167	0.00001	3.1	0.0076	31.3	0.105	0.001	116
MW12-05-01	2015-05-04 14:00	0.00002	0.009	0.00216	0.0633	0.199	0.0001	0.001	246	0.00001	0.0005	0.001	0.0002	0.0311	0.00001	3.51	0.0073	31.5	0.109	0.001	122
MW12-05-01	2015-08-08 11:10	0.00002	0.01	0.00102	0.0538	0.186	0.0001	0.001	252	0.00001	0.0005	0.001	0.0002	0.0267	0.00001	3.02	0.0063	34.1	0.114	0.001	134
MW12-05-01	2015-09-19 9:00	0.00002	0.0088	0.00098	0.0518	0.089	0.0001	0.001	254	0.00001	0.0005	0.001	0.0002	0.0245	0.00001	3.16	0.0083	33.4	0.116	0.001	135
MW12-05-01	2016-05-09 14:50	0.00001	0.0036	0.00082	0.0456	0.118	0.00002	0.00005	304	0.000005	0.0001	0.00037	0.0002	0.022	0.000005	3.38	0.0076	37	0.125	0.000241	145
MW12-05-01	2016-05-14 7:40	0.00001	0.0039	0.00084	0.0475	0.073	0.00002	0.00005	298	0.000005	0.0001	0.00042	0.0002	0.026	0.000005	3.52	0.0078	36.9	0.129	0.000227	143
MW12-05-01	2016-07-06 8:50	0.00001	0.0036	0.00084	0.048	0.172	0.00002	0.00005	293	0.000005	0.0001	0.00037	0.0002	0.026	0.000005	3.5	0.008	38.2	0.139	0.000349	145
MW12-05-01	2016-09-05 11:10	0.00002	0.0031	0.00077	0.045	0.114	0.00004	0.0001	309	0.00001	0.0002	0.0004	0.0004	0.037	0.000005	3.72	0.007	38	0.135	0.00033	148
MW12-05-01	2016-10-21 11:35	0.00001	0.0033	0.00064	0.0438	0.097	0.00002	0.00005	302	0.000005	0.0001	0.00037	0.0002	0.018	0.000005	3.53	0.0078	36	0.138	0.000281	148
MW12-05-01	2016-12-23 11:15	0.00002	0.0041	0.00059	0.0423	0.133	0.00004	0.0001	318	0.00001	0.0002	0.00042	0.00836	0.046	0.000005	3.68	0.0083	37.9	0.137	0.00031	150
MW12-05-01	2016-12-23 11:15																				
MW12-05-01	2017-02-20 13:50	0.00002	0.0036	0.00079	0.041	0.111	0.00004	0.0001	311	0.00001	0.0002	0.00045	0.0004	0.026	0.000005	3.84	0.0084	37.8	0.137	0.00031	140
MW12-05-01	2017-04-23 11:00	0.00002	0.0032	0.0006	0.0401	0.092	0.00004	0.0001	310	0.00001	0.0002	0.00029	0.0004	0.025	0.000005	3.23	0.0065	36	0.134	0.00022	141
MW12-05-01	2017-08-24 14:15	0.00001	0.0038	0.00069	0.0409	0.094	0.00002	0.00005	327	0.0000165	0.0001	0.00029	0.0002	0.025	0.000005	3.84	0.0077	39.7	0.145	0.000128	163
MW12-05-01	2017-11-11 10:45	0.00001	0.0054	0.00064	0.0369	0.11	0.00002	0.00005	312	0.000005	0.0001	0.00023	0.00021	0.032	0.000005	3.82	0.0086	38.9	0.148	0.000125	163
MW12-05-01	2018-03-02 10:15	0.00001	0.0038	0.00069	0.039	0.07	0.00002	0.00005	326	0.000005	0.0001	0.00017	0.0002	0.033	0.000005	3.61	0.0071	41.5	0.147	0.000208	158
MW12-05-01	2018-05-10 10:40	0.00001	0.0055	0.00067	0.0357	0.069	0.00002	0.00005	334	0.0000076	0.0001	0.00014	0.0002	0.036	0.000005	3.78	0.0077	41.9	0.151	0.000159	168
MW12-05-01	2018-08-23 15:00	0.00002	0.0092	0.00063	0.0359	0.103	0.00004	0.0001	358	0.000029	0.0002	0.00028	0.0004	0.04	0.000005	3.5	0.0077	38.1	0.149	0.00022	155
MW12-05-01	2018-10-22 10:45	0.00002	0.0049	0.00498	0.0353	0.108	0.00004	0.0001	308	0.000025	0.0002	0.00023	0.0004	0.041	0.000005	3.56	0.0073	38.4	0.156	0.00023	154
MW12-05-01	2019-02-14 10:45	0.00002	0.0047	0.00053	0.0338	0.079	0.00004	0.0001	361	0.000026	0.0002	0.00034	0.0004	0.046	0.000005	3.85	0.0078	42.8	0.164	0.00021	174
MW12-05-01	2019-05-04 9:45	0.00002	0.0035	0.00061	0.0318	0.081	0.00004	0.0001	355	0.00001	0.0002	0.00022	0.0004	0.043	0.000005	3.53	0.0078	42.8	0.159	0.0002	164
MW12-05-01	2019-05-16 8:05	0.00002	0.0048	0.0007	0.0336	0.167	0.00004	0.0001	359	0.000189	0.0002	0.00034	0.0004	0.045	0.000005	3.74	0.0078	43.3	0.166	0.0004	171
MW12-05-01	2019-08-02 8:45	0.00002	0.0045	0.00066	0.03	0.071	0.00004	0.0001	365	0.00001	0.0002	0.00028	0.0004	0.061	0.000005	3.64	0.0078	42.2	0.171	0.00018	173
MW12-05-01	2019-10-04 9:30	0.00002	0.0047	0.00074	0.0306	0.113	0.00004	0.0001	354	0.000192	0.0002	0.00022	0.0004	0.05	0.000005	3.84	0.008	43.7	0.163	0.00033	170
MW12-05-01	2020-02-13 10:55	0.00002	0.007	0.00047	0.0293	0.076	0.00004	0.0001	349	0.000193	0.0002	0.00034	0.00079	0.061	0.000005	3.77	0.0066	43.8	0.17	0.000233	175
MW12-05-01	2020-04-25 9:00	0.00002	0.0167	0.0006	0.0298	0.076	0.00004	0.0001	331	0.00001	0.0002	0.0002	0.0005	0.067	0.000005	3.7	0.007	42.2	0.171	0.000302	158
MW12-05-01	2020-07-24 9:00	0.00002	0.0074	0.00107	0.0323	0.109	0.00004	0.0001	354	0.00001	0.0002	0.0002	0.0004	0.084	0.000005	3.89	0.0085	41.4	0.174	0.000257	178
MW12-05-01	2020-10-02 9:00	0.00002	0.0029	0.00063	0.0313	0.084	0.00004	0.0001	394	0.0000138	0.0002	0.00042	0.0004	0.069	0.000005	3.79	0.0081	41.8	0.186	0.000258	175
MW12-05-01	2021-03-20 10:25	0.00002	0.0042	0.00049	0.0261	0.101	0.00004	0.0001	344	0.0000183	0.0002	0.0002	0.0004	0.069	0.000005	3.78	0.0076	39.1	0.153	0.000595	164
MW12-05-01	2021-06-06 9:55	0.00002	0.0483	0.0005	0.0294	0.071	0.00004	0.0001	343	0.00001	0.0002	0.001	0.0004	0.169	0.000005	3.85	0.0082	40.5	0.176	0.000277	172
MW12-05-01	2021-08-21 16:40	0.00002	0.0042	0.00058	0.0289	0.072	0.00004	0.0001	341	0.00001	0.0002	0.001	0.0004	0.071	0.000005	3.62	0.0072	43	0.169	0.000227	166
MW12-05-01	2021-11-15 10:50	0.00002	0.0084	0.00053	0.0358	0.09	0.00004	0.0001	346	0.00001	0.0002	0.001	0.00048	0.076	0.000005	3.62	0.0074	41.8	0.171	0.000416	165
MW12-05-02	2016-05-14 8:15	0.00001	0.0061	0.0005	0.607	0.044	0.00002	0.00005	84.3	0.000005	0.0001	0.00093	0.0002	0.022	0.000005	2.88	0.0089	23.7	0.239	0.00105	44.5
MW12-05-02	2016-07-06 9:20	0.00001	0.0059	0.00047	0.702	0.112	0.00002	0.00005	115	0.000005	0.0001	0.00065	0.0002	0.028	0.000005	3.03	0.0079	32.5	0.365	0.00112	62
MW12-05-02	2016-09-05 11:45	0.000011	0.0045	0.00063	0.219	0.114	0.00002	0.00005	282	0.000005	0.0001	0.00025	0.0002	0.176	0.000005	4.1	0.0062	54.9	0.927	0.00105	130
MW12-05-02	2016-10-21 13:10	0.00001	0.0036	0.00024	0.157	0.121	0.00002	0.00005	297	0.000005	0.0001	0.00027	0.0002	0.02	0.000005	3.98	0.0062	54.7	0.869	0.000558	127
MW12-05-02	2016-12-23 11:35	0.00002	0.0045	0.00023	0.138	0.139	0.00004	0.0001	324	0.00001	0.0002	0.00026	0.0004	0.025	0.000005	4.5	0.0061	62	0.897	0.00041	144
MW12-05-02	2017-02-20 14:15	0.00002	0.0043	0.00029	0.109	0.106	0.00004	0.0001	319	0.00001	0.0002	0.0003	0.0006	0.042	0.000005	4.07	0.0059	54.7	0.789	0.00039	125
MW12-05-02	2017-04-23 14:20	0.00002	0.0045	0.0002	0.114	0.075	0.00004	0.0001	301	0.00001	0.0002	0.00031	0.0004	0.052	0.000005	3.61	0.0053	52.3	0.776	0.00021	122
MW12-05-02	2017-08-24 14:55	0.00001	0.0044	0.00028	0.114	0.085	0.00002	0.00005	305	0.000005	0.0001	0.00033	0.0002	0.026	0.000005	4.18	0.0057	56.9	0.768	0.000147	137
MW12-05-02	2017-11-11 11:15	0.00001	0.0048	0.0003	0.0871	0.104	0.00002	0.00005	312	0.000005	0.0001	0.00029	0.0002	0.071	0.000005	4.17	0.0058	54	0.827	0.000231	142
MW12-05-02	2018-03-02 10:50	0.00001	0.004	0.00034	0.0919	0.07	0.00002	0.00005	321	0.000005	0.0001	0.00015	0.0002	0.072	0.000005	4.3	0.005	58.1	0.868	0.000247	145
MW12-05-02	2018-05-10 11:10	0.00001	0.0042	0.00057	0.0787	0.086	0.00002	0.00005	328	0.000005	0.0001	0.00019	0.0002	0.074	0.000005	4.13	0.0052	59.2	0.854	0.000264	147
MW12-05-02	2018-08-23 15:15	0.00005	0.006	0.0005	0.0873	0.12	0.0001	0.00025	314	0.000025	0.0005	0.0005	0.001	0.05	0.000005	3.7	0.0053	51.9	0.719	0.00025	131
MW12-05-02	2018-10-22 11:15	0.00002	0.0088	0.0019	0.0843	0.081	0.00004	0.0001	285	0.00001	0.0002	0.0003	0.0004	0.043	0.000005	3.88	0.0049	53.7	0.825	0.00014	140
MW12-05-02	2019-02-14 11:45	0.00002	0.0052	0.00037	0.0718	0.08	0.00004	0.0001	356	0.00001	0.0002	0.0002	0.0004	0.033	0.000005	4.39	0.0053	63.6	0.849	0.0004	162
MW12-05-02	2019-05-16 8:40	0.00002	0.0052	0.00028	0.0739	0.078	0.00004	0.0001	333	0.00001	0.0002	0.00035	0.0004	0.022	0.000005	3.98	0.0051	59.3	0.784	0.00019	147
MW12-05-02	2019-08-02 10:20	0.00002	0.0049	0.00024	0.0666	0.078	0.00004	0.0001	349	0.000014	0.0002	0.00029	0.0004	0.046	0.000005	3.98	0.0052	58	0.835	0.00021	156
MW12-05-02	2019-10-04 10:30	0.00002	0.0044	0.00042	0.0656	0.075	0.00004	0.0001	328	0.000011	0.0002	0.00037	0.0004	0.029	0.000005	4.2	0.0054	60.3	0.774	0.00021	152
MW12-05-02	2020-02-13 14:15	0.00002	0.0053	0.00044	0.062	0.072	0.00004	0.0001	327	0.00001	0.0002	0.00031	0.00054	0.026	0.000005	3.92	0.0044	58.9	0.755	0.000173	152
MW12-05-02	2020-04-25 9:30	0.00002	0.0053	0.00035	0.051	0.07	0.00004	0.0001	312	0.00001	0.0002	0.0002	0.0004	0.077	0.000005	3.9	0.0045	58	0.759	0.000373	142
MW12-05-02	2020-07-24 11:35	0.00002	0.0066	0.00048	0.0594	0.087	0.00004	0.0001	322	0.00001	0.0002	0.0002	0.0004	0.053	0.000005	4.22	0.0055	55.8	0.794	0.000185	153
MW12-05-02	2020-10-02 9:30	0.00002	0.0048	0.00031	0.05	0.074	0.00004	0.0001	363	0.00001	0.0002	0.00037	0.0004	0.068	0.000005	3.93	0.0052	53.5	0.813	0.000392	149
MW12-05-02	2021-03-20 11:10	0.00002	0.0036	0.00031	0.0458	0.068	0.00004	0.0001	312	0.00001	0.0002	0.00024	0.0004	0.022	0.000005	3.64	0.0047	52.3	0.634	0.000201	143
MW12-05-02	2021-06-06 10:40	0.00002	0.0049	0.00032	0.0528	0.077	0.00004	0.0001	317	0.00001	0.0002	0.001	0.0004	0.033	0.000005	4.03	0.0054	53.7	0.743	0.000201	149
MW12-05-02	2021-08-21 17:09	0.00005	0.0052	0.0005	0.0553	0.079	0.0001	0.00025	335	0.000025	0.0005	0.0025	0.001	0.05	0.000005	4	0.005	61.4	0.761	0.00025	149
MW12-05-02	2021-11-15 11:30	0.00005	0.0103	0.0005	0.0525	0.076	0.0001	0.00025	313	0.000025	0.0005	0.0025	0.001	0.05	0.000005	3.88	0.005	56.4	0.726	0.00025	146
MW12-05-03	2012-11-12 0:00	0.000005	0.0043	0.000307	0.143	0.077	0.00001	0.000005	120	0.000214	0.00551	0.0001	0.0022	0.0981		4.17	0.00476	52.7	0.647	0.0112	67.6
MW12-05-03	2013-08-21 16:00	0.00002	0.0233	0.00044	0.0823	0.08	0.0001	0.001	188	0.00001	0.0005	0.001	0.0002	1.82	0.00001	3.82	0.0052	62.3	2.6	0.001	95.4
MW12-05-03	2013-10-10 13:15	0.00002	0.0045	0.0005	0.0768	0.08	0.0001	0.001	189	0.00001	0.0005	0.001	0.00023	1.9	0.00001	4.04	0.0064	66.1	2.52	0.001	101
MW12-05-03	2014-05-29 10:30	0.00002	0.003	0.0003	0.0621	0.167	0.0001	0.001	198	0.00001	0.0005	0.001	0.0002	3.43	0.00001	3.8	0.0058	68.5	2.37	0.0014	108
MW12-05-03	2014-07-25 10:00	0.00002	0.003	0.00033	0.0579	0.108	0.0001	0.001	192	0.00001	0.0005	0.001	0.0002	3.62	0.00001	3.74	0.006	64.7	2.09	0.0027	101
MW12-05-03	2014-10-04 11:50	0.00002	0.0042	0.00039	0.056	0.092	0.0001	0.001	209	0.00001	0.0005	0.001	0.0002	4.14	0.00001	3.79	0.0053	67.5	2.07	0.0049	100
MW12-05-03	2015-01-01 11:10	0.00002	0.0083	0.00035	0.0568	0.137	0.0001	0.001	213	0.000011	0.0005	0.001	0.00036	2.97	0.00001	3.82	0.0065	70.5	2.15	0.0027	106
MW12-05-03	2015-01-11 11:15	0.00002	0.0036	0.00037	0.0581	0.094	0.0001	0.001	205	0.00001	0.0005	0.001	0.0002	2.32	0.00001	3.86	0.0063	67.7	2	0.0014	100
MW12-05-03	2015-05-04 15:00	0.00002	0.0073	0.00077	0.0559	0.102	0.0001	0.001	215	0.00001	0.0005	0.001	0.0002	1.9	0.00001	4.08	0.0066	69.1	2.52	0.001	102
MW12-05-03	2015-08-08 13:25	0.00002	0.0073	0.00033	0.0508	0.104	0.0001	0.001	209	0.00001	0.0005	0.001	0.00023	1.62	0.00001	3.63	0.0051	74.3	2.63	0.001	111
MW12-05-03	2015-09-19 9:30	0.00002	0.0212	0.00037	0.0477	0.081	0.0001	0.001	209	0.00001	0.0005	0.001	0.00235	1.49	0.00001	3.79	0.006	71.8	2.63	0.001	106
MW12-05-03	2016-05-09 15:35																				
MW12-05-03	2016-05-10 15:35	0.00001	0.0049	0.00023	0.0445	0.12	0.00002	0.00005	235	0.000005	0.0001	0.00018	0.0002	1.13	0.000005	4.26	0.0056	76.3	2.44	0.000521	109
MW12-05-03	2016-05-14 8:40	0.00001	0.0024	0.00024	0.0499	0.062	0.00002	0.00005	224	0.000005	0.0001	0.00021	0.0002	1.11	0.000005	4.09	0.0056	75.5	2.46	0.000443	104
MW12-05-03	2016-07-06 9:50	0.00001	0.0016	0.0002	0.0629	0.111	0.00002	0.00005	209	0.000005	0.0001	0.0001	0.0002	0.253	0.000005	3.86	0.0055	74	2.41	0.000679	105
MW12-05-03	2016-09-05 14:15	0.00001	0.003	0.0002	0.0468	0.1	0.00002	0.00005	228	0.000005	0.0001	0.00012	0.0002	0.29	0.000005	4.25	0.0056	73.8	2.41	0.000456	108
MW12-05-03	2016-10-21 13:45	0.00001	0.0011	0.00017	0.0436	0.104	0.00002	0.00005	221	0.000005	0.0001	0.0001	0.0002	0.021	0.000005	4.07	0.0051	72.7	2.36	0.000566	107
MW12-05-03	2016-12-23 13:30	0.00001	0.0013	0.00025	0.0462	0.125	0.00002	0.00005	220	0.000005	0.0001	0.0001	0.0002	0.031	0.000005	4.36	0.0052	72.4	2.24	0.00043	106
MW12-05-03	2016-12-23 13:30																				
MW12-05-03	2017-02-20 14:40	0.00002	0.0025	0.00029	0.0441	0.088	0.00004	0.0001	196	0.000014	0.0002	0.0002	0.00579	0.042	0.000005	3.86	0.0034	68.3	2.07	0.00076	87.6
MW12-05-03	2017-04-23 11:30	0.00001	0.0034	0.00022	0.0395	0.075	0.00002	0.00005	190	0.000005	0.0001	0.00017	0.0002	0.651	0.000005	3.47	0.0031	64.4	1.91	0.000832	84.2
MW12-05-03	2017-08-24 15:15	0.000021	0.003	0.00026	0.0448	0.082	0.00002	0.00005	227	0.000005	0.0001	0.00014	0.00036	0.625	0.000005	4.31	0.0045	78	2.42	0.000405	114
MW12-05-03	2017-11-11 11:35	0.00001	0.0029	0.00021	0.0438	0.093	0.00002	0.00005	210	0.000005	0.0001	0.0001	0.0002	0.531	0.000005	4.15	0.0047	71.5	2.31	0.000229	109
MW12-05-03	2018-03-02 11:10	0.00001	0.0029	0.00028	0.0445	0.073	0.00002	0.00005	201	0.000005	0.0001	0.00015	0.0002	0.582	0.000005	3.99	0.004	74.9	2.2	0.000249	98.9
MW12-05-03	2018-05-10 11:30	0.00001	0.0039	0.00028	0.0446	0.064	0.00002	0.00005	216	0.000005	0.0001	0.00026	0.0002	0.434	0.000005	4.26	0.0042	83.3	2.34	0.000177	110
MW12-05-03	2018-08-23 15:30	0.00002	0.0144	0.0002	0.0402	0.066	0.00004	0.0001	180	0.000021	0.0002	0.0002	0.0017	0.433	0.000005	3.8	0.0038	65	2.02	0.00017	97.7
MW12-05-03	2018-10-22 13:30	0.00002	0.0043	0.0022	0.0395	0.087	0.00004	0.0001	205	0.00004	0.0002	0.0002	0.00056	0.435	0.000005	3.83	0.0041	71.6	2.16	0.00021	105
MW12-05-03	2019-02-14 14:05	0.000013	0.0039	0.0002	0.0437	0.066	0.00002	0.00005	237	0.000005	0.0001	0.00015	0.0002	0.331	0.000005	4.43	0.0042	82.9	2.24	0.0003	115
MW12-05-03	2019-05-04 11:50	0.00001	0.0035	0.00017	0.0402	0.073	0.00002	0.00005	223	0.000005	0.0001	0.00024	0.0002	0.411	0.000005	3.9	0.0041	77.3	2.2	0.00023	103
MW12-05-03	2019-05-16 9:20	0.00002	0.0038	0.0002	0.0405	0.071	0.00004	0.0001	229	0.000017	0.0002	0.0002	0.0004	0.471	0.000005	3.96	0.0042	77.6	2.13	0.00041	104
MW12-05-03	2019-08-02 11:20	0.00001	0.0066	0.0002	0.041	0.101	0.00002	0.00005	234	0.0000229	0.0001	0.00028	0.00127	0.525	0.000005	4.17	0.0043	77.2	2.36	0.000307	116
MW12-05-03	2019-10-04 10:40	0.00002	0.0095	0.0002	0.0377	0.07	0.00004	0.0001	229	0.00001	0.0002	0.00022	0.0004	0.473	0.000005	4.18	0.0046	80.8	2.21	0.00019	110
MW12-05-03	2020-02-13 14:35	0.00001	0.0044	0.0002	0.0358	0.051	0.00002	0.00005	190	0.000005	0.0001	0.00014	0.00041	0.621	0.000005	3.61	0.0026	72.5	1.95	0.000702	93.7
MW12-05-03	2020-04-25 10:15	0.00002	0.0055	0.0002	0.0354	0.064	0.00004	0.0001	180	0.00001	0.0002	0.0002	0.0004	0.552	0.000005	3.68	0.0027	70.5	1.94	0.000629	83.4
MW12-05-03	2020-07-24 13:55	0.00001	0.0025	0.00033	0.039	0.076	0.00002	0.00005	209	0.000005	0.0001	0.00015	0.0002	0.464	0.000005	4.19	0.0041	72.9	2.15	0.000241	105
MW12-05-03	2020-10-02 10:15	0.00001	0.004	0.00016	0.0403	0.07	0.00002	0.00005	246	0.000005	0.0001	0.00045	0.0002	0.445	0.000005	4.15	0.0042	75	2.36	0.00022	106
MW12-05-03	2021-03-20 11:20	0.00001	0.0032	0.00014	0.0368	0.065	0.00002	0.00005	211	0.000005	0.0001	0.00014	0.0002	0.658	0.000005	4.05	0.0034	75	1.98	0.000658	104
MW12-05-03	2021-06-06 10:55	0.00001	0.0031	0.00016	0.0391	0.072	0.00002	0.00005	220	0.000005	0.0001	0.0005	0.0002	0.475	0.000005	4.29	0.0039	77.5	2.13	0.000372	105
MW12-05-03	2021-08-23 14:30	0.00002	0.0055	0.0002	0.0364	0.068	0.00004	0.0001	208	0.00001	0.0002	0.001	0.0004	0.442	0.000005	3.72	0.0036	75.1	2.04	0.000284	98
MW12-05-03	2021-11-15 11:45	0.00002	0.0079	0.0002	0.037	0.059	0.00004	0.0001	215	0.00001	0.0002	0.001	0.00097	0.448	0.000005	3.84	0.0037	75	2.01	0.000292	100
MW12-05-04	2016-05-14 9:00	0.00001	0.0029	0.00024	0.0713	0.274	0.00002	0.00005	50.4	0.000005	0.0001	0.00014	0.0002	0.054	0.000005	2.28	0.003	29.3	0.306	0.00411	21.2
MW12-05-04	2016-07-06 10:05	0.00001	0.0025	0.00012	0.0577	0.085	0.00002	0.00005	49	0.000005	0.0001	0.0001	0.00021	0.019	0.000005	2.14	0.0035	29.9	0.216	0.0048	18.8

		Dissolved Elements (cont.)													
Station	Date / Time	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW09-03-03	2015-08-18 16:00	0.001	0.0002	0.0005	3.9	0.00031	4.25	0.005	0.224	0.005	0.00005	0.00097	0.005	0.0098	0.0005
MW09-03-03	2015-09-19 18:00	0.001	0.0002	0.0005	3.5	0.00025	4.53	0.005	0.164	0.005	0.00005	0.00088	0.005	0.005	0.0005
MW09-03-04	2009-12-01 0:00	0.004	0.0001	0.0034	38.4	0.0068	2.58	0.0001	1.91	0.01	0.00001	0.0008	0.0001	0.014	0.0001
MW09-03-04	2010-03-29 0:00	0.001	0.0002	0.0012	3.5	0.0006	3.98	0.0001	0.12	0.01	0.00001	0.0004	0.0004	0.004	0.0001
MW09-03-04	2012-11-17 0:00	0.000263	0.000011	0.000079	4	0.000301	4.96	0.0002	0.174	0.0005	0.000004	0.000799	0.00028	0.00104	0.0001
MW09-03-05	2012-05-10 0:00	0.001	0.0002	0.0005	3	0.0001	0.1	0.005	0.001	0.005	0.00005	0.0001	0.005	0.005	0.0005
MW09-03-05	2012-11-17 0:00	0.00002	0.000014	0.000033	3	0.00004	0.1	0.0002	0.00387	0.0005	0.000002	0.000025	0.00038	0.00046	0.0001
MW09-04-04	2010-03-29 0:00	0.001	0.0002	0.0006	0.2	0.0006	0.05	0.0001	0.001	0.01	0.00001	0.0004	0.0001	0.004	0.0001
MW12-05-01	2012-11-11 0:00	0.0043	0.0002	0.00056	122	0.00047	5.59	0.005	3.05	0.005	0.00005	0.00404	0.005	0.0402	0.0005
MW12-05-01	2013-06-29 13:40														
MW12-05-01	2013-08-21 15:00	0.001	0.0002	0.0005	187	0.00033	6.75	0.005	4.22	0.005	0.00005	0.00072	0.005	0.005	0.0005
MW12-05-01	2013-10-10 12:15	0.0011	0.0002	0.0005	222	0.0009	7.1	0.005	4.71	0.005	0.00005	0.00089	0.005	0.005	0.0005
MW12-05-01	2014-05-29 9:00	0.001	0.0002	0.0005	220	0.0001	6.69	0.005	5.6	0.005	0.00005	0.00082	0.005	0.005	0.0005
MW12-05-01	2014-07-25 9:00	0.001	0.0002	0.0005	238	0.00027	7.05	0.005	5.8	0.005	0.00005	0.00084	0.005	0.005	0.0005
MW12-05-01	2014-10-04 11:00	0.001	0.0002	0.0005	237	0.00021	7.45	0.005	5.82	0.005	0.00005	0.00095	0.005	0.005	0.0005
MW12-05-01	2015-01-01 10:35	0.001	0.0002	0.0005	251	0.00058	7.71	0.005	6.2	0.005	0.00005	0.00091	0.005	0.005	0.0005
MW12-05-01	2015-01-11 10:40	0.001	0.0002	0.0005	269	0.00021	6.64	0.005	6.38	0.005	0.00005	0.00089	0.005	0.005	0.0005
MW12-05-01	2015-05-04 14:00	0.001	0.0002	0.0005	278	0.00014	7.87	0.005	6.73	0.005	0.00005	0.00093	0.005	0.005	0.0005
MW12-05-01	2015-08-08 11:10	0.001	0.0002	0.0005	298	0.0001	7.32	0.005	7.11	0.005	0.00005	0.00095	0.005	0.005	0.0005
MW12-05-01	2015-09-19 9:00	0.001	0.0002	0.0005	300	0.00023	7.07	0.005	6.97	0.005	0.00005	0.00093	0.005	0.005	0.0005
MW12-05-01	2016-05-09 14:50	0.0005	0.00005	0.0001	389	0.00144	7.49	0.0001	7.67	0.0003	0.00001	0.000986	0.0005	0.001	0.0003
MW12-05-01	2016-05-14 7:40	0.0005	0.00005	0.0001	359	0.000467	7.51	0.0001	7.94	0.0003	0.00001	0.000954	0.0005	0.001	0.0003
MW12-05-01	2016-07-06 8:50	0.0005	0.00005	0.00014	356	0.000347	7.48	0.0001	8.29	0.0003	0.00001	0.00101	0.0005	0.0014	0.0003
MW12-05-01	2016-09-05 11:10	0.001	0.0001	0.0002	375	0.0003	7.56	0.0002	7.95	0.0006	0.00002	0.00102	0.001	0.002	0.0006
MW12-05-01	2016-10-21 11:35	0.0005	0.00005	0.00022	383	0.000083	7.23	0.0001	8.09	0.0003	0.00001	0.000986	0.0005	0.001	0.0003
MW12-05-01	2016-12-23 11:15	0.001	0.0001	0.00022	388	0.0001	7.28	0.00051	8.32	0.0006	0.00002	0.000944	0.001	0.002	0.0006
MW12-05-01	2016-12-23 11:15														
MW12-05-01	2017-02-20 13:50	0.001	0.0001	0.00032	412	0.00034	7.45	0.0002	8.56	0.0006	0.00002	0.0011	0.001	0.002	0.0006
MW12-05-01	2017-04-23 11:00	0.001	0.0001	0.0002	385	0.00225	7.06	0.0002	8.75	0.0006	0.00002	0.000917	0.001	0.002	0.0003
MW12-05-01	2017-08-24 14:15	0.0005	0.00005	0.0001	417	0.000275	7.86	0.00023	8.63	0.0003	0.00001	0.000882	0.0005	0.0022	0.0003
MW12-05-01	2017-11-11 10:45	0.0005	0.00005	0.0001	479	0.000295	7.56	0.0001	8.51	0.0003	0.00001	0.000892	0.0005	0.003	0.0003
MW12-05-01	2018-03-02 10:15	0.0005	0.00005	0.0001	451	0.00239	7.44	0.0001	9.09	0.0003	0.00001	0.000874	0.0005	0.0021	0.0003
MW12-05-01	2018-05-10 10:40	0.0005	0.00005	0.0001	426	0.00139	7.19	0.0001	9.51	0.0003	0.00001	0.000864	0.0005	0.0025	0.0003
MW12-05-01	2018-08-23 15:00	0.001	0.0001	0.0002	429	0.00066	7.25	0.0002	9.69	0.0006	0.00002	0.000897	0.001	0.0153	0.0003
MW12-05-01	2018-10-22 10:45	0.001	0.0001	0.0002	474	0.00018	7.31	0.0002	9.12	0.0006	0.00002	0.000915	0.001	0.0056	0.0003
MW12-05-01	2019-02-14 10:45	0.001	0.0001	0.0002	487	0.0001	7.96	0.0002	9.99	0.0006	0.00002	0.000825	0.001	0.0034	0.0003
MW12-05-01	2019-05-04 9:45	0.001	0.0001	0.0002	500	0.00951	7.7	0.0002	9.96	0.0006	0.00005	0.000908	0.001	0.002	0.0003
MW12-05-01	2019-05-16 8:05	0.001	0.0001	0.0002	440	0.00114	7.87	0.0002	10	0.0006	0.00002	0.000909	0.001	0.0036	0.0003
MW12-05-01	2019-08-02 8:45	0.001	0.0001	0.0002	474	0.0001	7.89	0.0002	10.2	0.0006	0.00002	0.000911	0.001	0.002	0.0004
MW12-05-01	2019-10-04 9:30	0.001	0.0001	0.0002	485	0.00068	8.03	0.0002	9.9	0.0006	0.00002	0.000957	0.001	0.0039	0.0004
MW12-05-01	2020-02-13 10:55	0.001	0.0001	0.0002	460	0.000186	7.18	0.0002	10	0.0006	0.00002	0.000862	0.001	0.0268	0.0004
MW12-05-01	2020-04-25 9:00	0.001	0.0001	0.0002	458	0.00327	7.46	0.0002	10.2	0.0006	0.00002	0.000863	0.001	0.0116	0.0004
MW12-05-01	2020-07-24 9:00	0.001	0.0001	0.0002	472	0.000124	7.64	0.0002	10.6	0.0006	0.00002	0.00089	0.001	0.0088	0.0004
MW12-05-01	2020-10-02 9:00	0.001	0.0001	0.0002	465	0.000188	7.32	0.0002	10.8	0.0006	0.00002	0.000818	0.001	0.014	0.0004
MW12-05-01	2021-03-20 10:25	0.001	0.0001	0.0002	444	0.0006	7.13	0.0002	9.55	0.0006	0.00002	0.000719	0.001	0.0067	0.0004
MW12-05-01	2021-06-06 9:55	0.001	0.0001	0.0002	471	0.0001	7.46	0.0002	10.3	0.00537	0.00002	0.000888	0.001	0.0139	0.0004
MW12-05-01	2021-08-21 16:40	0.001	0.0001	0.0002	475	0.000233	7.33	0.0002	10.2	0.0006	0.00002	0.00078	0.001	0.015	0.0004
MW12-05-01	2021-11-15 10:50	0.001	0.0001	0.0002	453	0.000166	7.03	0.0002	10.3	0.0006	0.00002	0.000812	0.001	0.0201	0.0004
MW12-05-02	2016-05-14 8:15	0.0005	0.00005	0.00021	86.9	0.00061	7.27	0.00011	2.91	0.00048	0.00001	0.000273	0.00165	0.0011	0.00057
MW12-05-02	2016-07-06 9:20	0.0005	0.00005	0.00028	91.8	0.000155	6.93	0.0001	4.01	0.00037	0.00001	0.000378	0.00126	0.0029	0.0004
MW12-05-02	2016-09-05 11:45	0.0005	0.00005	0.00012	325	0.00007	7.12	0.0001	9.65	0.0003	0.00001	0.00079	0.0005	0.0037	0.0003
MW12-05-02	2016-10-21 13:10	0.0005	0.00005	0.00032	374	0.00005	7.07	0.0001	10.1	0.0003	0.00001	0.000375	0.0005	0.0217	0.0003
MW12-05-02	2016-12-23 11:35	0.001	0.0001	0.00026	400	0.0001	7.25	0.0002	10.8	0.0006	0.00002	0.000373	0.001	0.0261	0.0006
MW12-05-02	2017-02-20 14:15	0.001	0.0001	0.00025	406	0.0001	7.2	0.0002	11.2	0.0006	0.00002	0.000569	0.001	0.0024	0.0006
MW12-05-02	2017-04-23 14:20	0.001	0.0001	0.0002	364	0.00275	6.65	0.0002	10.4	0.0006	0.00002	0.000262	0.001	0.002	0.0003
MW12-05-02	2017-08-24 14:55	0.0005	0.00005	0.0001	374	0.000188	7.6	0.0001	10.4	0.0003	0.00001	0.000258	0.0005	0.001	0.0003
MW12-05-02	2017-11-11 11:15	0.0005	0.00005	0.0001	425	0.000222	6.88	0.0001	11.2	0.0003	0.00001	0.000567	0.0005	0.0045	0.0003
MW12-05-02	2018-03-02 10:50	0.0005	0.00005	0.0001	465	0.00222	7.32	0.0001	11.8	0.0003	0.00001	0.000582	0.0005	0.0012	0.0003
MW12-05-02	2018-05-10 11:10	0.0005	0.00005	0.00043	419	0.00028	6.87	0.0001	11.9	0.0003	0.00001	0.000611	0.0005	0.0011	0.0003
MW12-05-02	2018-08-23 15:15	0.0025	0.00025	0.0005	372	0.00134	6.67	0.0005	11	0.0015	0.00005	0.000337	0.0025	0.0065	0.0003
MW12-05-02	2018-10-22 11:15	0.001	0.0001	0.0002	440	0.0001	7.07	0.0002	10.5	0.0006	0.00002	0.000467	0.001	0.0044	0.0003
MW12-05-02	2019-02-14 11:45	0.001	0.0001	0.0002	513	0.00014	8.1	0.0002	13.3	0.0006	0.00002	0.000858	0.001	0.002	0.0003
MW12-05-02	2019-05-16 8:40	0.001	0.0001	0.00026	399	0.00172	7.49	0.0002	11.8	0.0006	0.00002	0.000556	0.001	0.002	0.0003
MW12-05-02	2019-08-02 10:20	0.001	0.0001	0.0002	456	0.0001	7.83	0.0002	12.3	0.0006	0.00002	0.00086	0.001	0.0031	0.0004
MW12-05-02	2019-10-04 10:30	0.001	0.0001	0.0002	449	0.00056	7.64	0.0002	11.9	0.0006	0.00002	0.000747	0.001	0.002	0.0004
MW12-05-02	2020-02-13 14:15	0.001	0.0001	0.0002	419	0.000402	6.76	0.0002	12.1	0.0006	0.00002	0.000823	0.001	0.002	0.0004
MW12-05-02	2020-04-25 9:30	0.001	0.0001	0.0002	424	0.00123	7	0.0002	12.3	0.0006	0.00002	0.00104	0.001	0.002	0.0004
MW12-05-02	2020-07-24 11:35	0.001	0.0001	0.0002	443	0.00255	6.94	0.0002	12.4	0.00077	0.00002	0.000953	0.001	0.002	0.0004
MW12-05-02	2020-10-02 9:30	0.001	0.0001	0.0002	430	0.000179	6.8	0.0002	12.9	0.0006	0.00002	0.00105	0.001	0.002	0.0004
MW12-05-02	2021-03-20 11:10	0.001	0.0001	0.0002	423	0.00299	6.75	0.0002	11.3	0.0006	0.00002	0.000853	0.001	0.002	0.0004
MW12-05-02	2021-06-06 10:40	0.001	0.0001	0.0002	402	0.00014	6.72	0.0002	11.9	0.0006	0.00002	0.0011	0.001	0.002	0.0004
MW12-05-02	2021-08-21 17:09	0.0025	0.00025	0.0005	421	0.000615	6.84	0.0005	12.3	0.0015	0.00005	0.00114	0.0025	0.005	0.001
MW12-05-02	2021-11-15 11:30	0.0025	0.00025	0.0005	401	0.000682	6.7	0.0005	12.5	0.0015	0.00005	0.00105	0.0025	0.0051	0.001
MW12-05-03	2012-11-12 0:00	0.00328	0.000124	0.000197	166	0.000364	5.03	0.0002	3.89	0.0005	0.000004	0.0041	0.0002	0.0312	0.0001
MW12-05-03	2013-08-21 16:00	0.001	0.0002	0.0005	209	0.0001	8.04	0.005	7.1	0.005	0.00005	0.00027	0.005	0.005	0.0005
MW12-05-03	2013-10-10 13:15	0.001	0.0002	0.0005	246	0.0001	8.07	0.005	7.73	0.005	0.00005	0.00036	0.005	0.005	0.0005
MW12-05-03	2014-05-29 10:30	0.001	0.0002	0.0005	243	0.0001	7.76	0.005	7.76	0.005	0.00005	0.00096	0.005	0.0054	0.0005
MW12-05-03	2014-07-25 10:00	0.001	0.0002	0.0005	265	0.0001	7.57	0.005	7.96	0.005	0.00005	0.00103	0.005	0.005	0.0005
MW12-05-03	2014-10-04 11:50	0.001	0.0002	0.0005	249	0.00011	8.1	0.005	8.07	0.005	0.00005	0.0012	0.005	0.005	0.0005
MW12-05-03	2015-01-01 11:10	0.0012	0.0002	0.00054	251	0.0001	7.96	0.005	8.16	0.005	0.00005	0.00124	0.005	0.0067	0.0005
MW12-05-03	2015-01-11 11:15	0.001	0.0002	0.0005	249	0.00011	7.55	0.005	8.43	0.005	0.00005	0.00121	0.005	0.005	0.0005
MW12-05-03	2015-05-04 15:00	0.001	0.0002	0.0005	265	0.0001	8.8	0.005	8.05	0.005	0.00005	0.00109	0.005	0.005	0.0005
MW12-05-03	2015-08-08 13:25	0.001	0.0002	0.0005	268	0.0001	8.02	0.005	8.05	0.005	0.00005	0.00114	0.005	0.005	0.0005
MW12-05-03	2015-09-19 9:30	0.001	0.0002	0.0005	268	0.0001	8.08	0.005	8.21	0.005	0.00005	0.00114	0.005	0.005	0.0005
MW12-05-03	2016-05-09 15:35														
MW12-05-03	2016-05-10 15:35	0.0005	0.000194	0.00012	290	0.000076	8.41	0.0001	8.16	0.0003	0.00001	0.00127	0.0005	0.0015	0.0003
MW12-05-03	2016-05-14 8:40	0.0005	0.00005	0.0001	255	0.000146	8.22	0.0001	8.28	0.0003	0.00001	0.00121	0.0005	0.001	0.0003
MW12-05-03	2016-07-06 9:50	0.0005	0.00005	0.0001	255	0.000102	7.82	0.0001	8.31	0.0003	0.00001	0.00104	0.0005	0.0018	0.0003
MW12-05-03	2016-09-05 14:15	0.0005	0.00005	0.0001	272	0.000075	8.16	0.0001	7.94	0.0003	0.00001	0.00105	0.0005	0.0023	0.0003
MW12-05-03	2016-10-21 13:45	0.0005	0.00005	0.00017	301	0.000059	7.83	0.0001	8.14	0.0003	0.00001	0.00123	0.0005	0.0069	0.0003
MW12-05-03	2016-12-23 13:30	0.0005	0.00005	0.00023	268	0.000057	7.55	0.0001	7.76	0.0003	0.00001	0.00155	0.0005	0.0103	0.0003
MW12-05-03	2016-12-23 13:30														
MW12-05-03	2017-02-20 14:40	0.001	0.0001	0.0002	256	0.0001	7.47	0.00039	7.04	0.0006	0.00002	0.00255	0.001	0.0026	0.0006
MW12-05-03	2017-04-23 11:30	0.0005	0.00005	0.0001	247	0.000562	6.76	0.0001	7.18	0.0003	0.00001	0.00247	0.0005	0.0015	0.0003
MW12-05-03	2017-08-24 15:15	0.0005	0.00005	0.0001	308	0.00005	8.32	0.0001	8.19	0.00046	0.00001	0.00119	0.0005	0.0015	0.0003
MW12-05-03	2017-11-11 11:35	0.0005	0.00005	0.0001	277	0.000122	7.04	0.00011	7.83	0.0003	0.00001	0.00123	0.0005	0.004	0.0003
MW12-05-03	2018-03-02 11:10	0.0005	0.00005	0.0001	287	0.00041	7.84	0.0001	7.48	0.0003	0.00001	0.00164	0.0005	0.0064	0.0003
MW12-05-03	2018-05-10 11:30	0.0005	0.00005	0.0001	267	0.000273	7.92	0.0001	7.58	0.0003	0.00001	0.00168	0.0005	0.0012	0.0003
MW12-05-03	2018-08-23 15:30	0.001	0.0001	0.0002	299	0.0001	7.43	0.0002	7.19	0.0015	0.00002	0.00123	0.001	0.0059	0.0003
MW12-05-03	2018-10-22 13:30	0.001	0.0001	0.0002	327	0.0001	7.82	0.0002	7.78	0.0006	0.00002	0.00133	0.001	0.019	0.0003
MW12-05-03	2019-02-14 14:05	0.0005	0.00005	0.0001	282	0.00005	7.97	0.0001	8.47	0.0003	0.00001	0.000993	0.0005	0.0014	0.0003
MW12-05-03	2019-05-04 11:50	0.0005	0.00005	0.0001	317	0.00408	7.95	0.0001	8.37	0.0003	0.00001	0.00128	0.0005	0.0032	0.0003
MW12-05-03	2019-05-16 9:20	0.001	0.0001	0.00052	285	0.0001	8.21	0.0002	8.48	0.0006	0.00002	0.000892	0.001	0.0022	0.0003
MW12-05-03	2019-08-02 11:20	0.0005	0.00005	0.00012	313	0.000131	8.52	0.0001	8.86	0.0003	0.00001	0.00149	0.0005	0.0084	0.0003
MW12-05-03	2019-10-04 10:40	0.001	0.0001	0.0002	324	0.00014	8.59	0.0002	8.56	0.0009	0.00002	0.00166	0.001	0.002	0.0004
MW12-05-03	2020-02-13 14:35	0.0005	0.00005	0.0001	262	0.000059	6.83	0.0001	6.81	0.0003	0.00001	0.0027	0.0005	0.001	0.0002
MW12-05-03	2020-04-25 10:15	0.001	0.0001	0.0002	255	0.000541	7.01	0.0002	7.17	0.0006	0.00002	0.00298	0.001	0.002	0.0004
MW12-05-03	2020-07-24 13:55	0.0005	0.00005	0.0001	297	0.000247	7.68	0.0001	8.21	0.0003	0.00001	0.00161	0.0005	0.0014	0.0002
MW12-05-03	2020-10-02 10:15	0.0005	0.00005	0.0001	288	0.000094	7.52	0.0001	9	0.0003	0.00001	0.00149	0.0005	0.0014	0.0002
MW12-05-03	2021-03-20 11:20	0.0005	0.00005	0.0001	293	0.000302	7.97	0.0001	6.84	0.0003	0.00001	0.00262	0.0005	0.0017	0.0002
MW12-05-03	2021-06-06 10:55	0.0005	0.00005	0.0001	304	0.000368	8	0.0001	8.26	0.0003	0.00001	0.00111	0.0005	0.0018	0.0002
MW12-05-03	2021-08-23 14:30	0.001	0.0001	0.0002	290	0.00013	7.68	0.0002	8.23	0.0006	0.00002	0.00141	0.001	0.0175	0.0004
MW12-05-03	2021-11-15 11:45	0.001	0.0001	0.0002	291	0.0001	7.47	0.0002	8.59	0.0006	0.00002	0.00143	0.001	0.0031	0.0004
MW12-05-04	2016-05-14 9:00	0.0005	0.00005	0.00025	12.3	0.000127	6.76	0.0001	0.914	0.0003	0.00001	0.00206	0.00058	0.0011	0.0003
MW12-05-04	2016-07-06 10:05	0.0005	0.00005	0.0001	15.4	0.000105	6.34	0.0001	0.959	0.0003	0.00001	0.00236	0.0005	0.0013	0.0003

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species						Dissolved Elements																																	
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	N-NO_2	N-NO_3	N-NH_3	SO_4-D	Chlord	Fluord	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW12-05-04	2016-09-30 13:35	225	473		8	281	3	5.6		0.0369	0.0309	0.013	41.6	6.01		0.00001	0.0033	0.00012	0.0495	0.059	0.00002	0.00005	47.7	0.0000063	0.0001	0.0001	0.00048	0.012	0.000005	2.46	0.0061	29	0.139	0.00498	19.1	0.0005	0.00005	0.00017	14.4	0.000095	6.4	0.00023	0.883	0.0003	0.00001	0.00255	0.00056	0.0042	0.0003
MW12-05-04	2016-10-21 14:20	228	494		8.2	285	3	3		0.0309	0.035	0.005	47.3	5.76		0.00001	0.0021	0.00011	0.0439	0.069	0.00002	0.00005	47.8	0.000005	0.0001	0.0001	0.00021	0.01	0.000005	2.2	0.0035	27.1	0.122	0.00439	17.8	0.0005	0.00005	0.00016	16.1	0.00005	6.37	0.0001	0.89	0.0003	0.00001	0.00264	0.0005	0.0141	0.0003
MW12-05-04	2016-12-23 13:45	236	520		8.3	289	3	2.8		0.061	0.005	0.0164	39.3	5.5		0.00001	0.0027	0.0001	0.0648	0.085	0.00002	0.00005	48.9	0.000005	0.0001	0.0001	0.0002	0.032	0.000005	2.38	0.0033	29.8	0.552	0.00444	20.8	0.0005	0.00005	0.00016	12.4	0.00005	6.25	0.0001	0.912	0.0003	0.00001	0.00135	0.0005	0.0069	0.0003
MW12-05-04	2017-02-20 15:00	242	506		8.2	279	3	2.2		0.0677	0.005	0.0194	34.6	5.32		0.00001	0.0034	0.00014	0.0661	0.081	0.00002	0.00005	46.7	0.000005	0.0001	0.0001	0.0002	0.012	0.000005	2.21	0.0033	26.2	0.555	0.00406	18	0.0005	0.00005	0.00019	12.2	0.000172	6.58	0.0001	0.892	0.0003	0.00001	0.00149	0.0005	0.001	0.0003
MW12-05-04	2017-04-23 11:45	236	489		8.4	296	3	2.4		0.0248	0.005	0.0352	28.1	5.1		0.00001	0.004	0.0001	0.065	0.047	0.00002	0.00005	43.8	0.000005	0.0001	0.00021	0.00021	0.082	0.000005	1.89	0.0033	24.6	0.52	0.00248	16.4	0.0005	0.00005	0.0001	10.9	0.00128	6.05	0.00011	0.819	0.0003	0.00001	0.00113	0.0005	0.0015	0.0003
MW12-05-04	2017-08-24 15:45	224	486			262	3			0.0124	0.005	0.0107	25.6	5.21		0.00001	0.0042	0.00017	0.0732	0.056	0.00002	0.00005	46.2	0.000005	0.0001	0.00017	0.0002	0.058	0.000005	2.3	0.003	28	0.566	0.00142	20.3	0.0005	0.00005	0.0001	7.86	0.000056	6.83	0.0001	0.86	0.0003	0.00001	0.00108	0.0005	0.0019	0.0003
MW12-05-04	2017-11-11 11:55	245	487		8.6	273	3	2		0.0293	0.005	0.0173	25.2	5.18		0.00001	0.0049	0.00014	0.0677	0.065	0.00002	0.00005	44.6	0.000005	0.0001	0.00017	0.0002	0.101	0.000005	2.26	0.0031	26.7	0.5	0.00311	20.6	0.0005	0.00005	0.0001	12.5	0.000107	6.35	0.0001	0.833	0.0003	0.00001	0.00138	0.0005	0.0035	0.0003
MW12-05-04	2018-03-02 11:25	243	498		7.9	279	3	3.2		0.0023	0.005	0.0218	27	4.96		0.00001	0.0037	0.0001	0.0745	0.031	0.00002	0.00005	47.4	0.000005	0.0001	0.00018	0.0002	0.117	0.000005	2.23	0.0031	29.6	0.475	0.00316	20.6	0.0005	0.00005	0.0001	12.9	0.00082	6.82	0.0001	0.892	0.0003	0.00001	0.00154	0.0005	0.002	0.0003
MW12-05-04	2018-05-10 11:50	244	500		8.1	296	3	4.9		0.001	0.005	0.0095	37.4	4.98		0.00001	0.003	0.00017	0.0622	0.034	0.00002	0.00005	51.6	0.000005	0.0001	0.0001	0.0002	0.148	0.000005	2.3	0.0036	31.9	0.394	0.00418	20.8	0.0005	0.00005	0.0001	14.4	0.000687	6.42	0.0001	0.958	0.0003	0.00001	0.00224	0.0005	0.0011	0.0003
MW12-05-04	2018-08-23 15:45	234	525	-98.9	7.76	289	3	4.8	82.3	0.0277	0.0089	0.0238	43.2	4.99		0.00001	0.0338	0.00012	0.0574	0.041	0.00002	0.00005	51.5	0.0000114	0.0001	0.0001	0.00171	0.114	0.000005	2.11	0.0033	27.2	0.254	0.0023	18.7	0.0005	0.000104	0.0001	20.5	0.000884	6.27	0.0001	0.99	0.00399	0.00001	0.00234	0.0006	0.0032	0.0003
MW12-05-04	2018-10-22 13:50	203	498	-63.1	7.86	271	3	3.8	82.1	0.0158	0.0677	0.0405	44.3	5.02		0.00001	0.0107	0.0033	0.0562	0.059	0.00002	0.00005	47.3	0.0000054	0.0001	0.00013	0.00062	0.063	0.000005	2.3	0.0032	28.5	0.223	0.00215	20.7	0.0005	0.00005	0.0001	21.2	0.000247	6.26	0.0001	0.95	0.0012	0.00001	0.00269	0.00057	0.0032	0.0003
MW12-05-04	2019-02-14 14:40	241	517	2.3	7.83	296	3	2.5	80.1	0.001	0.005	0.0114	44.4	5.01		0.00001	0.0022	0.0001	0.0443	0.029	0.00002	0.00005	50.1	0.0000176	0.0001	0.0001	0.00028	0.043	0.0000066	2.3	0.0032	29.2	0.144	0.00392	20.1	0.0005	0.00005	0.0001	16.5	0.000154	6.25	0.0001	0.952	0.0003	0.00001	0.00265	0.0005	0.0014	0.0003
MW12-05-04	2019-05-16 9:35	232	510	-93.7	7.71	296	3	4.5	89.1	0.0072	0.0145	0.0178	45.2	4.88		0.00001	0.0032	0.00011	0.0551	0.044	0.00002	0.00005	52	0.0000123	0.0001	0.00016	0.00027	0.045	0.000005	2.26	0.0031	31.4	0.198	0.0021	20.5	0.0005	0.00005	0.00012	26.9	0.00328	6.62	0.0001	1.04	0.0003	0.00001	0.00271	0.00054	0.0012	0.0003
MW12-05-04	2019-08-02 13:20	243	527	-72.2	8.03	304	3	4.1	93.03	0.0058	0.0476	0.0113	47.1	4.87		0.00001	0.003	0.0001	0.0458	0.027	0.00002	0.00005	51.4	0.000005	0.0001	0.00011	0.00036	0.038	0.000005	2.24	0.0033	30.2	0.142	0.00292	21.8	0.0005	0.00005	0.0001	21.1	0.00164	6.82	0.0001	1.03	0.0003	0.00001	0.0031	0.00057	0.001	0.0003
MW12-05-04	2019-10-04 15:35	253	523	-57.2	7.77	312	3	3.9	102.7	0.001	0.005	0.033	47.9	4.97		0.00001	0.0038	0.00016	0.0517	0.055	0.00002	0.00005	50.3	0.000251	0.0001	0.00023	0.00031	0.055	0.000005	2.45	0.0033	32.5	0.148	0.0023	21.5	0.0005	0.00005	0.0001	21.9	0.000773	6.85	0.0001	0.993	0.0003	0.00001	0.00326	0.00054	0.0026	0.0003
MW12-05-04	2020-02-13 15:25	252	535				3			0.0125	0.0201	0.0203	44.4	4.77		0.00001	0.0022	0.00028	0.0449	0.051	0.00002	0.00005	48.2	0.00001	0.0001	0.00038	0.0003	0.02	0.000005	2.14	0.0027	30.6	0.121	0.00268	20.6	0.0005	0.00005	0.0001	18.7	0.00085	5.97	0.0001	0.992	0.0003	0.00001	0.00305	0.00057	0.0011	0.0002
MW12-05-04	2020-04-25 10:55	245	556	-77.3	7.59	316	3.6	4.3	85.1	0.001	0.0408	0.0133	50.9	4.64		0.00001	0.0024	0.00013	0.038	0.046	0.00002	0.00005	46.7	0.00001	0.0001	0.0001	0.00038	0.026	0.000005	2.17	0.0032	28.4	0.0903	0.00378	18.3	0.0005	0.00005	0.0001	19.8	0.00184	6.51	0.0001	1.02	0.0003	0.00001	0.00333	0.00058	0.001	0.0002
MW12-05-04	2020-07-24 14:43	234	553	19.9	7.67	319	3.5	6	77.8	0.001	0.005	0.0152	54.7	4.7		0.00001	0.0034	0.00012	0.0392	0.034	0.00002	0.00005	49.2	0.000005	0.0001	0.0001	0.00046	0.035	0.000005	2.25	0.0036	29.4	0.0825	0.00356	20.6	0.0005	0.00005	0.0001	20.2	0.000704	6.4	0.0001	1.04	0.0003	0.00001	0.00347	0.00068	0.001	0.0002
MW12-05-04	2020-10-02 10:40	260	534	35.6	7.82	338	3	2.8	98.7	0.001	0.005	0.0137	51.8	4.75		0.00001	0.0031	0.00012	0.0394	0.044	0.00002	0.00005	54.7	0.000005	0.0001	0.00034	0.00038	0.026	0.000005	2.28	0.0034	29.8	0.0834	0.00359	21.4	0.0005	0.00005	0.0001	18.4	0.00132	6.08	0.0001	1.05	0.0003	0.00001	0.00321	0.00058	0.001	0.0002
MW12-05-04	2021-03-20 12:00	262	548	78.6	7.79	336	1	1.1	19.9	0.001	0.005	0.0241	49.4	4.91		0.00001	0.0027	0.00012	0.0467	0.05	0.00002	0.00005	51.8	0.0000056	0.0001	0.00014	0.00021	0.045	0.000005	2.26	0.0033	29.2	0.189	0.00276	22.2	0.0005	0.00005	0.0001	21.6	0.000793	6.95	0.0001	1.04	0.0003	0.00001	0.00278	0.0005	0.001	0.0002
MW12-05-04	2021-06-06 11:40	265	541	78	7.29	343	3	5.4	85.9	0.001	0.0206	0.0091	53.9	4.99		0.00001	0.0024	0.00011	0.045	0.032	0.00002	0.00005	51.6	0.000005	0.0001	0.0005	0.00048	0.025	0.000005	2.4	0.0035	31.2	0.189	0.00396	21.6	0.0005	0.00005	0.0001	19	0.000382	6.55	0.0001	1.06	0.0003	0.00001	0.0031	0.00053	0.0047	0.0002
MW12-05-04	2021-08-23 15:05	245	558	-74.7	7.75	321	3	5.7	98.3	0.0013	0.0454	0.0058	48.1	4.73		0.00001	0.0101	0.00011	0.0499	0.062	0.00002	0.00005	48.7	0.000005	0.0001	0.0005	0.00027	0.045	0.000005	2.2	0.0031	30.8	0.2	0.00277	21	0.0005	0.00005	0.0001	21.1	0.00196	6.5	0.0001	0.996	0.00131	0.00001	0.003	0.0005	0.0015	0.0002
MW12-05-05	2012-11-12 0:00	221	515			288				0.195	0.817	0.016	46.3			0.000005	0.00459	0.000329	0.0936	0.05	0.00001	0.000005	47.2	0.000016	0.000522	0.0001	0.00154	0.0152		2.55	0.00439	27.4	0.198	0.0153	18.5	0.000905	0.000055	0.000086	17.3	0.000164	5.8	0.0002	0.816	0.0005	0.000002	0.00273	0.0005	0.00655	0.0001
MW12-05-05	2013-08-21 16:50	213	476	-27.9	7.93	276	4	3.43	75	0.122	0.614	0.013	40.7	3.6	0.56	0.00002	0.0041	0.00013	0.0847	0.05	0.0001	0.001	46.4	0.00001	0.0005	0.001	0.0014	0.0284	0.00001	2.24	0.005	25.3	0.345	0.0052	17.1	0.0019	0.0002	0.0005	12.6	0.00012	6.45	0.005	0.755	0.005	0.00005	0.00253	0.005	0.005	0.0005
MW12-05-05	2013-10-10 15:30	214	466	-25.3	7.58	292	1	3.9	45.8	0.16	0.467	0.014	42.5	3.7	0.57	0.00002	0.0041	0.00122	0.0789	0.084	0.0001	0.001	43.9	0.00001	0.0005	0.001	0.00119	0.044	0.00001	2.19	0.005	26.6	0.311	0.0047	18.2	0.0015	0.0002	0.0005	14.8	0.00017	6.34	0.005	0.757	0.005	0.00005	0.00244	0.005	0.0068	0.0005
MW12-05-05	2014-05-29 11:30	209	467		8.1	278		3.29		0.0905	0.291	0.019	36.4	6.5	0.59	0.00002	0.0033	0.00015	0.0734	0.165	0.0001	0.001	43.7	0.00001	0.0005	0.001	0.00043	0.0205	0.00001	2.01	0.005	25.1	0.209	0.0039	17.7	0.001	0.0002	0.0005	13.5	0.0001	6.19	0.005	0.764	0.005	0.00005	0.00235	0.005	0.012	0.0005
MW12-05-05	2014-07-25 10:45	203	474		8.2	252		5.7		0.0305	0.224	0.036	35.1	7.4	0.58	0.00002	0.003	0.00016	0.0744	0.058	0.0001	0.001	41.8	0.000015	0.0005	0.001	0.00065	0.0457	0.00001	1.99	0.005	26	0.216	0.0042	17.5	0.001	0.0002	0.0005	14	0.0001	5.8	0.005	0.731	0.005	0.00005	0.00222	0.005	0.0076	0.0005
MW12-05-05	2014-10-05 10:30	217	475	54.1	7.9	258		0.6	53.5	0.0433	0.2	0.018	33.3	6.1	0.55	0.00002	0.0034	0.00014	0.078	0.05	0.0001	0.001	45.9	0.000011	0.0005	0.001	0.00088	0.0404	0.00001	2.07	0.005	24.6	0.265	0.005	16.2	0.001	0.0002	0.0005	11.4	0.0001	6.53	0.005	0.73	0.005	0.00005	0.00231	0.005	0.005	0.0005
MW12-05-05	2015-05-04 15:30	206	511	-22.7	7.42	316		5.6	45.6	0.046	0.425	0.036	62.4	5.6	0.54	0.00002	0.0035	0.00043	0.0734	0.051	0.0001	0.001	47.6	0.00001	0.0005	0.001	0.00066	0.0282	0.00001	2.25	0.005	25.1	0.181	0.0041	15.5	0.001	0.0002	0.0005	18.2	0.0001	6.31	0.005	0.786	0.005	0.00005	0.00244	0.005	0.0067	0.0005
MW12-05-05	2015-08-08 14:10	206	547		7.9	338		7.6		0.0503	0.547	0.054	54.9	15	0.56	0.00002	0.0106	0.0002	0.0719	0.104	0.0001	0.001	46.8	0.000011	0.0005	0.001	0.00049	0.0159	0.00001	2.02	0.005	28.5	0.172	0.0035	19.3	0.001	0.0002	0.0005	17.4	0.00012	6.22	0.005	0.792	0.005	0.00005	0.00247	0.005	0.0129	0.0005
MW12-05-05	2015-09-19 10:15	204	501		8	302		1.8		0.03	0.495	0.022	57.2	5.6	0.57	0.00002	0.0097	0.00022	0.0664	0.05	0.0001	0.001	47.1	0.00003	0.0005	0.001	0.00099	0.0248	0.00001	1.91	0.005	26.2	0.166	0.0038	16.3	0.001	0.0002	0.0005	19	0.00014	6.04	0.005	0.791	0.005	0.00005	0.00236	0.005	0.0114	0.0005
MW12-05-05	2016-05-09 16:35				8.6			2.8																																									
MW12-05-05	2016-05-11 16:35	212	496			283	3			0.398	0.196	0.0143	46.8	5.4		0.00001	0.006	0.00015	0.0706	0.185	0.00002	0.00005	52.9	0.0000091	0.0001	0.0001	0.00055	0.017	0.000005	2.23	0.0042	28.2	0.147	0.00372	17.9	0.00065	0.00005	0.00023	18.1	0.000139	6.42	0.0001	0.798	0.0003	0.00001	0.00271	0.0005	0.0119	0.0003
MW12-05-05	2016-05-14 9:20	212	496		7.6	279	4	7.6		0.307	0.211	0.0108	47.7	5.57		0.00001	0.0023	0.00012	0.0723	0.047	0.00002	0.00005	51.1	0.000005	0.0001	0.0001	0.00034	0.013	0.000005	2.15	0.0034	27.6	0.157	0.00382	15.8	0.00052	0.00005	0.0001	14.6	0.00008	6.46	0.0001	0.751	0.0003	0.00001	0.00271	0.0005	0.0032	0.0003
MW12-05-05	2016-09-30 15:45	219	455		8.1	276	3	2.6		0.0616	0.229	0.0072	42.4	5.75		0.00001	0.0071	0.00013	0.0654	0.069	0.00002	0.00005	46.6	0.0000052	0.0001	0.0001	0.0008	0.01	0.000005	2.11	0.0038	28.3	0.119	0.00392	17.9	0.00064	0.00005	0.0001	14.7	0.000109	6.31	0.00033	0.754	0.0003	0.00001	0.00279	0.0005	0.0214	0.0003
MW12-05-05	2016-10-21 14:50	219	485		7.6	275	3	3.2		0.167	0.248	0.005	43.8	5.72		0.00001	0.0024	0.00017	0.0688	0.162	0.00002	0.00005	46.9	0.000005	0.0001	0.0001	0.00039	0.01	0.000005	2.18	0.0036	26	0.124	0.00368	17.3	0.00058	0.00005	0.00038	14.8	0.000099	6.21	0.0001	0.732	0.0003	0.00001	0.00272	0.0005	0.076	0.0003
MW12-05-05	2016-12-23 14:45	218	486		9	278	3	2.3		0.133	0.317	0.005	43.7	5.33		0.00001	0.0034	0.00013	0.0734	0.125	0.00002	0.00005	47.9	0.000005	0.0001	0.0001	0.0036	0.01	0.000005	2.29	0.0035	28.4	0.134	0.00379	17.9	0.00068	0.00005	0.00024	14.6	0.000072	6.1	0.00012	0.734	0.0003	0.00001	0.0025	0.0005	0.118	0.0003
MW12-05-05	2016-12-23 14:45				9			2.3																																									
MW12-05-05	2017-02-20 15:20	212	479		8	264	3	2		0.0606	0.332	0.0082	43.5	5.12		0.00001	0.0025	0.00015	0.0675	0.064	0.00002	0.00005	43.6	0.000005	0.0001	0.0001	0.00082	0.01	0.000005	2.16	0.0036	25.9	0.142	0.00365	15	0.00065	0.00005	0.00019	15.1	0.000172	6.42	0.0001	0.683	0.0003	0.00001	0.00295	0.0005	0.0457	0.0003
MW12-05-05	2017-04-23 13:40	212	496		7.9	287	3	3.1		0.0388	0.334	0.0122	44.5	5		0.00001	0.0026	0.0001	0.061	0.046	0.00002	0.00005	46.2	0.000008	0.0001	0.0001	0.00178	0.01	0.000005	1.83	0.0038	23.6	0.128	0.00393	14	0.00058	0.00005	0.0001	14.3	0.000173	5.65	0.0001	0.727	0.0003	0.00001	0.00267	0.0005	0.0112	0.0003
MW12-05-05	2017-08-24 16:00	216	493			282	3			0.0402	0.259	0.0479	49	5.35		0.000017	0.0024	0.00015	0.0711	0.047	0.00002	0.00005	49	0.000005	0.0001	0.0001	0.00105	0.011	0.000005	2.28	0.0035	28.2	0.144	0.00375	17.1	0.00062	0.00005	0.0001	16.1	0.00005	6.55	0.0001	0.77	0.0003	0.00001	0.00292	0.0005	0.006	0.0003
MW12-05-05	2017-11-11 13:35	220	479		8.5	286	3	0.9		0.0438	0.194	0.0119	47.9	5.17		0.00001	0.0025	0.00061	0.0696	0.063	0.00002	0.00005	52.2	0.0000081	0.0001	0.0001	0.00117	0.012	0.000005	1.89	0.0036	29.1	0.132	0.00371	15.9	0.0005	0.00005	0.00011	15.6	0.00011	6.33	0.00019	0.758	0.0003	0.00001	0.00265	0.0005	0.0202	0.0003
MW12-05-05	2018-03-02 13:35	212	496		8.1	275	3	4.2		0.0219	0.137	0.0107	47.5	4.86		0.00001	0.002	0.00015	0.0705	0.032	0.00002	0.00005	47	0.0000238	0.0001	0.0001	0.00114	0.012	0.000005	2.04	0.0037	28.6	0.118	0.00389	16.4	0.00061	0.00005	0.0001	16.8	0.000107	6.19	0.0001	0.782	0.0003	0.00001	0.00299	0.0005	0.0096	0.0003
MW12-05-05	2018-05-10 13:50	227	491		8	295	3.8	5		0.0051	0.0825	0.0069	49	5.02		0.00001	0.0025	0.00015	0.0735	0.029	0.00002	0.00005	52.9	0.000005	0.0001	0.0001	0.00099	0.018	0.000005	2.27	0.0039	30.9	0.144	0.00409	17.7	0.0005	0.00005	0.0001	16.1	0.000145	6.26	0.0001	0.838	0.0003	0.00001	0.0032	0.00051	0.0033	0.0003
MW12-05-05	2018-08-23 16:00	231	517	-4.6	7.49	295	3	4.2	77.8	0.0146	0.0265	0.0443	49.8	5.22		0.00001	0.0072	0.00151	0.0682	0.428	0.00002	0.00005	53	0.0000138	0.0001	0.0001	0.00141	0.048	0.000005	2.1	0.0037	26.5	0.144	0.00463	19.2	0.0005	0.00005	0.0006	18.1	0.00112	5.96	0.0001	0.861	0.00074	0.00001	0.00304	0.0005	0.0628	0.0003
MW12-05-05	2018-10-22 14:15	191	497	-31.7	7.83	269	3	2.9	58.4	0.0097	0.0147	0.0095	50.1	5.31		0.00001	0.0062	0.00058	0.0724	0.031	0.00002	0.00005	52	0.0000146	0.0001	0.0001	0.00139	0.059	0.000005	2.26	0.0036	27.7	0.141	0.00434	16.9	0.00056	0.00005	0.0001	17.7	0.00005	6.08	0.0001	0.82	0.0005	0.00001	0.00342	0.0005	0.0063	0.0003
MW12-05-05	2019-02-14 15:30	231	518	43	7.82	300	3	1.3	73.2	0.0176	0.006	0.0136	51.9	5.05		0.00001	0.002	0.00013	0.0711	0.028	0.00002	0.00005	54.9	0.0000086	0.0001	0.0001	0.00069	0.075	0.0000099	2.27	0.0036	30.1	0.158	0.00485	16.9	0.0005	0.00005	0.0001	16.9	0.00005	6.16	0.0001	0.863	0.0003	0.00001	0.00306	0.0005	0.0026	0.0003
MW12-05-05	2019-05-04 14:10	237	523	27.5	8.05	301	4	2.8	128.7	0.0282	0.0073	0.0121	52.2	4.83		0.00001	0.0026	0.00016	0.0681	0.044	0.00002	0.00005	53.2	0.0000064	0.0001	0.0001	0.00083	0.074	0.000005	2.08	0.0037	29.9	0.165	0.00489	16.2	0.00051	0.00005	0.0001	19.1	0.000727	6.42	0.0001	0.876	0.0003	0.00001	0.00343	0.0005	0.0089	0.0003
MW12-05-05	2019-05-16 10:00	234	520	-30.5	7.61	301	3	4.3	68.7	0.0041	0.005	0.0141	52.5	4.85		0.00001	0.0028	0.00015	0.0673	0.053	0.00002	0.00005	53.5	0.0000223	0.0001	0.0001	0.00102	0.043	0.000005	2.22	0.0036	30.6	0.147	0.00471	16.8	0.0005	0.00005	0.0001	17.7	0.000299	6.51	0.0001	0.86	0.0003	0.00001	0.00334	0.00051	0.0101	0.0003
MW12-05-05	2019-08-02 14:05	266	533	21.1	7.96	324	3	5.3	69.6	0.0057	0.0098	0.005	53.5	4.97		0.00001	0.004	0.00015	0.0679	0.033	0.00002	0.00005	56.5	0.0000162	0.0001	0.0001	0.00142	0.03	0.000005	2.19	0.0036	29.5	0.155	0.00542	17.8	0.00064	0.00005	0.0001	17.6	0.000128	6.3	0.0001	0.874	0.0003	0.00001	0.00358	0.0005	0.0056	0.0003
MW12-05-05	2019-10-04 11:40	250	540	11.3	7.79	325	3	0.6	78.1	0.018	0.0183	0.0139	60	5.06		0.00001	0.0029	0.00016	0.0643	0.05	0.00002	0.00005	56.7	0.0000096	0.0001	0.0001	0.00114	0.025	0.000005	2.41	0.0039	32.6	0.157	0.00538	18.3	0.00051	0.00005	0.0001	19.4	0.000096	6.61	0.0001	0.936	0.0003	0.00001	0.00366	0.00053	0.0137	0.0003
MW12-05-05	2020-02-13 15:45	243	560	72.2	7.61		3	3.9	110.1	0.0102	0.0597	0.008	54.4	4.8		0.00001	0.0022	0.00013	0.066	0.027	0.00002	0.00005	51.1	0.00001	0.0001	0.00012	0.00104	0.011	0.000005	2.13	0.0031	30.9	0.15	0.00522	17.6	0.0005	0.00005	0.0001	18.9	0.000217	5.84	0.0001	0.893	0.0003	0.00001	0.00367	0.0005	0.0039	0.0002
MW12-05-05	2020-04-25 11:20	252	570	35	7.55	328	3	4	67	0.0049	0.03	0.006	56	4.9		0.00001	0.0034	0.00014	0.0688	0.041	0.00002	0.00005	50.5	0.0000181	0.0001	0.0001	0.0011	0.014	0.000005	2.22	0.0035	29.7	0.155	0.00523	15.8	0.00052	0.00005	0.0001	18.4	0.000104	6.27	0.0001	0.922	0.0003	0.00001	0.0038	0.0005	0.0114	0.0002
MW12-05-05	2020-07-24 15:45	244	570	97.1	7.41	329	3	4	81.5	0.001	0.005	0.0069	55.5	5.27		0.00001	0.0045	0.00021	0.0681	0.05	0.00002	0.00005	53.5	0.0000103	0.0001	0.0001	0.00116	0.032	0.000005	2.29	0.004	30.4	0.16	0.0048	18	0.0005	0.00005	0.0001	19.7	0.000125	6.32	0.0001	0.943	0.0003	0.00001	0.00377	0.00059	0.0083	0.0002
MW12-05-05	2020-10-02 11:00	246	561	78.8	7.76	339	3	2.4	71.6	0.001	0.005	0.005	57.3	5.3		0.00001	0.0021	0.00013	0.0696	0.038	0.00002	0.00005	60.6	0.000006	0.0001	0.0001	0.00091	0.028	0.000005	2.29	0.0037	31.1	0.149	0.00513	18.3	0.0005	0.00005	0.0001	18.4	0.0001	6.01	0.00069	0.981	0.0003	0.00001	0.00355	0.0005	0.0056	0.0002
MW12-05-05	2021-03-20 12:20	263	566	120	7.54	351	1	0	25.1	0.001	0.005	0.005	59.6	5.08		0.00001	0.0026	0.00018	0.0642	0.058	0.00002	0.00005	58.4	0.0000108	0.0001	0.0001	0.00073	0.018	0.000005	2.23	0.0038	30.9	0.144	0.00475	18.7	0.0005	0.00005	0.0001	21.4	0.000115	6.58	0.0001	0.921	0.0003	0.00001	0.00336	0.0005	0.0128	0.0002
MW12-05-05	2021-06-06 13:30	245	568	158.2	6.86	340	3	4.5	102.7	0.001	0.005	0.0071	63.5	5.29		0.00001	0.005	0.00012	0.0673	0.044	0.00002	0.00005	56.6	0.0000118	0.0001	0.0005	0.00091	0.014	0.000005	2.22	0.004	30.5	0.157	0.00482	18	0.00052	0.00005	0.0001	21.2	0.000069	6.1	0.0001	0.961	0.0003	0.00001	0.00358	0.0005	0.0089	0.0002
MW12-05-05	2021-08-23 15:35	241	566	18.2	7.66	330	3	5.5	91	0.0026	0.0387	0.005	59.2	5.1		0.00001	0.0022	0.00012	0.0736	0.041	0.00002	0.00005	52.3	0.0000097	0.0001	0.0005	0.00085	0.024	0.000005	2.23	0.0035	31.9	0.174	0.00455	17.3	0.0005	0.00005	0.0001	20	0.000216	6.32	0.0001	0.892	0.0003	0.00001	0.0034	0.0005	0.0094	0.0002
MW12-05-05	2021-11-15 14:45	246	556	41.4	7.29	331	6.4	1.9	128.4	0.0178	0.0183	0.0059	58	4.96		0.00001	0.0025	0.00014	0.0658	0.054	0.00002	0.00005	53.2	0.0000602	0.0001	0.0005	0.0011	0.011	0.000005	2.22	0.0037	31	0.14	0.00482	17.5	0.0006	0.00005	0.0001	18.2	0.000091	6.05	0.0001	0.927	0.0003	0.00001	0.00334	0.00058	0.0159	0.0002
MW12-05-06	2016-05-14 10:05	208	486		8	273	3.3	8.2		0.0663	0.32	0.005	45	5.6		0.00001	0.0023	0.00013	0.0622	0.04	0.00002	0.00005	51.6	0.0000119	0.00012	0.0001	0.00096	0.01	0.000005	2.08	0.0035	26.8	0.0813	0.00331	15.4	0.00055	0.00005	0.0001	14.4	0.000163	6.41	0.0001	0.748	0.0003	0.00001	0.00288	0.0005	0.0073	0.0003
MW12-05-06	2016-07-06 10:50	215	484		7.9	271	3	7.5		0.0346	0.271	0.005	43	5.82		0.00001	0.0023	0.00013	0.0609	0.079	0.00002	0.00005	47.9	0.0000076	0.0001	0.0001	0.00121	0.01	0.000005	1.97	0.0038	25.7	0.0631	0.00359	16.1	0.00073	0.00005	0.0001	14.5	0.000176	6.08	0.0001	0.778	0.0003	0.00001	0.00296	0.0005	0.0624	0.0003
MW12-05-06	2016-09-30 16:05	215	444		7.7	271	3	2.4		0.0308	0.32	0.005	41.9	5.65		0.00001	0.0023	0.00013	0.0594	0.042	0.00002	0.00005	46.8	0.0000171	0.0001	0.0001	0.00112	0.01	0.000005	2.04	0.0037	27.2	0.0682	0.00373	17.1	0.00065	0.00005	0.0001	15	0.00014	6.38	0.0001	0.745	0.0003	0.00001	0.00296	0.0005	0.0271	0.0003
MW12-05-06	2016-10-21 15:15	213	473		8	268	3	2.6		0.023	0.361	0.005	42.5	5.62		0.00001	0.0024	0.00012	0.0627	0.044	0.00002	0.00005	47.4	0.0000179	0.0001	0.0001	0.00087	0.01	0.000005	2.09	0.0036	25.2	0.0607	0.00346	15.8	0.0006	0.00005	0.00013	14.6	0.000102	6.18	0.0001	0.713	0.0003	0.00001	0.00286	0.0005	0.0521	0.0003
MW12-05-06	2016-12-23 15:00	266	516		8.1	302	3	1.8		0.0394	0.433	0.005	43.2	5.23		0.00001	0.0022	0.00012	0.0642	0.043	0.00002	0.00005	45.6	0.0000122	0.0001	0.0001	0.00095	0.01	0.000005	2.16	0.0031	27.4	0.0672	0.00339	16.3	0.00068	0.00005	0.00014	14.2	0.0001	5.92	0.0001	0.669	0.0003	0.00001	0.00247	0.0005	0.115	0.0003
MW12-05-06	2017-02-20 15:40	212	475		8.9	265	3	2.6		0.0344	0.463	0.005	44.4	5.13		0.00001	0.0042	0.00014	0.0598	0.04	0.00002	0.00005	44	0.000005	0.0001	0.00015	0.00197	0.01	0.000005	2.13	0.0037	25.4	0.0639	0.00347	14.6	0.00066	0.00005	0.00032	15.6	0.00015	6.35	0.0001	0.682	0.0003	0.00001	0.00319	0.0005	0.0613	0.0003
MW12-05-06	2017-04-23 14:00	209	486		7.7	293	3	2.8		0.0301	0.423	0.0181	45.5	4.96		0.00001	0.0027	0.00011	0.0535	0.042	0.00002	0.00005	45.5	0.0000129	0.0001	0.0001	0.00132	0.01	0.000005	1.78	0.0038	23.4	0.0662	0.00368	14	0.00054	0.00005	0.0001	14.6	0.00019	5.62	0.0001	0.704	0.0003	0.00001	0.00287	0.0005	0.0157	0.0003
MW12-05-06	2017-08-24 16:40	199	464			272	3			0.0297	0.311	0.005	49.5	5.27		0.00001	0.0023	0.00016	0.063	0.045	0.00002	0.00005	49.4	0.0000158	0.00014	0.0001	0.00155	0.01	0.000005	2.2	0.0036	28.2	0.0938	0.00372	17.1	0.00067	0.00005	0.0001	16.1	0.00007	6.26	0.0001	0.752	0.0003	0.00001	0.00315	0.0005	0.0118	0.0003
MW12-05-06	2017-11-11 13:55	217	480		8.3	284	3	1		0.047	0.229	0.005	48.8	5.08		0.00001	0.0021	0.00047	0.0613	0.062	0.00002	0.00005	52.6	0.0000142	0.00011	0.0001	0.0013	0.01	0.000005	1.82	0.0037	28.8	0.0816	0.00379	15.2	0.0006	0.00005	0.00012	15.7	0.000161	6.17	0.00011	0.748	0.0003	0.00001	0.00287	0.0005	0.0373	0.0003
MW12-05-06	2018-03-02 14:40	214	494		7.8	281	3	4.6		0.0073	0.181	0.005	48.5	4.87		0.00001	0.002	0.00012	0.0687	0.03	0.00002	0.00005	50.5	0.000015	0.00011	0.0001	0.00128	0.01	0.000005	2.03	0.0038	29	0.0741	0.00417	16.3	0.00064	0.00005	0.0001	16.7	0.000177	6.18	0.0001	0.764	0.0003	0.00001	0.00305	0.0005	0.0112	0.0003
MW12-05-06	2018-05-10 14:05	227	492		7.9	298	3	4.8		0.0213	0.0879	0.005	50.2	4.98		0.00001	0.0029	0.0002	0.0679	0.038	0.00002	0.00005	54.6	0.0000077	0.00012	0.0001	0.00129	0.012	0.000005	2.27	0.004	31.1	0.0947	0.00427	18	0.0005	0.00005	0.0001	16.8	0.000103	6.2	0.0001	0.844	0.0003	0.00001	0.00343	0.0005	0.0108	0.0003
MW12-05-06	2018-08-23 16:15	223	519	43.8	7.56	289	3	5.4	78.9	0.0138	0.051	0.005	50.9	5.2		0.00001	0.0263	0.00027	0.0663	0.073	0.00002	0.00005	53.8	0.0000175	0.00014	0.0001	0.00466	0.072	0.000005	2.04	0.0036	26.4	0.135	0.00521	16.1	0.00171	0.00005	0.00017	16.9	0.000376	5.85	0.0001	0.835	0.00271	0.00001	0.00333	0.00055	0.0214	0.0003
MW12-05-06	2018-10-22 14:30	202	505	20.8	7.71	278	3	3.1	78.6	0.0145	0.0678	0.005	51.8	5.15		0.00001	0.0808	0.00054	0.0744	0.03	0.00002	0.00005	53.1	0.0000209	0.00028	0.0001	0.0148	0.175	0.000005	2.22	0.0036	27.3	0.205	0.00508	16.2	0.00195	0.00005	0.0001	18.1	0.000089	6.21	0.0001	0.817	0.00812	0.00001	0.0035	0.00077	0.0066	0.0003
MW12-05-06	2019-02-14 15:50	233	519	76.8	7.72	303	3	1	81.1	0.0072	0.0559	0.0061	53.7	4.89		0.00001	0.0024	0.00017	0.0582	0.028	0.00002	0.00005	54.9	0.0000231	0.00013	0.0001	0.00118	0.018	0.0000096	2.22	0.0034	29.5	0.14	0.00504	17.5	0.00069	0.00005	0.0001	17.7	0.000118	6.12	0.0001	0.873	0.0003	0.00001	0.00345	0.0005	0.0129	0.0003
MW12-05-06	2019-05-04 14:30	233	528	81.1	7.95	301	3	1	123.1	0.0218	0.0455	0.0062	54.2	4.81		0.00001	0.0017	0.00015	0.0533	0.048	0.00002	0.00005	54.7	0.0000142	0.00014	0.0001	0.00165	0.014	0.000005	2	0.0036	29.1	0.149	0.00452	16.1	0.00082	0.00005	0.0001	19.5	0.0006	6.28	0.0001	0.843	0.0003	0.00001	0.00374	0.0005	0.0216	0.0003
MW12-05-06	2019-05-16 10:15	229	519	-1	7.6	308	3	5	51	0.0108	0.0307	0.005	56.6	5.06		0.00001	0.0041	0.00015	0.0573	0.041	0.00002	0.00005	55.4	0.0000453	0.00011	0.0001	0.00236	0.01	0.000005	2.33	0.0035	33.1	0.118	0.00461	18	0.00083	0.00005	0.0001	17.2	0.000248	6.23	0.0001	0.886	0.0003	0.00001	0.00357	0.0005	0.0164	0.0003
MW12-05-06	2019-08-02 14:40	243	537	75.8	8.07	318	3	3.3	78	0.0093	0.0496	0.0052	55.5	5.03		0.00001	0.0028	0.00016	0.0651	0.028	0.00002	0.00005	59.8	0.0000196	0.00019	0.0001	0.00143	0.035	0.000005	2.21	0.0037	30.5	0.212	0.00495	18.4	0.00099	0.00005	0.0001	19	0.000095	6.52	0.0001	0.919	0.0003	0.00001	0.00379	0.0005	0.0054	0.0003
MW12-05-06	2019-10-04 16:00	248	534	21.8	7.76	317	3	1.8	70.5	0.0024	0.0246	0.0074	55.6	5.03		0.00001	0.0021	0.00016	0.0708	0.037	0.00002	0.00005	54.9	0.00004	0.00026	0.0001	0.00126	0.046	0.000005	2.28	0.0037	32.1	0.273	0.00488	17.3	0.00095	0.00005	0.0001	18.3	0.000125	6.68	0.0001	0.86	0.0003	0.00001	0.00378	0.0005	0.0079	0.0003
MW12-05-06	2020-02-13 16:10	249	569	94.3	7.71		3	0.6	61.3	0.0282	0.087	0.0059	56.1	4.88		0.00001	0.0017	0.00033	0.0686	0.061	0.00002	0.00005	53.8	0.0000418	0.0002	0.0003	0.00134	0.014	0.000005	2.08	0.0032	30.1	0.222	0.00507	17.8	0.00115	0.00005	0.0001	19.5	0.000222	5.91	0.0001	0.846	0.0003	0.00001	0.00362	0.0005	0.0435	0.0002
MW12-05-06	2020-04-25 12:20	257	577	93.2	7.62	336	3	4.6	71.4	0.0012	0.0892	0.0081	57.2	5		0.00001	0.002	0.00015	0.0652	0.042	0.00002	0.00005	54.9	0.0000265	0.00021	0.0001	0.00102	0.014	0.000005	2.11	0.0035	29.3	0.203	0.0046	16.1	0.0009	0.00005	0.0001	19.3	0.000157	6.2	0.0001	0.945	0.0003	0.00001	0.00374	0.0005	0.0162	0.0002
MW12-05-06	2020-07-24 16:01	245	571	103.7	7.47	331	3	3.8	52.3	0.0029	0.005	0.005	57	5.4		0.00001	0.0022	0.00092	0.068	0.033	0.00002	0.00005	54.4	0.0000158	0.00021	0.0001	0.00112	0.019	0.000005	2.18	0.004	30.1	0.216	0.00463	17.5	0.00074	0.00005	0.0001	19.8	0.000147	6.14	0.0001	0.921	0.0003	0.00001	0.00391	0.00057	0.0075	0.0002
MW12-05-06	2020-10-02 11:20	246	561	95.5	7.71	340	3	2.5	54.3	0.001	0.0125	0.0074	58.1	5.29		0.00001	0.0031	0.00014	0.0656	0.029	0.00002	0.00005	61.7	0.0000102	0.00024	0.0001	0.00106	0.018	0.000005	2.25	0.0038	30.7	0.198	0.00464	18	0.00075	0.00005	0.0001	18.2	0.000119	5.9	0.00034	1.01	0.0003	0.00001	0.00367	0.0005	0.0059	0.0002
MW12-05-06	2021-03-20 13:05	259	577	131.5	7.81	353	1	0.1	5.1	0.0085	0.0744	0.005	61.5	5.17		0.00001	0.0023	0.00016	0.0554	0.04	0.00002	0.00005	58.8	0.0000184	0.00024	0.0001	0.00094	0.01	0.000005	2.21	0.0038	31.7	0.146	0.00425	19.2	0.00063	0.00005	0.0001	22.7	0.000169	6.81	0.0001	0.954	0.0003	0.00001	0.00344	0.0005	0.0142	0.0002
MW12-05-06	2021-06-06 13:50	244	560	153.4	7.13	342	5.2	4.1	89.4	0.003	0.103	0.0054	62.5	5.43		0.00001	0.0024	0.00015	0.0563	0.04	0.00002	0.00005	57.5	0.0000225	0.00021	0.0005	0.00107	0.01	0.000005	2.26	0.0039	30.7	0.14	0.00451	18.7	0.00059	0.000051	0.0001	22.2	0.000145	6.65	0.0001	0.97	0.0003	0.00001	0.00346	0.0005	0.0123	0.0002
MW12-05-06	2021-11-15 15:04	242	553	82.8	7.37	326	1.2	0.6	103.6	0.002	0.213	0.005	56.8	4.79		0.00001	0.0024	0.00015	0.0469	0.025	0.00002	0.00005	52.5	0.000029	0.00019	0.0005	0.00117	0.01	0.000005	2.03	0.0036	30.7	0.0912	0.00456	16.9	0.00074	0.00005	0.0001	18.6	0.000155	6.08	0.0001	0.918	0.0003	0.00001	0.00316	0.0005	0.0156	0.0002
MW12-05-07	2012-11-12 0:00	216	486			260				0.0298	0.02	0.21	40.6			0.000005	0.00363	0.000917	0.142	0.054	0.00001	0.000005	49.4	0.000005	0.000249	0.0001	0.000477	0.867		1.79	0.00247	22.1	0.411	0.00346	17.9	0.00097	0.000039	0.000134	14.4	0.000108	5.27	0.0002	0.534	0.0005	0.000002	0.00227	0.00033	0.00538	0.0001
MW12-05-07	2013-08-21 0:00	288	497			298	4			0.0427	0.02	0.1	11.5	4.2	0.49	0.00002	0.0127	0.00076	0.736	0.05	0.0001	0.001	51.9	0.00001	0.0005	0.001	0.00065	0.928	0.00001	1.78	0.005	25.3	0.484	0.002	18.3	0.001	0.00055	0.0005	4.9	0.00014	7.1	0.005	0.591	0.005	0.00005	0.00067	0.005	0.005	0.0005
MW12-05-07	2013-08-21 17:45			-116.4	7.7			4.22	60																																								
MW12-05-07	2013-10-10 16:00	246	480	-88.9	7.39	306	3	2.7	43.2	0.005	0.02	0.068	18.5	3.7	0.54	0.00002	0.0053	0.00053	0.797	0.05	0.0001	0.001	49	0.00001	0.0005	0.001	0.0002	0.387	0.00001	1.79	0.005	24.3	0.499	0.0022	18.4	0.001	0.0002	0.0005	8.3	0.0003	6.66	0.005	0.626	0.005	0.00005	0.00054	0.005	0.005	0.0005
MW12-05-07	2014-07-25 11:15	235	483		8.2	262		5.2		0.0137	0.02	0.08	11.4	9.1	0.61	0.00002	0.0033	0.00024	0.9	0.05	0.0001	0.001	47.2	0.00001	0.0005	0.001	0.0002	0.113	0.00001	1.82	0.005	23.9	0.549	0.0016	17.2	0.001	0.0002	0.0005	9	0.00022	6.14	0.005	0.608	0.005	0.00005	0.00106	0.005	0.005	0.0005
MW12-05-07	2014-10-05 11:15	268	569	-112.9	7.89	362		0.1	40.1	2.91	0.2	0.24	38.6	8	0.62	0.00002	0.0058	0.0004	0.953	0.759	0.0001	0.001	52.4	0.000019	0.0005	0.001	0.00031	0.0602	0.00001	2.59	0.005	24.6	0.57	0.003	22.4	0.001	0.0002	0.0005	5.6	0.00034	6.72	0.005	0.722	0.005	0.00005	0.00137	0.005	0.005	0.0005
MW12-05-07	2015-05-04 16:15	226	518	-144.8	7.56	288		4.4	34.3	0.0149	0.02	0.08	41	6.1	0.54	0.00002	0.0063	0.00046	0.929	0.05	0.0001	0.001	52.1	0.00001	0.0005	0.001	0.0002	0.194	0.00001	2.05	0.005	23.6	0.683	0.0038	14.6	0.001	0.0002	0.0005	15.7	0.0001	6.45	0.005	0.742	0.005	0.00005	0.00191	0.005	0.005	0.0005
MW12-05-07	2015-08-08 14:35	233	525		8	336		7		0.0187	0.02	0.1	45.2	6.4	0.55	0.00002	0.0092	0.00029	0.933	0.05	0.0001	0.001	52.1	0.00001	0.0005	0.001	0.0002	0.141	0.00001	1.93	0.005	26.9	0.736	0.0028	16.8	0.001	0.0002	0.0005	11.5	0.0001	6.19	0.005	0.756	0.005	0.00005	0.00176	0.005	0.005	0.0005
MW12-05-07	2015-09-19 10:45	231	512		8.1	292		1.8		0.0107	0.02	0.069	43.9	5.9	0.56	0.00002	0.0074	0.00034	0.786	0.05	0.0001	0.001	51.7	0.00001	0.0005	0.001	0.0002	0.157	0.00001	1.88	0.005	26	0.731	0.0028	15.7	0.0015	0.0002	0.0005	18.1	0.00016	6.44	0.005	0.729	0.005	0.00005	0.00176	0.005	0.005	0.0005
MW12-05-07	2016-05-11 16:30	262	547		8	302	10.7	8.8		0.7	0.189	0.465	22.7	5.72		0.00001	0.0032	0.00035	0.775	0.626	0.00002	0.00005	58.2	0.000005	0.0001	0.00025	0.0002	0.067	0.000005	2.14	0.0032	29	0.696	0.00251	22.4	0.0005	0.00005	0.00033	33.3	0.00075	7.04	0.0001	0.786	0.0003	0.00001	0.00183	0.0005	0.0028	0.0003
MW12-05-07	2016-05-14 10:20	246	512		7.8	284	5.3	7.2		0.034	0.005	0.0337	25.4	5.49		0.00001	0.0024	0.00027	0.776	0.027	0.00002	0.00005	58	0.000005	0.0001	0.0003	0.0002	0.139	0.000005	1.98	0.0028	28.4	0.739	0.00124	15.8	0.0005	0.00005	0.0001	67	0.000512	7.09	0.0001	0.757	0.0003	0.00001	0.00191	0.0005	0.0013	0.0003
MW12-05-07	2016-07-06 11:10	254	507		7.8	284	3	9.5		0.0212	0.005	0.0161	25.6	5.56		0.00001	0.0034	0.00026	0.677	0.034	0.00002	0.00005	54.8	0.000005	0.0001	0.0002	0.0002	0.124	0.000005	1.9	0.0032	26.9	0.739	0.00223	16.2	0.0005	0.00005	0.0001	43.4	0.000558	6.78	0.0001	0.773	0.0003	0.00001	0.00195	0.0005	0.0019	0.0003
MW12-05-07	2016-09-30 17:15	247	462		8	280	3	3.3		0.0105	0.005	0.0132	25.8	5.44		0.00001	0.0025	0.0003	0.517	0.027	0.00002	0.00005	52.1	0.000005	0.0001	0.00012	0.0002	0.064	0.000005	2.07	0.003	28.8	0.681	0.00245	17.5	0.0005	0.00005	0.0001	9.87	0.000317	6.99	0.0001	0.751	0.0003	0.00001	0.00214	0.0005	0.001	0.0003
MW12-05-07	2016-10-21 15:50	250	487		8	279	3	1.2		0.001	0.005	0.0092	26.8	5.37		0.00001	0.0022	0.00022	0.558	0.032	0.00002	0.00005	52.2	0.000005	0.0001	0.00011	0.0002	0.041	0.000005	1.93	0.0031	25.9	0.712	0.00236	16	0.0005	0.00005	0.0001	9.78	0.000075	6.72	0.0001	0.725	0.0003	0.00001	0.00214	0.0005	0.0136	0.0003
MW12-05-07	2016-12-23 15:50	212	483		8.9	252	3	2		0.0021	0.005	0.005	16.7	5.06		0.00001	0.0028	0.00028	0.822	0.034	0.00002	0.00005	54.8	0.000005	0.0001	0.00019	0.00021	0.022	0.000005	2.11	0.0029	29.2	0.662	0.00152	16.7	0.00051	0.000095	0.00015	6.91	0.00005	6.65	0.0001	0.752	0.0003	0.00001	0.00178	0.00054	0.0015	0.0003
MW12-05-07	2016-12-23 15:50				8.9			2																																									
MW12-05-07	2017-02-20 16:00	247	500		8	278	3	2.3		0.0177	0.009	0.0154	29	4.84		0.00001	0.0025	0.00024	0.469	0.035	0.00002	0.00005	51.9	0.000005	0.0001	0.00036	0.00025	0.089	0.000005	1.97	0.0032	26.6	0.617	0.00221	14.4	0.00057	0.00005	0.00022	10.6	0.000129	6.78	0.0001	0.729	0.0003	0.00001	0.0028	0.0005	0.0025	0.0003
MW12-05-07	2017-04-23 14:50	236	514		8.2	306	217	3.3		0.0098	0.005	0.0248	35.6	4.65		0.00001	0.0032	0.00023	0.396	0.034	0.00002	0.00005	53.7	0.000005	0.0001	0.00015	0.0002	0.233	0.000005	1.7	0.0032	25.1	0.636	0.00224	14.9	0.0005	0.00005	0.0001	18.4	0.00168	6.25	0.0001	0.845	0.0003	0.00001	0.00267	0.0005	0.0014	0.0003
MW12-05-07	2017-08-24 17:00	218	514			270	3			0.0057	0.005	0.0146	28.5	5.11		0.00001	0.0038	0.00035	0.536	0.031	0.00002	0.00005	55.3	0.000005	0.0001	0.00017	0.0002	0.156	0.000005	2.14	0.0031	30.4	0.646	0.00109	17.2	0.0005	0.00005	0.0001	14.3	0.000565	6.88	0.0001	0.805	0.0003	0.00001	0.00385	0.0005	0.0013	0.0003
MW12-05-07	2017-11-11 14:15	242	494		8.1	291	3	1.1		0.0087	0.005	0.0238	38.7	4.84		0.00001	0.0018	0.00044	0.333	0.027	0.00002	0.00005	55.3	0.000005	0.0001	0.0001	0.0002	0.365	0.000005	1.71	0.0031	29.2	0.696	0.00246	14.6	0.0005	0.00005	0.0001	18.4	0.000233	6.46	0.0001	0.756	0.0003	0.00001	0.00451	0.0005	0.001	0.0003
MW12-05-07	2018-03-02 15:00	228	508		6.1	284	3	2.5		0.001	0.005	0.0433	41.4	4.69		0.00001	0.0023	0.00038	0.313	0.023	0.00002	0.00005	52.9	0.000005	0.00012	0.0001	0.0002	0.467	0.000005	1.92	0.0036	28.8	0.707	0.00337	16	0.0005	0.00005	0.0001	20.5	0.00149	6.47	0.0001	0.817	0.0003	0.00001	0.00492	0.0005	0.0027	0.0003
MW12-05-07	2018-05-10 14:25	254	535		7.9	321	7.4	8.1		0.0104	0.0105	0.154	47.6	5.33		0.00001	0.0024	0.00115	1.01	0.031	0.00002	0.00005	59.7	0.000005	0.0001	0.00014	0.00025	1.7	0.000005	2.33	0.0038	32.4	0.497	0.00259	18.7	0.0005	0.00005	0.0001	16.6	0.000135	7.3	0.0001	0.838	0.00031	0.00001	0.00294	0.0005	0.0033	0.0003
MW12-05-07	2018-08-23 16:30	204	517	-50.2	7.55	277	3	4.1	86	0.0044	0.005	0.119	51.9	5.7		0.00001	0.0067	0.00035	0.143	0.031	0.00002	0.00005	53	0.000005	0.0001	0.00023	0.0006	0.228	0.000005	2.02	0.0036	26	0.15	0.00273	15.4	0.0005	0.00005	0.0001	14.4	0.000274	5.26	0.0001	0.78	0.0003	0.00001	0.00271	0.0005	0.0034	0.0003
MW12-05-07	2018-10-22 14:45	201	498	-43.4	7.66	278	3	2.5	55.3	0.0047	0.005	0.114	52	5.57		0.00001	0.016	0.00095	0.129	0.036	0.00002	0.00005	53.5	0.0000057	0.0001	0.00016	0.00186	0.335	0.000005	2.26	0.0037	27	0.165	0.00272	16.5	0.00096	0.00005	0.0001	19.6	0.000141	6.48	0.0001	0.806	0.00162	0.00001	0.00282	0.0005	0.0046	0.0003
MW12-05-07	2019-02-14 16:30	243	542	135.6	7.95	315	3	0.2	44	0.0015	0.005	0.322	56.2	4.71		0.00001	0.0019	0.00165	0.0887	0.025	0.00002	0.00005	57.8	0.000007	0.0001	0.00049	0.00034	1.2	0.0000095	2.18	0.0032	28.8	0.16	0.0035	17.7	0.00074	0.00005	0.0001	18.7	0.000075	7.02	0.0001	0.846	0.00032	0.00001	0.0014	0.0005	0.005	0.0003
MW12-05-07	2019-05-04 15:10	245	537	-73.2	7.93	315	3	2.7	121.6	0.0124	0.005	0.316	56	4.87		0.00001	0.0019	0.00154	0.0869	0.043	0.00002	0.00005	57.5	0.000005	0.0001	0.00012	0.00032	1.31	0.000005	2.02	0.0032	28.7	0.157	0.00307	16.8	0.0005	0.00005	0.0001	20	0.000487	7.02	0.0001	0.801	0.0003	0.00001	0.00146	0.0005	0.0075	0.0003
MW12-05-07	2019-05-16 10:40	239	531	-87.3	7.54	313	3	5.6	59.6	0.0018	0.005	0.298	55.6	4.98		0.00001	0.0041	0.00131	0.0942	0.024	0.00002	0.00005	57.7	0.00003	0.0001	0.00017	0.00039	1.37	0.000005	2.15	0.0031	29.9	0.164	0.00288	17.3	0.00051	0.00005	0.0001	18.1	0.000097	7.11	0.0001	0.796	0.0006	0.00001	0.00144	0.00053	0.004	0.0003
MW12-05-07	2019-08-02 15:40	248	547	-75.5	7.68	320	3	8.5	882	0.002	0.005	0.335	56.5	5.62		0.00001	0.0072	0.00161	0.0869	0.036	0.00002	0.00005	58.8	0.0000118	0.0001	0.00012	0.00078	1.36	0.000005	2.13	0.0033	28.8	0.171	0.00321	17.7	0.00059	0.00005	0.0001	19.2	0.000088	7.26	0.0001	0.801	0.001	0.00001	0.00149	0.0005	0.0109	0.0003
MW12-05-07	2019-10-04 12:10	247	543	-76	7.71	319	5	0.7	65.2	0.001	0.0104	0.318	56.6	5.41		0.00001	0.0018	0.00155	0.0899	0.038	0.00002	0.00005	56.2	0.000005	0.0001	0.00015	0.00025	1.5	0.000005	2.25	0.0034	31.1	0.166	0.00302	17.7	0.0005	0.00005	0.0001	18.6	0.000058	7.4	0.0001	0.816	0.0003	0.00001	0.00151	0.0005	0.011	0.0003
MW12-05-07	2020-02-13 16:55	241	563	-8.5	7.38		3.6	1.2	75.9	0.0023	0.0058	0.258	53.8	5.62		0.00001	0.001	0.00123	0.102	0.026	0.00002	0.00005	55.4	0.0000177	0.0001	0.00026	0.00036	1.5	0.000005	2.16	0.003	30.4	0.159	0.00284	17.7	0.0005	0.00005	0.0001	19	0.000278	6.53	0.0001	0.823	0.0003	0.00001	0.00162	0.0005	0.0047	0.0002
MW12-05-07	2020-07-24 16:37	252	577	48.9	7.37	340	3	6.4	79.3	0.001	0.011	0.208	55.3	6.1		0.00001	0.001	0.00155	0.097	0.029	0.00002	0.00005	57.4	0.000005	0.0001	0.0001	0.0002	1.56	0.000005	2.22	0.0039	30.2	0.158	0.00326	17.8	0.0005	0.00005	0.0001	18.5	0.000055	6.53	0.0001	0.88	0.0003	0.00001	0.00184	0.00057	0.0027	0.0002

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species						Dissolved Elements																																	
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	N-NO$_2$	N-NO$_3$	N-NH$_3$	SO$_4$-D	Chlord	Fluord	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW12-05-07	2020-10-02 11:45	244	561	-22.5	7.62	340	3	2.9	62.2	0.001	0.005	0.208	56	5.91		0.00001	0.0016	0.00131	0.0988	0.023	0.00002	0.00005	61.3	0.000005	0.0001	0.00025	0.0002	1.68	0.000005	2.28	0.0037	31	0.172	0.00357	18.1	0.0005	0.000108	0.0001	18	0.00005	6.27	0.00048	0.919	0.0003	0.00001	0.00173	0.0005	0.0017	0.0002
MW12-05-07	2021-03-20 13:20	252	566	122.7	7.95	350	3.5	0.7	10.3	0.001	0.005	0.185	60.6	5.63		0.00001	0.0029	0.00123	0.0918	0.028	0.00002	0.00005	60.8	0.0000059	0.0001	0.0001	0.0002	1.7	0.000005	2.17	0.0038	30.7	0.133	0.00351	18.3	0.0005	0.00005	0.0001	22	0.000186	6.92	0.0001	0.849	0.0003	0.00001	0.0017	0.0005	0.0023	0.0002
MW12-05-07	2021-06-06 14:20	236	558	-34	7.15	333	5.4	5.6	71.1	0.001	0.0123	0.175	63.6	5.82		0.00001	0.0032	0.00108	0.11	0.024	0.00002	0.00005	51.7	0.0000054	0.0001	0.0005	0.00054	1.74	0.000005	2.22	0.0034	29.7	0.146	0.00341	17.8	0.0005	0.00005	0.0001	22.5	0.000104	6.87	0.0001	0.781	0.0003	0.00001	0.00156	0.0005	0.005	0.0002
MW12-05-07	2021-11-15 15:20	234	536	-24	7.39	318	8.2	0.9	83.9	0.001	0.0086	0.122	57.3	5.4		0.00001	0.0046	0.00041	0.0761	0.03	0.00002	0.00005	51.4	0.0000078	0.0001	0.0005	0.00054	0.429	0.000005	2.04	0.0035	28.7	0.125	0.00425	16.4	0.0005	0.00005	0.0001	18.2	0.000078	5.83	0.0001	0.806	0.00032	0.00001	0.00196	0.0005	0.0144	0.0002
MW12-06-01	2016-10-25 11:40	378	720		7.7	401	3	4.2		0.952	0.252	0.0542	2.3	5.3		0.00001	0.0148	0.0064	0.239	0.59	0.000113	0.00005	85.2	0.000005	0.0001	0.00333	0.00038	0.239	0.000005	2.56	0.0099	18.2	0.0922	0.00172	55.4	0.0006	0.000056	0.00038	3.48	0.000327	7.68	0.00016	3.48	0.00229	0.00001	0.000815	0.0116	0.0044	0.00103
MW12-06-01	2016-12-29 15:00	382	734		8.3	418	6.1	0.6		3.31	0.82	0.955	4.3	4.8	0.85	0.00001	0.0169	0.00759	0.255	0.898	0.000116	0.00005	83.4	0.0000085	0.0001	0.00318	0.00034	0.058	0.000005	2.54	0.0089	18.6	0.0872	0.000867	57.9	0.0005	0.00005	0.0004	11.1	0.00189	7.67	0.0003	3.53	0.00255	0.00001	0.000808	0.0116	0.0027	0.001
MW12-06-01	2017-04-24 14:45	386	717		7.5	499	3	9.3		0.11	0.031	0.1	1.5	5.2		0.00001	0.0169	0.00571	0.243	0.143	0.000099	0.00005	83.1	0.000005	0.0001	0.00362	0.0012	0.259	0.000005	2.43	0.0094	18.6	0.089	0.00104	54.6	0.00051	0.000085	0.00017	1.72	0.00017	7.29	0.00016	3.35	0.00293	0.00001	0.000653	0.0134	0.0025	0.00101
MW12-06-01	2017-08-29 10:35	364	801		7.8	387	3.3	6		0.936	0.251	0.612	5	5.02		0.00001	0.0182	0.00828	0.224	0.989	0.000095	0.00005	79	0.0000112	0.0001	0.00314	0.00337	0.222	0.000005	2.55	0.009	17	0.0799	0.00104	60	0.00073	0.000064	0.00042	2.48	0.00056	7.67	0.00022	3.04	0.00236	0.00001	0.00072	0.0136	0.0066	0.00109
MW12-06-01	2017-11-14 13:55	394	700		8.2	400	3	4.4		0.0379	0.0139	0.0067	5	5.1		0.00001	0.015	0.0059	0.205	0.124	0.000088	0.00005	83.1	0.000005	0.0001	0.00312	0.00057	0.256	0.000005	2.4	0.0094	19	0.0731	0.000954	52.5	0.0005	0.00005	0.00013	6.39	0.00374	7.79	0.00015	3.6	0.003	0.00001	0.000637	0.0136	0.004	0.00111
MW12-06-01	2017-12-31 11:15	389	702		8.1	406	4.7	3.2		0.0981	0.0348	0.0108	1.14	5.4		0.00001	0.0157	0.00663	0.212	0.144	0.0001	0.00005	84.6	0.0000104	0.0001	0.00402	0.00068	0.273	0.000005	2.73	0.0091	19.1	0.0802	0.000996	58.6	0.0005	0.000051	0.0002	5.06	0.000622	7.93	0.00015	3.51	0.00293	0.00001	0.000699	0.0146	0.0037	0.00122
MW12-06-01	2018-03-12 13:35	405	748		8.1	418	3.5	4.1		0.316	0.088	0.116	0.87	5.09		0.00001	0.0158	0.00724	0.209	0.175	0.00008	0.00005	87	0.0000178	0.0001	0.00386	0.00104	0.282	0.000005	2.46	0.0112	19.4	0.0777	0.000938	56.9	0.0005	0.00005	0.00025	2.7	0.000632	7.68	0.00016	3.53	0.00283	0.00001	0.000689	0.0143	0.0075	0.00109
MW12-06-01	2018-05-09 10:15	398	720		7.4	405	3.7	4.7		0.108	0.031	0.128	0.42	4.95		0.00001	0.0181	0.0095	0.193	0.249	0.000128	0.00005	84.7	0.0000065	0.0001	0.00362	0.00077	0.323	0.000005	2.51	0.0102	17.7	0.0819	0.00146	54.6	0.0008	0.00005	0.0003	0.85	0.000262	7.88	0.00017	3.45	0.003	0.00001	0.000723	0.0145	0.0037	0.00118
MW12-06-01	2018-08-25 14:30	447	909	-82.1	6.87	460	3	7.9	83	0.0522	0.0165	0.113	0.71	4.85		0.00001	0.0268	0.00667	0.276	0.26	0.000152	0.00005	106	0.0000248	0.0001	0.00406	0.00078	0.496	0.000005	2.68	0.0097	20.9	0.276	0.000954	55.8	0.00086	0.00005	0.00021	5.73	0.000534	7.52	0.00029	4.28	0.00384	0.00001	0.000758	0.0161	0.0155	0.00108
MW12-06-01	2018-10-25 13:55	473	919	-73.1	7.1	491	3	4.7	95.1	0.0567	0.025	0.086	1.5	5		0.00001	0.0277	0.00892	0.345	0.259	0.000165	0.00005	118	0.0000107	0.0001	0.00449	0.0002	0.489	0.000005	3	0.0105	22.4	0.341	0.00109	57.6	0.0005	0.00005	0.00018	25.1	0.00115	8.05	0.00017	5.12	0.00432	0.00001	0.000696	0.0187	0.0023	0.00116
MW12-06-01	2019-05-09 13:30	501	990	-57.8	6.74	537	3	9	96.9	0.206	0.059	0.0682	1.5	5.2		0.00001	0.0243	0.0078	0.385	0.213	0.00016	0.00005	132	0.0000091	0.0001	0.00491	0.00026	0.434	0.000005	3.2	0.0111	26.9	0.302	0.00102	67.1	0.0005	0.00005	0.00016	20.6	0.000612	8.3	0.00017	5.38	0.00409	0.00001	0.000609	0.0192	0.0022	0.00121
MW12-06-01	2019-08-15 11:35	521	973	-110.5	6.85	545	4	7.7	42	0.143	0.088	0.098	1.5	4.8		0.00001	0.0253	0.00894	0.373	0.307	0.000161	0.00005	132	0.0000327	0.0001	0.00504	0.0002	0.307	0.000005	3.12	0.0115	26.3	0.276	0.00106	65.2	0.00063	0.00005	0.00021	35	0.00632	8.46	0.00019	5.13	0.00448	0.00001	0.000736	0.0192	0.0055	0.00117
MW12-06-01	2019-10-17 9:30	495	1080	-119.3	6.86	609	3	5	103.1	1.22	0.421	1.17	53.3	4.67		0.000027	0.0247	0.0106	0.333	1.29	0.00019	0.00005	141	0.0000313	0.0001	0.00451	0.00045	0.178	0.000005	4.94	0.0116	26.7	0.269	0.00189	73	0.00069	0.00005	0.0006	86.2	0.00478	8.18	0.00033	6.02	0.00353	0.00001	0.000745	0.0182	0.0075	0.00122
MW12-06-01	2020-03-14 11:35	488	1120	-161	6.8	648	3	4.7	88.2	0.355	0.256	0.85	85	5.04		0.00001	0.0326	0.0178	0.274	1.25	0.000232	0.00005	130	0.0000288	0.0001	0.0049	0.00035	0.191	0.000005	3.6	0.0122	27.6	0.295	0.00265	75.6	0.00084	0.00005	0.00049	73.7	0.00341	8.88	0.00032	5.8	0.0037	0.00001	0.000563	0.0185	0.0072	0.00115
MW12-06-01	2020-05-29 9:40	484	1230	-141.9	6.85	771	3	5.5	80.3	0.0722	0.0789	0.29	159	5.34		0.00001	0.0299	0.00953	0.32	0.763	0.00022	0.00005	177	0.0000116	0.0001	0.00438	0.0002	0.205	0.000005	3.79	0.0132	33.8	0.36	0.00145	77.9	0.0008	0.00005	0.00019	141	0.002	8.2	0.00031	6.9	0.00327	0.00001	0.000457	0.0178	0.0042	0.00098
MW12-06-01	2020-08-07 8:20	450	1280	100.6		831	3	4.9	75.5	0.164	0.061	0.872	236	5.34		0.00001	0.0211	0.00481	0.292	0.499	0.000161	0.00005	180	0.000005	0.0001	0.00337	0.0002	0.229	0.000005	3.54	0.0132	37.1	0.397	0.000747	76.3	0.00067	0.00005	0.00022	210	0.00319	7.58	0.00032	6.86	0.00234	0.00001	0.000329	0.0139	0.0065	0.00069
MW12-06-01	2020-10-19 10:00	377	1420	-89	7.12	1000	3	3.1	76.1	0.231	0.134	0.278	414	5.54		0.00001	0.0148	0.00672	0.258	0.328	0.000142	0.00005	210	0.0000073	0.0001	0.00234	0.0002	0.116	0.000005	3.62	0.0152	39.2	0.401	0.000511	84.7	0.00054	0.00005	0.0002	226	0.0034	7.39	0.00029	7.95	0.00195	0.00001	0.000326	0.0116	0.0045	0.00059
MW12-06-01	2021-03-22 12:15	394	1520	-106.8	6.75	1060	1.6	3.9	105.4	0.0885	0.0321	0.129	467	5.66		0.00001	0.0129	0.00466	0.232	0.216	0.000117	0.00005	204	0.0000143	0.0001	0.00262	0.00024	0.126	0.0001	3.71	0.0147	41	0.407	0.000769	82.8	0.00078	0.00005	0.00028	363	0.00733	6.95	0.00055	8.38	0.00206	0.00001	0.000333	0.0124	0.0066	0.00075
MW12-06-01	2021-05-29 14:40	298	1570	407.2	6.96	1170	6.8	6.7	95	0.112	0.0587	0.152	612	5.49		0.00002	0.0085	0.00435	0.205	0.206	0.000084	0.0001	223	0.0000216	0.0002	0.00179	0.0004	0.125	0.000005	3.46	0.014	45.3	0.361	0.00049	85.4	0.001	0.0001	0.0002	181	0.000196	6.51	0.00049	8.42	0.00193	0.00002	0.000372	0.0102	0.0151	0.00047
MW12-06-02	2012-11-16 0:00	316	962			636				0.263	0.081	0.0074	208			0.00001	0.00587	0.00304	0.0519	0.185	0.000027	0.000005	113	0.000047	0.000307	0.0001	0.00115	0.726		4.01	0.00919	31.6	0.0554	0.0164	42.9	0.00121	0.000099	0.000136	76.5	0.000238	7.54	0.0002	8.8	0.0005	0.000002	0.00544	0.0002	0.0111	0.0001
MW12-06-02	2013-06-30 11:10			-42.6	7.17			4.5	23.5																																								
MW12-06-02	2013-08-18 14:00	346	979	-92.5	7.33	646	80.5	10.6	47.7	0.787	0.25	0.048	206	2.1	1.6	0.00002	0.0045	0.00664	0.0292	0.742	0.0001	0.001	132	0.00001	0.0005	0.001	0.0007	0.954	0.00001	3.57	0.0106	28.1	0.0441	0.0069	50.7	0.001	0.0002	0.0005	71.7	0.00028	11.8	0.005	11.5	0.005	0.00005	0.00174	0.005	0.005	0.0005
MW12-06-02	2013-10-11 9:30	340	994		8.6	686	43.6	4.6		0.302	0.052	0.052	227	3.1	1.6	0.00002	0.0061	0.00601	0.0263	0.524	0.0001	0.001	137	0.000018	0.0005	0.001	0.00042	1.67	0.00001	3.59	0.0128	29.2	0.0456	0.0082	51.3	0.001	0.0002	0.0005	75.9	0.00018	10.5	0.005	11.6	0.005	0.00005	0.00175	0.005	0.005	0.0005
MW12-06-02	2014-05-30 15:30	359	950		7.2	646		8.16		0.525	0.165	0.046	185	1.6	1.6	0.00002	0.0042	0.00586	0.0288	0.541	0.0001	0.001	131	0.00001	0.0005	0.001	0.00027	0.974	0.00001	3.58	0.0104	29.9	0.0352	0.0072	41.7	0.001	0.0002	0.0005	75	0.0001	12.4	0.005	10.7	0.005	0.00005	0.00242	0.005	0.0064	0.0005
MW12-06-02	2014-07-25 14:00	352	977		7.7	640		10		0.164	0.054	0.072	199	1.8	1.5	0.00002	0.003	0.00461	0.0509	0.239	0.0001	0.001	114	0.000042	0.0005	0.001	0.0004	1.22	0.00001	3.19	0.0088	30.9	0.0374	0.0051	38.8	0.001	0.0002	0.0005	59.9	0.0001	10	0.005	10.2	0.005	0.00005	0.0022	0.005	0.0056	0.0005
MW12-06-02	2014-10-06 15:45	363	977			630				0.0882	0.026	0.05	187	1.6	1.5	0.00002	0.0038	0.00498	0.0351	0.308	0.0001	0.001	128	0.00001	0.0005	0.001	0.0003	1.21	0.00001	3.36	0.0091	31.9	0.0402	0.0055	39.8	0.001	0.0002	0.0005	65.5	0.0001	10.6	0.005	10.4	0.005	0.00005	0.00237	0.005	0.0072	0.0005
MW12-06-02	2015-05-05 14:35	354	992	-36	7.1	612		6.4	61.9	0.183	0.051	0.057	204	1.9	1.5	0.00002	0.0053	0.00617	0.046	0.311	0.0001	0.001	142	0.00001	0.0005	0.001	0.0002	1.22	0.00001	3.81	0.0097	33.5	0.0377	0.0059	39.8	0.001	0.0002	0.0005	66.6	0.00013	12.2	0.005	10.8	0.005	0.00005	0.00245	0.005	0.0085	0.0005
MW12-06-02	2015-08-17 15:00	348	986	-70.1	7.49	658		7.8	76.6	0.114	0.033	0.066	199	1.3	1.5	0.00002	0.0102	0.00378	0.0281	0.165	0.0001	0.001	132	0.00001	0.0005	0.001	0.0002	1.23	0.00001	3.25	0.0091	36.5	0.0341	0.0083	40.2	0.001	0.0002	0.0005	66.1	0.0001	9.73	0.005	11	0.005	0.00005	0.00248	0.005	0.0059	0.0005
MW12-06-02	2015-09-19 13:30	355	994		7.7	650		4		0.0931	0.025	0.075	218	1.5	1.5	0.00002	0.0048	0.00409	0.0441	0.154	0.0001	0.001	132	0.000015	0.0005	0.001	0.0002	1.21	0.00001	3.47	0.0099	37.4	0.0386	0.007	41	0.001	0.0002	0.0005	67.8	0.0001	10.5	0.005	10.4	0.005	0.00005	0.00253	0.005	0.005	0.0005
MW12-06-02	2016-05-10 14:30	358	1020		7.4	660	22.7	12.8		0.212	0.054	0.0231	209	1		0.00001	0.0014	0.00614	0.031	2.53	0.000041	0.00005	136	0.000005	0.0001	0.0001	0.0002	0.765	0.000005	3.8	0.0083	37.6	0.0284	0.00711	56.6	0.0005	0.00005	0.00014	65.8	0.00074	11.2	0.0001	9.54	0.0003	0.00001	0.00257	0.0005	0.0055	0.0003
MW12-06-02	2016-05-14 13:30	376	1070		7.5	693	37.3	10.5		7.21	1.83	0.014	215	1		0.00001	0.0013	0.00453	0.0281	0.206	0.000044	0.00005	139	0.000005	0.0001	0.0001	0.0002	1.09	0.000005	3.64	0.0088	38	0.0274	0.00695	38.2	0.0005	0.00005	0.0001	68	0.000066	10.9	0.0001	10.2	0.0003	0.00001	0.00254	0.0005	0.0028	0.0003
MW12-06-02	2016-09-02 16:15	368	983		7.7	660	46.4	7.8		1.13	0.264	0.0235	216	1		0.00001	0.0014	0.00438	0.0237	0.162	0.000049	0.00005	137	0.000005	0.0001	0.0001	0.0002	1.11	0.000005	3.6	0.0095	37.2	0.0277	0.00666	39.2	0.0005	0.00005	0.0001	70.3	0.00005	10.6	0.0001	9.95	0.0003	0.00001	0.0024	0.0005	0.0046	0.0003
MW12-06-02	2016-10-25 13:30	377	982		7.9	643	15.6	4.7		0.557	0.143	0.0142	209	2.5		0.00001	0.001	0.00286	0.0237	0.298	0.000025	0.00005	129	0.000005	0.0001	0.0001	0.0002	0.012	0.000005	3.54	0.0081	32.1	0.0264	0.00646	40.3	0.0005	0.00005	0.0001	59.9	0.00005	9.21	0.0001	9.73	0.0003	0.00001	0.00231	0.0005	0.0034	0.0003
MW12-06-02	2016-12-29 16:15	362	995		7.8	644	43.1	2.9		0.642	0.153	0.0303	209	2.5	1.44	0.00002	0.0023	0.00458	0.0301	0.787	0.000045	0.00005	131	0.000005	0.0001	0.0001	0.00049	0.936	0.000005	3.49	0.0082	33.9	0.0268	0.00628	43.9	0.0005	0.00005	0.00027	69	0.00022	10.2	0.0001	9.94	0.0003	0.00001	0.00237	0.0005	0.0061	0.0003
MW12-06-02	2016-12-29 16:15				7.8			2.9																																									
MW12-06-02	2017-02-18 10:15	361	983		8	637	61.3	3.8		0.413	0.106	0.0261	214	2.5		0.000011	0.0015	0.00364	0.0234	0.252	0.000039	0.00005	131	0.000005	0.0001	0.0001	0.0202	0.743	0.000005	3.78	0.0108	33.9	0.0266	0.00695	35.5	0.00235	0.00005	0.00025	72.6	0.000721	10.6	0.0001	10.1	0.0003	0.00001	0.00277	0.0005	0.0016	0.0003
MW12-06-02	2017-04-24 15:45	359	993		7.4	649	34	9.4		0.126	0.035	0.0528	213	2.5		0.00001	0.0037	0.00398	0.0336	0.118	0.000042	0.00005	143	0.000005	0.0001	0.00017	0.00039	1.1	0.000005	3.34	0.0092	34.6	0.0283	0.00743	39.8	0.0005	0.00005	0.00011	70.6	0.00005	9.77	0.0001	10.7	0.0006	0.00001	0.00255	0.0005	0.0034	0.0003
MW12-06-02	2017-08-29 11:05	357	1040		7.5	644	80	6.6		0.259	0.083	0.0519	224	0.77		0.00001	0.0012	0.00403	0.0305	0.182	0.000039	0.00005	127	0.000005	0.0001	0.0001	0.0002	1.1	0.000005	3.53	0.0078	32.8	0.026	0.00715	39.4	0.0005	0.00005	0.0001	71.4	0.00005	10.1	0.0001	9.24	0.0003	0.00001	0.00234	0.0005	0.0029	0.0003
MW12-06-02	2017-11-14 14:30	358	952		7.8	647	137	6.1		0.266	0.0668	0.0427	211	0.57		0.00001	0.0011	0.00362	0.0226	0.069	0.000045	0.00005	138	0.000005	0.0001	0.0001	0.0002	1.13	0.000005	3.38	0.0074	36.6	0.0249	0.00791	38.2	0.0005	0.00005	0.0001	72.8	0.000643	10.5	0.0001	10.8	0.0003	0.00001	0.00232	0.0005	0.005	0.0003
MW12-06-02	2017-12-31 11:50	356	955		7.9	664	30.1	3.7		0.125	0.033	0.0252	222	2.5		0.00001	0.0013	0.0038	0.0249	0.084	0.000052	0.00005	144	0.0000076	0.0001	0.0001	0.0002	1.18	0.000005	3.85	0.0084	38.5	0.0267	0.00784	41	0.0005	0.00005	0.0001	76.3	0.000057	10.9	0.0001	10.7	0.0003	0.00001	0.00242	0.0005	0.0058	0.0003
MW12-06-02	2018-03-12 14:10	365	1010		8.1	653	33.9	5.4		0.196	0.05	0.053	215	2.5		0.00001	0.0013	0.0037	0.0293	0.286	0.00002	0.00005	138	0.000005	0.0001	0.00012	0.0002	1.12	0.000005	3.21	0.0097	35.7	0.0258	0.00775	39.3	0.0005	0.00005	0.00011	65.3	0.000307	10.1	0.0001	10.4	0.0003	0.00001	0.00243	0.0005	0.0061	0.0003
MW12-06-02	2018-05-09 10:50	351	958		7.4	630	30.1	5.3		0.0811	0.025	0.0478	213	2.5		0.00001	0.001	0.00389	0.0278	0.135	0.000041	0.00005	130	0.000005	0.0001	0.0001	0.00023	1.11	0.000005	3.44	0.0083	34.2	0.0259	0.00838	37	0.0005	0.00005	0.0001	75.5	0.000182	10.3	0.0001	9.48	0.0003	0.00001	0.00248	0.0005	0.0072	0.0003
MW12-06-02	2018-08-25 15:30	368	1010	-34.6	7.11	641	24	8.9	117.7	0.0401	0.0105	0.0663	214	0.5		0.00005	0.005	0.0038	0.0304	0.18	0.0001	0.00025	127	0.00016	0.0005	0.0005	0.001	1.07	0.000005	3.38	0.0081	36.6	0.029	0.00858	37.4	0.0025	0.00025	0.0005	72.8	0.00025	10.2	0.0005	9.63	0.0017	0.00005	0.00257	0.0025	0.005	0.0003
MW12-06-02	2018-10-25 14:30	367	995	-14.9	7.05	635	19.5	4.4	111.9	0.114	0.027	0.0379	209	2.5		0.00002	0.002	0.00595	0.0273	0.203	0.00004	0.0001	124	0.00001	0.0002	0.0002	0.0004	1.19	0.000005	3.67	0.0083	37.8	0.0266	0.00922	38.2	0.001	0.0001	0.0002	80.7	0.0002	10.3	0.0002	9.7	0.0006	0.00002	0.00263	0.001	0.0061	0.0003
MW12-06-02	2019-02-25 9:00	340	1010	-4.7	6.75	621	17.6	0.9	88.4	0.103	0.031	0.0446	211	2.5		0.00001	0.0015	0.00358	0.0275	0.139	0.000039	0.00005	128	0.000005	0.0001	0.0001	0.0002	1.07	0.000005	3.4	0.0079	35.8	0.0252	0.00879	36.8	0.0005	0.00005	0.0001	74.7	0.000314	10	0.0001	9.3	0.0003	0.00001	0.00257	0.0005	0.0047	0.0003
MW12-06-02	2019-05-09 14:30	364	1010	-30.1	7.26	642	43.6	5.6	176.9	0.0922	0.025	0.0472	218	2.5		0.00002	0.0029	0.00349	0.0307	0.181	0.00004	0.0001	126	0.00001	0.0002	0.0002	0.00048	1.04	0.000005	3.37	0.0084	38.7	0.0268	0.00947	35.5	0.001	0.0001	0.0002	69.2	0.00018	9.71	0.0002	9.78	0.0006	0.00002	0.0024	0.001	0.0032	0.0003
MW12-06-02	2019-08-15 13:10	342	956	-48.7	6.58	636	4.2	6.2	64	0.0498	0.025	0.041	218	2.5		0.00001	0.0031	0.00362	0.0284	0.12	0.000041	0.00005	130	0.00002	0.0001	0.00013	0.0002	1.07	0.000005	3.71	0.0077	39.7	0.0255	0.00958	38.6	0.0005	0.00005	0.0001	74.4	0.000531	10.2	0.0001	9.19	0.0003	0.00001	0.00289	0.0005	0.0038	0.0003
MW12-06-02	2019-10-17 10:20	368	1010	7.8	7.15	654	21.5	5.3	113.1	0.076	0.031	0.0694	213	0.82		0.00002	0.002	0.00344	0.0251	0.109	0.00006	0.0001	137	0.00001	0.0002	0.0002	0.0004	1.04	0.000005	3.56	0.0083	38.5	0.024	0.0101	38.4	0.001	0.0001	0.0002	74.9	0.0001	10.6	0.0002	9.54	0.0006	0.00002	0.0028	0.001	0.0022	0.0004
MW12-06-02	2020-03-14 12:40	366	1000	-57.6	7.18	666	19.5	6.1	97.9	0.108	0.0304	0.0399	198	0.55		0.000011	0.001	0.00381	0.0285	0.115	0.000043	0.00005	131	0.0000061	0.0001	0.0001	0.0002	1.02	0.000005	3.83	0.0085	42.1	0.0244	0.0106	40.4	0.0005	0.00005	0.0001	75.6	0.000169	10.7	0.0001	9.83	0.0003	0.00001	0.00275	0.0005	0.0043	0.0002
MW12-06-02	2020-05-29 10:35	361	999	-59	7.15	684	6.1	5.4	85.5	0.1	0.0302	0.0347	218	0.69		0.00001	0.0011	0.00357	0.028	0.106	0.00004	0.00005	137	0.000005	0.0001	0.0001	0.0002	1	0.000005	3.82	0.0082	39	0.0242	0.0105	38	0.0005	0.00005	0.0001	74.4	0.00005	10.4	0.0001	10.3	0.0003	0.00001	0.00272	0.0005	0.0027	0.0002
MW12-06-02	2020-08-07 9:30	357	1000	-50.3	7.17	670	7	4.9	98.2	0.0798	0.025	0.0266	223	0.65		0.00001	0.0022	0.00329	0.0245	0.088	0.000034	0.00005	124	0.000005	0.0001	0.0001	0.0002	1.04	0.000005	3.48	0.008	38.8	0.024	0.00961	35.4	0.0005	0.00005	0.0001	75.6	0.000351	10.6	0.00014	9.08	0.0003	0.00001	0.00281	0.0005	0.0027	0.0002
MW12-06-02	2020-10-19 11:00	368	1010	-15.7	7.3	674	6.3	2.9	87.6	0.0805	0.0353	0.0406	215	0.7		0.00001	0.0019	0.0041	0.0262	0.104	0.000039	0.00005	128	0.000005	0.0001	0.0001	0.0002	0.94	0.000005	3.45	0.0078	37.6	0.0261	0.0101	37.6	0.0005	0.00005	0.0001	80.1	0.000176	10.5	0.0001	9.34	0.0003	0.00001	0.00279	0.0005	0.0017	0.0002
MW12-06-02	2021-03-22 12:50	380	1010	-17.5	6.96	683	15.3	3.6	149.3	0.104	0.0258	0.0349	222	0.77		0.00001	0.0015	0.00366	0.0257	0.102	0.000033	0.00005	124	0.000005	0.0001	0.0001	0.0002	1.02	0.000005	3.62	0.0079	39.3	0.0254	0.0109	36.8	0.0005	0.00005	0.0001	77.9	0.000587	10.1	0.0001	9.51	0.0003	0.00001	0.0027	0.0005	0.0026	0.0002
MW12-06-02	2021-05-29 16:00	312	956	-14.6	7.14	652	9.5	6.2	143.9	0.0756	0.0801	0.0297	224	0.6		0.00002	0.0029	0.00336	0.0229	0.101	0.00004	0.0001	131	0.00001	0.0002	0.001	0.0004	0.975	0.000005	3.27	0.0074	41	0.0233	0.0108	36.8	0.001	0.0001	0.0002	75.2	0.000108	9.99	0.0002	9.43	0.0006	0.00002	0.00253	0.001	0.0049	0.0004
MW12-06-02	2021-09-30 12:30	360	979	-37	7.64	678	21.4	3.4	142.9	0.0371	0.025	0.0276	218	0.74		0.00001	0.0012	0.00324	0.0233	0.073	0.000041	0.00005	133	0.0000139	0.0001	0.0005	0.0002	1	0.000005	3.7	0.0089	39.5	0.0261	0.0106	37.9	0.0005	0.00005	0.0001	73.5	0.00005	10.4	0.0001	9.9	0.0003	0.00001	0.00266	0.0005	0.0024	0.0002
MW12-06-02	2021-12-29 15:30	366	997	-35.3	8.04	687	26.3	3.3	275.1	0.373	0.163	0.0188	226	1.1		0.00001	0.0022	0.00236	0.0217	0.226	0.000034	0.00005	130	0.000005	0.0001	0.0005	0.0002	0.049	0.000005	3.49	0.0086	37.4	0.0241	0.0102	38	0.0005	0.00005	0.0001	75.5	0.000114	11	0.0001	9.75	0.0003	0.00001	0.00255	0.0005	0.0068	0.0002
MW12-06-03	2016-09-02 16:50	381	941		8	615	5.2	6.2		1.02	0.234	0.0307	175	0.5		0.00001	0.0018	0.00079	0.0261	0.327	0.000026	0.00005	110	0.000005	0.0001	0.00039	0.0002	1.19	0.000005	3.95	0.0083	55.3	0.0153	0.00189	37.2	0.0005	0.00005	0.00013	61.4	0.000078	9.13	0.0001	4.22	0.0003	0.00001	0.0019	0.0005	0.0083	0.0003
MW12-06-03	2016-10-25 13:55	394	981			652	5.3			0.769	0.198	0.0076	214	2.5		0.00001	0.001	0.0006	0.0258	0.36	0.00002	0.00005	106	0.000005	0.0001	0.00011	0.0002	0.02	0.000005	3.95	0.0075	49.7	0.0151	0.00238	38	0.0005	0.00005	0.00012	67.8	0.000052	9.63	0.0001	4.36	0.0003	0.00001	0.00201	0.0005	0.0065	0.0003
MW12-06-03	2016-12-30 11:15	389	1000		7.8	661	5.5	5.8		1.07	0.269	0.0367	214	2.5		0.00001	0.0013	0.00092	0.032	0.57	0.000025	0.00005	110	0.000005	0.0001	0.0003	0.0002	1.17	0.000005	4.13	0.0076	52.8	0.0199	0.00201	41.3	0.0005	0.00005	0.00039	68.9	0.000447	9.66	0.0001	4.22	0.0003	0.00001	0.00212	0.0005	0.0035	0.0003
MW12-06-03	2017-04-24 16:00	385	1010		8.1	629	3	6		0.115	0.028	0.0579	205	2.5		0.00001	0.001	0.00059	0.0268	0.092	0.00002	0.00005	110	0.000005	0.0001	0.0003	0.0002	1.19	0.000005	3.68	0.0081	54.5	0.0154	0.00197	36.1	0.0005	0.00005	0.00012	68.9	0.00005	8.84	0.00013	4.42	0.0003	0.00001	0.00217	0.0005	0.002	0.0003
MW12-06-03	2017-08-29 11:25	354	1040		7.7	619	5.3	5.2		0.131	0.038	0.0673	206	0.65		0.00001	0.0017	0.00062	0.0256	0.108	0.000022	0.00005	107	0.0000247	0.0001	0.00026	0.0002	1.14	0.000005	3.96	0.0072	50.7	0.0149	0.00174	36.6	0.0005	0.00005	0.0001	69.8	0.00005	9.35	0.00013	4.11	0.0003	0.00001	0.00215	0.0005	0.0092	0.0003
MW12-06-03	2017-11-14 14:55	377	953		8	641	6.7	5.3		0.133	0.0346	0.0352	202	0.48		0.00001	0.0028	0.00052	0.0226	0.053	0.000028	0.00005	113	0.000005	0.0001	0.00019	0.0002	1.33	0.000005	3.73	0.0068	57.2	0.0149	0.00353	34.8	0.0005	0.00005	0.0001	72.1	0.000422	9.42	0.0001	4.82	0.0003	0.00001	0.00253	0.0005	0.004	0.0003
MW12-06-03	2017-12-31 13:30	379	970		8	671	6.7	4.5		0.314	0.077	0.015	221	2.5		0.00001	0.0019	0.00056	0.0252	0.071	0.000026	0.00005	120	0.000005	0.0001	0.0001	0.0002	1.39	0.000005	4.24	0.0077	56.7	0.0158	0.004	38.1	0.0005	0.00005	0.0001	77.1	0.00005	9.96	0.0001	4.93	0.0003	0.00001	0.00269	0.0005	0.0096	0.0003
MW12-06-03	2018-03-12 14:30	383	1020		7.9	646	3	4		0.0675	0.025	0.0724	211	2.5		0.00001	0.0015	0.00068	0.0245	0.128	0.00002	0.00005	111	0.000005	0.0001	0.0002	0.0002	1.11	0.000005	3.45	0.008	52	0.0145	0.00243	35.3	0.0005	0.00005	0.0001	62.6	0.000119	8.94	0.0001	4.88	0.0003	0.00001	0.00237	0.0005	0.0034	0.0003
MW12-06-03	2018-05-09 11:10	374	981		8	636	3	5.3		0.0692	0.025	0.0511	210	2.5		0.00001	0.001	0.00077	0.0241	0.092	0.000031	0.00005	110	0.000005	0.0001	0.00017	0.00031	1.27	0.000005	3.82	0.0075	52	0.0156	0.00322	34.7	0.0005	0.000058	0.0001	73.5	0.000132	9.49	0.0001	4.47	0.0003	0.00001	0.00251	0.0005	0.0057	0.0003
MW12-06-03	2018-08-25 15:45	381	1020	-53.2	7.4	623	5.4	7	125.1	0.0342	0.0094	0.0791	206	0.5		0.00001	0.0177	0.00071	0.0227	0.14	0.00002	0.00005	101	0.000005	0.0001	0.0002	0.00267	0.943	0.000005	3.66	0.0069	49.6	0.0152	0.00155	33	0.0005	0.00005	0.0001	64.8	0.000063	8.92	0.00012	4.38	0.00149	0.00001	0.00218	0.0005	0.0057	0.0003
MW12-06-03	2018-10-25 14:50	378	992	-31.9	7.2	627	5.9	4.3	107.4	0.0686	0.025	0.0703	206	2.5		0.00001	0.001	0.00156	0.0245	0.106	0.000024	0.00005	104	0.000005	0.0001	0.0002	0.0002	1.07	0.000005	3.89	0.0073	51.6	0.0154	0.00199	34.3	0.0005	0.00005	0.0001	73.2	0.000095	9.01	0.00011	4.51	0.0003	0.00001	0.00221	0.0005	0.0023	0.0003
MW12-06-03	2019-02-25 9:30	377	1010	-13.2	6.98	630	3	3	90.1	0.058	0.025	0.0849	201	2.5		0.00001	0.001	0.00057	0.0228	0.13	0.000022	0.00005	111	0.000005	0.0001	0.00022	0.0002	0.928	0.000005	3.79	0.0076	51.5	0.0147	0.0014	35.3	0.0005	0.00005	0.0001	70.1	0.000331	9.44	0.00012	4.44	0.0003	0.00001	0.00211	0.0005	0.0022	0.0003
MW12-06-03	2019-05-09 14:45	384	1020	-23.3	7.24	647	3	5.7	138.1	0.0839	0.026	0.0315	209	2.5		0.00001	0.0011	0.00053	0.0233	0.086	0.000028	0.00005	110	0.000005	0.0001	0.00022	0.0002	1.06	0.000005	3.98	0.0073	55.7	0.0153	0.00239	37.4	0.0005	0.00005	0.0001	67.3	0.000139	9.21	0.0001	4.59	0.0003	0.00001	0.00217	0.0005	0.0019	0.0003
MW12-06-03	2019-08-15 13:35	363	954	-77.9	7.09	634	3	6.3	72	0.0475	0.025	0.077	206	2.5		0.00001	0.0014	0.00053	0.0243	0.097	0.000024	0.00005	112	0.000005	0.0001	0.00019	0.0002	0.822	0.000005	4.06	0.0074	55.3	0.0145	0.00118	37.6	0.0005	0.00005	0.0001	68.5	0.000358	9.48	0.0001	4.69	0.0003	0.00001	0.00222	0.0005	0.001	0.0003
MW12-06-03	2019-10-17 10:45	390	998	6.9	7.36	631	3	4.7	106.1	0.0731	0.025	0.084	196	0.6		0.00001	0.001	0.0007	0.0246	0.112	0.000034	0.00005	106	0.000005	0.0001	0.00012	0.0002	0.789	0.000005	3.93	0.007	52.2	0.0169	0.0017	36.1	0.0005	0.00005	0.0001	69.8	0.000301	9.41	0.0001	4.82	0.0003	0.00001	0.00214	0.0005	0.0021	0.0003
MW12-06-03	2020-03-14 13:05	386	985	-56.6	7.33	618	3	4.7	100.9	0.152	0.0463	0.0695	171	0.53		0.000016	0.001	0.0006	0.022	0.129	0.00002	0.00005	95	0.000005	0.0001	0.00015	0.0002	0.631	0.000005	3.93	0.0074	50.4	0.0126	0.00108	37.7	0.0005	0.00005	0.0001	67.2	0.00005	9.8	0.0001	4.84	0.0003	0.00001	0.0019	0.0005	0.004	0.0002
MW12-06-03	2020-05-29 11:00	387	987	-74	7.34	668	3	4.9	58.3	0.0841	0.0314	0.0481	195	0.7		0.00001	0.0012	0.00059	0.0234	0.088	0.000022	0.00005	114	0.000005	0.0001	0.00017	0.0002	0.689	0.000005	4.12	0.0075	56.1	0.0142	0.00115	37.6	0.0005	0.00005	0.0001	67.6	0.000118	9.77	0.0001	4.97	0.0003	0.00001	0.00196	0.0005	0.0011	0.0002
MW12-06-03	2020-08-07 9:45	382	997	-58	7.37	664	3	4.9	82.1	0.135	0.0327	0.0736	206	0.63		0.00001	0.0023	0.00048	0.021	0.105	0.00002	0.00005	108	0.0000065	0.0001	0.00016	0.00029	0.772	0.000005	3.76	0.0076	53.2	0.0136	0.00164	33.9	0.0005	0.00005	0.0001	71.8	0.000201	9.87	0.0001	4.61	0.0003	0.00001	0.00216	0.0005	0.0078	0.0002
MW12-06-03	2020-10-19 11:30	387	1000	-6.2	7.47	658	3	2.2	89.7	0.107	0.0342	0.0602	194	0.61		0.00001	0.0016	0.00148	0.0215	0.104	0.000021	0.00005	106	0.000005	0.0001	0.00015	0.00072	0.641	0.000005	3.75	0.0071	54.7	0.0138	0.00113	37.3	0.0005	0.00005	0.0001	73.6	0.000115	10.2	0.0001	4.85	0.0003	0.00001	0.00191	0.0005	0.0013	0.0002
MW12-06-03	2021-05-29 16:25	350	934	23.3	7.35	638	3.6	5.7	78.3	0.0507	0.025	0.0994	184	0.61		0.00001	0.0229	0.00065	0.0241	0.118	0.000025	0.00005	116	0.0000148	0.0001	0.0005	0.0013	0.329	0.000005	4.07	0.0076	58.1	0.0148	0.000237	38.7	0.0005	0.00005	0.0001	60.5	0.00314	9.66	0.00016	5.05	0.00198	0.00001	0.00118	0.0005	0.0059	0.0002
MW12-06-03	2021-09-30 13:10	390	961	-54.3	7.7	637	1.1	3	103	0.118	0.0285	0.0755	178	0.68		0.00001	0.0012	0.00052	0.0224	0.089	0.00002	0.00005	104	0.0000297	0.0001	0.0005	0.00028	0.378	0.000005	3.93	0.0079	52.8	0.0145	0.000521	36.1	0.0005	0.00005	0.0001	62.4	0.000453	9.64	0.0001	4.85	0.0003	0.00001	0.0014	0.0005	0.0022	0.0002
MW12-06-03	2021-12-29 16:20	399	942	-53.6	7.96	640	1	3.1	216.8	0.0402	0.025	0.0122	175	0.57		0.00001	0.001	0.0004	0.0195	0.07	0.00002	0.00005	104	0.000005	0.0001	0.0005	0.0002	0.01	0.000005	3.88	0.0077	54	0.0146	0.00178	35.7	0.0005	0.00005	0.0001	67.7	0.00005	10.1	0.0001	4.83	0.0003	0.00001	0.00219	0.0005	0.0021	0.0002
MW12-06-04	2012-11-16 0:00	403	1000			618				0.229	0.08	0.0059	178			0.000005	0.0037	0.00163	0.0425	0.149	0.000019	0.000005	97.2	0.000012	0.00021	0.0001	0.000106	0.717		3.81	0.00654	54.4	0.057	0.0102	33.7	0.000513	0.000031	0.000116	58.3	0.000083	7.41	0.0002	3.21	0.0005	0.000002	0.00681	0.0002	0.00807	0.0001
MW12-06-04	2013-08-18 15:30	403	962	-73.5	7.31	602	4.5	8.7	47.6	0.463	0.128	0.021	163	1.2	1.3	0.00002	0.0051	0.00231	0.0207	0.372	0.0001	0.001	103	0.00001	0.0005	0.001	0.0002	0.67	0.00001	3.62	0.0066	56.1	0.0536	0.0089	36.9	0.001	0.0002	0.0005	56.8	0.00014	9.11	0.005	2.95	0.005	0.00005	0.00623	0.005	0.005	0.0005
MW12-06-04	2013-10-11 10:30	395	968		8.1	620	4.4	2.37		0.167	0.022	0.019	161	0.94	1.2	0.00002	0.003	0.00199	0.02	0.145	0.0001	0.001	104	0.00001	0.0005	0.001	0.00038	0.713	0.00001	3.95	0.0077	59.7	0.0565	0.0074	36.7	0.001	0.0002	0.0005	58.3	0.0001	8.61	0.005	2.88	0.005	0.00005	0.00583	0.005	0.005	0.0005
MW12-06-04	2014-05-30 16:30	414	977		6.4	644		5.16		1.12	0.324	0.022	159	0.79	1.3	0.00002	0.0031	0.00232	0.0193	0.514	0.0001	0.001	102	0.00001	0.0005	0.001	0.00025	0.531	0.00001	3.9	0.0069	56.2	0.0526	0.0087	35.5	0.001	0.0002	0.0005	62.7	0.0001	10.4	0.005	2.88	0.005	0.00005	0.00586	0.005	0.0052	0.0005
MW12-06-04	2014-07-25 14:45	396	996		7.8	616		6.1		0.276	0.089	0.016	170	1.3	1.3	0.00002	0.0032	0.00212	0.0189	0.172	0.0001	0.001	98	0.000016	0.0005	0.001	0.00049	0.694	0.00001	3.45	0.0066	54.7	0.05	0.0082	34.9	0.001	0.0002	0.0005	53.5	0.0001	8.57	0.005	2.98	0.005	0.00005	0.00553	0.005	0.005	0.0005
MW12-06-04	2014-10-06 16:20	418	992	-32.1	7.46	618		0.8	63.9	0.0998	0.029	0.023	164	1.3	1.2	0.00002	0.003	0.0023	0.0168	0.099	0.0001	0.001	105	0.00001	0.0005	0.001	0.0002	0.699	0.00001	3.53	0.0062	56.7	0.0496	0.0083	34.2	0.001	0.0002	0.0005	56.9	0.0001	8.94	0.005	2.87	0.005	0.00005	0.00581	0.005	0.0227	0.0005
MW12-06-04	2015-05-05 15:20	404	1010	8.2	7.22	604		6.4	61.7	0.173	0.049	0.019	168	1.5	1.3	0.00002	0.0031	0.00232	0.02	0.148	0.0001	0.001	103	0.00001	0.0005	0.001	0.00054	0.667	0.00001	3.66	0.0066	51.2	0.0442	0.0085	31.5	0.001	0.0002	0.0005	52.2	0.0001	9.11	0.005	2.98	0.005	0.00005	0.00583	0.005	0.0134	0.0005
MW12-06-04	2015-08-17 15:30	393	980	-54	7.82	616		7.3	47.2	0.143	0.04	0.028	171	0.96	1.3	0.00002	0.0081	0.00188	0.0185	0.109	0.0001	0.001	101	0.00001	0.0005	0.001	0.0002	0.767	0.00001	3.45	0.0073	60	0.0473	0.0081	35.3	0.001	0.0002	0.0005	55.8	0.0001	8.34	0.005	2.89	0.005	0.00005	0.00569	0.005	0.0069	0.0005
MW12-06-04	2015-09-19 13:55	405	991		7.4	636		4.4		0.243	0.074	0.014	169	1.4	1.3	0.00002	0.012	0.00229	0.0186	0.131	0.0001	0.001	96.8	0.000017	0.0005	0.001	0.0002	0.719	0.00001	3.34	0.0067	54.8	0.0468	0.008	33	0.001	0.0002	0.0005	51.2	0.00014	8.36	0.005	2.89	0.005	0.00005	0.00557	0.005	0.0118	0.0005
MW12-06-04	2016-05-10 15:25	419	1080		7.7	671	12	8.4		6.12	1.48	0.0069	175	1		0.00002	0.0024	0.00302	0.0188	0.954	0.000031	0.00005	110	0.000005	0.0001	0.0001	0.0002	0.656	0.000005	3.78	0.0066	61.4	0.0449	0.00817	42.6	0.0005	0.00005	0.0001	57.1	0.00073	9.02	0.0001	3.04	0.0003	0.00001	0.00576	0.0005	0.0092	0.0003
MW12-06-04	2016-05-14 16:20	426	1080		8.3	735	3.3	10.7		7.92	2	0.0056	179	1		0.00002	0.002	0.00515	0.023	9.71	0.00004	0.0001	105	0.00001	0.0002	0.00022	0.0004	0.434	0.000005	4.12	0.0068	56.8	0.0404	0.00892	98.8	0.001	0.0001	0.00071	51.8	0.00101	11.5	0.0002	3.36	0.0006	0.00002	0.00562	0.001	0.0151	0.0006
MW12-06-04	2016-09-02 17:50															0.00001	0.0018	0.00224	0.0174	0.527	0.000021	0.00005	108	0.000005	0.0001	0.0001	0.0002	0.01		3.85	0.007	62.2	0.0464	0.00854	39.5	0.0005	0.00005	0.0001	59.2	0.000119	8.98	0.0001	2.98	0.0003	0.00001	0.00564	0.0005	0.0686	0.0003
MW12-06-04	2016-12-30 11:45	418	993		7.7	651	3.7	3.6		2.23	0.552	0.005	179	2.5		0.00002	0.0019	0.00329	0.0196	0.762	0.00003	0.00005	106	0.000005	0.0001	0.0001	0.00076	0.708	0.000005	4.04	0.0064	58.3	0.048	0.00761	43	0.0005	0.00005	0.00062	60.5	0.00084	9.13	0.0001	2.85	0.0003	0.00001	0.0056	0.0005	0.0266	0.0003
MW12-06-04	2016-12-30 11:45				7.7			3.6																																									
MW12-06-04	2017-02-18 10:45	414	991		8.3	635	8.1	3.1		0.875	0.202	0.008	182	2.5		0.00001	0.0021	0.00258	0.0172	0.435	0.000027	0.00005	104	0.000005	0.0001	0.0001	0.0003	0.442	0.000005	3.8	0.0067	57.6	0.0432	0.00783	35.2	0.0005	0.00005	0.00022	63.8	0.000569	9.2	0.0001	3.07	0.0003	0.00001	0.00603	0.0005	0.0402	0.0003
MW12-06-04	2017-04-24 16:15	408	991		7.9	614	3	6		0.12	0.03	0.0097	181	2.5		0.00001	0.0017	0.00237	0.0172	0.084	0.000024	0.00005	104	0.000005	0.0001	0.0001	0.0002	0.725	0.000005	3.6	0.0068	60.7	0.0444	0.00841	36.4	0.0005	0.00005	0.0001	62.2	0.00005	8.31	0.0001	2.97	0.0003	0.00001	0.00575	0.0005	0.0103	0.0003
MW12-06-04	2017-08-29 11:40	398	1020		7.6	627	4	4.9		0.118	0.034	0.011	190	0.64		0.00001	0.0015	0.00238	0.0176	0.101	0.000028	0.00005	103	0.0000054	0.0001	0.0001	0.0002	0.706	0.000005	3.72	0.0061	54.8	0.0408	0.00771	35	0.0005	0.00005	0.0001	62.5	0.00005	8.73	0.0001	2.85	0.0003	0.00001	0.00562	0.0005	0.0125	0.0003
MW12-06-04	2017-11-14 15:10	399	937		7.5	634	5.3	4.3		0.0623	0.016	0.0068	182	0.43		0.00001	0.0017	0.00227	0.0164	0.049	0.000027	0.00005	110	0.000005	0.0001	0.00014	0.0002	0.723	0.000005	3.65	0.0055	61.4	0.0404	0.00865	35.1	0.0005	0.00005	0.0001	63.7	0.000261	8.92	0.0001	3.22	0.0003	0.00001	0.00595	0.0005	0.0084	0.0003
MW12-06-04	2017-12-31 13:50	400	966		8.2	651	3	4.4		0.0522	0.025	0.0062	197	2.5		0.00001	0.0024	0.00242	0.0174	0.059	0.000028	0.00005	112	0.0000067	0.0001	0.0001	0.0002	0.774	0.000005	3.96	0.0065	61	0.0444	0.00906	37.2	0.0005	0.00005	0.0001	67.6	0.00005	9.18	0.0001	3.16	0.0003	0.00001	0.00601	0.0005	0.0114	0.0003
MW12-06-04	2018-03-12 14:45	413	1010		8.2	627	3	4.9		0.0731	0.025	0.0087	183	2.5		0.00001	0.0031	0.00223	0.0175	0.052	0.00002	0.00005	107	0.000005	0.0001	0.0001	0.0002	0.728	0.000005	3.24	0.0063	52.4	0.0388	0.00845	31.3	0.0005	0.00005	0.0001	58.2	0.00005	8.39	0.0001	3.28	0.0003	0.00001	0.00565	0.0005	0.0088	0.0003
MW12-06-04	2018-05-09 11:25	399	961		7.5	620	3.5	5.1		0.107	0.028	0.0069	186	2.5		0.00001	0.001	0.00246	0.0171	0.087	0.000031	0.00005	102	0.000005	0.0001	0.0001	0.0002	0.764	0.000005	3.6	0.0061	54.6	0.0424	0.00842	33.2	0.0005	0.00005	0.0001	64.7	0.000122	8.66	0.0001	2.92	0.0003	0.00001	0.00572	0.0005	0.0176	0.0003
MW12-06-04	2018-08-25 16:00	404	1020	-33.9	7.37	622	10.8	5.8	134	0.0482	0.0129	0.013	185	0.5		0.00001	0.0021	0.00229	0.0168	0.153	0.000023	0.00005	102	0.000005	0.0001	0.0001	0.0002	0.773	0.000005	3.49	0.006	54.7	0.0403	0.00817	33.6	0.0005	0.00005	0.0001	60.4	0.000081	8.56	0.0001	3.01	0.0003	0.00001	0.00551	0.0005	0.0218	0.0003
MW12-06-04	2018-10-25 15:10	407	985	-7.9	7.2	619	4.7	3.9	105.9	0.0579	0.025	0.0103	180	2.5		0.00001	0.0013	0.00339	0.0183	0.096	0.000024	0.00005	99.1	0.000005	0.0001	0.0001	0.0002	0.825	0.000005	3.88	0.0062	56.7	0.0457	0.00831	34.4	0.0005	0.00005	0.0001	67.2	0.00005	8.45	0.0001	2.89	0.0003	0.00001	0.00571	0.0005	0.0114	0.0003
MW12-06-04	2019-02-25 10:05	395	1000	-10.3	7	624	3	5.1	76.5	0.0677	0.025	0.0119	181	2.5		0.00001	0.0014	0.00261	0.0167	0.109	0.000035	0.00005	104	0.0000078	0.0001	0.00021	0.0002	0.841	0.000005	3.91	0.0067	60.7	0.0424	0.00826	35.9	0.0005	0.00005	0.0001	65	0.000207	9.07	0.0001	3.01	0.0003	0.00001	0.00527	0.0005	0.0139	0.0003
MW12-06-04	2019-05-09 15:00	393	987	-25.1	7.25	625	3	6	100.9	0.0578	0.025	0.0071	183	2.5		0.00001	0.0014	0.00226	0.0175	0.097	0.000025	0.00005	106	0.000005	0.0001	0.0001	0.0002	0.805	0.000005	3.61	0.0066	61.1	0.0434	0.00884	34.1	0.0005	0.00005	0.0001	58.2	0.000066	8.21	0.0001	3.16	0.0003	0.00001	0.00537	0.0005	0.0111	0.0003
MW12-06-04	2019-08-15 14:10	385	965	-53.6	7.2	633	3	5.9	85	0.0473	0.025	0.009	196	2.5		0.00001	0.0013	0.00238	0.0176	0.106	0.000027	0.00005	106	0.0000162	0.0001	0.0003	0.0002	0.784	0.000005	3.85	0.0063	60	0.0464	0.0083	35.9	0.0005	0.00005	0.0001	65.8	0.000346	8.7	0.0001	3.13	0.0003	0.00001	0.00629	0.0005	0.0083	0.0003
MW12-06-04	2019-10-17 11:05	407	1010	33.7	7.31	635	3	4.8	90.1	0.06	0.025	0.0098	191	0.59		0.00001	0.0027	0.00238	0.0171	0.07	0.000036	0.00005	100	0.0000111	0.0001	0.0001	0.0002	0.763	0.000005	3.88	0.0061	58.8	0.0465	0.00851	35.3	0.0005	0.00005	0.0001	68.7	0.000226	9.13	0.0001	3.07	0.0003	0.00001	0.00578	0.0005	0.0058	0.0003
MW12-06-04	2020-03-14 13:30	403	1010	-38.6	7.4	647	3	4	90.8	0.15	0.0457	0.0085	181	0.57		0.000012	0.0014	0.00259	0.0161	0.125	0.000029	0.00005	96.5	0.000005	0.0001	0.00012	0.0002	0.787	0.000005	3.87	0.0064	58.4	0.0416	0.00889	37.2	0.0005	0.00005	0.0001	68	0.00005	9.37	0.0001	3.26	0.0003	0.00001	0.00565	0.0005	0.01	0.0002
MW12-06-04	2020-05-29 11:20	400	1000	-42.6	7.28	675	3	4.7	80.9	0.0782	0.0459	0.0098	192	0.64		0.00001	0.0016	0.00246	0.0187	0.082	0.000029	0.00005	112	0.000005	0.0001	0.0001	0.0002	0.833	0.000005	4.06	0.0067	62.9	0.0457	0.00893	36.6	0.0005	0.00005	0.0001	68.2	0.00005	9.28	0.0001	3.41	0.0003	0.00001	0.00588	0.0005	0.0096	0.0002
MW12-06-04	2020-08-07 10:10	396	1000	-43.7	7.3	658	3	5.6	96.7	0.0711	0.025	0.0104	196	0.58		0.00001	0.0019	0.00214	0.0173	0.071	0.00002	0.00005	101	0.000005	0.0001	0.0001	0.0002	0.859	0.000005	3.7	0.0063	59	0.0444	0.00779	33.8	0.0005	0.00005	0.0001	67.8	0.0001	9.1	0.0001	2.92	0.0003	0.00001	0.00587	0.0005	0.0045	0.0002
MW12-06-04	2020-10-19 12:00	402	1020	-2.2	7.45	664	3	2.1	74	0.0848	0.037	0.0108	189	0.62		0.00001	0.0019	0.00296	0.0176	0.082	0.00003	0.00005	106	0.0000066	0.0001	0.00038	0.0002	0.886	0.000005	3.72	0.0064	59.5	0.0438	0.00796	36.3	0.0005	0.00005	0.0001	73	0.000087	9.7	0.0001	3.16	0.0003	0.00001	0.00559	0.0005	0.0041	0.0002
MW12-06-04	2021-03-22 13:15	419	1020	-8.3	7	669	2.9	4.5	123.7	0.0888	0.025	0.0277	196	0.66		0.00001	0.0026	0.00237	0.0198	0.078	0.000022	0.00005	99.4	0.000005	0.0001	0.0001	0.0002	0.969	0.000005	3.8	0.0065	57.4	0.0462	0.00897	34.5	0.0005	0.00005	0.0001	70.2	0.000214	8.96	0.0001	3.26	0.0003	0.00001	0.00547	0.0005	0.0048	0.0002
MW12-06-04	2021-05-29 16:50	375	986	7.9	7.27	677	3.4	5.5	99.3	0.0527	0.025	0.0137	198	0.56		0.00001	0.002	0.00238	0.0202	0.11	0.000023	0.00005	118	0.000005	0.0001	0.0005	0.0002	1.08	0.000005	4.11	0.0066	66.4	0.0521	0.00882	38.2	0.0005	0.00005	0.0001	64.3	0.000138	9.31	0.0001	3.51	0.0003	0.00001	0.00557	0.0005	0.0097	0.0002

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N-NO_2$	$N-NO_3$	$N-NH_3$	SO_4-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW12-06-04	2021-09-30 13:40	399	993	-30.8	7.65	666	1.8	2.8	103.9	0.0946	0.0253	0.0122	193	0.6	
MW12-06-04	2021-12-29 16:45	379	973	-27.3	7.85	653	1.7	2.6	211.3	0.0578	0.025	0.0084	200	0.55	
MW12-06-05	2016-09-02 18:40	412	977		7.8	641	9	5.6		0.154	0.038	0.005	181	1	
MW12-06-05	2016-10-25 14:40	420	978		8	624	4.8	4.1		0.125	0.04	0.007	176	2.5	
MW12-06-05	2016-12-30 14:00	418	1000		7.7	646	6.1	3.1		1	0.255	0.005	185	2.5	
MW12-06-05	2017-04-24 16:45	414	1020		7.6	610	3	5.5		0.0972	0.025	0.0054	177	2.5	
MW12-06-05	2017-08-29 13:25	400	1000		7.6	630	6	5.8		0.117	0.034	0.0131	188	0.64	
MW12-06-05	2017-11-14 15:45	406	948		8.2	622	4.7	4.2		0.0511	0.0155	0.005	181	0.44	
MW12-06-05	2017-12-31 14:15	400	966		8.2	635	3	4.7		0.0688	0.025	0.0061	182	2.5	
MW12-06-05	2018-03-12 15:00	410	1010		8.3	635	3	4.9		0.0328	0.025	0.0073	183	2.5	
MW12-06-05	2018-05-09 11:55	397	968		7.6	622	3	5.4		0.0568	0.025	0.0089	182	2.5	
MW12-06-05	2018-08-25 16:15	413	1020	-4	7.4	635	3	5.2	87.5	0.0637	0.0168	0.0083	183	0.5	
MW12-06-05	2018-10-25 15:30	401	987	27.7	7.26	614	3.7	3.4	81.9	0.0539	0.025	0.005	183	2.5	
MW12-06-05	2019-02-25 10:25	397	1020	28.1	7.14	541	3	2.7	66.7	0.0402	0.025	0.0059	98.3	2.5	
MW12-06-05	2019-05-09 15:25	410	1020	5.7	7.26	641	3.8	5.6	80.2	0.0384	0.025	0.0076	189	2.5	
MW12-06-05	2019-08-15 14:40	402	886	12.6	7.34	632	3	5.6	67.1	0.0373	0.025	0.0084	186	2.5	
MW12-06-05	2019-10-17 11:25	408	1010	68.3	7.36	637	3	4.3	76.5	0.0567	0.025	0.0088	186	0.56	
MW12-06-05	2020-03-14 13:55	403	1010	-2.7	7.45	637	3	3.2	67.9	0.153	0.0501	0.0081	177	0.53	
MW12-06-05	2020-05-29 11:45	399	1000	-12.9	7.28	651	3	4.6	59.2	0.0819	0.025	0.007	189	0.64	
MW12-06-05	2020-08-07 10:25	398	1000	47	7.35	662	3	4.1	65.1	0.0762	0.0431	0.0062	200	0.6	
MW12-06-05	2020-10-19 12:15	400	1030	37	7.5	714	3	1.8	53.9	0.067	0.0286	0.0107	195	52.9	
MW12-06-05	2021-05-29 17:05	363	970	51.3	7.29	657	2.6	4.9	78.5	0.0635	0.0484	0.0066	196	0.58	
MW12-06-05	2021-09-30 14:15	401	994	13.1	7.53	664	1	2.5	77.4	0.106	0.0262	0.0064	192	0.65	
MW12-06-05	2021-12-29 17:10	399	992	14.2	7.82	662	1.4	2.4	149.4	0.0344	0.025	0.0059	199	0.58	
MW12-06-06	2012-11-16 0:00	345	905			538				0.0651	0.45	0.085	171		
MW12-06-06	2013-08-18 16:30	315	821	99.3	7.66	510	4	9.8	54.6	0.0953	0.952	0.011	154	3	0.67
MW12-06-06	2013-10-11 12:30	309	824		8.2	528	1.4	1.58		0.0896	0.871	0.018	158	0.5	0.65
MW12-06-06	2014-05-30 17:30				7.5			8.2				0.033			
MW12-06-06	2014-07-25 15:15	294	816		7.8	472		7.5		0.0521	0.953	0.01	153	5.3	0.68
MW12-06-06	2014-10-06 16:50	313	807	76.1	7.62	519		0.2	46.8	0.102	0.993	0.0093	146	5.1	0.65
MW12-06-06	2015-05-05 15:45	310	836	94.4	7.35	478		5.5	43.4	0.0629	0.893	0.033	145	5.1	0.65
MW12-06-06	2015-08-17 16:00	305	819	76.1	8.4	480		5	48.6	0.0672	1.04	0.025	146	5.7	0.66
MW12-06-06	2015-09-19 14:30	304	835		8	494		3.2		0.0542	1.13	0.013	143	5.8	0.67
MW12-06-06	2016-05-10 15:55	312	868		7.7	520	3.3	9.1		0.185	1.13	0.005	148	5.43	
MW12-06-06	2016-05-14 16:50	314	846		7.8	521	3	10.1		0.499	1.31	0.005	151	5.93	
MW12-06-06	2016-09-02 19:20	325	829		8.1	531	3	4.5		0.0971	1.15	0.005	154	5.7	
MW12-06-06	2016-10-25 15:20	326	839		8	529	3	5		0.0692	1.15	0.005	156	5.9	
MW12-06-06	2016-12-30 14:40	327	853		7.7	537	3	4.1		0.0889	1.13	0.005	159	5.8	
MW12-06-06	2016-12-30 14:40				7.7			4.1							
MW12-06-06	2017-02-18 11:25	325	845		8.3	522	7.6	2.6		0.221	1.05	0.005	153	5.4	
MW12-06-06	2017-04-24 17:15	322	853		8.4	527	3	5.8		0.0685	1.08	0.005	155	6.1	
MW12-06-06	2017-08-29 13:40	315	845		7.6	519	3	5.5		0.0793	1.1	0.005	155	6.48	
MW12-06-06	2017-11-14 16:05	321	816		7.8	529	3	4.2		0.0455	1.06	0.005	154	6.62	
MW12-06-06	2017-12-31 14:45	314	817		8.3	527	3	4		0.0773	1.02	0.005	155	6.8	
MW12-06-06	2018-03-12 15:30	328	852		8.1	531	3	4.8		0.0619	1	0.0133	155	7	
MW12-06-06	2018-05-09 12:10	322	834		7.8	516	3	5.5		0.0755	0.959	0.005	153	6.9	
MW12-06-06	2018-08-25 16:30	326	861	34.1	7.72	528	3	4.8	124	0.0528	0.963	0.005	154	7.26	
MW12-06-06	2018-10-25 15:50	316	838	61.2	7.38	514	3.7	3.9	77.2	0.0503	0.952	0.005	153	7.5	
MW12-06-06	2019-02-25 10:50	309	849	88.8	7.25	513	3	3.6	74.4	0.0459	0.895	0.0051	148	7.6	
MW12-06-06	2019-05-09 16:00	321	858	51.9	7.5	532	3	5.2	70.1	0.0961	0.917	0.005	155	8.3	
MW12-06-06	2019-08-15 15:10	325	814	60.3	7.57	533	3	6.1	67.7	0.124	0.853	0.0086	157	8	
MW12-06-06	2019-10-17 11:45	324	853	95.2	7.45	522	3	4.7	61.3	0.0746	0.744	0.0091	153	7.34	
MW12-06-06	2020-03-14 14:15	322	859	31.3	7.57	529	3	3.8	55.5	0.0527	0.643	0.005	147	7.18	
MW12-06-06	2020-05-29 12:00	317	855	15.6	7.4	532	3	5	52.9	0.0335	0.618	0.005	155	6.67	
MW12-06-06	2020-08-07 10:50	316	853	43.6	7.49	545	3	4.6	69.9	0.026	0.639	0.005	162	7.26	
MW12-06-06	2020-10-19 12:35	314	865	56.2	7.63	536	7.3	1.9	53.4	0.0461	0.646	0.005	155	7.1	
MW12-06-06	2021-03-22 13:55	321	851	72.5	7.32	539	1	4.2	81.6	0.0692	0.766	0.0138	158	7.32	
MW12-06-06	2021-05-29 17:20	313	851	94.2	7.45	566	2.9	7.1	67.7	0.308	0.744	0.0129	160	7.35	
MW12-06-06	2021-09-30 15:05	320	839	60.1	7.73	541	1	2.4	69.6	0.0338	0.622	0.0061	153	7.49	
MW12-06-06	2021-12-29 17:25	314	828	23.4	7.88	518	1.5	2.4	133.6	0.0296	0.668	0.005	153	7.53	
MW12-07-01	2012-11-03 0:00	296	1250			870				0.0731	53.2	0.005	193		
MW12-07-01	2013-06-29 7:35			81.3	7.33			9.5	24.2						
MW12-07-01	2013-08-06 16:25	311	1230	155.1	7.67	900	2.7	8.5	29.5	3.05	45.3	0.025	198	4.4	0.65
MW12-07-01	2013-08-20 14:00	315	1240	111.9	7.73	902	1.2	7.74	24.4	1.83	40.6	0.027	213	4.1	0.66
MW12-07-01	2013-10-15 12:00	347	1220			868	1.4			2.46	23.8	0.07	256	4.1	0.8
MW12-07-01	2014-03-16 15:40	308	1200		7.9	864		4.2		1.81	16.1	0.39	284	3.6	0.88
MW12-07-01	2014-04-19 15:15	319	1210		7.9	774		9.2		3.8	9.27	0.22	269	3.7	1
MW12-07-01	2014-04-28 17:00	314	1220		8.3	832		4.13		4.37	8.13	0.2	307	2.8	0.95
MW12-07-01	2014-05-24 14:30	334	1190		8.1	818		5.48		4.83	4.54	0.37	291	3.5	1
MW12-07-01	2014-06-22 10:15	350	1200		8.1	814		9.9		4.75	1.37	0.57	273	3.3	1.1
MW12-07-01	2014-07-18 14:00	336	1190		8.1	816		10.2		1.78	0.318	0.59	290	2.8	1
MW12-07-01	2014-08-15 10:30	329	1230		16.6	876		15.8		1.21	0.477	0.46	340	3	1
MW12-07-01	2014-09-14 13:55	295	1260		8.07	938		9.6		1.07	0.455	0.41	342	2.8	1.1
MW12-07-01	2014-10-02 15:05	278	1270	-88.5	7.76	942		0.5	47.1	2.3	0.98	0.27	410	3.3	1.1
MW12-07-01	2014-11-07 13:20	321	1270		8.9	938				0.05	0.669	0.96	319	4.3	1
MW12-07-01	2014-12-07 13:55	307	1320	-114.9	7.34	994		-0.8	28.7	1.86	1.05	0.64	377	3.3	1
MW12-07-01	2015-01-12 17:00	109	1400	-104.9	7.2	1090		1.6	92.7	0.235	0.109	0.16	624	1.8	1.3
MW12-07-01	2015-03-20 12:00	337	1470	-70.4	6.75	1270		4.5	100.1	0.309	0.174	0.3	425	3.4	0.95
MW12-07-01	2015-04-24 11:15	356	1520	-89.2	6.84	1270		3.6	86.2	0.255	0.122	0.31	423	3.5	1
MW12-07-01	2015-05-22 16:00	376	1530	-165.9	6.92	1400		7.8	77.8	0.68	0.306	0.33	420	4.1	0.98
MW12-07-01	2015-06-02 9:30	376	1530	-143.6	6.97	1290		4.5	77.6	0.299	0.118	0.31	415	4.3	0.99
MW12-07-01	2015-07-18 9:20	385	1480	122.1	6.95	1280		4.7	79.2	0.438	0.237	0.44	401	5.2	1
MW12-07-01	2015-08-11 9:40	380	1530		7.2	1280		6.5		0.295	0.148	1.2	399	5.4	1.1
MW12-07-01	2015-09-18 15:30	371	1480		7.3	1170		4.6		0.632	0.28	0.69	392	5.2	1.1
MW12-07-01	2015-10-11 16:40	373	1480		7	1220		3.7		0.59	0.274	1.6	380	5.1	1
MW12-07-01	2015-11-14 14:45	345	1440		7.8	1100		1.7		0.268	0.121	0.48	371	5.7	1.1
MW12-07-01	2015-12-31 15:00	392	1440		7.4	1170	4	3.4		0.258	0.142	0.45	382	7	1.1
MW12-07-01	2016-02-28 16:55	430	1420		7.5	1080		3.3		0.312	0.2	0.58	312	7.1	1.1
MW12-07-01	2016-03-31 16:40				7.8			7.7							
MW12-07-01	2016-04-23 16:00	450	1410		7.6	879	3	6.5		0.203	0.088	0.212	280	1.2	
MW12-07-01	2016-05-13 16:35	448	1380		7.4	877	11.3	12.7		1.71	0.69	0.915	256	1.3	
MW12-07-01	2016-05-22 15:10	503	1360		7.5	866	5.3	6.1		0.39	0.167	0.902	234	2.5	
MW12-07-01	2016-06-25 14:15	512	1330		7.3	845	3.3	9		1.52	0.626	1.13	200	1.3	
MW12-07-01	2016-09-01 15:45	551	1280		7.3	825	3	7.9		0.472	0.203	0.472	166	1.2	
MW12-07-01	2016-10-22 16:00	529	1240		7.3	769	3	4.4		0.578	0.263	0.315	138	2.5	
MW12-07-01	2016-12-20 15:45	573	1250		7.7	763	3	4.6		0.518	0.225	0.351	105	2.5	
MW12-07-01	2016-12-20 15:45				7.7			4.6							
MW12-07-01	2017-01-27 10:30				7.5			4.7							
MW12-07-01	2017-01-30 16:05	570	1200		8	717	3.9	1.54		0.363	0.158	0.459	80	2.5	
MW12-07-01	2017-02-16 14:40	566	1190		7.6	708	3	2.8		0.575	0.25	0.525	69.1	2.5	
MW12-07-01	2017-03-30 8:40	577	1170		7.9	921	6.2	4.1		0.202	0.091	0.229	49.8	2.5	
MW12-07-01	2017-04-22 14:12	566	1170		7.5	906	6.2	6.5		0.206	0.092	0.248	43.5	5	
MW12-07-01	2017-05-21 16:20	517	1080		7.6	629	3	7.8		0.216	0.09	0.243	34.6	2.5	
MW12-07-01	2017-06-23 8:10	571	1090		7.7	646	3	5.8		0.206	0.089	0.325	25.3	2.5	
MW12-07-01	2017-07-28 14:00	573	1100		8	637	6.1	5.9		0.128	0.06	0.279	15.9	2.5	1.01
MW12-07-01	2017-08-15 15:35	554	1100		7.5	599	3	6.8		0.0891	0.044	0.218	12.4	2.5	
MW12-07-01	2017-10-20 16:45	459	1150		7.7	753	7.6	1.7		1.47	0.623	0.587	193	2.5	
MW12-07-01	2017-11-09 10:10	374	1180		8	840	3	3.8		0.455	0.193	0.604	311	1.3	
MW12-07-01	2018-01-13 14:00	288	1310		7.3	935	9	2.1		0.555	0.243	0.974	427	2.5	
MW12-07-01	2018-02-24 9:40	241	1380		7.5	956	5.4	2.2		0.561	0.225	1.23	473	5	0.96
MW12-07-01	2018-03-16 13:35	238	1370		7.8	1020	5.8	3.5		2.08	0.881	1.91	505	2.5	
MW12-07-01	2018-04-13 10:35	190	1420		7.5	1050	12.7	4		4.41	1.82	0.984	575	2.5	
MW12-07-01	2020-03-20 14:00	129	1370				3.2			1.66	0.639	0.124	631	1.82	
MW12-07-01	2020-04-17 9:10	122	1340	17.8	7.8	1090	3	5.8	61.8	1.34	0.51	0.118	638	1.98	
MW12-07-01	2020-07-28 15:50	126	1350	138.5	8.45	1060	3.9	4.9	35	2.59	1.07	0.0815	646	2.5	

Station	Date / Time	Dissolved Elements																	
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW12-06-04	2021-09-30 13:40	0.00001	0.0014	0.0021	0.0204	0.083	0.000029	0.00005	107	0.000005	0.0001	0.0005	0.0002	1.05	0.000005	3.98	0.0073	59.3	0.0448
MW12-06-04	2021-12-29 16:45	0.00001	0.0013	0.00173	0.0178	0.07	0.000026	0.00005	103	0.000005	0.0001	0.0005	0.0002	0.01	0.000005	3.8	0.0067	57.8	0.0439
MW12-06-05	2016-09-02 18:40	0.00001	0.0029	0.00087	0.0427	0.096	0.00002	0.00005	108	0.000005	0.00115	0.0001	0.00041	0.014	0.000005	3.77	0.0069	64.6	0.34
MW12-06-05	2016-10-25 14:40	0.00001	0.001	0.00085	0.0417	0.101	0.00002	0.00005	102	0.000005	0.00109	0.0001	0.0002	0.012	0.000005	3.77	0.0061	54.8	0.333
MW12-06-05	2016-12-30 14:00	0.00001	0.0014	0.0011	0.0442	0.123	0.00002	0.00005	106	0.000007	0.00121	0.0001	0.0002	0.162	0.000005	4.05	0.0063	58.5	0.367
MW12-06-05	2017-04-24 16:45	0.00001	0.0026	0.00074	0.0404	0.076	0.00002	0.00005	102	0.000005	0.00107	0.0001	0.00022	0.153	0.000005	3.56	0.0066	60.2	0.343
MW12-06-05	2017-08-29 13:25	0.00001	0.0015	0.00076	0.0418	0.101	0.00002	0.00005	102	0.0000103	0.00117	0.0001	0.00024	0.137	0.000005	3.96	0.0062	58.2	0.356
MW12-06-05	2017-11-14 15:45	0.00001	0.0018	0.00058	0.0344	0.048	0.00002	0.00005	108	0.000005	0.00097	0.0001	0.00033	0.12	0.000005	3.15	0.0059	53.8	0.299
MW12-06-05	2017-12-31 14:15	0.00001	0.0011	0.00074	0.0418	0.058	0.00002	0.00005	105	0.0000112	0.00151	0.0001	0.0002	0.016	0.000005	4.33	0.0061	65	0.396
MW12-06-05	2018-03-12 15:00	0.00001	0.0022	0.00072	0.0399	0.058	0.00002	0.00005	108	0.000005	0.00106	0.0001	0.00026	0.134	0.000005	3.5	0.0067	57.8	0.36
MW12-06-05	2018-05-09 11:55	0.00001	0.0015	0.001	0.0418	0.093	0.00002	0.00005	103	0.0000071	0.00114	0.0001	0.0002	0.14	0.000005	3.8	0.0061	58.6	0.373
MW12-06-05	2018-08-25 16:15	0.00001	0.0024	0.00079	0.0412	0.099	0.00002	0.00005	104	0.0000187	0.00114	0.0001	0.00027	0.14	0.000005	3.91	0.006	60.3	0.369
MW12-06-05	2018-10-25 15:30	0.00001	0.0014	0.00146	0.0416	0.092	0.00002	0.00005	97.4	0.0000051	0.00113	0.0001	0.0002	0.136	0.000005	3.78	0.0061	55.4	0.4
MW12-06-05	2019-02-25 10:25	0.00001	0.0021	0.00068	0.0393	0.126	0.00002	0.00005	104	0.0000163	0.00116	0.0001	0.0002	0.122	0.000005	3.94	0.0065	60.3	0.421
MW12-06-05	2019-05-09 15:25	0.00001	0.0013	0.00052	0.0392	0.067	0.00002	0.00005	111	0.0000074	0.00113	0.0001	0.0002	0.113	0.000005	3.68	0.0063	57	0.385
MW12-06-05	2019-08-15 14:40	0.00001	0.0019	0.00053	0.0405	0.086	0.00002	0.00005	105	0.0000156	0.00111	0.00019	0.0002	0.119	0.000005	3.83	0.0062	59.1	0.396
MW12-06-05	2019-10-17 11:25	0.00001	0.0011	0.00055	0.04	0.086	0.00002	0.00005	108	0.0000091	0.00116	0.0001	0.0002	0.108	0.000005	3.88	0.0063	58	0.395
MW12-06-05	2020-03-14 13:55	0.00001	0.001	0.00058	0.0383	0.124	0.00002	0.00005	92.5	0.000005	0.00112	0.0001	0.0002	0.12	0.000005	3.9	0.0061	59	0.377
MW12-06-05	2020-05-29 11:45	0.00001	0.0014	0.00047	0.0404	0.072	0.00002	0.00005	99.3	0.00001	0.00122	0.0001	0.0002	0.109	0.000005	3.84	0.0066	60.7	0.401
MW12-06-05	2020-08-07 10:25	0.00001	0.0018	0.00044	0.0404	0.074	0.00002	0.00005	102	0.000005	0.00122	0.0001	0.0002	0.106	0.000005	3.74	0.0062	59.5	0.417
MW12-06-05	2020-10-19 12:15	0.00001	0.0023	0.0011	0.0384	0.084	0.00002	0.00005	104	0.000005	0.00114	0.00013	0.0002	0.134	0.000005	3.72	0.0062	58	0.402
MW12-06-05	2021-05-29 17:05	0.00001	0.0024	0.00058	0.0377	0.113	0.00002	0.00005	113	0.000005	0.00107	0.0005	0.00024	0.174	0.000005	3.94	0.0063	65.3	0.39
MW12-06-05	2021-09-30 14:15	0.00001	0.002	0.00067	0.0377	0.091	0.00002	0.00005	106	0.0000118	0.00105	0.0005	0.0002	0.14	0.000005	4.04	0.0068	60.9	0.422
MW12-06-05	2021-12-29 17:10	0.00001	0.0018	0.00048	0.0374	0.066	0.00002	0.00005	101	0.000005	0.0011	0.0005	0.0002	0.01	0.000005	3.78	0.0064	58.3	0.412
MW12-06-06	2012-11-16 0:00	0.000005	0.00239	0.00009	0.0253	0.083	0.00001	0.000005	81.2	0.000012	0.000218	0.0001	0.000261	0.0833		3.57	0.00509	53.9	0.1
MW12-06-06	2013-08-18 16:30	0.00002	0.0038	0.00013	0.0144	0.088	0.0001	0.001	79.2	0.000011	0.0005	0.001	0.00036	0.009	0.00001	3.24	0.005	47.4	0.0551
MW12-06-06	2013-10-11 12:30	0.00002	0.003	0.0001	0.0144	0.077	0.0001	0.001	82.7	0.00001	0.0005	0.001	0.00047	0.0197	0.00001	3.55	0.0053	51.8	0.0553
MW12-06-06	2014-05-30 17:30	0.00002	0.0071	0.00018	0.016	0.397	0.0001	0.001	74.7	0.000124	0.0005	0.001	0.00072	0.0423	0.00001	3.4	0.005	46	0.0416
MW12-06-06	2014-07-25 15:15	0.00002	0.003	0.0001	0.0145	0.07	0.0001	0.001	73	0.00001	0.0005	0.001	0.00031	0.0081	0.00001	3.18	0.005	46.8	0.0384
MW12-06-06	2014-10-06 16:50	0.00002	0.003	0.0001	0.0141	0.09	0.0001	0.001	78	0.00001	0.0005	0.001	0.00022	0.013	0.00001	3.21	0.005	46.8	0.0333
MW12-06-06	2015-05-05 15:45	0.00002	0.003	0.00019	0.0147	0.088	0.0001	0.001	76.1	0.00001	0.0005	0.001	0.0002	0.0106	0.00001	3.32	0.005	44.1	0.0215
MW12-06-06	2015-08-17 16:00	0.00002	0.0059	0.00013	0.0145	0.093	0.0001	0.001	79.7	0.00001	0.0005	0.001	0.0002	0.0145	0.00001	3.07	0.005	52.2	0.0208
MW12-06-06	2015-09-19 14:30	0.00002	0.0142	0.00016	0.014	0.077	0.0001	0.001	73.9	0.000026	0.0005	0.001	0.00155	0.0334	0.00001	2.96	0.005	46.4	0.0226
MW12-06-06	2016-05-10 15:55	0.00001	0.0025	0.0001	0.0146	0.168	0.00002	0.00005	84.3	0.0000115	0.0001	0.0001	0.00021	0.01	0.000005	3.47	0.0051	53.8	0.0195
MW12-06-06	2016-05-14 16:50	0.00001	0.0084	0.00011	0.0131	0.176	0.00002	0.00005	84.9	0.000007	0.0001	0.0001	0.0002	0.01	0.000005	3.46	0.0051	54	0.0155
MW12-06-06	2016-09-02 19:20	0.00001	0.0024	0.0001	0.0144	0.074	0.00002	0.00005	82.8	0.0000169	0.0001	0.0001	0.0002	0.01	0.000005	3.36	0.0052	53.2	0.0192
MW12-06-06	2016-10-25 15:20	0.00001	0.001	0.0001	0.0137	0.087	0.00002	0.00005	81.1	0.000005	0.0001	0.0001	0.0002	0.01	0.000005	3.43	0.0055	50.6	0.0266
MW12-06-06	2016-12-30 14:40	0.00001	0.001	0.0001	0.0154	0.066	0.00002	0.00005	81.4	0.000013	0.0001	0.0001	0.0002	0.01	0.000005	3.74	0.0048	51.4	0.0388
MW12-06-06	2016-12-30 14:40																		
MW12-06-06	2017-02-18 11:25	0.00001	0.0016	0.00016	0.0138	0.156	0.00002	0.00005	80.2	0.0000423	0.0001	0.00022	0.00059	0.01	0.000005	3.47	0.0051	50.5	0.036
MW12-06-06	2017-04-24 17:15	0.00001	0.0027	0.0001	0.0143	0.065	0.00002	0.00005	77.9	0.000005	0.0001	0.0001	0.0006	0.014	0.000005	3.25	0.0052	52.4	0.0377
MW12-06-06	2017-08-29 13:40	0.00001	0.0016	0.0001	0.0146	0.075	0.00002	0.00005	77.4	0.0000055	0.0001	0.0001	0.00036	0.01	0.000005	3.5	0.0047	50.5	0.0383
MW12-06-06	2017-11-14 16:05	0.00001	0.001	0.0001	0.0132	0.047	0.00002	0.00005	83.3	0.000005	0.0001	0.0001	0.0002	0.01	0.000005	3.29	0.0044	53.6	0.0367
MW12-06-06	2017-12-31 14:45	0.00001	0.001	0.0001	0.0148	0.054	0.00002	0.00005	82.8	0.0000104	0.0001	0.0001	0.00025	0.01	0.000005	3.74	0.0047	52.6	0.0373
MW12-06-06	2018-03-12 15:30	0.00001	0.0018	0.00015	0.0145	0.067	0.00002	0.00005	81.3	0.0000069	0.0001	0.0001	0.00096	0.01	0.000005	3.39	0.0044	51.2	0.0348
MW12-06-06	2018-05-09 12:10	0.00001	0.001	0.00026	0.0135	0.085	0.00002	0.00005	77.5	0.0000092	0.0001	0.0001	0.0002	0.01	0.000005	3.25	0.0048	47.9	0.034
MW12-06-06	2018-08-25 16:30	0.00001	0.0074	0.0002	0.0151	0.083	0.00002	0.00005	80	0.000025	0.0001	0.00016	0.00095	0.025	0.000005	3.61	0.0049	52.1	0.0395
MW12-06-06	2018-10-25 15:50	0.00001	0.001	0.00065	0.0141	0.081	0.00002	0.00005	76.9	0.0000072	0.0001	0.0001	0.0002	0.01	0.000005	3.39	0.005	49.1	0.0395
MW12-06-06	2019-02-25 10:50	0.00001	0.001	0.0001	0.013	0.063	0.00002	0.00005	78.7	0.0000139	0.0001	0.0001	0.0002	0.01	0.000005	3.61	0.0052	52.6	0.0282
MW12-06-06	2019-05-09 16:00	0.00001	0.001	0.00011	0.014	0.075	0.00002	0.00005	79.8	0.0000093	0.0001	0.00011	0.0002	0.01	0.000005	3.64	0.0048	54.5	0.0331
MW12-06-06	2019-08-15 15:10	0.00001	0.0045	0.00011	0.0151	0.095	0.00002	0.00005	79.4	0.000196	0.0001	0.0001	0.00187	0.02	0.000005	3.71	0.005	52.2	0.0409
MW12-06-06	2019-10-17 11:45	0.00001	0.001	0.00011	0.0133	0.078	0.00002	0.00005	79	0.0000241	0.0001	0.0001	0.00035	0.011	0.000005	3.49	0.0049	49.7	0.0323
MW12-06-06	2020-03-14 14:15	0.00001	0.0053	0.0001	0.013	0.066	0.00002	0.00005	73	0.0000091	0.0001	0.0001	0.00051	0.02	0.000005	3.54	0.005	49.7	0.04
MW12-06-06	2020-05-29 12:00	0.00001	0.0014	0.0001	0.0133	0.052	0.00002	0.00005	74.4	0.0000129	0.0001	0.0001	0.00034	0.01	0.000005	3.41	0.0053	50.5	0.0384
MW12-06-06	2020-08-07 10:50	0.00001	0.0012	0.0001	0.0137	0.049	0.00002	0.00005	77.7	0.00001	0.0001	0.0001	0.0002	0.024	0.000005	3.38	0.0051	52	0.0401
MW12-06-06	2020-10-19 12:35	0.00001	0.0015	0.00043	0.0134	0.066	0.00002	0.00005	78.6	0.0000054	0.0001	0.0001	0.0002	0.014	0.000005	3.33	0.0051	49.2	0.0444
MW12-06-06	2021-03-22 13:55	0.00001	0.0015	0.00012	0.0136	0.066	0.00002	0.00005	74.7	0.00001	0.0001	0.0001	0.0002	0.023	0.000005	3.47	0.005	49.7	0.0321
MW12-06-06	2021-05-29 17:20	0.00001	0.003	0.00033	0.0145	0.701	0.00002	0.00005	87.4	0.0000153	0.0001	0.0005	0.00039	0.023	0.000005	3.74	0.0051	57	0.043
MW12-06-06	2021-09-30 15:05	0.00001	0.0099	0.00016	0.0137	0.059	0.00002	0.00005	78.9	0.0000111	0.0001	0.0005	0.00043	0.01	0.000005	3.61	0.0055	52	0.0352
MW12-06-06	2021-12-29 17:25	0.00001	0.0036	0.0001	0.0118	0.051	0.00002	0.00005	71	0.0000142	0.0001	0.0005	0.00028	0.01	0.000005	3.11	0.0049	44.8	0.033
MW12-07-01	2012-11-03 0:00	0.000021	0.0281	0.00074	0.171	0.076	0.0001	0.001	177	0.000224	0.0005	0.001	0.077	0.23	0.00001	5.74	0.0101	38.3	0.299
MW12-07-01	2013-06-29 7:35																		
MW12-07-01	2013-08-06 16:25	0.000037	0.0085	0.00105	0.0827	0.321	0.0001	0.001	184	0.000309	0.0005	0.001	0.0265	0.226	0.00001	4.57	0.0117	23.6	0.194
MW12-07-01	2013-08-20 14:00	0.00002	0.009	0.00154	0.081	0.478	0.0001	0.001	186	0.000081	0.0005	0.001	0.0288	0.222	0.00001	4.16	0.0107	26.3	0.146
MW12-07-01	2013-10-15 12:00	0.00002	0.0062	0.00102	0.0664	0.583	0.0001	0.001	176	0.000033	0.0005	0.001	0.0107	0.233	0.00001	4.05	0.0142	25	0.13
MW12-07-01	2014-03-16 15:40	0.000026	0.0033	0.00156	0.0404	1.73	0.0001	0.001	157	0.000018	0.0005	0.001	0.00409	0.121	0.00001	3.41	0.0178	22.3	0.0938
MW12-07-01	2014-04-19 15:15	0.00002	0.0046	0.00086	0.0426	0.435	0.0001	0.001	175	0.000096	0.0005	0.001	0.00298	0.176	0.00001	3.56	0.0185	21.3	0.087
MW12-07-01	2014-04-28 17:00	0.00002	0.003	0.00065	0.043	0.571	0.0001	0.001	180	0.000102	0.0005	0.001	0.00351	0.111	0.00001	3.53	0.0208	22.6	0.0849
MW12-07-01	2014-05-24 14:30	0.00002	0.0097	0.001	0.0367	0.787	0.0001	0.001	159	0.000045	0.0005	0.001	0.00249	0.261	0.00001	3.35	0.0172	20.2	0.0838
MW12-07-01	2014-06-22 10:15	0.00002	0.0104	0.0008	0.0376	0.853	0.0001	0.001	156	0.000048	0.0005	0.001	0.00157	0.275	0.00001	3.21	0.0222	20.5	0.0836
MW12-07-01	2014-07-18 14:00	0.00002	0.0056	0.00092	0.0368	0.569	0.0001	0.001	163	0.000029	0.0005	0.001	0.00227	0.265	0.00001	3.1	0.0208	22.3	0.0834
MW12-07-01	2014-08-15 10:30	0.00002	0.0121	0.00119	0.0335	1.13	0.0001	0.001	174	0.000049	0.0005	0.001	0.00426	0.27	0.00001	2.98	0.0184	20.9	0.0846
MW12-07-01	2014-09-14 13:55	0.00002	0.0045	0.00152	0.0381	0.709	0.0001	0.001	175	0.00001	0.0005	0.001	0.00095	0.537	0.00001	3.51	0.0198	23.3	0.0908
MW12-07-01	2014-10-02 15:05	0.00002	0.004	0.0014	0.0356	2.47	0.0001	0.001	173	0.00001	0.0005	0.001	0.00078	0.705	0.00001	3.04	0.0208	23.2	0.0917
MW12-07-01	2014-11-07 13:20	0.00002	0.0105	0.00103	0.0369	1.29	0.0001	0.001	169	0.00001	0.0005	0.001	0.00059	0.382	0.00001	3.16	0.0204	22.6	0.108
MW12-07-01	2014-12-07 13:55	0.00002	0.011	0.00191	0.0404	1.6	0.0001	0.001	188	0.00001	0.0005	0.001	0.00042	0.671	0.00001	3.18	0.0213	23.3	0.172
MW12-07-01	2015-01-12 17:00	0.00002	0.0076	0.00165	0.0162	0.34	0.0001	0.001	195	0.000027	0.0005	0.001	0.00024	0.163	0.00001	2.84	0.0288	32.2	0.123
MW12-07-01	2015-03-20 12:00	0.00002	0.0146	0.00077	0.0477	0.557	0.0001	0.001	245	0.000027	0.0005	0.0012	0.00038	0.698	0.00001	3.22	0.0216	26.5	0.481
MW12-07-01	2015-04-24 11:15	0.00002	0.0153	0.00098	0.0514	0.641	0.0001	0.001	254	0.00001	0.0005	0.0013	0.00023	0.619	0.00001	3.44	0.0243	29.1	0.559
MW12-07-01	2015-05-22 16:00	0.00002	0.0144	0.00249	0.0552	0.639	0.0001	0.001	266	0.00001	0.0005	0.0011	0.00049	0.469	0.00001	3.39	0.0235	27.9	0.531
MW12-07-01	2015-06-02 9:30	0.00002	0.0108	0.00084	0.0524	0.569	0.0001	0.001	259	0.00001	0.0005	0.0011	0.00023	0.387	0.00001	3.13	0.021	26.4	0.528
MW12-07-01	2015-07-18 9:20	0.00002	0.0188	0.00068	0.0464	0.587	0.0001	0.001	240	0.00001	0.0005	0.0011	0.00028	0.333	0.00001	2.97	0.0228	25.6	0.438
MW12-07-01	2015-08-11 9:40	0.00002	0.0116	0.0008	0.0491	0.623	0.0001	0.001	237	0.00001	0.0005	0.001	0.00021	0.282	0.00001	2.7	0.0218	25.7	0.403
MW12-07-01	2015-09-18 15:30	0.000024	0.0346	0.00112	0.0502	0.932	0.0001	0.001	240	0.000403	0.0005	0.0014	0.00319	0.307	0.00001	3.34	0.023	27.1	0.407
MW12-07-01	2015-10-11 16:40	0.00002	0.0227	0.001	0.0505	0.62	0.0001	0.001	244	0.000011	0.0005	0.001	0.0002	0.173	0.00001	3.15	0.0243	26.7	0.343
MW12-07-01	2015-11-14 14:45	0.00002	0.0093	0.00114	0.0493	0.648	0.0001	0.001	245	0.00001	0.0005	0.001	0.00045	0.112	0.00001	3.44	0.0273	25.9	0.321
MW12-07-01	2015-12-31 15:00	0.00002	0.0095	0.00095	0.0496	0.649	0.0001	0.001	255	0.00001	0.0005	0.001	0.00032	0.0699	0.00001	3.19	0.0249	27.6	0.28
MW12-07-01	2016-02-28 16:55	0.00002	0.0232	0.00126	0.0551	0.631	0.0001	0.001	216	0.00001	0.0005	0.001	0.0002	0.056	0.00001	2.93	0.0249	25.6	0.228
MW12-07-01	2016-03-31 16:40																		
MW12-07-01	2016-04-23 16:00	0.00001	0.0058	0.00096	0.0621	0.359	0.000043	0.00005	217	0.000005	0.0001	0.00045	0.00022	0.031	0.000005	3.48	0.0227	23.9	0.2
MW12-07-01	2016-05-13 16:35	0.00001	0.0027	0.00126	0.0742	2.02	0.000044	0.00005	217	0.000005	0.0001	0.00051	0.0002	0.022	0.000005	3.23	0.026	23.8	0.189
MW12-07-01	2016-05-22 15:10	0.00001	0.0039	0.00096	0.0738	0.724	0.000043	0.00005	213	0.000005	0.0001	0.00041	0.00027	0.064	0.000005	3.13	0.026	23.7	0.218
MW12-07-01	2016-06-25 14:15	0.00001	0.0036	0.00101	0.0716	1.1	0.000041	0.00005	209	0.000005	0.0001	0.00042	0.00027	0.041	0.000005	3.47	0.0263	23.1	0.182
MW12-07-01	2016-09-01 15:45	0.00001	0.0028	0.00092	0.0705	0.773	0.000041	0.00005	208	0.0000282	0.0001	0.00042	0.0004	0.039	0.000005	3.23	0.0275	23.3	0.152
MW12-07-01	2016-10-22 16:00	0.00001	0.0031	0.00078	0.0818	0.616	0.000043	0.00005	198	0.000005	0.0001	0.00045	0.00024	0.055	0.000005	3.03	0.0265	20.6	0.146
MW12-07-01	2016-12-20 15:45	0.00001	0.0044	0.00087	0.0802	0.612	0.00004	0.00005	198	0.000005	0.0001	0.00046	0.0002	0.037	0.000005	3.02	0.0264	19.9	0.134
MW12-07-01	2016-12-20 15:45																		
MW12-07-01	2017-01-27 10:30																		
MW12-07-01	2017-01-30 16:05	0.00001	0.0026	0.00065	0.0942	0.557	0.000045	0.00005	179	0.0000154	0.0001	0.00042	0.00023	0.023	0.00001	2.97	0.0268	20.5	0.134
MW12-07-01	2017-02-16 14:40	0.00001	0.002	0.00074	0.088	0.638	0.000042	0.00005	185	0.000005	0.0001	0.00047	0.0002	0.022	0.000005	2.94	0.026	19.8	0.115
MW12-07-01	2017-03-30 8:40	0.00001	0.0058	0.00053	0.107	0.47	0.000049	0.00005	179	0.0000073	0.0001	0.00086	0.00139	0.038	0.000005	3.05	0.0261	18.6	0.122
MW12-07-01	2017-04-22 14:12	0.00001	0.0055	0.0004	0.106	0.395	0.000048	0.00005	167	0.0000876	0.0001	0.00026	0.00037	0.04	0.000005	2.46	0.0246	17.7	0.111
MW12-07-01	2017-05-21 16:20	0.00001	0.003	0.0005	0.123	0.422	0.000041	0.00005	174	0.000013	0.0001	0.00028	0.0002	0.051	0.000005	2.8	0.0262	18.8	0.125
MW12-07-01	2017-06-23 8:10	0.00001	0.0015	0.00061	0.132	0.497	0.000039	0.00005	169	0.000005	0.0001	0.00031	0.0002	0.016	0.000005	2.95	0.0262	18.8	0.119
MW12-07-01	2017-07-28 14:00	0.00001	0.0026	0.00081	0.146	0.399	0.000037	0.00005	159	0.000005	0.0001	0.0002	0.0002	0.01	0.000005	3.24	0.0267	20.1	0.114
MW12-07-01	2017-08-15 15:35	0.00001	0.0049	0.00034	0.127	0.388	0.000046	0.00005	155	0.000005	0.0001	0.00025	0.0002	0.035	0.000005	2.62	0.0261	16.3	0.103
MW12-07-01	2017-10-20 16:45	0.00001	0.0045	0.00271	0.112	0.556	0.000036	0.00005	160	0.0000113	0.0001	0.00015	0.00036	0.045	0.000005	2.83	0.0239	19.4	0.111
MW12-07-01	2017-11-09 10:10	0.00001	0.002	0.0004	0.104	0.568	0.000039	0.00005	188	0.000005	0.0001	0.0004	0.0002	0.06	0.000005	2.71	0.0294	20.6	0.111
MW12-07-01	2018-01-13 14:00	0.000011	0.0026	0.00082	0.0932	0.957	0.000045	0.00005	215	0.00005	0.0001	0.00032	0.00033	0.033		3.34	0.0272	23	0.11
MW12-07-01	2018-02-24 9:40	0.00001	0.0039	0.0008	0.0908	1.01	0.000052	0.00005	210	0.000006	0.0001	0.00027	0.0002	0.075	0.000005	2.94	0.0215	24.8	0.132
MW12-07-01	2018-03-16 13:35	0.00001	0.0231	0.00108	0.0895	1.91	0.000072	0.00005	233	0.000107	0.0001	0.00166	0.00038	0.153	0.000005	2.82	0.0232	22.5	0.131
MW12-07-01	2018-04-13 10:35	0.00001	0.0377	0.00573	0.0692	3.24	0.00005	0.00005	204	0.000146	0.0001	0.00216	0.00856	0.229	0.000005	3	0.0216	26.4	0.133
MW12-07-01	2020-03-20 14:00	0.00001	0.0015	0.00837	0.0175	1.08	0.00002	0.00005	188	0.00002	0.0001	0.0001	0.0002	0.221	0.000005	2.42	0.0202	23.7	0.0867
MW12-07-01	2020-04-17 9:10	0.00002	0.0022	0.00609	0.0174	0.83	0.00004	0.0001	227	0.00003	0.0002	0.0002	0.00104	0.201	0.000005	2.33	0.0192	26.5	0.0941
MW12-07-01	2020-07-28 15:50	0.00002	0.0027	0.0153	0.0218	1.58	0.00002	0.00005	194	0.00006	0.00011	0.00026	0.00131	0.215	0.000005	2.72	0.0209	21.7	0.0904

Station	Date / Time	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW12-06-04	2021-09-30 13:40	0.0084	35.9	0.0005	0.00005	0.0001	66.8	0.000053	9.39	0.0001	3.35	0.0003	0.00001	0.00534	0.0005	0.0117	0.0002
MW12-06-04	2021-12-29 16:45	0.00873	34.5	0.0005	0.00005	0.0001	65.9	0.00005	9.35	0.0001	3.17	0.0003	0.00001	0.00528	0.0005	0.0107	0.0002
MW12-06-05	2016-09-02 18:40	0.00863	35.4	0.00067	0.00005	0.0001	59.9	0.00005	8.5	0.0001	2.69	0.0003	0.00001	0.00587	0.0005	0.0637	0.0003
MW12-06-05	2016-10-25 14:40	0.0088	35.1	0.00057	0.00005	0.0001	60.6	0.00005	8.6	0.0001	2.7	0.0003	0.00001	0.00575	0.0005	0.0406	0.0003
MW12-06-05	2016-12-30 14:00	0.00833	37.6	0.00059	0.00005	0.00028	60.6	0.000183	8.68	0.0001	2.61	0.0003	0.00001	0.00577	0.0005	0.0145	0.0003
MW12-06-05	2017-04-24 16:45	0.00913	35.8	0.00055	0.00005	0.0001	60.4	0.00005	7.96	0.0001	2.69	0.0003	0.00001	0.00585	0.0005	0.0094	0.0003
MW12-06-05	2017-08-29 13:25	0.0085	35.7	0.00083	0.00005	0.0001	60.5	0.00005	8.31	0.0001	2.56	0.0003	0.00001	0.00589	0.0005	0.0185	0.0003
MW12-06-05	2017-11-14 15:45	0.00973	30.2	0.0005	0.00005	0.0001	65.5	0.000168	8.63	0.0001	2.96	0.0003	0.00001	0.00594	0.0005	0.01	0.0003
MW12-06-05	2017-12-31 14:15	0.00993	39	0.00069	0.00005	0.0001	66.6	0.00005	8.97	0.0001	2.55	0.0003	0.00001	0.00417	0.0005	0.0236	0.0003
MW12-06-05	2018-03-12 15:00	0.00876	35.2	0.00055	0.00005	0.0001	57.5	0.00005	8.17	0.0001	2.92	0.0003	0.00001	0.00577	0.0005	0.012	0.0003
MW12-06-05	2018-05-09 11:55	0.00948	35	0.00056	0.00005	0.0001	64.7	0.000065	8.72	0.0001	2.71	0.0003	0.00001	0.00603	0.0005	0.0326	0.0003
MW12-06-05	2018-08-25 16:15	0.00948	35.4	0.00061	0.00005	0.0001	61.2	0.00005	8.42	0.0001	2.93	0.0003	0.00001	0.0062	0.0005	0.0206	0.0003
MW12-06-05	2018-10-25 15:30	0.00919	33.2	0.00056	0.00005	0.0001	66.5	0.00005	8.17	0.0001	2.65	0.0003	0.00001	0.00603	0.0005	0.0155	0.0003
MW12-06-05	2019-02-25 10:25	0.00921	35.8	0.00063	0.00005	0.0001	65.7	0.000161	8.69	0.0001	2.72	0.0003	0.00001	0.00567	0.0005	0.0269	0.0003
MW12-06-05	2019-05-09 15:25	0.00951	33.6	0.00057	0.00005	0.0001	63.3	0.000074	8.53	0.0001	2.85	0.0003	0.00001	0.00554	0.0005	0.0139	0.0003
MW12-06-05	2019-08-15 14:40	0.00964	35.7	0.00064	0.00005	0.0001	65.5	0.000238	8.4	0.0001	2.79	0.0003	0.00001	0.00641	0.0005	0.0105	0.0003
MW12-06-05	2019-10-17 11:25	0.0103	34.5	0.0007	0.00005	0.0001	65.1	0.000201	8.47	0.0001	3.05	0.0003	0.00001	0.00661	0.0005	0.0127	0.0003
MW12-06-05	2020-03-14 13:55	0.0102	37.3	0.00059	0.00005	0.0001	66.9	0.00005	8.85	0.0001	2.83	0.0003	0.00001	0.00581	0.0005	0.015	0.0002
MW12-06-05	2020-05-29 11:45	0.0103	34.8	0.00068	0.00005	0.0001	68.2	0.000085	8.37	0.0001	2.92	0.0003	0.00001	0.00574	0.0005	0.0118	0.0002
MW12-06-05	2020-08-07 10:25	0.00917	33.7	0.00058	0.00005	0.0001	67.7	0.000079	8.47	0.0001	2.7	0.0003	0.00001	0.00612	0.0005	0.0099	0.0002
MW12-06-05	2020-10-19 12:15	0.00956	35.6	0.00063	0.00005	0.0001	71.5	0.000087	9.05	0.0001	2.8	0.0003	0.00001	0.00586	0.0005	0.0055	0.0002
MW12-06-05	2021-05-29 17:05	0.0111	37.2	0.0005	0.00005	0.0001	64	0.000126	8.14	0.0001	2.84	0.0003	0.00001	0.00592	0.0005	0.0199	0.0002
MW12-06-05	2021-09-30 14:15	0.0105	36.6	0.00054	0.00005	0.0001	67.8	0.000077	8.37	0.0001	2.77	0.0003	0.00001	0.00592	0.0005	0.0214	0.0002
MW12-06-05	2021-12-29 17:10	0.0104	34.4	0.00064	0.00005	0.0001	68.1	0.00005	9.05	0.0001	2.74	0.0003	0.00001	0.00574	0.0005	0.0282	0.0002
MW12-06-06	2012-11-16 0:00	0.0066	32.9	0.000514	0.000061	0.000096	58.3	0.000511	6.29	0.0002	1.76	0.0005	0.000002	0.00482	0.00026	0.00312	0.0001
MW12-06-06	2013-08-18 16:30	0.0058	29.1	0.001	0.0002	0.0005	51.1	0.00022	7.4	0.005	1.61	0.005	0.00005	0.00377	0.005	0.005	0.0005
MW12-06-06	2013-10-11 12:30	0.0052	32	0.001	0.0002	0.0005	54.6	0.00018	7.03	0.005	1.56	0.005	0.00005	0.00352	0.005	0.0053	0.0005
MW12-06-06	2014-05-30 17:30	0.0062	32	0.001	0.0002	0.0005	50.2	0.0002	6.92	0.005	1.52	0.005	0.00005	0.00376	0.005	0.0672	0.0005
MW12-06-06	2014-07-25 15:15	0.0057	29.6	0.001	0.0002	0.0005	47.7	0.00019	6.64	0.005	1.54	0.005	0.00005	0.0036	0.005	0.005	0.0005
MW12-06-06	2014-10-06 16:50	0.0062	29	0.001	0.0002	0.0005	48.4	0.00019	7.04	0.005	1.61	0.005	0.00005	0.00394	0.005	0.0088	0.0005
MW12-06-06	2015-05-05 15:45	0.006	27.6	0.001	0.0002	0.0005	44.9	0.00023	7.09	0.005	1.54	0.005	0.00005	0.00384	0.005	0.0084	0.0005
MW12-06-06	2015-08-17 16:00	0.006	30.9	0.001	0.0002	0.0005	55.4	0.00015	6.76	0.005	1.61	0.005	0.00005	0.00405	0.005	0.0066	0.0005
MW12-06-06	2015-09-19 14:30	0.0048	28.4	0.001	0.0002	0.0005	43.5	0.00021	6.87	0.005	1.47	0.005	0.00005	0.00386	0.005	0.0081	0.0005
MW12-06-06	2016-05-10 15:55	0.00528	32.2	0.0005	0.00005	0.0001	50.1	0.000402	7.12	0.0001	1.48	0.0003	0.00001	0.00402	0.0005	0.0234	0.0003
MW12-06-06	2016-05-14 16:50	0.00551	26	0.0005	0.00005	0.0001	48.7	0.000345	7.22	0.0001	1.58	0.00039	0.00001	0.00406	0.0005	0.0152	0.0003
MW12-06-06	2016-09-02 19:20	0.00554	31.8	0.0005	0.00005	0.0001	50.4	0.000266	6.96	0.0001	1.53	0.0003	0.00001	0.00412	0.0005	0.0827	0.0003
MW12-06-06	2016-10-25 15:20	0.00562	31.3	0.0005	0.00005	0.0001	50.8	0.000259	6.92	0.0001	1.53	0.0003	0.00001	0.00401	0.0005	0.0504	0.0003
MW12-06-06	2016-12-30 14:40	0.00521	33.4	0.0005	0.00005	0.00033	53.1	0.000346	7.29	0.0001	1.47	0.0003	0.00001	0.00402	0.0005	0.0208	0.0003
MW12-06-06	2016-12-30 14:40																
MW12-06-06	2017-02-18 11:25	0.00569	29.4	0.0005	0.00005	0.00013	54.6	0.000487	7.2	0.0001	1.58	0.0003	0.00001	0.00494	0.0005	0.0488	0.0003
MW12-06-06	2017-04-24 17:15	0.00575	31.8	0.0005	0.00005	0.0001	52.4	0.000294	6.63	0.0001	1.53	0.00031	0.00001	0.00406	0.0005	0.0138	0.0003
MW12-06-06	2017-08-29 13:40	0.00514	32	0.0005	0.00005	0.0001	55	0.000316	7.22	0.0001	1.42	0.0003	0.00001	0.00403	0.0005	0.0133	0.0003
MW12-06-06	2017-11-14 16:05	0.00572	30.4	0.0005	0.00005	0.0001	54.1	0.000291	7.01	0.0001	1.6	0.0003	0.00001	0.00411	0.0005	0.0116	0.0003
MW12-06-06	2017-12-31 14:45	0.00607	33	0.0005	0.00005	0.0001	57.4	0.00028	7.32	0.0001	1.62	0.0003	0.00001	0.0043	0.0005	0.0356	0.0003
MW12-06-06	2018-03-12 15:30	0.00561	30.7	0.0005	0.00005	0.0001	47.8	0.000281	6.59	0.0001	1.65	0.0003	0.00001	0.00411	0.0005	0.0335	0.0003
MW12-06-06	2018-05-09 12:10	0.0057	29.4	0.0005	0.00005	0.0001	53.7	0.000331	6.92	0.0001	1.49	0.0003	0.00001	0.00402	0.0005	0.034	0.0003
MW12-06-06	2018-08-25 16:30	0.00612	31.8	0.0005	0.00005	0.0001	50.7	0.000239	7.13	0.0001	1.69	0.00103	0.00001	0.00419	0.0005	0.026	0.0003
MW12-06-06	2018-10-25 15:50	0.00569	30.1	0.0005	0.00005	0.0001	55.6	0.000326	6.74	0.0001	1.46	0.0003	0.00001	0.00393	0.0005	0.0192	0.0003
MW12-06-06	2019-02-25 10:50	0.00577	32.5	0.0005	0.00005	0.0001	53.3	0.000377	7.1	0.0001	1.56	0.0003	0.00001	0.00382	0.0005	0.0163	0.0003
MW12-06-06	2019-05-09 16:00	0.00563	34	0.0005	0.00005	0.0001	51.8	0.000383	6.97	0.0001	1.48	0.0003	0.00001	0.00361	0.0005	0.0427	0.0003
MW12-06-06	2019-08-15 15:10	0.00582	33	0.0005	0.00005	0.0001	57.7	0.000513	7.5	0.00014	1.58	0.00034	0.00001	0.00441	0.0005	0.0284	0.0003
MW12-06-06	2019-10-17 11:45	0.006	31.2	0.0005	0.00005	0.0001	54.2	0.00043	7.12	0.0001	1.64	0.0003	0.00001	0.00409	0.0005	0.0168	0.0003
MW12-06-06	2020-03-14 14:15	0.00616	32.9	0.0005	0.00005	0.0001	56.9	0.00031	7.39	0.0001	1.62	0.00042	0.00001	0.004	0.0005	0.0211	0.0002
MW12-06-06	2020-05-29 12:00	0.00611	29.9	0.0005	0.00005	0.0001	56	0.000386	6.82	0.0001	1.63	0.0003	0.00001	0.00403	0.0005	0.0125	0.0002
MW12-06-06	2020-08-07 10:50	0.00553	30.3	0.0005	0.00005	0.0001	56.5	0.000321	7.08	0.0001	1.54	0.0003	0.00001	0.00419	0.0005	0.0083	0.0002
MW12-06-06	2020-10-19 12:35	0.0059	31.2	0.0005	0.00005	0.0001	58.8	0.000296	7.48	0.0001	1.58	0.0003	0.00001	0.00406	0.0005	0.0084	0.0002
MW12-06-06	2021-03-22 13:55	0.00614	31.3	0.0005	0.00005	0.0001	57.5	0.000439	6.9	0.0001	1.63	0.0003	0.00001	0.00384	0.0005	0.0132	0.0002
MW12-06-06	2021-05-29 17:20	0.00658	39.2	0.0005	0.00005	0.00024	50.9	0.00095	7.02	0.0001	1.76	0.0003	0.00001	0.00372	0.0005	0.189	0.0002
MW12-06-06	2021-09-30 15:05	0.00616	31.8	0.0005	0.00005	0.0001	54.5	0.000298	7.22	0.0001	1.65	0.0003	0.00001	0.00388	0.0005	0.0223	0.0002
MW12-06-06	2021-12-29 17:25	0.00569	28.7	0.0005	0.00005	0.0001	48.3	0.000335	6.82	0.0001	1.42	0.0003	0.00001	0.00347	0.0005	0.0364	0.0002
MW12-07-01	2012-11-03 0:00	0.0192	34.4	0.0051	0.00041	0.0005	67.5	0.0337	6.83	0.005	5.32	0.005	0.00005	0.00622	0.005	0.0562	0.0005
MW12-07-01	2013-06-29 7:35																
MW12-07-01	2013-08-06 16:25	0.0215	40	0.0033	0.00062	0.00073	69.5	0.0274	5.74	0.005	7.72	0.005	0.00005	0.00632	0.005	0.051	0.0005
MW12-07-01	2013-08-20 14:00	0.0223	47.1	0.0018	0.0002	0.0005	71.1	0.0248	6.4	0.005	7.3	0.005	0.00005	0.00606	0.005	0.0237	0.0005
MW12-07-01	2013-10-15 12:00	0.0208	57.5	0.0015	0.0002	0.00063	78.5	0.0134	6.24	0.005	7.23	0.005	0.00005	0.00602	0.005	0.0276	0.0005
MW12-07-01	2014-03-16 15:40	0.0144	81.9	0.001	0.0002	0.0005	92.4	0.00274	6.33	0.005	7.23	0.005	0.00005	0.00427	0.005	0.048	0.0005
MW12-07-01	2014-04-19 15:15	0.0146	71.9	0.001	0.0002	0.0005	109	0.00225	6.93	0.005	7.53	0.005	0.00005	0.00374	0.005	0.114	0.0005
MW12-07-01	2014-04-28 17:00	0.017	75	0.0018	0.0002	0.0005	110	0.00633	6.56	0.005	8.18	0.005	0.00005	0.00388	0.005	0.0433	0.0005
MW12-07-01	2014-05-24 14:30	0.0139	74.7	0.0022	0.0002	0.0005	97.8	0.00208	6.74	0.005	7.3	0.005	0.00005	0.00325	0.005	0.0569	0.0005
MW12-07-01	2014-06-22 10:15	0.0129	71.7	0.001	0.0002	0.0005	103	0.00195	6.44	0.005	7.24	0.005	0.00005	0.00275	0.005	0.0372	0.0005
MW12-07-01	2014-07-18 14:00	0.0131	80.2	0.001	0.0002	0.0005	100	0.00178	6.31	0.005	7.18	0.005	0.00005	0.00281	0.005	0.0411	0.0005
MW12-07-01	2014-08-15 10:30	0.014	77	0.0011	0.0002	0.0005	122	0.00573	7.17	0.005	7.68	0.005	0.00005	0.0023	0.005	0.234	0.0005
MW12-07-01	2014-09-14 13:55	0.016	77.5	0.001	0.0002	0.0005	135	0.00106	6.7	0.005	7.78	0.005	0.00005	0.00211	0.005	0.0106	0.0005
MW12-07-01	2014-10-02 15:05	0.0162	89	0.0016	0.0002	0.0005	147	0.00236	6.83	0.005	7.73	0.005	0.00005	0.00202	0.005	0.005	0.0005
MW12-07-01	2014-11-07 13:20	0.0059	84.6	0.001	0.0002	0.0005	127	0.00173	7.28	0.005	7.61	0.005	0.00005	0.00111	0.005	0.005	0.0005
MW12-07-01	2014-12-07 13:55	0.0031	86	0.0011	0.0002	0.0005	151	0.00167	7.95	0.005	8.54	0.005	0.00005	0.00048	0.005	0.005	0.0005
MW12-07-01	2015-01-12 17:00	0.0172	71.7	0.001	0.0002	0.0005	231	0.0001	6.34	0.005	11.2	0.005	0.00005	0.00183	0.005	0.0053	0.0005
MW12-07-01	2015-03-20 12:00	0.001	77.2	0.001	0.0002	0.0005	153	0.00082	9.41	0.005	10.1	0.005	0.00005	0.0001	0.005	0.005	0.0005
MW12-07-01	2015-04-24 11:15	0.0016	82.5	0.001	0.0002	0.0005	175	0.00042	9.38	0.005	10.7	0.005	0.00005	0.0001	0.005	0.005	0.0005
MW12-07-01	2015-05-22 16:00	0.0014	84.6	0.001	0.00104	0.0005	168	0.00129	9.41	0.005	10.9	0.005	0.00005	0.0001	0.005	0.005	0.0005
MW12-07-01	2015-06-02 9:30	0.0012	84	0.001	0.0002	0.0005	166	0.00169	9.36	0.005	10.6	0.005	0.00005	0.0001	0.005	0.005	0.0005
MW12-07-01	2015-07-18 9:20	0.001	80.8	0.001	0.0002	0.0005	154	0.00047	9.56	0.005	9.34	0.005	0.00005	0.0001	0.005	0.005	0.0005
MW12-07-01	2015-08-11 9:40	0.001	79	0.001	0.0002	0.0005	140	0.00038	8.69	0.005	9.8	0.005	0.00005	0.0001	0.005	0.005	0.0005
MW12-07-01	2015-09-18 15:30	0.0018	85.3	0.001	0.00029	0.0005	170	0.00208	9.44	0.005	9.4	0.005	0.00005	0.0001	0.005	0.0853	0.0005
MW12-07-01	2015-10-11 16:40	0.001	82.2	0.0019	0.0002	0.0005	156	0.00035	10.5	0.005	9.52	0.005	0.00005	0.00016	0.005	0.005	0.0005
MW12-07-01	2015-11-14 14:45	0.0015	85.6	0.001	0.0002	0.0005	173	0.00124	8.94	0.005	9.76	0.005	0.00005	0.00023	0.005	0.005	0.0005
MW12-07-01	2015-12-31 15:00	0.001	94	0.001	0.0002	0.0005	164	0.00086	10.2	0.005	10.1	0.005	0.00005	0.00015	0.005	0.005	0.0005
MW12-07-01	2016-02-28 16:55	0.001	89.4	0.001	0.0002	0.0005	120	0.00101	8.56	0.005	9.4	0.005	0.00005	0.00036	0.005	0.005	0.0005
MW12-07-01	2016-03-31 16:40																
MW12-07-01	2016-04-23 16:00	0.000553	82.3	0.0005	0.00005	0.0001	307	0.00101	8.93	0.0019	8.13	0.0003	0.00001	0.000103	0.00153	0.007	0.0003
MW12-07-01	2016-05-13 16:35	0.00128	97.2	0.0005	0.00005	0.00033	147	0.00407	9.47	0.0001	8.78	0.0003	0.00001	0.000175	0.00161	0.0025	0.0003
MW12-07-01	2016-05-22 15:10	0.000995	85.7	0.0005	0.00005	0.0001	235	0.00388	9.32	0.0001	8.47	0.0003	0.00001	0.000124	0.00157	0.0055	0.0003
MW12-07-01	2016-06-25 14:15	0.00107	92	0.0005	0.00005	0.00013	263	0.00233	9.24	0.0001	8.46	0.0003	0.00001	0.000144	0.00169	0.0057	0.0003
MW12-07-01	2016-09-01 15:45	0.000755	89.6	0.0005	0.00005	0.00012	269	0.00206	9.41	0.0001	8.16	0.0003	0.00001	0.000144	0.00168	0.0058	0.0003
MW12-07-01	2016-10-22 16:00	0.000904	89	0.0005	0.00005	0.00041	52.1	0.000444	9.39	0.0001	8.11	0.0003	0.00001	0.000168	0.00177	0.001	0.0003
MW12-07-01	2016-12-20 15:45	0.000582	89.8	0.0005	0.00005	0.00022	43.3	0.000405	9.32	0.0001	7.92	0.0003	0.00001	0.000212	0.00166	0.0023	0.0003
MW12-07-01	2016-12-20 15:45																
MW12-07-01	2017-01-27 10:30																
MW12-07-01	2017-01-30 16:05	0.000596	90	0.0005	0.00005	0.00038	72.4	0.00147	10.2	0.0001	7.66	0.0003	0.00001	0.000187	0.00189	0.0027	0.0003
MW12-07-01	2017-02-16 14:40	0.00055	88.5	0.0005	0.00005	0.00023	58	0.00204	9.5	0.0001	7.63	0.0003	0.00001	0.000179	0.00175	0.0023	0.0003
MW12-07-01	2017-03-30 8:40	0.000373	92.5	0.00227	0.00009	0.00018	45.2	0.00132	9.82	0.00033	7.25	0.0003	0.00001	0.000174	0.00189	0.004	0.0003
MW12-07-01	2017-04-22 14:12	0.000351	76.9	0.0005	0.000054	0.0001	63.7	0.0085	8.79	0.00045	7.13	0.00039	0.00001	0.000177	0.00164	0.0051	0.0003
MW12-07-01	2017-05-21 16:20	0.000484	87	0.0005	0.00005	0.0001	33.3	0.00196	9.69	0.00011	7.1	0.0003	0.00001	0.000168	0.00176	0.0027	0.0003
MW12-07-01	2017-06-23 8:10	0.000889	85.1	0.0005	0.00005	0.00023	13.8	0.000378	9.79	0.00042	6.99	0.0003	0.00001	0.000181	0.00182	0.001	0.0003
MW12-07-01	2017-07-28 14:00	0.000473	92.9	0.0005	0.00005	0.00026	11.1	0.000277	9.72	0.0001	6.79	0.0003	0.00001	0.000159	0.00183	0.0327	0.0003
MW12-07-01	2017-08-15 15:35	0.000252	79.9	0.0005	0.00038	0.00013	31.4	0.00145	9.16	0.00258	6.5	0.00053	0.00001	0.000152	0.00162	0.0041	0.0003
MW12-07-01	2017-10-20 16:45	0.00084	92.9	0.00061	0.00005	0.0001	71.4	0.00348	8.7	0.00028	7.22	0.0003	0.00001	0.000161	0.00144	0.0127	0.0003
MW12-07-01	2017-11-09 10:10	0.000968	88.4	0.0005	0.00005	0.0001	114	0.00128	8.38	0.0001	8.2	0.0003	0.00001	0.000113	0.00121	0.0039	0.0003
MW12-07-01	2018-01-13 14:00	0.00169	89.7	0.0005	0.00005	0.00034	184	0.00288	7.97	0.00015	8.76	0.0003	0.00001	0.000081	0.001	0.0033	0.0003
MW12-07-01	2018-02-24 9:40	0.00141	94.5	0.0005	0.00005	0.00024	227	0.00276	8.01	0.0001	9.6	0.0003	0.00001	0.000053	0.00118	0.0053	0.0003
MW12-07-01	2018-03-16 13:35	0.00224	97.6	0.00108	0.000544	0.00028	171	0.00188	7.51	0.00015	10.4	0.00127	0.00001	0.000098	0.00134	0.672	0.0003
MW12-07-01	2018-04-13 10:35	0.00708	107	0.0015	0.000812	0.0011	227	0.00226	7.84	0.00051	10	0.00159	0.00001	0.000187	0.00077	1.24	0.0003
MW12-07-01	2020-03-20 14:00	0.0211	80.8	0.0005	0.00005	0.00037	214	0.000714	6.49	0.0001	8.88	0.0003	0.00001	0.000201	0.0005	0.0901	0.0002
MW12-07-01	2020-04-17 9:10	0.0204	97.4	0.001	0.0001	0.00028	218	0.000902	6.55	0.0002	9.75	0.0006	0.00002	0.000191	0.001	0.112	0.0004
MW12-07-01	2020-07-28 15:50	0.0246	88	0.00211	0.00005	0.00065	237	0.000962	7.24	0.00025	9.26	0.0003	0.00001	0.000299	0.0005	0.197	0.0002

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	N-NO$_2$	N-NO$_3$	N-NH$_3$	SO$_4$-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW12-07-01	2020-10-31 13:35	134	1300	192.1	7.48	1040	5.1	2.1	48.3	7.06	2.95	0.105	586	2.73	
MW12-07-01	2021-10-02 14:00	128	1300				1.3			0.882	0.297	0.142	594	3.78	
MW12-07-01	2022-01-11 14:45	136	1280			992	3.3			4.45	1.73	0.102	573	4.4	
MW12-07-02	2012-11-03 0:00	197	1070			782				0.148	21.3	0.005	283		
MW12-07-02	2013-06-29 9:30			70.3	7.66			7.1	55.8						
MW12-07-02	2013-08-20 15:00	126	1370	-112.9	7.46	1100	4.6	3.01	38.7	0.287	0.158	0.087	631	0.78	1.3
MW12-07-02	2013-10-15 14:30	139	1350			1020	1.6			0.652	0.271	0.27	633	2.1	1.4
MW12-07-02	2014-03-16 17:20	110	1360		8	1060		1.4		0.495	0.245	0.045	647	1.2	1.4
MW12-07-02	2014-04-30 14:00	111	1370		8.8	1070		7		1.05	0.408	0.15	617	1.5	1.4
MW12-07-02	2014-05-24 15:30	110	1390		7.9	1060		3.67		0.897	0.392	0.2	628	2	1.4
MW12-07-02	2014-06-22 11:15	111	1390		8.5	1060		8.4		0.504	0.225	0.22	658	1.5	1.4
MW12-07-02	2014-07-18 15:00	109	1390		8	1050		7.1		0.771	0.322	0.19	651	1.4	1.4
MW12-07-02	2014-08-15 11:05	114	1410		16.8	1090		14.8		0.849	0.36	0.2	644	1.9	1.4
MW12-07-02	2014-09-14 14:25	123	1400		8.06	1160		12.4		0.945	0.391	0.34	628	2.2	1.3
MW12-07-02	2014-10-02 16:10	125	1400	-75.3	7.8	1110		-0.1	32.2	0.768	0.346	0.61	622	3	1.4
MW12-07-02	2014-11-07 13:45	119	1410		8	1110				1.07	0.428	0.23	623	3.1	1.4
MW12-07-02	2014-12-07 14:20	117	1410	-77.2	7.52	1060		-0.5	50.8	1.47	0.66	0.29	624	1.7	1.3
MW12-07-02	2015-01-12 17:30	306	1350	-40.4	7.35	1100		2.1	71.9	0.325	0.172	0.54	397	3	0.97
MW12-07-02	2015-03-20 13:00	101	1390	4.9	7.41	1060		3.7	74.6	0.283	0.117	0.069	680	0.99	1.3
MW12-07-02	2015-04-24 11:25	101	1420	-73.7	7.56	1090		3.1	67.9	0.286	0.129	0.074	667	1.3	1.4
MW12-07-02	2015-05-22 16:45	104	1420	-119.4	7.52	1120		8	62.3	0.248	0.091	0.079	662	0.8	1.3
MW12-07-02	2015-06-02 10:00	106	1430	-37.9	7.65	1150		4.5	53.5	0.226	0.075	0.059	681	1.2	1.3
MW12-07-02	2015-07-18 9:50	106	1410	49.7	7.35	1020		5.8	49.1	0.151	0.077	0.039	675	1	1.3
MW12-07-02	2015-08-11 10:15	104	1420		7.9	1160		5.6		0.219	0.111	0.049	659	0.99	1.4
MW12-07-02	2015-09-18 16:00	102	1420		8	1120		4.3		0.194	0.089	0.058	675	1.1	1.4
MW12-07-02	2015-10-11 17:15	105	1440		7.9	1120		2.3		0.222	0.107	0.24	673	1.3	1.3
MW12-07-02	2015-11-14 15:00	98.8	1420		8.2	1140		1		0.188	0.083	0.085	669	1	1.3
MW12-07-02	2015-12-31 15:35	108	1440		7.9	1120	4	3.5		0.255	0.118	0.061	702	1.3	1.3
MW12-07-02	2016-02-28 17:40	108	1440		8.4	1120		1.8		0.243	0.107	0.049	674	1.1	1.3
MW12-07-02	2016-03-31 17:15				8.6			5							
MW12-07-02	2016-04-23 16:25	108	1460		8.2	1100	3	6.9		0.225	0.091	0.0254	712	1	
MW12-07-02	2016-05-13 17:10	107	1450		7.8	1110	5.3	8.6		0.532	0.209	0.0286	715	1	
MW12-07-02	2016-05-22 15:30	110	1450		8	748	4.7	6.5		0.191	0.08	0.031	356	2.5	
MW12-07-02	2016-06-25 14:45	106	1440		8.1	1100	6	7		0.351	0.138	0.0389	708	1	
MW12-07-02	2016-09-01 17:15	115	1410		8	1110	3	5.6		0.38	0.149	0.0427	710	1	
MW12-07-02	2016-10-22 17:02	108	1420		7.9	1120	3.5	4.2		0.285	0.122	0.005	733	2.5	
MW12-07-02	2016-12-20 17:10	112	1190		8.7	1140	70.6	4		0.969	0.399	0.022	724	2.5	
MW12-07-02	2016-12-20 17:10				8.7			4							
MW12-07-02	2017-01-27 11:15				8.1			4.5							
MW12-07-02	2017-01-30 16:20	110	1400		7.6	1110	3.6	0.8		0.499	0.212	0.0407	727	2.5	
MW12-07-02	2017-02-16 15:05	110	1430		7.9	1080	3.6	3.7		1	0.162	0.0322	687	2.5	
MW12-07-02	2017-03-30 9:10	106	1430		8.8	1160	5.7	3		0.221	0.092	0.0594	731	2.5	
MW12-07-02	2017-04-22 14:17	108	1460		8	1180	3	4.8		0.17	0.077	0.0461	722	2.5	
MW12-07-02	2017-05-21 16:45	99	1390		8.2	1130	3	6.2		0.208	0.085	0.0384	741	2.5	
MW12-07-02	2017-06-23 8:30	106	1440		7.8	1140	3	5.4		0.14	0.06	0.0402	735	2.5	
MW12-07-02	2017-07-28 14:45	111	1450		8	1130	4.3	6.9		0.208	0.094	0.0221	722	2.5	1.23
MW12-07-02	2017-08-15 16:00	106	1460		8	1130	3	6.3		0.199	0.081	0.0387	754	2.5	
MW12-07-02	2017-10-20 17:15	104	1430		8.2	1140	3.8	1.4		0.248	0.107	0.022	752	2.5	
MW12-07-02	2017-11-09 10:55	102	1390		8.5	1150	3	2.2		0.232	0.094	0.034	747	1.12	
MW12-07-02	2018-01-13 14:20	148	1060		8.2	784	4.6	1.8		0.305	0.132	0.0202	454	2.5	
MW12-07-02	2018-02-24 10:05	151	1010		8.3	721	3	2.5		0.127	0.081	0.0163	402	2.5	0.79
MW12-07-02	2018-03-16 14:00	142	981		8.5	736	3	2.8		0.894	0.368	0.0209	406	2.5	
MW12-07-02	2018-04-13 11:00	156	935		8.2	690	3.3	2.6		0.298	0.206	0.0128	391	2.5	
MW12-07-02	2018-05-05 13:40	161	939		8.1	665	3.6	2.4		0.0963	0.08	0.0124	365	2.5	
MW12-07-02	2018-06-01 15:50				7.7			5.1							
MW12-07-02	2018-06-01 15:50	151	909			630	7.2			0.204	0.129	0.0102	334	0.63	
MW12-07-02	2018-08-19 16:30	166	880	176.7	7.95	590	3	7.7	117.4	0.142	0.128	0.0193	306	1.32	
MW12-07-02	2018-09-28 13:40	168	890	176.3	8.03	594	3.3	2.5	80.2	0.0453	0.154	0.0232	312	2.5	
MW12-07-02	2018-10-20 11:40	124	812	157.1	7.79	551	3	3.6	117.5	0.107	0.235	0.0081	298	2.6	
MW12-07-02	2019-01-20 14:20	164	813	165.6	7.7	579	3	2.6	79.1	0.666	0.783	0.013	301	4.6	
MW12-07-02	2019-02-08 10:55	159	823	190.9	7.37	591	4.7	2	93.6	0.245	0.66	0.0099	303	4.9	
MW12-07-02	2019-03-09 10:30	168	823	143.1	7.73	563	3	2.8	89.9	0.172	0.698	0.0105	289	5.3	
MW12-07-02	2019-04-19 14:15	173	847	152.1	7.61	572	3	3.5	107	0.267	0.844	0.0122	283	5.84	
MW12-07-02	2019-05-06 13:40	171	873	215	7.6	577	3	2.9	71.2	0.135	0.895	0.013	288	6.2	
MW12-07-02	2019-06-07 14:25	174	813	183.2	7.57	583	3	5.8	128.1	0.243	1	0.0134	285	6.5	
MW12-07-02	2019-07-05 14:40	171	845	131.7	7.86	580	3	9.7	78.3	0.206	1.06	0.0087	289	7.4	
MW12-07-02	2019-08-01 8:55	182	875	163.6	7.42	602	3	7.3	91.2	0.175	1.12	0.0155	291	7.8	
MW12-07-02	2019-09-12 9:30	199	891	184.4	7.67	618	3	3.3	99	0.124	1.19	0.0198	299	8.28	
MW12-07-02	2019-10-03 14:05	185	875	155.2	8.06	605	3	3.1	104.2	0.229	1.24	0.0142	292	8.7	
MW12-07-02	2019-11-02 14:35	185	877	179.4	7.57	629	3	1.5	95.2	0.131	1.3	0.0144	291	8.97	0.742
MW12-07-02	2019-12-02 14:00	129	1310			1050	8.9			3.37	1.33	0.158	638	1.8	
MW12-07-02	2020-02-09 10:45			164.1	8.34			2.7	106.6						
MW12-07-02	2020-02-09 10:45	206	887				3			0.0799	1.35	0.0126	288	9.71	
MW12-07-02	2020-03-20 14:30	198	923				3			0.115	1.41	0.0104	296	9.98	
MW12-07-02	2020-04-17 9:40	193	920	108.8	7.78	678	3	3.6	92.3	0.0932	1.45	0.0087	297	10.3	
MW12-07-02	2020-07-28 16:30	189	929	145.7	7.72	644	3	5	38.7	0.0738	1.51	0.0113	307	11.4	
MW12-07-02	2020-10-31 14:05	195	945	196.3	7.46	648	3	1.8	79.9	0.0992	1.57	0.0159	305	11.9	
MW12-07-02	2021-03-15 15:20	196	948	126.2	7.46	666	1	4.2	104.3	0.14	1.54	0.0112	318	11.9	
MW12-07-02	2021-05-23 8:35	199	962	184	7.45	681	1		116	0.266	0.275	0.021	322	11.9	
MW12-07-02	2021-10-02 14:40	199	982	39.4	7.69	690	1	3.4	107.2	0.192	1.41	0.0073	331	11.8	
MW12-07-02	2022-01-11 15:25	205	984			706	1.1			0.0876	1.44	0.008	339	12.5	
MW12-07-03	2016-12-20 17:40	138	1290		8	979	27.7	4.3		0.331	0.143	0.0761	604	2.5	
MW12-07-03	2021-05-23 9:15	293	1050	67	7.24	735	41.2		53.9	0.0621	0.0782	0.253	289	19.9	
MW17-08-01	2017-08-28 9:50	219	464			269	4.7			0.0012	0.329	0.0073	41.7	0.91	
MW17-08-01	2017-11-20 11:30	230	472		8.4	281	3	0.5		0.0136	0.365	0.005	43.1	0.52	
MW17-08-01	2018-03-08 14:20	230	474			269	3			0.001	0.367	0.005	38.8	0.5	
MW17-08-01	2018-03-08 14:20				8.7			1.8							
MW17-08-01	2018-05-07 15:20	226	470		8.1	269	3	4.7		0.0025	0.387	0.005	39.1	0.5	
MW17-08-01	2018-08-27 16:15	220	473	163.2	7.48	260	11.2	4.7	108.1	0.0038	0.369	0.0068	37.3	0.59	
MW17-08-01	2018-10-26 16:15	169	454	223.5	7.39	224	5.9	2.4	99.7	0.001	0.379	0.005	36.9	0.5	
MW17-08-01	2019-02-23 14:30	227	477	162.3	7.72	258	3	2.3	75.5	0.001	0.408	0.005	33.9	0.5	
MW17-08-01	2019-05-10 9:00	230	470	151.3	7.6	267	3	4.1	113.2	0.0068	0.445	0.005	35.7	0.5	
MW17-08-01	2019-08-06 10:10	237	458	117.9	8.29	270	3	4.9	96	0.0163	0.453	0.005	33.9	0.53	
MW17-08-01	2019-10-19 9:55	233	451	235.1	7.37	263	3	3.2	67.9	0.001	0.016	0.201	33.4	0.56	
MW17-08-01	2020-03-13 9:00	454	920	201.2	6.85	265	6	4.8	98.9	0.007	0.85	0.0436	62.4	1.14	
MW17-08-01	2020-06-29 9:05	219	466	183.2	7.57	267	6.3	8.1	99.3	0.0074	0.403	0.005	32.9	0.53	
MW17-08-01	2020-09-24 9:00	221	451	177.9	7.97	266	3	2.7	66.2	0.0025	0.49	0.005	31.3	0.48	
MW17-08-01	2020-10-28 10:15	237	457	165.2	7.79	285	3	2.7	69.9	0.0018	0.471	0.0059	31.4	0.43	
MW17-08-01	2021-06-06 15:20	220	455	127.4	7.49	268	3	5	116.6	0.001	0.524	0.005	30.4	0.45	
MW17-08-01	2021-10-02 17:37	225	453	83.5	7.77	267	2.3	2	91.5	0.0469	0.354	0.0093	29.3	0.65	
MW17-08-02	2017-08-28 10:15	147	299			162	3			0.0045	0.678	0.005	11.4	0.76	
MW17-08-02	2017-11-20 13:30	154	293		8.7	180	3	0.3		0.001	0.684	0.005	11.7	0.41	
MW17-08-02	2018-03-08 14:45	157	311		9	170	3	1.8		0.001	0.657	0.005	11.8	0.5	
MW17-08-02	2018-05-07 15:40	155	308		8.1	168	3	3.7		0.0023	0.703	0.005	11.9	0.5	
MW17-08-02	2018-08-27 16:45	154	305	148.9	7.74	162	3.4	4.7	127	0.001	0.669	0.005	12	0.5	
MW17-08-02	2018-10-26 16:55	108	298	226.5	7.69	138	4.1	2.3	114.5	0.001	0.669	0.005	12	0.5	
MW17-08-02	2019-02-23 15:35	152	296	159.3	7.89	162	3	1.2	89.4	0.001	0.678	0.005	10.6	0.5	
MW17-08-02	2019-05-10 9:50	159	310	148.7	7.82	170	3	3.3	111.7	0.0035	0.689	0.005	11.5	0.5	
MW17-08-02	2019-08-06 11:30	164	306	110	8.58	171	3	6.7	108.8	0.0023	0.693	0.005	10.7	0.5	
MW17-08-02	2019-10-19 10:45	159	297	221.4	7.67	165	3	3.1	88.7	0.0018	0.678	0.0133	10.2	0.44	
MW17-08-02	2020-03-13 9:50	330	610	326	14.86	178	6	11	169.6	0.007	1.264	0.01	19.52	0.96	
MW17-08-02	2020-06-29 9:20	141	285	178.2	7.76	164	3	7.8	87.6	0.0148	0.563	0.0104	10.2	0.39	
MW17-08-02	2020-09-24 9:30	153	302	192.5	7.83	175	3	2.4	80.9	0.0049	0.654	0.005	10	0.39	
MW17-08-02	2020-10-28 11:15	154	303	169.4	7.89	183	3	2	74.9	0.001	0.696	0.005	10	0.45	
MW17-08-02	2021-06-06 15:50	152	297	133.3	7.57	175	3	5.1	109.9	0.0021	0.71	0.005	9.24	0.39	

Station	Date / Time	Dissolved Elements																			
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW12-07-01	2020-10-31 13:35	0.00001	0.0023	0.00824	0.0211	3.79	0.00002	0.00005	185	0.000025	0.0001	0.00012	0.0002	0.084	0.000005	2.66	0.0186	23	0.0854	0.022	104
MW12-07-01	2021-10-02 14:00														0.000005						
MW12-07-01	2022-01-11 14:45	0.00001	0.004	0.00285	0.016	0.586	0.00003	0.00005	196	0.0000196	0.0001	0.00069	0.00504	0.113	0.000005	2.21	0.02	20	0.0772	0.0121	74.1
MW12-07-02	2012-11-03 0:00	0.00002	0.006	0.00024	0.0546	0.105	0.0001	0.001	140	0.000269	0.0005	0.001	0.0217	0.0069	0.00001	5.92	0.022	35.5	0.0899	0.0334	38.9
MW12-07-02	2013-06-29 9:30																				
MW12-07-02	2013-08-20 15:00	0.00002	0.0074	0.00055	0.0292	0.322	0.0001	0.001	187	0.00001	0.0005	0.001	0.00039	1.3	0.00001	3.21	0.0233	32.7	0.253	0.0176	67.2
MW12-07-02	2013-10-15 14:30	0.00002	0.0044	0.00034	0.0256	0.322	0.0001	0.001	187	0.00001	0.0005	0.001	0.0002	0.151	0.00001	3.38	0.023	33.9	0.221	0.0099	67.9
MW12-07-02	2014-03-16 17:20	0.00002	0.0033	0.00159	0.0183	0.556	0.0001	0.001	184	0.00001	0.0005	0.001	0.00044	0.242	0.00001	2.62	0.0273	32.4	0.142	0.0166	74.2
MW12-07-02	2014-04-30 14:00	0.00002	0.004	0.00154	0.0178	0.628	0.0001	0.001	177	0.000015	0.0005	0.001	0.00055	0.213	0.00001	2.62	0.0243	30.3	0.136	0.0179	73.7
MW12-07-02	2014-05-24 15:30	0.00002	0.0069	0.00109	0.0168	0.297	0.0001	0.001	193	0.00001	0.0005	0.001	0.00074	0.236	0.00001	2.75	0.0221	30.7	0.142	0.0157	72.3
MW12-07-02	2014-06-22 11:15	0.00002	0.0127	0.00122	0.0174	0.335	0.0001	0.001	180	0.000015	0.0005	0.001	0.0023	0.247	0.00001	2.73	0.0265	31.7	0.132	0.0168	71
MW12-07-02	2014-07-18 15:00	0.00002	0.0041	0.00115	0.0162	0.301	0.0001	0.001	192	0.00001	0.0005	0.001	0.00042	0.246	0.00001	2.58	0.0243	32.3	0.131	0.0166	75.5
MW12-07-02	2014-08-15 11:05	0.00002	0.0034	0.00104	0.0154	0.349	0.0001	0.001	200	0.00001	0.0005	0.001	0.00255	0.234	0.00001	2.47	0.0224	30.5	0.137	0.017	68.9
MW12-07-02	2014-09-14 14:25	0.00002	0.0051	0.00188	0.0164	0.655	0.0001	0.001	198	0.00001	0.0005	0.001	0.0002	0.0091	0.00001	2.87	0.0246	32.4	0.19	0.015	73.8
MW12-07-02	2014-10-02 16:10	0.00002	0.0052	0.00038	0.0168	0.35	0.0001	0.001	200	0.00001	0.0005	0.001	0.00031	0.266	0.00001	2.67	0.0272	31.4	0.242	0.007	69.6
MW12-07-02	2014-11-07 13:45	0.00002	0.0075	0.00113	0.0152	0.312	0.0001	0.001	191	0.00001	0.0005	0.001	0.0002	0.199	0.00001	2.71	0.0249	32	0.14	0.0151	70.5
MW12-07-02	2014-12-07 14:20	0.00002	0.0065	0.00166	0.0169	0.485	0.0001	0.001	207	0.000016	0.0005	0.001	0.00027	0.157	0.00001	2.76	0.0264	31.8	0.141	0.0158	72.2
MW12-07-02	2015-01-12 17:30	0.00002	0.0144	0.00083	0.0484	0.923	0.0001	0.001	207	0.00001	0.0005	0.0011	0.0008	0.762	0.00001	3.18	0.026	24.7	0.299	0.0019	83.8
MW12-07-02	2015-03-20 13:00	0.00002	0.0051	0.00196	0.0137	0.24	0.0001	0.001	212	0.00001	0.0005	0.001	0.00081	0.229	0.00001	2.8	0.0236	31.7	0.116	0.019	66.8
MW12-07-02	2015-04-24 11:25	0.00002	0.0066	0.00209	0.0142	0.318	0.0001	0.001	212	0.00001	0.0005	0.001	0.0002	0.262	0.00001	2.87	0.0281	35.3	0.122	0.0212	72
MW12-07-02	2015-05-22 16:45	0.00002	0.0082	0.00243	0.0152	0.297	0.0001	0.001	208	0.00001	0.0005	0.001	0.00039	0.205	0.00001	2.88	0.0256	33.4	0.115	0.0198	72.3
MW12-07-02	2015-06-02 10:00	0.00002	0.0068	0.00218	0.0144	0.281	0.0001	0.001	217	0.00001	0.0005	0.001	0.0002	0.199	0.00001	2.76	0.025	33.4	0.125	0.021	74.5
MW12-07-02	2015-07-18 9:50	0.00002	0.0171	0.00189	0.0132	0.237	0.0001	0.001	191	0.00001	0.0005	0.001	0.00095	0.23	0.00001	2.49	0.0254	30.8	0.108	0.0186	67.3
MW12-07-02	2015-08-11 10:15	0.00002	0.0089	0.00182	0.016	0.556	0.0001	0.001	200	0.00001	0.0005	0.001	0.0002	0.212	0.00001	2.5	0.0254	33.8	0.11	0.02	73.4
MW12-07-02	2015-09-18 16:00	0.00002	0.0097	0.0019	0.0129	0.288	0.0001	0.001	208	0.00001	0.0005	0.001	0.00124	0.235	0.00001	2.67	0.0247	30.8	0.114	0.0209	64.7
MW12-07-02	2015-10-11 17:15	0.00002	0.0192	0.00176	0.0137	0.264	0.0001	0.001	207	0.00001	0.0005	0.001	0.00042	0.231	0.00001	2.7	0.0244	30.7	0.111	0.0197	69.1
MW12-07-02	2015-11-14 15:00	0.00002	0.0071	0.00176	0.0137	0.306	0.0001	0.001	220	0.00001	0.0005	0.001	0.00091	0.211	0.00001	2.85	0.0315	34.3	0.12	0.0187	75.1
MW12-07-02	2015-12-31 15:35	0.00002	0.0067	0.00192	0.0131	0.491	0.0001	0.001	232	0.00001	0.0005	0.001	0.0002	0.193	0.00001	2.9	0.0266	35.3	0.114	0.0196	78
MW12-07-02	2016-02-28 17:40	0.000023	0.021	0.00197	0.0119	0.394	0.0001	0.001	217	0.000011	0.0005	0.001	0.0002	0.226	0.00001	2.92	0.0273	33.4	0.108	0.0193	73
MW12-07-02	2016-03-31 17:15																				
MW12-07-02	2016-04-23 16:25	0.00001	0.0022	0.00182	0.0125	0.251	0.00002	0.00005	220	0.000005	0.0001	0.0001	0.00022	0.157	0.000005	2.91	0.0275	33.6	0.108	0.0194	67.7
MW12-07-02	2016-05-13 17:10	0.00001	0.002	0.00198	0.0128	0.198	0.00002	0.00005	222	0.000005	0.0001	0.0001	0.0002	0.159	0.000005	2.82	0.0296	34.3	0.111	0.0197	72.8
MW12-07-02	2016-05-22 15:30	0.00002	0.0021	0.00193	0.0142	0.352	0.00004	0.0001	217	0.00001	0.0002	0.0002	0.0004	0.168	0.000005	2.78	0.0283	34.7	0.112	0.0191	70.2
MW12-07-02	2016-06-25 14:45	0.00001	0.0034	0.00174	0.0142	0.315	0.00002	0.00005	219	0.000005	0.0001	0.0001	0.00023	0.154	0.000005	3.01	0.0259	35.3	0.112	0.0173	73.3
MW12-07-02	2016-09-01 17:15	0.00002	0.0022	0.00093	0.0121	0.3	0.00004	0.0001	219	0.00001	0.0002	0.0002	0.0004	0.181	0.000005	2.94	0.03	35.1	0.152	0.0181	70.2
MW12-07-02	2016-10-22 17:02	0.00001	0.0038	0.00132	0.0117	0.274	0.00002	0.00005	218	0.000005	0.0001	0.0001	0.00022	0.021	0.000005	2.84	0.0274	31.2	0.109	0.0197	71.1
MW12-07-02	2016-12-20 17:10	0.00002	0.002	0.00162	0.012	0.645	0.00004	0.0001	227	0.00001	0.0002	0.0002	0.0004	0.02	0.000005	2.89	0.0277	32.8	0.111	0.0195	78.7
MW12-07-02	2016-12-20 17:10																				
MW12-07-02	2017-01-27 11:15																				
MW12-07-02	2017-01-30 16:20	0.00001	0.0019	0.00159	0.0143	0.349	0.00002	0.00005	215	0.0000056	0.0001	0.0001	0.0002	0.145	0.000005	2.69	0.0291	29.4	0.109	0.0191	66.2
MW12-07-02	2017-02-16 15:05	0.00001	0.0027	0.0016	0.0139	0.317	0.00002	0.00005	215	0.0000125	0.0001	0.00013	0.00094	0.108	0.000005	3.04	0.0289	33.1	0.11	0.0189	74.5
MW12-07-02	2017-03-30 9:10	0.00001	0.0038	0.0017	0.0138	0.256	0.00002	0.00005	213	0.0000865	0.0001	0.0001	0.0006	0.151	0.000005	3	0.0292	32.3	0.109	0.0188	77.6
MW12-07-02	2017-04-22 14:17	0.00002	0.0021	0.00141	0.0129	0.226	0.00004	0.0001	223	0.00001	0.0002	0.0002	0.0004	0.142	0.000005	2.53	0.0272	31.6	0.102	0.0196	65.4
MW12-07-02	2017-05-21 16:45	0.00002	0.0175	0.00174	0.015	0.21	0.00004	0.0001	219	0.00003	0.0002	0.0002	0.00123	0.148	0.000005	3.02	0.0268	33.6	0.11	0.0181	74.4
MW12-07-02	2017-06-23 8:30	0.00001	0.0024	0.00174	0.0142	0.246	0.00002	0.00005	224	0.0000071	0.0001	0.0001	0.00043	0.123	0.000005	2.98	0.0278	35.8	0.112	0.0182	72.8
MW12-07-02	2017-07-28 14:45	0.00001	0.0014	0.00164	0.0167	0.245	0.00002	0.00005	219	0.00001	0.0001	0.0001	0.0002	0.01	0.000005	3.25	0.0287	37.4	0.11	0.0192	78.6
MW12-07-02	2017-08-15 16:00	0.00001	0.0047	0.00142	0.0137	0.204	0.00002	0.00005	213	0.0000115	0.0001	0.0001	0.0007	0.132	0.000005	2.74	0.0282	30.9	0.0986	0.0178	68.3
MW12-07-02	2017-10-20 17:15	0.00001	0.0026	0.00292	0.0119	0.213	0.00002	0.00005	207	0.0000252	0.0001	0.0001	0.00056	0.114	0.000005	2.83	0.0276	34.8	0.109	0.018	78.8
MW12-07-02	2017-11-09 10:55	0.00001	0.0019	0.00135	0.0103	0.296	0.00002	0.00005	228	0.000005	0.0001	0.0001	0.00037	0.141	0.000005	2.93	0.033	35.7	0.117	0.0194	75.8
MW12-07-02	2018-01-13 14:20	0.000217	0.0037	0.00077	0.0176	0.529	0.00004	0.0001	153	0.00002	0.00022	0.0002	0.0004	0.034		2.85	0.0193	30.4	0.688	0.0293	52.6
MW12-07-02	2018-02-24 10:05	0.00001	0.002	0.00057	0.0192	0.378	0.00002	0.00005	141	0.00002	0.00023	0.0001	0.00055	0.071	0.000005	2.97	0.0169	31.2	0.822	0.0299	50.2
MW12-07-02	2018-03-16 14:00	0.00001	0.014	0.00136	0.02	0.975	0.00002	0.00005	147	0.0000694	0.00025	0.00071	0.0037	0.088	0.000005	2.85	0.0178	27.5	0.856	0.0373	52
MW12-07-02	2018-04-13 11:00	0.00001	0.0131	0.00032	0.0202	0.376	0.00002	0.00005	125	0.0000405	0.00027	0.00023	0.00461	0.068	0.000005	2.95	0.0185	30.1	0.853	0.0371	44.2
MW12-07-02	2018-05-05 13:40	0.00001	0.0025	0.00043	0.0218	0.189	0.00002	0.00005	131	0.000015	0.00022	0.0001	0.00151	0.019	0.000005	2.92	0.0182	27.1	0.719	0.0331	40.7
MW12-07-02	2018-06-01 15:50																				
MW12-07-02	2018-06-01 15:50	0.00001	0.0043	0.00037	0.0251	0.217	0.00002	0.00005	126	0.0000486	0.00025	0.0001	0.00278	0.018	0.000005	3.04	0.0181	29.1	0.796	0.0314	43.8
MW12-07-02	2018-08-19 16:30	0.00001	0.0021	0.00064	0.0236	0.866	0.00002	0.00005	109	0.0000171	0.00022	0.0001	0.00219	0.01	0.000005	2.72	0.0165	26.8	0.886	0.0304	43.3
MW12-07-02	2018-09-28 13:40	0.00001	0.0018	0.00096	0.0226	0.332	0.00002	0.00005	111	0.000055	0.00026	0.00019	0.00147	0.01	0.000005	2.74	0.0172	27	0.809	0.0287	38.7
MW12-07-02	2018-10-20 11:40	0.00001	0.0215	0.00592	0.0257	0.126	0.00002	0.00005	110	0.000102	0.00028	0.0001	0.00494	0.047	0.000005	3.01	0.0165	25.5	0.771	0.0279	35.4
MW12-07-02	2019-01-20 14:20	0.00001	0.0017	0.00071	0.0214	0.292	0.00002	0.00005	106	0.0000714	0.00025	0.0001	0.00089	0.01	0.000005	2.61	0.0162	25.3	0.643	0.024	34.4
MW12-07-02	2019-02-08 10:55	0.00001	0.0024	0.00028	0.025	0.156	0.00002	0.00005	116	0.000143	0.00024	0.0001	0.00911	0.01	0.000005	2.86	0.0172	27.9	0.694	0.0264	36.4
MW12-07-02	2019-03-09 10:30	0.00001	0.0021	0.00024	0.0239	0.178	0.00002	0.00005	103	0.000039	0.00023	0.0001	0.00112	0.01	0.000005	2.53	0.0154	25	0.618	0.0242	32.9
MW12-07-02	2019-04-19 14:15	0.00001	0.0039	0.00029	0.0232	0.174	0.00002	0.00005	109	0.0000431	0.0003	0.0001	0.00159	0.01	0.000005	2.74	0.0164	27.3	0.658	0.0217	35
MW12-07-02	2019-05-06 13:40	0.00001	0.0033	0.00029	0.0232	0.17	0.00002	0.00005	113	0.000169	0.00027	0.0001	0.00275	0.01	0.000005	2.67	0.0167	26.6	0.662	0.0233	33
MW12-07-02	2019-06-07 14:25	0.000011	0.0062	0.00022	0.0245	0.125	0.00002	0.00005	115	0.0000769	0.0003	0.0001	0.0031	0.012	0.000005	2.93	0.0168	28.2	0.692	0.0236	35.5
MW12-07-02	2019-07-05 14:40	0.00001	0.0024	0.00044	0.0257	0.153	0.00002	0.00005	112	0.000152	0.00028	0.0001	0.00377	0.01	0.000005	3.56	0.0155	26.2	0.634	0.0227	33.6
MW12-07-02	2019-08-01 8:55	0.00001	0.0025	0.00046	0.0264	0.229	0.00002	0.00005	119	0.000191	0.00032	0.0001	0.00316	0.01	0.000005	2.98	0.0168	28.3	0.693	0.0232	37.3
MW12-07-02	2019-09-12 9:30	0.00001	0.0027	0.00058	0.025	0.173	0.00002	0.00005	118	0.00007	0.00032	0.0001	0.0021	0.01	0.000005	2.89	0.016	28.5	0.653	0.0217	35.7
MW12-07-02	2019-10-03 14:05	0.00001	0.0019	0.00033	0.0242	0.234	0.00002	0.00005	118	0.000105	0.0003	0.00011	0.00365	0.01	0.000005	3.09	0.017	30	0.624	0.0217	35.8
MW12-07-02	2019-11-02 14:35	0.00001	0.0022	0.00028	0.0233	0.126	0.00002	0.00005	107	0.000133	0.00034	0.00014	0.00442	0.01	0.000005	2.74	0.0165	29.8	0.647	0.0214	34.6
MW12-07-02	2019-12-02 14:00	0.00001	0.0015	0.00515	0.0206	0.49	0.00002	0.00005	201	0.000025	0.0001	0.0001	0.0002	0.282	0.000005	2.48	0.0203	23	0.0891	0.0208	84.4
MW12-07-02	2020-02-09 10:45																				
MW12-07-02	2020-02-09 10:45	0.00001	0.721	0.00739	0.254	0.072	0.00002	0.00005	32.7	0.000015	0.00039		0.0093	0.086	0.000005	28.8	0.0132	0.118	0.00028	0.0248	208
MW12-07-02	2020-03-20 14:30	0.00001	0.0055	0.0006	0.0235	0.121	0.00002	0.00005	115	0.0000988	0.00036	0.0001	0.00626	0.01	0.000005	2.86	0.0163	30.4	0.578	0.0194	32.6
MW12-07-02	2020-04-17 9:40	0.00001	0.0023	0.00026	0.025	0.106	0.00002	0.00005	150	0.000122	0.00038	0.0001	0.00734	0.01	0.000005	3.06	0.0163	36	0.731	0.0188	40.3
MW12-07-02	2020-07-28 16:30	0.00001	0.003	0.00114	0.0238	0.115	0.00002	0.00005	120	0.000154	0.00041	0.00011	0.0104	0.01	0.000005	3.04	0.0167	28.8	0.564	0.0196	32.8
MW12-07-02	2020-10-31 14:05	0.00001	0.0019	0.00028	0.0248	0.116	0.00002	0.00005	120	0.000175	0.00039	0.0001	0.0153	0.01	0.000005	3	0.0154	31.7	0.616	0.0186	32.9
MW12-07-02	2021-03-15 15:20	0.00001	0.0017	0.00025	0.0233	0.137	0.00002	0.00005	126	0.000199	0.00039	0.0001	0.0203	0.01	0.000005	2.91	0.017	31.4	0.541	0.018	31.8
MW12-07-02	2021-05-23 8:35	0.00001	0.0019	0.0002	0.0234	0.109	0.00002	0.00005	135	0.000316	0.00045	0.0005	0.027	0.01	0.000005	3.1	0.0168	33.5	0.594	0.0169	35.4
MW12-07-02	2021-10-02 14:40	0.00001	0.0018	0.00033	0.0218	0.227	0.00002	0.00005	132	0.000174	0.00043	0.0005	0.0258	0.01	0.000005	3.04	0.0172	32.8	0.546	0.0174	34.7
MW12-07-02	2022-01-11 15:25	0.00001	0.0029	0.00081	0.0197	0.161	0.00002	0.00005	139	0.00016	0.00039	0.0005	0.027	0.01	0.000005	2.83	0.0159	32	0.481	0.0165	31.8
MW12-07-03	2016-12-20 17:40	0.00001	0.0056	0.0001	0.0243	0.283	0.00002	0.00005	184	0.0000058	0.0001	0.0001	0.00258	1.56	0.000005	3.72	0.0176	42.9	1.77	0.0322	56.2
MW12-07-03	2021-05-23 9:15	0.00001	0.0018	0.0001	0.0484	0.073	0.00002	0.00005	146	0.0000091	0.0001	0.0005	0.00123	16	0.000005	2.88	0.0089	48	0.686	0.001	22.1
MW17-08-01	2017-08-28 9:50	0.00001	0.0029	0.0002	0.0083	0.029	0.00002	0.00005	52	0.0000396	0.0001	0.0001	0.00061	0.01	0.000005	1.86	0.0019	30.4	0.00485	0.00525	9.82
MW17-08-01	2017-11-20 11:30	0.00001	0.0014	0.00026	0.00978	0.028	0.00002	0.00005	55.6	0.0000635	0.0001	0.00019	0.00068	0.01	0.000005	1.91	0.0022	32.9	0.00136	0.00908	7.08
MW17-08-01	2018-03-08 14:20	0.00001	0.0012	0.00022	0.00852	0.021	0.00003	0.00005	50.2	0.0000658	0.0001	0.0001	0.00061	0.01	0.000005	1.57	0.0018	30.8	0.00187	0.0082	7.57
MW17-08-01	2018-03-08 14:20																				
MW17-08-01	2018-05-07 15:20	0.00001	0.0028	0.00013	0.0088	0.023	0.00002	0.00005	53.8	0.000057	0.0001	0.0001	0.00049	0.01	0.000005	1.58	0.0021	30	0.00261	0.00868	7.22
MW17-08-01	2018-08-27 16:15	0.00001	0.0016	0.00015	0.007	0.021	0.00002	0.00005	49	0.000201	0.0001	0.0001	0.00129	0.01	0.000005	1.75	0.002	29.8	0.00114	0.0087	7.27
MW17-08-01	2018-10-26 16:15	0.00001	0.001	0.00523	0.00949	0.021	0.00002	0.00005	45.8	0.0000294	0.0001	0.0001	0.00033	0.01	0.000005	1.68	0.002	28.6	0.00086	0.00876	7.15
MW17-08-01	2019-02-23 14:30	0.000011	0.0028	0.0001	0.0146	0.023	0.00002	0.00005	50	0.0000487	0.0001	0.0001	0.00036	0.01	0.000005	1.57	0.0021	27.3	0.00171	0.0087	7.14
MW17-08-01	2019-05-10 9:00	0.00001	0.001	0.00012	0.00726	0.032	0.00002	0.00005	50	0.0000159	0.0001	0.0001	0.00023	0.01	0.000005	1.66	0.002	31.8	0.00178	0.00873	7.88
MW17-08-01	2019-08-06 10:10	0.00001	0.0019	0.00027	0.00891	0.031	0.00002	0.00005	51.2	0.0000448	0.0001	0.0001	0.00142	0.01	0.000005	1.65	0.002	30.2	0.00279	0.00922	7.87
MW17-08-01	2019-10-19 9:55	0.00002	0.0025	0.00051	0.00814	0.026	0.00004	0.0001	46.8	0.00325	0.0002	0.0002	0.0062	0.02	0.000005	2.79	0.0021	29.5	0.00364	0.0091	9.67
MW17-08-01	2020-03-13 9:00	0.00002	0.002	0.0002	0.01472	0.044	0.00004	0.0001	86.6	0.000322	0.0002	0.0001	0.00152	0.02	0.00001	3.9	0.004	55.6	0.00262	0.01908	14.94
MW17-08-01	2020-06-29 9:05	0.00001	0.0015	0.00089	0.00738	0.022	0.00002	0.00005	47.4	0.0000556	0.0001	0.0001	0.00037	0.01	0.000005	1.58	0.002	29.5	0.0007	0.00942	7.19
MW17-08-01	2020-09-24 9:00	0.00002	0.0072	0.0002	0.00792	0.023	0.00004	0.0001	46.2	0.000123	0.0002	0.0002	0.00532	0.02	0.000005	1.68	0.002	29.4	0.0011	0.00925	7.46
MW17-08-01	2020-10-28 10:15	0.00001	0.0016	0.0001	0.0078	0.023	0.00002	0.00005	53.2	0.0000426	0.0001	0.0001	0.00031	0.01	0.000005	1.7	0.0021	31.6	0.00099	0.00926	7.86
MW17-08-01	2021-06-06 15:20	0.00001	0.0014	0.0001	0.0101	0.024	0.00002	0.00005	49.7	0.0000462	0.0001	0.0005	0.00087	0.01	0.000005	1.72	0.0023	28.5	0.0035	0.00949	7.38
MW17-08-01	2021-10-02 17:37	0.00001	0.0021	0.00016	0.0064	0.03	0.00002	0.00005	48.3	0.0000528	0.0001	0.0005	0.00116	0.01	0.000005	1.64	0.0023	28.6	0.00336	0.00933	7.27
MW17-08-02	2017-08-28 10:15	0.00001	0.0038	0.00028	0.0739	0.01	0.00002	0.00005	34.7	0.0000133	0.0001	0.00082	0.00175	0.015	0.000005	1.09	0.001	16.4	0.00626	0.00336	6.69
MW17-08-02	2017-11-20 13:30	0.00001	0.0027	0.00033	0.105	0.013	0.00002	0.00005	45.7	0.0000258	0.0001	0.0001	0.0024	0.01	0.000005	1.1	0.001	19.7	0.0031	0.00372	5.32
MW17-08-02	2018-03-08 14:45	0.00001	0.0021	0.00032	0.0887	0.01	0.00003	0.00005	37.7	0.0000458	0.0001	0.0001	0.00226	0.01	0.000005	0.98	0.001	16.3	0.00189	0.00306	5.12
MW17-08-02	2018-05-07 15:40	0.00001	0.0022	0.00022	0.0888	0.014	0.00002	0.00005	38.4	0.0000293	0.0001	0.0001	0.00227	0.01	0.000005	0.94	0.001	16	0.00168	0.00312	4.84
MW17-08-02	2018-08-27 16:45	0.00001	0.0022	0.00033	0.0894	0.01	0.00002	0.00005	32.9	0.000017	0.0001	0.0001	0.00245	0.01	0.000005	0.98	0.001	15.6	0.00115	0.00299	4.8
MW17-08-02	2018-10-26 16:55	0.00001	0.0019	0.00479	0.0927	0.01	0.00002	0.00005	37.1	0.0000114	0.0001	0.0001	0.00245	0.01	0.000005	1.03	0.001	15.4	0.00085	0.00309	4.96
MW17-08-02	2019-02-23 15:35	0.00001	0.0019	0.00014	0.0915	0.01	0.00002	0.00005	36.9	0.0000099	0.0001	0.0001	0.00225	0.01	0.000005	0.92	0.001	15.2	0.00084	0.00296	4.63
MW17-08-02	2019-05-10 9:50	0.00001	0.0021	0.00028	0.0915	0.012	0.00002	0.00005	37.3	0.000015	0.0001	0.0001	0.00239	0.01	0.000005	0.97	0.001	16.6	0.00071	0.00302	5.42
MW17-08-02	2019-08-06 11:30	0.00001	0.0027	0.00033	0.0857	0.013	0.00002	0.00005	37.1	0.0000327	0.0001	0.0001	0.0025	0.01	0.000005	0.99	0.001	15.8	0.00131	0.00308	5.29
MW17-08-02	2019-10-19 10:45	0.00001	0.0014	0.00021	0.0809	0.01	0.00002	0.00005	33.5	0.000234	0.0001	0.0001	0.00259	0.01	0.000005	1.36	0.001	15.6	0.00106	0.00289	5.14
MW17-08-02	2020-03-13 9:50	0.00002	0.0036	0.00036	0.173	0.02	0.00004	0.0001	64	0.000208	0.0002	0.0001	0.00534	0.02	0.00001	2.3	0.002	29.6	0.00238	0.00614	9.98
MW17-08-02	2020-06-29 9:20	0.00001	0.0023	0.00065	0.0835	0.01	0.00002	0.00005	33.4	0.0000855	0.0001	0.0001	0.00279	0.01	0.000005	0.892	0.001	14.7	0.00087	0.00293	4.42
MW17-08-02	2020-09-24 9:30	0.00001	0.0028	0.00021	0.0968	0.011	0.00002	0.00005	35.7	0.0000619	0.0001	0.00018	0.00338	0.01	0.000005	1.03	0.001	15.7	0.00057	0.00289	4.79
MW17-08-02	2020-10-28 11:15	0.00001	0.0018	0.00021	0.0909	0.012	0.00002	0.00005	39.8	0.0000221	0.0001	0.0001	0.00309	0.01	0.000005	0.996	0.001	17.7	0.00043	0.00287	5.31
MW17-08-02	2021-06-06 15:50	0.00001	0.0019	0.00021	0.0987	0.011	0.00002	0.00005	36.2	0.0000299	0.0001	0.0005	0.00373	0.01	0.000005	1.02	0.001	15.3	0.00103	0.00268	4.84

Station	Date / Time	Dissolved Elements													
		Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW12-07-01	2020-10-31 13:35	0.0005	0.00005	0.00135	209	0.00631	6.41	0.00029	8.84	0.0003	0.00001	0.000341	0.0005	0.0078	0.0002
MW12-07-01	2021-10-02 14:00														
MW12-07-01	2022-01-11 14:45	0.00053	0.00005	0.00019	198	0.000278	6.89	0.0001	8.53	0.0003	0.00001	0.000146	0.0005	0.0146	0.0002
MW12-07-02	2012-11-03 0:00	0.0017	0.00056	0.0005	104	0.0148	6.61	0.005	3.68	0.005	0.00005	0.00575	0.005	0.0385	0.0005
MW12-07-02	2013-06-29 9:30														
MW12-07-02	2013-08-20 15:00	0.001	0.0002	0.0005	209	0.00019	6.62	0.005	9.73	0.005	0.00005	0.00064	0.005	0.005	0.0005
MW12-07-02	2013-10-15 14:30	0.0012	0.0002	0.0005	224	0.00041	6.8	0.005	9.15	0.005	0.00005	0.00034	0.005	0.005	0.0005
MW12-07-02	2014-03-16 17:20	0.001	0.0002	0.0005	218	0.0001	6.23	0.005	9.72	0.005	0.00005	0.0013	0.005	0.005	0.0005
MW12-07-02	2014-04-30 14:00	0.001	0.0002	0.0005	229	0.00023	5.58	0.005	9.82	0.005	0.00005	0.00177	0.005	0.005	0.0005
MW12-07-02	2014-05-24 15:30	0.001	0.0002	0.0005	217	0.00012	5.97	0.005	9.8	0.005	0.00005	0.00109	0.005	0.005	0.0005
MW12-07-02	2014-06-22 11:15	0.001	0.0002	0.0005	228	0.0001	5.31	0.005	10.3	0.005	0.00005	0.00104	0.005	0.0054	0.0005
MW12-07-02	2014-07-18 15:00	0.001	0.0002	0.0005	212	0.0001	5.78	0.005	9.64	0.005	0.00005	0.00094	0.005	0.005	0.0005
MW12-07-02	2014-08-15 11:05	0.001	0.00023	0.0005	215	0.00013	6.15	0.005	10.1	0.005	0.00005	0.00067	0.005	0.005	0.0005
MW12-07-02	2014-09-14 14:25	0.001	0.0002	0.0005	231	0.00025	6.54	0.005	10.1	0.005	0.00005	0.00056	0.005	0.005	0.0005
MW12-07-02	2014-10-02 16:10	0.001	0.0002	0.0005	220	0.00024	6.12	0.005	9.64	0.005	0.00005	0.00025	0.005	0.005	0.0005
MW12-07-02	2014-11-07 13:45	0.001	0.0002	0.0005	216	0.00018	5.67	0.005	9.74	0.005	0.00005	0.00135	0.005	0.005	0.0005
MW12-07-02	2014-12-07 14:20	0.001	0.0002	0.0005	237	0.00015	6.37	0.005	10.9	0.005	0.00005	0.0015	0.005	0.005	0.0005
MW12-07-02	2015-01-12 17:30	0.001	0.0002	0.0005	148	0.00151	8.08	0.005	10.1	0.005	0.00005	0.00018	0.005	0.005	0.0005
MW12-07-02	2015-03-20 13:00	0.001	0.0002	0.0005	238	0.00011	6.65	0.005	10.2	0.005	0.00005	0.00153	0.005	0.005	0.0005
MW12-07-02	2015-04-24 11:25	0.001	0.0002	0.0005	270	0.0001	7.05	0.005	10.7	0.005	0.00005	0.00154	0.005	0.005	0.0005
MW12-07-02	2015-05-22 16:45	0.001	0.0002	0.0005	257	0.00011	6.25	0.005	10.9	0.005	0.00005	0.00153	0.005	0.005	0.0005
MW12-07-02	2015-06-02 10:00	0.001	0.0002	0.0005	261	0.0001	6.49	0.005	11.3	0.005	0.00005	0.0016	0.005	0.005	0.0005
MW12-07-02	2015-07-18 9:50	0.001	0.0002	0.0005	238	0.0001	6.01	0.005	9.6	0.005	0.00005	0.00152	0.005	0.005	0.0005
MW12-07-02	2015-08-11 10:15	0.001	0.0002	0.0005	230	0.00015	5.95	0.005	10.6	0.005	0.00005	0.00161	0.005	0.0064	0.0005
MW12-07-02	2015-09-18 16:00	0.001	0.0002	0.0005	236	0.00025	6.25	0.005	10.9	0.005	0.00005	0.00147	0.005	0.005	0.0005
MW12-07-02	2015-10-11 17:15	0.001	0.0002	0.0005	255	0.0001	6.92	0.005	10.3	0.005	0.00005	0.00156	0.005	0.005	0.0005
MW12-07-02	2015-11-14 15:00	0.001	0.0002	0.0005	246	0.00015	6.28	0.005	10.6	0.005	0.00005	0.00182	0.005	0.0068	0.0005
MW12-07-02	2015-12-31 15:35	0.001	0.0002	0.0005	255	0.00018	6.96	0.005	11.1	0.005	0.00005	0.00146	0.005	0.0083	0.0005
MW12-07-02	2016-02-28 17:40	0.001	0.0002	0.0005	242	0.0002	6.59	0.005	10.6	0.005	0.00005	0.00159	0.005	0.0087	0.0005
MW12-07-02	2016-03-31 17:15														
MW12-07-02	2016-04-23 16:25	0.0005	0.00005	0.0001	235	0.00009	5.94	0.0001	10.5	0.0003	0.00001	0.00166	0.0005	0.002	0.0003
MW12-07-02	2016-05-13 17:10	0.0005	0.00005	0.0001	233	0.000113	6.08	0.0001	11	0.0003	0.00001	0.00172	0.0005	0.0074	0.0003
MW12-07-02	2016-05-22 15:30	0.001	0.0001	0.0002	236	0.00037	6.04	0.0002	10.4	0.0006	0.00002	0.00163	0.001	0.0049	0.0006
MW12-07-02	2016-06-25 14:45	0.0005	0.00005	0.0001	236	0.000145	5.94	0.0001	9.4	0.0003	0.00001	0.00161	0.0005	0.0038	0.0003
MW12-07-02	2016-09-01 17:15	0.001	0.0001	0.0002	234	0.00013	6.03	0.0002	10.1	0.0006	0.00002	0.00157	0.001	0.0066	0.0006
MW12-07-02	2016-10-22 17:02	0.0005	0.00005	0.00024	255	0.000055	5.92	0.0001	10.7	0.00035	0.00001	0.00176	0.0005	0.0659	0.0003
MW12-07-02	2016-12-20 17:10	0.001	0.0001	0.00028	257	0.00019	6.01	0.0002	10.8	0.0006	0.00002	0.00167	0.001	0.178	0.0006
MW12-07-02	2016-12-20 17:10														
MW12-07-02	2017-01-27 11:15														
MW12-07-02	2017-01-30 16:20	0.0005	0.00005	0.00019	256	0.000155	6.1	0.0001	11	0.0003	0.00001	0.00176	0.0005	0.0035	0.0003
MW12-07-02	2017-02-16 15:05	0.0005	0.00005	0.00022	250	0.000205	6.27	0.0001	10.9	0.0003	0.00001	0.00169	0.0005	0.0031	0.0003
MW12-07-02	2017-03-30 9:10	0.0005	0.00005	0.00017	280	0.0001	6.29	0.0001	10.5	0.0003	0.00001	0.00171	0.0005	0.0027	0.0003
MW12-07-02	2017-04-22 14:17	0.001	0.0001	0.0002	239	0.00072	5.58	0.0002	10.9	0.0006	0.00002	0.00177	0.001	0.002	0.0003
MW12-07-02	2017-05-21 16:45	0.001	0.0001	0.0002	256	0.00013	6.02	0.0002	10.6	0.0006	0.00002	0.0016	0.001	0.0027	0.0003
MW12-07-02	2017-06-23 8:30	0.0005	0.00005	0.0001	243	0.000073	6.13	0.0001	11.1	0.0003	0.00001	0.00156	0.0005	0.0029	0.0003
MW12-07-02	2017-07-28 14:45	0.0005	0.000127	0.00014	267	0.000104	6.31	0.0001	11.1	0.0003	0.00001	0.0018	0.0005	0.0153	0.0003
MW12-07-02	2017-08-15 16:00	0.0005	0.00005	0.00012	245	0.000193	5.9	0.00043	10.5	0.00042	0.00001	0.0018	0.0005	0.0032	0.0003
MW12-07-02	2017-10-20 17:15	0.0005	0.00005	0.0001	245	0.000203	5.73	0.0001	10.7	0.0003	0.00001	0.00164	0.0005	0.0051	0.0003
MW12-07-02	2017-11-09 10:55	0.0005	0.00005	0.0001	253	0.00023	5.98	0.0001	10.8	0.0003	0.00001	0.00185	0.0005	0.012	0.0003
MW12-07-02	2018-01-13 14:20	0.001	0.0001	0.00035	161	0.00145	6.11	0.0002	5.52	0.0006	0.00002	0.00261	0.001	0.0426	0.0003
MW12-07-02	2018-02-24 10:05	0.0005	0.00005	0.0002	154	0.000562	6.45	0.0001	5.25	0.0003	0.00001	0.00279	0.0005	0.0599	0.0003
MW12-07-02	2018-03-16 14:00	0.00061	0.000213	0.00053	131	0.000848	5.88	0.00016	5.12	0.0009	0.00001	0.00287	0.0005	0.375	0.0003
MW12-07-02	2018-04-13 11:00	0.0005	0.000114	0.0002	141	0.000486	6.57	0.00023	4.62	0.0009	0.00001	0.00317	0.0005	0.154	0.0003
MW12-07-02	2018-05-05 13:40	0.0005	0.00005	0.0001	115	0.00047	6.04	0.0001	4.22	0.0003	0.00001	0.00274	0.0005	0.028	0.0003
MW12-07-02	2018-06-01 15:50														
MW12-07-02	2018-06-01 15:50	0.0005	0.00005	0.0001	117	0.000706	6.58	0.0001	4.15	0.0003	0.00001	0.00308	0.0005	0.0318	0.0003
MW12-07-02	2018-08-19 16:30	0.0005	0.00005	0.00031	110	0.00134	6.17	0.00011	3.58	0.0003	0.00001	0.00311	0.0005	0.0684	0.0003
MW12-07-02	2018-09-28 13:40	0.0005	0.00005	0.00017	103	0.000623	6.22	0.0001	3.31	0.0003	0.00001	0.00301	0.0005	0.0771	0.0003
MW12-07-02	2018-10-20 11:40	0.0005	0.00005	0.0001	106	0.000439	6.16	0.0001	3.34	0.00257	0.00001	0.00328	0.0005	0.0619	0.0003
MW12-07-02	2019-01-20 14:20	0.0005	0.00005	0.00014	97.4	0.000861	6.09	0.0001	3.03	0.0003	0.00001	0.00308	0.0005	0.15	0.0003
MW12-07-02	2019-02-08 10:55	0.0005	0.00005	0.0001	102	0.000511	6.36	0.0001	3.36	0.0003	0.00001	0.00338	0.0005	0.057	0.0003
MW12-07-02	2019-03-09 10:30	0.0005	0.00005	0.0001	96.7	0.00045	6.02	0.0001	3.32	0.0003	0.00001	0.00339	0.0005	0.0479	0.0003
MW12-07-02	2019-04-19 14:15	0.0005	0.00005	0.0001	104	0.00067	6.55	0.0001	2.99	0.00031	0.00001	0.00297	0.0005	0.0363	0.0003
MW12-07-02	2019-05-06 13:40	0.0005	0.00005	0.0001	104	0.00105	6.44	0.0001	3.27	0.0003	0.00001	0.00355	0.0005	0.0701	0.0003
MW12-07-02	2019-06-07 14:25	0.0005	0.000094	0.0001	99.3	0.000535	6.41	0.0001	3.5	0.0006	0.00001	0.00345	0.0005	0.0364	0.0003
MW12-07-02	2019-07-05 14:40	0.0005	0.00005	0.0001	102	0.000518	6.59	0.0001	3.28	0.0003	0.00001	0.00369	0.0005	0.0655	0.0003
MW12-07-02	2019-08-01 8:55	0.0005	0.00005	0.00011	100	0.000626	6.73	0.0001	3.43	0.0003	0.00001	0.00364	0.0005	0.152	0.0003
MW12-07-02	2019-09-12 9:30	0.0005	0.00005	0.0001	102	0.000581	6.57	0.0001	3.34	0.0003	0.00001	0.00365	0.0005	0.0585	0.0003
MW12-07-02	2019-10-03 14:05	0.0005	0.00005	0.00011	98.2	0.000718	6.59	0.0001	3.33	0.0003	0.00001	0.00406	0.0005	0.0714	0.0003
MW12-07-02	2019-11-02 14:35	0.0005	0.00005	0.0001	106	0.000543	6.95	0.0001	3.11	0.0003	0.00001	0.00361	0.0005	0.0299	0.0003
MW12-07-02	2019-12-02 14:00	0.0005	0.00005	0.00018	229	0.000468	6.49	0.0001	9.56	0.0003	0.00001	0.000173	0.0005	0.116	0.0002
MW12-07-02	2020-02-09 10:45														
MW12-07-02	2020-02-09 10:45	0.00164	0.00005	0.00178	9.99	0.00117	3.84	0.00023	0.986	0.0003	0.00001	0.00001	0.00684	0.001	0.0002
MW12-07-02	2020-03-20 14:30	0.0005	0.00005	0.0001	97.5	0.000445	6.41	0.0001	3.2	0.0003	0.00001	0.00408	0.0005	0.0306	0.0002
MW12-07-02	2020-04-17 9:40	0.0005	0.00005	0.0001	94.7	0.000548	6.53	0.0001	3.9	0.0003	0.00001	0.00436	0.0005	0.0343	0.0002
MW12-07-02	2020-07-28 16:30	0.00051	0.00005	0.0001	117	0.000504	7.35	0.0001	3.42	0.0003	0.00001	0.00483	0.00055	0.0352	0.0002
MW12-07-02	2020-10-31 14:05	0.0005	0.00005	0.0001	108	0.00085	6.54	0.0001	3.39	0.0003	0.00001	0.00495	0.00059	0.0249	0.0002
MW12-07-02	2021-03-15 15:20	0.0005	0.00005	0.0001	104	0.000521	6.64	0.0001	3.3	0.0003	0.00001	0.00484	0.00051	0.0664	0.0002
MW12-07-02	2021-05-23 8:35	0.0007	0.00005	0.0001	109	0.000393	6.56	0.0001	3.28	0.0003	0.00001	0.0052	0.0005	0.0817	0.0002
MW12-07-02	2021-10-02 14:40	0.0005	0.00005	0.0001	111	0.00043	6.75	0.0001	3.4	0.0003	0.00001	0.00499	0.0005	0.1	0.0002
MW12-07-02	2022-01-11 15:25	0.0005	0.00005	0.0001	109	0.000273	6.82	0.0001	3.29	0.00082	0.00001	0.00488	0.0005	0.0434	0.0002
MW12-07-03	2016-12-20 17:40	0.0005	0.00005	0.00016	223	0.000101	4.13	0.00023	3.57	0.0003	0.00001	0.000205	0.0005	0.081	0.0003
MW12-07-03	2021-05-23 9:15	0.0005	0.00005	0.0001	96.1	0.000072	5.1	0.0001	2.42	0.0003	0.00001	0.000053	0.0005	0.0268	0.0002
MW17-08-01	2017-08-28 9:50	0.00087	0.00005	0.00023	16.2	0.00116	4.99	0.00022	6.45	0.0003	0.00001	0.000315	0.0005	0.0297	0.0003
MW17-08-01	2017-11-20 11:30	0.0005	0.00005	0.00051	14.6	0.000665	5.68	0.0001	7.94	0.0003	0.00001	0.000263	0.0005	0.0336	0.0003
MW17-08-01	2018-03-08 14:20	0.0005	0.00005	0.0001	12.6	0.000598	5.09	0.0001	6.84	0.0003	0.00001	0.000245	0.0005	0.0373	0.0003
MW17-08-01	2018-03-08 14:20														
MW17-08-01	2018-05-07 15:20	0.0005	0.00005	0.00023	11.3	0.00051	4.81	0.0001	7.06	0.0003	0.00001	0.000258	0.0005	0.0539	0.0003
MW17-08-01	2018-08-27 16:15	0.0005	0.00005	0.00013	12.4	0.000498	5.34	0.0001	6.62	0.0003	0.00001	0.000247	0.0005	0.03	0.0003
MW17-08-01	2018-10-26 16:15	0.0005	0.00005	0.0001	12.1	0.000399	4.94	0.0001	6.29	0.0003	0.00001	0.00025	0.0005	0.0363	0.0003
MW17-08-01	2019-02-23 14:30	0.0005	0.00005	0.0001	12.7	0.000938	5.3	0.0001	6.12	0.0003	0.00001	0.000308	0.0005	0.0383	0.0003
MW17-08-01	2019-05-10 9:00	0.0005	0.00005	0.0001	11.9	0.000485	5.17	0.0001	6.54	0.0003	0.00001	0.000232	0.0005	0.0239	0.0003
MW17-08-01	2019-08-06 10:10	0.00166	0.00005	0.0001	11.8	0.00072	5.52	0.0001	6.83	0.0003	0.00001	0.000249	0.0005	0.0692	0.0003
MW17-08-01	2019-10-19 9:55	0.0014	0.0001	0.0002	11.3	0.00044	5.37	0.0002	6.36	0.0006	0.00002	0.00026	0.001	0.0468	0.0004
MW17-08-01	2020-03-13 9:00	0.001	0.0001	0.0002	23.6	0.00095	10.98	0.0002	13.2	0.0006	0.00002	0.000472	0.001	0.082	0.0004
MW17-08-01	2020-06-29 9:05	0.0005	0.00005	0.0001	11.8	0.000673	5.32	0.0001	6.55	0.0003	0.00001	0.000218	0.0005	0.0521	0.0002
MW17-08-01	2020-09-24 9:00	0.001	0.0001	0.0002	10.5	0.000562	5.22	0.0002	6.32	0.0006	0.00002	0.000227	0.001	0.0563	0.0004
MW17-08-01	2020-10-28 10:15	0.0005	0.00005	0.0001	10.8	0.000536	5.27	0.0001	6.84	0.0003	0.00001	0.000224	0.0005	0.0276	0.0002
MW17-08-01	2021-06-06 15:20	0.0005	0.00005	0.0001	10.8	0.000584	5.6	0.0001	6.5	0.0003	0.00001	0.000217	0.0005	0.0173	0.0002
MW17-08-01	2021-10-02 17:37	0.0005	0.00005	0.0001	9.98	0.000518	5.26	0.0001	6.39	0.0003	0.00001	0.00022	0.0005	0.0847	0.0002
MW17-08-02	2017-08-28 10:15	0.0007	0.00005	0.00016	4.01	0.00127	4.79	0.00015	1.08	0.0003	0.00001	0.000178	0.00064	0.0155	0.0003
MW17-08-02	2017-11-20 13:30	0.0005	0.00005	0.00017	4.8	0.000729	5.78	0.0001	1.38	0.0003	0.00001	0.000182	0.00088	0.0224	0.0003
MW17-08-02	2018-03-08 14:45	0.0005	0.00005	0.00013	4.09	0.00081	4.73	0.0001	1.08	0.0003	0.00001	0.00016	0.00081	0.0313	0.0003
MW17-08-02	2018-05-07 15:40	0.0005	0.00005	0.0002	3.38	0.000638	4.48	0.00035	1.08	0.0003	0.00001	0.000161	0.00071	0.0178	0.0003
MW17-08-02	2018-08-27 16:45	0.0005	0.00005	0.0001	3.7	0.00052	4.7	0.0001	0.989	0.0003	0.00001	0.00018	0.00078	0.0084	0.0003
MW17-08-02	2018-10-26 16:55	0.0005	0.00005	0.0001	3.58	0.000514	4.51	0.0001	1.04	0.0003	0.00001	0.000164	0.00084	0.0127	0.0003
MW17-08-02	2019-02-23 15:35	0.0005	0.00005	0.0001	4.15	0.000727	4.65	0.0001	0.981	0.0003	0.00001	0.000162	0.00075	0.0095	0.0003
MW17-08-02	2019-05-10 9:50	0.0005	0.00005	0.0001	3.96	0.000607	4.67	0.0001	1.01	0.0003	0.00001	0.000151	0.00079	0.0152	0.0003
MW17-08-02	2019-08-06 11:30	0.0005	0.00005	0.0001	4.04	0.000791	4.9	0.0001	1.1	0.0003	0.00001	0.000166	0.00074	0.036	0.0003
MW17-08-02	2019-10-19 10:45	0.0005	0.00005	0.0001	3.74	0.000546	4.68	0.0001	1.05	0.0003	0.00001	0.00016	0.00077	0.0184	0.0003
MW17-08-02	2020-03-13 9:50	0.001	0.0001	0.0002	8.22	0.00094	9.96	0.0002	1.986	0.0006	0.00002	0.000314	0.00154	0.037	0.0004
MW17-08-02	2020-06-29 9:20	0.0005	0.00005	0.0001	3.82	0.0005	4.57	0.0001	1.01	0.0003	0.00001	0.000147	0.00076	0.0209	0.0002
MW17-08-02	2020-09-24 9:30	0.0005	0.00005	0.0001	3.49	0.000497	4.78	0.0001	1.02	0.0003	0.00001	0.000147	0.00079	0.0232	0.0002
MW17-08-02	2020-10-28 11:15	0.0005	0.00005	0.0001	3.68	0.000578	4.81	0.0001	1.12	0.0003	0.00001	0.000145	0.0008	0.0112	0.0002
MW17-08-02	2021-06-06 15:50	0.0005	0.00005	0.0001	3.44	0.000496	5.01	0.0001	1.04	0.0003	0.00001	0.000137	0.00075	0.0123	0.0002

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N-NO_2$	$N-NO_3$	$N-NH_3$	SO_4-D	Chlord	Fluord
		mg/L	μS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW17-08-02	2021-10-02 17:45	152	302	88.1	7.83	173	1	1.9	102.9	0.0197	0.625	0.005	8.79	0.4	
MW17-08-03	2017-08-28 10:40	132	264			142	3			0.0029	0.806	0.005	5.3	0.5	
MW17-08-03	2017-11-20 13:45	151	279		8.4	160	3	0.3		0.001	0.851	0.005	5.7	0.43	
MW17-08-03	2018-03-08 15:05	142	272		8.2	149	3	2		0.001	0.771	0.005	5.43	0.5	
MW17-08-03	2018-05-07 16:15	142	269		8.3	148	4.3	4.1		0.0028	0.804	0.005	5.15	0.5	
MW17-08-03	2018-08-27 17:10	137	253	146.5	7.71	141	3.8	3	148	0.0018	0.773	0.005	5.16	0.5	
MW17-08-03	2018-10-26 17:10	132	258	228.5	7.62	140	3	1.9	115.8	0.001	0.774	0.005	5.08	0.5	
MW17-08-03	2019-02-23 16:00	135	256	164.8	7.85	139	3	3.4	107.5	0.001	0.768	0.005	4.19	0.5	
MW17-08-03	2019-05-10 10:05	142	271	153	7.79	145	3	3.3	118.4	0.001	0.789	0.005	4.53	0.5	
MW17-08-03	2019-08-06 13:35	104	195	111.9	8.63	108	3	3.6	150.7	0.001	0.684	0.005	2.65	0.5	
MW17-08-03	2019-10-19 11:00	97.6	182	222	7.79	98.3	3	2.9	88.7	0.001	0.663	0.0127	2.43	0.37	
MW17-08-03	2020-03-13 10:25	176.2	370	316	15.4	103	6	8.2	167.4	0.0072	1.236	0.01	5.4	1.22	
MW17-08-03	2020-06-29 9:25	137	266	183.3	7.74	153	3	7.5	96.9	0.0206	0.654	0.0054	4.8	0.43	
MW17-08-03	2020-09-24 10:00	87.6	182	178.7	8.2	105	3	3.4	76.4	0.0047	0.63	0.005	2.8	0.49	
MW17-08-03	2020-10-28 11:30	87	183	174.1	8.02	107	3	1.8	83.4	0.001	0.626	0.005	2.95	0.43	
MW17-08-03	2021-06-06 16:05	93	180	138.7	7.67	108	3	5.5	128.8	0.001	0.644	0.005	2.38	0.34	
MW17-08-03	2021-10-02 18:40	91.2	182	109.1	7.76	106	1	1.9	92.7	0.0051	0.636	0.0051	2.31	0.37	
MW17-08-04	2017-08-28 11:10	63	158			71.2	3.3			0.0051	0.618	0.005	5	0.5	
MW17-08-04	2017-11-20 14:00														
MW17-08-04	2018-08-27 17:20	76.6	150	141	7.78	81.6	4	5.2	128	0.001	0.603	0.0184	2.33	0.5	
MW17-08-04	2018-10-26 17:30	76.2	153		8.5	81	3.1			0.002	0.594	0.0184	2.2	0.5	
MW17-08-04	2021-06-06 16:50	74.6	146	133.2	7.76	91.6	4.8	6.9	112.1	0.001	0.495	0.005	1.47	0.32	
MW17-08-04	2021-10-02 19:15	61.2	124	61.2	7.87	78.6	1	2.8	84.4	0.001	0.469	0.0245	1.68	0.32	
MW17-09-01	2017-08-29 16:28	175	400		8.3	621	89	13.8		0.0653	1.11	0.12	56.8	44.1	
MW17-10-01	2017-08-28 15:35	99.9	330			191	5.3			0.0827	1.96	0.0088	58.3	1.62	
MW17-10-01	2017-11-20 15:55	120	367		8.6	233	6.7	0.3		0.0484	3.1	0.0275	61.9	2.44	
MW17-10-01	2018-03-01 15:20	118	373		8.8	217	3	4.1		0.0108	4	0.0438	56.6	0.9	
MW17-10-01	2018-05-06 15:50	125	384		7.4	229	12.4	5		0.0288	5.64	0.0421	56.1	0.9	
MW17-10-01	2018-08-13 16:00	117	408	194.9	7.84	245	4.6	5.2	93	0.476	7.46	0.012	55.2	1.18	
MW17-10-01	2018-08-18 9:30	123	398	211.8	7.84	232	4.4	3.9	71.9	0.0057	7.47	0.005	52.9	0.82	
MW17-10-01	2018-10-26 13:50	99.9	387	201.9	7.54	225	3	3	91.9	0.0014	8.45	0.0062	53.7	0.86	
MW17-10-01	2019-03-09 12:45	121	402	153.1	7.92	242	3.6	3.5	87.54	0.0121	10.6	0.0068	50.1	0.79	
MW17-10-01	2019-05-15 13:40	109	377	203.2	7.8	233	3	6.2	51.3	0.0029	10.8	0.005	41.8	0.71	
MW17-10-01	2019-08-17 14:55	126	431	147.5	7.66	263	3	3.9	64.3	0.0024	13.1	0.0258	49.5	0.84	
MW17-10-01	2019-10-18 10:35	125	440	144.8	7.58	269	3.3	4.2	62.2	0.0069	13.4	0.0588	48.2	0.92	
MW17-10-01	2020-03-07 11:55	131	439	139.7	7.47	292	3	5.9	91	0.0072	15	0.0205	47.4	0.81	0.601
MW17-10-01	2020-06-26 14:45	120	458	163.8	7.87	285	6.2	9.6	84.3	0.0046	14.9	0.0364	51	1.02	
MW17-10-01	2020-07-21 15:00	119	455	182.2	7.63	284	4.7	9.3	71.2	0.0092	15.9	0.0411	47.4	0.95	
MW17-10-01	2020-10-27 14:15	119	466	205.9	7.66	302	3	4.1	62.7	0.0028	17.2	0.0135	50	0.91	
MW17-10-01	2021-03-23 9:40	123	488	135.1	7.85	308	2.5	3.1	69.1	0.0019	19.7	0.0144	49.8	1.06	
MW17-10-01	2021-05-14 14:15	112	469	135.4	7.83	306	3.7	2.4	105.4	0.0025	19	0.0471	49.1	0.95	
MW17-10-01	2021-07-21 14:25	122	469	116.9	8.02	303	1	8.7	81.9	0.0084	18.5	0.0467	48	0.93	
MW17-10-01	2021-10-15 15:00	119	481	104.3	7.84	304	2.7	1.5	146.3	0.0342	19	0.0238	48.5	0.93	
MW17-10-02	2017-08-28 16:00	113	381			234	24			0.0045	15.6	0.0055	25.9	0.81	
MW17-10-02	2017-11-20 16:10	116	388		8.7	255	7.3	0.1		0.0016	17.7	0.005	24.8	0.85	
MW17-10-02	2018-03-01 15:40	113	419		8.7	249	3	2.8		0.0024	18.3	0.005	24.4	0.78	
MW17-10-02	2018-05-06 16:10	116	428		7.5	267	4	5.7		0.0037	21.1	0.005	23.8	0.87	
MW17-10-02	2018-08-13 16:25			179.8	7.81			4.5	77			0.0053			
MW17-10-02	2018-08-18 9:55	116	446	193.8	7.82	271	6.4	4.6	106.6	0.0013	22.5	0.005	23.7	0.94	
MW17-10-02	2018-10-26 14:10	108	435	202.9	7.56	266	3	2.8	96.8	0.0011	21.7	0.005	24.1	0.98	
MW17-10-02	2019-03-09 13:15	112	457	167.3	7.88	291	3.6	1.7	87.17	0.002	27.4	0.005	24.2	1	
MW17-10-02	2019-05-15 14:10	110	473	193	7.77	294	3	7	62.1	0.001	27.2	0.005	24	1	
MW17-10-02	2019-08-17 15:40	112	494	149.8	7.66	308	3.6	3.5	74.4	0.001	29	0.0145	25.6	1.05	
MW17-10-02	2019-10-17 10:55	115	506			306	3			0.0135	29.4	0.0831	22.1	1.25	
MW17-10-02	2019-10-18 10:55			148.3	7.58			3.6	71.4						
MW17-10-02	2020-03-07 12:20	114	519	144.9	7.29	361	3.1	2.2	79.9	0.001	34.4	0.62	27.5	1.22	0.422
MW17-10-02	2020-06-26 15:20	112	544	169.1	7.79	335	4.6	8.3	89.4	0.0579	29.4	0.145	29.9	1.2	
MW17-10-02	2020-07-21 16:30	112	544	187.1	7.35	340	3	8	97.7	0.0122	31	0.307	29.3	1.23	
MW17-10-02	2020-10-27 14:35	112	552	178.9	7.88	386	3	3.7	56.3	0.001	37.7	0.0074	31.2	1.27	
MW17-10-02	2021-03-23 9:55	114	577	142.9	7.77	372	1	0.7	79.3	0.0085	36.9	0.013	32.8	1.63	
MW17-10-02	2021-05-14 15:15	105	566	146.4	7.54	376	3	5.1	105.7	0.0085	35.2	0.0238	33.1	1.29	
MW17-10-02	2021-07-21 16:20	150	525	6.5	7.96	347	9.8	5.5	105.9	0.24	24.1	0.612	31.7	5.89	
MW17-10-02	2021-10-15 15:30	111	568	100.1	7.72	364	1.1	1.4	107.8	0.0781	33	0.0148	32.8	1.29	
MW17-10-03	2017-08-28 16:30	112	390			240	4.7			0.0051	17.4	0.0172	23.2	1.06	
MW17-10-03	2017-11-20 16:45	115	405		8.8	262	3	0.1		0.0036	19.9	0.005	23.3	0.88	
MW17-10-03	2018-03-01 16:05	114	423		8.4	260	3	1.7		0.0035	20.5	0.005	22.3	0.83	
MW17-10-03	2018-05-06 16:30	118	440		7.7	269	3	4.7		0.0038	22.9	0.005	22.4	0.9	
MW17-10-03	2018-08-18 10:00	115	453	189.8	7.93	271	3	3.3	90.2	0.001	23.9	0.005	22.5	0.93	
MW17-10-03	2018-10-26 14:30	108	450	206	7.55	274	3	2.4	97.6	0.0022	24.4	0.005	23.2	1	
MW17-10-03	2019-03-09 13:45	113	471	173.3	8.09	297	4.8	1.8	78.9	0.0017	28.6	0.0053	23.6	1.19	
MW17-10-03	2019-05-15 14:30	112	481	167.4	7.56	307	3	6.8	63.7	0.001	28.4	0.005	23.6	1.04	
MW17-10-03	2019-08-17 16:00	118	507	143.1	7.66	320	3	3.2	64.5	0.001	29.6	0.0098	25.2	1.09	
MW17-10-03	2019-10-17 11:20	117	500			314	3			0.0113	30.4	0.0432	21.9	1.28	
MW17-10-03	2019-10-18 11:20			158.1	7.55			2.8	67.7						
MW17-10-03	2020-03-07 12:55	116	526	144.3	7.41	366	3	2.7	60.9	0.001	34.5	0.207	27.5	1.24	0.37
MW17-10-03	2020-06-26 16:00	118	547	168.5	7.8	288	8.8	7.8	72.7	2.68	15.9	0.345	29.3	2.01	
MW17-10-03	2020-07-22 9:25	114	559	645.8		350	6.1	8.7	79	0.0746	32.8	0.036	29.7	1.41	
MW17-10-03	2020-10-27 15:10	114	571	186.6	7.83	398	3	2.5	60.9	0.001	39.8	0.0107	31.7	1.3	
MW17-10-03	2021-03-23 10:15	120	595	145.1	7.67	393	1	0.2	65	0.0166	39.4	0.158	34	1.34	
MW17-10-03	2021-05-14 15:35	96	588	161.6	7.3	389	3	3.9	108	0.0054	39.4	0.0259	34.2	1.36	
MW17-10-03	2021-07-22 7:40	154	564	109.9	7.94	360	7.5	8.7	97.7	0.186	25.4	0.0512	33.4	2.01	
MW17-10-03	2021-10-15 15:50	134	518	108.4	7.7	337	27.6	1.5	112.1	4.33	18	2.73	33.3	9.11	
MW17-10-04	2021-03-23 10:35			155	7.64			1.2	78.9						
MW17-10-04	2021-05-14 16:35											0.163			
MW17-10-04	2021-10-15 16:20	126	610	111.6	7.64	418	7.7	1.3	93.5	0.704	38.2	0.0661	38.5	1.41	
MW17-11-01	2017-08-26 10:47	109	285			171	24.7			0.0187	0.339	0.005	39	1.32	
MW17-11-01	2017-11-18 14:50	120	308		8.8	183	28.7	1.2		0.0435	0.0674	0.0067	38.7	1.85	
MW17-11-01	2018-02-27 11:05	128	319		8.5	185	10	1.8		0.0274	0.0098	0.005	38.5	0.71	1.85
MW17-11-01	2018-05-05 8:50	136	330		8.4	191	7.4	2.8		0.0036	0.005	0.0098	39.5	0.8	
MW17-11-01	2018-08-12 16:10	132	338	-42.8	8.18	189	7	5	90	0.008	0.0133	0.0202	36.2	0.88	
MW17-11-01	2018-10-26 9:15	134	333	40.6	7.53	187	4.5	3.3	112.8	0.0033	0.005	0.0073	36.6	0.59	
MW17-11-01	2019-02-23 10:30	138	345	238	6.81	189	9.2	0.2	62	0.001	0.005	0.005	37.1	0.51	
MW17-11-01	2019-05-10 13:30	141	345	-47.2	7.6	196	5.6	4.5	89.1	0.0018	0.0057	0.0062	38.5	0.53	
MW17-11-01	2019-08-10 14:40	155	340	100.2	7.84	199	8	5.2	56.9	0.0037	0.0139	0.0132	40.1	0.51	2.23
MW17-11-01	2019-10-14 10:20	146	331	118.3	7.19	201	3.6	2.5	105.8	0.0042	0.0142	0.0206	38.9	0.72	
MW17-11-01	2020-03-05 11:20	174	337	13.1	6.84	230	3	1.3	80.6	0.001	0.005	0.0068	37.2	0.5	2.13
MW17-11-01	2020-05-24 11:05	143	335	-33.4	7.72	214	3	2.9	59	0.001	0.023	0.005	37.7	0.44	
MW17-11-01	2020-07-26 14:12	274	702	70.1	7.37	414	6.2	4.5	82.4	0.22	0.0294	0.0322	78.8	1.18	
MW17-11-01	2020-10-31 10:00	137	350	88.6	7.59	210	3.1	1.6	87.5	0.001	0.005	0.01	42	0.42	
MW17-11-01	2021-03-21 15:10	142	346	70.9	7.29	210	1.8	16.2	69.3	0.0035	0.0057	0.021	41.5	0.46	
MW17-11-01	2021-05-13 11:05	130	336	27.1	7.71	209	3	4.1	112.5	0.001	0.0284	0.0114	41.4	0.48	
MW17-11-01	2021-09-25 10:30	162	339	112.3	8.21	223	9	0.8	77.7	0.0101	0.0438	0.0749	41.3	0.62	
MW17-11-01	2021-10-11 16:15	133	341	84.9	7.83	203	3.2	1.7	109.7	0.001	0.0067	0.0849	41.1	0.44	
MW17-11-02	2017-08-26 14:08	134	311			178	24			0.0021	0.005	0.005	31.3	0.67	
MW17-11-02	2017-11-18 15:20	147	319		8.9	192	20	1.7		0.0053	0.0748	0.005	28.7	3.19	
MW17-11-02	2018-02-27 11:40	143	336		8.6	194	5.2	2.2		0.001	0.005	0.005	34.1	0.5	1.98
MW17-11-02	2018-05-05 9:15	151	348		8.1	199	3	1.8		0.001	0.005	0.005	37	0.5	
MW17-11-02	2018-08-12 16:55	138	352	62.9	8.04	197	6.8	4.5	110.3	0.001	0.005	0.005	38.9	0.58	
MW17-11-02	2018-10-26 9:35	142	342	99.7	7.45	192	3	1.8	106.9	0.0011	0.0872	0.005	39.2	0.5	
MW17-11-02	2019-02-23 11:05	125	321	84.2	7.22	181	3	1.7	57.5	0.001	0.0066	0.005	36.2	0.5	
MW17-11-02	2019-05-10 14:15	144	357	5.5	7.61	203	3	3.9	136.6	0.001	0.0055	0.0061	43.4	0.5	
MW17-11-02	2019-08-10 15:15	149	338	93.7	7.9	198	3	4.8	55.6	0.0011	0.0126	0.005	43	0.5	2.27
MW17-11-02	2019-10-14 11:00	146	334	156.1	7.41	199	3	2	107.8	0.001	0.005	0.0087	42.1	0.42	
MW17-11-02	2020-03-05 12:00	151	351	47.5	7.19	222	3.5	1.1	78.7	0.001	0.005	0.005	42	0.5	2.06
MW17-11-02	2020-05-24 11:30	146	346	12.9	7.7	221	3	2.7	63.9	0.001	0.005	0.005	41.9	0.39	

Station	Date / Time	Dissolved Elements																	
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW17-08-02	2021-10-02 17:45	0.00001	0.0019	0.00023	0.0994	0.013	0.00002	0.00005	35.9	0.0000348	0.0001	0.0005	0.00403	0.01	0.000005	1.01	0.001	15.3	0.001
MW17-08-03	2017-08-28 10:40	0.00001	0.0044	0.00015	0.0665	0.01	0.00002	0.00005	35.5	0.000005	0.0001	0.0001	0.00061	0.01	0.000005	1.22	0.001	12.8	0.00614
MW17-08-03	2017-11-20 13:45	0.00001	0.0036	0.00023	0.0959	0.01	0.00002	0.00005	40.5	0.0000131	0.0001	0.0001	0.00069	0.01	0.000005	1.01	0.001	13.8	0.00252
MW17-08-03	2018-03-08 15:05	0.00001	0.0031	0.00025	0.0872	0.01	0.00003	0.00005	36.6	0.0000247	0.0001	0.0001	0.00056	0.01	0.000005	0.99	0.001	12.5	0.001
MW17-08-03	2018-05-07 16:15	0.00001	0.0034	0.00016	0.0796	0.01	0.00002	0.00005	37.5	0.0000175	0.0001	0.0001	0.00044	0.01	0.000005	0.99	0.001	11.9	0.00062
MW17-08-03	2018-08-27 17:10	0.00001	0.0042	0.00018	0.0822	0.01	0.00002	0.00005	34	0.0000369	0.0001	0.0001	0.00073	0.01	0.000005	1.06	0.001	11.7	0.00039
MW17-08-03	2018-10-26 17:10	0.00001	0.0037	0.00332	0.0923	0.01	0.00002	0.00005	35.6	0.0000066	0.0001	0.0001	0.00065	0.01	0.000005	1.04	0.001	12.1	0.00031
MW17-08-03	2019-02-23 16:00	0.00001	0.003	0.0001	0.0897	0.01	0.00002	0.00005	33.7	0.0000112	0.0001	0.0001	0.00044	0.01	0.000005	0.96	0.001	11.6	0.00016
MW17-08-03	2019-05-10 10:05	0.00001	0.0051	0.00017	0.0831	0.01	0.00002	0.00005	34.7	0.0000151	0.0001	0.00021	0.00073	0.01	0.000005	0.98	0.001	11.8	0.00041
MW17-08-03	2019-08-06 13:35	0.00001	0.0094	0.00021	0.0606	0.01	0.00002	0.00005	27.1	0.0000473	0.0001	0.0001	0.0014	0.01	0.000005	0.93	0.001	8.5	0.00165
MW17-08-03	2019-10-19 11:00	0.00001	0.0041	0.00018	0.0496	0.01	0.00002	0.00005	23.2	0.000172	0.0001	0.0001	0.00079	0.01	0.000005	0.75	0.001	6.97	0.00039
MW17-08-03	2020-03-13 10:25	0.00002	0.0096	0.00022	0.0918	0.02	0.00004	0.0001	44.8	0.000218	0.0002	0.00011	0.00146	0.02	0.00001	2.2	0.002	12.32	0.00186
MW17-08-03	2020-06-29 9:25	0.00001	0.0033	0.00082	0.0802	0.01	0.00002	0.00005	34.4	0.0000513	0.0001	0.00014	0.00083	0.01	0.000005	0.938	0.001	11.6	0.00026
MW17-08-03	2020-09-24 10:00	0.00001	0.0047	0.00014	0.0456	0.01	0.00002	0.00005	25.9	0.0000407	0.0001	0.00022	0.00524	0.01	0.000005	0.776	0.001	6.44	0.00042
MW17-08-03	2020-10-28 11:30	0.00001	0.0039	0.00012	0.0395	0.01	0.00002	0.00005	27.7	0.0000179	0.0001	0.00017	0.00033	0.01	0.000005	0.723	0.001	6.66	0.00024
MW17-08-03	2021-06-06 16:05	0.00001	0.0039	0.0001	0.0391	0.01	0.00002	0.00005	25.7	0.0000393	0.0001	0.0005	0.00162	0.01	0.000005	0.782	0.001	6.08	0.00087
MW17-08-03	2021-10-02 18:40	0.00001	0.0025	0.00014	0.0389	0.01	0.00002	0.00005	25.6	0.0000203	0.0001	0.0005	0.00066	0.01	0.000005	0.733	0.001	6.18	0.00037
MW17-08-04	2017-08-28 11:10	0.00001	0.0056	0.00013	0.0267	0.01	0.00002	0.00005	22.4	0.000005	0.0001	0.0001	0.00038	0.01	0.000005	0.75	0.001	4.67	0.00209
MW17-08-04	2017-11-20 14:00	0.00001	0.0038	0.00028	0.0278	0.01	0.00002	0.00005	26.5	0.000091	0.0001	0.00017	0.00053	0.01	0.000005	0.73	0.001	5.5	0.00129
MW17-08-04	2018-08-27 17:20	0.00001	0.0035	0.00013	0.0249	0.01	0.00002	0.00005	22.8	0.0000227	0.0001	0.0001	0.00036	0.01	0.000005	0.71	0.001	4.48	0.00081
MW17-08-04	2018-10-26 17:30	0.00001	0.0037	0.00489	0.0275	0.01	0.00002	0.00005	22.2	0.0000402	0.0001	0.0001	0.00096	0.01	0.000005	0.73	0.001	4.54	0.00089
MW17-08-04	2021-06-06 16:50	0.00001	0.0027	0.00011	0.0305	0.01	0.00002	0.00005	21.7	0.0000119	0.0001	0.0005	0.00104	0.01	0.000005	0.72	0.001	4.04	0.00093
MW17-08-04	2021-10-02 19:15	0.00001	0.001	0.0001	0.0301	0.01	0.00002	0.00005	16.1	0.0000367	0.00023	0.0005	0.00093	0.088	0.000005	0.708	0.001	4.17	0.0614
MW17-09-01	2017-08-29 16:28	0.00002	0.0056	0.00276	0.113	0.129	0.00004	0.0001	198	0.00025	0.00277	0.0002	0.00459	1.41	0.000005	15.4	0.0256	76.2	0.49
MW17-10-01	2017-08-28 15:35	0.000013	0.0071	0.00031	0.0257	0.016	0.00002	0.00005	37.9	0.0000229	0.00029	0.0001	0.00321	0.01	0.000005	2.28	0.0017	13.3	0.0435
MW17-10-01	2017-11-20 15:55	0.000014	0.0084	0.00064	0.029	0.015	0.00002	0.00005	50.3	0.0000884	0.00029	0.0001	0.0043	0.01	0.000005	2.22	0.0021	17.1	0.0764
MW17-10-01	2018-03-01 15:20	0.00001	0.0048	0.00022	0.0275	0.013	0.00002	0.00005	42.6	0.000015	0.00031	0.0001	0.00388	0.01	0.000005	1.58	0.0017	16.3	0.0643
MW17-10-01	2018-05-06 15:50	0.000013	0.0061	0.00033	0.0252	0.055	0.00002	0.00005	44.5	0.0000367	0.00032	0.0001	0.00448	0.01	0.000005	1.7	0.0017	15.9	0.0566
MW17-10-01	2018-08-13 16:00	0.000017	0.0062	0.00053	0.0279	0.573	0.00002	0.00005	48.2	0.000196	0.00037	0.0001	0.0043	0.01	0.000005	1.76	0.0018	18.7	0.0522
MW17-10-01	2018-08-18 9:30	0.00001	0.0041	0.00014	0.0279	0.027	0.00002	0.00005	43.7	0.0000342	0.00031	0.0001	0.00428	0.01	0.000005	1.55	0.0017	16.8	0.0457
MW17-10-01	2018-10-26 13:50	0.000011	0.0048	0.00244	0.0301	0.015	0.00002	0.00005	45.5	0.0000301	0.0004	0.0001	0.00429	0.016	0.000005	1.66	0.0017	16.8	0.0447
MW17-10-01	2019-03-09 12:45	0.000014	0.0042	0.00016	0.0247	0.035	0.00002	0.00005	44.3	0.0000788	0.0004	0.0001	0.00358	0.01	0.000005	1.42	0.0017	16.3	0.0388
MW17-10-01	2019-05-15 13:40	0.00001	0.004	0.00025	0.0273	0.019	0.00002	0.00005	48.8	0.000147	0.00048	0.0001	0.00375	0.01	0.000005	1.51	0.0016	17.9	0.0313
MW17-10-01	2019-08-17 14:55	0.00001	0.0041	0.00069	0.0271	0.018	0.00002	0.00005	50.2	0.0000351	0.00052	0.0001	0.00356	0.01	0.000005	1.5	0.0016	18	0.0293
MW17-10-01	2019-10-18 10:35	0.000028	0.0036	0.00025	0.0265	0.023	0.00002	0.00005	50.6	0.0015	0.00052	0.0001	0.0089	0.01	0.000005	5.36	0.0017	18.1	0.0305
MW17-10-01	2020-03-07 11:55	0.00001	0.0035	0.00018	0.0263	0.016	0.00002	0.00005	54.6	0.00019	0.00054	0.0001	0.00429	0.01	0.000005	1.43	0.0022	18.2	0.0255
MW17-10-01	2020-06-26 14:45	0.00001	0.0041	0.00124	0.0276	0.021	0.00002	0.00005	50.2	0.0000544	0.00058	0.0001	0.00316	0.01	0.000005	1.5	0.0014	18.6	0.0233
MW17-10-01	2020-07-21 15:00	0.000015	0.0037	0.0124	0.0287	0.017	0.00002	0.00005	49.7	0.0000877	0.00061	0.0001	0.0039	0.01	0.000005	1.64	0.0016	18.1	0.0382
MW17-10-01	2020-10-27 14:15	0.000015	0.0046	0.0002	0.0268	0.018	0.00002	0.00005	56.7	0.0000633	0.00062	0.0001	0.0042	0.01	0.000005	1.56	0.0014	20.4	0.0233
MW17-10-01	2021-03-23 9:40	0.000012	0.0037	0.00022	0.0283	0.017	0.00002	0.00005	49.8	0.0000276	0.00059	0.00013	0.00361	0.01	0.000005	1.6	0.0014	19.4	0.021
MW17-10-01	2021-05-14 14:15	0.00001	0.0045	0.00027	0.029	0.016	0.00002	0.00005	58.7	0.0000846	0.00056	0.0005	0.00415	0.01	0.000005	1.52	0.0015	19.6	0.0223
MW17-10-01	2021-07-21 14:25	0.000014	0.0046	0.00019	0.029	0.015	0.00002	0.00005	52.4	0.0000886	0.00058	0.0005	0.00454	0.01	0.000005	1.56	0.0014	19.7	0.0202
MW17-10-01	2021-10-15 15:00	0.00001	0.0048	0.00014	0.0285	0.013	0.00002	0.00005	54	0.0000458	0.00058	0.0005	0.00469	0.01	0.000005	1.46	0.0013	19	0.0193
MW17-10-02	2017-08-28 16:00	0.00001	0.0044	0.00015	0.0307	0.01	0.00002	0.00005	46.2	0.0000136	0.00053	0.0001	0.00419	0.01	0.000005	1.91	0.0012	15.3	0.0131
MW17-10-02	2017-11-20 16:10	0.00001	0.0026	0.00021	0.0332	0.01	0.00002	0.00005	55.9	0.0000365	0.00055	0.0001	0.00343	0.01	0.000005	1.93	0.0013	17	0.00642
MW17-10-02	2018-03-01 15:40	0.00001	0.0023	0.00012	0.0336	0.01	0.00002	0.00005	50.6	0.00001	0.00044	0.0001	0.00231	0.01	0.000005	1.59	0.0013	15.6	0.0037
MW17-10-02	2018-05-06 16:10	0.00001	0.0038	0.00018	0.0305	0.012	0.00002	0.00005	55	0.0000241	0.0005	0.0001	0.00524	0.01	0.000005	1.71	0.0013	15.4	0.00441
MW17-10-02	2018-08-13 16:25	0.00001	0.003	0.00024	0.0331	0.02	0.00002	0.00005	55.6	0.000164	0.00048	0.0001	0.00199	0.01		1.75	0.0012	17.8	0.00577
MW17-10-02	2018-08-18 9:55	0.00001	0.0025	0.00023	0.0342	0.01	0.00002	0.00005	51.5	0.0000435	0.00053	0.0001	0.0018	0.01	0.000005	1.74	0.0012	17	0.00377
MW17-10-02	2018-10-26 14:10	0.00001	0.0024	0.00654	0.0331	0.01	0.00002	0.00005	55.2	0.0000144	0.0007	0.0001	0.00172	0.01	0.000005	1.75	0.0011	15.9	0.00268
MW17-10-02	2019-03-09 13:15	0.00001	0.0019	0.0001	0.0326	0.01	0.00002	0.00005	52.5	0.0000666	0.0005	0.0001	0.00113	0.01	0.000005	1.57	0.0011	16.3	0.00282
MW17-10-02	2019-05-15 14:10	0.00001	0.0021	0.0001	0.0325	0.01	0.00002	0.00005	58	0.000042	0.0005	0.0001	0.00139	0.01	0.000005	1.62	0.0011	17.2	0.00188
MW17-10-02	2019-08-17 15:40	0.00001	0.0019	0.00015	0.0348	0.01	0.00002	0.00005	59.3	0.000012	0.00054	0.0001	0.00107	0.01	0.000005	1.69	0.0012	17.9	0.00178
MW17-10-02	2019-10-17 10:55	0.00001	0.0026	0.00015	0.0328	0.01	0.00002	0.00005	56.4	0.000336	0.00062	0.0001	0.00204	0.01	0.000005	1.95	0.0012	17.5	0.00331
MW17-10-02	2019-10-18 10:55																		
MW17-10-02	2020-03-07 12:20	0.00001	0.002	0.0002	0.0357	0.01	0.00002	0.00005	67.1	0.000121	0.00054	0.0001	0.00132	0.01	0.000005	1.85	0.0018	19.2	0.0021
MW17-10-02	2020-06-26 15:20	0.00001	0.0029	0.00035	0.0379	0.01	0.00002	0.00005	62.3	0.0000329	0.00043	0.0001	0.00088	0.01	0.000005	1.78	0.0012	19.9	0.00189
MW17-10-02	2020-07-21 16:30	0.00001	0.0024	0.00039	0.0384	0.01	0.00002	0.00005	61.3	0.000045	0.00058	0.0001	0.00176	0.01	0.000005	1.88	0.0013	19.4	0.00202
MW17-10-02	2020-10-27 14:35	0.00001	0.0017	0.0001	0.0398	0.01	0.00002	0.00005	71.8	0.0000325	0.00048	0.0001	0.00082	0.01	0.000005	1.9	0.0012	21.7	0.00161
MW17-10-02	2021-03-23 9:55	0.00001	0.0032	0.00012	0.0403	0.01	0.00002	0.00005	61.3	0.0000217	0.00042	0.0001	0.00082	0.01	0.000005	1.87	0.0012	20	0.00172
MW17-10-02	2021-05-14 15:15	0.00001	0.0027	0.00015	0.0386	0.01	0.00002	0.00005	77.2	0.000109	0.0004	0.0005	0.00136	0.01	0.000005	1.81	0.0013	21	0.00179
MW17-10-02	2021-07-21 16:20	0.00001	0.0061	0.0006	0.0365	0.06	0.00002	0.00005	60.5	0.000204	0.00057	0.0005	0.00131	0.019	0.000005	2.04	0.0015	19.2	0.0114
MW17-10-02	2021-10-15 15:30	0.00001	0.002	0.0001	0.0439	0.01	0.00002	0.00005	71.9	0.0000273	0.00033	0.0005	0.00089	0.01	0.000005	1.9	0.0012	21.1	0.00102
MW17-10-03	2017-08-28 16:30	0.00001	0.0028	0.00014	0.0305	0.01	0.00002	0.00005	48.9	0.0000117	0.00057	0.0001	0.00356	0.01	0.000005	1.8	0.0012	14.9	0.00825
MW17-10-03	2017-11-20 16:45	0.00001	0.0032	0.00012	0.0334	0.01	0.00002	0.00005	55.9	0.0000561	0.00071	0.0001	0.00295	0.01	0.000005	1.94	0.0012	15.8	0.00485
MW17-10-03	2018-03-01 16:05	0.00001	0.0021	0.00013	0.035	0.01	0.00002	0.00005	53.9	0.0000117	0.00069	0.0001	0.00201	0.01	0.000005	1.62	0.0015	15.3	0.0028
MW17-10-03	2018-05-06 16:30	0.00001	0.0077	0.00014	0.0319	0.01	0.00002	0.00005	51	0.0000158	0.0007	0.0001	0.00216	0.012	0.000005	1.75	0.001	14.9	0.00301
MW17-10-03	2018-08-18 10:00	0.00001	0.0028	0.0001	0.0335	0.01	0.00002	0.00005	50.9	0.0000299	0.00059	0.0001	0.00173	0.01	0.000005	1.64	0.0011	13.9	0.00181
MW17-10-03	2018-10-26 14:30	0.00001	0.0026	0.00502	0.036	0.01	0.00002	0.00005	54.7	0.0000268	0.00053	0.0001	0.00174	0.01	0.000005	1.73	0.0011	15	0.00137
MW17-10-03	2019-03-09 13:45	0.00001	0.0016	0.00013	0.0342	0.011	0.00002	0.00005	54.1	0.0000389	0.00045	0.0001	0.00111	0.01	0.000005	1.62	0.0011	15.5	0.00198
MW17-10-03	2019-05-15 14:30	0.00001	0.0023	0.0001	0.0366	0.01	0.00002	0.00005	62.4	0.0000662	0.00042	0.0001	0.00148	0.013	0.000005	1.81	0.0011	18.1	0.0012
MW17-10-03	2019-08-17 16:00	0.00001	0.0014	0.0002	0.0392	0.01	0.00002	0.00005	65	0.0000261	0.00042	0.0001	0.00111	0.01	0.000005	1.76	0.0012	18.1	0.00089
MW17-10-03	2019-10-17 11:20	0.00001	0.0014	0.00022	0.0355	0.01	0.00002	0.00005	60.1	0.000166	0.00039	0.0001	0.00162	0.01	0.000005	1.92	0.0012	17.2	0.00221
MW17-10-03	2019-10-18 11:20																		
MW17-10-03	2020-03-07 12:55	0.000016	0.0014	0.00014	0.037	0.01	0.00002	0.00005	71.2	0.0000944	0.00035	0.0001	0.0012	0.01	0.000005	1.89	0.0018	18.8	0.00198
MW17-10-03	2020-06-26 16:00	0.00001	0.0032	0.0022	0.0389	0.03	0.00002	0.00005	62.6	0.00014	0.00035	0.00013	0.00099	0.01	0.000005	1.85	0.0013	18.5	0.00545
MW17-10-03	2020-07-22 9:25	0.00001	0.0018	0.00289	0.0391	0.01	0.00002	0.00005	63.2	0.0000268	0.0003	0.0001	0.00094	0.01	0.000005	1.8	0.0013	18.8	0.00068
MW17-10-03	2020-10-27 15:10	0.00001	0.002	0.0001	0.0423	0.01	0.00002	0.00005	74.8	0.000035	0.0003	0.0001	0.00078	0.01	0.000005	1.9	0.0012	21.2	0.00085
MW17-10-03	2021-03-23 10:15	0.000011	0.0023	0.00014	0.0457	0.01	0.00002	0.00005	67	0.0000389	0.00033	0.00011	0.00102	0.01	0.000005	1.94	0.0013	20.1	0.0014
MW17-10-03	2021-05-14 15:35	0.00001	0.0019	0.0001	0.0416	0.01	0.00002	0.00005	76.4	0.0000754	0.00029	0.0005	0.00095	0.01	0.000005	1.81	0.0013	20.9	0.00179
MW17-10-03	2021-07-22 7:40	0.00001	0.0022	0.00019	0.0461	0.01	0.00002	0.00005	72.7	0.0000511	0.00029	0.0005	0.00108	0.01	0.000005	1.98	0.0014	20.9	0.00151
MW17-10-03	2021-10-15 15:50	0.00002	0.0042	0.0304	0.0225	0.265	0.00004	0.0001	53.1	0.000508	0.00088	0.001	0.00229	0.092	0.000005	2.31	0.0022	15	0.0371
MW17-10-04	2021-03-23 10:35	0.000026	0.0047	0.00018	0.0724	0.01	0.00002	0.00005	68.2	0.000473	0.0002	0.00031	0.00354	0.01		3.69	0.0031	14.6	0.0213
MW17-10-04	2021-05-14 16:35	0.000016	0.0044	0.00011	0.072	0.01	0.00002	0.00005	85.7	0.000196	0.00021	0.0005	0.00273	0.01	0.000005	3.37	0.0033	15.9	0.0224
MW17-10-04	2021-10-15 16:20	0.000012	0.0032	0.0001	0.0845	0.01	0.00002	0.00005	85.3	0.0000876	0.00018	0.0005	0.00228	0.01	0.000005	3.34	0.0028	16.6	0.014
MW17-11-01	2017-08-26 10:47	0.00001	0.0095	0.00068	0.0455	0.022	0.00002	0.00005	32.1	0.0000614	0.0001	0.0001	0.00095	0.01	0.000005	3.73	0.005	8.85	0.0414
MW17-11-01	2017-11-18 14:50	0.00001	0.0229	0.00063	0.0426	0.05	0.00002	0.00005	36	0.0000538	0.0001	0.00017	0.00052	0.026	0.000005	3.15	0.0052	9.75	0.0331
MW17-11-01	2018-02-27 11:05	0.00001	0.0062	0.00095	0.0429	0.025	0.00002	0.00005	32.7	0.0000076	0.0001	0.0001	0.0002	0.219	0.000005	2.77	0.0041	9.68	0.0415
MW17-11-01	2018-05-05 8:50	0.00001	0.0054	0.00169	0.0431	0.027	0.00002	0.00005	35	0.000005	0.0001	0.0001	0.00052	0.614	0.000005	2.53	0.0057	9.23	0.0504
MW17-11-01	2018-08-12 16:10	0.00001	0.0082	0.00136	0.0436	0.038	0.00002	0.00005	36.3	0.000673	0.0001	0.00021	0.00317	0.423	0.000005	2.71	0.0054	10.7	0.0554
MW17-11-01	2018-10-26 9:15	0.00001	0.0054	0.0019	0.0399	0.026	0.00002	0.00005	34.3	0.0000321	0.0001	0.0001	0.00054	0.403	0.000005	2.31	0.0057	9.84	0.0494
MW17-11-01	2019-02-23 10:30	0.00001	0.0046	0.0014	0.0447	0.02	0.00002	0.00005	35.2	0.0000052	0.0001	0.0001	0.0002	0.315	0.000005	1.98	0.0055	9.99	0.046
MW17-11-01	2019-05-10 13:30	0.00001	0.005	0.00151	0.0444	0.022	0.00002	0.00005	36.6	0.0000298	0.0001	0.0001	0.0003	0.288	0.000005	2.12	0.0056	10.8	0.0454
MW17-11-01	2019-08-10 14:40	0.00001	0.0049	0.00183	0.0429	0.045	0.00002	0.00005	34.8	0.0000776	0.0001	0.0001	0.00055	0.259	0.000005	1.99	0.0057	10.6	0.0427
MW17-11-01	2019-10-14 10:20	0.00001	0.0057	0.00219	0.0404	0.036	0.00002	0.00005	37.3	0.000118	0.0001	0.0001	0.00048	0.241	0.000005	2.01	0.0061	10.7	0.0438
MW17-11-01	2020-03-05 11:20	0.00001	0.0044	0.00184	0.0382	0.034	0.00002	0.00005	36.9	0.0000576	0.0001	0.0001	0.00042	0.187	0.000005	1.88	0.0085	10	0.0387
MW17-11-01	2020-05-24 11:05	0.00001	0.005	0.00208	0.037	0.023	0.00002	0.00005	37.7	0.00001	0.0001	0.0001	0.0002	0.18	0.000005	1.88	0.006	11.3	0.0376
MW17-11-01	2020-07-26 14:12	0.00002	0.0092	0.0304	0.0834	0.172	0.00004	0.0001	70	0.0000356	0.0002	0.0002	0.0004	0.332	0.00001	3.82	0.0122	20.4	0.0838
MW17-11-01	2020-10-31 10:00	0.00001	0.0047	0.00231	0.043	0.023	0.00002	0.00005	36.4	0.000015	0.0001	0.0001	0.0002	0.226	0.000005	1.89	0.0056	10.4	0.0399
MW17-11-01	2021-03-21 15:10	0.00001	0.0069	0.00228	0.0428	0.026	0.00002	0.00005	33.7	0.0000209	0.0001	0.0001	0.0002	0.227	0.000005	1.84	0.006	10.3	0.0387
MW17-11-01	2021-05-13 11:05	0.00001	0.0054	0.00247	0.0388	0.03	0.00002	0.00005	39.3	0.0000498	0.0001	0.0005	0.00028	0.21	0.000005	1.72	0.0062	10	0.0375
MW17-11-01	2021-09-25 10:30	0.00001	0.0053	0.00249	0.0415	0.038	0.00002	0.00005	35.1	0.00071	0.0001	0.0005	0.00052	0.228	0.000005	1.83	0.0063	9.97	0.0386
MW17-11-01	2021-10-11 16:15	0.00001	0.0059	0.0024	0.0396	0.029	0.00002	0.00005	33.7	0.000062	0.0001	0.0005	0.00024	0.228	0.000005	1.67	0.0058	10	0.0358
MW17-11-02	2017-08-26 14:08	0.00001	0.0066	0.00067	0.0449	0.017	0.00002	0.00005	37.3	0.0000348	0.0001	0.0001	0.00047	0.028	0.000005	2.96	0.0056	10.3	0.0569
MW17-11-02	2017-11-18 15:20	0.00001	0.0047	0.00183	0.0374	0.022	0.00002	0.00005	32.5	0.0000187	0.0001	0.0001	0.00061	0.069	0.000005	2.36	0.0045	10.1	0.0532
MW17-11-02	2018-02-27 11:40	0.00001	0.005	0.00055	0.0434	0.019	0.00002	0.00005	40.6	0.0000065	0.0001	0.0001	0.0002	0.055	0.000005	2.62	0.0047	11.6	0.0524
MW17-11-02	2018-05-05 9:15	0.00001	0.0021	0.00064	0.0396	0.019	0.00002	0.00005	39.9	0.0000086	0.0001	0.0001	0.00023	0.051	0.000005	2.67	0.0057	11.2	0.0483
MW17-11-02	2018-08-12 16:55	0.00001	0.0042	0.00058	0.044	0.021	0.00002	0.00005	41.3	0.0000633	0.0001	0.0001	0.00065	0.072	0.000005	2.6	0.0055	12.7	0.0535
MW17-11-02	2018-10-26 9:35	0.00001	0.0024	0.00126	0.0416	0.019	0.00002	0.00005	38.4	0.0000097	0.0001	0.0001	0.00026	0.076	0.000005	2.27	0.0053	10.9	0.0511
MW17-11-02	2019-02-23 11:05	0.00001	0.0021	0.00075	0.043	0.019	0.00002	0.00005	39.5	0.0000056	0.0001	0.0001	0.0002	0.083	0.000005	2.15	0.0054	10.9	0.0469
MW17-11-02	2019-05-10 14:15	0.00001	0.0033	0.00077	0.0426	0.018	0.00002	0.00005	40.8	0.0000189	0.0001	0.0001	0.00021	0.094	0.000005	2.28	0.0053	11.5	0.0515
MW17-11-02	2019-08-10 15:15	0.00001	0.0018	0.00091	0.0414	0.018	0.00002	0.00005	37.6	0.0000097	0.0001	0.0001	0.0002	0.104	0.000005	2.09	0.0052	11.6	0.0457
MW17-11-02	2019-10-14 11:00	0.00001	0.0026	0.00101	0.0385	0.019	0.00002	0.00005	39.1	0.000128	0.0001	0.0001	0.00038	0.106	0.000005	2.16	0.0055	11.4	0.0474
MW17-11-02	2020-03-05 12:00	0.00001	0.0012	0.0013	0.0392	0.025	0.00002	0.00005	41.6	0.0000463	0.0001	0.0001	0.0002	0.12	0.000005	2.06	0.0072	11.3	0.0451
MW17-11-02	2020-05-24 11:30	0.00001	0.0028	0.00136	0.0384	0.019	0.00002	0.00005	41.6	0.0000092	0.0001	0.0001	0.0002	0.121	0.000005	2.23	0.0057	13.1	0.0454

Station	Date / Time	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW17-08-02	2021-10-02 17:45	0.00273	4.78	0.0005	0.00005	0.0001	2.98	0.000498	4.82	0.0001	1.01	0.0003	0.00001	0.000142	0.00076	0.0445	0.0002
MW17-08-03	2017-08-28 10:40	0.00116	4.15	0.0005	0.00005	0.0001	2.02	0.000474	4.5	0.0001	0.726	0.0003	0.00001	0.00013	0.00053	0.0074	0.0003
MW17-08-03	2017-11-20 13:45	0.00114	3.84	0.0005	0.00005	0.00013	2.3	0.000682	4.81	0.0001	0.919	0.0003	0.00001	0.000145	0.00065	0.0209	0.0003
MW17-08-03	2018-03-08 15:05	0.000994	4.13	0.0005	0.00005	0.00013	2.03	0.000605	4.21	0.00022	0.755	0.0003	0.00001	0.000128	0.00064	0.0381	0.0003
MW17-08-03	2018-05-07 16:15	0.000972	3.78	0.0005	0.00005	0.0001	1.34	0.000344	4.25	0.0001	0.701	0.0003	0.00001	0.000139	0.00056	0.0143	0.0003
MW17-08-03	2018-08-27 17:10	0.000979	3.78	0.0005	0.00005	0.0001	1.73	0.000441	4.43	0.0001	0.683	0.0003	0.00001	0.000141	0.00064	0.0158	0.0003
MW17-08-03	2018-10-26 17:10	0.000941	3.88	0.0005	0.00005	0.0001	1.13	0.000287	4.2	0.0001	0.695	0.0003	0.00001	0.000139	0.00071	0.0128	0.0003
MW17-08-03	2019-02-23 16:00	0.000906	3.63	0.0005	0.00005	0.0001	1.92	0.000557	4.41	0.0001	0.653	0.0003	0.00001	0.000131	0.00065	0.012	0.0003
MW17-08-03	2019-05-10 10:05	0.000837	3.94	0.0005	0.00005	0.0001	1.68	0.000363	4.27	0.0001	0.653	0.0003	0.00001	0.000126	0.00068	0.0138	0.0003
MW17-08-03	2019-08-06 13:35	0.000786	3.41	0.0005	0.00005	0.0001	1.01	0.00026	4.04	0.0001	0.472	0.00047	0.00001	0.000106	0.00089	0.0262	0.0003
MW17-08-03	2019-10-19 11:00	0.000774	3.11	0.0005	0.00005	0.0001	1.14	0.000338	3.9	0.0001	0.348	0.0003	0.00001	0.000095	0.00095	0.0125	0.0003
MW17-08-03	2020-03-13 10:25	0.001554	6.1	0.001	0.0001	0.0002	2.32	0.000404	8.12	0.0002	0.586	0.0006	0.00002	0.000184	0.00198	0.0544	0.0004
MW17-08-03	2020-06-29 9:25	0.000978	3.74	0.0005	0.00005	0.0001	1.93	0.000407	4.43	0.0001	0.663	0.0003	0.00001	0.000125	0.00074	0.0202	0.0002
MW17-08-03	2020-09-24 10:00	0.00082	2.8	0.0005	0.00005	0.0001	0.98	0.000198	3.98	0.0001	0.26	0.0003	0.00001	0.000085	0.0011	0.0124	0.0002
MW17-08-03	2020-10-28 11:30	0.000738	2.85	0.0005	0.00005	0.0001	0.91	0.000288	3.82	0.0001	0.262	0.0003	0.00001	0.000088	0.00108	0.0091	0.0002
MW17-08-03	2021-06-06 16:05	0.000794	2.74	0.0005	0.00005	0.0001	0.83	0.000131	4.11	0.0001	0.248	0.0003	0.00001	0.000083	0.00104	0.0124	0.0002
MW17-08-03	2021-10-02 18:40	0.000745	2.78	0.0005	0.00005	0.0001	0.81	0.000246	3.92	0.0001	0.238	0.0003	0.00001	0.000087	0.00108	0.026	0.0002
MW17-08-04	2017-08-28 11:10	0.0005	2.8	0.0005	0.00005	0.0001	0.75	0.000213	4.12	0.0001	0.15	0.0003	0.00001	0.000067	0.00101	0.0045	0.0003
MW17-08-04	2017-11-20 14:00	0.000714	3.52	0.001	0.00005	0.00036	0.9	0.000659	4.44	0.00025	0.209	0.0003	0.00001	0.000076	0.00114	0.137	0.0003
MW17-08-04	2018-08-27 17:20	0.000433	2.63	0.0005	0.00005	0.0001	0.65	0.000308	4.09	0.0001	0.138	0.0003	0.00001	0.000064	0.00109	0.0085	0.0003
MW17-08-04	2018-10-26 17:30	0.000562	2.84	0.00078	0.00005	0.0001	0.5	0.000158	3.61	0.00105	0.168	0.0003	0.00001	0.00007	0.00103	0.0367	0.0003
MW17-08-04	2021-06-06 16:50	0.000208	3.06	0.0005	0.00005	0.0001	0.5	0.000097	4.92	0.0001	0.09	0.0003	0.00001	0.000035	0.00102	0.0096	0.0002
MW17-08-04	2021-10-02 19:15	0.00025	3.47	0.00111	0.00005	0.0001	0.62	0.000091	4.84	0.0001	0.0631	0.0003	0.00001	0.000019	0.0005	0.049	0.0002
MW17-09-01	2017-08-29 16:28	0.464	118	0.0183	0.00016	0.00425	127	0.0111	27.6	0.0029	3.17	0.00075	0.00002	0.000552	0.001	0.141	0.0003
MW17-10-01	2017-08-28 15:35	0.0369	8.79	0.0137	0.00005	0.00022	19.7	0.000882	5.41	0.00015	0.868	0.0003	0.00001	0.0016	0.00052	0.0133	0.0003
MW17-10-01	2017-11-20 15:55	0.0381	11.8	0.0136	0.00005	0.00042	22.4	0.0029	6.02	0.00012	1.35	0.0003	0.00001	0.00195	0.0008	0.0463	0.0003
MW17-10-01	2018-03-01 15:20	0.029	9.58	0.0122	0.00005	0.0001	19.9	0.00087	5.21	0.0001	1.12	0.0003	0.00001	0.00203	0.00084	0.0221	0.0003
MW17-10-01	2018-05-06 15:50	0.0258	10.1	0.0104	0.00005	0.00011	18.2	0.000817	5.27	0.0001	1.17	0.0003	0.00001	0.00214	0.00088	0.029	0.0003
MW17-10-01	2018-08-13 16:00	0.0224	15.2	0.0101	0.00005	0.00024	17.6	0.00197	5.2	0.00011	1.23	0.0003	0.00001	0.00231	0.00102	0.0326	0.0003
MW17-10-01	2018-08-18 9:30	0.0218	9.23	0.0089	0.00005	0.0001	18.1	0.000718	5.27	0.0001	1.18	0.0003	0.00001	0.00236	0.00095	0.0205	0.0003
MW17-10-01	2018-10-26 13:50	0.0193	9.34	0.0101	0.00005	0.0001	17.5	0.000724	5.23	0.0001	1.13	0.0003	0.00001	0.00246	0.00104	0.0222	0.0003
MW17-10-01	2019-03-09 12:45	0.0171	8.89	0.00944	0.00005	0.0001	16.7	0.000899	5.2	0.0001	1.24	0.0003	0.00001	0.00238	0.00094	0.0243	0.0003
MW17-10-01	2019-05-15 13:40	0.0149	8.99	0.0105	0.00005	0.0001	15.9	0.00105	5.59	0.0001	1.14	0.0003	0.00001	0.00232	0.00101	0.0377	0.0003
MW17-10-01	2019-08-17 14:55	0.0164	9.54	0.0106	0.00005	0.0001	17	0.0011	5.36	0.0001	1.3	0.0003	0.00001	0.00224	0.00074	0.0325	0.0003
MW17-10-01	2019-10-18 10:35	0.0159	11.1	0.0119	0.000116	0.00017	16.9	0.00133	5.68	0.00023	1.26	0.0003	0.00001	0.0026	0.0006	0.0356	0.0003
MW17-10-01	2020-03-07 11:55	0.0141	9.07	0.0119	0.00005	0.0001	15.2	0.00171	5.46	0.0001	1.27	0.0003	0.00001	0.00248	0.00096	0.0408	0.0002
MW17-10-01	2020-06-26 14:45	0.0146	9.21	0.0119	0.00005	0.0001	17.9	0.00195	5.7	0.0001	1.3	0.0003	0.00001	0.00241	0.00066	0.0459	0.0002
MW17-10-01	2020-07-21 15:00	0.0135	9.22	0.0122	0.00005	0.0001	16.2	0.00198	5.4	0.0001	1.26	0.0003	0.00001	0.00256	0.00087	0.0748	0.0002
MW17-10-01	2020-10-27 14:15	0.0142	10.3	0.0138	0.00005	0.0001	17.6	0.00187	5.63	0.0001	1.4	0.0003	0.00001	0.00257	0.00115	0.0367	0.0002
MW17-10-01	2021-03-23 9:40	0.0134	9.67	0.0129	0.00005	0.0001	17.1	0.00235	5.6	0.0001	1.33	0.0003	0.00001	0.00257	0.00114	0.016	0.0002
MW17-10-01	2021-05-14 14:15	0.0128	9.88	0.0135	0.00005	0.0001	17.5	0.0024	5.65	0.0001	1.29	0.0003	0.00001	0.0026	0.00106	0.0356	0.0002
MW17-10-01	2021-07-21 14:25	0.0132	9.13	0.0137	0.00005	0.0001	16.9	0.0024	5.92	0.0001	1.34	0.0003	0.00001	0.00265	0.0009	0.0755	0.0002
MW17-10-01	2021-10-15 15:00	0.012	9.51	0.0144	0.00005	0.0001	16.6	0.00236	5.49	0.0001	1.28	0.0003	0.00001	0.00248	0.00106	0.0533	0.0002
MW17-10-02	2017-08-28 16:00	0.00931	6.59	0.0106	0.00005	0.0001	8.83	0.00118	5.4	0.0001	0.784	0.0003	0.00001	0.00119	0.0005	0.0163	0.0003
MW17-10-02	2017-11-20 16:10	0.0091	6.73	0.00633	0.00005	0.00011	9.2	0.00153	5.99	0.0001	1.04	0.0003	0.00001	0.00123	0.00053	0.0365	0.0003
MW17-10-02	2018-03-01 15:40	0.00806	6.71	0.0036	0.00005	0.0001	8.03	0.00138	5.31	0.0001	0.875	0.0003	0.00001	0.0011	0.00056	0.0201	0.0003
MW17-10-02	2018-05-06 16:10	0.00771	6.8	0.00336	0.00005	0.0001	7.53	0.00134	5.23	0.0001	0.897	0.0003	0.00001	0.0011	0.00058	0.0258	0.0003
MW17-10-02	2018-08-13 16:25	0.00822	7.39	0.00318	0.00005	0.0001	7.85	0.00171	5.1	0.0001	0.983	0.0003	0.00001	0.00112	0.00054	0.0429	0.0003
MW17-10-02	2018-08-18 9:55	0.00775	7.27	0.00291	0.00005	0.0001	8.27	0.00185	5.24	0.0001	0.943	0.0003	0.00001	0.00114	0.00058	0.0475	0.0003
MW17-10-02	2018-10-26 14:10	0.00753	6.95	0.00284	0.00005	0.0001	7.88	0.00171	4.99	0.0001	0.917	0.0003	0.00001	0.00124	0.00059	0.0269	0.0003
MW17-10-02	2019-03-09 13:15	0.00734	6.56	0.00217	0.00005	0.0001	7.73	0.00218	4.92	0.0001	0.997	0.0003	0.00001	0.00115	0.0005	0.0629	0.0003
MW17-10-02	2019-05-15 14:10	0.00694	6.53	0.002	0.00005	0.0001	7.86	0.00213	5.29	0.0001	0.972	0.0003	0.00001	0.00121	0.00054	0.0244	0.0003
MW17-10-02	2019-08-17 15:40	0.00752	7.26	0.00112	0.00005	0.0001	8.83	0.00283	5.2	0.0001	1.09	0.0003	0.00001	0.00122	0.00062	0.0195	0.0003
MW17-10-02	2019-10-17 10:55	0.00733	7.65	0.00227	0.00005	0.0001	8.93	0.00317	5.49	0.0001	1.04	0.0003	0.00001	0.00138	0.00057	0.0326	0.0003
MW17-10-02	2019-10-18 10:55																
MW17-10-02	2020-03-07 12:20	0.0071	7.62	0.00153	0.00005	0.0001	9.04	0.0037	5.41	0.0001	1.14	0.0003	0.00001	0.00138	0.0006	0.03	0.0002
MW17-10-02	2020-06-26 15:20	0.00715	7.41	0.00162	0.00005	0.0001	10.8	0.00456	5.4	0.0001	1.13	0.0003	0.00001	0.00145	0.00055	0.0284	0.0002
MW17-10-02	2020-07-21 16:30	0.00664	7.84	0.0016	0.00005	0.0001	10.2	0.00409	5.24	0.0001	1.14	0.0003	0.00001	0.00156	0.00065	0.0452	0.0002
MW17-10-02	2020-10-27 14:35	0.00734	8.23	0.00104	0.00005	0.0001	11.4	0.00462	5.62	0.0001	1.24	0.0003	0.00001	0.00155	0.00059	0.0262	0.0002
MW17-10-02	2021-03-23 9:55	0.00706	8.42	0.0015	0.00005	0.0001	11.3	0.00495	5.34	0.0001	1.17	0.0003	0.00001	0.00156	0.00056	0.0132	0.0002
MW17-10-02	2021-05-14 15:15	0.0065	8.16	0.00155	0.00005	0.0001	12.2	0.0052	5.42	0.0001	1.16	0.0003	0.00001	0.00164	0.0005	0.0218	0.0002
MW17-10-02	2021-07-21 16:20	0.00868	14.5	0.0053	0.00005	0.00098	10.4	0.0161	5.42	0.00076	1.06	0.0003	0.00001	0.00146	0.00051	0.258	0.0002
MW17-10-02	2021-10-15 15:30	0.00632	8.02	0.00126	0.00005	0.0001	11.1	0.00522	5.19	0.0001	1.19	0.0003	0.00001	0.00154	0.00053	0.0443	0.0002
MW17-10-03	2017-08-28 16:30	0.00966	6.4	0.00805	0.00005	0.0001	8.12	0.0012	5.42	0.0001	0.722	0.0003	0.00001	0.00111	0.00052	0.0184	0.0003
MW17-10-03	2017-11-20 16:45	0.00902	6.33	0.00592	0.00005	0.00014	8.22	0.00145	5.72	0.0001	0.906	0.0003	0.00001	0.00112	0.00058	0.0559	0.0003
MW17-10-03	2018-03-01 16:05	0.00802	6.48	0.0042	0.00005	0.0001	7.42	0.0015	5.25	0.0001	0.825	0.0003	0.00001	0.00108	0.00062	0.0568	0.0003
MW17-10-03	2018-05-06 16:30	0.00775	6.68	0.00362	0.00005	0.0001	6.99	0.00148	5.22	0.0001	0.853	0.00096	0.00001	0.00106	0.00065	0.0303	0.0003
MW17-10-03	2018-08-18 10:00	0.00675	6.07	0.00392	0.00005	0.0001	7.05	0.00174	4.93	0.0001	0.768	0.0003	0.00001	0.00104	0.0006	0.0372	0.0003
MW17-10-03	2018-10-26 14:30	0.00706	6.43	0.00319	0.00005	0.0001	7.29	0.00206	4.97	0.0001	0.818	0.0003	0.00001	0.00118	0.0006	0.0355	0.0003
MW17-10-03	2019-03-09 13:45	0.00688	6.61	0.00266	0.00005	0.0001	7.78	0.00262	5.01	0.0001	0.892	0.0003	0.00001	0.00109	0.00053	0.116	0.0003
MW17-10-03	2019-05-15 14:30	0.00648	6.98	0.00252	0.00005	0.0001	7.61	0.00274	5.33	0.0001	0.927	0.0003	0.00001	0.00125	0.00061	0.0349	0.0003
MW17-10-03	2019-08-17 16:00	0.00714	7.34	0.00169	0.00005	0.0001	8.97	0.00324	5.28	0.0001	1.02	0.0003	0.00001	0.00119	0.00062	0.0242	0.0003
MW17-10-03	2019-10-17 11:20	0.00671	7.2	0.00275	0.00005	0.0001	8.45	0.00354	5.4	0.0001	0.95	0.0003	0.00001	0.00133	0.0006	0.0406	0.0003
MW17-10-03	2019-10-18 11:20																
MW17-10-03	2020-03-07 12:55	0.00664	7.46	0.00209	0.00005	0.0001	9.16	0.00404	5.38	0.0001	1.08	0.0003	0.00001	0.00143	0.00064	0.0266	0.0002
MW17-10-03	2020-06-26 16:00	0.00717	9.02	0.00309	0.00005	0.0004	10.7	0.00802	5.27	0.00029	1.01	0.0003	0.00001	0.0014	0.00059	0.131	0.0002
MW17-10-03	2020-07-22 9:25	0.0062	7.31	0.0017	0.00005	0.0001	10.3	0.00472	5.32	0.0001	1.03	0.0003	0.00001	0.00154	0.00067	0.0357	0.0002
MW17-10-03	2020-10-27 15:10	0.00632	7.91	0.00136	0.00005	0.0001	11.3	0.00559	5.46	0.0001	1.11	0.0003	0.00001	0.00156	0.0006	0.0284	0.0002
MW17-10-03	2021-03-23 10:15	0.00654	7.61	0.00211	0.00005	0.0001	11.8	0.00598	5.36	0.0001	1.12	0.0003	0.00001	0.00164	0.00059	0.0149	0.0002
MW17-10-03	2021-05-14 15:35	0.00623	7.87	0.00165	0.00005	0.0001	11.5	0.00603	5.38	0.0001	1.12	0.0003	0.00001	0.00165	0.00055	0.021	0.0002
MW17-10-03	2021-07-22 7:40	0.00628	7.78	0.00185	0.00005	0.0001	12.4	0.00711	5.61	0.0001	1.15	0.0003	0.00001	0.00166	0.00057	0.0584	0.0002
MW17-10-03	2021-10-15 15:50	0.0152	30.5	0.018	0.0001	0.00399	12.5	0.0185	5.6	0.00294	0.778	0.0006	0.00002	0.000911	0.001	0.891	0.0004
MW17-10-04	2021-03-23 10:35	0.0106	10.1	0.00585	0.00005	0.00013	12.2	0.0048	6.38	0.00016	0.908	0.0003	0.00001	0.000919	0.0005	0.0362	0.0002
MW17-10-04	2021-05-14 16:35	0.00938	10.3	0.00544	0.00005	0.0001	13.1	0.00568	6.48	0.00015	0.93	0.0003	0.00001	0.00102	0.0005	0.0456	0.0002
MW17-10-04	2021-10-15 16:20	0.00799	8.8	0.00389	0.00005	0.0001	12.4	0.00625	6.24	0.0001	0.98	0.0003	0.00001	0.00108	0.0005	0.136	0.0002
MW17-11-01	2017-08-26 10:47	0.0273	18.4	0.0012	0.00005	0.00018	13.4	0.000137	5.19	0.0002	0.71	0.0003	0.00001	0.000419	0.0005	0.0099	0.0003
MW17-11-01	2017-11-18 14:50	0.0257	18.9	0.00102	0.00005	0.00052	13.7	0.000596	4.98	0.00034	0.945	0.00165	0.00001	0.000399	0.0005	0.024	0.0003
MW17-11-01	2018-02-27 11:05	0.0193	21.7	0.0005	0.00005	0.0001	13.2	0.000087	5.06	0.0001	0.867	0.0003	0.00001	0.000265	0.0005	0.0164	0.0003
MW17-11-01	2018-05-05 8:50	0.0225	22	0.0005	0.00005	0.00012	12.1	0.000471	5.1	0.00012	0.894	0.0003	0.00001	0.000163	0.0005	0.02	0.0003
MW17-11-01	2018-08-12 16:10	0.0197	22.8	0.00101	0.00005	0.00015	11.3	0.000063	5.43	0.00013	0.946	0.0003	0.00001	0.000149	0.0005	0.0429	0.0003
MW17-11-01	2018-10-26 9:15	0.0167	22.3	0.0005	0.00005	0.0001	11.5	0.00005	5.55	0.0001	0.907	0.0003	0.00001	0.000163	0.0005	0.0119	0.0003
MW17-11-01	2019-02-23 10:30	0.0135	20.4	0.0005	0.00005	0.0001	13.6	0.00125	5.34	0.0001	0.901	0.0003	0.00001	0.000154	0.0005	0.0094	0.0003
MW17-11-01	2019-05-10 13:30	0.0125	23	0.0005	0.00005	0.0001	12.4	0.000098	5.49	0.0001	0.938	0.0003	0.00001	0.00015	0.0005	0.0099	0.0003
MW17-11-01	2019-08-10 14:40	0.012	22.5	0.0005	0.00005	0.00011	14.1	0.000166	5.69	0.0001	0.92	0.0003	0.00001	0.00022	0.0005	0.0384	0.0003
MW17-11-01	2019-10-14 10:20	0.0121	23.5	0.0005	0.00005	0.00013	13.5	0.000878	5.49	0.00012	0.928	0.0003	0.00001	0.00026	0.0005	0.0245	0.0003
MW17-11-01	2020-03-05 11:20	0.00993	22.3	0.00061	0.00005	0.0001	12.2	0.000386	5.45	0.0001	0.967	0.0003	0.00001	0.000185	0.0005	0.0165	0.0002
MW17-11-01	2020-05-24 11:05	0.00984	24	0.0005	0.00005	0.0001	13.8	0.00005	5.4	0.0001	1.03	0.0003	0.00001	0.000226	0.0005	0.0048	0.0002
MW17-11-01	2020-07-26 14:12	0.01834	44.8	0.001	0.0001	0.0002	26.4	0.000252	10.8	0.0002	1.908	0.0006	0.00002	0.000458	0.001	0.012	0.0004
MW17-11-01	2020-10-31 10:00	0.00923	22.2	0.0005	0.00005	0.0001	13.6	0.000183	5.42	0.0001	0.995	0.0003	0.00001	0.000236	0.0005	0.0083	0.0002
MW17-11-01	2021-03-21 15:10	0.00917	22.1	0.0005	0.00005	0.0001	14.6	0.000085	5.45	0.0001	0.918	0.0003	0.00001	0.000205	0.0005	0.0091	0.0002
MW17-11-01	2021-05-13 11:05	0.009	23.5	0.0005	0.00005	0.0001	14.3	0.00005	5.42	0.0001	0.946	0.0003	0.00001	0.000207	0.0005	0.0206	0.0002
MW17-11-01	2021-09-25 10:30	0.0092	21.8	0.0005	0.00005	0.0001	13.2	0.00005	5.3	0.0001	0.96	0.0003	0.00001	0.000209	0.0005	0.0372	0.0002
MW17-11-01	2021-10-11 16:15	0.00841	22.4	0.0005	0.00005	0.0001	13.9	0.000051	5.14	0.0001	0.881	0.0003	0.00001	0.000178	0.0005	0.0246	0.0002
MW17-11-02	2017-08-26 14:08	0.00743	14.7	0.00095	0.00005	0.0001	10.3	0.000202	5.16	0.00021	0.872	0.0003	0.00001	0.000623	0.0005	0.0136	0.0003
MW17-11-02	2017-11-18 15:20	0.00669	24.5	0.00069	0.000082	0.00029	8.47	0.00261	5.35	0.00025	0.844	0.0003	0.00001	0.000757	0.0005	0.0656	0.0003
MW17-11-02	2018-02-27 11:40	0.00586	17.2	0.0005	0.00005	0.0001	11.6	0.000055	5.4	0.0001	1.01	0.0003	0.00001	0.000481	0.0005	0.0142	0.0003
MW17-11-02	2018-05-05 9:15	0.00657	17	0.00099	0.00005	0.0001	11.2	0.000126	5.13	0.0001	0.999	0.0003	0.00001	0.000436	0.0005	0.0178	0.0003
MW17-11-02	2018-08-12 16:55	0.00659	18.1	0.0005	0.00005	0.0001	12.3	0.000109	5.1	0.00122	1.04	0.0003	0.00001	0.000371	0.0005	0.0267	0.0003
MW17-11-02	2018-10-26 9:35	0.00593	16	0.0005	0.00005	0.0001	13.6	0.00005	4.98	0.0001	0.906	0.0003	0.00001	0.000347	0.0005	0.0121	0.0003
MW17-11-02	2019-02-23 11:05	0.00594	16.5	0.0005	0.00005	0.0001	14.6	0.00005	5.31	0.0001	0.968	0.0003	0.00001	0.000284	0.0005	0.0166	0.0003
MW17-11-02	2019-05-10 14:15	0.00585	17.9	0.0005	0.00005	0.0001	13.5	0.000055	5.15	0.0001	0.956	0.0003	0.00001	0.000258	0.0005	0.0157	0.0003
MW17-11-02	2019-08-10 15:15	0.00584	16.5	0.0005	0.00005	0.0001	14.5	0.00005	5.5	0.0001	0.974	0.0003	0.00001	0.000268	0.0005	0.0256	0.0003
MW17-11-02	2019-10-14 11:00	0.00572	16.2	0.0005	0.00005	0.0001	13.4	0.000117	5.24	0.0001	0.965	0.0003	0.00001	0.000269	0.0005	0.0238	0.0003
MW17-11-02	2020-03-05 12:00	0.00591	17.3	0.0005	0.00005	0.0001	12.9	0.000223	5.26	0.0001	1.06	0.0003	0.00001	0.000237	0.0005	0.0251	0.0002
MW17-11-02	2020-05-24 11:30	0.00593	19.2	0.0005	0.00005	0.0001	14.8	0.00005	5.31	0.0001	1.12	0.0003	0.00001	0.000262	0.0005	0.0138	0.0002

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species						Dissolved Elements																																	
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N\text{-}NO_2$	$N\text{-}NO_3$	$N\text{-}NH_3$	SO_4-D	Chlord	Fluord	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW17-11-02	2020-07-28 10:00	140	357			216	3			0.0515	0.0667	0.005	44.2	0.45		0.00001	0.0197	0.00227	0.041	0.051	0.00002	0.00005	39.4	0.00006	0.0001	0.00017	0.00138	0.178	0.000005	2.23	0.0057	11.7	0.0518	0.00634	18.7	0.0005	0.00005	0.0001	14.9	0.00005	5.48	0.0001	1.05	0.00192	0.00001	0.000272	0.0005	0.0338	0.0002
MW17-11-02	2020-07-29 10:00			103.1	7.61			5.9	54.6																																								
MW17-11-02	2020-10-31 10:35	139	356	124.3	7.42	213	3	0.8	68.7	0.001	0.005	0.005	44.5	0.38		0.00001	0.002	0.00217	0.0409	0.019	0.00002	0.00005	38.7	0.000015	0.0001	0.0001	0.0002	0.159	0.000005	2.23	0.0054	11.6	0.0466	0.00623	17.7	0.0005	0.00005	0.0001	14.9	0.000117	5.48	0.0001	1.09	0.0003	0.00001	0.000268	0.0005	0.0182	0.0002
MW17-11-02	2021-03-21 15:35	147	355	98.4	7.07	215	1.2	4.7	80.6	0.0016	0.0155	0.0107	43.6	0.42		0.00001	0.0025	0.00248	0.0429	0.02	0.00002	0.00005	37.3	0.000154	0.0001	0.0001	0.0002	0.163	0.000005	2.17	0.0055	11.5	0.0448	0.00601	17.1	0.0005	0.00005	0.0001	14.9	0.00005	5.38	0.0001	1.02	0.0003	0.00001	0.000238	0.0005	0.0132	0.0002
MW17-11-02	2021-05-13 11:35	132	347	75.8	7.39	213	3.1	3.4	111.4	0.0016	0.005	0.005	43.5	0.5		0.00001	0.0032	0.00256	0.0385	0.022	0.00002	0.00005	42.4	0.0000482	0.0001	0.0005	0.00064	0.144	0.000005	2.1	0.0059	11.6	0.0446	0.00601	18.5	0.0005	0.00005	0.0001	15.2	0.000083	5.41	0.0001	1.03	0.0003	0.00001	0.000249	0.0005	0.023	0.0002
MW17-11-02	2021-09-25 11:00	165	340	100.7	8.53	226	4.2	1.7	93.6	0.001	0.005	0.005	42.6	0.47		0.00001	0.0031	0.00284	0.0422	0.02	0.00002	0.00005	39.3	0.000062	0.0001	0.0005	0.00046	0.179	0.000005	2.19	0.0056	11.3	0.0444	0.00618	16.8	0.0005	0.00005	0.0001	13.7	0.00005	5.3	0.0001	1.06	0.0003	0.00001	0.000247	0.0005	0.0484	0.0002
MW17-11-02	2021-10-11 16:40	139	353	44.6	7.72	209	1	1.1	109.4	0.001	0.005	0.0066	42.8	0.41		0.00001	0.0033	0.00286	0.04	0.019	0.00002	0.00005	37.6	0.0000785	0.0001	0.0005	0.0004	0.172	0.000005	2.06	0.0053	11.3	0.0421	0.00578	17.2	0.0005	0.00005	0.0001	14.1	0.000101	5.21	0.0001	0.983	0.0003	0.00001	0.000196	0.0005	0.085	0.0002
MW17-11-03	2017-08-26 14:30	148	318			183	3			0.103	0.331	0.005	23.8	0.53		0.00001	0.0057	0.00021	0.0601	0.011	0.00002	0.00005	39.5	0.0000065	0.0001	0.0001	0.00036	0.01	0.000005	3.89	0.0063	12	0.0855	0.00789	12.2	0.00154	0.00005	0.0001	7.75	0.000075	4.88	0.0001	0.915	0.0003	0.00001	0.0013	0.0005	0.0063	0.0003
MW17-11-03	2017-11-18 16:00	161	323		8.4	194	3.3	1.8		0.0395	0.335	0.005	21.1	0.39		0.00001	0.0056	0.00046	0.0719	0.012	0.00002	0.00005	44.1	0.000005	0.0001	0.0001	0.00033	0.01	0.000005	3.86	0.0053	13.7	0.102	0.00615	11.1	0.0005	0.00005	0.00011	7.49	0.000586	5.47	0.0001	1.16	0.0003	0.00001	0.0019	0.0005	0.0112	0.0003
MW17-11-03	2018-02-27 13:40	147	310		8.6	173	3	1.7		0.0019	0.005	0.005	19.9	0.5	1.62	0.00001	0.0057	0.00042	0.0613	0.012	0.00002	0.00005	37.1	0.000005	0.0001	0.0001	0.0002	0.051	0.000005	3.39	0.004	11.6	0.0914	0.00593	11.5	0.0005	0.00005	0.0001	6.7	0.000063	5.32	0.0001	0.964	0.0003	0.00001	0.00128	0.0005	0.0094	0.0003
MW17-11-03	2018-05-05 9:30	153	325		8.2	181	3	1.7		0.0014	0.005	0.005	22.5	0.5		0.00001	0.0038	0.00048	0.06	0.014	0.00002	0.00005	39.7	0.0000083	0.0001	0.0001	0.0002	0.042	0.000005	3.44	0.0053	12	0.0923	0.00601	11.6	0.00107	0.00005	0.0001	6.52	0.000139	5.13	0.0001	1.01	0.0003	0.00001	0.00157	0.0005	0.0166	0.0003
MW17-11-03	2018-08-12 17:10	140	309	106.8	8	166	3	3.8	98.3	0.001	0.005	0.005	18.6	0.5		0.00001	0.0048	0.00041	0.0602	0.011	0.00002	0.00005	37.9	0.000019	0.0001	0.0001	0.00029	0.016	0.000005	2.67	0.0044	12.7	0.109	0.00475	10.6	0.00061	0.00005	0.0001	5.73	0.000054	4.95	0.0001	0.971	0.0003	0.00001	0.00132	0.0005	0.0153	0.0003
MW17-11-03	2018-10-26 9:50	141	291	132	7.47	160	3	2.7	91.7	0.001	0.005	0.005	16.9	0.5		0.00001	0.0039	0.00068	0.0569	0.01	0.00002	0.00005	35.6	0.0000109	0.0001	0.0001	0.0002	0.014	0.000005	2.2	0.0041	11.2	0.114	0.00406	9.53	0.00054	0.00005	0.0001	4.91	0.00005	4.91	0.0001	0.951	0.0003	0.00001	0.00137	0.0005	0.0106	0.0003
MW17-11-03	2019-02-23 11:30	147	306	166	7.23	162	3	0.5	58.4	0.001	0.0053	0.005	15.7	0.5		0.00001	0.0044	0.00027	0.0614	0.01	0.00002	0.00005	36.3	0.00001	0.0001	0.0001	0.0002	0.01	0.000005	2.15	0.004	10.9	0.108	0.00419	9.09	0.0005	0.00005	0.0001	5.94	0.00005	4.82	0.0001	0.894	0.0003	0.00001	0.00161	0.0005	0.0146	0.0003
MW17-11-03	2019-05-10 14:30	150	320	79.7	7.69	169	3	5.7	71.5	0.001	0.0079	0.005	18.6	0.5		0.00001	0.0066	0.00031	0.0609	0.011	0.00002	0.00005	36.4	0.0000105	0.0001	0.0001	0.0002	0.013	0.000005	2.5	0.0046	11.6	0.0945	0.00493	9.18	0.0005	0.00005	0.0001	5.71	0.000128	4.8	0.0001	0.95	0.0003	0.00001	0.00186	0.0005	0.0234	0.0003
MW17-11-03	2019-08-10 15:45	147	293	119.1	7.94	167	3	4.6	54	0.0011	0.0109	0.005	17	0.5	1.78	0.00001	0.0044	0.00032	0.0605	0.01	0.00002	0.00005	36.4	0.00001	0.0001	0.0001	0.0002	0.01	0.000005	2.31	0.0042	12.2	0.0981	0.00445	9.59	0.0005	0.00005	0.0001	6.04	0.000053	5.22	0.0001	0.947	0.0003	0.00001	0.00166	0.0005	0.0239	0.0003
MW17-11-03	2019-10-14 11:20	152	294	180.6	7.71	170	3	1.9	54.5	0.001	0.005	0.005	16.2	0.4		0.00001	0.0057	0.00032	0.059	0.011	0.00002	0.00005	38.3	0.000347	0.0001	0.0001	0.00211	0.012	0.000005	2.5	0.0045	11.9	0.101	0.00465	9.66	0.0005	0.000056	0.0001	5.54	0.00009	4.88	0.0001	0.979	0.0003	0.00001	0.00182	0.0005	0.0307	0.0003
MW17-11-03	2020-03-05 12:35	171	309	135.9	7.89	200	3	1.2	55	0.001	0.005	0.005	16.4	0.5	1.56	0.00001	0.0044	0.00039	0.0601	0.016	0.00002	0.00005	40.5	0.000306	0.0001	0.0001	0.0013	0.014	0.000005	2.41	0.0057	12.2	0.099	0.00458	10.2	0.0005	0.00005	0.0001	5.49	0.000221	4.98	0.0001	1.03	0.0003	0.00001	0.00203	0.0005	0.0416	0.0002
MW17-11-03	2020-05-24 11:45	153	302	59.3	7.66	188	3	3.7	61.1	0.001	0.005	0.005	16.4	0.41		0.00001	0.0043	0.00032	0.0563	0.01	0.00002	0.00005	39.6	0.0000065	0.0001	0.0001	0.0002	0.014	0.000005	2.39	0.0044	12.9	0.0997	0.00417	10.5	0.0005	0.00005	0.0001	5.8	0.00005	5.15	0.0001	1.1	0.0003	0.00001	0.00171	0.0005	0.0147	0.0002
MW17-11-03	2020-07-26 15:11	288	632	140.7	7.38	354	6	4.8	65.1	0.0054	0.01	0.01	33	1.16		0.00002	0.0194	0.0012	0.1244	0.024	0.00004	0.0001	72.8	0.0000328	0.0002	0.0002	0.00142	0.032	0.00001	4.8	0.0088	22.8	0.204	0.00852	19.16	0.001	0.0001	0.0002	10.66	0.00012	10.16	0.0002	1.984	0.0006	0.00002	0.00376	0.001	0.0444	0.0004
MW17-11-03	2020-10-31 11:15	161	319	148.7	7.74	186	3	0.3	52.9	0.001	0.005	0.005	17.3	0.43		0.00001	0.004	0.0003	0.061	0.01	0.00002	0.00005	35	0.0000113	0.0001	0.0001	0.0002	0.01	0.000005	2.34	0.004	12	0.0988	0.00433	8.96	0.0005	0.00005	0.0001	5.24	0.000078	4.83	0.0001	0.992	0.0003	0.00001	0.00199	0.0005	0.0097	0.0002
MW17-11-03	2021-03-21 15:55	153	319	129.3	6.92	187	1	4	84	0.0041	0.013	0.005	19.4	0.41		0.00001	0.0042	0.00036	0.0703	0.013	0.00002	0.00005	36.1	0.0000098	0.0001	0.0001	0.0002	0.01	0.000005	2.81	0.0047	12.1	0.112	0.0046	10.4	0.0005	0.00005	0.0001	6.53	0.000069	5.18	0.0001	0.987	0.0003	0.00001	0.00153	0.0005	0.014	0.0002
MW17-11-03	2021-05-13 13:15	141	312	150.9	7.63	184	3	4.3	91.2	0.001	0.005	0.005	19.2	0.45		0.00001	0.0054	0.00025	0.0666	0.013	0.00002	0.00005	40.6	0.0000244	0.0001	0.0005	0.00039	0.01	0.000005	2.79	0.0049	12.2	0.108	0.0046	11	0.0005	0.00005	0.0001	6.39	0.000054	5.03	0.0001	0.99	0.0003	0.00001	0.0017	0.0005	0.015	0.0002
MW17-11-03	2021-09-25 11:55			92.1	8.28			1.2	85.4							0.00001	0.0046	0.00259	0.0409	0.021	0.00002	0.00005	36.8	0.000503	0.0001	0.0005	0.00286	0.144	0.000005	2.25	0.0055	10.8	0.044	0.00595	16.1	0.00072	0.00005	0.0001	13.3	0.00005	5.23	0.0001	1	0.0003	0.00001	0.000238	0.0005	0.102	0.0002
MW17-11-03	2021-10-11 17:00	147	316	85.8	7.71	182	1	0.8	78.1	0.0372	0.0079	0.0056	18.1	0.49		0.00001	0.0075	0.00024	0.0741	0.012	0.00002	0.00005	36.2	0.0000646	0.0001	0.0005	0.00067	0.01	0.000005	3.15	0.0047	12.1	0.11	0.00462	10.2	0.00068	0.00005	0.0001	6.4	0.000054	4.9	0.0001	0.972	0.00033	0.00001	0.00178	0.0005	0.0767	0.0002
MW17-11-04	2017-08-26 14:45	301	611			367	37.3			0.0316	9.23	0.0202	8	1.18		0.00001	0.0035	0.00011	0.183	0.01	0.00002	0.00005	113	0.0000385	0.0003	0.0001	0.01	0.01	0.000005	5.3	0.0032	11	0.11	0.00717	7.56	0.00309	0.00005	0.0001	2.99	0.000226	7.35	0.00011	0.576	0.0003	0.00001	0.0039	0.0005	0.0168	0.0003
MW17-11-04	2017-11-18 16:20	248	496		8.4	313	10	0.4		0.0181	9.1	0.0145	6.3	0.89		0.000011	0.0035	0.00024	0.126	0.01	0.00002	0.00005	95.3	0.0000491	0.00018	0.0001	0.00674	0.01	0.000005	4.46	0.0026	10.3	0.0488	0.00407	6.68	0.00136	0.00005	0.00052	2.52	0.000502	7.26	0.0001	0.612	0.0003	0.00001	0.00383	0.0005	0.0453	0.0003
MW17-11-04	2018-02-27 13:55	170	349		8.4	197	14	1.9		0.002	0.0369	0.005	20.3	0.5	1.22	0.00001	0.0047	0.00014	0.112	0.01	0.00002	0.00005	51.3	0.0000062	0.0001	0.0001	0.00081	0.01	0.000005	2.92	0.0039	12	0.105	0.00475	6.76	0.0005	0.00005	0.0001	6.76	0.000133	5.46	0.0001	0.77	0.0003	0.00001	0.00183	0.0005	0.0137	0.0003
MW17-11-04	2018-05-05 9:45	179	360		7.9	209	47.4	1.7		0.002	0.0173	0.005	21.4	0.5		0.00001	0.0037	0.00028	0.121	0.011	0.00002	0.00005	56.7	0.0000093	0.0001	0.0001	0.0008	0.01	0.000005	3.16	0.0051	13	0.111	0.00557	7.22	0.00121	0.00005	0.0001	6.93	0.000139	5.62	0.0001	0.875	0.0003	0.00001	0.00195	0.0005	0.0289	0.0003
MW17-11-04	2018-08-12 17:25	369	815	147	7.22	557	39.2	4.1	88.9	0.0038	11.1	0.0207	29	1.43		0.000033	0.0057	0.00065	0.324	0.025	0.00002	0.00005	178	0.0000707	0.00021	0.0001	0.00253	0.018	0.000005	13.8	0.0138	39.6	0.0628	0.0165	24.4	0.0052	0.00005	0.00019	15.5	0.00058	19	0.00016	2.36	0.0003	0.000014	0.0072	0.00082	0.0834	0.0003
MW17-11-04	2018-10-26 10:00	285	605	167.1	6.88	521	4.3	0.9	94.2	0.0044	9.22	0.106	18.5	1.12		0.000027	0.003	0.00067	0.329	0.021	0.00002	0.00005	211	0.00002	0.00059	0.0001	0.0068	0.016	0.0000051	15.8	0.0123	35.7	0.0712	0.0198	26.4	0.00823	0.00005	0.00025	8.18	0.000929	23.9	0.00033	1.84	0.0003	0.000017	0.0111	0.00073	0.0419	0.0003
MW17-11-04	2019-02-23 11:50	241	537	176.3	6.95	327	3	0.5	58.1	0.0022	6.42	0.145	16.3	0.88		0.000013	0.0029	0.00018	0.189	0.012	0.00002	0.00005	99	0.000023	0.0003	0.0001	0.00266	0.01	0.000005	6.04	0.0071	19.5	0.11	0.0111	12.7	0.00377	0.00005	0.00011	7.24	0.000296	10.5	0.00014	1.13	0.0003	0.00001	0.00491	0.0005	0.0438	0.0003
MW17-11-04	2019-05-10 15:20	245	532	121.5	6.94	301	4	4.7	49.6	0.0022	6.47	0.0513	18.8	0.98		0.00001	0.0087	0.00017	0.166	0.01	0.00002	0.00005	74.1	0.0000188	0.00017	0.0001	0.00176	0.018	0.000005	4.38	0.0059	17.2	0.109	0.00721	9.48	0.0017	0.00005	0.0001	6.29	0.000227	7.81	0.0001	0.961	0.00063	0.00001	0.00336	0.0005	0.0282	0.0003
MW17-11-04	2019-10-14 13:40	271	542	244.1	7	359	3	2	59.3	0.0063	7.22	0.043	17.9	1.14		0.000027	0.0042	0.00038	0.194	0.015	0.00002	0.00005	103	0.000472	0.00027	0.0001	0.00381	0.01	0.000005	8.09	0.0088	21.3	0.124	0.00991	12.7	0.00224	0.00005	0.00015	7.11	0.000327	10.9	0.00018	1.44	0.0003	0.00001	0.00536	0.0005	0.0528	0.0003
MW17-11-04	2020-05-24 12:15	146	281	62.2	7.59	174	3	1.8	76.7	0.0584	0.637	0.005	9.18	0.82		0.000015	0.0056	0.00038	0.0786	0.013	0.00002	0.00005	44.3	0.0000362	0.0001	0.0001	0.00104	0.043	0.000005	2.78	0.0043	9.72	0.0911	0.00462	6.04	0.00125	0.00005	0.00015	3.41	0.000289	3.92	0.00015	0.74	0.0003	0.00001	0.00155	0.0005	0.0284	0.0002
MW17-11-04	2021-09-25 12:10	332	541	30.2	7.63	426	5.9	0.7	54.3	0.0188	2.53	0.171	15.5	1.21		0.000015	0.0054	0.00033	0.189	0.022	0.00002	0.00005	131	0.0000617	0.00072	0.00065	0.00068	2.15	0.000005	5	0.0088	19.4	0.5	0.0121	10.8	0.00313	0.00005	0.0001	6.67	0.000186	10.9	0.00017	1.41	0.0003	0.00001	0.00407	0.0005	0.211	0.0002
MW17-11-05	2017-11-18 16:50	241	474		8.5	305	4	0.5		0.0045	9.23	0.005	4.7	0.82		0.000011	0.0014	0.0001	0.211	0.01	0.00002	0.00005	96.2	0.0000083	0.0001	0.0001	0.00229	0.01	0.000005	3.5	0.0019	7.95	0.0065	0.00114	6.13	0.00067	0.00005	0.00024	1.79	0.000349	6.98	0.0001	0.403	0.0003	0.00001	0.00338	0.0005	0.045	0.0003
MW17-11-05	2018-02-27 14:10				7.4			3.4				0.0334				0.00005	0.0053	0.0005	0.0582	0.05	0.0001	0.00025	319	0.000055	0.0005	0.0005	0.0093	0.05	0.000005	12.1	0.0109	27.5	0.0281	0.00433	22.9	0.0053	0.00025	0.0005	1330	0.00102	25	0.00076	1.24	0.0015	0.00005	0.0124	0.0025	0.0737	0.0003
MW17-11-05	2018-05-05 10:45	582	1200		7	958	3	2.8		0.0089	29	0.0081	17.8	2.7		0.000063	0.0021	0.00037	1.17	0.031	0.00002	0.00005	358	0.000023	0.00039	0.0001	0.00342	0.01	0.000005	21.9	0.0237	42.9	0.00658	0.00688	37.2	0.00561	0.00005	0.00062	9.48	0.00121	40.3	0.00087	2.14	0.0003	0.000018	0.0151	0.00153	0.0665	0.0003
MW17-11-05	2018-08-12 18:10	648	1320	169.3	7.01	971	7.2	5.9	115.4	0.0227	22.7	0.0122	17.2	2.5		0.00005	0.0034	0.00054	1.27	0.037	0.00002	0.00005	346	0.0000834	0.00038	0.0001	0.00341	0.013		25.5	0.0279	52.1	0.00941	0.00952	40.8	0.00789	0.00005	0.00074	10.8	0.00155	37.7	0.0008	2.25	0.0003	0.000021	0.0151	0.00161	0.101	0.0003
MW17-11-05	2019-05-10 15:50	584	1250	120.4	7.07	903	3	4.9	85.1	0.51	29.7	0.0594	11.8	2.5		0.000027	0.0016	0.00026	0.992	0.019	0.00002	0.00005	338	0.0000381	0.00095	0.0001	0.00493	0.01	0.000005	14.6	0.0195	30.9	0.0229	0.00755	24.1	0.0045	0.00005	0.00034	7.2	0.00089	21.5	0.00028	1.4	0.0003	0.00001	0.0123	0.00095	0.0396	0.0003
MW17-11-05	2020-05-24 12:55	475	948	105.8	7.08	707	3	4	56.5	0.713	17.9	0.0707	8.25	1.74		0.000038	0.0057	0.00034	0.76	0.019	0.00002	0.00005	237	0.0000697	0.0004	0.0001	0.00331	0.01	0.000005	12.3	0.016	22.6	0.0346	0.00619	16.7	0.0153	0.00005	0.00037	4.2	0.000629	15.4	0.00023	1.22	0.0003	0.00001	0.00886	0.0006	0.0555	0.0002
MW17-12-01	2017-08-27 10:10	189	2480			2170	36.7			0.014	0.05	0.005	1410	11		0.00001	0.0029	0.00223	0.0157	0.182	0.000069	0.00005	326	0.0000127	0.0001	0.0001	0.0002	2.93	0.000005	3.69	0.0167	55.4	0.108	0.00689	245	0.00081	0.00005	0.0001	487	0.000083	7.57	0.00018	10.3	0.0003	0.00001	0.000256	0.0005	0.0331	0.0003
MW17-12-01	2017-11-12 10:50	197	2530		8.3	2160	13.6	1.4		0.02	0.1	0.005	1370	13		0.00001	0.0023	0.00232	0.00783	0.147	0.000077	0.00005	342	0.0000087	0.0001	0.0001	0.0002	3.08	0.000005	3.75	0.0181	60.7	0.108	0.00748	246	0.0005	0.00005	0.0001	522	0.00006	7.67	0.00051	10.5	0.0003	0.00001	0.000232	0.0005	0.0385	0.0003
MW17-12-01	2018-03-05 14:10	198	2550		7.2	2120	10.3	3.9		0.02	0.1	0.005	1340	13		0.00002	0.0025	0.00232	0.00883	0.163	0.000086	0.0001	330	0.00006	0.0002	0.0002	0.0004	3.01	0.000005	3.44	0.0156	56.8	0.1	0.00808	252	0.001	0.0001	0.0002	508	0.00017	7.54	0.0002	10	0.0006	0.00002	0.000295	0.001	0.0294	0.0003
MW17-12-01	2018-05-11 9:05	211	2490		7.9	2160	7.9	7.2		0.044	0.1	0.005	1340	13		0.00002	0.0031	0.0025	0.0119	0.171	0.000085	0.0001	330	0.00001	0.0002	0.0002	0.0004	2.98	0.000005	3.74	0.0167	61.1	0.108	0.00839	277	0.001	0.0001	0.0002	511	0.0001	8.04	0.0002	10.5	0.0006	0.00002	0.000296	0.001	0.0164	0.0003
MW17-12-01	2018-08-24 14:40	206	2530	-13.7	7.4	2040	12	6	167.6	0.01	0.05	0.005	1300	12.3		0.00005	0.0157	0.00273	0.0127	0.173	0.0001	0.00025	296	0.000025	0.0005	0.0005	0.0028	2.91	0.000005	3.51	0.0146	54.5	0.0981	0.00792	250	0.0025	0.00025	0.0005	467	0.00025	7.63	0.0005	9.93	0.0016	0.00005	0.000298	0.0025	0.0427	0.0003
MW17-12-01	2018-10-23 14:25	209	2490	-23.6	7.54	2040	9.8	5	154.3	0.02	0.1	0.005	1310	13		0.00002	0.0024	0.00425	0.0103	0.166	0.000056	0.0001	289	0.000067	0.0002	0.0002	0.0004	3.01	0.000005	3.56	0.0154	53.6	0.105	0.00801	248	0.001	0.0001	0.0002	529	0.0001	7.83	0.0002	9.61	0.0006	0.00002	0.000272	0.001	0.0574	0.0003
MW17-12-01	2019-02-15 10:25	210	2480	-30.4	7.6	2050	9.2	2.6	113.4	0.01	0.05	0.005	1320	13		0.00002	0.0024	0.00274	0.00719	0.18	0.000084	0.0001	289	0.000018	0.0002	0.0002	0.0004	2.78	0.000005	3.4	0.0146	52.3	0.092	0.00815	244	0.001	0.0001	0.0002	487	0.0001	7.57	0.0002	9.54	0.0006	0.00002	0.000234	0.001	0.0223	0.0003
MW17-12-01	2019-05-05 8:45	211	2420	54.7	7.14	1940	8.2	4.4	99.7	0.02	0.1	0.0058	1210	11		0.00002	0.0029	0.00254	0.01	0.173	0.000085	0.0001	298	0.00007	0.0002	0.0002	0.00052	2.82	0.000005	3.36	0.0152	52.7	0.0951	0.00744	233	0.001	0.0001	0.0002	483	0.00096	7.7	0.0002	9.75	0.0006	0.00002	0.00027	0.001	0.0538	0.0003
MW17-12-01	2019-08-16 12:15	228	2390	-54.9	7.01	2040	7.8	6.5	42.6	0.02	0.1	0.0052	1280	13		0.00002	0.0026	0.00234	0.00948	0.193	0.000072	0.0001	296	0.000211	0.0002	0.0002	0.0004	2.85	0.000005	3.59	0.0152	53.4	0.0965	0.00783	257	0.001	0.0001	0.0002	489	0.00027	7.7	0.0002	9.6	0.0006	0.00002	0.000295	0.001	0.0549	0.0004
MW17-12-01	2019-10-05 8:15	217	2430	-9.6	6.3	2010	3.2	4.5	104.2	0.02	0.1	0.0062	1260	13		0.00002	0.0025	0.00242	0.011	0.167	0.000078	0.0001	296	0.000177	0.0002	0.0002	0.0004	2.86	0.000005	3.68	0.0157	54.1	0.0984	0.00792	247	0.001	0.0001	0.0002	457	0.00014	8.24	0.0002	9.55	0.0006	0.00002	0.000292	0.001	0.0621	0.0004
MW17-12-01	2020-02-14 11:45	198	2480	-11.2	7.55		6.5	1.1	108.2	0.0205	0.1	0.0121	1230	12.3		0.00002	0.002	0.00191	0.0074	0.156	0.000073	0.0001	291	0.000151	0.0002	0.00028	0.00146	2.57	0.000005	3.42	0.0132	52.8	0.0924	0.00784	253	0.001	0.0001	0.0002	432	0.000193	6.95	0.0002	9.55	0.0006	0.00002	0.000266	0.001	0.0751	0.0004
MW17-12-01	2020-05-23 10:30	207	2430	-28.3	7.48	2100	4.3	8.2	96.9	0.02	0.1	0.007	1270	12.4		0.00002	0.0024	0.0019	0.0124	0.168	0.000074	0.0001	331	0.0000581	0.0002	0.0002	0.00149	2.74	0.000005	3.68	0.0169	58.8	0.0948	0.00777	274	0.001	0.0001	0.0002	474	0.000135	7.73	0.0002	10.7	0.0006	0.00002	0.000277	0.001	0.0848	0.0004
MW17-12-01	2020-08-06 7:30	205	2480	-4.8	7.35	2040	5.4	4.8	99.7	0.01	0.05	0.005	1290	11.9		0.00002	0.0027	0.0017	0.0107	0.158	0.000075	0.0001	296	0.0000126	0.0002	0.0002	0.0004	2.58	0.000005	3.44	0.0143	48.1	0.0993	0.00736	246	0.001	0.0001	0.0002	456	0.0001	7.02	0.00022	9.35	0.0006	0.00002	0.000312	0.001	0.0879	0.0004
MW17-12-01	2020-10-04 9:45	194	2460	15.7	6.74	2120	6.2	4.9	106.6	0.02	0.1	0.005	1340	12.2		0.00002	0.0027	0.00172	0.0103	0.168	0.000078	0.0001	325	0.0000152	0.0002	0.0002	0.0004	2.65	0.000005	3.46	0.015	50.3	0.108	0.00772	251	0.001	0.0001	0.0002	453	0.0001	7.22	0.0002	9.95	0.0006	0.00002	0.000255	0.001	0.146	0.0004
MW17-12-01	2021-03-24 12:00	197	2580	-4.3	7.22	2240	8.6	6.1	169.3	0.0226	0.1	0.0139	1380	12.8		0.00002	0.0031	0.00196	0.0105	0.216	0.000088	0.0001	341	0.0000136	0.0002	0.0002	0.0004	3.18	0.000005	3.99	0.0166	58.2	0.115	0.00704	295	0.001	0.0001	0.0002	584	0.000381	9.21	0.0002	9.64	0.0006	0.00002	0.000262	0.001	0.044	0.0004
MW17-12-01	2021-06-04 15:20	214	2550	33	7.17	2110	4.8	7.2	187.8	0.02	0.1	0.005	1340	11.8		0.00002	0.0035	0.0015	0.00931	0.183	0.000057	0.0001	295	0.0000557	0.0002	0.001	0.0004	2.83	0.000005	3.7	0.0147	51.4	0.113	0.00707	253	0.001	0.0001	0.0002	484	0.0001	7.64	0.0002	9.44	0.0006	0.00002	0.000268	0.001	0.103	0.0004
MW17-12-01	2021-08-18 16:30	195	2580	-25.8	6.99	2120	4	7.5	201.9	0.02	0.1	0.005	1340	11.6		0.00002	0.0039	0.00168	0.00894	0.179	0.000069	0.0001	322	0.0000642	0.0002	0.001	0.0004	2.63	0.000005	3.7	0.0139	55.4	0.11	0.00762	252	0.001	0.0001	0.0002	437	0.0001	7.61	0.0002	10.5	0.0006	0.00002	0.000263	0.001	0.0944	0.0004
MW17-12-01	2021-10-01 10:45	197	2560	-50.1	7.44	2130	13.8	4.4	107	0.02	0.1	0.0052	1340	12		0.00002	0.0032	0.0016	0.0126	0.166	0.000082	0.0001	323	0.0000127	0.0002	0.001	0.0004	2.67	0.000005	3.72	0.0155	53.8	0.115	0.0071	252	0.001	0.0001	0.0002	469	0.0001	7.62	0.0002	9.86	0.0006	0.00002	0.000258	0.001	0.0416	0.0004
MW17-12-02	2017-08-27 10:25	191	2160			1780	16			0.01	0.05	0.005	1110	10.4		0.00001	0.0023	0.00157	0.0235	0.154	0.00002	0.00005	266	0.000006	0.0006	0.0001	0.0002	2.35	0.000005	3.96	0.0152	44.7	0.0752	0.00732	231	0.00098	0.00005	0.0001	386	0.00005	7.8	0.0001	10.5	0.0003	0.00001	0.000568	0.0005	0.0219	0.0003
MW17-12-02	2017-11-12 11:25	223	2190		8.3	1840	19.6	1		0.02	0.1	0.005	1140	12		0.00002	0.0022	0.00213	0.0109	0.144	0.00004	0.0001	269	0.00001	0.0002	0.0002	0.0004	2.29	0.000005	3.32	0.0134	46.9	0.0537	0.0084	235	0.001	0.0001	0.0002	391	0.0001	7.74	0.0002	10.9	0.0006	0.00002	0.00053	0.001	0.023	0.0003
MW17-12-02	2018-03-05 14:30	226	2180		7.9	1780	12.1	4.1		0.01	0.05	0.005	1100	11.5		0.00001	0.0038	0.00199	0.0116	0.136	0.000043	0.00005	254	0.0000171	0.0001	0.0001	0.0002	2.18	0.000005	3.71	0.0148	46.2	0.0598	0.00781	229	0.0005	0.00005	0.0001	385	0.000076	7.7	0.0001	9.93	0.0003	0.00001	0.000512	0.0005	0.0297	0.0003
MW17-12-02	2018-05-11 9:25	235	2190		8	1810	7.5	7.6		0.02	0.1	0.005	1100	12		0.00002	0.0027	0.00208	0.0119	0.152	0.000042	0.0001	254	0.00001	0.0002	0.0002	0.0004	2.16	0.000005	3.52	0.0164	48.9	0.0623	0.00827	253	0.001	0.0001	0.0002	411	0.0001	8.18	0.0002	10.4	0.0006	0.00002	0.000579	0.001	0.0127	0.0003
MW17-12-02	2018-08-24 15:00	228	2210	-37.1	7.28	1670	12.2	5.3	139.6	0.005	0.025	0.005	1020	10.9		0.00005	0.0134	0.00211	0.0101	0.148	0.0001	0.00025	227	0.000025	0.0005	0.0005	0.001	2.03	0.000005	3.16	0.0138	42.1	0.0538	0.0078	219	0.0025	0.00025	0.0005	370	0.00025	7.46	0.0005	9.45	0.0015	0.00005	0.000539	0.0025	0.0437	0.0003
MW17-12-02	2018-10-23 14:40	237	2180	-24.1	7.53	1680	8.6	4.5	127	0.01	0.05	0.005	1030	11.4		0.00002	0.0023	0.00405	0.00794	0.137	0.00004	0.0001	219	0.00002	0.0002	0.0002	0.0004	2.2	0.000005	3.18	0.0142	43.4	0.0508	0.00775	226	0.001	0.0001	0.0002	417	0.0001	7.74	0.0002	9.27	0.0006	0.00002	0.000536	0.001	0.0468	0.0003
MW17-12-02	2019-02-15 11:00	229	2190	-6.6	7.45	1740	10.8	0.4	64.9	0.01	0.05	0.005	1070	11.7		0.00002	0.0028	0.00242	0.00638	0.16	0.000045	0.0001	229	0.000021	0.0002	0.0002	0.0004	1.98	0.000005	3.19	0.0141	44.6	0.0486	0.00828	236	0.001	0.0001	0.0002	398	0.0001	7.54	0.0002	9.53	0.0006	0.00002	0.000473	0.001	0.0418	0.0003
MW17-12-02	2019-05-05 9:00	227	2190	-3.2	7.47	1670	5	3.4	104.7	0.02	0.1	0.005	1020	10		0.00002	0.0033	0.00237	0.00634	0.146	0.000046	0.0001	242	0.000015	0.0002	0.0002	0.0004	2.04	0.000005	3.2	0.0147	45.8	0.0499	0.00764	221	0.001	0.0001	0.0002	381	0.00093	7.75	0.0002	9.74	0.0006	0.00002	0.000519	0.001	0.0893	0.0003
MW17-12-02	2019-08-16 15:30	228	2200	-28.3	7.31	1820	6.8	5.9	106.3	0.02	0.1	0.005	1110	12		0.00005	0.005	0.0026	0.00823	0.167	0.000042	0.00025	263	0.000054	0.0005	0.0005	0.001	2.01	0.000005	3.23	0.0156	47.6	0.0539	0.00817	246	0.0025	0.00025	0.0005	381	0.00025	7.45	0.0005	11.3	0.0015	0.00005	0.000466	0.0025	0.0743	0.001
MW17-12-02	2019-10-05 8:40	227	2200	-35	6.83	1840	7.4	3.5	106.4	0.01	0.05	0.005	1130	11.5		0.00001	0.0012	0.00249	0.00714	0.143	0.00005	0.00005	264	0.0000541	0.0001	0.0001	0.0002	2.22	0.000005	3.86	0.0151	50.5	0.0569	0.00757	246	0.0005	0.00005	0.0001	390	0.000091	8.27	0.0001	10.4	0.0003	0.00001	0.000505	0.0005	0.0499	0.0003
MW17-12-02	2020-02-14 14:25	212	2320	78.4	7.62		5.5	0.4	125.4	0.02	0.1	0.005	1090	11.3		0.00002	0.0023	0.00236	0.00656	0.14	0.000046	0.0001	254	0.0000241	0.0002	0.0002	0.00078	2.16	0.000005	3.33	0.0122	47.8	0.057	0.00734	243	0.001	0.0001	0.0002	381	0.000119	7.25	0.0002	10.5	0.0006	0.00002	0.000491	0.001	0.0255	0.0004
MW17-12-02	2020-05-23 11:00	221	2210	-31.6	7.47	1850	4.7	8.5	94.1	0.02	0.1	0.005	1100	11.4		0.00002	0.0026	0.00236	0.0096	0.152	0.000046	0.0001	276	0.0000233	0.0002	0.0002	0.0004	2.1	0.000005	3.5	0.0161	51.9	0.0583	0.0075	254	0.001	0.0001	0.0002	397	0.0001	7.84	0.0002	12.3	0.0006	0.00002	0.000538	0.001	0.0441	0.0004
MW17-12-02	2020-08-06 8:15	222	2230	-17.2	7.36	1830	3.4	5.5	73.3	0.01	0.05	0.0052	1100	11		0.00002	0.0022	0.00275	0.00812	0.15	0.000048	0.0001	267	0.0000205	0.0002	0.0002	0.0004	2.14	0.000005	3.59	0.0146	47.3	0.0685	0.00769	244	0.001	0.0001	0.0002	418	0.0001	7.77	0.0002	11	0.0006	0.00002	0.0005	0.001	0.0517	0.0004
MW17-12-02	2020-10-04 10:20	213	2210	17.7	7.11	1820	5.6	4.2	101.7	0.02	0.1	0.005	1110	11.2		0.00002	0.006	0.00226	0.00986	0.151	0.00004	0.0001	274	0.00001	0.0002	0.0002	0.0023	2.04	0.000005	3.47	0.0147	43.3	0.0708	0.00769	229	0.001	0.0001	0.0002	386	0.0001	7.32	0.0002	11.2	0.0006	0.00002	0.000466	0.001	0.0521	0.0004
MW17-12-02	2021-03-24 12:20	216	2250	-4.6	7.29	1890	5.7	6.4	130.8	0.0233	0.1	0.006	1130	11.6		0.00002	0.0032	0.00268	0.00905	0.185	0.00005	0.0001	272	0.0000194	0.0002	0.0002	0.0004	2.41	0.000005	3.88	0.016	49	0.0657	0.00707	269	0.001	0.0001	0.0002	447	0.000401	8.88	0.0002	11.1	0.0006	0.00002	0.000477	0.001	0.0308	0.0004
MW17-12-02	2021-06-05 10:00	243	2250	68.4	7.23	1870	5	6.8	126.7	0.01	0.05	0.005	1110	10.7		0.000014	0.0017	0.00309	0.00838	0.146	0.000048	0.00005	277	0.0000586	0.0001	0.0005	0.0002	2.37	0.000005	4.03	0.0155	48.2	0.0648	0.00744	249	0.0005	0.00005	0.0001	397	0.000063	8.22	0.0001	11.9	0.0003	0.00001	0.000469	0.0005	0.0727	0.0002
MW17-12-02	2021-08-18 16:55	240	1640	-22.2	6.98	1330	70	6.7	151.7	0.01	0.05	0.0531	749	17.1		0.000021	0.349	0.00744	0.0211	0.159	0.00004	0.00005	174	0.00179	0.00067	0.0219	0.0201	2.61	0.000005	3.02	0.0111	35	0.114	0.01	172	0.0106	0.00363	0.0006	238	0.00435	7.38	0.00213	7.52	0.0169	0.000014	0.00049	0.00093	15	0.0002
MW17-12-02	2021-10-01 12:04	220	2240	-36.5	7.49	1850	5.8	4	135.9	0.01	0.05	0.005	1140	11.2		0.00002	0.0021	0.00258	0.00901	0.144	0.00005	0.0001	257	0.0000271	0.0002	0.001	0.0004	2.13	0.000005	3.53	0.015	45.2	0.0638	0.00707	236	0.001	0.0001	0.0002	380	0.0001	7.97	0.0002	11	0.0006	0.00002	0.000468	0.001	0.25	0.0004
MW17-12-03	2017-08-27 10:50	361	858			541	7.3			0.0091	0.0221	0.005	133	1.08		0.00001	0.0027	0.00123	0.0243	0.062	0.00002	0.00005	80.1	0.000008	0.00019	0.0001	0.0002	0.27	0.000005	3.2	0.0099	37.8	0.123	0.0062	69.1	0.00186	0.00005	0.00011	46.8	0.00005	8.37	0.0002	3.42	0.0003	0.00001	0.00486	0.0005	0.0151	0.0003
MW17-12-03	2017-11-12 13:00	373	851		8.1	561	5	1.2		0.005	0.274	0.005	142	2.5		0.00001	0.0024	0.00104	0.0189	0.056	0.00002	0.00005	84.8	0.000005	0.0001	0.0001	0.0002	0.47	0.000005	2.94	0.0085	36.3	0.104	0.00601	68.1	0.00069	0.00005	0.0001	44.7	0.00005	7.97	0.00014	3.79	0.0003	0.00001	0.00455	0.0005	0.0286	0.0003
MW17-12-03	2018-03-05 14:50	362	879		8	543	3	3.8		0.005	0.025	0.005	139	2.5		0.00001	0.0023	0.00104	0.0175	0.052	0.00002	0.00005	81.1	0.0000128	0.0001	0.0001	0.0002	0.119	0.000005	3.01	0.0089	36.1	0.114	0.00563	64.1	0.0005	0.00005	0.0001	46.7	0.00005	7.89	0.0001	3.56	0.0003	0.00001	0.00448	0.0005	0.0146	0.0003
MW17-12-03	2018-05-11 9:50	351	856		8.2	559	3	9		0.005	0.025	0.005	142	2.5		0.00001	0.0027	0.00107	0.0176	0.053	0.00002	0.00005	88.5	0.000005	0.0001	0.0001	0.0002	0.097	0.000005	3.35	0.0095	41.5	0.132	0.00592	73.7	0.0005	0.00005	0.0001	48.4	0.00005	8.3	0.0001	3.79	0.0003	0.00001	0.00481	0.0005	0.0103	0.0003
MW17-12-03	2018-08-24 15:15	358	882	63	7.27	526	3	5.1	128.7	0.0016	0.006	0.005	137	1.87		0.00001	0.0106	0.00097	0.0143	0.052	0.00002	0.00005	75	0.0000136	0.0001	0.0001	0.00137	0.082	0.000005	2.85	0.008	34.3	0.11	0.00521	60.6	0.0005	0.00005	0.0001	45.3	0.00012	7.59	0.0001	3.24	0.0006	0.00001	0.00431	0.0005	0.048	0.0003
MW17-12-03	2018-10-23 14:55	336	865	43.4	7.53	522	3	4.4	128.1	0.005	0.025	0.005	136	2.5		0.00001	0.0019	0.00149	0.0158	0.051	0.00002	0.00005	79.9	0.0000057	0.0001	0.0001	0.0002	0.102	0.000005	3.23	0.0089	35.2	0.106	0.00536	65.2	0.00144	0.00005	0.0001	50.4	0.00005	8.03	0.0001	3.42	0.0003	0.00001	0.00445	0.0005	0.0195	0.0003
MW17-12-03	2019-02-15 11:35	363	853	51.3	7.53	535	3	1.3	84.8	0.005	0.025	0.005	128	2.5		0.00001	0.0024	0.00163	0.0158	0.06	0.00002	0.00005	84.7	0.0000111	0.0001	0.0001	0.0002	0.132	0.000005	3.1	0.0089	33.1	0.097	0.00613	67.2	0.0005	0.00005	0.0001	41.8	0.00005	8.14	0.0001	4	0.0003	0.00001	0.00386	0.0005	0.0294	0.0003
MW17-12-03	2019-05-05 9:45	371	836	79.1	7.63	514	3	3.5	83.2	0.005	0.025	0.005	112	2.5		0.00001	0.0027	0.00162	0.014	0.054	0.00002	0.00005	81.9	0.0000229	0.0001	0.0001	0.0002	0.13	0.000005	2.86	0.0091	33.2	0.0837	0.00556	60.1	0.0005	0.00005	0.0001	42.3	0.000647	8.01	0.0001	3.7	0.0003	0.00001	0.00413	0.0005	0.0648	0.0003
MW17-12-03	2019-08-16 15:50	347	814	36.9	7.45	513	3	6.5	103.7	0.005	0.025	0.0061	121	2.5		0.00001	0.0019	0.00161	0.0149	0.059	0.00002	0.00005	80.4	0.0000301	0.0001	0.0001	0.0002	0.122	0.000005	2.97	0.0091	33.7	0.0922	0.00579	66.3	0.0005	0.000129	0.0001	42	0.000143	7.99	0.0001	3.63	0.0003	0.00001	0.00452	0.0005	0.0411	0.0003
MW17-12-03	2019-10-05 9:05	356	821	52.1	7.4	523	3	5.5	104.4	0.0108	0.025	0.005	124	2.5		0.00001	0.0023	0.00165	0.0142	0.055	0.00002	0.00005	82.2	0.0000437	0.0001	0.0001	0.00023	0.129	0.000005	3.07	0.0093	34.4	0.094	0.00565	64.7	0.0005	0.00005	0.0001	43.2	0.00005	8.54	0.0001	3.61	0.0003	0.00001	0.00429	0.0005	0.0421	0.0003
MW17-12-03	2020-02-14 14:55	304	809	110.2	7.71		3	0.7	152.1	0.005	0.025	0.0068	122	1.89		0.00001	0.0017	0.00104	0.0136	0.048	0.00002	0.00005	76.2	0.0000218	0.0001	0.0001	0.0003	0.084	0.000005	2.82	0.0074	34.2	0.11	0.00555	62.5	0.0005	0.00005	0.0001	41.6	0.000083	7.38	0.0001	3.36	0.0003	0.00001	0.00421	0.0005	0.0189	0.0002
MW17-12-03	2020-05-23 11:25	344	835	47.5	7.69	545	3	8.7	91.1	0.005	0.025	0.005	123	1.88		0.00001	0.0023	0.00098	0.016	0.052	0.00002	0.00005	81.9	0.0000191	0.0001	0.0001	0.0002	0.066	0.000005	3	0.0093	38.5	0.111	0.0054	67.6	0.0005	0.00005	0.0001	44.5	0.000084	8.01	0.0001	3.73	0.0003	0.00001	0.0045	0.0005	0.037	0.0002
MW17-12-03	2020-08-06 8:40	345	833	75.5	7.56	549	3	4.7	82.8	0.005	0.025	0.005	127	2		0.00001	0.0017	0.00094	0.0135	0.061	0.00002	0.00005	80.1	0.0000153	0.0001	0.00012	0.0002	0.075	0.000005	3.18	0.0098	36.8	0.119	0.00556	69.1	0.0005	0.00005	0.0001	46.4	0.00007	8.59	0.0001	3.51	0.0003	0.00001	0.00401	0.0005	0.0367	0.0002
MW17-12-03	2020-10-04 10:45	353	828	91.9	7.33	537	3	4	108.3	0.005	0.025	0.0057	123	1.88		0.00001	0.0019	0.00071	0.0135	0.05	0.00002	0.00005	82.7	0.0000124	0.0001	0.0001	0.0002	0.059	0.000005	3.02	0.0091	33.9	0.119	0.00566	60.9	0.0005	0.00005	0.0001	39.9	0.000081	7.32	0.0001	3.6	0.0003	0.00001	0.0042	0.0005	0.0392	0.0002
MW17-12-03	2021-03-24 12:50	353	846	90.3	7.47	560	1	7.1	113.7	0.005	0.025	0.0147	127	1.93		0.00001	0.0022	0.00073	0.0135	0.061	0.00002	0.00005	84.8	0.000015	0.0001	0.0001	0.0002	0.062	0.000005	3.29	0.0099	38	0.114	0.00524	69.4	0.0005	0.00005	0.0001	48.3	0.00024	8.85	0.0001	3.46	0.0003	0.00001	0.00445	0.0005	0.0358	0.0002
MW17-12-03	2021-06-05 10:45	352	841	120.1	7.25	554	3.2	5.4	137.8	0.005	0.0462	0.0128	131	2.63		0.00001	0.0016	0.00099	0.0144	0.054	0.00002	0.00005	81.9	0.000034	0.0001	0.0005	0.0002	0.065	0.000005	3.29	0.0097	37.4	0.118	0.00568	64.2	0.0005	0.00005	0.0001	45.4	0.000205	8.04	0.0001	3.6	0.0003	0.00001	0.0044	0.0005	0.0684	0.0002
MW17-12-03	2021-08-18 17:21	352	887	37.1	7.2	548	3	6.2	172	0.005	0.102	0.0102	134	2.09		0.00001	0.0026	0.00186	0.0153	0.055	0.00002	0.00005	80	0.0000566	0.0001	0.0005	0.00032	0.099	0.000005	2.92	0.0099	33.2	0.106	0.00615	63	0.0005	0.00005	0.0001	44.1	0.000837	7.86	0.0001	3.63	0.0003	0.00001	0.00429	0.0005	0.109	0.0002
MW17-12-03	2021-10-01 14:26	342	776	43.8	7.56	488	1	4	119.9	0.005	0.0857	0.005	101	2.1		0.00001	0.0031	0.00021	0.0201	0.04	0.00002	0.00005	66.9	0.0000246	0.0001	0.0005	0.00084	0.01	0.000005	3.24	0.0082	48.7	0.00211	0.00552	40.6	0.0005	0.00005	0.0001	35.6	0.00042	7.46	0.0001	1.63	0.0003	0.00001	0.00403	0.0005	0.069	0.0002
MW17-12-04	2017-08-27 11:15	301	782			469	4			0.0036	0.242	0.005	126	1.8		0.00001	0.0029	0.00061	0.0322	0.038	0.00002	0.00005	67.5	0.0000189	0.00029	0.0001	0.00347	0.01	0.000005	3.86	0.0082	54.3	0.0269	0.0089	33.7	0.00272	0.00005	0.0001	43.7	0.000674	7.11	0.00019	1.46	0.0003	0.00001	0.00475	0.0005	0.0173	0.0003
MW17-12-04	2017-11-12 13:20	339	746		8.3	480	3	1.2		0.005	0.261	0.005	115	2.5		0.00001	0.0035	0.00018	0.0263	0.036	0.00002	0.00005	69.9	0.0000113	0.00012	0.0001	0.00374	0.01	0.000005	3.34	0.0069	51.8	0.0149	0.00711	33.9	0.00103	0.00005	0.0001	37.7	0.000569	7.04	0.0001	1.49	0.0003	0.00001	0.00434	0.0005	0.0257	0.0003
MW17-12-04	2018-03-05 15:10	309	718		8.7	423	3	3.2		0.001	0.335	0.005	93.6	1.6		0.00001	0.0023	0.00024	0.0304	0.031	0.00002	0.00005	57.3	0.000015	0.0001	0.0001	0.00217	0.01	0.000005	3.37	0.0066	48	0.00319	0.00641	31.6	0.00086	0.00005	0.0001	33	0.000994	6.93	0.0001	1.31	0.0003	0.00001	0.00353	0.0005	0.0198	0.0003
MW17-12-04	2018-05-11 10:10	330	716		8.2	450	3	9.9		0.005	0.285	0.005	97.8	2.5		0.00001	0.0035	0.00021	0.0287	0.035	0.00002	0.00005	62.8	0.0000052	0.0001	0.0001	0.00189	0.01	0.000005	3.48	0.0075	51.7	0.0027	0.00616	35.4	0.0005	0.00005	0.0001	35.3	0.00065	7.33	0.0001	1.42	0.0003	0.00001	0.00398	0.0005	0.0105	0.0003
MW17-12-04	2018-08-24 15:35	324	747	88.1	7.58	432	3	5	114.8	0.001	0.245	0.005	99.1	1.62		0.000015	0.0033	0.00037	0.0231	0.035	0.00002	0.00005	55.9	0.0000142	0.0001	0.0001	0.00152	0.01	0.000005	2.96	0.0064	44.1	0.0037	0.00532	32.9	0.0005	0.00005	0.0001	32	0.000607	6.78	0.0001	1.32	0.0003	0.00001	0.00371	0.0005	0.0508	0.0003
MW17-12-04	2018-10-23 15:15	313	737	91	7.59	436	3	4.3	107.2	0.005	0.222	0.005	102	2.5		0.000015	0.0027	0.00226	0.0248	0.035	0.00002	0.00005	60.1	0.0000212	0.0001	0.0001	0.00123	0.01	0.000005	3.26	0.0069	46.7	0.00228	0.00526	35	0.0005	0.00005	0.0001	36.3	0.000652	7.04	0.0001	1.37	0.0003	0.00001	0.00389	0.0005	0.101	0.0003
MW17-12-04	2019-02-15 14:10	327	749	133.3	7.8	448	3	1.1	72	0.0011	0.223	0.005	99.5	1.76		0.000019	0.0053	0.00019	0.0225	0.043	0.00002	0.00005	64.3	0.0000542	0.0001	0.0001	0.00091	0.01	0.000005	3.19	0.0073	46.1	0.00191	0.00562	36.2	0.0005	0.00005	0.0001	34.3	0.000683	7.15	0.0001	1.42	0.00048	0.00001	0.00368	0.0005	0.03	0.0003
MW17-12-04	2019-05-05 10:15	335	740	164	7.71	443	3	3.3	81.1	0.005	0.174	0.005	95.6	2.5		0.000026	0.0025	0.0002	0.0203	0.039	0.00002	0.00005	61.3	0.000011	0.0001	0.0001	0.00094	0.01	0.000005	2.88	0.0071	46.6	0.00244	0.00497	35	0.0005	0.00005	0.0001	36.4	0.000965	7.24	0.0001	1.37	0.0003	0.00001	0.00394	0.0005	0.0477	0.0003
MW17-12-04	2019-08-16 16:10	340	754	58.6	7.46	458	3	5.3	115.2	0.005	0.179	0.005	102	2.5		0.000017	0.0023	0.00016	0.0217	0.042	0.00002	0.00005	61.4	0.000017	0.0001	0.0001	0.00077	0.01	0.000005	3.15	0.0072	47.6	0.00215	0.00507	38.8	0.0005	0.00005	0.0001	36.7	0.000705	7.39	0.0001	1.38	0.0003	0.00001	0.00431	0.0005	0.0408	0.0003
MW17-12-04	2019-10-05 11:05	337	745	98.5	7.57	459	3	3.8	93.6	0.0069	0.159	0.005	103	2.5		0.000016	0.0018	0.00014	0.0204	0.04	0.00002	0.00005	62.5	0.0000536	0.0001	0.0001	0.00089	0.01	0.000005	3.28	0.0073	49.2	0.00297	0.0051	38.6	0.0005	0.00005	0.0001	34.8	0.000423	7.6	0.0001	1.41	0.0003	0.00001	0.00411	0.0005	0.028	0.0003
MW17-12-04	2020-02-14 15:20	304	763	153.7	8.06		3	0.6	78.8	0.005	0.137	0.005	102	1.84		0.000014	0.002	0.00019	0.02	0.037	0.00002	0.00005	59.9	0.0000207	0.0001	0.0001	0.00116	0.01	0.000005	2.98	0.0064	46.8	0.00208	0.00491	38.5	0.0005	0.00005	0.0001	36.6	0.000444	6.97	0.0001	1.34	0.0003	0.00001	0.00393	0.0005	0.0171	0.0002
MW17-12-04	2020-05-23 11:55	335	762	89.6	7.66	492	3	6.5	88.9	0.005	0.127	0.005	104	1.91		0.000011	0.0026	0.00013	0.0252	0.04	0.00002	0.00005	66	0.0000443	0.0001	0.0001	0.00075	0.01	0.000005	3.09	0.0078	52.2	0.00227	0.00508	42.5	0.0005	0.00005	0.0001	39.1	0.000567	7.44	0.0001	1.55	0.0003	0.00001	0.00413	0.0005	0.04	0.0002
MW17-12-04	2020-08-06 9:20	329	765	119.1	7.58	470	3	4.3	76.8	0.005	0.127	0.005	106	2.03		0.00001	0.0029	0.00012	0.0204	0.035	0.00002	0.00005	60.6	0.0000189	0.0001	0.00014	0.00078	0.01	0.000005	2.99	0.0074	45.2	0.00209	0.00493	34.5	0.0005	0.00005	0.0001	36.6	0.000617	7.56	0.00012	1.4	0.0003	0.00001	0.00407	0.0005	0.0363	0.0002
MW17-12-04	2020-10-04 11:25	332	757	114.9	7.58	484	3	4.3	106.2	0.005	0.125	0.005	109	1.99		0.000019	0.0041	0.00014	0.0211	0.038	0.00002	0.00005	67.8	0.0000152	0.0001	0.0001	0.00064	0.01	0.000005	3.17	0.0078	44.8	0.00208	0.00541	38.7	0.0005	0.00005	0.0001	33.8	0.000486	6.83	0.0001	1.56	0.0003	0.00001	0.00384	0.0005	0.0366	0.0002
MW17-12-04	2021-03-24 13:15	333	767	116.4	7.41	491	1	6.7	121.9	0.005	0.136	0.005	106	2.09		0.000012	0.0027	0.00019	0.0204	0.045	0.00002	0.00005	66.2	0.0000192	0.0001	0.0001	0.00054	0.01	0.000005	3.31	0.0081	48.8	0.00222	0.005	42.8	0.0005	0.00005	0.0001	38.8	0.000698	8.05	0.0001	1.5	0.0003	0.00001	0.00398	0.0005	0.0398	0.0002
MW17-12-04	2021-06-05 11:15	333	755	145.1	7.37	484	3	6.3	104.2	0.005	0.147	0.0084	105	2.09		0.000011	0.0021	0.00016	0.0208	0.04	0.00002	0.00005	66.1	0.0000378	0.0001	0.0005	0.0006	0.01	0.000005	3.24	0.0081	48.5	0.00324	0.00519	38.9	0.0005	0.00005	0.0001	37.5	0.000503	7.3	0.0001	1.52	0.0003	0.00001	0.00384	0.0005	0.0564	0.0002
MW17-12-04	2021-08-19 14:09	333	835	76.6	7.11	514	10.6	7	99.3	0.005	0.105	0.0402	135	1.96		0.00001	0.0022	0.001	0.022	0.095	0.00002	0.00005	64.5	0.000378	0.00013	0.0005	0.00091	0.046	0.000005	3.01	0.0077	42.6	0.0175	0.00631	45.6	0.00178	0.00005	0.00024	41.9	0.00158	6.95	0.00058	1.72	0.0003	0.00001	0.00298	0.0005	1.96	0.0002
MW17-12-04	2021-10-01 14:50	340	751	73	7.59	470	1	4	91.6	0.0133	0.178	0.0057	91.4	3.19		0.00001	0.0032	0.00025	0.0423	0.035	0.00002	0.00005	65.3	0.0000379	0.0001	0.0005	0.00227	0.01	0.000005	3.82	0.0084	49.7	0.103	0.00824	31.4	0.00161	0.00005	0.0001	30.5	0.000248	7.37	0.0001	1.6	0.0003	0.00001	0.00366	0.0005	0.289	0.0002
MW17-12-05	2017-08-27 13:30	326	781			486	3			0.0165	0.279	0.005	120	1.93		0.00001	0.0037	0.00044	0.046	0.047	0.00002	0.00005	71.7	0.0000348	0.00045	0.0001	0.0016	0.018	0.000005	4.22	0.0087	51.4	0.066	0.0088	39.4	0.00264	0.00005	0.00014	41.9	0.000562	7.24	0.00012	1.86	0.0003	0.00001	0.00447	0.0005	0.0737	0.0003

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	N-NO$_2$	N-NO$_3$	N-NH$_3$	SO$_4$-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW17-12-05	2017-11-12 13:45	352	755		8.4	474	3	0.4		0.005	0.336	0.006	102	2.5	
MW17-12-05	2018-03-05 15:25	349	758		7.9	458	3	3.3		0.005	0.415	0.005	92.4	2.5	
MW17-12-05	2018-05-11 10:30	352	750		7.9	466	3	8.2		0.005	0.285	0.005	87.6	2.5	
MW17-12-05	2018-08-24 15:50	350	768	100.9	7.7	450	3	4.9	122.3	0.001	0.205	0.005	93.1	2.34	
MW17-12-05	2018-10-23 15:35	325	753	101.8	7.62	441	3	4.3	107.1	0.005	0.199	0.005	87.5	2.5	
MW17-12-05	2019-02-15 14:35	349	760	145.9	7.66	461	3	2.2	82	0.001	0.218	0.005	92.5	2.53	
MW17-12-05	2019-05-05 10:30	354	738	201.4	7.72	443	3	3.1	85.5	0.005	0.201	0.005	85.7	2.5	
MW17-12-05	2019-08-16 16:30	341	750	84.9	7.45	449	3	4.9	101.5	0.005	0.27	0.005	91.3	2.9	
MW17-12-05	2019-10-05 11:20	346	739	103.9	7.63	455	49	3.6	97.6	0.0056	0.26	0.005	91.6	2.9	
MW17-12-05	2020-02-14 15:40	326	757	149.4	8.1		3	0.7	13.2	0.005	0.271	0.005	86.4	2.67	
MW17-12-05	2020-05-23 12:15	346	747	102.7	7.67	481	3	5.5	85.7	0.005	0.318	0.005	90.9	2.69	
MW17-12-05	2020-08-06 10:05	340	751	128.3	7.57	460	3	5.7	72.9	0.0095	0.311	0.005	88.6	2.75	
MW17-12-05	2020-10-04 11:45	348	746	134.8	7.5	471	3	4.1	101.3	0.005	0.313	0.0058	92.8	2.73	
MW17-12-05	2021-03-24 13:50	339	751	150.6	7.47	464	1.4	5.9	133.6	0.0056	0.291	0.0132	91	3.22	
MW17-12-05	2021-06-05 11:35	344	749	160.4	7.42	483	3	6.4	111.4	0.005	0.244	0.0086	96.8	2.44	
MW17-12-05	2021-08-19 14:20	318	834	28.7	6.99	532	84.4	6.4	93	0.005	0.102	0.145	129	4.74	
MW17-12-05	2021-10-01 15:00	340	742	84.1	7.56	464	1	4.1	103.9	0.0068	0.194	0.005	86	3.03	
MW17-12-06	2017-08-27 13:50	305	703			422	6			0.0015	0.005	0.0253	88.2	2.75	
MW17-12-06	2017-11-12 14:05	348	730		8	462	3.4	1.5		0.005	0.046	0.005	94.1	2.5	
MW17-12-06	2018-03-05 15:40	346	754		8.5	456	3	3.1		0.0151	0.0575	0.005	91.6	2.19	
MW17-12-06	2018-05-11 10:45	356	742		8.2	466	3	8.6		0.0152	0.071	0.005	92.1	2.5	
MW17-12-06	2018-08-24 16:05	337	774	113.7	7.57	457	3	4.6	148.4	0.0119	0.247	0.0094	101	3.36	
MW17-12-06	2018-10-23 15:50	323	755	108.1	7.63	443	3	4.2	86.3	0.005	0.24	0.005	93.6	2.8	
MW17-12-06	2019-02-15 14:50	322	738	173	7.59	440	3.8	1	89.5	0.001	0.246	0.005	92	2.71	
MW17-12-06	2019-05-06 10:30	347	770	264.3	7.3	452	3	4.2	82.1	0.0018	0.251	0.005	90.1	2.76	
MW17-12-06	2019-08-16 16:45	349	751	97.6	7.48	452	3	5.5	85	0.005	0.281	0.005	89.9	3.1	
MW17-12-06	2019-10-05 11:40	346	735	110.2	7.72	454	3	3.5	98.4	0.005	0.251	0.005	88	3	
MW17-12-06	2020-02-14 16:00	334	752	142.3	7.98		3	1.5	24.1	0.005	0.253	0.005	84.8	2.91	
MW17-12-06	2020-05-23 14:15	345	745	129.7	7.72	479	3	7.3	79.4	0.005	0.238	0.005	87.6	2.96	
MW17-12-06	2020-08-06 10:25	335	755	130.9	7.6	456	3	5.8	92.3	0.005	0.233	0.005	90.1	3.08	
MW17-12-06	2020-10-04 12:10	330	744	150.5	7.57	461	3	3.3	88.9	0.005	0.237	0.005	88	3.12	
MW17-12-06	2021-03-24 14:15	339	750	140.7	7.56	468	1	6.5	117.7	0.005	0.242	0.0135	88.9	3.18	
MW17-12-06	2021-06-05 13:10	333	731	161.9	7.38	462	3	9.2	75	0.005	0.24	0.0056	87.9	3.09	
MW17-12-06	2021-08-19 14:46	281	889	239	6.94	740	156	6.3	99.5	0.005	0.025	0.275	301	24.7	
MW17-12-06	2021-10-01 16:30	350	874	97.2	7.61	571	1	4.2	99.6	0.005	0.025	0.005	146	1.87	
MW17-12-07	2017-08-27 14:05	202	563			304	3			0.0021	0.997	0.005	63.3	3.92	
MW17-12-07	2017-11-12 14:30	251	556		8.3	333	3	2		0.001	0.97	0.005	60.9	4.03	
MW17-12-07	2018-03-05 15:55	252	568		8	327	3	3.1		0.001	0.928	0.005	60.6	4.05	
MW17-12-07	2018-05-11 11:10	257	568		8.2	343	3	8.1		0.0012	0.862	0.005	62.4	4.2	
MW17-12-07	2018-08-24 16:20	251	589	106.8	7.92	334	3	4.8	105.2	0.0014	0.763	0.005	67.4	4.91	
MW17-12-07	2018-10-23 16:05	231	566	107.9	7.75	316	3	4.4	90.2	0.0027	0.749	0.005	61.9	4.62	
MW17-12-07	2019-02-15 15:10	217	560	222.9	7.67	314	3	1.3	62.4	0.001	0.692	0.005	64.7	4.66	
MW17-12-07	2019-05-06 10:55	249	593	251.6	7.66	328	3	4	99.5	0.001	0.663	0.005	62.8	4.63	
MW17-12-07	2019-08-16 17:00	256	577	99.6	7.52	337	3	5.3	82.3	0.001	0.629	0.005	65	5.08	
MW17-12-07	2019-10-05 12:30	257	572	114.7	7.77	336	3	3.3	82.6	0.0019	0.55	0.005	63.8	4.96	
MW17-12-07	2020-02-14 16:35	256	584	104.2	8.31		3	1.8	18	0.001	0.495	0.005	62.2	5.19	
MW17-12-07	2020-05-23 14:45	261	575	127.4	7.77	365	3	5.7	73.6	0.001	0.445	0.005	63	5.41	
MW17-12-07	2020-08-06 10:50	252	582	126.1	7.6	344	3	5.9	89.4	0.0017	0.401	0.005	63.4	5.46	
MW17-12-07	2020-10-04 12:25	278	578	153.4	7.61	367	3	3.3	68	0.0012	0.428	0.005	63.7	5.38	
MW17-12-07	2021-03-24 14:25	242	576	149.9	7.67	344	1	6.5	128.1	0.001	0.627	0.005	63.9	5.82	
MW17-12-07	2021-06-05 13:45	258	566	158.8	7.34	356	3	5.9	62.5	0.001	0.68	0.0115	63.8	5.73	
MW17-12-07	2021-08-19 15:05	262	752	16.4	7.17	526	73	6.5	82.5	0.0227	0.294	0.14	174	14.8	
MW17-12-07	2021-10-01 17:00	236	542	94.4	7.71	327	1	4	101.2	0.0174	1.08	0.005	54.4	5.09	
MW17-12-08	2017-08-27 14:25	231	579			321	153			0.0058	0.936	0.005	62.5	3.97	
MW17-12-08	2017-11-12 14:50	255	557		8.2	337	4.6	1		0.001	0.963	0.005	60.8	4	
MW17-12-08	2018-03-05 16:10	255	572		8.5	334	3	3		0.001	0.917	0.005	61.2	4.03	
MW17-12-08	2018-05-11 11:30	261	565		8.2	344	3.1	7		0.0013	0.862	0.005	62.2	4.14	
MW17-12-08	2018-08-24 16:45	251	575	113.6	7.73	333	3	5.2	92.3	0.001	0.756	0.005	63.1	4.42	
MW17-12-08	2018-10-23 16:30	243	572	112.5	7.79	327	8	4.2	53.1	0.0036	0.73	0.005	62.4	4.52	
MW17-12-08	2019-02-15 15:25	233	559	178.8	7.58	326	3	0.7	84.1	0.001	0.702	0.005	64.2	4.65	
MW17-12-08	2019-05-06 11:20	248	589	261.9	7.69	328	3	4.2	74.6	0.001	0.662	0.005	62.6	4.59	
MW17-12-08	2019-08-16 17:20	256	572	99.9	7.53	337	3	5	66	0.0022	0.657	0.005	64.7	4.96	
MW17-12-08	2019-10-05 12:45	255	575	116.9	7.74	339	3	3.7	68.4	0.0038	0.562	0.005	65.7	5.07	
MW17-12-08	2020-02-14 17:00	252	590	111	8.26		3	2.9	33.9	0.001	0.504	0.0053	62.6	5.12	
MW17-12-08	2020-05-23 15:00	261	579	126	7.8	365	3	6.7	53	0.001	0.459	0.005	63.3	5.36	
MW17-12-08	2020-08-06 11:05	253	588	125.2	7.55	349	3	5.9	69.4	0.0019	0.409	0.005	63.7	5.44	
MW17-12-08	2020-10-04 12:50	283	572	158.3	7.64	371	3	3.2	60.5	0.001	0.425	0.005	63	5.4	
MW17-12-08	2021-03-24 14:40	246	574	146.9	7.7	344	1	5.8	160.4	0.0032	0.578	0.0079	64.2	5.71	
MW17-12-08	2021-06-05 14:05	245	585	177.4	7.23	351	3.2	5.1	71.4	0.001	0.626	0.0055	63.4	5.64	
MW17-12-08	2021-08-19 15:40	281	892	35.8	7.12	739	138	6.5	44.8	0.005	0.025	0.39	303	25.5	
MW17-12-08	2021-10-01 17:25	239	551	90.2	7.72	335	1	3.8	74.4	0.015	0.96	0.005	56.3	5.11	
UG1	2015-08-22 13:00	215	1420		7.9	1070	112	17.7		0.376	13.2	11	492	0.8	1.1
UG1	2015-09-24 13:00	215	2110			1550	477			0.63	81.9	75	534	1.6	1.2
UG1	2015-10-12 15:30	201	1630		8	1180	48.3	5		0.344	39.7	31	586	1.5	1.2
UG1	2015-11-21 14:00	234	1460	108.6	7.83	1100	102	16.5	76.7	1.21	15.2	8.1	513	1.7	1.2
UG1	2015-12-22 17:00	136	1410	-182.6	8.1	978	36	11.9	171.5	2.44	25	11	418	11	1.5
UG1	2016-01-09 13:00	278	1870	141.6	7.72	1260	34.3	15.9	89	3.07	58	29	466	7.1	1.4
UG1	2016-02-06 14:15	281	1610	132.2	7.79	1090	13.9	14.9	69.1	3.18	43.9	17	404	10	1.3
UG1	2016-03-16 14:00	267	1320	191	7.7	902	34	4	74.8	1.45	15.2	10	370	1.5	1.6
UG1	2016-04-29 15:00	212	2510		8.6	1860	113	11.1		0.673	73.6	62	854	5	
UG1	2016-05-13 14:00	210	2460	146.4	7.71	1990	143	17.1	76.9	0.666	59.2	41.8	993	5	
UG1	2016-05-21 13:10	193	2190	152.5	7.78	1680	119	12.6	73.8	0.801	56.6	39.7	812	10	
UG1	2016-06-27 13:30	191	1970	131.6	7.81	1650	146	15.9	87.1	0.915	37.4	20.8	881	2.5	
UG1	2016-07-30 15:30	198	2080				49.3			0.774	26.3	13.1	1020	2.5	1.67
UG1	2016-08-26 9:30	190	2310	133.8	7.51	1990	112	19.2	74.3	1.12	40.6	21.8	1130	2.5	
UG1	2016-09-24 14:00	162	1920	138.7	7.76	1700	16.3	7.4	91.8	0.807	28.4	12.9	997	10	
UG1	2016-10-28 14:30			90.2	7.94			16.1	90.3						
UG1	2016-10-30 7:00	176	1860	94.6	7.83	1620	20	20.9	76.1	0.9	24	9.98	973	5	
UG1	2016-11-19 14:00	201	2270	88.7	7.57	1860	153	18.5	81.9	1.42	41.4	19.7	1010	1.8	
UG1	2016-12-20 15:30			84.9	7.95			12.4	95.4						
UG1	2016-12-20 15:30	203	2280	84.9	7.95	2030	3.8	12.4	95.4	1.27	35.2	17.1	1160	10	
UG1	2017-01-19 11:45	220	2010	146.1	4.72	1740	47.6	8.1	91.7	1.25	35	16.9	964	5	
UG1	2017-02-13 9:40	237	2480	192.5	7.78	2050	21.5	5.8	78.7	1.58	59.6	32.2	1080	10	
UG1	2017-03-29 15:30	214	2230	117.6	7.7	1990	95.5	11.5	84.8	0.856	26	6.01	1180	10	
UG1	2017-04-23 12:20	203	2490	146.5	7.76	2150	545	6.7	80.9	1.28	34.2	12	1270	10	
UG1	2017-05-15 15:00	201	2580	113.5	7.38	2190	181	11.5	81	1.67	34.5	13.3	1280	5	
UG1	2017-06-18 14:25	180	2770	121.3	7.84	2490	220	12.3	64.4	2.2	40.5	16.5	1510	10	
UG1	2017-07-15 10:00	158	2600	136	7.63	2450	27.4	17.2	68.5	2.53	36.1	11.3	1460	5.5	
UG1	2017-08-20 12:50	164	2520	165.9	7.84	2350	73.6	12.4	77.6	2.09	33.9	13.8	1450	10	
UG1	2017-09-21 13:00	178	2380	202.1	7.41	2220	175	18.1	73.4	1.67	26.2	10.7	1340	10	1.45
UG1	2017-10-06 10:00	188	2390	180.8	7.58	2130	53.5	12.4	92	1.49	22.5	9.56	1310	10	
UG1	2017-11-17 15:00	183	2570	201.5	7.42	2520	340	19.4	65.7	1.62	26.3	11.8	1530	8.7	
UG1	2017-12-19 16:00	180	2800	194.3	7.27	2600	37.3	7.7	100.5	1.53	32.9	16.5	1600	12	
UG1	2018-01-13 8:30	199	2280	47.9	7.9	2160	323	17	73.5	0.98	14.4	6.6	1310	12	
UG1	2018-02-04 16:45	186	2550	171.9	7.76	2310	528	6.4	95.1	0.827	17.3	7.87	1450	10	
UG1	2018-02-20 12:03	192	2790		7.73	2600	886	11.7		1.01	27.1	16.7	1560	10	
UG1	2018-03-04 16:20	165	2830	244.3	7.6	2530	37.5	6.9	75.6	1.04	18.9	9.76	1640	12	
UG1	2018-04-22 9:00	189	2400	176.7	7.81	2140	369		85.4	0.796	21.3	11.8	1310	17	
UG1	2018-05-26 12:00	170	1930	197.2	7.58	1710	293	15.7	83.6	0.614	10.1	6.2	1010	16.3	
UG1	2018-06-22 12:00	174	2130	175.5	7.77	1910	148	19.6	88.5	0.659	15.7	8.31	1150	16.9	
UG1	2018-07-17 15:50	186	2060	168.5	7.72	1720	153	19.6	83.1	0.909	13.4	6.97	1030	14.4	
UG1	2018-08-24 16:30	170	2120	153.4	7.63	1710	149	10.4	104.1	0.605	13	7.95	1030	18	
UG1	2018-09-24 14:20	174	1980	184.9	7.89	1670	182	17.4	72.9	0.631	6.44	3.49	1040	17.9	
UG1	2018-10-25 14:00	185	1870	172.6	7.69	1560	151	15.1	68.8	0.389	3.37	1.72	987	19.1	
UG1	2018-11-10 10:30	182	1840	201.7	7.9	1540	67.2	10.5	85.7	0.387	3.13	2.2	939	13.1	

Station	Date / Time	Dissolved Elements																			
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW17-12-05	2017-11-12 13:45	0.00001	0.0037	0.0001	0.041	0.033	0.00002	0.00005	69.2	0.0000151	0.00026	0.0001	0.00086	0.01	0.000005	3.78	0.0071	53.5	0.0764	0.0078	31.8
MW17-12-05	2018-03-05 15:25	0.00001	0.0026	0.0001	0.045	0.031	0.00002	0.00005	66.7	0.0000232	0.0001	0.0001	0.00098	0.01	0.000005	3.97	0.0073	53.3	0.0172	0.00474	29.4
MW17-12-05	2018-05-11 10:30	0.00001	0.0068	0.0001	0.0559	0.032	0.00002	0.00005	71.4	0.0000191	0.00016	0.0001	0.00189	0.01	0.000005	4.53	0.0087	56.6	0.106	0.0131	33.2
MW17-12-05	2018-08-24 15:50	0.00001	0.0177	0.00022	0.066	0.031	0.00002	0.00005	60.3	0.0000192	0.00027	0.0001	0.00308	0.031	0.000005	4.2	0.0087	48.9	0.241	0.0207	30.3
MW17-12-05	2018-10-23 15:35	0.00001	0.0046	0.00047	0.0784	0.031	0.00002	0.00005	64.3	0.000029	0.00032	0.0001	0.00318	0.024	0.000005	4.73	0.0091	52.2	0.274	0.0201	33.5
MW17-12-05	2019-02-15 14:35	0.00001	0.0027	0.00014	0.0643	0.039	0.00002	0.00005	68.7	0.00004	0.00025	0.0001	0.0032	0.01	0.0000067	4.48	0.0092	50.8	0.218	0.0196	31.6
MW17-12-05	2019-05-05 10:30	0.00001	0.003	0.00013	0.0606	0.034	0.00002	0.00005	62.6	0.0000208	0.00021	0.0001	0.00346	0.01	0.000005	3.95	0.0091	48.8	0.199	0.0166	28.9
MW17-12-05	2019-08-16 16:30	0.00001	0.0031	0.0001	0.0588	0.036	0.00002	0.00005	63.2	0.0000277	0.00019	0.00138	0.00347	0.018	0.000005	4.06	0.0085	49.7	0.169	0.0144	31.5
MW17-12-05	2019-10-05 11:20	0.00001	0.0026	0.00011	0.0545	0.033	0.00002	0.00005	64.3	0.0000505	0.00017	0.0001	0.00342	0.01	0.000005	4.2	0.0085	52	0.147	0.0126	31.2
MW17-12-05	2020-02-14 15:40	0.00001	0.0024	0.00013	0.049	0.03	0.00002	0.00005	60.2	0.0000308	0.00012	0.0001	0.00299	0.01	0.000005	3.75	0.0069	50.2	0.104	0.0101	30.7
MW17-12-05	2020-05-23 12:15	0.00001	0.003	0.0001	0.0478	0.034	0.00002	0.00005	67.2	0.0000444	0.0001	0.0001	0.00214	0.01	0.000005	3.67	0.0079	55.3	0.0313	0.00518	32.6
MW17-12-05	2020-08-06 10:05	0.00001	0.004	0.0001	0.0394	0.029	0.00002	0.00005	61.3	0.0000309	0.0001	0.00018	0.00205	0.01	0.000005	3.57	0.0071	49.5	0.022	0.00422	28.2
MW17-12-05	2020-10-04 11:45	0.00001	0.0027	0.0001	0.0369	0.032	0.00002	0.00005	66.7	0.0000188	0.0001	0.0001	0.00184	0.01	0.000005	3.6	0.0074	46.9	0.0199	0.00425	29.5
MW17-12-05	2021-03-24 13:50	0.00001	0.0037	0.0001	0.0364	0.036	0.00002	0.00005	63.9	0.0000298	0.0001	0.0001	0.00173	0.01	0.000005	3.56	0.0079	46.5	0.0578	0.00621	31.3
MW17-12-05	2021-06-05 11:35	0.00001	0.0035	0.00011	0.034	0.036	0.00002	0.00005	66.4	0.0000376	0.0001	0.0005	0.00193	0.01	0.000005	3.75	0.0082	51	0.0558	0.00693	34.9
MW17-12-05	2021-08-19 14:20	0.00001	0.0029	0.00325	0.0363	0.347	0.00002	0.00005	72.9	0.00116	0.00061	0.0005	0.00095	0.217	0.000005	3.34	0.0073	35.9	0.124	0.0113	68.5
MW17-12-05	2021-10-01 15:00	0.00001	0.0029	0.00018	0.0454	0.032	0.00002	0.00005	64	0.0000364	0.0002	0.0005	0.00428	0.01	0.000005	4.18	0.0094	49.2	0.0991	0.017	31.2
MW17-12-06	2017-08-27 13:50	0.00001	0.0047	0.00035	0.0463	0.033	0.00002	0.00005	62.9	0.00004	0.00059	0.0001	0.00062	1.54	0.000005	4.89	0.0104	47.7	0.157	0.0607	31.1
MW17-12-06	2017-11-12 14:05	0.00001	0.0028	0.0001	0.0511	0.032	0.00002	0.00005	67.6	0.0000223	0.00054	0.0001	0.00077	0.01	0.000005	4.88	0.0095	52.5	0.531	0.0448	32.8
MW17-12-06	2018-03-05 15:40	0.00001	0.0024	0.0001	0.0804	0.031	0.00002	0.00005	65.6	0.000035	0.00052	0.0001	0.00115	0.01	0.000005	5.29	0.0097	51.7	0.482	0.033	31.1
MW17-12-06	2018-05-11 10:45	0.00001	0.0036	0.0001	0.0789	0.033	0.00002	0.00005	68.1	0.000025	0.00043	0.0001	0.00141	0.01	0.000005	5.19	0.0105	53.6	0.332	0.0298	33.2
MW17-12-06	2018-08-24 16:05	0.00001	0.0093	0.00058	0.0553	0.056	0.00002	0.00005	62.2	0.0000598	0.00026	0.0001	0.00292	0.02	0.000005	4.41	0.0088	48	0.157	0.022	34.6
MW17-12-06	2018-10-23 15:50	0.00001	0.0052	0.00031	0.062	0.032	0.00002	0.00005	64.7	0.0000258	0.00022	0.0001	0.00296	0.01	0.000005	4.88	0.0092	50.4	0.151	0.0216	31.6
MW17-12-06	2019-02-15 14:50	0.00001	0.0026	0.00016	0.0548	0.037	0.00002	0.00005	63.9	0.00004	0.00022	0.0001	0.003	0.01	0.0000061	4.49	0.009	49.8	0.128	0.0224	32.1
MW17-12-06	2019-05-06 10:30	0.00001	0.0029	0.00015	0.0476	0.036	0.00002	0.00005	64	0.0000227	0.00019	0.00012	0.003	0.01	0.000005	4.17	0.0093	49.9	0.119	0.0197	30.7
MW17-12-06	2019-08-16 16:45	0.00001	0.0024	0.0001	0.0504	0.036	0.00002	0.00005	63	0.0000334	0.00018	0.0001	0.00328	0.01	0.000005	4.23	0.0092	49.4	0.114	0.0193	31.9
MW17-12-06	2019-10-05 11:40	0.00001	0.0027	0.0001	0.0507	0.032	0.00002	0.00005	65	0.0000469	0.0002	0.0001	0.00347	0.01	0.000005	4.55	0.0093	52.2	0.121	0.0189	32.2
MW17-12-06	2020-02-14 16:00	0.00001	0.0033	0.00017	0.0481	0.03	0.00002	0.00005	61.6	0.00003	0.00018	0.0001	0.00332	0.01	0.000005	4.11	0.0079	49.1	0.111	0.0189	30.2
MW17-12-06	2020-05-23 14:15	0.00001	0.0029	0.0001	0.0542	0.034	0.00002	0.00005	66.6	0.0000455	0.00017	0.0001	0.00345	0.01	0.000005	4.28	0.0097	55	0.117	0.0182	34.5
MW17-12-06	2020-08-06 10:25	0.00001	0.0027	0.0001	0.05	0.03	0.00002	0.00005	60.5	0.0000356	0.00018	0.0001	0.00343	0.01	0.000005	4.07	0.0089	48.1	0.115	0.0171	28.2
MW17-12-06	2020-10-04 12:10	0.00001	0.003	0.0001	0.0498	0.034	0.00002	0.00005	69	0.0000302	0.00018	0.0001	0.00392	0.01	0.000005	4.24	0.0096	47.7	0.121	0.0178	31
MW17-12-06	2021-03-24 14:15	0.00001	0.0041	0.00011	0.0424	0.038	0.00002	0.00005	67.1	0.0000365	0.00019	0.0001	0.00385	0.01	0.000005	4.12	0.0096	47.4	0.0979	0.016	32.2
MW17-12-06	2021-06-05 13:10	0.00001	0.002	0.00024	0.0459	0.034	0.00002	0.00005	63.7	0.0000654	0.00024	0.0005	0.00387	0.01	0.000005	4.19	0.0092	50.3	0.103	0.0172	31.2
MW17-12-06	2021-08-19 14:46	0.00001	0.0029	0.00503	0.0269	0.73	0.00002	0.00005	81.5	0.00228	0.00113	0.0005	0.00034	0.3	0.000005	2.88	0.0065	23.6	0.146	0.0139	103
MW17-12-06	2021-10-01 16:30	0.00001	0.0024	0.00164	0.0151	0.056	0.00002	0.00005	83.7	0.0000167	0.0001	0.0005	0.0002	0.129	0.000005	3.1	0.0102	33.8	0.109	0.00579	69.4
MW17-12-07	2017-08-27 14:05	0.00001	0.0027	0.00029	0.0264	0.027	0.00002	0.00005	47.7	0.0000068	0.0001	0.0001	0.00207	0.01	0.000005	2.94	0.0067	38.8	0.0089	0.00966	21.3
MW17-12-07	2017-11-12 14:30	0.00001	0.003	0.0001	0.0227	0.024	0.00002	0.00005	50	0.000005	0.0001	0.0001	0.00122	0.01	0.000005	2.71	0.0055	38.8	0.00558	0.00801	21.5
MW17-12-07	2018-03-05 15:55	0.00001	0.0023	0.0001	0.0245	0.023	0.00002	0.00005	45.8	0.0000097	0.0001	0.0001	0.00085	0.01	0.000005	2.69	0.0056	37.8	0.00259	0.00676	20.4
MW17-12-07	2018-05-11 11:10	0.00001	0.004	0.00014	0.0252	0.024	0.00002	0.00005	51.6	0.000005	0.0001	0.0001	0.00083	0.01	0.000005	2.97	0.0064	41.2	0.00205	0.00695	22.8
MW17-12-07	2018-08-24 16:20	0.00001	0.0135	0.00048	0.022	0.029	0.00002	0.00005	46.6	0.0000292	0.0001	0.0001	0.00127	0.029	0.000005	2.59	0.0058	35.3	0.00641	0.00651	23
MW17-12-07	2018-10-23 16:05	0.00001	0.0061	0.00047	0.0236	0.024	0.00002	0.00005	47.4	0.0000113	0.0001	0.0001	0.00079	0.01	0.000005	2.91	0.0063	36.3	0.004	0.00642	21.1
MW17-12-07	2019-02-15 15:10	0.000012	0.0023	0.00014	0.0216	0.029	0.00002	0.00005	49.8	0.0000188	0.0001	0.0001	0.00056	0.01	0.000007	2.81	0.006	37.6	0.00187	0.00672	21.4
MW17-12-07	2019-05-06 10:55	0.00001	0.0022	0.00017	0.0198	0.026	0.00002	0.00005	49.2	0.000021	0.0001	0.00011	0.00074	0.01	0.000005	2.54	0.006	36.5	0.00172	0.00594	20.1
MW17-12-07	2019-08-16 17:00	0.00001	0.0023	0.00011	0.0212	0.027	0.00002	0.00005	48.6	0.0000125	0.0001	0.0001	0.0006	0.01	0.000005	2.7	0.006	37.7	0.00201	0.00596	21.2
MW17-12-07	2019-10-05 12:30	0.00001	0.0019	0.00013	0.0206	0.025	0.00002	0.00005	48.3	0.0000489	0.0001	0.00013	0.00065	0.01	0.000005	2.76	0.0059	39.1	0.00219	0.00588	21
MW17-12-07	2020-02-14 16:35	0.00001	0.0028	0.00017	0.0201	0.022	0.00002	0.00005	48.6	0.00002	0.0001	0.0001	0.0008	0.01	0.000005	2.57	0.0053	39	0.00144	0.00605	21
MW17-12-07	2020-05-23 14:45	0.00001	0.002	0.00011	0.0238	0.025	0.00002	0.00005	53.4	0.0000369	0.0001	0.0001	0.00064	0.01	0.000005	2.63	0.0063	41.6	0.00122	0.00568	22
MW17-12-07	2020-08-06 10:50	0.00001	0.0028	0.0001	0.0209	0.023	0.00002	0.00005	48.2	0.0000203	0.0001	0.0001	0.00062	0.01	0.000005	2.53	0.006	35	0.00188	0.00535	18.6
MW17-12-07	2020-10-04 12:25	0.000012	0.0036	0.0001	0.0215	0.024	0.00002	0.00005	52.3	0.0000144	0.0001	0.0001	0.0009	0.01	0.000005	2.73	0.0063	36.3	0.00141	0.00583	20.5
MW17-12-07	2021-03-24 14:25	0.00001	0.0023	0.00015	0.0191	0.027	0.00002	0.00005	50.9	0.0000122	0.0001	0.0001	0.00053	0.01	0.000005	2.62	0.0063	34.9	0.00139	0.0052	20.1
MW17-12-07	2021-06-05 13:45	0.000013	0.0019	0.00023	0.0202	0.026	0.00002	0.00005	50.7	0.0000383	0.0001	0.0005	0.00063	0.01	0.000005	2.74	0.0062	36.9	0.00321	0.0059	19.9
MW17-12-07	2021-08-19 15:05	0.00001	0.0022	0.00246	0.0238	0.338	0.00002	0.00005	64.7	0.00111	0.00061	0.0005	0.00062	0.143	0.000005	2.63	0.0063	28.6	0.0775	0.0102	59.4
MW17-12-07	2021-10-01 17:00	0.00001	0.0021	0.00016	0.0192	0.024	0.00002	0.00005	46.6	0.0000176	0.0001	0.0005	0.00056	0.01	0.000005	2.6	0.006	34	0.00129	0.00614	19.6
MW17-12-08	2017-08-27 14:25	0.00001	0.006	0.00025	0.0277	0.028	0.00002	0.00005	48.2	0.0000076	0.00011	0.0001	0.00141	0.06	0.000005	2.92	0.007	39	0.0258	0.0137	22.1
MW17-12-08	2017-11-12 14:50	0.00001	0.0024	0.0001	0.024	0.024	0.00002	0.00005	50.5	0.0000075	0.0001	0.0001	0.00151	0.01	0.000005	2.78	0.0056	38.6	0.00518	0.011	22.6
MW17-12-08	2018-03-05 16:10	0.00001	0.002	0.00016	0.0247	0.025	0.00002	0.00005	48.7	0.0000114	0.0001	0.0001	0.00083	0.01	0.000005	2.8	0.0062	38.3	0.00203	0.00883	21.6
MW17-12-08	2018-05-11 11:30	0.00001	0.0024	0.00013	0.025	0.025	0.00002	0.00005	50.4	0.000005	0.0001	0.0001	0.00082	0.01	0.000005	2.97	0.0065	40.3	0.0016	0.00879	23.4
MW17-12-08	2018-08-24 16:45	0.00001	0.0113	0.00017	0.0229	0.025	0.00002	0.00005	49	0.0000137	0.0001	0.0001	0.00494	0.024	0.000005	2.89	0.0061	38	0.00169	0.00803	22.1
MW17-12-08	2018-10-23 16:30	0.000011	0.0099	0.00069	0.0247	0.025	0.00002	0.00005	49.6	0.000012	0.0001	0.0001	0.00152	0.015	0.000005	3.15	0.0062	36.8	0.00135	0.00787	21.6
MW17-12-08	2019-02-15 15:25	0.00001	0.0019	0.00016	0.0231	0.032	0.00002	0.00005	50.9	0.0000213	0.0001	0.0001	0.00076	0.01	0.0000079	2.91	0.0062	38.1	0.00133	0.00811	22.5
MW17-12-08	2019-05-06 11:20	0.00001	0.0019	0.00015	0.0211	0.026	0.00002	0.00005	49.3	0.0000241	0.0001	0.0001	0.00069	0.01	0.000005	2.56	0.0061	36.7	0.00082	0.00712	20.1
MW17-12-08	2019-08-16 17:20	0.00001	0.0016	0.0001	0.022	0.027	0.00002	0.00005	48.3	0.0000136	0.0001	0.0001	0.00061	0.01	0.000005	2.77	0.0061	37.2	0.00054	0.00717	22
MW17-12-08	2019-10-05 12:45	0.00001	0.0013	0.00012	0.0213	0.026	0.00002	0.00005	49.1	0.0000471	0.0001	0.00012	0.00073	0.01	0.000005	2.85	0.0061	39.4	0.0009	0.00722	21.8
MW17-12-08	2020-02-14 17:00	0.00001	0.0013	0.00015	0.0204	0.023	0.00002	0.00005	47	0.0000313	0.0001	0.0001	0.00089	0.01	0.000005	2.59	0.0053	37.5	0.00046	0.00717	21.2
MW17-12-08	2020-05-23 15:00	0.00001	0.0017	0.0001	0.025	0.025	0.00002	0.00005	52.7	0.0000345	0.0001	0.0001	0.00072	0.01	0.000005	2.68	0.0065	41	0.0006	0.00683	23
MW17-12-08	2020-08-06 11:05	0.00001	0.0029	0.0001	0.0217	0.023	0.00002	0.00005	47.8	0.0000157	0.0001	0.00023	0.00073	0.01	0.000005	2.63	0.0061	37	0.0008	0.00668	19.8
MW17-12-08	2020-10-04 12:50	0.00001	0.0022	0.0001	0.0224	0.024	0.00002	0.00005	53.3	0.0000109	0.0001	0.0001	0.00063	0.01	0.000005	2.76	0.0064	36.2	0.0005	0.00703	21
MW17-12-08	2021-03-24 14:40	0.00001	0.0026	0.00013	0.0206	0.027	0.00002	0.00005	48.4	0.0000317	0.0001	0.0001	0.00059	0.01	0.000005	2.58	0.0062	34.8	0.0007	0.00616	20.4
MW17-12-08	2021-06-05 14:05	0.00001	0.0025	0.00016	0.0219	0.026	0.00002	0.00005	51	0.0000281	0.0001	0.0005	0.00081	0.01	0.000005	2.85	0.0064	38.5	0.00143	0.0069	20.7
MW17-12-08	2021-08-19 15:40	0.00001	0.0016	0.00394	0.0304	0.854	0.00002	0.00005	80.1	0.00268	0.00135	0.0005	0.00053	0.328	0.000005	3.03	0.0068	24.2	0.187	0.0162	104
MW17-12-08	2021-10-01 17:25	0.00001	0.0015	0.00016	0.0205	0.024	0.00002	0.00005	48.5	0.0000126	0.0001	0.0005	0.00057	0.01	0.000005	2.68	0.0064	35.7	0.00067	0.00696	20.6
UG1	2015-08-22 13:00	0.00002	0.0097	0.0026	0.032	0.227	0.0001	0.001	192	0.00001	0.0005	0.001	0.00374	0.0109	0.00001	7.4	0.0059	55	0.135	0.0097	25.7
UG1	2015-09-24 13:00	0.00002	0.0123	0.00163	0.0479	0.636	0.0001	0.001	219	0.000015	0.00072	0.001	0.00921	0.0052	0.00001	10.4	0.0077	56.7	0.11	0.0101	55
UG1	2015-10-12 15:30	0.00002	0.0114	0.00178	0.0251	0.155	0.0001	0.001	205	0.000306	0.0005	0.001	0.0175	0.0061	0.00001	5.94	0.0053	48.6	0.162	0.0083	28.2
UG1	2015-11-21 14:00	0.00002	0.0122	0.00212	0.0305	0.343	0.0001	0.001	212	0.000147	0.00193	0.001	0.0536	0.0121	0.00001	9.28	0.0076	58.4	0.163	0.0147	34.8
UG1	2015-12-22 17:00	0.00002	0.51	0.00144	0.0587	0.435	0.0001	0.001	169	0.000131	0.00197	0.001	0.178	1.16	0.00001	20.8	0.0109	51.2	0.221	0.0394	64.6
UG1	2016-01-09 13:00	0.00002	0.0161	0.00137	0.0463	0.665	0.0001	0.001	197	0.00038	0.00246	0.001	0.057	0.0156	0.00001	18	0.0112	59.2	0.243	0.0316	64.1
UG1	2016-02-06 14:15	0.000045	0.0292	0.00259	0.0389	0.567	0.0001	0.001	156	0.000071	0.00075	0.001	0.0481	0.0064	0.00001	20.7	0.0151	61.5	0.228	0.0336	65.6
UG1	2016-03-16 14:00	0.00002	0.0709	0.00184	0.0312	0.358	0.0001	0.001	168	0.00005	0.00058	0.001	0.0287	0.0136	0.00001	11.7	0.0099	58.1	0.203	0.0183	39.4
UG1	2016-04-29 15:00	0.00002	0.0074	0.00082	0.0439	0.47	0.00004	0.0001	375	0.000375	0.00124	0.0002	0.0219	0.014	0.000005	9.65	0.0073	41.4	0.154	0.0129	47.5
UG1	2016-05-13 14:00	0.00002	0.0232	0.00088	0.0389	0.487	0.00004	0.0001	449	0.000034	0.00117	0.0002	0.0194	0.01	0.000005	10	0.0065	40.7	0.134	0.0145	51.2
UG1	2016-05-21 13:10	0.00002	0.0101	0.00086	0.0383	0.42	0.00004	0.0001	356	0.000031	0.00121	0.0002	0.0142	0.01	0.000005	10.4	0.0059	39.4	0.126	0.0153	43.6
UG1	2016-06-27 13:30	0.00002	0.0103	0.00105	0.0359	0.431	0.00004	0.0001	370	0.00001	0.00057	0.0002	0.00502	0.01	0.000005	9.64	0.0068	40.6	0.0675	0.019	38.6
UG1	2016-07-30 15:30	0.00002	0.008	0.001	0.0283	0.393	0.00004	0.0001	418	0.00001	0.00039	0.0002	0.00571	0.01		9.01	0.0076	45.1	0.0671	0.0166	35.2
UG1	2016-08-26 9:30	0.00002	0.0087	0.00083	0.0288	0.436	0.00004	0.0001	440	0.00001	0.00032	0.0002	0.00555	0.01	0.000005	11.7	0.0071	50.2	0.071	0.0201	38.9
UG1	2016-09-24 14:00	0.00002	0.0079	0.00075	0.0333	0.389	0.00004	0.0001	364	0.00001	0.00046	0.0002	0.00907	0.02	0.000005	9.36	0.0066	47.7	0.0753	0.0173	38
UG1	2016-10-28 14:30																				
UG1	2016-10-30 7:00	0.00002	0.0079	0.00064	0.0242	0.357	0.00004	0.0001	337	0.000022	0.00065	0.0002	0.00425	0.02	0.000005	8.51	0.007	43.2	0.0644	0.0161	32.9
UG1	2016-11-19 14:00	0.00002	0.0122	0.00061	0.0289	0.663	0.00004	0.0001	399	0.000149	0.00056	0.0002	0.00745	0.02	0.000005	12.5	0.008	47.9	0.121	0.0204	56.3
UG1	2016-12-20 15:30																				
UG1	2016-12-20 15:30	0.00002	0.007	0.0006	0.0285	0.546	0.00004	0.0001	458	0.000157	0.0006	0.0002	0.0117	0.02	0.000005	10.7	0.0075	49	0.174	0.0174	47.5
UG1	2017-01-19 11:45	0.00002	0.0083	0.00111	0.0273	0.449	0.00004	0.0001	360	0.000342	0.00095	0.0002	0.0254	0.02	0.000005	10.2	0.0094	54.4	0.137	0.0177	43.7
UG1	2017-02-13 9:40	0.00002	0.0089	0.00118	0.0346	0.677	0.00004	0.0001	420	0.000379	0.00232	0.0002	0.0198	0.02	0.000005	12	0.009	52.9	0.164	0.0199	67
UG1	2017-03-29 15:30	0.00002	0.0077	0.00064	0.0215	0.604	0.00004	0.0001	434	0.000398	0.00071	0.0002	0.00955	0.02	0.000005	8.98	0.0093	53.9	0.109	0.0157	59.5
UG1	2017-04-23 12:20	0.00002	0.0102	0.00059	0.028	0.618	0.00004	0.0001	459	0.00028	0.00058	0.0002	0.0043	0.02	0.000005	10.1	0.0081	49.7	0.11	0.0184	63.9
UG1	2017-05-15 15:00	0.00002	0.0121	0.0008	0.0386	0.674	0.00004	0.0001	472	0.000266	0.00108	0.0002	0.0119	0.02	0.000005	12.7	0.0115	53.6	0.168	0.0222	84.3
UG1	2017-06-18 14:25	0.00002	0.0261	0.00082	0.0349	0.775	0.00004	0.0001	508	0.000059	0.00045	0.0002	0.00473	0.036	0.000005	12.5	0.0103	51.6	0.134	0.0251	84.8
UG1	2017-07-15 10:00	0.00001	0.0145	0.00056	0.0337	0.649	0.00002	0.00005	551	0.000152	0.00066	0.00228	0.0224	0.014	0.000005	13.6	0.0096	51.2	0.119	0.0231	87
UG1	2017-08-20 12:50	0.00002	0.0074	0.00077	0.0271	0.651	0.00004	0.0001	490	0.000225	0.00056	0.00086	0.0218	0.02	0.000005	11.1	0.0101	46.9	0.103	0.0208	78.7
UG1	2017-09-21 13:00	0.00002	0.0107	0.00146	0.0315	0.61	0.00004	0.0001	475	0.000163	0.00071	0.0002	0.0203	0.02	0.000005	11.2	0.0112	52.5	0.135	0.0281	90.9
UG1	2017-10-06 10:00	0.00001	0.0107	0.00129	0.0299	0.528	0.00002	0.00005	441	0.000137	0.00061	0.00012	0.0134	0.01	0.000005	11.3	0.0105	44.2	0.132	0.0241	87.2
UG1	2017-11-17 15:00	0.00002	0.0134	0.00136	0.041	0.709	0.00004	0.0001	567	0.000189	0.00079	0.0002	0.0078	0.02	0.000005	12.9	0.012	50.2	0.168	0.0302	104
UG1	2017-12-19 16:00	0.00002	0.0067	0.00137	0.051	0.627	0.00004	0.0001	537	0.00011	0.00085	0.0002	0.0104	0.02	0.000005	13.5	0.0119	46.9	0.202	0.0274	110
UG1	2018-01-13 8:30	0.00002	0.0085	0.00119	0.0432	0.553	0.00004	0.0001	480	0.000197	0.0009	0.0002	0.0146	0.02	0.000005	10.6	0.0132	47.9	0.195	0.0245	106
UG1	2018-02-04 16:45	0.00002	0.0087	0.00083	0.0403	0.602	0.00004	0.0001	521	0.000265	0.00066	0.0002	0.0077	0.02	0.000005	10.1	0.0111	39.2	0.178	0.0232	91.9
UG1	2018-02-20 12:03	0.00002	0.0187	0.00088	0.0378	0.724	0.00004	0.0001	599	0.000208	0.00074	0.0002	0.0077	0.02	0.000005	11.5	0.0124	51.4	0.19	0.0259	109
UG1	2018-03-04 16:20	0.00002	0.0147	0.00106	0.0382	0.573	0.00004	0.0001	526	0.000111	0.0004	0.00261	0.015	0.02	0.000005	12.1	0.0306	37.3	0.141	0.0266	110
UG1	2018-04-22 9:00	0.00002	0.0146	0.00127	0.0314	0.448	0.00004	0.0001	438	0.000062	0.0005	0.00039	0.0359	0.02	0.000005	9.52	0.0113	42.6	0.11	0.0241	98.3
UG1	2018-05-26 12:00	0.00001	0.0122	0.00156	0.0319	0.372	0.00002	0.00005	363	0.0000151	0.00126	0.0001	0.00641	0.01	0.000005	8.45	0.0123	42	0.107	0.0227	111
UG1	2018-06-22 12:00	0.00001	0.0126	0.00111	0.0309	0.402	0.00002	0.00005	405	0.0000374	0.00066	0.00011	0.014	0.01	0.000005	9.21	0.011	41.6	0.108	0.0217	94.8
UG1	2018-07-17 15:50	0.00002	0.0115	0.00096	0.0309	0.393	0.00004	0.0001	359	0.000014	0.00049	0.0002	0.0168	0.02	0.000005	8.43	0.0134	39.6	0.0869	0.0211	82.2
UG1	2018-08-24 16:30	0.00002	0.0109	0.00102	0.0293	0.367	0.00004	0.0001	353	0.000016	0.00049	0.0002	0.00784	0.02	0.000005	8.11	0.0101	41.3	0.0865	0.0219	84.5
UG1	2018-09-24 14:20	0.00001	0.0133	0.00084	0.0304	0.326	0.00002	0.00005	347	0.000121	0.00051	0.0001	0.0165	0.01	0.000005	8.3	0.0102	41	0.121	0.0204	75.5
UG1	2018-10-25 14:00	0.00002	0.0089	0.00089	0.0274	0.252	0.00004	0.0001	307	0.00002	0.00037	0.0002	0.0132	0.02	0.000005	7.36	0.0095	41.4	0.0879	0.0191	72.3
UG1	2018-11-10 10:30	0.00001	0.0492	0.00078	0.0166	0.265	0.00002	0.00005	337	0.000277	0.00046	0.0001	0.0717	0.01	0.000005	7.36	0.0085	43.1	0.106	0.0162	68.3

Station	Date / Time	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW17-12-05	2017-11-12 13:45	0.00136	0.00005	0.0001	33.7	0.000588	7.14	0.0001	1.67	0.0003	0.00001	0.00446	0.0005	0.0372	0.0003
MW17-12-05	2018-03-05 15:25	0.00117	0.00005	0.0001	32.2	0.000504	7.03	0.0001	1.49	0.0003	0.00001	0.00429	0.0005	0.0196	0.0003
MW17-12-05	2018-05-11 10:30	0.00225	0.00005	0.0001	31.5	0.000363	7.17	0.0001	1.65	0.0003	0.00001	0.00455	0.0005	0.013	0.0003
MW17-12-05	2018-08-24 15:50	0.00379	0.00005	0.0001	30.2	0.000255	6.8	0.0001	1.61	0.00137	0.00001	0.00399	0.0005	0.026	0.0003
MW17-12-05	2018-10-23 15:35	0.0043	0.00005	0.0001	31.7	0.000257	6.92	0.0001	1.66	0.0003	0.00001	0.00395	0.0005	0.043	0.0003
MW17-12-05	2019-02-15 14:35	0.00363	0.00005	0.0001	30.6	0.000213	6.86	0.0001	1.77	0.0003	0.00001	0.00334	0.0005	0.0497	0.0003
MW17-12-05	2019-05-05 10:30	0.00331	0.00005	0.0001	32.7	0.000643	7.16	0.0001	1.67	0.0003	0.00001	0.00376	0.0005	0.0488	0.0003
MW17-12-05	2019-08-16 16:30	0.00307	0.00005	0.0001	32.5	0.00031	7.09	0.0001	1.59	0.0003	0.00001	0.00409	0.0005	0.0389	0.0003
MW17-12-05	2019-10-05 11:20	0.00278	0.00005	0.0001	30.4	0.000224	7.51	0.0001	1.61	0.0003	0.00001	0.00407	0.0005	0.0389	0.0003
MW17-12-05	2020-02-14 15:40	0.00214	0.00005	0.0001	30.8	0.000173	6.76	0.0001	1.52	0.0003	0.00001	0.004	0.0005	0.0239	0.0002
MW17-12-05	2020-05-23 12:15	0.00101	0.00005	0.0001	32.9	0.000226	7.25	0.0001	1.63	0.0003	0.00001	0.00427	0.0005	0.0351	0.0002
MW17-12-05	2020-08-06 10:05	0.00089	0.00005	0.0001	32.4	0.000168	7.61	0.0001	1.36	0.0003	0.00001	0.00435	0.0005	0.0443	0.0002
MW17-12-05	2020-10-04 11:45	0.00065	0.00005	0.0001	29.4	0.000215	6.82	0.0001	1.49	0.0003	0.00001	0.00402	0.0005	0.0376	0.0002
MW17-12-05	2021-03-24 13:50	0.00097	0.00005	0.0001	30.4	0.000365	7.33	0.0001	1.46	0.0003	0.00001	0.00385	0.0005	0.071	0.0002
MW17-12-05	2021-06-05 11:35	0.00094	0.00005	0.0001	33.1	0.000305	7.31	0.0001	1.61	0.0003	0.00001	0.00389	0.0005	0.0458	0.0002
MW17-12-05	2021-08-19 14:20	0.00831	0.00005	0.00098	58.8	0.00375	6.06	0.00279	2.51	0.0003	0.000027	0.00149	0.0005	9.54	0.0002
MW17-12-05	2021-10-01 15:00	0.00204	0.00005	0.0001	31	0.000106	7.65	0.0001	1.55	0.0003	0.00001	0.00351	0.00061	0.244	0.0002
MW17-12-06	2017-08-27 13:50	0.00357	0.00005	0.00014	31	0.000544	6.02	0.0001	1.92	0.0003	0.00001	0.00166	0.0005	0.0135	0.0003
MW17-12-06	2017-11-12 14:05	0.00268	0.00005	0.0001	33	0.000532	6.59	0.0001	1.92	0.0003	0.00001	0.00372	0.0005	0.0218	0.0003
MW17-12-06	2018-03-05 15:40	0.00457	0.00005	0.0001	31.9	0.00037	6.81	0.0001	1.69	0.0003	0.00001	0.0035	0.0005	0.0119	0.0003
MW17-12-06	2018-05-11 10:45	0.00447	0.00005	0.0001	33.8	0.0003	7.16	0.0001	1.66	0.0003	0.00001	0.0038	0.0005	0.011	0.0003
MW17-12-06	2018-08-24 16:05	0.00342	0.000056	0.00012	31.7	0.00085	6.57	0.00014	1.56	0.00071	0.00001	0.00306	0.0005	0.524	0.0003
MW17-12-06	2018-10-23 15:50	0.00326	0.00005	0.0001	32.8	0.000197	7.08	0.0001	1.55	0.0003	0.00001	0.00401	0.00055	0.0209	0.0003
MW17-12-06	2019-02-15 14:50	0.00286	0.00005	0.0001	31	0.000233	7.03	0.0001	1.58	0.0003	0.00001	0.00344	0.00055	0.047	0.0003
MW17-12-06	2019-05-06 10:30	0.00274	0.00005	0.0001	32.8	0.000515	7.31	0.0001	1.51	0.0003	0.00001	0.00378	0.00051	0.107	0.0003
MW17-12-06	2019-08-16 16:45	0.00254	0.00005	0.0001	31.9	0.000203	7.29	0.0001	1.5	0.0003	0.00001	0.00403	0.00055	0.0157	0.0003
MW17-12-06	2019-10-05 11:40	0.00259	0.00005	0.0001	43.5	0.000136	7.53	0.0001	1.52	0.0003	0.00001	0.00389	0.00053	0.0326	0.0003
MW17-12-06	2020-02-14 16:00	0.0023	0.00005	0.0001	30.3	0.000122	6.89	0.0001	1.5	0.0003	0.00001	0.00371	0.00053	0.0219	0.0002
MW17-12-06	2020-05-23 14:15	0.00251	0.00005	0.0001	32.5	0.00009	7.31	0.0001	1.63	0.0003	0.00001	0.00388	0.00059	0.0293	0.0002
MW17-12-06	2020-08-06 10:25	0.0023	0.00005	0.0001	30.9	0.000064	7.47	0.0001	1.41	0.0003	0.00001	0.00374	0.00062	0.0344	0.0002
MW17-12-06	2020-10-04 12:10	0.00232	0.00005	0.0001	29.1	0.00012	6.9	0.0001	1.57	0.0003	0.00001	0.00364	0.0006	0.0363	0.0002
MW17-12-06	2021-03-24 14:15	0.00212	0.00005	0.0001	30.3	0.000249	7.52	0.0001	1.45	0.0003	0.00001	0.00355	0.0006	0.0526	0.0002
MW17-12-06	2021-06-05 13:10	0.00221	0.00005	0.0001	31.9	0.000228	7.49	0.0001	1.5	0.0003	0.00001	0.0035	0.0007	0.166	0.0002
MW17-12-06	2021-08-19 14:46	0.015	0.00005	0.00212	92.4	0.00683	5.11	0.00564	3.4	0.00036	0.000042	0.000036	0.0005	19.6	0.0002
MW17-12-06	2021-10-01 16:30	0.0005	0.00005	0.0001	49.1	0.000051	8.51	0.0001	3.75	0.0003	0.00001	0.00413	0.0005	0.0964	0.0002
MW17-12-07	2017-08-27 14:05	0.00068	0.00005	0.0001	22	0.000332	6.82	0.0001	0.948	0.0003	0.00001	0.00291	0.00059	0.0131	0.0003
MW17-12-07	2017-11-12 14:30	0.0005	0.00005	0.0001	20.9	0.000345	6.66	0.0001	1.01	0.0003	0.00001	0.0027	0.00062	0.018	0.0003
MW17-12-07	2018-03-05 15:55	0.0005	0.00005	0.0001	20.7	0.000244	6.55	0.0001	0.959	0.0003	0.00001	0.00255	0.00062	0.0108	0.0003
MW17-12-07	2018-05-11 11:10	0.0005	0.00005	0.0001	21.6	0.000233	6.76	0.0001	1.04	0.0003	0.00001	0.00287	0.00072	0.0126	0.0003
MW17-12-07	2018-08-24 16:20	0.00057	0.00005	0.0001	22.5	0.000809	6.42	0.00011	1.04	0.00094	0.00001	0.00236	0.00062	0.281	0.0003
MW17-12-07	2018-10-23 16:05	0.0005	0.00005	0.0001	22.2	0.000224	6.65	0.0001	0.942	0.00046	0.00001	0.00271	0.00067	0.0188	0.0003
MW17-12-07	2019-02-15 15:10	0.0005	0.00005	0.0001	21.2	0.000268	6.55	0.0001	1.12	0.0003	0.00001	0.00246	0.00065	0.0471	0.0003
MW17-12-07	2019-05-06 10:55	0.0005	0.00005	0.0001	22.9	0.000686	6.68	0.0001	0.977	0.0003	0.00001	0.0027	0.00059	0.0957	0.0003
MW17-12-07	2019-08-16 17:00	0.0005	0.00005	0.0001	22	0.000268	6.72	0.0001	0.98	0.0003	0.00001	0.00296	0.00059	0.0169	0.0003
MW17-12-07	2019-10-05 12:30	0.0005	0.00005	0.0001	21.8	0.00024	6.97	0.0001	0.973	0.0003	0.00001	0.00289	0.00058	0.0456	0.0003
MW17-12-07	2020-02-14 16:35	0.0005	0.00005	0.0001	21.7	0.000188	6.44	0.0001	1.02	0.0003	0.00001	0.00271	0.00062	0.0193	0.0002
MW17-12-07	2020-05-23 14:45	0.0005	0.00005	0.0001	23.4	0.0002	6.76	0.0001	1.12	0.0003	0.00001	0.00292	0.00062	0.0874	0.0002
MW17-12-07	2020-08-06 10:50	0.0005	0.00005	0.0001	22.6	0.000155	6.84	0.00042	0.949	0.0003	0.00001	0.00282	0.00066	0.0304	0.0002
MW17-12-07	2020-10-04 12:25	0.0005	0.00005	0.0001	20.7	0.000217	6.44	0.0001	1.05	0.0003	0.00001	0.00271	0.00064	0.0315	0.0002
MW17-12-07	2021-03-24 14:25	0.0005	0.00005	0.0001	19.9	0.000377	6.59	0.0001	0.958	0.0003	0.00001	0.00264	0.00059	0.042	0.0002
MW17-12-07	2021-06-05 13:45	0.0005	0.00005	0.0001	23.2	0.000322	6.84	0.0001	1.04	0.0003	0.00001	0.00276	0.0007	0.0701	0.0002
MW17-12-07	2021-08-19 15:05	0.0072	0.00005	0.00096	52.7	0.00376	5.77	0.0029	2.12	0.0003	0.000023	0.00115	0.0005	7.62	0.0002
MW17-12-07	2021-10-01 17:00	0.0005	0.00005	0.0001	19.4	0.000186	6.82	0.0001	0.96	0.0003	0.00001	0.00243	0.00062	0.13	0.0002
MW17-12-08	2017-08-27 14:25	0.00348	0.00005	0.0001	22.2	0.000347	6.77	0.0001	0.971	0.0003	0.00001	0.00292	0.00053	0.0157	0.0003
MW17-12-08	2017-11-12 14:50	0.0005	0.00005	0.0001	21.4	0.00034	6.84	0.0001	1.01	0.0003	0.00001	0.00266	0.00066	0.0213	0.0003
MW17-12-08	2018-03-05 16:10	0.0005	0.00005	0.0001	21.3	0.000286	6.64	0.0001	0.984	0.0003	0.00001	0.0026	0.00072	0.02	0.0003
MW17-12-08	2018-05-11 11:30	0.0005	0.00005	0.0001	22.9	0.000243	7.14	0.0001	0.999	0.0003	0.00001	0.00273	0.00077	0.0121	0.0003
MW17-12-08	2018-08-24 16:45	0.0005	0.00005	0.0001	20.3	0.000224	6.85	0.0001	1.05	0.00095	0.00001	0.0028	0.00069	0.0628	0.0003
MW17-12-08	2018-10-23 16:30	0.0005	0.00005	0.0001	22.7	0.000225	6.69	0.0001	0.988	0.0015	0.00001	0.00271	0.00072	0.0304	0.0003
MW17-12-08	2019-02-15 15:25	0.0005	0.00005	0.0001	21.6	0.000288	6.75	0.0001	1.1	0.0003	0.00001	0.00241	0.00071	0.165	0.0003
MW17-12-08	2019-05-06 11:20	0.0005	0.00005	0.0001	22.2	0.000569	6.56	0.0001	0.971	0.0003	0.00001	0.00276	0.00063	0.0601	0.0003
MW17-12-08	2019-08-16 17:20	0.0005	0.00005	0.0001	21.7	0.000308	6.67	0.0001	0.983	0.0003	0.00001	0.00295	0.00064	0.0166	0.0003
MW17-12-08	2019-10-05 12:45	0.0005	0.00005	0.0001	21.9	0.000231	7.08	0.0001	1.01	0.0003	0.00001	0.00289	0.00066	0.0475	0.0003
MW17-12-08	2020-02-14 17:00	0.0005	0.00005	0.0001	21.8	0.000206	6.48	0.0001	0.979	0.0003	0.00001	0.00279	0.00063	0.0203	0.0002
MW17-12-08	2020-05-23 15:00	0.0005	0.00005	0.0001	22.9	0.000239	6.73	0.0001	1.11	0.0003	0.00001	0.00294	0.00071	0.045	0.0002
MW17-12-08	2020-08-06 11:05	0.0005	0.00005	0.0001	22.8	0.000194	7.16	0.0001	0.974	0.0003	0.00001	0.0029	0.00071	0.0274	0.0002
MW17-12-08	2020-10-04 12:50	0.0005	0.00005	0.0001	20.3	0.000188	6.41	0.0001	1.08	0.0003	0.00001	0.00277	0.00067	0.0234	0.0002
MW17-12-08	2021-03-24 14:40	0.0005	0.00005	0.0001	20.9	0.000361	6.74	0.0001	0.964	0.0003	0.00001	0.0026	0.00062	0.035	0.0002
MW17-12-08	2021-06-05 14:05	0.0005	0.00005	0.0001	23	0.000202	7	0.0001	1.02	0.0003	0.00001	0.00271	0.00075	0.051	0.0002
MW17-12-08	2021-08-19 15:40	0.0147	0.00005	0.00242	91.2	0.00562	4.83	0.00625	3.34	0.0003	0.000058	0.000055	0.0005	16.4	0.0002
MW17-12-08	2021-10-01 17:25	0.0005	0.00005	0.0001	19.8	0.000159	6.82	0.0001	0.984	0.0003	0.00001	0.00258	0.00069	0.091	0.0002
UG1	2015-08-22 13:00	0.0013	0.0002	0.00053	201	0.00024	8.34	0.005	4.63	0.005	0.00005	0.00654	0.005	0.005	0.0005
UG1	2015-09-24 13:00	0.004	0.0002	0.00109	208	0.00066	9.22	0.005	5.18	0.005	0.00005	0.00581	0.005	0.0072	0.0005
UG1	2015-10-12 15:30	0.0016	0.0002	0.00051	182	0.00051	8.18	0.005	5.03	0.005	0.00005	0.00642	0.005	0.0136	0.0005
UG1	2015-11-21 14:00	0.0068	0.0002	0.00056	177	0.00123	9.51	0.005	5.49	0.005	0.00005	0.00596	0.005	0.0173	0.0005
UG1	2015-12-22 17:00	0.0065	0.00063	0.00058	166	0.00557	9.06	0.005	4.96	0.0479	0.00005	0.00479	0.005	0.0335	0.0005
UG1	2016-01-09 13:00	0.007	0.0002	0.00068	171	0.00509	8.84	0.005	6.92	0.005	0.00005	0.00934	0.005	0.0293	0.0005
UG1	2016-02-06 14:15	0.0021	0.0002	0.00081	144	0.00274	8.9	0.005	5.84	0.005	0.00005	0.00688	0.005	0.038	0.0005
UG1	2016-03-16 14:00	0.0011	0.0002	0.0005	148	0.0009	9.78	0.005	5.48	0.005	0.00005	0.00811	0.005	0.0348	0.0005
UG1	2016-04-29 15:00	0.0023	0.00012	0.00125	289	0.00046	8.3	0.0002	7.93	0.0006	0.000031	0.0107	0.001	0.134	0.0006
UG1	2016-05-13 14:00	0.0025	0.00013	0.00127	342	0.00041	7.63	0.0002	9	0.00167	0.000025	0.0109	0.001	0.021	0.0006
UG1	2016-05-21 13:10	0.0028	0.0001	0.00101	290	0.00035	7.58	0.0002	8.9	0.0006	0.000021	0.0108	0.001	0.0203	0.0006
UG1	2016-06-27 13:30	0.0023	0.0001	0.00085	299	0.00022	7.83	0.0002	11.6	0.0006	0.00002	0.0113	0.001	0.003	0.0006
UG1	2016-07-30 15:30	0.0016	0.0001	0.00081	336	0.00029	7.21	0.0002	10.9	0.0006	0.000021	0.0133	0.001	0.002	0.0006
UG1	2016-08-26 9:30	0.0017	0.0001	0.00087	373	0.00052	6.55	0.0002	10.3	0.0006	0.000028	0.0138	0.001	0.002	0.0006
UG1	2016-09-24 14:00	0.0019	0.0001	0.00082	353	0.00038	6.61	0.0002	10.2	0.0006	0.00002	0.0143	0.001	0.0035	0.0006
UG1	2016-10-28 14:30														
UG1	2016-10-30 7:00	0.0016	0.0001	0.00047	299	0.0004	6.3	0.0002	9.79	0.0006	0.00002	0.0142	0.001	0.0045	0.0006
UG1	2016-11-19 14:00	0.0022	0.0001	0.00067	369	0.00098	6.55	0.0002	10.2	0.0006	0.00002	0.0144	0.001	0.0099	0.0006
UG1	2016-12-20 15:30														
UG1	2016-12-20 15:30	0.0017	0.0001	0.00056	422	0.00108	6.65	0.0002	10.7	0.0006	0.00002	0.0142	0.001	0.0178	0.0006
UG1	2017-01-19 11:45	0.0026	0.0001	0.00052	315	0.00082	7.56	0.0002	9.45	0.0006	0.00002	0.0126	0.001	0.0223	0.0006
UG1	2017-02-13 9:40	0.0056	0.0001	0.00075	411	0.00087	7.73	0.0002	9.75	0.0006	0.00002	0.0124	0.001	0.0118	0.0006
UG1	2017-03-29 15:30	0.002	0.0001	0.00039	448	0.00089	6.99	0.0002	10.9	0.0006	0.00002	0.0136	0.001	0.0091	0.0006
UG1	2017-04-23 12:20	0.0028	0.0001	0.00059	419	0.00076	6.33	0.0002	10	0.0009	0.00002	0.012	0.001	0.0066	0.0003
UG1	2017-05-15 15:00	0.0037	0.0001	0.00103	471	0.0008	6.93	0.0002	9.34	0.0006	0.00002	0.0128	0.001	0.0098	0.0003
UG1	2017-06-18 14:25	0.003	0.0001	0.00088	520	0.00084	6.8	0.0002	10.3	0.0012	0.000023	0.0133	0.001	0.0145	0.0003
UG1	2017-07-15 10:00	0.00247	0.00005	0.00065	554	0.00193	7.6	0.0001	10	0.0006	0.00002	0.0117	0.00105	0.0084	0.0003
UG1	2017-08-20 12:50	0.0024	0.0001	0.00078	492	0.00107	6.85	0.0002	8.79	0.0006	0.00002	0.0112	0.001	0.006	0.0003
UG1	2017-09-21 13:00	0.0029	0.0001	0.00091	467	0.00077	7.05	0.0002	8.51	0.0006	0.00002	0.00963	0.001	0.0072	0.0003
UG1	2017-10-06 10:00	0.0025	0.00005	0.00059	492	0.00111	7.65	0.0001	8.68	0.0003	0.000015	0.00972	0.00053	0.009	0.0003
UG1	2017-11-17 15:00	0.0035	0.0001	0.00084	567	0.00161	8.25	0.0002	10	0.0006	0.000023	0.00924	0.001	0.0122	0.0003
UG1	2017-12-19 16:00	0.0031	0.0001	0.00067	540	0.00113	7.22	0.0002	7.97	0.0006	0.00002	0.00808	0.001	0.0085	0.0003
UG1	2018-01-13 8:30	0.0028	0.0001	0.00045	470	0.00133	7.29	0.0002	8.27	0.0006	0.00002	0.00844	0.001	0.0325	0.0003
UG1	2018-02-04 16:45	0.0024	0.0001	0.00044	483	0.00146	6.66	0.0002	7.88	0.0006	0.00002	0.00969	0.001	0.0234	0.0003
UG1	2018-02-20 12:03	0.0029	0.0001	0.00062	543	0.00135	6.67	0.0002	9.37	0.0006	0.00002	0.00962	0.001	0.0209	0.0003
UG1	2018-03-04 16:20	0.0033	0.0001	0.00041	597	0.0008	8.61	0.0002	7.34	0.0006	0.00002	0.0069	0.001	0.0038	0.0003
UG1	2018-04-22 9:00	0.0012	0.0001	0.00056	447	0.00064	6.75	0.0002	7.38	0.0006	0.00002	0.00799	0.001	0.0037	0.0003
UG1	2018-05-26 12:00	0.00339	0.00005	0.0004	371	0.00051	7.4	0.0001	7.05	0.0003	0.000011	0.00755	0.0005	0.0015	0.0003
UG1	2018-06-22 12:00	0.00194	0.00005	0.00047	393	0.000952	6.99	0.0001	7.62	0.0006	0.000012	0.00872	0.00062	0.0031	0.0003
UG1	2018-07-17 15:50	0.0011	0.0001	0.00046	394	0.00185	6.98	0.0002	6.83	0.0006	0.00002	0.00887	0.001	0.0049	0.0003
UG1	2018-08-24 16:30	0.0016	0.0001	0.00058	378	0.00154	6.96	0.0002	7.05	0.0015	0.000023	0.00853	0.001	0.003	0.0003
UG1	2018-09-24 14:20	0.00139	0.00005	0.00024	382	0.00138	6.9	0.0001	7.06	0.0003	0.000015	0.00904	0.00056	0.0096	0.0003
UG1	2018-10-25 14:00	0.001	0.0001	0.0002	366	0.00144	6.71	0.0002	6.92	0.0006	0.00002	0.00893	0.001	0.0031	0.0003
UG1	2018-11-10 10:30	0.00066	0.00005	0.00015	309	0.00142	6.75	0.0001	7.6	0.0003	0.00001	0.0091	0.00059	0.0093	0.0003

Attachment 3: Sitewide Database

Station	Date / Time	Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	N-NO_2	N-NO_3	N-NH_3	SO_4-D	Chlord	Fluord
		General Parameters								Anions & Nitrogen Species					
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
UG1	2018-12-18 16:00	180	1900	224.7	8	1550	24	12.9	82.1	0.313	2.33	1.69	950	14.6	
UG1	2019-01-18 12:00	240	1170	176.5	7.72	890	6.2	10.7	76.7	0.014	3.68	0.404	469	6.3	
UG1	2019-02-11 8:30	199	1950	235.7	7.65	1670	12.7	8.7	70.2	0.17	1.59	1.47	1020	13.7	
UG1	2019-03-11 16:10	193	1910	242.7	7.71	1660	8.8	9.3	73.2	0.117	1.53	1.47	1030	13.5	
UG1	2019-04-09 10:10	183	1930	193.8	7.98	1610	3.1	16.5	80.4	0.095	1.42	1.29	1010	14.1	
UG1	2019-05-27 7:20	188	1980	214	7.78	1680	3.9	15.8	88.2	0.069	1.32	1.2	975	15.2	
UG1	2019-06-25 11:30	138	1870	117.7	8.18	1600	11.6	9.2	98.7	0.119	1.61	1.18	1030	13.7	
UG1	2019-07-16 7:20	145	1860	160.1	8.29	1570	3.2	16.7	78.6	0.114	1.77	1.15	984	12.6	
UG1	2019-08-17 11:30	157	1920	165.8	6.89	1590	3	11.7	70.7	0.103	1.67	1.16	1010	13.7	
UG1	2019-09-16 14:30	175	1890	225.6	7.98	1610	134	11.7	72.9	0.132	2.01	1.47	995	13.2	
UG1	2019-10-22 15:40	210	1990	204.5	7.82	1650	54.7	10.6	85.2	0.145	1.97	1.4	1010	14	
UG1	2019-11-25 13:50	203	2000	219.6	7.79	1660	99.9	11.8	101.7	0.16	1.67	1.33	1010	14.7	
UG1	2019-12-30 12:25	262	2010	173.5	7.69		469	7.8	91.3	0.598	9.78	6.18	1090	13.5	
UG1	2020-01-25 15:15	267	1880	179.3	7.63	1560	190	9	77.9	0.263	10	5.77	875	12	
UG1	2020-02-21 15:00	266	1870	222.1	6.78	1560	85.5	8.8	84.1	0.316	7.72	4.62	847	11.4	
UG1	2020-03-21 15:00	323	1870	175.1	7.53	1510	297	5.8	72.2	0.33	9.66		815	9.8	
UG1	2020-04-26 14:00	258	1950			1470	160			0.318	6.48	3.9	829	10.9	
UG1	2020-05-09 15:15	235	1910	188.8	6.95	1620	125	15.6	77.4	0.382	7.72	4.83	910	12.2	
UG1	2020-06-01 11:30	259	2060	155.2	7.51	1730	134		68.9	0.346	14.6	9.82	934	10.3	
UG1	2020-07-05 13:30	239	2010	196.5	7.15	1630	24.4	11.7	95.2	0.425	14.5	9.02	911	11	
UG1	2020-08-10 14:30	259	2080	215.9	7.5	1630	90.7	9.1	93.1	0.503	13.7	7.86	925	10.6	
UG1	2020-09-15 15:00	239	1850	157	8.53	1780	57.7	10.9	74.8	0.425	13	0.158	1000	10	
UG1	2020-10-16 17:30	236	2280	220.9	6.83	2010	25.4	10.5	72.3	0.373	18.6	11.9	1160	13.1	
UG1	2020-11-15 15:30	236	2230	217.7	7.42	2000	10.1	7.3	87.4	0.492	21.5	12.7	1170	9.91	
UG1	2020-12-20 15:00	232	2020	154.9	7.82	1720	58.4	8.9	67.5	0.423	13.8	7.47	960	9.45	
UG1	2021-01-17 16:30	252	2470	138.3	8.04	2130	46.2	6.4	79.1	0.51	23.1	12.6	1240	11.2	
UG1	2021-02-02 8:30	213	2070	183.6	7.41	1680	113	10	72.9	0.479	15.5	8.42	954	8.78	
UG1	2021-03-15 11:35	251	2290	63.2	7.42	1880	126	9.1	90.7	0.488	19.8	14	888	9.46	
UG1	2021-04-06 15:45	244	2180			1880	218			0.417	16.8	9.11	1080	13.5	
UG1	2021-04-26 15:00														
UG1	2021-05-04 15:50	236	2010	162.6	7.54	1560	131	9.3	79.3	0.376	13.3	7.59	873	9.92	
UG1	2021-06-28 12:00	210	2090	197.5	6.73	1780	109	0.9	101.6	0.368	8.86	4.29	1070	16.8	
UG1	2021-07-23 16:00	220	2080	127.7	7.96	1700	301	13.8	75	0.379	12.5	6.22	1000	15.2	
UG1	2021-08-14 14:25	198	1970	128.9	7.97	1610	157	13.9	80	0.392	7.72	3.49	971	14.8	
UG1	2021-09-11 16:30	194	1920	114.9	8.02	1560	959	12.8	75.2	0.335	5.74	2.53	949	13.2	
UG1	2021-10-09 15:45	207	2070	75.3	8.23	1640	511	9.8	83.1	0.333	9.16	4.37	971	15.2	
UG1	2021-11-09 11:00	230	2050	58.8	7.94	1710	110	7.4	74.1	0.315	7.71	4.08	978	15.7	
UG1	2021-12-18 12:00	241	2210			1830	196			0.382	6.89	3.62	1120	17.9	
UG4	2018-06-30 15:10	147	2180	132.9	7.62	1830	995	11.5	84.9	0.642	25.9	15.1	1060	19.9	
UG4	2018-07-31 8:20	167	1750	144.4	8.05	1400	1230	10.7	106.4	0.26	3.04	1.67	848	20.6	
UG4	2018-08-24 10:05	166	1930	129.3	7.85	1540	68.6	11.8	104.9	0.36	4.35	2.44	935	21.9	
UG4	2018-09-24 15:05	177	2080	160.2	7.93	1830	438	13	20.3	0.517	5.23	2.78	1120	23	
UG4	2018-10-25 9:45	172	1730	165.3	8.09	1370	46.2	11.3	102	0.115	0.735	0.175	829	24.8	
UG4	2018-11-10 15:15	185	1730	192.5	7.98	1380	10.4	10.4	86.7	0.098	0.563	0.115	830	24.5	
UG4	2018-12-18 16:20	183	1820	229.7	8.09	1430	7.2	10.6	99.3	0.066	0.439	0.097	876	26	
UG4	2019-01-15 10:40	195	1840	113	7.86	1490	7.4	6.8	89.8	0.051	0.367	0.0823	916	26.8	
UG4	2019-02-11 9:25	183	1800	251	7.03	1520	15.3	7.6	107.2	0.033	0.328	0.0779	925	27.4	
UG4	2019-03-11 15:00	195	1800	182.2	8.06	1540	9.4	7.4	94.2	0.03	0.338	0.0632	933	27	
UG4	2019-04-09 10:15	180	1820	155	8.08	1480	11.3	7.5	93.6	0.021	0.258	0.0569	913	26.8	
UG4	2019-05-27 8:00	195	1920	148.7	7.85	1580	5.5	9.4	101.5	0.013	0.258	0.0645	911	26.3	
UG4	2019-06-24 15:25	152	1860	134.4	8.14	1510	3	10	115.8	0.02	0.457	0.122	933	25.8	
UG4	2019-07-15 10:41	156	1810	148.8	8.48	1500	3.6	9.7	90.8	0.016	0.476	0.064	928	25	
UG4	2019-08-05 11:30	172	1840	100.3	8.03	1480	4.3	8.9	96.5	0.01	0.364	0.0573	916	26.7	
UG4	2019-09-09 9:20	180	1900	130.2	8.02	1460	9.5	7.8	86.3	0.03	0.474	0.0556	895	25.6	
UG4	2019-10-22 10:00	187	1920	188.5	8.03	1560	160	5.4	84.5	0.075	1.09	0.386	945	25.7	
UG4	2019-11-10 9:50	197	1990	203	7.91	1630	160	8.8	85.8	0.14	4.37	1.55	967	25.7	
UG4	2019-12-30 12:40	201	2630	179.6	7.85		458	9.2	83.6	0.454	40.2	31.8	1370	26.6	
UG4	2020-01-13 15:10	198	2660	127.7	7.68	2240	3.3	0	94.2	4.6	5.38	4.47	1360	24.6	
UG4	2020-02-17 11:35	166	2490	150.3	7.67	2240	123	7.8	90.8	0.335	4.73	3.08	1380	26.9	1.23
UG4	2020-03-22 9:45	210	2270	195.1	6.93	1970	126	7.8	88.6	0.229	4.34		1230	26.3	
UG4	2020-04-27 7:40	195	2290	176.1	7.29	1890	92.6	9.3	79.5	0.188	4.21	2.51	1180	24.2	
UG4	2020-05-04 16:50	203	2260	208.2	7.11	1930	110	10.9	82.6	0.164	2.29	1.72	1190	24.9	
UG4	2020-06-01 15:50	192	2630	155.6	7.58	2220	319	11.1	87.6	0.302	3.92	3.62	1440	20.6	
UG4	2020-07-06 15:40	195	2380	203.4	7.86	2080	86.8	11.3	76.3	0.256	5.76	3.1	1280	24.5	
UG4	2020-08-02 13:30	187	2600	169.5	7.71	2260	158	12.4	80.2	0.405	21.1	12.7	1390	24.7	
UG4	2020-09-03 14:00	173	2460	203.2	7.54	2200	557	11.8	92	0.298	5.98	3.97	1380	22.9	
UG4	2020-10-24 15:40	199	2270	192.2	6.69	2010	118	8.9	87.6	0.152	4.08	2.29	1230	23.4	
UG4	2020-11-23 8:30	164	2020	89.4	7.48	2070	494	10.4	75.9	0.135	4.8	1.88	1280	25.6	
UG4	2020-12-21 11:00	216	2150	210.6	7.67	2000	47.6	7.7	89.6	0.111	2.84	0.876	1230	26.1	
UG4	2021-01-16 16:10	210	2380	243.8	7.64	2110	6.4	8.6	87.3	0.132	4	1.51	1320	26.2	
UG4	2021-02-04 7:20	228	2310	179.5	7.63	1990	11.6	8.1	92	0.144	2.64	0.778	1220	26.8	
UG4	2021-03-15 10:55	180	2770	71.5	7.53	2620	30.9	6.9	103	4.69	9.23	7.34	1620	28.9	
UG4	2021-04-18 9:30	198	2140			1850	138			0.293	5.79	2.98	1130	23.1	
UG4	2021-04-26 7:15														
UG4	2021-05-22 10:10	179	2130	18.8	7.51	1800	12.3	10	94.2	0.225	5.21	3.38	1060	18.5	
UG4	2021-06-07 16:10	206	2180	178.9	7.67	1920	6.4	10.1	120	0.278	5.23	2.32	1210	23.6	
UG4	2021-07-17 9:40	205	2150	159.9	7.79	1820	44.6	10.8	120	0.204	10.2	5.31	1070	20.1	
UG4	2021-08-14 15:15	199	2060	157.5	7.99	1690	24.1	11	86.6	0.238	6.57	3.04	1030	18.4	
UG4	2021-09-11 15:35	202	2030	130.6	8.02	1680	14	10.7	90	0.223	6.04	2.84	1020	17.7	
UG4	2021-10-09 15:30	208	2170	86.7	8	1750	14.5	9.3	87	0.231	9.94	5.06	1040	19	
UG4	2021-11-03 11:40	217	2230	106	7.85	1800	11.8	9.4	108.7	0.286	13.3	6.85	1040	19.3	
UG4	2021-12-28 15:00	233	2180	97.7	7.58	1800	9.9	8.9	114.5	0.295	6.5	3.49	1110	19.4	
UG4	2022-01-26 13:00	238	2230			1860	4.8			0.236	8.1	4.1	1110	19.7	
W12	2007-05-19 0:00	201	1430			1100	66			6.38	100	10.8	18	1.3	
W12	2007-06-20 0:00	238	1320			1050	34			8.78	66	8.17	262	1.9	
W12	2007-06-27 0:00														
W12	2007-08-01 0:00														
W12	2007-08-12 0:00		979			718				3.87	41			1.6	
W12	2007-10-23 0:00	132	947			636	2			0.97	35.1	9.91	244	1.62	
W12	2007-10-30 0:00	126	813			556	2			0.48	20.4	8.66	221	0.96	
W12	2007-11-27 0:00	142	721		7.44	530	2	0.1		0.34	19.3	5.47	196	1.63	
W12	2007-12-18 0:00	140	659		8.17	572	2	1		0.14	9.8		239	0.95	
W12	2008-01-15 0:00	116	788			602	6			0.18	9.95	3.43	290	0.84	
W12	2008-01-16 0:00		788		8.25	602	6	3.4		0.18	9.95	3.43		0.84	
W12	2008-02-13 0:00	214	1490		7.6	1090	2	0.7		3	68	16.3	282	1.87	
W12	2008-04-22 0:00	111	398			294	19			0.5	5.77	2.16	79.5	1.71	
W12	2008-05-07 0:00														
W12	2008-05-13 0:00														
W12	2008-05-20 0:00	70	320		7.9	286	14	7.9		0.73	5.75	2.02	52.2	1.18	
W12	2008-05-27 0:00														
W12	2008-06-18 0:00	83	389		7.85	300	19	13.8		0.4	7.28	1.73	74.2	1.24	
W12	2008-06-27 0:00									0.35	7.88				
W12	2008-07-22 0:00	80	544		8.1	458	15	14.2		0.19	10.6	1.68	141	1.39	
W12	2008-09-18 0:00	91	401			352	44			0.06	6.68	1.11	84.7	1.63	
W12	2008-11-18 0:00	184	796		8.5	626	27	0.3				0.71	221	2.01	
W12	2009-02-02 0:00	158	1030		6.88	776	16	2.1					298	0.96	
W12	2009-04-21 0:00	131	710		8.1	458	40	2.8					98.2	4.84	
W12	2009-05-02 0:00	39	146			140	251						14.8	1.05	
W12	2009-05-03 0:00	136	335			252	25			0.132	2.9			1.6	
W12	2009-05-05 0:00	45	184			136	157						20.8	1.1	
W12	2009-06-03 0:00				7.85			20.5							
W12	2009-07-13 0:00														
W12	2009-07-19 9:30	66	326			190	4			0.057	6.4	1.09	43	16	0.3
W12	2009-09-21 0:00	80	449			304	2				8.04		63.3	32.4	
W12	2009-11-05 0:00				6.97			1.9							

Station	Date / Time	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
		Dissolved Elements																			
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
UG1	2018-12-18 16:00	0.000014	0.0048	0.00071	0.0172	0.296	0.00002	0.00005	346	0.000341	0.00042	0.0001	0.0683	0.01	0.0000061	7.7	0.0093	40.8	0.114	0.0177	71.5
UG1	2019-01-18 12:00	0.00001	0.0035	0.00319	0.0257	0.145	0.00002	0.00005	160	0.0000617	0.00021	0.0002	0.158	0.01	0.000005	6.08	0.0095	51.5	0.0514	0.0151	35.6
UG1	2019-02-11 8:30	0.00001	0.0027	0.00068	0.0172	0.293	0.00002	0.00005	376	0.000368	0.00045	0.00017	0.0987	0.01	0.000005	6.95	0.0098	44.6	0.132	0.0161	79.5
UG1	2019-03-11 16:10	0.00001	0.0025	0.00057	0.016	0.286	0.00002	0.00005	375	0.000449	0.00044	0.0001	0.116	0.01	0.000005	7.11	0.0089	41.5	0.132	0.0153	73.6
UG1	2019-04-09 10:10	0.00002	0.0035	0.00055	0.0161	0.285	0.00004	0.0001	347	0.000307	0.00046	0.0002	0.0798	0.02	0.000005	7.11	0.0087	44.3	0.127	0.0168	75.5
UG1	2019-05-27 7:20	0.00001	0.0024	0.00069	0.0146	0.239	0.00002	0.00005	336	0.000355	0.00042	0.0001	0.0783	0.011	0.000005	6.89	0.0088	47.2	0.128	0.0159	73.2
UG1	2019-06-25 11:30	0.00001	0.0098	0.00057	0.0155	0.255	0.00002	0.00005	336	0.000401	0.00046	0.0001	0.0685	0.017	0.000005	7.84	0.0077	45.7	0.14	0.0145	75.8
UG1	2019-07-16 7:20	0.00001	0.0066	0.00055	0.0138	0.272	0.00002	0.00005	347	0.000401	0.00047	0.0001	0.0672	0.01	0.000005	7.66	0.0091	46.4	0.132	0.0154	75.3
UG1	2019-08-17 11:30	0.00002	0.0034	0.00048	0.0153	0.284	0.00004	0.0001	329	0.000385	0.00049	0.0002	0.0622	0.02	0.000005	7.01	0.009	49.2	0.141	0.0159	75.8
UG1	2019-09-16 14:30	0.00002	0.0036	0.00042	0.017	0.263	0.00004	0.0001	361	0.000732	0.00055	0.0002	0.0902	0.02	0.000005	7.48	0.0088	45	0.128	0.0155	69.5
UG1	2019-10-22 15:40	0.00002	0.0089	0.00066	0.0205	0.294	0.00004	0.0001	358	0.000493	0.00045	0.00029	0.0502	0.02	0.000005	8.3	0.0092	44	0.183	0.0187	81.3
UG1	2019-11-25 13:50	0.00001	0.0094	0.00063	0.024	0.281	0.00002	0.00005	368	0.000479	0.00046	0.0001	0.033	0.01	0.000005	8.55	0.0096	45.5	0.194	0.0203	84.4
UG1	2019-12-30 12:25	0.00002	0.0609	0.001	0.0288	0.337	0.00004	0.0001	384	0.00011	0.00043		0.0133	0.02	0.000005	12.3	0.0115	50.8	0.18	0.0198	83.3
UG1	2020-01-25 15:15	0.00001	0.0046	0.00155	0.027	0.311	0.00002	0.00005	306	0.0000238	0.00039	0.0001	0.00368	0.01	0.000005	9.04	0.0117	47.2	0.136	0.0147	79.7
UG1	2020-02-21 15:00	0.00002	0.0081	0.00138	0.0327	0.256	0.00004	0.0001	336	0.000015	0.00049	0.0002	0.00746	0.02	0.000005	7.86	0.0131	55.8	0.138	0.0165	79.1
UG1	2020-03-21 15:00	0.00001	0.0072	0.00142	0.0325	0.29	0.00002	0.00005	286	0.00001	0.00049	0.0001	0.00379	0.01	0.000005	8.47	0.0124	53.7	0.111	0.0134	78.5
UG1	2020-04-26 14:00	0.00001	0.0118	0.00108	0.0265	0.262	0.00002	0.00005	288	0.00002	0.00048	0.00016	0.00464	0.01	0.000005	8.42	0.0122	52.5	0.0985	0.0147	70.6
UG1	2020-05-09 15:15	0.00001	0.0644	0.00112	0.0323	0.276	0.00002	0.00005	348	0.0000349	0.00056	0.00108	0.00493	0.01	0.000005	9.94	0.016	54.5	0.119	0.0153	84.6
UG1	2020-06-01 11:30	0.00001	0.0088	0.00109	0.031	0.363	0.00002	0.00005	382	0.000102	0.00057	0.00016	0.00856	0.01	0.000005	9.74	0.0158	56.7	0.13	0.0144	85.6
UG1	2020-07-05 13:30	0.00001	0.0103	0.00092	0.0283	0.364	0.00002	0.00005	319	0.0000508	0.00053	0.00018	0.0114	0.01	0.000005	8.85	0.0143	54	0.112	0.0141	83.6
UG1	2020-08-10 14:30	0.00001	0.0098	0.00111	0.0317	0.363	0.00002	0.00005	297	0.00001	0.00066	0.0001	0.00364	0.01	0.000005	9.1	0.0152	53	0.0823	0.0142	88.4
UG1	2020-09-15 15:00	0.00001	0.0081	0.00099	0.0299	0.363	0.00002	0.00005	380	0.000106	0.00082	0.00014	0.0217	0.01	0.000005	9.84	0.0155	59.8	0.11	0.0143	95.2
UG1	2020-10-16 17:30	0.00002	0.0098	0.00091	0.0329	0.415	0.00004	0.0001	398	0.0000494	0.00108	0.0002	0.0117	0.02	0.000005	10.3	0.016	62.3	0.149	0.0174	97.2
UG1	2020-11-15 15:30	0.00002	0.0066	0.00064	0.03	0.427	0.00004	0.0001	387	0.00009	0.00088	0.0002	0.0205	0.02	0.000005	10.7	0.0178	61.7	0.123	0.018	91.1
UG1	2020-12-20 15:00	0.00001	0.0071	0.00079	0.0307	0.384	0.00002	0.00005	351	0.0000257	0.00119	0.00023	0.0103	0.01	0.000005	10.2	0.0172	69.7	0.124	0.0142	89.4
UG1	2021-01-17 16:30	0.00002	0.0079	0.0007	0.0336	0.491	0.00004	0.0001	420	0.000035	0.00092	0.0002	0.00579	0.02	0.000005	11.8	0.0192	66.2	0.15	0.0195	95.3
UG1	2021-02-02 8:30	0.00002	0.0095	0.00075	0.0358	0.378	0.00004	0.0001	313	0.000137	0.00089	0.00029	0.0123	0.02	0.000005	12.4	0.0185	74.5	0.114	0.0154	90.3
UG1	2021-03-15 11:35	0.00002	0.0094	0.00065	0.035	0.443	0.00004	0.0001	327	0.000033	0.00073	0.0002	0.0062	0.02	0.000005	11.6	0.0219	69.4	0.162	0.0208	88
UG1	2021-04-06 15:45	0.00002	0.011	0.00078	0.0342	0.456	0.00004	0.0001	348	0.000147	0.00077	0.0002	0.0146	0.02	0.000005	12.8	0.0188	71.8	0.262	0.022	98.9
UG1	2021-04-26 15:00																				
UG1	2021-05-04 15:50	0.00002	0.0044	0.00077	0.0224	0.361	0.00004	0.0001	306	0.000297	0.00332	0.001	0.031	0.02	0.000005	9.41	0.0136	59	0.218	0.0162	72.1
UG1	2021-06-28 12:00	0.00002	0.0139	0.00079	0.031	0.309	0.00004	0.0001	320	0.000033	0.00083	0.001	0.0211	0.02	0.000005	12.8	0.0175	70.5	0.174	0.022	96.9
UG1	2021-07-23 16:00	0.00002	0.0118	0.00087	0.0353	0.356	0.00004	0.0001	294	0.000182	0.00056	0.001	0.00783	0.02	0.000005	12.9	0.0187	71.8	0.19	0.0199	93.8
UG1	2021-08-14 14:25	0.00002	0.0167	0.00075	0.0283	0.246	0.00004	0.0001	284	0.000106	0.00051	0.001	0.0172	0.02	0.000005	9.6	0.015	69.2	0.157	0.0172	82.5
UG1	2021-09-11 16:30	0.00002	0.0163	0.00066	0.0254	0.244	0.00004	0.0001	287	0.000168	0.00054	0.001	0.0106	0.02	0.000005	9.92	0.0158	60.2	0.149	0.018	76.1
UG1	2021-10-09 15:45	0.00002	0.0122	0.00082	0.0261	0.194	0.00004	0.0001	293	0.0000884	0.00169	0.001	0.0189	0.02	0.000005	10.2	0.017	73.8	0.15	0.0176	84.9
UG1	2021-11-09 11:00	0.00002	0.0112	0.00072	0.0277	0.215	0.00004	0.0001	328	0.000237	0.00312	0.001	0.0318	0.02	0.000005	12	0.016	77.7	0.209	0.0189	97.6
UG1	2021-12-18 12:00	0.00002	0.0116	0.00077	0.0304	0.236	0.00004	0.0001	315	0.000233	0.00063	0.001	0.026	0.02	0.000005	11.5	0.0161	71.2	0.267	0.0233	96.5
UG4	2018-06-30 15:10	0.00001	0.0105	0.00134	0.0367	0.456	0.00002	0.00005	376	0.0000437	0.00058	0.0001	0.00167	0.037	0.000005	8.29	0.0116	37.8	0.0715	0.024	106
UG4	2018-07-31 8:20	0.000014	0.0139	0.00103	0.0326	0.183	0.00002	0.00005	293	0.0000398	0.00027	0.0001	0.00496	0.01	0.000005	6.51	0.0093	35.8	0.0681	0.0231	78.6
UG4	2018-08-24 10:05	0.00001	0.0068	0.00095	0.0219	0.228	0.00002	0.00005	331	0.0000773	0.00031	0.0001	0.029	0.01	0.000005	5.74	0.0107	42.1	0.0891	0.0199	85.3
UG4	2018-09-24 15:05	0.00002	0.0154	0.00101	0.0383	0.275	0.00004	0.0001	411	0.000041	0.00072	0.00023	0.00288	0.02	0.000005	8.88	0.0113	45	0.145	0.0241	87.8
UG4	2018-10-25 9:45	0.000018	0.0027	0.00094	0.0177	0.131	0.00002	0.00005	298	0.000175	0.00024	0.0001	0.0597	0.01	0.000005	4.57	0.0086	44	0.0821	0.0191	64.5
UG4	2018-11-10 15:15	0.00001	0.0022	0.00097	0.0156	0.12	0.00002	0.00005	299	0.000234	0.00029	0.0001	0.0753	0.01	0.000005	4.41	0.0076	46.1	0.091	0.0182	65.5
UG4	2018-12-18 16:20	0.000011	0.0053	0.00097	0.0154	0.128	0.00002	0.00005	307	0.000183	0.00021	0.0001	0.0451	0.014	0.0000055	4.1	0.0083	42.7	0.0913	0.0184	61.5
UG4	2019-01-15 10:40	0.000017	0.001	0.00107	0.0143	0.134	0.000022	0.00005	307	0.000205	0.00024	0.0001	0.047	0.01	0.000005	4.32	0.0075	47	0.105	0.0168	69.5
UG4	2019-02-11 9:25	0.00001	0.0013	0.00116	0.0149	0.138	0.00002	0.00005	326	0.000209	0.00024	0.0001	0.0394	0.01	0.000005	4.27	0.0086	50.5	0.111	0.0176	74.2
UG4	2019-03-11 15:00	0.00001	0.0012	0.00111	0.0142	0.141	0.00002	0.00005	334	0.000161	0.00022	0.0001	0.0277	0.01	0.000005	4.32	0.0082	51	0.111	0.0168	72.4
UG4	2019-04-09 10:15	0.00002	0.002	0.00105	0.0143	0.13	0.00004	0.0001	302	0.000103	0.00024	0.0002	0.02	0.02	0.000005	4.25	0.0078	52	0.109	0.0173	73
UG4	2019-05-27 8:00	0.00001	0.001	0.00109	0.0135	0.138	0.00002	0.00005	349	0.00015	0.00021	0.0001	0.0259	0.051	0.000005	4.42	0.0092	53.6	0.114	0.0161	72
UG4	2019-06-24 15:25	0.00001	0.0027	0.00084	0.0135	0.13	0.00002	0.00005	314	0.000192	0.00021	0.0001	0.0276	0.01	0.000005	5.07	0.0071	56.3	0.122	0.0153	78.8
UG4	2019-07-15 10:41	0.000021	0.0012	0.00086	0.0134	0.144	0.00002	0.00005	310	0.00012	0.0002	0.0001	0.0235	0.01	0.000005	4.63	0.0088	55.1	0.112	0.0156	81.8
UG4	2019-08-05 11:30	0.00002	0.0032	0.00069	0.0129	0.124	0.00004	0.0001	303	0.000163	0.0002	0.0002	0.0249	0.02	0.000005	4.22	0.0072	54.9	0.12	0.0157	70.7
UG4	2019-09-09 9:20	0.00002	0.0058	0.00066	0.0141	0.136	0.00004	0.0001	306	0.000133	0.00022	0.00037	0.0242	0.02	0.000005	4.23	0.0076	54.7	0.12	0.0155	68.3
UG4	2019-10-22 10:00	0.00002	0.0146	0.00055	0.0184	0.151	0.00004	0.0001	334	0.000258	0.00029	0.00038	0.0425	0.02	0.0000057	5.21	0.0079	52.8	0.146	0.0177	77.2
UG4	2019-11-10 9:50	0.000025	0.0093	0.0006	0.0241	0.167	0.00002	0.00005	344	0.000177	0.00036	0.00022	0.0149	0.01	0.000005	7.54	0.008	60.1	0.157	0.0199	86.4
UG4	2019-12-30 12:40	0.00002	0.0149	0.0006	0.0292	0.38	0.00004	0.0001	468	0.000128	0.00044		0.00545	0.02	0.000005	8.15	0.0086	61	0.204	0.019	94.1
UG4	2020-01-13 15:10	0.00002	0.0052	0.00034	0.0651	0.353	0.00004	0.0001	448	0.000035	0.00089	0.0002	0.00259	0.02	0.000005	34.8	0.0161	75.7	0.572	0.0512	118
UG4	2020-02-17 11:35	0.00002	0.0053	0.00053	0.0234	0.216	0.00004	0.0001	536	0.000172	0.00044	0.0002	0.052	0.02	0.000005	6	0.009	64.6	0.238	0.0184	82.6
UG4	2020-03-22 9:45	0.00002	0.005	0.00054	0.0217	0.241	0.00004	0.0001	397	0.000271	0.00037	0.0002	0.0986	0.02	0.000005	6.18	0.0093	56	0.192	0.0181	87.9
UG4	2020-04-27 7:40	0.00002	0.0082	0.00065	0.0199	0.194	0.00004	0.0001	386	0.000254	0.0004	0.0002	0.095	0.02	0.000005	6.03	0.0091	56	0.173	0.0174	79.4
UG4	2020-05-04 16:50	0.00002	0.0167	0.00061	0.0244	0.163	0.00004	0.0001	413	0.000236	0.00059	0.0002	0.0482	0.02	0.000005	6.48	0.0108	59.5	0.176	0.02	81.2
UG4	2020-06-01 15:50	0.00002	0.0103	0.00056	0.0185	0.313	0.00004	0.0001	455	0.0000715	0.00046	0.0002	0.00807	0.02	0.000005	6.74	0.0107	56.3	0.176	0.0202	87.7
UG4	2020-07-06 15:40	0.00002	0.0077	0.00059	0.0213	0.248	0.00004	0.0001	447	0.000342	0.00044	0.0002	0.122	0.02	0.000005	6.54	0.0111	59.7	0.193	0.0201	93.8
UG4	2020-08-02 13:30	0.00002	0.0117	0.00067	0.0262	0.404	0.00004	0.0001	439	0.000256	0.00071	0.0002	0.0426	0.02	0.000005	8.47	0.0134	54.1	0.193	0.0221	99.5
UG4	2020-09-03 14:00	0.00002	0.0088	0.00065	0.0222	0.278	0.00004	0.0001	471	0.000255	0.00064	0.0002	0.093	0.02	0.000005	8.4	0.0113	61.3	0.208	0.0192	99.3
UG4	2020-10-24 15:40	0.00002	0.009	0.00062	0.0221	0.196	0.00004	0.0001	430	0.000508	0.00076	0.0002	0.128	0.02	0.000005	6.97	0.0098	65.8	0.259	0.0177	91.9
UG4	2020-11-23 8:30	0.00002	0.005	0.0005	0.0201	0.203	0.00004	0.0001	458	0.000876	0.00087	0.0002	0.236	0.02	0.000005	6.3	0.0089	66	0.231	0.0167	92.5
UG4	2020-12-21 11:00	0.00002	0.005	0.00033	0.0209	0.165	0.00004	0.0001	430	0.000694	0.00065	0.0002	0.243	0.02	0.000007	6.21	0.0087	67.6	0.232	0.0167	79
UG4	2021-01-16 16:10	0.00002	0.0025	0.00037	0.0204	0.211	0.00004	0.0001	440	0.000899	0.00076	0.0002	0.296	0.02	0.0000052	7.24	0.0105	64	0.227	0.0192	89.1
UG4	2021-02-04 7:20	0.00002	0.0034	0.00047	0.022	0.186	0.00004	0.0001	406	0.000833	0.00084	0.0002	0.31	0.02	0.000005	7.68	0.0094	65.9	0.289	0.0188	92.1
UG4	2021-03-15 10:55	0.00002	0.006	0.00034	0.0743	0.334	0.00004	0.0001	447	0.000015	0.00022	0.0002	0.00137	0.062	0.000005	34	0.0126	57	0.506	0.0427	99.1
UG4	2021-04-18 9:30	0.00002	0.0073	0.00061	0.0249	0.228	0.00004	0.0001	366	0.000423	0.00066	0.0002	0.148	0.02	0.000005	8	0.0137	64.1	0.18	0.0182	92.5
UG4	2021-04-26 7:15																				
UG4	2021-05-22 10:10	0.00002	0.0069	0.00067	0.0254	0.261	0.00004	0.0001	373	0.000362	0.0008	0.001	0.154	0.02	0.000005	9.59	0.0154	82.2	0.186	0.0202	99.2
UG4	2021-06-07 16:10	0.00002	0.0078	0.00054	0.0238	0.239	0.00004	0.0001	347	0.00038	0.00066	0.001	0.159	0.02	0.000005	10.6	0.0153	67.7	0.196	0.0201	89.8
UG4	2021-07-17 9:40	0.00002	0.0073	0.00068	0.0251	0.258	0.00004	0.0001	354	0.000396	0.00066	0.001	0.12	0.02	0.000005	8.51	0.0144	75.4	0.16	0.0176	92.6
UG4	2021-08-14 15:15	0.00002	0.0077	0.00056	0.0239	0.21	0.00004	0.0001	302	0.00033	0.00054	0.00126	0.117	0.02	0.000005	8	0.014	73	0.129	0.0166	86
UG4	2021-09-11 15:35	0.00002	0.0084	0.00056	0.026	0.188	0.00004	0.0001	305	0.000338	0.00056	0.001	0.123	0.02	0.000005	8.49	0.0157	74.8	0.144	0.0179	85
UG4	2021-10-09 15:30	0.00002	0.0061	0.00055	0.0266	0.176	0.00004	0.0001	312	0.000374	0.00055	0.001	0.102	0.02	0.000005	9.1	0.0162	80.9	0.175	0.0169	92.9
UG4	2021-11-03 11:40	0.00002	0.0079	0.0005	0.0281	0.163	0.00004	0.0001	346	0.000371	0.00052	0.001	0.122	0.02	0.000005	9.65	0.0156	81.7	0.162	0.0175	90.3
UG4	2021-12-28 15:00	0.00002	0.0073	0.0005	0.0247	0.183	0.00004	0.0001	311	0.000412	0.00054	0.001	0.122	0.02	0.000005	8.47	0.0148	75.1	0.175	0.0183	82.9
UG4	2022-01-26 13:00	0.00002	0.0072	0.00055	0.0256	0.18	0.00004	0.0001	350	0.00127	0.00055	0.0005	0.119	0.02	0.000005	9.24	0.0143	81	0.188	0.0204	83.4
W12	2007-05-19 0:00	0.0002	0.005	0.0005	0.087	0.216	0.0001	0.0005	178	0.00005	0.0019	0.0011	0.099	0.01	0.0001	10.4	0.03	43.4	0.36	0.016	20.1
W12	2007-06-20 0:00																				
W12	2007-06-27 0:00																				
W12	2007-08-01 0:00																				
W12	2007-08-12 0:00	0.0001	0.013	0.001	0.074	0.233	0.0001	0.0005	129	0.00049	0.0015	0.0005	0.141	0.02	0.0001	10.1	0.009	29	0.538	0.024	32.9
W12	2007-10-23 0:00																				
W12	2007-10-30 0:00																				
W12	2007-11-27 0:00																				
W12	2007-12-18 0:00																				
W12	2008-01-15 0:00																				
W12	2008-01-16 0:00																				
W12	2008-02-13 0:00																				
W12	2008-04-22 0:00																				
W12	2008-05-07 0:00																				
W12	2008-05-13 0:00		0.05	0.0016	0.054	0.03	0.00004		23.4	0.00008	0.00019	0.0006	0.15	0.12	0.0002	1.46	0.001	5.8	0.0505	0.0174	7.01
W12	2008-05-20 0:00		0.04	0.003	0.048	0.04	0.00004		33.5	0.00009	0.00036	0.0011	0.217	0.15	0.0001	2.75	0.002	7.8	0.0672	0.0226	9.99
W12	2008-05-27 0:00		0.0016	0.0021	0.049	0.075	0.00004		36.6	0.00012	0.00027	0.0013	0.318	0.14	0.0001	3	0.002	8.52	0.0763	0.0217	11
W12	2008-06-18 0:00	0.00002	0.04	0.0015	0.05	0.051	0.00004		46.8	0.00017	0.00024	0.001	0.318	0.09	0.0001	4.42	0.003	0.0798	0.0798	0.0262	13.8
W12	2008-06-27 0:00	0.00001	0.03	0.0014	0.053	0.062	0.00005		50.6	0.00019	0.00027	0.0025	0.396	0.09	0.00001	3.36	0.003	11.8	0.093	0.026	15.1
W12	2008-07-22 0:00																				
W12	2008-09-18 0:00	0.00001	0.051	0.0011	0.072	0.038	0.00004		42.4	0.00009	0.0004	0.0007	0.217	0.1	0.0001	3.56	0.003	11.3	0.107	0.0211	14.5
W12	2008-11-18 0:00																				
W12	2009-02-02 0:00	0.00001	0.005	0.0004	0.13	0.071	0.00004	0.0001	152	0.00025	0.00061	0.0004	0.126	0.01	0.00001	5.2	0.005	37.9	0.382	0.0407	30.3
W12	2009-04-21 0:00																				
W12	2009-05-02 0:00	0.00001	0.032	0.0007	0.045	0.012	0.00004	0.0001	19.5	0.00005	0.00025	0.0004	0.077	0.12	0.00001	2.9	0.001	4.61	0.0841	0.00492	4.5
W12	2009-05-03 0:00	0.00001	0.005	0.001	0.036	0.014	0.0001	0.0005	62.6	0.00001	0.0001	0.0005	0.117	0.02	0.0001	4.6	0.001	0.2	0.005	0.006	4.3
W12	2009-05-05 0:00	0.00001	0.034	0.001	0.05	0.019	0.00004	0.0001	24.9	0.00004	0.00026	0.0004	0.081	0.15	0.00001	2.6	0.002	5.82	0.0951	0.0074	5.8
W12	2009-06-03 0:00																				
W12	2009-07-13 0:00	0.00002	0.075	0.0009	0.121	0.05	0.0001	0.001	34.2	0.00003	0.0005	0.001	0.0276	0.101	0.00002	3.06	0.005	8.3	0.098	0.016	10.3
W12	2009-07-19 9:30	0.00002	0.07	0.0008	0.127	0.05	0.0001	0.001	35.6	0.00003	0.0005	0.001	0.0191	0.07	0.00002	3.1	0.005	8.59	0.11	0.017	11.4
W12	2009-09-21 0:00	0.00001	0.021	0.0003	0.143	0.032	0.00004	0.001	50.1	0.00001	0.00027	0.0004	0.001	0.01	0.00001	3.5	0.002	12.7	0.336	0.017	18.1
W12	2009-11-05 0:00																				

Station	Date / Time	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
UG1	2018-12-18 16:00	0.00061	0.00005	0.00014	353	0.00148	7.18	0.0001	8.51	0.0003	0.00001	0.0101	0.00052	0.0124	0.0003
UG1	2019-01-18 12:00	0.00057	0.00005	0.0003	162	0.00226	8.48	0.0001	3.74	0.0003	0.00001	0.0045	0.0005	0.0174	0.0003
UG1	2019-02-11 8:30	0.0007	0.00005	0.00012	362	0.00136	7.15	0.0001	8.61	0.0003	0.00001	0.0104	0.0005	0.0854	0.0003
UG1	2019-03-11 16:10	0.00059	0.00005	0.00013	366	0.0016	7.17	0.0001	8.06	0.0003	0.00001	0.0105	0.0005	0.0634	0.0003
UG1	2019-04-09 10:10	0.001	0.0001	0.0002	352	0.00148	6.6	0.0002	9.17	0.0006	0.00002	0.0111	0.001	0.0353	0.0003
UG1	2019-05-27 7:20	0.0005	0.00005	0.00011	340	0.00159	6.77	0.0001	8.68	0.0003	0.00001	0.00916	0.0005	0.0319	0.0003
UG1	2019-06-25 11:30	0.0005	0.00005	0.00011	375	0.00144	7.17	0.0001	8.86	0.0006	0.00001	0.00996	0.0005	0.0243	0.0003
UG1	2019-07-16 7:20	0.0005	0.00005	0.00012	362	0.00166	7.29	0.0001	8.99	0.0003	0.00001	0.0104	0.0005	0.0231	0.0003
UG1	2019-08-17 11:30	0.001	0.0001	0.0002	355	0.00113	7.25	0.0002	8.98	0.0006	0.00002	0.00983	0.001	0.0243	0.0004
UG1	2019-09-16 14:30	0.001	0.0001	0.0002	349	0.0015	6.76	0.0002	8.68	0.0006	0.00002	0.00952	0.001	0.027	0.0004
UG1	2019-10-22 15:40	0.001	0.0001	0.0002	376	0.00114	7.03	0.0002	9.53	0.0006	0.00002	0.00978	0.001	0.0185	0.0004
UG1	2019-11-25 13:50	0.00097	0.00005	0.00014	408	0.00104	7.46	0.0001	9.79	0.00036	0.000012	0.00994	0.0005	0.0189	0.0003
UG1	2019-12-30 12:25	0.00142	0.0001	0.00039	415	0.00118	7.86	0.0002	9.42	0.0006	0.00002	0.00913	0.001	0.0051	0.0004
UG1	2020-01-25 15:15	0.00116	0.00005	0.00034	335	0.000654	7.92	0.0001	8.88	0.0003	0.000014	0.0093	0.0005	0.003	0.0002
UG1	2020-02-21 15:00	0.0012	0.0001	0.00024	293	0.000615	7.22	0.0002	10.1	0.0006	0.00002	0.00842	0.001	0.0023	0.0004
UG1	2020-03-21 15:00	0.00113	0.00005	0.00031	304	0.000639	7.2	0.0001	8.37	0.0003	0.000012	0.00729	0.0005	0.0011	0.0002
UG1	2020-04-26 14:00	0.00099	0.00005	0.00031	315	0.00088	7.64	0.0001	8.57	0.0003	0.000012	0.00758	0.00055	0.0014	0.0002
UG1	2020-05-09 15:15	0.00096	0.00005	0.00032	315	0.00096	7.94	0.0001	9.26	0.00047	0.000016	0.00749	0.00098	0.0029	0.0002
UG1	2020-06-01 11:30	0.00136	0.00005	0.00055	354	0.00123	7.77	0.0001	8.35	0.0003	0.000012	0.008	0.00052	0.0045	0.0002
UG1	2020-07-05 13:30	0.0015	0.00005	0.00051	315	0.000869	7.77	0.0001	7.95	0.0003	0.000012	0.0075	0.00055	0.002	0.0002
UG1	2020-08-10 14:30	0.00227	0.00005	0.00042	330	0.000784	7.82	0.0001	7.49	0.0003	0.000012	0.00781	0.0005	0.003	0.0002
UG1	2020-09-15 15:00	0.00202	0.00005	0.00051	350	0.000828	7.08	0.0001	8.94	0.0003	0.000014	0.00833	0.00067	0.006	0.0002
UG1	2020-10-16 17:30	0.00222	0.0001	0.0007	382	0.00114	7.23	0.0002	8.76	0.0006	0.000021	0.00909	0.001	0.0056	0.0004
UG1	2020-11-15 15:30	0.00212	0.0001	0.00069	418	0.000971	7.6	0.0002	8.1	0.0006	0.000021	0.00938	0.001	0.0055	0.0004
UG1	2020-12-20 15:00	0.0015	0.00005	0.0004	350	0.00112	7.77	0.0001	7.77	0.0003	0.000032	0.0109	0.00061	0.0027	0.0002
UG1	2021-01-17 16:30	0.00249	0.0001	0.00058	414	0.000699	6.88	0.0002	8.93	0.0006	0.000024	0.0103	0.001	0.0036	0.0004
UG1	2021-02-02 8:30	0.00274	0.0001	0.00038	349	0.00121	7.59	0.0002	7.76	0.0006	0.00002	0.0106	0.001	0.0071	0.0004
UG1	2021-03-15 11:35	0.00391	0.0001	0.00045	351	0.00119	6.5	0.0002	8.1	0.0006	0.00002	0.00935	0.001	0.0031	0.0004
UG1	2021-04-06 15:45	0.00334	0.0001	0.00038	393	0.00104	7.56	0.0002	9.24	0.0006	0.000023	0.0097	0.001	0.0059	0.0004
UG1	2021-04-26 15:00														
UG1	2021-05-04 15:50	0.00152	0.0001	0.00024	312	0.000919	7.74	0.0002	8.49	0.0006	0.00002	0.00894	0.001	0.0132	0.0004
UG1	2021-06-28 12:00	0.00188	0.0001	0.00034	408	0.00163	8.19	0.0002	8.75	0.0006	0.00002	0.00935	0.001	0.004	0.0004
UG1	2021-07-23 16:00	0.00237	0.0001	0.00041	352	0.00122	7.46	0.0002	9.11	0.0006	0.00002	0.00909	0.001	0.0066	0.0004
UG1	2021-08-14 14:25	0.0016	0.0001	0.00032	332	0.00153	7.3	0.0002	7.71	0.0006	0.000022	0.00868	0.001	0.0127	0.0004
UG1	2021-09-11 16:30	0.0015	0.0001	0.0003	336	0.00114	7.24	0.0002	8.25	0.0006	0.00002	0.00893	0.001	0.0172	0.0004
UG1	2021-10-09 15:45	0.00173	0.0001	0.00025	342	0.00134	6.66	0.0002	7.61	0.0006	0.00002	0.00918	0.001	0.0037	0.0004
UG1	2021-11-09 11:00	0.00179	0.0001	0.00025	362	0.00148	6.99	0.0002	8.83	0.0006	0.00002	0.00965	0.001	0.0078	0.0004
UG1	2021-12-18 12:00	0.0027	0.0001	0.00032	367	0.00121	7.04	0.00035	8.97	0.0006	0.00002	0.00988	0.001	0.0254	0.0004
UG4	2018-06-30 15:10	0.00253	0.000103	0.00079	372	0.00855	7.29	0.0001	5.72	0.0003	0.00001	0.00871	0.00075	0.007	0.0003
UG4	2018-07-31 8:20	0.00109	0.00005	0.00014	283	0.00466	6.67	0.0001	5.81	0.0003	0.000026	0.00729	0.00057	0.0018	0.0003
UG4	2018-08-24 10:05	0.00092	0.00005	0.00016	352	0.00292	6.72	0.0001	6.12	0.0003	0.000016	0.00687	0.0005	0.0049	0.0003
UG4	2018-09-24 15:05	0.0032	0.0001	0.00021	398	0.00135	6.72	0.0002	6.3	0.0006	0.00002	0.00716	0.001	0.004	0.0003
UG4	2018-10-25 9:45	0.0005	0.00005	0.0001	281	0.00235	6.46	0.0001	6.34	0.0003	0.00001	0.00715	0.0005	0.0023	0.0003
UG4	2018-11-10 15:15	0.0005	0.00005	0.0001	282	0.00232	6.68	0.0001	6.34	0.0003	0.00001	0.0071	0.0005	0.0031	0.0003
UG4	2018-12-18 16:20	0.0005	0.000626	0.0001	313	0.00177	7.09	0.0001	6.71	0.0003	0.00001	0.00785	0.0005	0.0083	0.0003
UG4	2019-01-15 10:40	0.0005	0.000055	0.0001	300	0.00158	6.86	0.0001	6.14	0.0003	0.00001	0.00742	0.0005	0.0043	0.0003
UG4	2019-02-11 9:25	0.0005	0.00005	0.0001	325	0.00163	7.04	0.0001	6.75	0.0003	0.00001	0.0076	0.0005	0.0052	0.0003
UG4	2019-03-11 15:00	0.0005	0.000126	0.0001	346	0.00133	7.46	0.0001	6.21	0.0003	0.00001	0.00772	0.0005	0.0057	0.0003
UG4	2019-04-09 10:15	0.001	0.0001	0.0002	315	0.00101	6.63	0.0002	6.72	0.0006	0.00002	0.00802	0.001	0.0089	0.0003
UG4	2019-05-27 8:00	0.0005	0.000106	0.0001	317	0.00125	7.09	0.0001	6.74	0.0003	0.00001	0.00705	0.0005	0.0041	0.0003
UG4	2019-06-24 15:25	0.0005	0.000096	0.0001	342	0.00119	7.26	0.0001	6.57	0.0003	0.00001	0.00705	0.0005	0.0104	0.0003
UG4	2019-07-15 10:41	0.0005	0.000389	0.0001	343	0.00125	7.69	0.0001	6.61	0.0003	0.00001	0.00669	0.0005	0.01	0.0003
UG4	2019-08-05 11:30	0.001	0.0001	0.0002	331	0.0009	7.54	0.0002	6.48	0.0006	0.00002	0.00806	0.001	0.0196	0.0004
UG4	2019-09-09 9:20	0.001	0.0001	0.0002	315	0.00099	7.01	0.0002	6.38	0.0006	0.00002	0.00761	0.001	0.0058	0.0004
UG4	2019-10-22 10:00	0.001	0.0001	0.0002	355	0.00125	7.53	0.0002	6.36	0.0006	0.00002	0.00718	0.001	0.0344	0.0004
UG4	2019-11-10 9:50	0.00139	0.00005	0.00015	336	0.00123	7.33	0.00012	6.79	0.0003	0.00001	0.00664	0.0005	0.0175	0.0003
UG4	2019-12-30 12:40	0.0012	0.0001	0.00081	526	0.00136	7.42	0.0002	6.65	0.0006	0.00002	0.00749	0.001	0.0228	0.0004
UG4	2020-01-13 15:10	0.0078	0.0001	0.00041	531	0.00448	4.85	0.0002	6.86	0.0006	0.00002	0.00719	0.001	0.0045	0.0004
UG4	2020-02-17 11:35	0.00175	0.000193	0.00027	484	0.00079	6.91	0.0002	7.09	0.0006	0.00002	0.00845	0.001	0.0505	0.0004
UG4	2020-03-22 9:45	0.001	0.0001	0.0002	431	0.0013	6.39	0.0002	6.68	0.0006	0.00002	0.00749	0.001	0.006	0.0004
UG4	2020-04-27 7:40	0.001	0.0001	0.0002	415	0.00344	6.4	0.0002	6.81	0.0006	0.00002	0.00806	0.001	0.0075	0.0004
UG4	2020-05-04 16:50	0.0011	0.0001	0.0002	450	0.00373	6.61	0.0002	6.87	0.0006	0.00002	0.00757	0.001	0.0104	0.0004
UG4	2020-06-01 15:50	0.00285	0.0001	0.00032	569	0.00398	6.56	0.0002	6.99	0.0006	0.00002	0.00777	0.001	0.0035	0.0004
UG4	2020-07-06 15:40	0.001	0.0001	0.0002	463	0.00342	6.78	0.0002	7.12	0.0006	0.00002	0.00752	0.001	0.0077	0.0004
UG4	2020-08-02 13:30	0.00115	0.0001	0.00063	448	0.0032	6.43	0.0002	7.16	0.0006	0.000023	0.00764	0.001	0.0183	0.0004
UG4	2020-09-03 14:00	0.001	0.0001	0.00027	539	0.00401	6.87	0.0002	7.18	0.0006	0.00002	0.00798	0.001	0.0094	0.0004
UG4	2020-10-24 15:40	0.001	0.0001	0.0002	479	0.00359	6.86	0.0002	7.39	0.0006	0.00002	0.00852	0.001	0.0116	0.0004
UG4	2020-11-23 8:30	0.001	0.0001	0.0002	472	0.00388	6.5	0.0002	6.84	0.0006	0.00002	0.00857	0.001	0.0156	0.0004
UG4	2020-12-21 11:00	0.001	0.0001	0.0002	414	0.00242	6.37	0.0002	6.61	0.0006	0.00002	0.00876	0.001	0.012	0.0004
UG4	2021-01-16 16:10	0.001	0.0001	0.0002	438	0.00294	6.32	0.0002	7.69	0.0006	0.00002	0.0091	0.001	0.0098	0.0004
UG4	2021-02-04 7:20	0.001	0.000161	0.0002	450	0.00326	6.82	0.0002	8.05	0.0006	0.00002	0.00945	0.001	0.0183	0.0004
UG4	2021-03-15 10:55	0.0047	0.0001	0.00039	489	0.00382	3.4	0.0002	6.5	0.0006	0.00002	0.00452	0.001	0.0029	0.0004
UG4	2021-04-18 9:30	0.0012	0.0001	0.00022	339	0.00206	6.45	0.0002	6.85	0.0006	0.00002	0.00768	0.001	0.0073	0.0004
UG4	2021-04-26 7:15														
UG4	2021-05-22 10:10	0.00158	0.0001	0.0003	388	0.00167	7.32	0.0002	7.85	0.0006	0.00002	0.00971	0.001	0.0084	0.0004
UG4	2021-06-07 16:10	0.001	0.0001	0.00021	421	0.00181	7.34	0.0002	7.08	0.0006	0.00002	0.00858	0.001	0.007	0.0004
UG4	2021-07-17 9:40	0.00158	0.000222	0.00033	392	0.00196	7.6	0.0002	6.68	0.0006	0.00002	0.00903	0.001	0.0089	0.0004
UG4	2021-08-14 15:15	0.00122	0.0001	0.00026	348	0.00161	7.44	0.0002	6.31	0.0006	0.00002	0.00822	0.001	0.01	0.0004
UG4	2021-09-11 15:35	0.00148	0.0001	0.00021	360	0.0015	6.91	0.0002	6.66	0.0006	0.00002	0.00909	0.001	0.0079	0.0004
UG4	2021-10-09 15:30	0.00172	0.0001	0.00024	377	0.00165	6.74	0.0002	7.06	0.0006	0.00002	0.0097	0.001	0.0087	0.0004
UG4	2021-11-03 11:40	0.00165	0.0001	0.00024	342	0.00137	6.49	0.0002	7.29	0.0006	0.000022	0.00925	0.001	0.0075	0.0004
UG4	2021-12-28 15:00	0.00162	0.0001	0.00022	377	0.00173	7.54	0.0002	6.97	0.0006	0.00002	0.0102	0.001	0.0093	0.0004
UG4	2022-01-26 13:00	0.00191	0.0001	0.00024	368	0.00184	6.8	0.0002	7.08	0.0006	0.00002	0.0106	0.001	0.0165	0.0004
W12	2007-05-19 0:00	0.0008	0.0001	0.0005	34.9	0.0048	7.5	0.001	3.38	0.0005	0.00005	0.003	0.0017	0.015	
W12	2007-06-20 0:00														
W12	2007-06-27 0:00														
W12	2007-08-01 0:00														
W12	2007-08-12 0:00	0.0005	0.0002	0.0002		0.0071	5.52	0.001	2.84	0.0052	0.00005	0.006	0.0008	0.016	
W12	2007-10-23 0:00														
W12	2007-10-30 0:00														
W12	2007-11-27 0:00														
W12	2007-12-18 0:00														
W12	2008-01-15 0:00														
W12	2008-01-16 0:00														
W12	2008-02-13 0:00														
W12	2008-04-22 0:00														
W12	2008-05-07 0:00														
W12	2008-05-13 0:00	0.001	0.0004	0.0011		0.0006	1.07	0.004	0.563	0.0111	0.00001	0.0018	0.00138	0.002	0.0006
W12	2008-05-20 0:00	0.001	0.0005	0.002		0.0036	1.18	0.004	0.813	0.012	0.00001	0.0019	0.00166	0.003	0.0009
W12	2008-05-27 0:00	0.001	0.0004	0.64		0.0055	1.3	0.004	0.818	0.0104	0.00001	0.0019	0.00161	0.005	0.0016
W12	2008-06-18 0:00	0.001	0.0004	0.0012		0.006	2.74	0.0001	1.09	0.0107	0.00001	0.0023	0.00161	0.006	0.0012
W12	2008-06-27 0:00	0.001	0.0002	0.0011		0.009	2.77	0.0001	1.2	0.0068	0.00001	0.0024	0.00173	0.004	0.0014
W12	2008-07-22 0:00														
W12	2008-09-18 0:00	0.001	0.0003	0.0012		0.009	3.87	0.0001	0.89	0.0074	0.00001	0.0019	0.00156	0.005	0.0005
W12	2008-11-18 0:00														
W12	2009-02-02 0:00	0.001	0.0001	0.0015	92.3	0.0029	3.69	0.0001	4.46	0.0009	0.00001	0.0046	0.00062	0.007	0.0001
W12	2009-04-21 0:00														
W12	2009-05-02 0:00	0.001	0.0002	0.0006	5.2	0.0009	1.88	0.0001	0.27	0.002	0.00001	0.0004	0.00142	0.004	0.0003
W12	2009-05-03 0:00	0.0005	0.0001	0.0002	5.3	0.0018	2.09	0.001	0.417	0.001	0.00005	0.0005	0.0042	0.001	
W12	2009-05-05 0:00	0.001	0.0002	0.0006	7.2	0.0014	2	0.0001	0.396	0.0032	0.00001	0.0006	0.00139	0.004	0.0005
W12	2009-06-03 0:00														
W12	2009-07-13 0:00	0.001	0.0003	0.0013	15	0.0023	2.63	0.005	0.594	0.007	0.00005	0.001	0.005	0.005	0.0006
W12	2009-07-19 9:30	0.001	0.0002	0.0009	16	0.0023	2.77	0.005	0.6	0.005	0.00005	0.0009	0.005	0.005	0.0005
W12	2009-09-21 0:00	0.002	0.0001	0.001	21.1	0.0023	2.86	0.0001	0.804	0.0004	0.00001	0.0004	0.0006	0.004	0.0001
W12	2009-11-05 0:00														

Attachment 3: Sitewide Database

General Parameters; Anions & Nitrogen Species

Station	Date / Time	Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	N-NO$_2$	N-NO$_3$	N-NH$_3$	SO$_4$-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W12	2009-11-06 0:00	193	938			722	24				48.1		121	1.57	
W12	2009-12-02 0:00	342	2490		7.96	1860	68	1.1			141		452	4.49	
W12	2010-02-01 0:00	200	1560			1130	5				66.4		335	2.42	
W12	2010-02-02 0:00				7.05			0.9							
W12	2010-03-02 0:00	217	1630		7.87	1220	38	1.1			71.4		394	3.48	
W12	2010-04-07 0:00	102	427		6.99	260	13	1					46.4	1.54	
W12	2010-06-01 0:00	99	454		7.87	330	19	17.8		0.242	13.9	2.1	76	2.9	0.71
W12	2010-12-06 0:00	150			7.87			0.31	101.3	2.36	119	24	320	4.8	
W12	2011-03-16 0:00	230	1360			930	1			0.133	27	4.4	390	5.3	1.2
W12	2011-05-03 0:00	82	280			210	15			0.126	5.1	0.089	34	4.3	0.23
W12	2011-05-25 0:00	97	245			190	27			0.046	1.85	0.202	22	2.8	0.14
W12	2011-06-02 0:00	120	483			340	35			0.025	5.9	0.997	76	4.6	0.48
W12	2011-06-30 0:00	130	488			320	15			0.147	11.6	0.65	75		
W12	2011-08-07 0:00	130	531			340	11			0.6	13.3	0.74	74		
W12	2011-10-01 0:00	130	567		7.56	330	4	7.6	21.9	0.074	18	0.01	82	4.3	
W12	2011-10-30 0:00	130	582		7.73	360	5	3	29.4	0.007	18.8	0.005		4.1	
W12	2011-11-03 0:00	140	587		7.12	330	6	1.9	41.7	0.01	19.5	0.005		4.6	
W12	2011-11-23 0:00	141	621			370	5			0.036	17.9	0.16		4.9	
W12	2012-02-13 0:00	142	605			368	4			0.019	18.6	0.005		4.5	
W12	2012-03-28 14:00	137	595			380	1.7			0.023	19.4	0.0154	92	4	0.64
W12	2012-04-07 13:30	134	590		7.44	404	19.6	0.5	26	0.107	19.7	0.217	90.6	3.9	0.63
W12	2012-04-22 13:30	121	528		7.35	346	13	3.6	49.1	0.108	17.1	0.22	74.7	4.7	0.54
W12	2012-05-03 17:00	109	454		7.08	298	22.2	7	62.8	0.046	12.8	0.099	61.1	4.8	0.45
W12	2012-06-03 0:00	134	574	61.5	8.26	380	3.6	11.3	79.2	0.0623	15.5	0.073	74.9	13	0.48
W12	2012-07-03 10:45	164	663	26.5	8.38	424	2.2	15.5	81.5	0.0863	33.1	0.18	93.3	19	0.52
W12	2012-07-18 9:25	162	651		8.52	442	1.8	14.9	61.2	0.0804	8.88	0.11	87.9	16	0.51
W12	2012-08-12 17:10	167	641	6.4	7.7	446	1	16.7	74.1	0.0748	15	0.026	87.3	15	0.56
W12	2012-09-12 16:00	151	580	78.7	7.96	386	6.3	8.4	60.6	0.075	15	0.053	81.3	9.7	0.25
W12	2012-10-14 8:30	152	595	72.8	8.29	422	2.2	4.2	72.3	0.07	15.4	0.089	86.5	8.6	0.53
W12	2012-11-11 10:30	157	676	47.7	7.95	428	17.9	1.4		0.12	19	0.092	114	7.5	0.57
W12	2012-12-16 16:00	165	715	93	8.09	440	32.1	1.2	15.7	0.255	17.9	0.1	126	7.8	0.67
W12	2013-01-04 0:00	373	1780	149.3	7.91	1290	5.6	-0.2	47	0.941	23	4.3	565	6.3	3.2
W12	2013-02-13 0:00	276	1230			846	7.3			0.43	32.2	1.3	228	15	1.3
W12	2013-03-04 15:30	210	847	-396.5	8.01	560	5.2	0.3	4.9	0.0397	17.5	0.42	133	8.3	0.98
W12	2013-03-22 0:00														
W12	2013-04-18 9:30	163	677	-412.4	7.96	418	15.4	0.5		0.148	13.2	0.57	131	8.7	0.93
W12	2013-05-04 16:45	173	709	22.3	8.34	460	10.4	3.8	61.8	0.173	13.4	0.64	134	10	1
W12	2013-07-07 14:55	167	702	148.8	7.87	432	10.4	12.9	21.4	0.211	10.6	0.45	124	11	0.97
W12	2013-08-02 11:00	160	687	213	7.67	456	20.8	14.9	35.3	0.213	12.4	0.38	129	11	1.1
W12	2013-09-04 8:00	166	726	86.1	7.97	468	11.2	13.6	35.4	0.242	13.6	0.48	135	11	1.2
W12	2013-10-04 12:00	166	745		7	478	8.7	11		0.278	15.2	0.7	148	10	1.3
W12	2013-10-18 15:30	165	753	239.2	7.73	510	14.7	8.45	63.5	0.249	14.9	0.78	151	11	1.3
W12	2013-11-09 10:30	165	791	119.8	8	498	8.2	4.1	57.1	0.221	15.8	1.2	157	11	1.3
W12	2013-12-10 10:30	168	821	-3.2	7.98	560	6	2.1	53.1	0.262	17.2	1.5	169	12	1.3
W12	2014-01-05 17:10	183	833	69.6	8.09	514	2.7	2	36.2	0.242	16.8	1.6	174	13	1.4
W12	2014-02-04 17:00	172	844	44.9	8.16	554	11.6	4.1	83.4	0.284	16.7	1.5	179	14	1.5
W12	2014-03-24 11:30	178	866		8.4	548	9.3	7.4		0.0429	14.4	1.2	185	14	1.4
W12	2014-04-19 10:10	187	894	60.2	8	544	8	3.5	35.4	0.0351	12	1.2	187	14	1.4
W12	2014-05-06 15:30	193	878	46.1	8.11	562	3.2	6.3	3	0.131	10.4	1.3	185	15	1.4
W12	2014-06-14 10:45	195	897	207.7	8.2	560	1.1	12	43.3	0.191	10.1	1.5	190	17	1.4
W12	2014-07-03 11:10	188	921	153.5	8.32	614	6.1	14.5	82.6	0.216	11.6	1.3	215	17	1.5
W12	2014-07-23 8:30			134.8	8.66			14.5	48.1						
W12	2014-08-07 16:20														
W12	2014-08-09 10:02			105.7	8.08			14	70.7						
W12	2014-08-09 10:02	191	970	105.7	8.08	876	20.8	14	70.7	0.217	12.3	1.6	237	18	1.5
W12	2014-08-15 15:50			135.3	8.03			14.6	48.3						
W12	2014-08-19 11:30			134.1	8.12			13.3	68						
W12	2014-08-26 11:45			154.1	8.11			13	65.5						
W12	2014-09-07 10:00			167.6	8.03			11.3	56.6						
W12	2014-09-07 10:00	184	978	167.6	8.03	618	10.1	11.3	56.6	0.202	13.2	1.6	174	20	1.5
W12	2014-09-12 13:20			153.8	8.06			11.5	57.4						
W12	2014-09-12 13:20	185	978	153.8	8.06	792	3.7	11.5	57.4	0.197	13.6	1.4	179	19	1.5
W12	2014-09-15 16:10			133.3	6.01			11.6	39.9						
W12	2014-09-15 16:10	186	992	133.3	6.01	767	5.6	11.6	39.9	0.197	13.7	1.7	186	19	1.6
W12	2014-09-25 11:45			156.8	8			8.7	47.2						
W12	2014-10-03 11:45				8.4			12							
W12	2014-10-08 16:05														
W12	2014-10-08 16:05			170	8.18			8.4	78.3						
W12	2014-10-09 13:45	175	1010	183.6	8.16	652	19.9	7.4	70.3	0.194	14.1	1	235	20	1.5
W12	2014-10-13 16:05			154.4	7.9			7.3	56.6						
W12	2014-11-02 14:10	181	1020	174.5	7.99	642	7.5	5.2	51.6	0.174	15.6	1.2	211	20	1.6
W12	2014-11-23 17:40	182	1050	157.1	7.89	686	24.7	3.7	87.6	0.198	16.1	0.96	198	22	0.17
W12	2014-12-11 15:50	184	1060	33.9	7.84	684	6.6	2.7	13.6	0.457	14.9	1.4	255	22	1.5
W12	2015-01-05 9:45	163	1160	-37.7	7.76	686		2.1	30.4	1.87	16.4	1.4	265	30	1.4
W12	2015-01-17 10:40	186	1060			698	15.2			1.49	13.6	1.4	243	24	1.3
W12	2015-02-20 13:30	209	1100	185.9	7.89	702	69.4	7.2	84.1	0.0569	7.73	1.7	281	30	1.5
W12	2015-03-08 16:20	215	1140	153.6	8.09	722	14.8	3.2	40.1	0.749	8.31	2.2	264	29	1.4
W12	2015-04-02 10:20	213	1140	136	8.19	732	6.9	2.7	40.2	1.85	9.11	2.8	277	29	1.3
W12	2015-05-11 16:40	195	1060	179.5	7.92	638	15.5	12.1	84.5	1.66	8.2	2.7	223	26	1.3
W12	2015-06-11 17:15	196	1090	127.6	8.14	676	5.6	13.4	66.1	1.79	11.8	2.9	236	25	1.3
W12	2015-07-03 16:40	193	1230	67.2	8.19	788	38.3	14.8	65.8	2.83	13.6	3.9	286	28	1.4
W12	2015-08-20 9:45	176	1250	175.3	8.28	850	4.6	13.3	71.4	1.98	19.6	4.3	312	28	1.5
W12	2015-09-16 15:00	169	1250	191.8	8.22	812	3.4	10.1	76.6	1.1	21.2	3.5	313	27	1.3
W12	2015-10-16 15:55	174	1280	146.5	7.9	782	2	4.5	73.8	0.693	23.8	3.2	329	27	1.4
W12	2015-11-07 11:40	172	1290	64.5	8.26	878	46.9	3.9	86.4	0.529	24	3	309	27	1.4
W12	2015-12-11 17:15	171	1330	-226.5	8.2	866	5	4.4	92.2	0.552	26	3.1	333	30	1.3
W12	2016-01-03 15:35	169	1350	68.6	7.91	884	67.2	2.8	73	0.641	27	2.8	332	31	1.4
W12	2016-02-01 16:50	171	1350	29	7.97	870	2.2	3.3	91.4	0.709	29.4	2.5	324	32	1.4
W12	2016-03-05 17:10	173	1340	88	7.79	862	5.9	5.1	37	0.653	27.3	2.6	333	31	1.3
W12	2016-04-19 16:25	179	1290		9	840	41.3	7.2		0.836	26.4	2.65	322	34	
W12	2016-05-19 16:10	157	1180	167.7	7.85	822	3.3	12.3	77.4	1.06	25.3	2.32	321	30.8	
W12	2016-06-27 16:15	145	1330	54.2	7.79	952	7.3	17.6	50.1	1.23	29.1	2.83	398	36	
W12	2016-07-25 14:40	149	1420	110.2	7.69	994	6	15.7	69	1.84	28.1	3.11	419	36.4	
W12	2016-08-22 14:50	164	1400	77.5	8.07	967	3.3	14.5	76.5	2.7	25.3	3.2	425	1	
W12	2016-09-17 16:40	166	1450	97.4	7.91	1030	5.3	11.3	74.3	3.97	23.6	4.72	457	33.8	
W12	2016-10-15 11:15	170	1490	57.5	7.74	1150	3.2	4.8	73.3	4.33	24.6	4.07	530	34.8	
W12	2016-11-04 13:40	171	1590	67.3	7.89	1210	9.6	4.2	34.5	4.12	25	4.26	567	36.4	
W12	2016-12-01 16:10			30	7.84			3.6	62						
W12	2016-12-01 16:10	169	1770	30	7.84	1320	4.2	3.6	62	3.58	25.7	4.31	653	36.2	
W12	2017-01-02 14:25	171	2000	31.8	7.69	1570	4.3	5.1	89	2.65	27.3	5.4	834	35.6	
W12	2017-02-05 17:05	170	2210	75.8	7.73	1820	36.2	3	49.4	1.8	28.9	6.04	1050	37	1.45
W12	2017-03-06 16:30	166	2270	237.7	7.81	1910	3.5	2.2	82.6	1.84	27.2	6.94	1090	35	
W12	2017-04-04 16:30	167	2440	112.9	7.84	1980	4.7	3	81.7	2.04	25.8	6.66	1160	36	
W12	2017-05-08 8:50	173	1980	231.9	7.31	1600	18	6.4	120.2	2.14	19.6	4.55	902	30.4	
W12	2017-06-12 17:00	152	2330	105.7	7.78	2060	13.9	16	79.7	2.34	19.2	3.73	1230	33	
W12	2017-07-03 14:25	157	2560	159.3	7.81	2300	9.1	17.1	69.1	5.77	15.1	3.68	1430	36	
W12	2017-07-23 8:25														
W12	2017-07-25 8:40			183.1	7.44			18.9	78.1						
W12	2017-07-29 9:15			143.8	7.81			17.9	79.8						
W12	2017-07-30 7:50			241.2	5.73			18.2	96.4						
W12	2017-08-01 12:05				7.6			19.8							
W12	2017-08-02 11:55	161	2790	167.3	7.67	2400	10.7	19.2	75.2	6.71	12.3	3.48	1480	34.6	
W12	2017-08-06 9:15														
W12	2017-08-08 11:20														
W12	2017-08-12 9:00														

Dissolved Elements

Station	Date / Time	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W12	2009-11-06 0:00																		
W12	2009-12-02 0:00																		
W12	2010-02-01 0:00																		
W12	2010-02-02 0:00																		
W12	2010-03-02 0:00																		
W12	2010-04-07 0:00																		
W12	2010-06-01 0:00	0.0001	0.023	0.0009	0.05	0.1	0.0002	0.001	61	0.0001	0.0005		0.131	0.069	0.0002	3	0.01	12	0.088
W12	2010-12-06 0:00	0.0001	0.079	0.0007	0.095	0.388	0.0001	0.001	190	0.00015	0.0009	0.001	0.476	0.386	0.00002	7.21	0.016	48.6	0.132
W12	2011-03-16 0:00	0.00002	0.003	0.0007	0.076	0.122	0.0001	0.001	185	0.00014	0.0005	0.001	0.148	0.005	0.00002	6.62	0.007	48	0.213
W12	2011-05-03 0:00	0.00002	0.089	0.0003	0.059	0.05	0.0001	0.001	31.2	0.00004	0.0005	0.001	0.0431	0.204	0.00002	3.32	0.005	8.56	0.277
W12	2011-05-25 0:00	0.00002	0.032	0.0008	0.073	0.05	0.0001	0.001	34.3	0.00003	0.0005	0.001	0.0724	0.225	0.00002	2.36	0.005	8.41	0.161
W12	2011-06-02 0:00	0.00002	0.02	0.0012	0.162	0.05	0.0001	0.001	53.6	0.00005	0.0005	0.001	0.0742	0.07	0.00002	4.05	0.005	14.8	0.131
W12	2011-06-30 0:00	0.00002	0.007	0.0017	0.283	0.05	0.0001	0.001	55.8	0.00004	0.0005	0.001	0.0414	0.032	0.00002	3.57	0.005	16	0.058
W12	2011-08-07 0:00	0.00002	0.013	0.0015	0.199	0.05	0.0001	0.001	56.5	0.00003	0.0005	0.001	0.0501	0.024	0.00002	4.21	0.005	18.1	0.098
W12	2011-10-01 0:00	0.00002	0.014	0.0009	0.188	0.05	0.0001	0.001	64.7	0.00006	0.0005	0.001	0.0692	0.039	0.00002	4.04	0.005	20.1	0.135
W12	2011-10-30 0:00	0.00002	0.012	0.001	0.177	0.05	0.0001	0.001	63.9	0.00006	0.0005	0.001	0.0719	0.016	0.00002	4.15	0.005	19.8	0.139
W12	2011-11-03 0:00	0.00002	0.01	0.001	0.189	0.05	0.0001	0.001	66.3	0.00005	0.0005	0.001	0.0715	0.021	0.00002	4.33	0.005	20.3	0.141
W12	2011-11-23 0:00	0.00002	0.0048	0.001	0.152	0.05	0.0001	0.001	68.9	0.000052	0.0005	0.001	0.0791	0.0246	0.00002	4.33	0.005	21.9	0.143
W12	2012-02-13 0:00	0.00002	0.0042	0.00102	0.163	0.05	0.0001	0.001	65.9	0.000079	0.0005	0.001	0.0742	0.012	0.00001	4.55	0.005	22.1	0.134
W12	2012-03-28 14:00	0.00002	0.004	0.00091	0.153	0.05	0.0001	0.001	67	0.000089	0.0005	0.001	0.0755	0.0124	0.00001	4.13	0.005	20.1	0.13
W12	2012-04-07 13:30	0.00002	0.0038	0.00086	0.137	0.05	0.0001	0.001	62.6	0.000042	0.0005	0.001	0.0674	0.0113	0.00001	4.19	0.005	20.3	0.118
W12	2012-04-22 13:30	0.00002	0.0178	0.0008	0.116	0.05	0.0001	0.001	58	0.000034	0.0005	0.001	0.0398	0.0604	0.00001	3.9	0.005	19	0.112
W12	2012-05-03 17:00	0.00002	0.0384	0.00063	0.103	0.05	0.0001	0.001	50.7	0.000016	0.0005	0.001	0.0237	0.0456	0.00001	3.84	0.005	14.9	0.104
W12	2012-06-03 0:00	0.00002	0.0764	0.00069	0.119	0.05	0.0001	0.001	65.1	0.000046	0.0005	0.001	0.0772	0.0537	0.00001	4.65	0.005	19.5	0.131
W12	2012-07-03 10:45	0.00002	0.124	0.00061	0.119	0.05	0.0001	0.001	76.5	0.000024	0.0005	0.001	0.0586	0.0121	0.00001	6.07	0.005	23.1	0.0095
W12	2012-07-18 9:25	0.00002	0.0846	0.00063	0.112	0.05	0.0001	0.001	73.1	0.000022	0.0005	0.001	0.0655	0.0117	0.00001	5.34	0.005	22.4	0.0196
W12	2012-08-12 17:10	0.00002	0.0753	0.00062	0.106	0.05	0.0001	0.001	67.3	0.000028	0.0005	0.001	0.0664	0.0133	0.00001	5.23	0.005	21.8	0.0263
W12	2012-09-12 16:00	0.00002	0.0301	0.0006	0.104	0.05	0.0001	0.001	64.2	0.000031	0.0005	0.001	0.0696	0.028	0.00001	4.73	0.005	20.1	0.07
W12	2012-10-14 8:30														0.00001				
W12	2012-11-11 10:30	0.00002	0.0109	0.00051	0.0877	0.05	0.0001	0.001	72.3	0.000049	0.0005	0.001	0.0341	0.0074	0.00001	6.16	0.005	22.4	0.168
W12	2012-12-16 16:00	0.00002	0.0084	0.00046	0.0763	0.052	0.0001	0.001	70.3	0.000035	0.0005	0.001	0.00983	0.0108	0.00001	10.7	0.0067	24.1	0.296
W12	2013-01-04 0:00	0.00002	0.0066	0.00213	0.101	0.434	0.0001	0.001	184	0.000025	0.0005	0.001	0.0263	0.0298	0.00001	12.1	0.0141	71.5	0.146
W12	2013-02-13 0:00	0.00002	0.0095	0.00082	0.115	0.17	0.0001	0.001	113	0.000016	0.0005	0.001	0.0354	0.0069	0.00001	24.8	0.0163	46.6	0.194
W12	2013-03-04 15:30	0.00002	0.0122	0.00053	0.0938	0.081	0.0001	0.001	72.5	0.000019	0.0005	0.001	0.0082	0.0061	0.00001	20.4	0.0126	29.7	0.124
W12	2013-03-22 0:00																		
W12	2013-04-18 9:30	0.00002	0.0069	0.0004	0.0799	0.056	0.0001	0.001	48.1	0.000013	0.0005	0.001	0.00974	0.005	0.00001	16.1	0.0085	19.9	0.076
W12	2013-05-04 16:45	0.00002	0.0159	0.00036	0.0773	0.07	0.0001	0.001	57.1	0.000017	0.0005	0.001	0.00244	0.0128	0.00001	20	0.0109	23	0.104
W12	2013-07-07 14:55	0.00002	0.0266	0.00051	0.0784	0.061	0.0001	0.001	51.9	0.000023	0.0005	0.001	0.00615	0.0117	0.00001	20.8	0.0108	22.7	0.0906
W12	2013-08-02 11:00	0.00002	0.0269	0.00048	0.0864	0.074	0.0001	0.001	50.9	0.00002	0.0005	0.001	0.00666	0.0093	0.00001	20.3	0.0115	22.9	0.0604
W12	2013-09-04 8:00	0.00002	0.0288	0.00043	0.0803	0.081	0.0001	0.001	53	0.000023	0.0005	0.001	0.00647	0.005	0.00001	20.6	0.0125	23	0.0604
W12	2013-10-04 12:00	0.00002	0.0246	0.00046	0.0753	0.089	0.0001	0.001	57.2	0.00001	0.0005	0.001	0.00289	0.005	0.00001	20.2	0.0125	23.5	0.0495
W12	2013-10-18 15:30	0.00002	0.0249	0.0004	0.079	0.091	0.0001	0.001	59.7	0.000012	0.0005	0.001	0.0112	0.0228	0.00001	21.2	0.0117	24.8	0.0473
W12	2013-11-09 10:30	0.00002	0.0118	0.00027	0.0818	0.09	0.0001	0.001	62.5	0.000026	0.0005	0.001	0.0197	0.005	0.00001	21.5	0.0121	24.5	0.0458
W12	2013-12-10 10:30	0.00002	0.0159	0.00039	0.084	0.096	0.0001	0.001	66	0.000016	0.0005	0.001	0.00656	0.005	0.00001	24.3	0.0133	25.8	0.0635
W12	2014-01-05 17:10	0.00002	0.0122	0.0004	0.086	0.112	0.0001	0.001	68.1	0.00001	0.0005	0.001	0.00226	0.005	0.00001	24.3	0.0125	25.1	0.077
W12	2014-02-04 17:00	0.00002	0.0162	0.00034	0.0944	0.105	0.00011	0.001	70	0.000012	0.0005	0.001	0.0066	0.0052	0.00001	29	0.0133	24.3	0.115
W12	2014-03-24 11:30	0.00002	0.0154	0.00043	0.0987	0.119	0.0001	0.001	65.2	0.00001	0.0005	0.001	0.00046	0.0435	0.00001	29.9	0.014	23.3	0.161
W12	2014-04-19 10:10	0.00002	0.0184	0.00041	0.0912	0.121	0.0001	0.001	69.9	0.000013	0.0005	0.001	0.00121	0.0359	0.00001	33	0.0118	24.7	0.142
W12	2014-05-06 15:30	0.00002	0.0185	0.00038	0.0895	0.124	0.0001	0.001	67.2	0.000021	0.0005	0.001	0.00302	0.0706	0.00005	30.6	0.0107	23.5	0.141
W12	2014-06-14 10:45	0.00002	0.0184	0.00045	0.0922	0.124	0.0001	0.001	68.7	0.000015	0.0005	0.001	0.00805	0.0228	0.00001	34	0.0107	24.1	0.134
W12	2014-07-03 11:10	0.00002	0.0332	0.00049	0.0976	0.139	0.0001	0.001	68.7	0.000023	0.0005	0.001	0.00432	0.0069	0.00001	34	0.0117	23.3	0.1
W12	2014-07-23 8:30																		
W12	2014-08-07 16:20																		
W12	2014-08-09 10:02											0.001							
W12	2014-08-09 10:02	0.00002	0.0221	0.00037	0.0874	0.126	0.0001	0.001	73.1	0.00001	0.0005	0.001	0.00335	0.0112	0.00001	30.3	0.0101	25.1	0.0937
W12	2014-08-15 15:50											0.001							
W12	2014-08-19 11:30											0.001							
W12	2014-08-26 11:45											0.001							
W12	2014-09-07 10:00											0.001							
W12	2014-09-07 10:00	0.00002	0.0299	0.00059	0.108	0.159	0.0001	0.001	86.6	0.000011	0.0005	0.001	0.00324	0.0064	0.00001	37.7	0.0118	27.7	0.0992
W12	2014-09-12 13:20											0.001							
W12	2014-09-12 13:20	0.00002	0.0274	0.00052	0.0947	0.132	0.0001	0.001	79.4	0.00002	0.0005	0.001	0.0062	0.0172	0.00001	35.9	0.0115	24.8	0.0967
W12	2014-09-15 16:10											0.001							
W12	2014-09-15 16:10	0.00002	0.0284	0.00062	0.0958	0.135	0.0001	0.001	77.1	0.000018	0.0005	0.001	0.00699	0.005	0.00001	35.9	0.0108	25.8	0.104
W12	2014-09-25 11:45											0.001							
W12	2014-10-03 11:45											0.001							
W12	2014-10-08 16:05											0.001							
W12	2014-10-08 16:05																		
W12	2014-10-09 13:45	0.00002	0.0215	0.00054	0.1	0.166	0.0001	0.001	79.9	0.000022	0.0005	0.001	0.00809	0.0157	0.00001	36.5	0.0132	25.5	0.145
W12	2014-10-13 16:05											0.001							
W12	2014-11-02 14:10	0.00002	0.0201	0.00057	0.0958	0.156	0.0001	0.001	83.1	0.000025	0.0005	0.001	0.0123	0.0098	0.00001	35	0.0125	23.9	0.151
W12	2014-11-23 17:40	0.00002	0.0198	0.00054	0.0977	0.183	0.0001	0.001	80.7	0.000027	0.0005	0.001	0.00686	0.013	0.00001	36.7	0.0144	25.8	0.157
W12	2014-12-11 15:50	0.00002	0.0126	0.00048	0.0936	0.162	0.0001	0.001	81.6	0.000019	0.00055	0.001	0.00302	0.107	0.00001	35.9	0.0136	26	0.212
W12	2015-01-05 9:45	0.00002	0.0152	0.00046	0.1	0.174	0.0001	0.001	83	0.00001	0.00064	0.001	0.00098	0.231	0.00001	39.1	0.0146	25	0.321
W12	2015-01-17 10:40	0.00002	0.0107	0.00049	0.106	0.149	0.0001	0.001	74.4	0.00002	0.00123	0.001	0.00247	0.0484	0.00001	37.3	0.0146	27.2	0.438
W12	2015-02-20 13:30	0.00002	0.0149	0.00044	0.1	0.16	0.0001	0.001	75.5	0.000023	0.00087	0.001	0.0102	0.0115	0.00001	38.5	0.0169	25.7	0.576
W12	2015-03-08 16:20	0.00002	0.0141	0.00044	0.1	0.182	0.0001	0.001	73	0.00001	0.00094	0.001	0.0117	0.0063	0.00001	40.7	0.0159	28.1	0.687
W12	2015-04-02 10:20	0.00002	0.0132	0.00044	0.101	0.179	0.0001	0.001	73.5	0.000018	0.00066	0.001	0.0163	0.0054	0.00001	39.4	0.0159	26.7	0.63
W12	2015-05-11 16:40	0.00002	0.0095	0.00045	0.0882	0.148	0.0001	0.001	72.2	0.000044	0.00055	0.001	0.03	0.0095	0.00001	32.9	0.0153	25.8	0.548
W12	2015-06-11 17:15	0.00002	0.0084	0.00043	0.0842	0.173	0.0001	0.001	80.7	0.000055	0.0005	0.001	0.0373	0.0096	0.00001	32.3	0.0132	30.4	0.329
W12	2015-07-03 16:40	0.00002	0.0277	0.00037	0.089	0.214	0.0001	0.001	74.8	0.000045	0.0005	0.001	0.0049	0.005	0.00001	39.9	0.0143	28.6	0.264
W12	2015-08-20 9:45	0.00002	0.0235	0.00055	0.095	0.233	0.0001	0.001	69.7	0.000042	0.0005	0.001	0.0117	0.005	0.00001	42.7	0.0138	28.4	0.124
W12	2015-09-16 15:00	0.00002	0.0203	0.00047	0.0856	0.2	0.0001	0.001	81.1	0.00004	0.0005	0.001	0.0211	0.005	0.00001	39.6	0.0117	28.4	0.12
W12	2015-10-16 15:55	0.00002	0.0129	0.00035	0.0841	0.227	0.0001	0.001	82.1	0.000052	0.0005	0.001	0.029	0.005	0.00001	37.9	0.0112	28.9	0.117
W12	2015-11-07 11:40	0.00002	0.027	0.00047	0.0861	0.208	0.0001	0.001	83.3	0.000054	0.0005	0.001	0.0253	0.0085	0.00001	39.8	0.0125	31.1	0.133
W12	2015-12-11 17:15	0.00002	0.0191	0.00041	0.092	0.206	0.0001	0.001	91.9	0.000025	0.0005	0.001	0.0194	0.0124	0.00001	39.9	0.0122	30.4	0.143
W12	2016-01-03 15:35	0.00002	0.0156	0.00032	0.0949	0.2	0.0001	0.001	91.1	0.000016	0.0005		0.0191	0.0097	0.00001	36.5	0.0143	25.8	0.152
W12	2016-02-01 16:50	0.00002	0.0176	0.00043	0.0902	0.17	0.0001	0.001	93.2	0.00001	0.0005		0.0241	0.0164	0.00001	36.7	0.0129	28.2	0.163
W12	2016-03-05 17:10	0.00002	0.0158	0.0004	0.0906	0.202	0.0001	0.001	97	0.000025	0.0005		0.0265	0.0176	0.00001	37.1	0.0136	28.7	0.182
W12	2016-04-19 16:25	0.00001	0.0076	0.00042	0.0931	0.136	0.00002	0.00005	93.7	0.0000342	0.00031	0.0001	0.0526	0.022	0.000005	32.1	0.0102	29.1	0.235
W12	2016-05-19 16:10	0.00001	0.0073	0.00045	0.11	0.139	0.00002	0.00005	103	0.0000311	0.00024	0.0001	0.0486	0.01	0.0000063	30.5	0.011	24.8	0.199
W12	2016-06-27 16:15	0.00001	0.0119	0.00049	0.118	0.171	0.00002	0.00005	124	0.0000292	0.00015	0.0001	0.0205	0.01	0.000005	40.7	0.013	23	0.171
W12	2016-07-25 14:40	0.00001	0.0137	0.00045	0.108	0.165	0.00002	0.00005	127	0.000016	0.00011	0.0001	0.0196	0.01	0.000005	44.1	0.0118	24.4	0.183
W12	2016-08-22 14:50	0.00001	0.0137	0.00047	0.106	0.19	0.00002	0.00005	134	0.0000179	0.00015	0.0001	0.0252	0.01	0.000005	38.7	0.0124	25.4	0.222
W12	2016-09-17 16:40	0.00001	0.009	0.00046	0.118	0.166	0.00002	0.00005	147	0.0000145	0.00017	0.0001	0.0305	0.01	0.000005	36.5	0.0121	24.5	0.228
W12	2016-10-15 11:15	0.00001	0.0094	0.0005	0.11	0.189	0.00002	0.00005	168	0.0000063	0.00017	0.0001	0.0271	0.014	0.000005	38.6	0.0115	27.6	0.219
W12	2016-11-04 13:40	0.00001	0.0058	0.00049	0.111	0.21	0.00002	0.00005	180	0.000005	0.00016	0.0001	0.0213	0.01	0.000005	41.2	0.0104	28.7	0.212
W12	2016-12-01 16:10																		
W12	2016-12-01 16:10	0.00001	0.0074	0.00042	0.103	0.191	0.00002	0.00005	204	0.000005	0.0004	0.0001	0.0174	0.011	0.000005	40.9	0.0115	28.9	0.286
W12	2017-01-02 14:25	0.00001	0.0056	0.00048	0.0962	0.207	0.00002	0.00005	262	0.0000142	0.00057	0.0001	0.0117	0.024	0.000005	46.2	0.0107	33.6	0.366
W12	2017-02-05 17:05	0.00002	0.0052	0.00043	0.114	0.224	0.00004	0.0001	328	0.000052	0.00059	0.0002	0.025	0.031	0.000005	47.7	0.0114	36.3	0.409
W12	2017-03-06 16:30		0.0065	0.00042	0.117	0.223	0.00004	0.0001	366	0.00005	0.00064	0.0002	0.026	0.031	0.000005	47.7	0.0124	41	0.472
W12	2017-04-04 16:30	0.00002	0.0057	0.00039	0.11	0.214	0.00004	0.0001	362	0.000077	0.00091	0.0002	0.0256	0.047	0.000005	44.9	0.0124	44.1	0.705
W12	2017-05-08 8:50	0.000012	0.0043	0.0004	0.0838	0.173	0.00002	0.00005	284		0.00081	0.0001	0.0352	0.012	0.000005	34.4	0.0112	42.4	0.571
W12	2017-06-12 17:00	0.00002	0.0124	0.00046	0.122	0.211	0.00004	0.0001	387		0.00188	0.0002	0.0453	0.02	0.000005	44.3	0.0184	47.7	1.28
W12	2017-07-03 14:25	0.00002	0.0036	0.00041	0.122	0.231	0.00004	0.0001	406		0.00193	0.0002	0.0397	0.02	0.000005	50.1	0.0185	56.4	1.62
W12	2017-07-23 8:25																		
W12	2017-07-25 8:40																		
W12	2017-07-29 9:15																		
W12	2017-07-30 7:50																		
W12	2017-08-01 12:05																		
W12	2017-08-02 11:55	0.00002	0.0091	0.00044	0.125	0.229	0.00004	0.0001	441	0.000131	0.00121	0.0002	0.0299	0.02	0.000005	57.6	0.021	62.4	1.51
W12	2017-08-06 9:15																		
W12	2017-08-08 11:20																		
W12	2017-08-12 9:00																		

Dissolved Elements (continued)

Station	Date / Time	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W12	2009-11-06 0:00																
W12	2009-12-02 0:00																
W12	2010-02-01 0:00																
W12	2010-02-02 0:00																
W12	2010-03-02 0:00																
W12	2010-04-07 0:00																
W12	2010-06-01 0:00	0.021	19	0.001	0.0002	0.0005	60	0.0044	3.71	0.005	1.82	0.01	0.00005	0.0031	0.005	0.01	0.002
W12	2010-12-06 0:00	0.029	92.4	0.001	0.0002	0.0005	129	0.0098	3.21	0.005	9.8	0.005	0.00005	0.0074	0.005	0.005	0.0005
W12	2011-03-16 0:00	0.037	48.2	0.001	0.0002	0.0005	158	0.0095	5.54	0.005	6.97	0.005	0.00005	0.0066	0.005	0.005	0.0005
W12	2011-05-03 0:00	0.004	8.62	0.001	0.0002	0.0005	11	0.0014	3.32	0.005	0.417	0.005	0.00005	0.0006	0.005	0.008	0.0005
W12	2011-05-25 0:00	0.003	5.42	0.002	0.0002	0.0005	7	0.0009	4.24	0.005	0.228	0.005	0.00005	0.0005	0.005	0.031	0.0005
W12	2011-06-02 0:00	0.014	17	0.001	0.0002	0.0007	31	0.0047	3.6	0.005	1.61	0.005	0.00005	0.0026	0.005	0.005	0.0005
W12	2011-06-30 0:00	0.013	17.2	0.001	0.0002	0.0012	32	0.0055	4.12	0.005	1.17	0.005	0.00005	0.0025	0.005	0.005	0.0005
W12	2011-08-07 0:00	0.02	17.8	0.002	0.0002	0.0014	28	0.0058	4.82	0.005	1.33	0.005	0.00005	0.0035	0.005	0.009	0.0005
W12	2011-10-01 0:00	0.018	20	0.001	0.0002	0.001	29	0.0061	4.61	0.005	1.45	0.005	0.00005	0.003	0.005	0.005	0.0005
W12	2011-10-30 0:00	0.02	20.4	0.001	0.0002	0.001	30	0.006	4.88	0.005	1.59	0.005	0.00005	0.0034	0.005	0.005	0.0005
W12	2011-11-03 0:00	0.021	21.1	0.001	0.0002	0.001	32	0.0062	4.66	0.005	1.73	0.005	0.00005	0.0035	0.005	0.005	0.0005
W12	2011-11-23 0:00	0.0218	22.3	0.0016	0.0002	0.00107	35.2	0.00684	4.9	0.005	1.58	0.005	0.00005	0.00346	0.005	0.005	0.0005
W12	2012-02-13 0:00	0.0214	23.2	0.001	0.0002	0.00103	34.3	0.00701	4.9	0.005	1.61	0.005	0.00005	0.00332	0.005	0.005	0.0005
W12	2012-03-28 14:00	0.0211	21.1	0.001	0.0002	0.001	34	0.00685	5.1	0.005	1.56	0.005	0.00005	0.0033	0.005	0.005	0.0005
W12	2012-04-07 13:30	0.0223	20.2	0.001	0.0002	0.00079	30.3	0.00586	4.48	0.005	1.51	0.005	0.00005	0.00322	0.005	0.005	0.0005
W12	2012-04-22 13:30	0.0167	17.7	0.001	0.0002	0.00073	27.3	0.00554	4.33	0.005	1.35	0.005	0.00005	0.00288	0.005	0.005	0.0005
W12	2012-05-03 17:00	0.0137	15.1	0.001	0.0002	0.0006	22.8	0.00438	4.07	0.005	1.1	0.005	0.00005	0.00219	0.005	0.0219	0.0005
W12	2012-06-03 0:00	0.0171	20.2	0.001	0.0002	0.00065	28.3	0.00593	4.65	0.005	1.41	0.005	0.00005	0.00224	0.005	0.0079	0.0005
W12	2012-07-03 10:45	0.0195	24.2	0.001	0.0002	0.00061	33.6	0.00704	0.1	0.005	1.58	0.005	0.00005	0.00234	0.005	0.005	0.0005
W12	2012-07-18 9:25	0.0188	23.1	0.001	0.0002	0.00059	31.2	0.00639	0.308	0.005	1.55	0.005	0.00005	0.00234	0.005	0.005	0.0005
W12	2012-08-12 17:10	0.0179	22	0.001	0.0002	0.00054	31.8	0.00665	0.851	0.005	1.48	0.005	0.00005	0.00249	0.005	0.005	0.0005
W12	2012-09-12 16:00	0.0176	20.2	0.001	0.0002	0.00052	26.2	0.00629	2.47	0.005	1.44	0.005	0.00005	0.00263	0.005	0.005	0.0005
W12	2012-10-14 8:30																
W12	2012-11-11 10:30	0.0215	22	0.001	0.0002	0.00058	40	0.00667	3.77	0.005	2.05	0.005	0.00005	0.00394	0.005	0.005	0.0005
W12	2012-12-16 16:00	0.0286	26.4	0.003	0.0002	0.0005	39.5	0.00675	3.47	0.005	2.72	0.005	0.00005	0.00232	0.005	0.005	0.0005
W12	2013-01-04 0:00	0.0484	103	0.0019	0.0002	0.00087	189	0.00387	8.47	0.005	21.2	0.005	0.00005	0.0234	0.005	0.005	0.0005
W12	2013-02-13 0:00	0.0476	58.5	0.0028	0.0002	0.00063	82	0.00185	4.94	0.005	6.66	0.005	0.00005	0.00278	0.005	0.005	0.0005
W12	2013-03-04 15:30	0.0343	43	0.0015	0.0002	0.0005	50.6	0.00077	3.25	0.005	5.18	0.005	0.00005	0.00051	0.005	0.005	0.0005
W12	2013-03-22 0:00																
W12	2013-04-18 9:30	0.0255	32.7	0.0012	0.0002	0.0005	35.2	0.00062	2.07	0.005	3.96	0.005	0.00005	0.00047	0.005	0.005	0.0005
W12	2013-05-04 16:45	0.032	40.3	0.0032	0.0002	0.0005	43.3	0.00103	2.27	0.005	4.76	0.005	0.00005	0.00036	0.005	0.005	0.0005
W12	2013-07-07 14:55	0.0367	38.6	0.0014	0.0002	0.0005	40.1	0.00437	2.56	0.005	3.49	0.005	0.00005	0.00111	0.005	0.005	0.0005
W12	2013-08-02 11:00	0.043	40.9	0.0013	0.0002	0.0005	43	0.00467	2.81	0.005	3.29	0.005	0.00005	0.00103	0.005	0.005	0.0005
W12	2013-09-04 8:00	0.0435	43	0.0016	0.0002	0.0005	45.9	0.00537	3.18	0.005	3.23	0.005	0.00005	0.0009	0.005	0.005	0.0005
W12	2013-10-04 12:00	0.0484	44.4	0.0017	0.0002	0.0005	52.5	0.00548	3.24	0.005	4.15	0.005	0.00005	0.00116	0.005	0.005	0.0005
W12	2013-10-18 15:30	0.0475	46.1	0.0018	0.0002	0.0005	51.9	0.00586	3.2	0.005	4.33	0.005	0.00005	0.00151	0.005	0.005	0.0005
W12	2013-11-09 10:30	0.0491	44.7	0.002	0.0002	0.0005	55.5	0.00553	3.24	0.005	4.78	0.005	0.00005	0.00148	0.005	0.005	0.0005
W12	2013-12-10 10:30	0.0525	49.1	0.003	0.0002	0.0005	58.3	0.00562	2.99	0.005	5.29	0.005	0.00005	0.00151	0.005	0.005	0.0005
W12	2014-01-05 17:10	0.0496	50.3	0.0033	0.0002	0.0005	58.9	0.00521	3.22	0.005	5.08	0.005	0.00005	0.00146	0.005	0.005	0.0005
W12	2014-02-04 17:00	0.0508	47.6	0.0034	0.0002	0.0005	65.6	0.00465	3.17	0.005	5.54	0.005	0.00005	0.0012	0.005	0.0074	0.0005
W12	2014-03-24 11:30	0.0561	52.5	0.001	0.0002	0.0005	61.9	0.00494	2.65	0.005	6.14	0.005	0.00005	0.00027	0.005	0.005	0.0005
W12	2014-04-19 10:10	0.0537	57.7	0.001	0.0002	0.0005	70	0.00487	2.76	0.005	6.24	0.005	0.00005	0.00046	0.005	0.005	0.0005
W12	2014-05-06 15:30	0.0511	56.4	0.0014	0.0002	0.0005	66	0.00472	2.6	0.005	6.13	0.005	0.00005	0.00062	0.005	0.005	0.0005
W12	2014-06-14 10:45	0.0527	58.8	0.0036	0.0002	0.0005	63	0.00512	2.63	0.005	6.22	0.005	0.00005	0.00108	0.005	0.005	0.0005
W12	2014-07-03 11:10	0.0576	62.5	0.0026	0.0002	0.0005	72.5	0.00495	2.88	0.005	6.34	0.005	0.00005	0.00117	0.005	0.005	0.0005
W12	2014-07-23 8:30																
W12	2014-08-07 16:20																
W12	2014-08-09 10:02																
W12	2014-08-09 10:02	0.0502	58.4	0.0029	0.0002	0.0005	84.3	0.0063	3.24	0.005	5.84	0.005	0.00005	0.00106	0.005	0.005	0.0005
W12	2014-08-15 15:50																
W12	2014-08-19 11:30																
W12	2014-08-26 11:45																
W12	2014-09-07 10:00																
W12	2014-09-07 10:00	0.0635	72.1	0.0026	0.0002	0.0005	84.4	0.00763	3.65	0.005	7.1	0.005	0.00005	0.00101	0.005	0.005	0.0005
W12	2014-09-12 13:20																
W12	2014-09-12 13:20	0.0638	65.2	0.0023	0.0002	0.0005	85	0.0069	3.09	0.005	7.05	0.005	0.00005	0.00102	0.005	0.005	0.0005
W12	2014-09-15 16:10																
W12	2014-09-15 16:10	0.0645	68.1	0.0023	0.0002	0.0005	77.5	0.00617	3.23	0.005	7.06	0.005	0.00005	0.00107	0.005	0.005	0.0005
W12	2014-09-25 11:45																
W12	2014-10-03 11:45																
W12	2014-10-08 16:05																
W12	2014-10-08 16:05																
W12	2014-10-09 13:45	0.0725	67.2	0.0021	0.0002	0.0005	82.5	0.00641	3.15	0.005	7.17	0.005	0.00005	0.00102	0.005	0.005	0.0005
W12	2014-10-13 16:05																
W12	2014-11-02 14:10	0.0655	66.5	0.0017	0.0002	0.0005	77.8	0.00704	3.17	0.005	7.44	0.005	0.00005	0.00183	0.005	0.005	0.0005
W12	2014-11-23 17:40	0.0729	75.2	0.002	0.0002	0.0005	91.6	0.00725	3.21	0.005	7.32	0.005	0.00005	0.00185	0.005	0.005	0.0005
W12	2014-12-11 15:50	0.0732	76.1	0.0029	0.0002	0.0005	94.7	0.00749	3.02	0.005	7.34	0.005	0.00005	0.00167	0.005	0.005	0.0005
W12	2015-01-05 9:45	0.0782	83.3	0.0022	0.0002	0.0005	97.6	0.00819	2.86	0.005	7.19	0.005	0.00005	0.00142	0.005	0.005	0.0005
W12	2015-01-17 10:40	0.0758	84	0.0021	0.0002	0.00052	93.1	0.00877	2.58	0.005	6.99	0.005	0.00005	0.00128	0.005	0.0062	0.0005
W12	2015-02-20 13:30	0.0834	84.3	0.002	0.0002	0.0005	97.7	0.00893	2.52	0.005	6.07	0.005	0.00005	0.00168	0.005	0.005	0.0005
W12	2015-03-08 16:20	0.088	103	0.0019	0.0002	0.0005	104	0.00952	2.51	0.005	5.74	0.005	0.00005	0.00214	0.005	0.005	0.0005
W12	2015-04-02 10:20	0.0941	99	0.0015	0.0002	0.0005	105	0.0105	2.63	0.005	6.02	0.005	0.00005	0.00211	0.005	0.005	0.0005
W12	2015-05-11 16:40	0.0796	87.5	0.0015	0.0002	0.0005	96.3	0.00975	2.69	0.005	5.74	0.005	0.00005	0.0024	0.005	0.005	0.0005
W12	2015-06-11 17:15	0.0747	90.4	0.0015	0.0002	0.0005	89.6	0.00969	3.33	0.005	5.15	0.005	0.00005	0.00246	0.005	0.005	0.0005
W12	2015-07-03 16:40	0.0945	116	0.0018	0.0002	0.0005	112	0.0151	3.26	0.005	4.81	0.005	0.00005	0.00181	0.005	0.005	0.0005
W12	2015-08-20 9:45	0.0972	129	0.0011	0.0002	0.0005	113	0.0207	2.81	0.005	4.78	0.005	0.00005	0.00208	0.005	0.005	0.0005
W12	2015-09-16 15:00	0.0873	112	0.001	0.0002	0.0005	113	0.0165	3.66	0.005	4.31	0.005	0.00005	0.00234	0.005	0.005	0.0005
W12	2015-10-16 15:55	0.0825	115	0.001	0.0002	0.0005	116	0.0157	3.41	0.005	4.18	0.005	0.00005	0.0027	0.005	0.005	0.0005
W12	2015-11-07 11:40	0.0829	130	0.001	0.0002	0.0005	119	0.0163	3.57	0.005	4.24	0.005	0.00005	0.00257	0.005	0.0062	0.0005
W12	2015-12-11 17:15	0.0882	120	0.0038	0.0002	0.0005	121	0.0174	3.64	0.005	4.05	0.005	0.00005	0.0025	0.005	0.005	0.0005
W12	2016-01-03 15:35	0.083	116	0.0014		0.0005	116	0.0168	2.95	0.005	3.86	0.005	0.00005	0.00252	0.005	0.005	0.0005
W12	2016-02-01 16:50	0.0863	119	0.0015		0.0005	113	0.0164	3.37	0.005	4.35	0.005	0.00005	0.00254	0.005	0.0061	0.0005
W12	2016-03-05 17:10	0.0856	116	0.0014		0.0005	130	0.0171	3.51	0.005	4.19	0.005	0.00005	0.00274	0.005	0.0056	0.0005
W12	2016-04-19 16:25	0.069	97.9	0.00153	0.00005	0.00022	104	0.0143	3.45	0.0001	3.79	0.0003	0.00001	0.00287	0.0005	0.0036	0.0003
W12	2016-05-19 16:10	0.069	99.4	0.00179	0.00005	0.00023	105	0.0134	3.12	0.0001	3.99	0.0003	0.00001	0.00243	0.0005	0.0037	0.0003
W12	2016-06-27 16:15	0.0866	107	0.00219	0.000052	0.00025	132	0.0154	2.79	0.0001	4.59	0.0003	0.00001	0.00185	0.0005	0.0036	0.0003
W12	2016-07-25 14:40	0.082	120	0.00172	0.00005	0.00023	145	0.0149	2.78	0.0001	4.64	0.0003	0.00001	0.00177	0.0005	0.0024	0.0003
W12	2016-08-22 14:50	0.0773	121	0.0017	0.00005	0.00023	143	0.0129	3.15	0.0001	4.59	0.0003	0.00001	0.00235	0.0005	0.0022	0.0003
W12	2016-09-17 16:40	0.0831	106	0.00169	0.00005	0.00024	147	0.0135	3.14	0.0001	4.56	0.0003	0.00001	0.00267	0.0005	0.0024	0.0003
W12	2016-10-15 11:15	0.0758	119	0.00202	0.00005	0.00028	194	0.0138	3.32	0.0001	4.52	0.0003	0.00001	0.00278	0.0005	0.0041	0.0003
W12	2016-11-04 13:40	0.0807	122	0.00222	0.00005	0.00028	198	0.0152	3.45	0.0001	4.87	0.0003	0.00001	0.00283	0.0005	0.0032	0.0003
W12	2016-12-01 16:10																
W12	2016-12-01 16:10	0.0775	123	0.00253	0.00005	0.00023	228	0.0139	3.47	0.0001	4.81	0.0003	0.00001	0.00288	0.0005	0.0038	0.0003
W12	2017-01-02 14:25	0.0775	121	0.00268	0.000061	0.0003	278	0.0153	3.09	0.0001	5.13	0.0003	0.00001	0.00341	0.0005	0.0031	0.0003
W12	2017-02-05 17:05	0.0756	123	0.003	0.00016	0.00036	366	0.015	3.14	0.0002	5.91	0.0006	0.00002	0.00389	0.001	0.0022	0.0006
W12	2017-03-06 16:30	0.0835	133	0.003	0.00015	0.00035	383	0.0138	3.12	0.0002	7.11	0.0006	0.00002	0.00465	0.001	0.0022	0.0006
W12	2017-04-04 16:30	0.0801	122	0.0034	0.00021	0.00028	431	0.0132	3.15	0.0002	7.57	0.0006	0.00002	0.00526	0.001	0.0052	0.0006
W12	2017-05-08 8:50	0.0645	98.6	0.00262	0.00005	0.00023	326	0.0123	3.26	0.0001	6.34	0.0003	0.00001	0.00523	0.0005	0.0068	0.0003
W12	2017-06-12 17:00	0.0716	123	0.0038	0.0001	0.00028	426	0.0109	3.39	0.0002	7.08	0.0006	0.00002	0.0062	0.001	0.0062	0.0003
W12	2017-07-03 14:25	0.0787	137	0.0046	0.0001	0.00028	501	0.0126	3.64	0.0002	7.51	0.0006	0.00002	0.00708	0.001	0.007	0.0003
W12	2017-07-23 8:25																
W12	2017-07-25 8:40																
W12	2017-07-29 9:15																
W12	2017-07-30 7:50																
W12	2017-08-01 12:05																
W12	2017-08-02 11:55	0.0834	145	0.0045	0.0001	0.00025	491	0.0129	3.78	0.0002	7.2	0.0006	0.00002	0.00676	0.001	0.0069	0.0003
W12	2017-08-06 9:15																
W12	2017-08-08 11:20																
W12	2017-08-12 9:00																

Attachment 3: Sitewide Database

		General Parameters								Anions & Nitrogen Species						Dissolved Elements																																	
Station	Date / Time	Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N\text{-}NO_2$	$N\text{-}NO_3$	$N\text{-}NH_3$	$SO_4\text{-}D$	Chlord	Fluord	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W12	2017-08-15 9:25			155.6	7.72			16.2	35.5																																								
W12	2017-08-19 8:15			156.6	7.78			14.1	31.3																																								
W12	2017-08-22 10:00			159.2	7.97			14	35.7																																								
W12	2017-08-27 8:50			172.9	7.84			12.4	38.7																																								
W12	2017-08-29 12:50			161.3	7.86			13	64.7																																								
W12	2017-09-02 8:20			189.7	7.36			12.5	73.9																																								
W12	2017-09-03 9:30	171	2660	180.8	7.2	2330	10	11.2	86.1	5.8	13.1	3.98	1450	34.3		0.00002	0.0077	0.00048	0.115	0.244	0.00004	0.0001	397		0.00128	0.0002	0.0389	0.02	0.000005	65.4	0.0222	66.7	1.43	0.0847	140	0.004	0.0001	0.00027	477	0.0131	3.68	0.0002	7.06	0.0006	0.00002	0.00708	0.001	0.0073	0.0003
W12	2017-09-05 10:45			173.6	7.55			11.9	55.2																																								
W12	2017-09-24 13:55			226.3	7.55			10.3	49.8																																								
W12	2017-09-26 10:35			219.8	7.38			8.9	51.6																																								
W12	2017-09-30 8:55			232.8	7.34			7.8	46.3																																								
W12	2017-10-02 16:30	182	2490	221.3	7.52	2110	9.6	7.8	64.6	5.48	11.7	3.52	1280	32.2		0.00001	0.0053	0.00042	0.0963	0.223	0.00002	0.00005	360		0.00127	0.0001	0.0574	0.01	0.000005	50.5	0.0188	65.7	1.24	0.0754	140	0.00346	0.00005	0.00032	482	0.0131	3.97	0.0001	6.76	0.0003	0.00001	0.0077	0.0005	0.0072	0.0003
W12	2017-10-24 11:55				8.6			5.4																																									
W12	2017-10-30 9:40			204.6	7.57			4.2	75.3																																								
W12	2017-11-07 12:25	209	2460	115.4	7.71	2140	14	3.7	73.6	5.35	12.5	4.1	1290	36		0.00002	0.004	0.00039	0.0841	0.24	0.00004	0.0001	358		0.00121	0.0002	0.0675	0.02	0.000005	45.9	0.0181	64.1	1.14	0.0796	136	0.0034	0.0001	0.00027	419	0.0109	3.99	0.0002	7.28	0.0006	0.00002	0.00772	0.001	0.0074	0.0003
W12	2017-11-14 9:40																																																
W12	2017-11-17 16:20	215	2350	198.2	7.09	2110	3	7.3	50.1	5	11.9	4.34	1210	37.4		0.00002	0.0045	0.00048	0.09	0.25	0.00004	0.0001	396	0.000205	0.00122	0.0002	0.074	0.02		50.1	0.019	72.8	1.36	0.0818	134	0.0037	0.0001	0.00035	441	0.0112	4.41	0.0002	8.38	0.0006	0.00002	0.00795	0.001	0.0087	0.0003
W12	2017-11-21 12:20			160.3	7.71			4	39.9																																								
W12	2017-11-28 7:50			209.5	7.58			4.7	62.4																																								
W12	2017-12-05 11:55	203	2500	228.7	7.84	2200	6	4.9	47.2	4.68	12.6	4.46	1280	36		0.00002	0.005	0.00054	0.0843	0.287	0.00004	0.0001	408		0.00134	0.0002	0.0577	0.02	0.000005	51.8	0.0215	71.1	1.26	0.079	159	0.0035	0.0001	0.00028	511	0.0128	4.5	0.0002	7.16	0.0006	0.00002	0.00795	0.001		0.0003
W12	2017-12-12 9:55			238.4	7.97			6.3	62.4																																								
W12	2017-12-19 10:10			179	7.22			2.4	34.2																																								
W12	2017-12-26 7:45			263.4	7.74			3.6	50.3																																								
W12	2018-01-15 9:30	169	2670	125.7	7.77	2460	12.6	4.9	86.1	5.25	13.2	4.69	1540	40		0.00002	0.0054	0.00041	0.0919	0.292	0.00004	0.0001	412		0.0022	0.0002	0.0342	0.02	0.000005	55.1	0.0221	74	1.5	0.0975	154	0.0038	0.0001	0.00032	491	0.0116	3.93	0.0002	7.39	0.0006	0.00002	0.00795	0.001	0.0073	0.0003
W12	2018-02-05 10:45	183	2800	154.6	7.39	2400	8.9	4.8	41.5	6.49	9.96	4.46	1480	36		0.00002	0.0044	0.00039	0.106	0.287	0.00004	0.0001	442		0.00224	0.0002	0.0382	0.02	0.000005	50.6	0.0211	65.1	1.47	0.0927	143	0.0034	0.0001	0.00032	500	0.0104	3.83	0.0002	6.93	0.0006	0.00002	0.00942	0.001	0.0055	0.0003
W12	2018-02-14 8:15																																																
W12	2018-02-20 14:25			210.4	7.79			1.8	83.8																																								
W12	2018-03-06 10:35																																																
W12	2018-03-13 10:25	198	2740	125.5	7.85	2320	4.9	1.5	87.6	8.12	6.22	4.56	1410	37		0.00002	0.005	0.0004	0.0961	0.299	0.00004	0.0001	404	0.000114	0.00241	0.0002	0.0373	0.025	0.000005	54.3	0.0211	78	1.59	0.0894	154	0.0035	0.0001	0.00028	529	0.0094	4.27	0.0002	7.04	0.0006	0.00002	0.01	0.001	0.0058	0.0003
W12	2018-03-20 8:45			198.4	7.24			2.4	79.1																																								
W12	2018-03-28 16:00																																																
W12	2018-04-03 11:45																																																
W12	2018-04-09 8:50	195	2690	145.7	7.5	2300	5.2	2.3	82.6	8.49	6.05	4.21	1440	39		0.00002	0.0051	0.00042	0.0737	0.265	0.00004	0.0001	372	0.000081	0.00194	0.0002	0.039	0.021	0.000005	49.1	0.0183	75.1	1.25	0.0868	154	0.0036	0.00011	0.00029	484	0.0086	3.71	0.0002	6.76	0.0006	0.00002	0.0094	0.001	0.0076	0.0003
W12	2018-04-10 8:45			170.9	7.39			2.1	95.1																																								
W12	2018-04-17 8:15			192.5	7.46			2.1	50																																								
W12	2018-04-24 7:45			212.8	7.51			3.9	55.5																																								
W12	2018-05-08 10:55	138	1900	180.7	7.55	1550	42.8	5.5	122.6	3.16	12	2.78	891	22	1.48	0.000011	0.043	0.00039	0.0791	0.165		0.00005	289	0.00013	0.0016	0.00035	0.0641	0.084	0.000005	35.6	0.0171	53.7	0.967	0.0553	91.9	0.00305		0.00033	335	0.00719	3.26	0.0001	4.82	0.0024	0.00001	0.00579	0.0005	0.0106	0.0003
W12	2018-05-14 11:20			148.6	7.37			8.1	88.6																																								
W12	2018-05-28 9:40			171.2	7.76			12.9	59.5																																								
W12	2018-06-04 10:45	143	2240	155.1	7.82	1800	15.1	13.4	78.2	3.96	12.7	3.72	1060	24.1		0.00001	0.0067	0.0004	0.0868	0.2	0.00002	0.00005	343	0.00008	0.00122	0.0001	0.0502	0.034	0.000005	43.7	0.0153	63.1	0.994	0.0607	109	0.00424	0.000088	0.00037	378	0.00688	3.16	0.0001	5.27	0.0006	0.00001	0.0055	0.0005	0.0094	0.0003
W12	2018-06-12 15:15				8.1			14.3																																									
W12	2018-06-19 10:00	145	2190	195.6	7.58	1780	8	15.9	49.4	5.04	11.5	3.8	1060	25.5		0.00001	0.0033	0.0004	0.085	0.208	0.00002	0.00005	336	0.000115	0.00106	0.0001	0.0567	0.016	0.000005	42.1	0.0153	57.2	0.915	0.0655	100	0.00387	0.000093	0.00039	347	0.00674	3.11	0.0001	5.22	0.0003	0.00001	0.00598	0.0005	0.0091	0.0003
W12	2018-06-26 15:55			131.3	7.77			15.5	30.8																																								
W12	2018-07-02 11:10	188	2540	178.1	7.59	2120	9.3	11.4	30.9	7.23	4.86	4.59	1310	31		0.00002	0.0064	0.00042	0.0844	0.261	0.00004	0.0001	368	0.00008	0.00135	0.0002	0.0378	0.067	0.000005	48.5	0.018	70.1	1.17	0.0769	131	0.0048	0.00016	0.00036	482	0.00829	3.63	0.0002	5.93	0.0006	0.00002	0.00722	0.001	0.004	0.0003
W12	2018-07-03 16:00			172.8	7.47			11.7	28.7																																								
W12	2018-07-09 8:00			169.5	7.81			16.6	50.8																																								
W12	2018-07-17 15:00			186.7	7.88			14.5	69.6																																								
W12	2018-07-18 8:20	196	2480	170.5	7.93	2100	7.6	13.7	90.34	6.11	4.7	4.65	1280	31.3		0.00002	0.0064	0.00046	0.0765	0.267	0.00004	0.0001	371	0.000077	0.00114	0.00132	0.0293	0.049	0.000005	46.5	0.019	72.5	1.04	0.0714	131	0.0065	0.0001	0.00035	471	0.00691	3.94	0.0002	6.04	0.0006	0.00002	0.00717	0.001	0.0028	0.0003
W12	2018-07-24 8:40	229	2660	143.6	7.9	2100	7.5	18	57	5.59	5.12	4.44	1270	31.7	1.86	0.00002	0.0096	0.00046	0.0751	0.285	0.00004	0.0001	375	0.00007	0.00087	0.0002	0.0218	0.02	0.000005	44.8	0.0197	65.7	0.852	0.0672	126	0.005	0.0001	0.00034	455	0.00691	4	0.0002	5.98	0.0006	0.00002	0.00718	0.001	0.0022	0.0003
W12	2018-08-06 16:15	186	2570	189.3	7.69	2240	12.2	17.3	30.9	5.36	5.6	4.74	1390	32		0.00002	0.0081	0.00044	0.0771	0.305	0.00004	0.0001	403	0.00006	0.00081	0.0002	0.0168	0.02	0.000005	50.9	0.0215	73.7	0.829	0.077	137	0.0058	0.0001	0.00039	536	0.00724	4.37	0.0002	6.42	0.0006	0.00002	0.00702	0.001	0.0041	0.0003
W12	2018-08-27 8:55			152	7.79			12.9	49.6																																								
W12	2018-09-04 8:30			177.5	7.82			10.8	59.2																																								
W12	2018-09-14 10:20	207	2320	190.3	7.84	1890	14	9.4	59.8	3.48	5.59	3.86	1130	29.3		0.00001	0.0116	0.00043	0.071	0.235	0.00002	0.00005	339	0.00008	0.00078	0.0001	0.0454	0.016	0.000005	41.8	0.0153	66.8	0.775	0.0589	118	0.00444	0.00005	0.0003	395	0.0076	4.59	0.0001	5.85	0.0003	0.00001	0.00704	0.0005	0.0025	0.0003
W12	2018-09-24 9:15			240.4	7.36			7.3	71.6																																								
W12	2018-10-01 13:20			180	7.76			6.7	72.3																																								
W12	2018-10-09 13:20	215	2280	173.7	7.87	1920	13	3.9	47.5	2.73	4.57	3.77	1170	32		0.00002	0.0054	0.00042	0.072	0.237	0.00004	0.0001	337	0.00009	0.00089		0.0533	0.02	0.000005	39.8	0.0155	66	0.823	0.0635	118		0.0001	0.0003	395	0.00634	4.35	0.0002	6.03	0.0006	0.00002	0.00644	0.001	0.003	0.0003
W12	2018-10-23 10:30			143.9	7.82			3	59.3																																								
W12	2018-10-30 7:50			270.3	7.47			3	77.3																																								
W12	2018-11-18 15:50	226	2150	276.9	7.72	1820	10.6	2.1	47.8	2.15	5.26	3.17	1090	30.7		0.00002	0.0047	0.00047	0.064	0.222	0.00004	0.0001	321		0.00078	0.0002	0.0641	0.02	0.000005	33.7	0.0138	62.4	0.707	0.056	111	0.0041	0.0001	0.00026	398	0.00588	4.7	0.0002	5.84	0.0006	0.00002	0.00671	0.001	0.0036	0.0003
W12	2018-12-01 10:25	229	2150	192.1	7.63	1820	8.2	1.6	67.1	1.86	5.71	2.98	1050	29.8	1.12	0.000011	0.0031	0.00051	0.0704	0.212	0.00002	0.00005	358		0.00083	0.0001	0.0573	0.012	0.000005	37.9	0.0155	63.9	0.693	0.0543	110	0.00419	0.00005	0.00026	390	0.00643	5.35	0.0001	6.43	0.0003	0.00001	0.00659	0.0005	0.004	0.0003
W12	2019-01-04 13:55	311	1820	239.6	7.62	1400	6.4	-0.1	69.4	0.261	28.1	0.336	640	23.8		0.00001	0.0049	0.00077	0.0667	0.096	0.00002	0.00005	299		0.00023	0.0001	0.143	0.01	0.000005	10.4	0.0089	58.7	0.117	0.0299	58.2	0.001	0.00005	0.00024	241	0.0106	7.39	0.0001	6.2	0.0003	0.00001	0.0076	0.00056	0.007	0.0003
W12	2019-02-11 16:05	244	1900	260.8	7.4	1550	7.7	-0.1	10.2	0.134	14.4	0.226	838	31.3		0.00001	0.0063	0.00103	0.0451	0.127	0.00002	0.00005	325		0.00029	0.0001	0.22	0.01	0.000005	7.74	0.009	60	0.137	0.0256	73.1	0.00074	0.00005	0.00013	293	0.00666	7.89	0.0001	6.8	0.0003	0.00001	0.00829	0.0005	0.0047	0.0003
W12	2019-03-11 14:50	233	1850	191.9	7.95	1560	7.4	0.5	81	0.099	4.98	0.249	906	32.4		0.00001	0.0084	0.001	0.0302	0.133	0.00002	0.00005	321	0.000217	0.0003	0.0001	0.191	0.01	0.000005	7.16	0.0085	54.2	0.147	0.0206	78	0.00066	0.00005	0.0001	331	0.00295	7.7	0.0001	6.28	0.0003	0.00001	0.00799	0.0005	0.0132	0.0003
W12	2019-04-22 9:05	88.9	873	183.4	7.55	567	4.7	0.2	75	0.0624	3.32	0.125	323	12.4		0.00001	0.0042	0.00032	0.0234	0.05	0.00002	0.00005	114	0.0000492	0.00013	0.0001	0.0262	0.022	0.000005	3.32	0.0033	19.7	0.0699	0.00826	26.6	0.0005	0.00005	0.0001	112	0.00166	2.68	0.0001	2.42	0.0003	0.00001	0.00242	0.0005	0.0038	0.0003
W12	2019-05-07 16:35	159	1430	213.7	8.2	1130	3	8.1	104.2	0.0859	5.19	0.005	653	23		0.00001	0.0101	0.00068	0.0231	0.095	0.00002	0.00005	231	0.0000145	0.00018	0.0001	0.0237	0.01	0.000005	5.57	0.0066	41.6	0.0807	0.0163	55.2	0.00067	0.00005	0.0001	238	0.00297	5.69	0.0001	4.56	0.0003	0.00001	0.0053	0.0005	0.001	0.0003
W12	2019-06-12 10:45	159	1490	179.3	7.63	1210	3	14.8	109.5	0.11	6.06	0.082	698	24.4		0.00001	0.0058	0.00066	0.0374	0.111	0.00002	0.00005	247	0.00004	0.00014	0.0001	0.0387	0.01	0.000005	8.69	0.0071	48.2	0.0682	0.02	61.6	0.0008	0.00005	0.0001	243	0.00353	5.39	0.0001	5.25	0.0003	0.00001	0.00626	0.0005	0.001	0.0003
W12	2019-07-04 9:05	150	1540	98.7	8.18	1220	4.4	17.9	78.8	0.0691	6.11	0.0098	720	24.6		0.00002	0.002	0.00056	0.0352	0.103	0.00004	0.0001	238	0.00001	0.0002	0.0002	0.026	0.02	0.000005	8.51	0.0069	47.2	0.0438	0.0204	59.6	0.001	0.0001	0.0002	264	0.00329	3.88	0.0002	5.21	0.0006	0.00002	0.00668	0.001	0.002	0.0004
W12	2019-08-10 8:30	176	1600	172.7	7.85	1270	3	14.9	68.1	0.1	7.54	0.136	722	24.7	0.91	0.00001	0.0028	0.00059	0.0424	0.108	0.00002	0.00005	229	0.00006	0.0001	0.0001	0.0488	0.01	0.000005	10.5	0.0075	49.1	0.0428	0.0271	62.2	0.00072	0.00005	0.00012	252	0.00472	4.47	0.0001	5.57	0.0003	0.00001	0.00612	0.0005	0.0012	0.0003
W12	2019-09-09 9:35	171	1770	141.3	8.11	1300	3	12	89.6	0.207	6.88	0.353	764	24.7		0.00002	0.0024	0.00049	0.0419	0.134	0.00004	0.0001	251	0.000056	0.0002	0.0002	0.0463	0.02	0.000005	13	0.0089	48.9	0.0742	0.0286	64	0.0011	0.0001	0.0002	270	0.00424	4.38	0.0002	5.59	0.0006	0.00002	0.00701	0.001	0.002	0.0004
W12	2019-10-18 14:50	200	1790	198.5	8.01	1400	3	2.9	81.4	0.289	7.55	0.522	823	26.1		0.00002	0.0032	0.00041	0.0473	0.144	0.00004	0.0001	258	0.000076	0.0002	0.0002	0.059	0.02	0.000005	16.9	0.0095	51.3	0.0905	0.0316	74.1	0.0014	0.0001	0.0002	305	0.00478	4.83	0.0002	5.53	0.0006	0.00002	0.00636	0.001	0.0025	0.0004
W12	2019-11-25 10:25	215	1720	191.8	7.77	1260	3	1.8	67.4	0.205	12.5	0.365	674	22.2		0.00001	0.002	0.00052	0.0483	0.123	0.00002	0.00005	250	0.0000838	0.00011	0.00014	0.0938	0.01	0.000005	14	0.009	51	0.0817	0.0306	61.3	0.00119	0.00005	0.00022	262	0.00661	5.46	0.0001	5.2	0.0003	0.00001	0.00652	0.0005	0.0025	0.0003
W12	2019-12-16 9:35	202	1810	169.2	7.78	1450	3.5	1.7	64.1	0.01	9.28	0.52	828	27.9		0.00001	0.0025	0.00057	0.0482	0.142	0.00002	0.00005	281	0.000102	0.00012	0.00018	0.0648	0.01	0.000005	16	0.0099	58	0.105	0.0327	78.1	0.00152	0.00005	0.00019	302	0.00755	5.87	0.0001	5.85	0.0003	0.00001	0.00656	0.0005	0.0055	0.0003
W12	2020-01-13 13:50	227	1960	138.5	7.53	1500	4.5	1.4	25.6	0.63	7.29	1.41	812	23.5		0.00001	0.0021	0.00046	0.0502	0.208	0.00002	0.00005	310	0.00011	0.00028	0.00011	0.0549	0.01	0.000005	18.2	0.0108	60.3	0.21	0.0338	86.6	0.00241	0.00005	0.00021	345	0.00466	5.48	0.0001	6	0.0003	0.00001	0.0068	0.0005	0.005	0.0002
W12	2020-02-17 11:20	184	2310	146.9	7.46	1920	3	1.5	33.2	1.78	8.08	3	1130	26.9	1.11	0.00002	0.0022	0.00034	0.0492	0.234	0.00004	0.0001	412	0.000106	0.0005	0.0002	0.041	0.02	0.000005	23.4	0.0128	66.2	0.366	0.0384	96.7	0.00366	0.0001	0.0003	400	0.00433	5.21	0.0002	6.89	0.0006	0.00002	0.00766	0.001	0.0046	0.0004
W12	2020-03-09 10:45	245	1590	38.9	7.44	1210	3	1.3	3.7	0.702	19.2	0.984	601	16.5	0.687	0.00001	0.002	0.00039	0.0434	0.112	0.00002	0.00005	221	0.000229	0.00024	0.0001	0.107	0.01	0.000005	13.1	0.008	51.7	0.2	0.035	48.2	0.00166	0.00005	0.00022	196	0.00718	5.17	0.0001	4.78	0.0003	0.00001	0.00634	0.0005	0.0053	0.0002
W12	2020-04-13 11:20	246	1940	17.8	7.79	1610	12.6	1.6	11.7	1.13	10.8	2.21	916	22.8		0.00001	0.0028	0.00044	0.0419	0.177	0.00002	0.00005	302	0.00013	0.00036	0.0001	0.0641	0.01	0.000005	17.9	0.0097	56.3	0.345	0.0307	78.5	0.00237	0.00005	0.00023	333	0.00527	5.42	0.0001	5.5	0.0003	0.00001	0.00667	0.0005	0.0041	0.0002
W12	2020-05-25 13:40	138	1350	160.8	7.7	1030	8.4	13.3	57.1	0.672	8.69	1.18	578	12.6		0.000034	0.0133	0.0005	0.0582	0.113	0.000069	0.00005	207	0.0000878	0.00031	0.0001	0.113	0.058	0.000005	13.2	0.0067	36.5	0.219	0.0199	49.2	0.00242	0.000119	0.00032	218	0.00523	3.67	0.0001	3.43	0.00179	0.00005	0.00401	0.0005	0.0025	0.00021
W12	2020-06-16 2:50	151	1720	210.4	7.75	1360	3	16.3	44	1.02	10.1	1.77	807	16.6		0.000014	0.0049	0.00039	0.0621	0.148	0.00002	0.00005	268	0.0000794	0.00028	0.0001	0.0972	0.033	0.000005	15	0.0074	42	0.26	0.0255	58.4	0.00242	0.00005	0.00029	277	0.00525	4.19	0.0001	4.11	0.00066	0.00001	0.00423	0.0005	0.0029	0.0002
W12	2020-06-24 7:00	155		238.5	7.77	1620		13.4	59.6	1.04	10.5	1.81	836	31.4		0.00001	0.0045	0.0004	0.0626	0.152	0.00002	0.00005	307	0.000111	0.00024	0.0001	0.0963	0.023		17	0.0077	47.1	0.255	0.0256	68.4	0.00251	0.000338	0.00028	290	0.00541	4.31	0.0001	4.52	0.00033	0.00001	0.00461	0.0005	0.0049	0.0002
W12	2020-07-18 14:55	179	1900	161.2	7.54	1640	5.2	19.2	47.7	1.75	9.66	2.04	943	19.6		0.00001	0.0038	0.00045	0.0658	0.179	0.00002	0.00005	367	0.000116	0.00023	0.00014	0.0731	0.014	0.000005	18.6	0.0089	47.4	0.266	0.0294	72	0.00252	0.00005	0.0003	316	0.00509	4.18	0.0001	5.21	0.0003	0.00001	0.005	0.0005	0.0034	0.0002
W12	2020-08-26 14:50	177	2140	233.4	7.1	1910	10.8	14.9	62.1	2.47	10.1	2.4	1110	21.8		0.00002	0.0036	0.00024	0.0658	0.213	0.00004	0.0001	427	0.0000937	0.0002	0.0002	0.0518	0.02	0.000005	21.6	0.0088	60.4	0.278	0.0343	93.3	0.00243	0.0001	0.00032	408	0.00544	4.69	0.0002	5.65	0.0006	0.00002	0.00433	0.001	0.0029	0.0004
W12	2020-09-02 13:40	178	2120	210.4	7.26	1780	5	12.7	52.9	2.84	9.55	2.72	1080	21.5		0.00002	0.0036	0.00038	0.0644	0.202	0.00004	0.0001	357	0.000103	0.0002	0.0002	0.0522	0.02	0.000005	20.4	0.0093	52.5	0.31	0.0331	75.5	0.00239	0.0001	0.00033	382	0.00518	4.18	0.0002	5.14	0.0006	0.00002	0.00485	0.001	0.0036	0.0004
W12	2020-10-11 14:10	199	1930	223.5	7.39	1640	4.5	4.5	59.7	1.64	13.6	2.21	927	19.2		0.00001	0.003	0.00053	0.0928	0.19	0.00002	0.00005	341	0.00013	0.00028	0.0001	0.0806	0.01	0.000005	17.8	0.0083	60.1	0.271	0.0293	69.9	0.00157	0.00005	0.00029	322	0.00836	4.8	0.0001	5.52	0.0003	0.00001	0.00525	0.0005	0.0037	0.0002
W12	2020-11-03 10:25	220	1840	162.9	7.34	1480	3	1.8	58.7	1.26	17.7	1.77	822	18.4		0.00001	0.0031	0.00057	0.108	0.144	0.00002	0.00005	285	0.000148	0.00028	0.0001	0.0958	0.01	0.000005	14.4	0.0071	52.1	0.211	0.0262	56.6	0.00111	0.00005	0.00037	279	0.00914	5.02	0.0001	4.93	0.0003	0.00001	0.00578	0.00077	0.0092	0.0002
W12	2020-12-02 13:35	215	1720	216.1	7.14	1730	3	1.8	46.2	0.741	16.7	1.87	933	21.7		0.00001	0.0024	0.0004	0.0761	0.2	0.00002	0.00005	400	0.000178	0.00032	0.0001	0.0994	0.01	0.000005	17.4	0.0107	59	0.265	0.0344	72.8	0.00157	0.00005	0.00032	372	0.009	5.34	0.0001	6.19	0.0003	0.00001	0.00711	0.0005	0.0045	0.0002
W12	2021-01-05 15:30	243	1530	193.4	7.69	1210	4.9	1.2	38.9	0.173	24	1.16	551	15		0.00001	0.0037	0.00039	0.0629	0.101	0.00002	0.00005	259	0.000228	0.00025	0.0001	0.121	0.014	0.000005	11.8	0.0064	57.6	0.162	0.0308	49.8	0.0011	0.00005	0.00037	212	0.0106	5.07	0.0001	5.1	0.0003	0.00001	0.00679	0.0005	0.0083	0.0002
W12	2021-02-04 7:10	242	2350	95.7	7.75	2010	3.2	2.4	9.5	1.16	8.16	3.66	1200	25.9		0.00002	0.0031	0.00043	0.0586	0.245	0.00004	0.0001	404	0.000182	0.00044	0.0002	0.0636	0.02	0.000005	21.9	0.0105	62.1	0.49	0.0304	91.1	0.00244	0.0001	0.00029	439	0.00504	5.48	0.0002	6.54	0.0006	0.00002	0.00651	0.001	0.0032	0.0004
W12	2021-03-13 14:20	220	2410	154.6	7.17	1970	3.8	0.3	8	2.24	7.44	4.31	1290	27.1		0.00002	0.002	0.00033	0.0505	0.253	0.00004	0.0001	374	0.000153	0.00037	0.0002	0.0455	0.02	0.000005	20.9	0.0107	54.6	0.452	0.0313	80.7	0.0024	0.0001	0.00029	394	0.00384	4.63	0.0002	5.94	0.0006	0.00002	0.00573	0.001	0.004	0.0004
W12	2021-04-26 7:55																																																
W12	2021-04-26 7:55	118	711			487	2.8			0.0325	12.8	0.18	205	3.86		0.00001	0.0024	0.00028	0.0496	0.042	0.00002	0.00005	99.1	0.0000653	0.0001		0.068	0.01	0.000005	5.54	0.0031	22.2	0.0388	0.0153	14.7	0.0005	0.00005	0.00015	65.5	0.00598	3.18	0.0001	2.14	0.0003	0.00001	0.00253	0.0005	0.0011	0.0002
W12	2021-05-08 15:05	137	1110	173.8	7.51	804	8.2	5.4	63.3	0.27	12.2	1.09	415	13.1		0.00001	0.0118	0.00036	0.0432	0.082	0.00002	0.00005	156	0.000136	0.00025		0.0823	0.023	0.000005	6.6	0.005	30.9	0.136	0.0148	33.5	0.00075	0.00005	0.00017	145	0.00544	3.75	0.0001	2.93	0.0006	0.00001	0.00372	0.0005	0.0043	0.0002
W12	2021-06-05 17:00	124	949	156.5	8.02	694	6.9	13.3	78.6	0.424	10.4	0.56	354	10.1		0.00001	0.0102	0.00038	0.0454	0.077	0.00002	0.00005	134	0.0000762	0.00021	0.0005	0.109	0.051	0.000005	6.92	0.0047	26.8	0.102	0.0144	29.7	0.00098	0.00005	0.00018	122	0.00491	3.75	0.0001	2.46	0.00137	0.00001	0.00279	0.0005	0.0016	0.0002
W12	2021-07-04 10:05	154	1470	159.3	8.11	1140	5.3	19.3	68.7	1	11.4	1.39	626	16.3		0.00001	0.0078	0.00044	0.0544	0.151	0.00002	0.00005	244	0.00012	0.00021	0.0005	0.0864	0.017	0.000005	12.8	0.0079	38	0.145	0.0188	47.6	0.0013	0.00005	0.00022	201	0.00516	4.1	0.0001	3.82	0.0005	0.00001	0.00394	0.0005	0.0024	0.0002
W12	2021-07-15 7:30																																																
W12	2021-07-15 7:30			133.4	7.12			15	72.1																																								
W12	2021-07-19 8:30	162	1470	105.3	7.99			16.7	65.9	0.973	12.1	1.35	664	17.7																																			
W12	2021-08-06 9:50	168	1520	111.9	7.99	1190	1	18.8	77.1	0.644	13.3	1	663	18.2		0.00001	0.0057	0.00044	0.0575	0.153	0.00002	0.00005	218	0.000126	0.0002	0.0005	0.0932	0.01	0.000005	11.3	0.0084	44.8	0.106	0.023	58.2	0.00124	0.00005	0.00026	237	0.00591	4.47	0.0001	4.48	0.0003	0.00001	0.00495	0.00052	0.0033	0.0002
W12	2021-09-08 13:15	215	1640	135.3	8.12	1320	1	11.7	64.7	0.822	12.4	0.977	728	20.1		0.00001	0.0054	0.00047	0.0548	0.143	0.00002	0.00005	247	0.000145	0.00022	0.0005	0.0834	0.01	0.000005	11.4	0.0078	50.6	0.128	0.0215	59.4	0.00116	0.00005	0.00024	258	0.00573	4.93	0.0001	4.54	0.0003	0.00001	0.0058	0.00051	0.004	0.0002
W12	2021-10-04 16:40	213	1800	91.8	8.04	1390	1	3.2	71.6	0.714	14	1.33	778	20.4		0.00001	0.0049	0.00041	0.0612	0.142	0.00002	0.00005	250	0.000161	0.00025	0.0005	0.0861	0.01	0.000005	13.2	0.0089	53.8	0.149	0.0247	63.2	0.00144	0.00005	0.00025	263	0.00552	5.03	0.0001	5.1	0.0003	0.00001	0.00579	0.0005	0.006	0.0002
W12	2021-11-10 9:50	216	1900	112.1	7.7	1430	3.1	2.3	60.3	1.18	15.8	1.81	860	21.2		0.000012	0.0028	0.00049	0.0914	0.102	0.00002	0.00005	219	0.000133	0.00032	0.0005	0.13	0.01	0.000005	11.2	0.0071	53.7	0.103	0.0279	46.4	0.00115	0.00005	0.00022	203	0.0119	5.33	0.0001	4.79	0.0003	0.00001	0.00645	0.00069	0.0037	0.0002
W12	2021-12-08 14:15	209	2060	91.5	7.46	1620	3.2	7.9	62.9	1.15	14.4	2.23	924	22.1		0.00001	0.0269	0.00044	0.0637	0.186	0.00002	0.00005	307	0.000181	0.00032	0.0005	0.105	0.044	0.000005	16.3	0.011	63.2	0.158	0.0306	75.5	0.00216	0.00005	0.00024	313	0.00639	5.27	0.0001	6.91	0.0012	0.00001	0.00635	0.00058	0.0041	0.0002
W12	2022-01-21 14:00	191	1620			1340	1.5			0.669	22	1.68	676	14.5		0.00001	0.0029	0.00037	0.062	0.155	0.00002	0.00005	281	0.000174	0.00024	0.0005	0.104	0.01	0.000005	16.1	0.0102	58.9	0.15	0.0341	65	0.00195	0.00005	0.0002	305	0.00907	5.44	0.0001	6.14	0.0003	0.00001	0.00624	0.0005	0.0039	0.0002
W12N	2010-06-23 0:00	97	488		8.16	340	15	15.37	98.6	0.098	15.1	1.2	86	2.4	0.75	0.0001	0.028	0.0008	0.051	0.1	0.0002	0.001	50	0.0001	0.0005	0.002	0.216	0.045	0.0002	3	0.01	12	0.102	0.022	19	0.001	0.0002	0.0005	60	0.0043	3.3	0.005	1.94	0.01	0.00005	0.0032	0.005	0.01	0.002
W12N	2010-06-24 0:00	96	487		8.17	340	8	17.36	105.9	0.098	15.2	1.5	85	2.4	0.75	0.0001	0.021	0.0008	0.05	0.1	0.0002	0.001	52	0.0001	0.0005	0.002	0.216	0.049	0.0002	3	0.01	12	0.102	0.022	19	0.001	0.0002	0.0005	60	0.0043	3.52	0.005	2.06	0.01	0.00005	0.0031	0.005	0.01	0.002
W12N	2010-06-27 0:00	98	494		8.11	380	12	17.22	86.3	0.096	15.5	1.8	96	2.5	0.78	0.0001	0.014	0.0008	0.05	0.1	0.0002	0.001	51	0.0001	0.0005	0.002	0.223	0.033	0.0002	3	0.01	12	0.098	0.023	20	0.001	0.0002	0.0005	60	0.004	3.96	0.005	2.07	0.01	0.00005	0.003	0.005	0.01	0.002
W12N	2010-07-13 0:00	110	574		8.39	390	17	20.02	98.8	0.203	17.9	1.2	98	2.9	0.84	0.0001	0.01	0.0014	0.102	0.1	0.0002	0.001	59	0.0001	0.0005	0.002	0.074	0.022	0.0002	4	0.01	14	0.115	0.028	24	0.001	0.0002	0.0007	60	0.0076	3.58	0.005	2.23	0.01	0.00005	0.0037	0.005	0.01	0.002
W12N	2010-07-14 0:00	110	552		8.43	410	17	15.74	93.7	0.197	18.1	1.5	100	2.8	0.89	0.0001	0.01	0.0014	0.097	0.1	0.0002	0.001	58	0.0001	0.0005	0.002	0.07	0.022	0.0002	4	0.01	14	0.104	0.027	25	0.001	0.0002	0.0006	60	0.0075	3.54	0.005	2.12	0.01	0.00005	0.0035	0.005	0.01	0.002
W12N	2010-07-19 0:00	110	532		8.49	370	15	17.7	85.6	0.186	15.3	1.1	89	2.5	0.7	0.0001	0.021	0.0012	0.097	0.1	0.0002	0.001	57	0.0001	0.0005	0.002	0.066	0.036	0.0002	4	0.01	14	0.092	0.024	23	0.001	0.0002	0.0006	60	0.0068	4.13	0.005	1.96	0.01	0.00005	0.0031	0.005	0.01	0.002
W12N	2010-08-07 0:00	120	522		8.01	340	36	16.04	55.8	0.189	14.3	3.3	86	2.6	0.59	0.0001	0.01	0.0013	0.111	0.1	0.0002	0.001	58	0.0001	0.0005	0.002	0.062	0.038	0.0002	3	0.01	16	0.12	0.02	19	0.001	0.0002	0.0006	60	0.006	4.43	0.005	1.69	0.01	0.00005	0.0027	0.005	0.01	0.002
W12N	2010-08-13 0:00		541		8.04	370	7	16.87	71.9	0.203	15.6	0.57																																					
W12N	2010-08-20 0:00	110	572		7.81	370	18	10.27	65.7	0.241	16.3	1.1	100	2.7	0.74	0.0001	0.01	0.0011	0.098	0.1	0.0002	0.001	60	0.0002	0.0005	0.002	0.079	0.02	0.0002	4	0.01	15	0.131	0.025	22	0.001	0.0002	0.0007	60	0.0075	3.69	0.005	2.04	0.01	0.00005	0.0036	0.005	0.01	0.002
W12N	2010-08-27 0:00	110	551		8.1	380	17	12.66	76.5	0.243	14.7	0.79	110	2.8	0.57	0.0001	0.013	0.0011	0.115	0.1	0.0002	0.001	63	0.0001	0.0005	0.002	0.063	0.147	0.0002	4	0.01	17	0.107	0.024	24	0.001	0.0002	0.0007	60	0.0065	4.16	0.005	1.94	0.01	0.00005	0.0036	0.005	0.01	0.002
W12N	2010-09-07 0:00	120	567		7.99	420	17	11.87	63	0.205	13	0.5	96	2.9	0.65	0.0001	0.01	0.0012	0.119	0.1	0.0002	0.001	61	0.0001	0.0005	0.002	0.063	0.02	0.0002	4	0.01	17	0.118	0.022	21	0.001	0.0002	0.0006	60	0.0063	4.32	0.005	1.78	0.01	0.00005	0.0032	0.005	0.01	0.002
W12N	2010-09-10 0:00	120	566		8.01	390	17	12.63	71.6	0.225	15.9	0.41	100	3		0.0001	0.01	0.0013	0.118	0.1	0.0002	0.001	61	0.0001	0.0005	0.002	0.061	0.02	0.0002	4	0.01	17	0.128	0.025	23	0.001	0.0002	0.0008	60	0.0073	4.04	0.005	1.92	0.01	0.00005	0.0034	0.005	0.01	0.002
W12N	2010-09-15 0:00	120	574		8.07	410	21	9.95	74.8	0.319	17.2	0.38	100	2.5	0.75	0.0001	0.01	0.0012	0.121	0.1	0.0002	0.001	64	0.0001	0.0005	0.002	0.066	0.02	0.0002	4	0.01	17	0.142	0.026	25	0.001	0.0002	0.0007	60	0.0071	4.27	0.005	2.03	0.01	0.00005	0.0036	0.005	0.01	0.002

Attachment 3: Sitewide Database

General Parameters / Anions & Nitrogen Species

Station	Date / Time	Alk-T (mg/L)	Cond-L (µS/cm)	ORP (mV)	pH-F	TDS (mg/L)	TSS (mg/L)	Temp-F (°C)	O-DO-% (%)	N-NO_2 (mg/L)	N-NO_3 (mg/L)	N-NH_3 (mg/L)	SO_4-D (mg/L)	Chlord (mg/L)	Fluord (mg/L)
W12N	2010-09-20 0:00	120	587		8.06	410	21	8.28	60.8	0.245	17.1	0.34	110	2.8	0.71
W12N	2010-09-27 0:00	120	623		7.89	430	19	4.02	57.7	0.221	18.7	0.75	120	2.7	0.75
W12N	2011-01-08 0:00	110	1070		8.31	690	540	-0.34	87.4	3.49	67	4.9	140	5	3.18
W12N	2011-02-03 0:00	200	1550		7.9	1100	37	0.4	61.7	0.75	45	8.7	400	4.2	1.8
W12S	2010-06-23 0:00	93	455		8.27	330	6	15.79	98.8	0.111	11.8	0.74	90	2.7	0.65
W12S	2010-06-24 0:00	95	458		8.26	340	4	15.82	106.4	0.113	11.6	0.83	91	2.8	0.64
W12S	2010-06-27 0:00	95	464		8.5	350	5	15.73	107	0.103	12	0.95	90	2.6	0.64
W12S	2010-07-13 0:00	120	399		8.38	270	12	20.4	105.7	0.19	9.3	0.38	48	2.4	0.36
W12S	2010-07-14 0:00	110	383		8.57	310	13	15.49	100.9	0.181	9.4	0.42	47	2.4	0.41
W12S	2010-07-19 0:00	120	391		8.16	310	16	15.1	83.9	0.233	8.4	0.28	44	2.8	0.28
W12S	2010-08-07 0:00	130	534		8.11	360	7	16.35	60.9	0.189	14.1	3.4	88	2.6	0.57
W12S	2010-08-13 0:00		579		8.03	380	4	15.74	59.6	0.23	15.2	0.89			
W12S	2010-08-27 0:00	110	524		8.1	350	10	12.46	69.6	0.215	13.7	0.77	99	2.7	0.45
W12S	2010-09-07 0:00	120	574		7.96	420	8	11.44	56	0.159	16	0.31	99	2.9	0.56
W12S	2010-09-10 0:00	120	595		7.97	420	21	11.53	68.3	0.183	15.6	0.14	110	2.8	
W12S	2010-09-15 0:00	120	617		7.98	450	14	10.42	49.6	0.22	16.6	0.2	120	2.9	0.61
W12S	2010-09-20 0:00	130	644		8.05	440	15	7.52	62.8	0.119	15.6	0.28	130	2.7	0.59
W12S	2010-09-27 0:00	130	660		7.99	450	6	4.44	68.5	0.103	16.9	0.23	140	2.7	0.6
W12S	2011-04-23 0:00	190	760			500	31			0.18	17.5	1.48	120	12	0.76
W14	2007-08-14 0:00	115	585			448	311			0.97	27	2.19	59	6.7	
W14	2007-09-18 0:00	114	602			404	295			0.66	26.3	1.44	58.3	9.73	
W14	2007-10-17 0:00	95	630			430	226			1.23	32.8	3.45		8.21	
W14	2007-11-20 0:00	124	1020			1010	149			1.04	50.4	4.82		16.7	
W14	2007-12-18 0:00	128	636			528	193			1.48	24.9	2.72	95.4	12.2	
W14	2008-01-15 0:00	120	733			514	147			0.83	17.7	2.36	135	10.4	
W14	2008-02-13 0:00	136	966			654	44			1.31	30.4	5.55	196	9.14	
W14	2008-03-18 0:00	125	730			474	124						118	15.1	
W14	2008-06-18 0:00	95	1060			732	29			0.59	45	4.35	167	22.9	
W14	2008-07-23 0:00	65	984			726	348			0.34	40.3	3.36	212	19.7	
W14	2008-08-26 0:00	125	624			402	398			0.47	12.4	3.32	101	13.2	
W14	2008-09-18 0:00	72	1160			878	128			0.68	52.6	2.26	250	25.4	
W14	2008-10-27 0:00	119	627			428	423					0.05	96.5	15	
W14	2008-11-18 0:00	117	656		9.15	476	68	17.2				0.23	89.6	15.5	
W14	2008-12-10 0:00	103	776		7.1	562	153	17.8				2.52	119	18.8	
W14	2009-01-18 0:00	103	751		7.47	534	174	11.7					121	18.4	
W14	2009-02-18 0:00				7.71			21							
W14	2009-03-21 0:00	109	836		9	604	5	20.7	124				127	18.4	
W14	2009-04-20 0:00	115	881		8.1	600	412	21.4					109	23.7	
W14	2009-05-18 0:00	111	697		8.15	424	24						94.4	19.8	
W14	2009-06-15 0:00				8.09			31.4							
W14	2009-07-13 0:00	104	781		7.78	4680	158	27.3					136	18.4	
W14	2009-08-11 0:00	87	1200		8.04	892	457	31.4					274	36.6	
W14	2009-09-02 0:00				8.65			27							
W14	2009-09-03 0:00	108	892			606	560				21		192	22.9	
W14	2009-10-19 0:00	78	954		8.12	712	76	26.3			39.8		175	25.2	
W14	2009-11-05 0:00	108	942		8.18	700	370	22.4			31		217	23.8	
W14	2009-12-02 0:00	78	1140		8.3	782	229	25.9			69.4		125	32.9	
W14	2010-01-04 0:00	93	1290		8.2	894	66				86.7		123	31.5	
W14	2010-02-01 0:00	79	1090			744	85				70		112	34.8	
W14	2010-02-02 0:00				8.67			26.3							
W14	2010-03-03 0:00	97	993		8.51	678	272	22.8			55.2		126	34.8	
W14	2010-04-05 0:00	100	979		8.26	654	1120	25.7			44.1		119	33.8	
W14	2010-06-02 0:00	120	795		8.03	470	142	27.6		0.82	32.6	1.3	100	27	3.23
W14	2010-08-22 0:00	100			8.25	620	32	26.88	84.3	0.443	21	0.65	180	29	2.61
W14	2010-09-12 0:00	110	970			700	38			0.61	38	1.7	170	33	
W14	2010-11-11 2:21	93	1060			700	25			1.02	47		170	26	2.83
W14	2010-12-06 0:00	110	1170			790	98			1.14	55	4.4	180	31	2.99
W14	2011-01-10 0:00	100	1190			780	80			1.23	60	3.7	190	23	2.74
W14	2011-02-03 0:00	97	1360			910	18			1.61	70	8	190	27	2.4
W14	2011-03-08 0:00	99	1200			780	19			1.87	61	2.4	180	61	2.78
W14	2011-04-01 0:00	97	1110			660	22			1.24	49	2.4	170	46	2.62
W14	2011-05-02 0:00	79	1390			890	37						260	39	2.97
W14	2011-05-27 0:00	70	1680			1200	60								
W14	2011-06-02 0:00	70	1500			1000	28						300	50	2.95
W14	2011-06-30 0:00	83	1220			740	17			0.59	72	5.22	190		
W14	2011-07-20 0:00	68	1670			1200	170			2.04	86	3.1	330		
W14	2011-08-17 0:00	62	1620			960	170			0.63	84	5.41			
W14	2011-09-19 0:00	100	1220			820	34						270	25	
W14	2011-10-01 0:00	78	1390			840	21			0.57	33	1.54	430	23	
W14	2011-11-04 0:00	89	1200			670	33			0.492	43	1.67		22	
W14	2011-12-05 0:00	89.9	1360			918	24						371	25	
W14	2012-01-09 0:00	90	1510		8.09	1010	140	18.3	125.9						
W14	2012-02-12 0:00	96.3	1160			726	71.2								
W14	2012-03-05 9:30	105	1310		8.6	840	35.9	16.1					329	20	1.7
W14	2012-04-03 16:00	77.3	1720		8.3	1260	103	20.7							
W14	2012-05-15 17:55	105	1130		8.5	756	165	24.2		0.934	42.1	1.2	228	31	2.3
W14	2012-05-18 0:00				8.6			25							
W14	2012-06-03 0:00	87.9	1350		8.6	902	262	29.1					328	43	2.9
W14	2012-07-08 17:50	102	1100	37	8.5	710	164	30.8	85.3						
W14	2012-08-15 16:30	85.5	1230		8.2	846	82	30.7		1	44.2	1.5	284	25	2.6
W14	2012-09-10 0:00	83.2	1370			906							282		
W14	2012-10-15 17:00	98.3	1100		8.5	722	167	25.2					176	26	2.6
W14	2012-11-18 17:00	145	742		8.5	476	70	5.4					112	13	1.2
W14	2012-12-27 0:00	152	792	253	8.42	374	52	9	83.7	0.465	19.9	0.82	128	13	1.3
W14	2013-01-02 0:00	142	818			524	179			0.43	26	1.1	152	13	1.4
W14	2013-02-13 0:00	146	784			502	138						145	13	1.3
W14	2013-03-04 15:00	151	763			484	6.9			0.364	19.1	0.54	119	13	1.5
W14	2013-04-02 11:00	146	771			478	187			0.226	19.3	0.95	131	16	1.6
W14	2013-05-13 8:15	135	775		8.3	504	50.8	13.8		0.38	16.7	0.55	145	20	1.6
W14	2013-06-17 15:15	153	686		8.6	458	55.5	18.5		0.192	12.3	0.38	119	16	1.6
W14	2013-07-07 16:00	90.5	842		9.3	514	64.6	20.8		0.305	14.6	1.1	186	23	2
W14	2013-08-02 10:30	124	731		8.9	462	31.3	24.3		0.521	17.6	0.54	137	21	2.2
W14	2013-09-06 10:55	117	767		8.1	486	56.8	20.1		0.54	21.8	1.5	148	16	2.2
W14	2013-10-18 17:00	147	884		8.7	572	41.2	17.4		0.55	28.6	6.3	154	16	1.8
W14	2013-11-10 11:25	131	853		8.6	546	67.6	13.9		0.593	22.3	1.3	164	19	1.8
W14	2013-12-11 16:30	125	837		6.8	538	5	12.1		0.478	23.9	1.7	167	21	1.8
W14	2014-01-05 17:25	131	900		8.6	564	29.2	13.3		0.23	22.8	1.4	189	34	1.9
W14	2014-02-04 16:35	131	908		8.4	608	105	10.2		0.3	24.9	1.5	188	40	2
W14	2014-03-24 11:25	133	934		8.3	614	6.5	13.5		0.139	22.6	2	196	27	1.9
W14	2014-04-19 10:00	141	938		8.5	554	99.6	2.3		0.712	22.6	2.9	187	25	1.6
W14	2014-05-06 15:50	140	1000		8.4	634	96	16.8		0.336	26.9	5.6	184	27	1.9
W14	2014-06-14 10:30	152	911		8.4	590	28	15.5		0.278	17.9	2.2	171	20	1.6
W14	2014-07-24 17:25	107	1050		9.2	680	70.8	24.1		0.292	18	1.6	257	28	2.3
W14	2014-08-19 16:40	117	1080		9.2	722		21.5		0.36	20.6		271	27	1.9
W14	2014-09-05 10:15	159	1040		8.4	664	19.7	14.9		0.286	17.1	2.2	207	24	1.7
W14	2014-10-09 13:30	127	1050		8.9	692		14.3		0.268	18.3	0.92	257	26	1.7
W14	2014-11-02 14:00	147	1060		8.7	722	37	12.1		0.145	17.3	0.84	238	37	1.8
W14	2014-12-11 15:40	183	1360		8.7	912		12.3		0.6	29.4	4.5	311	39	1.8
W14	2015-01-05 9:30	143	1210		8.3			9.3		1.84	17.2	1.5	282	39	1.4
W14	2015-02-20 13:40	210	1270		7.88			8.6	82.8	0.0183	15.3	2.7	291	66	1.4
W14	2015-03-08 16:15	181	1450		8.7	878		10.8		0.991	28.2	6.8	304	55	1.6
W14	2015-04-02 10:15	161	1340	153.2	8.65	824		8.4	85.7	1.54	32.8	8.3	304	44	1.5
W14	2015-05-11 16:30	125	1240	-10.4	9.11	750	162	17.4	80.8	1.74	24.8	5	256	51	1.9
W14	2015-06-11 17:10	87.2	1600		9	986	59.2	19.7		1.81	50.7	13	366	49	2.1
W14	2015-07-03 16:45	126	1620	-21.1	8.71	1060	22.4	19.9	73.2	3.06	34.1	6.7	410	61	1.9

Dissolved Elements (all mg/L)

Station	Date / Time	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
W12N	2010-09-20 0:00	0.0001	0.01	0.0011	0.12	0.1	0.0002	0.001	65	0.0001	0.0005	0.002	0.063	0.02	0.0002	4	0.01	17	0.138	0.025	23
W12N	2010-09-27 0:00	0.00002	0.005	0.0013	0.11	0.071	0.0001	0.001	67.8	0.00014	0.0005	0.001	0.104	0.009	0.00002	4.28	0.005	19.1	0.161	0.026	26.5
W12N	2011-01-08 0:00	0.00002	0.024	0.0005	0.031	0.282	0.0001	0.001	50	0.00001	0.0012	0.001	0.146	0.286	0.00002	4.54	0.012	12.7	0.016	0.02	131
W12N	2011-02-03 0:00	0.00002	0.009	0.0006	0.043	0.308	0.0001	0.001	145	0.00001	0.0005	0.001	0.038	0.047	0.00002	6.02	0.016	39	0.055	0.031	116
W12S	2010-06-23 0:00	0.0001	0.023	0.0009	0.06	0.1	0.0002	0.001	50	0.0001	0.0005	0.002	0.221	0.058	0.0002	3	0.01	12	0.091	0.018	16
W12S	2010-06-24 0:00	0.0001	0.019	0.0008	0.057	0.1	0.0002	0.001	52	0.0001	0.0005	0.002	0.201	0.055	0.0002	3	0.01	12	0.078	0.018	16
W12S	2010-06-27 0:00	0.0001	0.016	0.0008	0.057	0.1	0.0002	0.001	50	0.0001	0.0005	0.002	0.196	0.042	0.0002	3	0.01	12	0.044	0.018	17
W12S	2010-07-13 0:00	0.0001	0.026	0.0009	0.072	0.1	0.0002	0.001	48	0.0001	0.0005	0.002	0.078	0.161	0.0002	3	0.01	12	0.133	0.011	10
W12S	2010-07-14 0:00	0.0001	0.023	0.0008	0.068	0.1	0.0002	0.001	47	0.0001	0.0005	0.002	0.073	0.145	0.0002	3	0.01	12	0.098	0.011	10
W12S	2010-07-19 0:00	0.0001	0.024	0.0008	0.069	0.1	0.0002	0.001	47	0.0001	0.0005	0.002	0.067	0.13	0.0002	2	0.01	12	0.145	0.008	10
W12S	2010-08-07 0:00	0.0001	0.01	0.0015	0.123	0.1	0.0002	0.001	60	0.0001	0.0005	0.002	0.054	0.045	0.0002	4	0.01	17	0.122	0.019	18
W12S	2010-08-13 0:00																				
W12S	2010-08-27 0:00	0.0001	0.014	0.0012	0.135	0.1	0.0002	0.001	61	0.0001	0.0005	0.002	0.049	0.114	0.0002	3	0.01	16	0.101	0.019	20
W12S	2010-09-07 0:00	0.0001	0.01	0.0014	0.158	0.1	0.0002	0.001	69	0.0001	0.0005	0.002	0.051	0.02	0.0002	4	0.01	19	0.109	0.021	21
W12S	2010-09-10 0:00	0.0001	0.01	0.0017	0.186	0.1	0.0002	0.001	63	0.0001	0.0005	0.002	0.035	0.02	0.0002	4	0.01	19	0.108	0.022	23
W12S	2010-09-15 0:00	0.0001	0.013	0.0018	0.207	0.1	0.0002	0.001	70	0.0001	0.0005	0.002	0.031	0.02	0.0002	4	0.01	20	0.106	0.023	24
W12S	2010-09-20 0:00	0.0001	0.01	0.0016	0.21	0.1	0.0002	0.001	70	0.0001	0.0005	0.002	0.029	0.02	0.0002	4	0.01	20	0.097	0.023	22
W12S	2010-09-27 0:00	0.00002	0.004	0.0017	0.213	0.05	0.0001	0.001	73.5	0.00008	0.0005	0.001	0.0446	0.012	0.00002	3.64	0.005	21.3	0.101	0.025	24
W12S	2011-04-23 0:00	0.00002	0.013	0.0006	0.079	0.05	0.0001	0.001	85.8	0.00009	0.0005	0.001	0.0728	0.027		7.36	0.005	23.2	0.168	0.02	31.6
W14	2007-08-14 0:00	0.0001	0.15	0.0017	0.07	0.109	0.0001	0.0005	34.8	0.00005	0.0003	0.0013	0.012	0.01	0.0001	39.9	0.02	8	0.046	0.066	52.5
W14	2007-09-18 0:00	0.0001	0.105	0.001	0.063	0.121	0.0001	0.0005	31.6	0.00003	0.0001	0.0006	0.006	0.01	0.0001	37.8	0.019	7.7	0.02	0.077	54.4
W14	2007-10-17 0:00	0.0001	0.076	0.001	0.059	0.141	0.0001	0.0005	40.8	0.00004	0.0001	0.0005	0.007	0.02		27.2	0.018	11.7	0.033	0.069	53.8
W14	2007-11-20 0:00	0.0001	0.061	0.0008	0.124	0.169	0.0001	0.0005	67.5	0.00005	0.0007	0.0009	0.009	0.01	0.0001	68.8	0.023	11.6	0.048	0.116	80.6
W14	2007-12-18 0:00	0.0001	0.08	0.001	0.072	0.128	0.0001	0.0005	37.6	0.00005	0.0002	0.0011	0.01	0.01	0.0001	52.2	0.018	8.5	0.033	0.098	71.5
W14	2008-01-15 0:00	0.0001	0.062	0.0014	0.07	0.114	0.0001	0.0005	40.5	0.00001	0.0001	0.0005	0.011	0.01	0.0001	46.7	0.016	9.5	0.032	0.114	71.2
W14	2008-02-13 0:00	0.00001	0.065	0.0011	0.103	0.222	0.0001	0.0005	78.7	0.00009	0.0002	0.0014	0.032	0.07	0.0001	38.9	0.013	21.8	0.061	0.069	61.7
W14	2008-03-18 0:00	0.00001	0.112	0.0005	0.066	0.131	0.00004	0.0001	31.8	0.00007	0.0001	0.0005	0.01	0.06	0.00001	34.7	0.014	8.53	0.0213	0.0748	81.1
W14	2008-06-18 0:00	0.00001	0.09	0.0014	0.083	0.158	0.00004			0.00008	0.00015	0.0018	0.008	0.02			0.016		0.039	0.0873	
W14	2008-07-23 0:00	0.00001	0.062	0.0009	0.088	0.153	0.0001	0.0005	53.4	0.00007	0.0002	0.0005	0.015	0.01	0.0001	57.1	0.018	12.7	0.079	0.082	97.4
W14	2008-08-26 0:00	0.00001	0.051	0.0006	0.047	0.126	0.00004		25.9	0.00005	0.00008	0.0005	0.012	0.02	0.00002	37.7	0.015	6.5	0.0276	0.104	71.4
W14	2008-09-18 0:00	0.00001	0.083	0.0002	0.085	0.161	0.00004		62	0.00009	0.00021	0.0011	0.006	0.01	0.00001	66.7	0.028	16.1	0.0639	0.116	100
W14	2008-10-27 0:00	0.00001	0.212	0.0005	0.04	0.091	0.00004		25.2	0.00004	0.00004	0.0004	0.002	0.012	0.00001	32.3	0.01	7.42	0.0166	0.0812	100
W14	2008-11-18 0:00	0.00001	0.125	0.0008	0.065	0.083	0.0001	0.0005	22.8	0.00005	0.0002	0.0006	0.003	0.03	0.0001	40.1	0.014	7.6	0.018	0.073	78.3
W14	2008-12-10 0:00	0.00001	0.078	0.0006	0.061	0.167	0.00004	0.0001	34.2	0.00006	0.0001	0.0005	0.001	0.01	0.00001	36.6	0.013	9.13	0.0204	0.0784	92.1
W14	2009-01-18 0:00	0.00001	0.097	0.0006	0.077	0.123	0.0001	0.0005	30.2	0.00003	0.0001	0.0005	0.002	0.01	0.0001	43.6	0.014	8.9	0.018	0.09	78.2
W14	2009-02-18 0:00																				
W14	2009-03-21 0:00	0.00001	0.077	0.0006	0.071	0.106	0.00004	0.0001	41.7	0.00012	0.00007	0.0004	0.003	0.01	0.00001	48.2	0.015	11	0.0214	0.0842	96.2
W14	2009-04-20 0:00	0.00001	0.181	0.0006	0.092	0.104	0.00004	0.0001	57.9	0.00009	0.00022	0.0004	0.005	0.05	0.00001	39.9	0.015	13.9	0.0981	0.0767	73.9
W14	2009-05-18 0:00	0.00001	0.235	0.0003	0.078	0.103	0.00004	0.0001	33.7	0.00009	0.0002	0.0024	0.016	0.34	0.00001	47.3	0.013	8.36	0.0338	0.0994	68.4
W14	2009-06-15 0:00																				
W14	2009-07-13 0:00	0.0001	0.151	0.001	0.066	0.15	0.00004	0.0001	37	0.00003	0.00011	0.0004	0.003	0.04	0.00001	42.3	0.018	9.83	0.0228	0.0992	84.3
W14	2009-08-11 0:00																				
W14	2009-09-02 0:00																				
W14	2009-09-03 0:00	0.00001	0.084	0.0009	0.076	0.117	0.00004	0.001	45.6	0.00005	0.00011	0.0012	0.006	0.01	0.00001	52	0.02	13.1	0.038	0.0916	89.5
W14	2009-10-19 0:00	0.00001	0.074	0.0052	0.105	0.089	0.00004	0.001	60.3	0.00008	0.00022	0.0004	0.01	0.01	0.00001	52	0.015	14.8	0.0464	0.0851	74.5
W14	2009-11-05 0:00	0.00001	1.81	0.0008	0.096	0.109	0.00011	0.001	79.3	0.0003	0.00133	0.0036	0.723	4.8	0.00002	39	0.012	19.5	0.191	0.0716	71.8
W14	2009-12-02 0:00	0.00001	0.068	0.0006	0.107	0.134	0.00004	0.001	58.2	0.00003	0.00021	0.0004	0.005	0.05	0.00001	56	0.016	12.1	0.0351	0.0998	103
W14	2010-01-04 0:00	0.00001	0.153	0.0012	0.138	0.122	0.00004	0.001	81	0.00018	0.00033	0.0005	0.016	0.17	0.00001	56	0.022	18	0.0615	0.0964	111
W14	2010-02-01 0:00	0.00001	0.055	0.0011	0.095	0.124	0.00004	0.001	56	0.00011	0.00022	0.0004	0.004	0.03	0.00001	52	0.019	12.5	0.0434	0.106	96.5
W14	2010-02-02 0:00																				
W14	2010-03-03 0:00	0.00001	0.047	0.0022	0.09	0.117	0.00004	0.001	58.3	0.00013	0.00046	0.0004	0.01	0.02	0.00001	39	0.021	13.9	0.0427	0.101	82.5
W14	2010-04-05 0:00	0.00001	0.094	0.0012	0.081	0.169	0.00004	0.001	36.1	0.0001	0.0001	0.0006	0.003	0.03	0.00001	48	0.021	9.4	0.0225	0.0957	115
W14	2010-06-02 0:00	0.0001	0.058	0.0005	0.068	0.187	0.0002	0.001	43	0.0001	0.0005		0.002	0.02	0.0002	36	0.015	8	0.022	0.088	78
W14	2010-08-22 0:00	0.0001	0.078	0.0005	0.073	0.152	0.0002	0.001	47	0.0001	0.0005		0.009	0.02	0.0002	39	0.02	12	0.038	0.1	85
W14	2010-09-12 0:00	0.0001	1.91	0.0008	0.122	0.211	0.0002	0.001	46	0.0001	0.0006		0.064	1.93	0.0002	37	0.027	13	0.065	0.095	110
W14	2010-11-11 2:21	0.00002	0.06	0.0005	0.069	0.408	0.0001	0.001	56	0.00006	0.0005	0.001	0.0019	0.007	0.00002	25.8	0.022	13	0.02	0.078	134
W14	2010-12-06 0:00	0.00002	0.105	0.0006	0.095	0.273	0.0001	0.001	46.9	0.00004	0.0005	0.001	0.0024	0.015	0.00002	45.6	0.023	11.9	0.025	0.078	130
W14	2011-01-10 0:00	0.00002	0.093	0.0004	0.124	0.244	0.0001	0.001	49	0.00002	0.0005	0.001	0.0028	0.005	0.00002	42.1	0.023	11.4	0.016	0.07	132
W14	2011-02-03 0:00	0.00002	0.05	0.0004	0.113	0.265	0.0001	0.001	73.8	0.00003	0.0005	0.001	0.0032	0.006	0.00002	40.8	0.03	20.1	0.066	0.069	123
W14	2011-03-08 0:00	0.00002	0.421	0.0006	0.103	0.149	0.0001	0.001	76	0.00008	0.0005	0.001	0.0888	0.452	0.00002	42.8	0.025	17.2	0.146	0.122	122
W14	2011-04-01 0:00	0.00002	0.061	0.0005	0.089	0.166	0.0001	0.001	58.6	0.00003	0.0005	0.001	0.0026	0.005	0.00002	38.5	0.023	14.7	0.036	0.108	99.9
W14	2011-05-02 0:00	0.00002	0.058	0.0005	0.117	0.189	0.0001	0.001	84.8	0.00006	0.0005	0.001	0.0073	0.009	0.00002	57.8	0.029	20.7	0.082	0.105	124
W14	2011-05-27 0:00	0.00002	0.056	0.0007	0.149	0.211	0.0001	0.001	105	0.00008	0.0005	0.001	0.0119	0.013	0.00002	70.4	0.034	27.9	0.084	0.097	142
W14	2011-06-02 0:00	0.00002	0.044	0.0005	0.14	0.178	0.0001	0.001	88.4	0.00009	0.0005	0.001	0.0134	0.005		68.2	0.035	22.1	0.081	0.108	111
W14	2011-06-30 0:00	0.00002	0.058	0.0005	0.096	0.196	0.0001	0.001	78.1	0.00006	0.0005	0.001	0.0079	0.008	0.00002	40.9	0.027	18.3	0.053	0.081	113
W14	2011-07-20 0:00	0.00002	0.057	0.0005	0.142	0.14	0.0001	0.001	91.6	0.00009	0.0005	0.001	0.0092	0.005	0.00005	76.4	0.028	23.6	0.156	0.08	138
W14	2011-08-17 0:00	0.00002	0.056	0.0006	0.12	0.283	0.0001	0.001	105	0.00007	0.0005	0.001	0.0083	0.007	0.00002	49.4	0.03	24.1	0.097	0.085	141
W14	2011-09-19 0:00	0.00002	0.079	0.0004	0.123	0.113	0.0001	0.001	75	0.00006	0.0005	0.001	0.0114	0.014	0.00002	61.7	0.028	17	0.09	0.101	109
W14	2011-10-01 0:00	0.00002	0.06	0.0004	0.13	0.133	0.0001	0.001	112	0.00012	0.0005	0.001	0.0145	0.014	0.00002	57.3	0.034	25.3	0.138	0.081	107
W14	2011-11-04 0:00																				
W14	2011-12-05 0:00	0.00002	0.0381	0.0005	0.104	0.131	0.0001	0.001	98.8	0.000081	0.0005	0.001	0.00572	0.005	0.00002	40.3	0.0376	23.1	0.146	0.102	116
W14	2012-01-09 0:00	0.00002	0.0396	0.00083	0.127	0.163	0.0001	0.001	130	0.000101	0.0005	0.001	0.034	0.0101	0.00001	49.3	0.0465	28.6	0.134	0.0987	136
W14	2012-02-12 0:00	0.00002	0.0621	0.00042	0.096	0.113	0.0001	0.001	65.5	0.000038	0.0005	0.001	0.00644	0.005	0.00001	47.9	0.0268	16.2	0.0521	0.108	109
W14	2012-03-05 9:30	0.00002	0.0395	0.0005	0.109	0.11	0.0001	0.001	98.6	0.000057	0.0005	0.001	0.00579	0.005	0.00001	51.8	0.0315	22.1	0.0895	0.0983	109
W14	2012-04-03 16:00	0.00002	0.0385	0.00041	0.131	0.138	0.0001	0.001	129	0.000111	0.0005	0.001	0.00951	0.0083	0.00001	60.3	0.0421	29.8	0.165	0.0934	137
W14	2012-05-15 17:55	0.00002	0.123	0.00048	0.0881	0.166	0.0001	0.001	54.9	0.000039	0.0005	0.001	0.00871	0.005	0.00001	46.9	0.0297	14	0.0534	0.115	119
W14	2012-05-18 0:00	0.00002	0.218	0.00042	0.112	0.214	0.0001	0.001	38.4	0.00001	0.0005	0.001	0.00711	0.0721	0.00001	51.3	0.0228	18.4	0.0299	0.14	128
W14	2012-06-03 0:00	0.00002	0.372	0.00044	0.104	0.165	0.0001	0.001	35.9	0.00003	0.0005	0.001	0.00377	0.033	0.00001	59.3	0.0155	14.5	0.0352	0.14	173
W14	2012-07-08 17:50	0.00002	0.152	0.00045	0.0612	0.211	0.0001	0.001	21.8	0.000013	0.0005	0.001	0.0109	0.0398	0.00001	44.8	0.017	10.8	0.025	0.145	157
W14	2012-08-15 16:30	0.00002	0.185	0.00038	0.107	0.203	0.0001	0.001	50.9	0.000023	0.0005	0.001	0.0131	0.247	0.00001	60.9	0.0236	19.4	0.0557	0.129	140
W14	2012-09-10 0:00	0.00002	0.105	0.00023	0.092	0.142	0.0001	0.001	45.6	0.000064	0.0005	0.001	0.00954	0.0363	0.00001	48.3	0.0123	16.4	0.0537	0.134	168
W14	2012-10-15 17:00	0.00002	0.0868	0.00047	0.0897	0.381	0.0001	0.001	42	0.00001	0.0005	0.001	0.00395	0.0262	0.00001	41.4	0.0255	15.8	0.045	0.166	128
W14	2012-11-18 17:00	0.00002	0.0755	0.00047	0.0892	0.114	0.0001	0.001	42.3	0.00001	0.0005	0.001	0.00294	0.005	0.00001	30.9	0.021	18.5	0.0343	0.0635	58.5
W14	2012-12-27 0:00	0.00002	0.0423	0.00042	0.0784	0.094	0.0001	0.001	48.6	0.000024	0.0005	0.001	0.00701	0.0105	0.00001	28.5	0.0181	22.5	0.0466	0.0674	67.1
W14	2013-01-02 0:00	0.00002	0.0404	0.00046	0.081	0.079	0.0001	0.001	52.5	0.000032	0.0005	0.001	0.00963	0.005	0.00001	28.4	0.0197	18.3	0.0549	0.063	64.2
W14	2013-02-13 0:00	0.00002	0.0736	0.00038	0.0814	0.119	0.0001	0.001	46.3	0.000011	0.0005	0.001	0.00132	0.0057	0.00001	26	0.0191	15.8	0.0308	0.0458	69.2
W14	2013-03-04 15:00	0.00002	0.118	0.00047	0.105	0.12	0.0001	0.001	40.7	0.000028	0.0005	0.001	0.00271	0.0243	0.00001	36.3	0.0236	16.6	0.0239	0.055	68.3
W14	2013-04-02 11:00	0.00002	0.122	0.00038	0.109	0.109	0.0001	0.001	41.8	0.000011	0.0005	0.001	0.00028	0.005	0.00001	44.2	0.022	16.1	0.0258	0.0554	71.3
W14	2013-05-13 8:15																				
W14	2013-06-17 15:15	0.00002	0.0851	0.00044	0.0742	0.089	0.0001	0.001	35.9	0.000014	0.0005	0.001	0.00188	0.005	0.00001	27.4	0.0218	18	0.0266	0.0626	56.9
W14	2013-07-07 16:00	0.00002	0.168	0.00041	0.0438	0.08	0.0001	0.001	22.2	0.00001	0.0005	0.001	0.00404	0.0219	0.00001	25	0.0064	8.15	0.0224	0.0963	103
W14	2013-08-02 10:30																				
W14	2013-09-06 10:55	0.00002	0.0702	0.00041	0.0738	0.133	0.0001	0.001	45.2	0.00001	0.0005	0.001	0.00208	0.005	0.00001	24.6	0.0248	16.7	0.0314	0.138	62.2
W14	2013-10-18 17:00	0.00002	0.0713	0.00039	0.0847	0.121	0.0001	0.001	41.8	0.00001	0.0005	0.001	0.00259	0.0177	0.00001	45.6	0.0188	20	0.0348	0.0751	72.1
W14	2013-11-10 11:25	0.00002	0.0722	0.00034	0.114	0.142	0.0001	0.001	49.7	0.000019	0.0005	0.001	0.00037	0.005	0.00001	44	0.0233	15.3	0.0331	0.068	69.4
W14	2013-12-11 16:30	0.00002	0.0914	0.00029	0.117	0.142	0.0001	0.001	51.2	0.00001	0.0005	0.001	0.00051	0.005	0.00001	44.5	0.0174	15.7	0.0309	0.0702	75.8
W14	2014-01-05 17:25	0.00002	0.0546	0.00029	0.102	0.178	0.0001	0.001	49	0.000014	0.0005	0.001	0.0002	0.005	0.00001	54	0.0208	14.5	0.0429	0.0766	71.3
W14	2014-02-04 16:35	0.00002	0.0758	0.00035	0.11	0.132	0.0001	0.001	49.2	0.000018	0.0005	0.001	0.00053	0.116		52.7	0.013	14.1	0.0444	0.066	77.9
W14	2014-03-24 11:25	0.00002	0.0815	0.00041	0.107	0.153	0.0001	0.001	45.4	0.000013	0.0005	0.001	0.00082	0.005	0.000011	55	0.0143	15.8	0.0294	0.069	84.7
W14	2014-04-19 10:00	0.00002	0.142	0.00032	0.1	0.136	0.0001	0.001	57.5	0.000014	0.0005	0.001	0.00131	0.005	0.00001	47.7	0.0111	18.3	0.0595	0.0611	75.5
W14	2014-05-06 15:50	0.00002	0.0785	0.00035	0.0967	0.141	0.0001	0.001	41.6	0.000022	0.0005	0.001	0.00067	0.008	0.00005	51.8	0.0134	18.3	0.0357	0.0804	88.2
W14	2014-06-14 10:30	0.00002	0.0337	0.0005	0.0962	0.155	0.0001	0.001	65	0.000011	0.0005	0.001	0.00806	0.015	0.00001	42.2	0.0134	19.4	0.125	0.0676	73.2
W14	2014-07-24 17:25	0.000021	0.0834	0.00039	0.101	0.189	0.0001	0.001	49.6	0.000035	0.0005	0.001	0.00148	0.0163	0.00001	59.6	0.0098	16	0.048	0.0948	92.1
W14	2014-08-19 16:40	0.00002	0.0727	0.0004	0.0991	0.176	0.0001	0.001	57.3	0.000028	0.0005	0.001	0.0015	0.0053	0.00001	52.1	0.0111	17.3	0.0551	0.0853	92.5
W14	2014-09-05 10:15	0.00002	0.303	0.00041	0.0945	0.151	0.0001	0.001	67.1	0.000019	0.0005	0.001	0.00423	0.0144	0.00001	39.1	0.012	21.2	0.0666	0.076	81.6
W14	2014-10-09 13:30	0.00002	0.0574	0.00041	0.0973	0.186	0.0001	0.001	57.6	0.000018	0.0005	0.001	0.00476	0.0143	0.00001	43.2	0.0265	20.1	0.0752	0.12	97
W14	2014-11-02 14:00	0.00002	0.102	0.00051	0.0949	0.157	0.0001	0.001	65.7	0.000011	0.0005	0.001	0.00286	0.0293	0.00001	44.2	0.0128	19.9	0.106	0.088	99.1
W14	2014-12-11 15:40	0.00002	0.0768	0.00047	0.122	0.224	0.0001	0.001	89.6	0.000013	0.0005	0.001	0.00102	0.0272	0.00001	48.7	0.0189	30.8	0.156	0.124	113
W14	2015-01-05 9:30	0.00002	0.0505	0.00034	0.112	0.181	0.0001	0.001	78.9	0.00001	0.0005	0.001	0.00082	0.0152	0.00001	52.9	0.0151	20.8	0.128	0.0975	108
W14	2015-02-20 13:40	0.00002	0.0836	0.00046	0.103	0.172	0.0001	0.001	78.7	0.000028	0.0005	0.001	0.0922	0.0737	0.00001	44.2	0.0179	26.5	0.542	0.093	106
W14	2015-03-08 16:15	0.00002	0.0666	0.00046	0.125	0.287	0.0001	0.001	61.8	0.00001	0.00051	0.001	0.00417	0.0166	0.00001	58	0.0277	24.4	0.434	0.171	162
W14	2015-04-02 10:15	0.00002	0.0801	0.0004	0.102	0.258	0.0001	0.001	51	0.000015	0.0005	0.001	0.00572	0.0066	0.00001	50.9	0.0185	22	0.249	0.181	148
W14	2015-05-11 16:30	0.00002	0.121	0.00062	0.0816	0.204	0.0001	0.001	24.7	0.00001	0.0005	0.001	0.00105	0.0061	0.00001	47.1	0.0135	12	0.111	0.176	183
W14	2015-06-11 17:10	0.00002	0.0918	0.0004	0.0757	0.317	0.0001	0.001	43.7	0.000011	0.0005	0.001	0.00115	0.0127	0.00001	51.5	0.0063	17.8	0.0551	0.139	217
W14	2015-07-03 16:45	0.00002	0.0799	0.00044	0.089	0.304	0.0001	0.001	56.6	0.000041	0.0005	0.001	0.00364	0.011	0.00001	51.8	0.0106	22.4	0.121	0.174	217

Dissolved Elements, continued (all mg/L)

Station	Date / Time	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
W12N	2010-09-20 0:00	0.001	0.0002	0.0009	60	0.007	4.13	0.005	2.12	0.01	0.00005	0.0038	0.005	0.01	0.002
W12N	2010-09-27 0:00	0.001	0.0002	0.0007	41	0.0069	3.97	0.005	2.25	0.005	0.00005	0.004	0.005	0.005	0.0005
W12N	2011-01-08 0:00	0.001	0.0002	0.0005	50	0.0047	1.62	0.005	3.09	0.005	0.00005	0.0056	0.005	0.005	0.0005
W12N	2011-02-03 0:00	0.001	0.0002	0.0005	147	0.0069	3.1	0.005	7.66	0.005	0.00005	0.0083	0.005	0.005	0.0005
W12S	2010-06-23 0:00	0.001	0.0002	0.0005	60	0.0046	3.41	0.005	1.97	0.01	0.00005	0.003	0.005	0.01	0.002
W12S	2010-06-24 0:00	0.001	0.0002	0.0005	60	0.0047	3.62	0.005	1.96	0.01	0.00005	0.0028	0.005	0.01	0.002
W12S	2010-06-27 0:00	0.001	0.0002	0.0005	60	0.0044	4	0.005	1.94	0.01	0.00005	0.0026	0.005	0.01	0.002
W12S	2010-07-13 0:00	0.001	0.0002	0.0005	60	0.0032	4.81	0.005	0.89	0.01	0.00005	0.0014	0.005	0.01	0.002
W12S	2010-07-14 0:00	0.001	0.0002	0.0005	60	0.0033	4.76	0.005	0.86	0.01	0.00005	0.0014	0.005	0.01	0.002
W12S	2010-07-19 0:00	0.001	0.0002	0.0005	60	0.003	5.39	0.005	0.748	0.01	0.00005	0.0011	0.005	0.01	0.002
W12S	2010-08-07 0:00	0.001	0.0002	0.0007	60	0.0056	4.52	0.005	1.62	0.01	0.00005	0.0028	0.005	0.01	0.002
W12S	2010-08-13 0:00														
W12S	2010-08-27 0:00	0.001	0.0002	0.0007	60	0.0048	4.51	0.005	1.57	0.01	0.00005	0.003	0.005	0.01	0.002
W12S	2010-09-07 0:00	0.001	0.0002	0.0008	60	0.0054	5.07	0.005	1.79	0.01	0.00005	0.0032	0.005	0.01	0.002
W12S	2010-09-10 0:00	0.001	0.0002	0.0009	60	0.0059	4.18	0.005	1.81	0.01	0.00005	0.0035	0.005	0.01	0.002
W12S	2010-09-15 0:00	0.001	0.0002	0.0009	60	0.0057	4.61	0.005	1.92	0.01	0.00005	0.0037	0.005	0.01	0.002
W12S	2010-09-20 0:00	0.001	0.0002	0.0011	60	0.0054	4.26	0.005	2.03	0.01	0.00005	0.0039	0.005	0.01	0.002
W12S	2010-09-27 0:00	0.001	0.0002	0.0011	48	0.0055	4.31	0.005	2.14	0.005	0.00005	0.0041	0.005	0.005	0.0005
W12S	2011-04-23 0:00	0.002	0.0003	0.0005	43	0.0059	5.11	0.005	2.13	0.005	0.00005	0.0031	0.005	0.013	0.0005
W14	2007-08-14 0:00	0.0005	0.0001	0.0004	20.5	0.0221	3.18	0.001	0.615	0.0016	0.00005	0.0007	0.0041	0.007	
W14	2007-09-18 0:00	0.0005	0.0001	0.0004	19.9	0.0125	2.98	0.001	0.734	0.0016	0.00005	0.0005	0.0014	0.006	
W14	2007-10-17 0:00	0.0005	0.0001	0.0013	23.6	0.0121	2.84	0.001	1.25	0.0022	0.00005	0.0005	0.0011	0.003	
W14	2007-11-20 0:00	0.0082	0.0001	0.0014	50.1	0.0129	2.71	0.001	0.991	0.003	0.00005	0.0014	0.0017	0.007	
W14	2007-12-18 0:00	0.001	0.0001	0.0014	35.6	0.0283	2.48	0.001	0.636	0.0028	0.00005	0.0005	0.002	0.002	
W14	2008-01-15 0:00	0.0014	0.0001	0.001	48.2	0.0519	2.21	0.001	0.737	0.0025	0.00005	0.0005	0.0008	0.003	
W14	2008-02-13 0:00	0.0005	0.0006	0.001	70.1	0.023	2.49	0.001	2.2	0.0038	0.00005	0.0005	0.0031	0.004	
W14	2008-03-18 0:00	0.001	0.0004	0.0016	34.4	0.0091	1.79	0.0001	1.65	0.0015	0.00001	0.0004	0.00063	0.026	0.0002
W14	2008-06-18 0:00	0.001	0.0001	0.0011		0.0382		0.0001	1.17	0.0004	0.00001	0.0004	0.00059	0.004	0.0003
W14	2008-07-23 0:00	0.0005	0.0001	0.002	74.8	0.04	2.39	0.001	1.21	0.0022	0.00005	0.0005	0.0005	0.003	
W14	2008-08-26 0:00	0.001	0.0001	0.0004		0.0323	3.21	0.0001	0.653	0.0004	0.00001	0.0004	0.00069	0.002	0.0002
W14	2008-09-18 0:00	0.001	0.0001	0.001		0.0922	2.72	0.0001	2.17	0.0006	0.00002	0.0005	0.0006	0.003	0.0001
W14	2008-10-27 0:00	0.001	0.0001	0.001		0.0147	2.38	0.0001	0.998	0.0008	0.00001	0.0004	0.00047	0.001	0.0002
W14	2008-11-18 0:00	0.0005	0.0001	0.0011	34.3	0.0127	2.08	0.001	1.13	0.0028	0.00005	0.0005	0.0014	0.004	
W14	2008-12-10 0:00	0.001	0.0001	0.0011	43	0.0164	1.87	0.0003	1.67	0.0002	0.00001	0.0004	0.00047	0.002	0.0001
W14	2009-01-18 0:00	0.0007	0.0001	0.0014	41.4	0.0093	1.98	0.001	1.66	0.0027	0.00005	0.0005	0.0009	0.004	
W14	2009-02-18 0:00														
W14	2009-03-21 0:00	0.001	0.0002	0.0016	48.3	0.0126	2.07	0.0001	1.73	0.0007	0.00001	0.0004	0.00048	0.005	0.0002
W14	2009-04-20 0:00	0.002	0.0002	0.0011	37.6	0.0097	2.99	0.0001	1.59	0.002	0.00001	0.0007	0.0003	0.004	0.0003
W14	2009-05-18 0:00	0.001	0.0003	0.0011	30.4	0.0181	2.47	0.0001	1.11	0.0083	0.00001	0.0004	0.00082	0.006	0.0005
W14	2009-06-15 0:00														
W14	2009-07-13 0:00	0.001	0.0001	0.0016	45.3	0.0188	2.55	0.0001	1.9	0.0002	0.00001	0.0005	0.00053	0.003	0.0002
W14	2009-08-11 0:00														
W14	2009-09-02 0:00														
W14	2009-09-03 0:00	0.001	0.0011	0.0014	64.2	0.0239	2.57	0.0001	2.32	0.0006	0.00001	0.0004	0.0005	0.002	0.0001
W14	2009-10-19 0:00	0.002	0.0001	0.0012	58.4	0.0234	2.12	0.0001	1.83	0.01	0.00001	0.0004	0.0004	0.002	0.0001
W14	2009-11-05 0:00	0.006	0.0009	0.0008	72.3	0.0176	4.45	0.0003	2.84	0.06	0.00003	0.0008	0.0062	0.028	0.0006
W14	2009-12-02 0:00	0.001	0.0003	0.0016	41.8	0.0124	1.77	0.0001	1.85	0.01	0.00001	0.0004	0.0004	0.004	0.0002
W14	2010-01-04 0:00	0.002	0.0003	0.0295	41.1	0.0175	2.24	0.0001	2.14	0.01	0.00001	0.0004	0.0006	0.007	0.0042
W14	2010-02-01 0:00	0.001	0.0002	0.0012	37.5	0.0211	2	0.0001	1.46	0.01	0.00001	0.0004	0.0004	0.003	0.0007
W14	2010-02-02 0:00														
W14	2010-03-03 0:00	0.001	0.0004	0.004	42	0.0217	1.94	0.0003	2.72	0.01	0.00001	0.0006	0.0004	0.007	0.0002
W14	2010-04-05 0:00	0.001	0.0002	0.0016	39.7	0.007	1.98	0.0001	2.98	0.01	0.00001	0.0004	0.0006	0.004	0.0002
W14	2010-06-02 0:00	0.001	0.0002	0.0005	60	0.0163	2.6	0.005	2.03	0.01	0.00005	0.0004	0.005	0.01	0.002
W14	2010-08-22 0:00	0.001	0.0002	0.0005	62	0.0238	2.17	0.005	3.15	0.01	0.00005	0.0002	0.005	0.01	0.002
W14	2010-09-12 0:00	0.001	0.0007	0.0005	60	0.0279	4.94	0.005	3.88	0.068	0.00005	0.0014	0.005	0.011	0.002
W14	2010-11-11 2:21	0.001	0.0002	0.0005	80	0.0096	2.22	0.005	3.77	0.005	0.00005	0.0009	0.005	0.005	0.0005
W14	2010-12-06 0:00	0.001	0.0002	0.0005	64	0.0128	2.37	0.005	2.71	0.005	0.00005	0.0007	0.005	0.005	0.0005
W14	2011-01-10 0:00	0.001	0.0002	0.0005	70	0.0075	2.12	0.005	2.92	0.005	0.00005	0.0007	0.005	0.005	0.0005
W14	2011-02-03 0:00	0.001	0.0002	0.0006	74	0.0076	2.13	0.005	4.86	0.005	0.00005	0.0012	0.005	0.005	0.0005
W14	2011-03-08 0:00	0.001	0.0002	0.0005	75	0.0396	4.08	0.005	1.28	0.013	0.00005	0.0004	0.005	0.005	0.0005
W14	2011-04-01 0:00	0.001	0.0002	0.0005	59	0.0283	2.29	0.005	3.39	0.005	0.00005	0.0007	0.005	0.005	0.0005
W14	2011-05-02 0:00	0.001	0.0002	0.0005	96	0.0855	2.48	0.005	4.29	0.005	0.00005	0.0003	0.005	0.005	0.0005
W14	2011-05-27 0:00	0.001	0.0002	0.0005	108	0.16	2.66	0.005	6.39	0.005	0.00005	0.0004	0.005	0.005	0.0005
W14	2011-06-02 0:00	0.001	0.0002	0.0005	117	0.229	2.5	0.005	5.09	0.005	0.00005	0.0006	0.005	0.005	0.0005
W14	2011-06-30 0:00	0.001	0.0002	0.0005	93	0.069	2.65	0.005	4.07	0.005	0.00005	0.0002	0.005	0.005	0.0005
W14	2011-07-20 0:00	0.001	0.0002	0.0005	131	0.197	2.54	0.005	4.26	0.005	0.00005	0.0003	0.005	0.005	0.0005
W14	2011-08-17 0:00	0.001	0.0002	0.0005	136	0.11	2.64	0.005	5.17	0.005	0.00005	0.0003	0.005	0.005	0.0005
W14	2011-09-19 0:00	0.001	0.0002	0.0005	102	0.0587	2.85	0.005	2.73	0.005	0.00005	0.0002	0.005	0.005	0.0005
W14	2011-10-01 0:00	0.001	0.0002	0.0005	163	0.067	2.66	0.005	4.3	0.005	0.00005	0.0004	0.005	0.005	0.0005
W14	2011-11-04 0:00														
W14	2011-12-05 0:00	0.0011	0.0002	0.0005	136	0.141	2.67	0.005	4.74	0.005	0.00005	0.00059	0.005	0.005	0.0005
W14	2012-01-09 0:00	0.0015	0.0002	0.0005	175	0.196	2.74	0.005	5.72	0.005	0.00005	0.00061	0.005	0.005	0.0005
W14	2012-02-12 0:00	0.001	0.0002	0.0005	115	0.0721	2.46	0.005	3.06	0.005	0.00005	0.00034	0.005	0.005	0.0005
W14	2012-03-05 9:30	0.0016	0.0002	0.0005	136	0.0472	2.14	0.005	3.96	0.005	0.00005	0.00036	0.005	0.005	0.0005
W14	2012-04-03 16:00	0.0017	0.0002	0.0005	186	0.0931	2.18	0.005	5.19	0.005	0.00005	0.00048	0.005	0.005	0.0005
W14	2012-05-15 17:55	0.001	0.0002	0.0005	84.7	0.0397	2.62	0.005	2.71	0.005	0.00005	0.00033	0.005	0.005	0.0005
W14	2012-05-18 0:00	0.001	0.0002	0.00051	66.1	0.0317	2.54	0.005	2.94	0.005	0.00005	0.00053	0.005	0.005	0.0005
W14	2012-06-03 0:00	0.001	0.0002	0.0005	122	0.0433	2.28	0.005	2.32	0.005	0.00005	0.00088	0.005	0.005	0.0005
W14	2012-07-08 17:50	0.001	0.0002	0.00051	77.4	0.0873	2.75	0.005	1.14	0.005	0.00005	0.00046	0.005	0.005	0.0005
W14	2012-08-15 16:30	0.0013	0.0002	0.0005	115	0.0462	2.78	0.005	3.47	0.005	0.00005	0.00037	0.005	0.005	0.0005
W14	2012-09-10 0:00	0.001	0.0002	0.0005	112	0.0783	2.14	0.005	2.58	0.005	0.00005	0.00023	0.005	0.005	0.0005
W14	2012-10-15 17:00	0.001	0.0002	0.0005	65.3	0.0703	2.24	0.005	3.23	0.005	0.00005	0.00037	0.005	0.005	0.0005
W14	2012-11-18 17:00	0.001	0.0002	0.00079	44.5	0.00783	2.26	0.005	4.05	0.005	0.00005	0.00043	0.005	0.005	0.0005
W14	2012-12-27 0:00	0.0021	0.0002	0.00054	48.6	0.0203	2.11	0.005	2.97	0.005	0.00005	0.00047	0.005	0.005	0.0005
W14	2013-01-02 0:00	0.0012	0.0002	0.0005	60.4	0.0212	2.48	0.005	2.11	0.005	0.00005	0.00021	0.005	0.005	0.0005
W14	2013-02-13 0:00	0.0012	0.0002	0.0005	49.4	0.00664	2.03	0.005	5.39	0.005	0.00005	0.00028	0.005	0.005	0.0005
W14	2013-03-04 15:00	0.0012	0.0002	0.00057	45.9	0.00279	2.03	0.005	4.43	0.005	0.00005	0.00084	0.005	0.0059	0.0005
W14	2013-04-02 11:00	0.0012	0.0002	0.00065	43.1	0.00166	2.11	0.005	5.47	0.005	0.00005	0.00055	0.005	0.005	0.0005
W14	2013-05-13 8:15														
W14	2013-06-17 15:15	0.001	0.0002	0.0005	44.6	0.00876	2.51	0.005	2.46	0.005	0.00005	0.00102	0.005	0.005	0.0005
W14	2013-07-07 16:00	0.001	0.0002	0.0005	69.2	0.0291	2.34	0.005	1.34	0.005	0.00005	0.00098	0.005	0.005	0.0005
W14	2013-08-02 10:30														
W14	2013-09-06 10:55	0.001	0.0002	0.0005	53.4	0.0121	2.5	0.005	2.88	0.005	0.00005	0.00028	0.005	0.005	0.0005
W14	2013-10-18 17:00	0.0014	0.0002	0.00076	56.9	0.0066	2.19	0.005	3.39	0.005	0.00005	0.00055	0.005	0.005	0.0005
W14	2013-11-10 11:25	0.0011	0.0002	0.0005	63	0.00579	2.2	0.005	5.64	0.005	0.00005	0.00041	0.005	0.005	0.0005
W14	2013-12-11 16:30	0.0013	0.0002	0.0005	63.5	0.00593	2.13	0.005	5.27	0.005	0.00005	0.00061	0.005	0.005	0.0005
W14	2014-01-05 17:25	0.0012	0.0002	0.0005	69.1	0.00524	2.21	0.005	4.6	0.005	0.00005	0.00055	0.005	0.005	0.0005
W14	2014-02-04 16:35	0.0011	0.0002	0.0005	71.9	0.00487	2.07	0.005	4.89	0.005	0.00005	0.00063	0.005	0.005	0.0005
W14	2014-03-24 11:25	0.001	0.0002	0.0005	70.1	0.00499	1.83	0.005	5.61	0.005	0.00005	0.00078	0.005	0.005	0.0005
W14	2014-04-19 10:00	0.0014	0.0002	0.0005	68.3	0.00448	2.06	0.005	5.44	0.005	0.00005	0.00069	0.005	0.005	0.0005
W14	2014-05-06 15:50	0.0012	0.0002	0.00055	72.1	0.00596	1.72	0.005	4.6	0.005	0.00005	0.00059	0.005	0.005	0.0005
W14	2014-06-14 10:30	0.0036	0.0002	0.0005	70.8	0.00623	2.38	0.005	5.54	0.005	0.00005	0.00127	0.005	0.005	0.0005
W14	2014-07-24 17:25	0.0012	0.0002	0.0005	89.3	0.0133	2.29	0.005	5.42	0.005	0.00005	0.00049	0.005	0.005	0.0005
W14	2014-08-19 16:40	0.0012	0.0002	0.0005	88.2	0.0103	2	0.005	6.28	0.005	0.00005	0.00026	0.005	0.005	0.0005
W14	2014-09-05 10:15	0.0018	0.0002	0.0005	82.8	0.00801	2.47	0.005	7.24	0.005	0.00005	0.00079	0.005	0.005	0.0005
W14	2014-10-09 13:30	0.001	0.0002	0.0005	92.6	0.0178	2.15	0.005	6.13	0.005	0.00005	0.00105	0.005	0.005	0.0005
W14	2014-11-02 14:00	0.001	0.0002	0.0005	93.3	0.0102	2.39	0.005	5.97	0.005	0.00005	0.00313	0.005	0.005	0.0005
W14	2014-12-11 15:40	0.0027	0.0002	0.0005	118	0.015	2.83	0.005	7.63	0.005	0.00005	0.00134	0.005	0.0082	0.0005
W14	2015-01-05 9:30	0.0016	0.0002	0.0005	116	0.0122	2.26	0.005	6.34	0.005	0.00005	0.00024	0.005	0.005	0.0005
W14	2015-02-20 13:40	0.0022	0.0002	0.0005	114	0.0111	2.56	0.005	6.25	0.005	0.00005	0.00124	0.005	0.005	0.0005
W14	2015-03-08 16:15	0.0013	0.0002	0.00053	131	0.0118	2.79	0.005	4.81	0.005	0.00005	0.00401	0.005	0.005	0.0005
W14	2015-04-02 10:15	0.002	0.0002	0.00065	110	0.0156	2.14	0.005	4.73	0.005	0.00005	0.00198	0.005	0.005	0.0005
W14	2015-05-11 16:30	0.001	0.0002	0.00052	2310	0.0187	2.16	0.005	2.33	0.005	0.00005	0.00372	0.005	0.005	0.0005
W14	2015-06-11 17:10	0.001	0.0002	0.0005	151	0.0382	2.48	0.005	2.72	0.005	0.00005	0.00156	0.005	0.005	0.0005
W14	2015-07-03 16:45	0.001	0.0002	0.00133	167	0.0333	3.14	0.005	3.2	0.005	0.00005	0.00148	0.005	0.005	0.0005

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species						Dissolved Elements																																	
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N\text{-}NO_2$	$N\text{-}NO_3$	$N\text{-}NH_3$	$SO_4\text{-}D$	Chlord	Fluord	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	μS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W14	2015-08-22 15:25	98.9	1480		8.8	968		19.8		1.82	31.4	4.2	375	39	2	0.00002	0.0937	0.00048	0.0837	0.302	0.0001	0.001	50.8	0.000024	0.0005	0.001	0.00416	0.0125	0.00001	60.9	0.0102	19.2	0.0768	0.137	195	0.001	0.0002	0.0005	149	0.0423	2.43	0.005	3.6	0.005	0.00005	0.00215	0.005	0.005	0.0005
W14	2015-09-16 16:45	103	1420		9	874		16.7		1.19	30.8	3	377	42	1.9	0.00002	0.084	0.00049	0.0915	0.235	0.0001	0.001	53.6	0.00001	0.0005	0.001	0.00127	0.005	0.00001	56.6	0.0098	18.9	0.101	0.127	165	0.001	0.0002	0.0005	133	0.0307	2.52	0.104	4.1	0.005	0.00005	0.00237	0.005	0.005	0.0005
W14	2015-10-16 16:10	91.2	1550	42.6	8.72	1050	50.6	12.7	79.2	0.698	37	5.1	401	43	1.8	0.00002	0.0675	0.00041	0.0834	0.252	0.0001	0.001	58.9	0.000013	0.0005	0.001	0.00459	0.0182	0.00001	56.9	0.0198	20.9	0.0847	0.111	182	0.001	0.0002	0.0005	154	0.0335	2.04	0.005	2.73	0.005	0.00005	0.00193	0.005	0.007	0.0019
W14	2015-11-14 11:00	114	1430		8.7	956		10.8		0.72	38.5	5.1	342	40	1.5	0.00002	0.0342	0.00039	0.103	0.247	0.0001	0.001	88.1	0.00001	0.0005	0.001	0.00469	0.005	0.00001	55.8	0.0197	22.4	0.0956	0.112	158	0.0019	0.0002	0.0005	145	0.0273	2.46	0.005	3.42	0.005	0.00005	0.00266	0.005	0.005	0.0005
W14	2015-12-11 17:00	135	1360		8.8	924		9.8		0.576	33.3	2.5	347	50	1.5	0.00002	0.0393	0.00073	0.117	0.202	0.0001	0.001	104	0.00001	0.0005	0.001	0.00076	0.0071	0.00001	43.7	0.0185	19.4	0.14	0.0983	125	0.0013	0.0002	0.0005	150	0.0179	2.45	0.005	3.04	0.005	0.00005	0.00092	0.005	0.005	0.0005
W14	2016-01-03 15:25	116	1400		8.7	946		11.1		0.599	35	2.2	353	91	1.7	0.00002	0.0412	0.00043	0.114	0.178	0.0001	0.001	101	0.00001	0.0005	0.001	0.00099	0.0057	0.00001	40.5	0.0155	18.2	0.0733	0.0966	124	0.001	0.0002	0.0005	121	0.0191	1.79	0.005	3.44	0.005	0.00005	0.00175	0.005	0.005	0.0005
W14	2016-02-01 16:40	125	1420		8.2	916	25.5	11		0.413	39.9	2.4	325	91	1.6	0.00002	0.0465	0.00044	0.112	0.188	0.0001	0.001	101	0.00001	0.0005	0.001	0.00102	0.0056	0.00001	35.6	0.0182	18.9	0.0589	0.098	141	0.002	0.0002	0.0005	116	0.0164	2.11	0.005	3.7	0.005	0.00005	0.00168	0.005	0.005	0.0005
W14	2016-03-21 16:50	126	1620		13.6	1120	21	9.3		0.21	51.9	3.8	367	140	1.4	0.00002	0.0542	0.00046	0.14	0.244	0.0001	0.001	110	0.00001	0.0005	0.001	0.0007	0.0077	0.00001	41.6	0.0174	22.4	0.0705	0.107	152	0.0017	0.0002	0.0005	130	0.017	2.28	0.005	5.47	0.005	0.00005	0.00169	0.005	0.005	0.0005
W14	2016-04-19 16:10	160	1590		8.7	1110	14	14.9		1.24	38.4	2.96	427	53.7		0.00001	0.0307	0.00046	0.138	0.143	0.00002	0.00005	126	0.000015	0.0001	0.0001	0.00153	0.01	0.000005	69.8	0.0112	25.3	0.113	0.122	134	0.00126	0.000089	0.00038	160	0.0203	2.44	0.0001	4.67	0.0003	0.00001	0.00173	0.0005	0.0016	0.0003
W14	2016-05-12 16:05	104	1330		7.8	881	42.7	18.4		1.22	39.4	3.69	311	34.5		0.00001	0.0364	0.00031	0.111	0.147	0.00002	0.00005	106	0.00001	0.0001	0.0001	0.00038	0.01	0.000005	52.3	0.0133	15	0.06	0.0926	115	0.00095	0.00005	0.00028	141	0.0158	2	0.0001	4.07	0.0003	0.00001	0.00133	0.0005	0.001	0.0003
W14	2016-06-27 16:00	94.2	2090		8.4	1530	52	24.2		1.65	55.2	7.47	641	62		0.00001	0.0477	0.00039	0.168	0.253	0.00002	0.00005	180	0.0000065	0.0001	0.0001	0.00133	0.01	0.000005	91.2	0.0165	28.5	0.117	0.104	208	0.00109	0.00005	0.00015	248	0.0244	1.82	0.0001	5.63	0.0003	0.00001	0.00134	0.0005	0.001	0.0003
W14	2016-07-25 14:30	83.3	1980		8.4	1420	38.7	22.5		1.94	43.7	5.87	597	94.6		0.00001	0.25	0.00041	0.139	0.307	0.00002	0.00005	184	0.000005	0.0001	0.0001	0.00124	0.01	0.00025	69.7	0.0111	22.4	0.12	0.059	199	0.00077	0.00005	0.00017	317	0.0206	0.873	0.0001	4.75	0.0003	0.00001	0.00101	0.0005	0.001	0.0003
W14	2016-08-22 15:00	93.6	1910		8.3	1460	148	22.5		2.62	41	4.91	705	39.8		0.00001	0.0356	0.00039	0.163	0.213	0.00002	0.00005	203	0.000005	0.0001	0.0001	0.00141	0.01	0.000005	69.2	0.0144	25.7	0.143	0.0966	162	0.0025	0.00005	0.00014	302	0.0208	1.94	0.0001	5.66	0.0003	0.00001	0.00161	0.0005	0.001	0.0003
W14	2016-09-17 16:25	153	1270		8.5	870	59.3	20		2.59	26.2	2.96	343	29.6		0.00001	0.0306	0.00045	0.139	0.117	0.00002	0.00005	113	0.000005	0.0001	0.0001	0.00261	0.01	0.000005	43.3	0.0149	19	0.0685	0.0946	102	0.00191	0.00005	0.00032	121	0.0106	2.62	0.0001	3.22	0.0003	0.00001	0.00176	0.0005	0.001	0.0003
W14	2016-10-26 16:40	126	1940		8.3	1490	49.9	11.9		4.3	32.4	4.82	764	39.4		0.00001	0.0141	0.00039	0.137	0.171	0.00002	0.00005	216	0.000005	0.0001	0.0001	0.0005	0.01	0.00005	54.9	0.0135	27.1	0.171	0.107	142	0.00293	0.00005	0.00032	284	0.0169	1.92	0.0001	4.96	0.0003	0.00001	0.00207	0.0005	0.001	0.0003
W14	2016-11-04 13:30	105	3150		8.4	2900	88.3	13.8		4.13	49.2	9.58	1670	41		0.00002	0.0262	0.00046	0.277	0.287	0.00004	0.0001	578	0.00001	0.00034	0.0002	0.00048	0.02	0.00005	95.4	0.0171	40.7	0.732	0.122	163	0.0041	0.0001	0.0005	634	0.0165	2.05	0.0002	7.77	0.0006	0.00002	0.00452	0.001	0.002	0.0006
W14	2016-12-10 8:00	169	1830		8.3	1480		5.4		3.22	28.1	4.09	749	37.6		0.00001	0.0078	0.00043	0.101	0.191	0.00002	0.00005	237	0.0000104	0.00068	0.0001	0.0162	0.012	0.000005	46.2	0.011	32.3	0.346	0.0808	133	0.00294	0.00005	0.00027	239	0.0135	3.11	0.0001	5.25	0.0003	0.00001	0.00304	0.0005	0.0019	0.0003
W14	2017-01-02 14:15	135	2160		8.7	1730	63.9	12.4		2.74	33	3.83	910	40		0.00001	0.0242	0.00037	0.198	0.156	0.00002	0.00005	260	0.0000203	0.00114	0.0001	0.0012	0.01	0.000005	93.7	0.0212	33.6	0.345	0.0827	148	0.00216	0.00005	0.00021	346	0.0218	2.23	0.0001	6.35	0.0003	0.00001	0.00313	0.0005	0.0012	0.0003
W14	2017-02-05 16:55	94.2	2970		8.6	2020		9.1		1.89	46.7	8.02	1500	40.5	2.04	0.00001	0.0102	0.00021	0.101	0.132	0.00002	0.00005	275	0.0000329	0.0002	0.0001	0.00253	0.01	0.000005	40	0.0098	28.5	0.153	0.048	88.8	0.0016	0.00005	0.00025	317	0.016	1.1	0.0001	4.3	0.0003	0.00001	0.00241	0.0005	0.001	0.0003
W14	2017-03-06 16:25	83.8	3100		8.8	2810		8		2.06	45.4	9.69	1690	39		0.00002	0.0236	0.00037	0.278	0.256	0.00004	0.0001	555	0.000028	0.00077	0.0002	0.00175	0.02	0.000005	66.8	0.028	50.4	1.64	0.117	194	0.0025	0.0001	0.00046	641	0.0193	1.91	0.0002	11.9	0.0006	0.00002	0.00686	0.001	0.002	0.0006
W14	2017-04-04 16:30	74.2	2700		8.6	2200		12.2		2.18	35.1	4.25	1310	40		0.00002	0.0229	0.00033	0.216	0.148	0.00004	0.0001	363	0.00005	0.00086	0.0002	0.00468	0.02	0.00005	59.7	0.0226	38	0.603	0.119	169	0.0019	0.0001	0.00025	495	0.0207	2.23	0.0002	12.2	0.0006	0.00002	0.00821	0.001	0.002	0.0006
W14	2017-05-08 8:55	73.8	3180	193.9	7.4	2860	22	14	94.2	2.58	32.6	4.31	1790	38		0.00002	0.0291	0.00029	0.222	0.226	0.00004	0.0001	514	0.00006	0.00147	0.0002	0.0037	0.02	0.000005	74.3	0.0282	60.4	1.16	0.123	181	0.0023	0.0001	0.00033	677	0.0179	2.54	0.0002	9.74	0.0006	0.00002	0.0109	0.001	0.002	0.0003
W14	2017-06-12 16:40	64.4	3250	139.5	7.72	3130	28.7	22.2	81.3	3.54	23.4	3.19	2020	41		0.00002	0.0377	0.00036	0.257	0.243	0.00004	0.0001	543	0.00008	0.00051	0.0002	0.00066	0.02	0.000005	102	0.0294	67.8	1.08	0.133	192	0.003	0.0001	0.00036	744	0.023	2.62	0.0002	7.43	0.0006	0.00002	0.00829	0.001	0.002	0.0003
W14	2017-07-03 14:25	76.2	3420			3290	58.1			5.77	21.4	3.76	2150	39		0.00002	0.0356	0.00031	0.211	0.286	0.00004	0.0001	547		0.00133	0.0002	0.014	0.02	0.000005	102	0.0328	81.9	1.6	0.17	200	0.0029	0.0001	0.00033	743	0.0184	3.01	0.0002	7.76	0.0006	0.00002	0.0167	0.001	0.002	0.0003
W14	2017-08-02 11:50	73.4	3640			3320	41.7			6.19	19.5	3.17	2140	38		0.00002	0.0369	0.0004	0.22	0.264	0.00004	0.0001	566		0.00126	0.0002	0.00479	0.02	0.000005	115	0.0368	89.7	1.66	0.149	214	0.0033	0.0001	0.00021	760	0.0193	3.3	0.0002	6.31	0.0006	0.00002	0.00838	0.001	0.002	0.0003
W14	2017-09-03 9:15	85.2	2840		8.5	2480	155	17.4		6.08	19.9	2.9	1580	37.7		0.00002	0.0329	0.00043	0.198	0.203	0.00004	0.0001	313	0.00011	0.00151	0.0002	0.0124	0.02	0.000005	94	0.0357	82.6	1.37	0.139	212	0.0021	0.0001	0.00026	518	0.0178	3.04	0.0002	5.15	0.0006	0.00002	0.00862	0.001	0.002	0.0003
W14	2017-10-02 16:55	65.2	3510	90.9	7.92	3180	110	15.2	98.2	5.59	21.9	4.07	2050	37		0.00001	0.0324	0.00036	0.223	0.226	0.00002	0.00005	509	0.00005	0.00088	0.0001	0.02	0.014	0.0001	100	0.026	80.3	1.17	0.135	239	0.0017	0.00005	0.00034	718	0.0201	2.4	0.0001	6.29	0.0006	0.00001	0.01	0.0005	0.0013	0.0003
W14	2017-11-07 12:20	133	3240	90.5	7.48	3050	18	5.9	77.5	5.23	18.9	3.63	1950	51.4		0.00001	0.0233	0.00036	0.204	0.204	0.00002	0.00005	508	0.0001	0.00106	0.0001	0.00361	0.01	0.000005	83.7	0.0233	82.3	1.08	0.12	191	0.00364	0.00005	0.00033	697	0.0182	2.39	0.0001	6.95	0.0006	0.00001	0.00841	0.0005	0.001	0.0003
W14	2017-12-18 15:30	105	3550	73.6	7.7	3190	45.3	9	83.6	4.53	28.8	8.32	2020	46		0.00002	0.0279	0.00056	0.166	0.381	0.00004	0.0001	502	0.00001	0.00054	0.0002	0.00236	0.02	0.00025	83.8	0.0243	98.2	1.25	0.123	228	0.0018	0.0001	0.00062	715	0.0141	2.47	0.0002	7.43	0.0006	0.00002	0.0113	0.001	0.002	0.0003
W14	2018-01-15 9:50	94.2	3420	27	8.41	3250	30.8	11.1	103.7	5.02	23.2	4.82	2040	45		0.00002	0.0309	0.00034	0.239	0.315	0.00004	0.0001	532	0.00005	0.00035	0.0002	0.00223	0.02		119	0.0359	90.4	1.39	0.158	238	0.0019	0.0001	0.00041	742	0.0162	2.37	0.0002	7.27	0.0006	0.00002	0.0106	0.001	0.002	0.0003
W14	2018-02-05 10:55	138	3370	93	8.2	2960	62.1	5.7	107.2	6.15	15.4	3.69	1840	54		0.00002	0.0187	0.00032	0.27	0.272	0.00004	0.0001	534	0.000045	0.00138	0.0002	0.0085	0.02	0.000005	77.2	0.0334	82.2	1.05	0.122	195	0.0039	0.0001	0.00042	648	0.0136	2.54	0.0002	7.13	0.0006	0.00002	0.0136	0.001	0.002	0.0003
W14	2018-03-13 14:10	154	2800	80.3	8			9.9	90	8.42	11.1	2.97	1440	52		0.00002	0.0268	0.00055	0.224	0.27	0.00004	0.0001	308	0.000037	0.00034	0.0002	0.00363	0.02	0.000005	77.9	0.0429	110	0.475	0.129	179	0.0064	0.0001	0.00062	538	0.00937	2.2	0.0002	7.84	0.0006	0.00002	0.00922	0.001	0.002	0.0003
W14	2018-04-09 9:00	105	3330	100.2	8.15			8.9	103.2	7.96	17.1	5.16	1820	49		0.00002	0.0164	0.00045	0.134	0.271	0.00004	0.0001	467	0.000057	0.00259	0.0002	0.00635	0.02		64.6	0.0239	73.2	1.67	0.134	215	0.004	0.0001	0.00063	680	0.0105	2.48	0.0002	8.03	0.0006	0.00002	0.0106	0.001	0.002	0.0003
W14	2018-05-12 10:25	86.4	3410	-37.6	7.59	3030	15.3	15.9	76.9	3.14	40	12.3	1870	28	2.24	0.00002	0.0355	0.00036	0.177	0.367	0.00004	0.0001	552	0.00003		0.0002	0.00454	0.02	0.00005	94.7	0.0175	79.4	0.468	0.103	148	0.0027	0.0001	0.00064	766	0.00788	1.65	0.0002	6.05	0.0006	0.00002	0.00553	0.001	0.002	0.0003
W14	2018-06-04 15:30	98.8	3480	-24.1	8.06			19.6	93.2	3.99	33.2	12.3	1880	27.8		0.00002	0.0316	0.00037	0.184	0.344	0.00004	0.0001	536	0.00001	0.00028	0.0002	0.00849	0.02	0.000005	87.3	0.0292	91.9	0.577	0.106	143	0.0069	0.0001	0.00074	725	0.0094	2.12	0.0002	7.3	0.0006	0.00002	0.00629	0.001	0.002	0.0003
W14	2018-07-02 15:35	133	3280		7.5	3060	31.5	18.9		7.47	15.3	7.88	1970	40.3		0.00002	0.0273	0.00041	0.174	0.372	0.00004	0.0001	482	0.00003	0.00032	0.0002	0.00268	0.02	0.000005	86	0.0357	115	0.612	0.131	184	0.0105	0.0001	0.00063	689	0.0115	2.26	0.0002	8.36	0.0006	0.00002	0.00837	0.001	0.0023	0.0003
W14	2018-08-22 14:50			-34.9	7.91			21.8	65.5																																									
W14	2018-08-23 14:50	106	3570			3060	35.4			4.3	26	10	2010	34.9		0.00002	0.0684	0.0004	0.169	0.384	0.00004	0.0001	457	0.00004	0.00023	0.0002	0.00362	0.121	0.00001	86.1	0.0239	99.4	0.46	0.114	166	0.0058	0.00014	0.00037	778	0.00908	2.2	0.0002	8.12	0.003	0.00002	0.00558	0.001	0.002	0.0003
W14	2018-09-16 17:00	123	3330	80.2	7.97	3050	63.4	17.2	79.7	3.58	15.9	6.85	1950	35.2		0.00002	0.0399	0.00041	0.17	0.356	0.00004	0.0001	549	0.000043	0.00036	0.0002	0.0099	0.033	0.0001	85.9	0.0293	89.4	0.612	0.12	178	0.0092	0.00026	0.00057	770	0.00989	2.35	0.0002	7.71	0.00072	0.00002	0.00624	0.001	0.0043	0.0003
W14	2018-10-10 16:30	141	3310	126.2	7.96	3010	19.3	13.7	88.2	2.78	17.5	7.96	1960	38		0.00002	0.0241	0.00041	0.172	0.358	0.00004	0.0001	508	0.00007	0.00065	0.0002	0.00607	0.02	0.000005	78.4	0.0219	78.6	0.596	0.109	162	0.0109	0.0001	0.00058	665	0.00946	2.15	0.0002	6.74	0.0006	0.00002	0.00684	0.001	0.002	0.0003
W14	2019-09-30 11:15	171	1610	130.7	7.67	1380	3.5	16.4	67.5	0.251	6.64	0.439	826	28.3		0.000024	0.0051	0.00047	0.0452	0.13	0.00002	0.00005	251	0.000139	0.00054	0.0001	0.0951	0.053	0.0000177	15.1	0.0081	54.6	0.139	0.0309	74.1	0.00323	0.00005	0.00022	308	0.00501	4.29	0.0001	5.63	0.0003	0.00001	0.00632	0.0005	0.0064	0.0003
W14	2019-10-19 14:50	128	3030	176.2	7.53	2750	31.1	12.3	101.9	0.325	14.8	2.56	1770	29.5		0.00002	0.0273	0.0004	0.187	0.216	0.00004	0.0001	537	0.00003	0.0002	0.0002	0.00333	0.02	0.000005	72.5	0.0233	76.5	0.493	0.0707	121	0.0084	0.0001	0.00046	675	0.0107	2.4	0.0002	7.12	0.0009	0.00002	0.0043	0.001	0.0021	0.0004
W14	2019-11-25 11:00	195	1850	205.9	8.04	1430	123	5.1	89.2	0.223	7.77	0.541	830	27.2		0.00001	0.0071	0.00052	0.0468	0.14	0.00002	0.00005	271	0.000302	0.00016	0.00015	0.0437	0.017	0.0000106	16.6	0.0099	55.3	0.103	0.0317	79.8	0.00197	0.00005	0.0002	329	0.0053		0.0001	5.31	0.0003	0.00001	0.00644	0.0005	0.0044	0.0003
W14	2019-12-16 10:20	154	2950	165.9	7.85	2690	134	7.5	94.7	0.066	14.7	2.7	1660	46		0.00002	0.0192	0.00046	0.185	0.251	0.00004	0.0001	574	0.00003	0.0002	0.0002	0.00087	0.02	0.000005	52.4	0.0161	61.8	0.284	0.0593	131	0.0047	0.0001	0.00054	632	0.00513	3.26	0.0002	6.4	0.0006	0.00002	0.0059	0.001	0.002	0.0004
W14	2020-01-31 7:50	287	2250	216.9	7.66	1990	5.2	3.9	63.9	1.87	7.88	2.84	1160	26.8		0.00002	0.005	0.00043	0.052	0.234	0.00004	0.0001	387	0.000133	0.00052	0.0002	0.0398	0.02	0.000005	23.9	0.0129	63.8	0.368	0.0391	98.7	0.00407	0.0001	0.00029	426	0.00378	5.14	0.0002	6.67	0.0006	0.00002	0.00715	0.001	0.0055	0.0004
W14	2020-02-10 13:45	129	3320	100.7	7.84	2940	38.7	9.1	100.7	2.03	37.2	18.1	1800	44.2		0.00002	0.0178	0.00041	0.149	0.453	0.00004	0.0001	508	0.00004	0.0002	0.0002	0.00092	0.02		56.8	0.0179	63.8	0.308	0.0851	198	0.00169	0.0001	0.00061	685	0.00473	2.06	0.0002	6.74	0.0006	0.00002	0.00517	0.001	0.002	0.0004
W14	2020-03-09 10:00	146	3350	-14.5	7.54	2940	28	8.6	77.5	1.77	42.2	17.8	1770	52.6	2.38	0.00002	0.0276	0.00046	0.188	0.513	0.00004	0.0001	495	0.000025	0.0002	0.0002	0.00142	0.02	0.000005	61.6	0.0165	64	0.341	0.0698	178	0.0046	0.0001	0.001	604	0.00413	2.17	0.0002	6.3	0.0006	0.00002	0.00584	0.001	0.002	0.0004
W14	2020-04-13 9:25	165	3260	-26.9	7.76	2910	36	9.8	84.6	1.59	25.4	12	1770	53.5		0.00002	0.0252	0.00043	0.176	0.444	0.00004	0.0001	538	0.000025	0.0002	0.0002	0.00239	0.02	0.000005	60.5	0.0108	67.8	0.393	0.0724	187	0.00366	0.0001	0.00101	677	0.00415	2.73	0.0002	6.69	0.0006	0.00002	0.00646	0.001	0.002	0.0004
W14	2020-05-25 15:35	105	3050	9.3	7.68	2820	31.6	16.2	70.1	1.25	26.6	11.9	1750	26.2		0.00002	0.0338	0.00042	0.203	0.386	0.00004	0.0001	557	0.000035	0.0002	0.0002	0.00224	0.02	0.00005	80.5	0.0173	57.1	0.414	0.0606	137	0.00416	0.0001	0.00071	696	0.00644	2.38	0.0002	5.87	0.0006	0.00002	0.00441	0.001	0.0024	0.0004
W14	2020-06-26 14:15	144	2290	184	7.49	1940	13	14	65	1.32	14.6	4.4	1170	19.2		0.00001	0.0172	0.00039	0.0994	0.234	0.00002	0.00005	408	0.0000877	0.00027	0.0001	0.0431	0.02	0.000005	36.1	0.0098	52.5	0.326	0.0391	89.6	0.00396	0.00005	0.00033	457	0.00642	3.78	0.0001	5.22	0.0004	0.00001	0.0047	0.0005	0.0082	0.0002
W14	2020-07-12 8:50	90.1	3200	81.7	7.9	2950	27.7	21.3	89.7	2.17	26.2	8.94	1820	25.4		0.00002	0.0507	0.00036	0.214	0.477	0.00004	0.0001	625	0.00002	0.00027	0.0002	0.00454	0.02	0.000005	81.7	0.0161	63.6	0.563	0.0756	134	0.00695	0.0001	0.00056	713	0.00757	2.48	0.0002	6.33	0.0009	0.00002	0.00456	0.001	0.002	0.0004
W14	2020-08-26 16:30	90.7	3410	-6.8	7.68	3250	15.4	21.3	71.9	2.79	33.6	12.2	1950	29.5		0.00002	0.0535	0.00026	0.2	0.665	0.00004	0.0001	672	0.000025	0.0002	0.0002	0.00198	0.02	0.00005	97.4	0.0104	64.4	0.345	0.0766	202	0.00337	0.0001	0.00044	703	0.00648	2.22	0.00027	7.13	0.0006	0.00002	0.00348	0.001	0.002	0.0004
W14	2020-09-04 10:00	90.9	3260	-40.7	7.91	3030	21.6	18.2	75	2.88	34	11.8	1850	28.2		0.00002	0.0578	0.0004	0.212	0.511	0.00004	0.0001	607	0.000035	0.0002	0.0002	0.00376	0.02	0.000005	93.7	0.0114	58.9	0.478	0.079	154	0.00447	0.0001	0.00066	753	0.00706	2.35	0.0002	6.7	0.0006	0.00002	0.00482	0.001	0.0036	0.0004
W14	2020-10-16 16:50	171	2060	-86.3	7.41	1830	28.2	9	25.2	0.0317	0.1	3.45	1150	24.2		0.00002	0.0021	0.00031	0.0468	0.216	0.00004	0.0001	369	0.00001	0.00057	0.0002	0.0004	15.6	0.000005	19	0.0093	51.8	0.912	0.038	82	0.00622	0.0001	0.0002	379	0.00629	3.44	0.0002	5.94	0.0006	0.00002	0.000819	0.001	0.002	0.0004
W14	2020-11-23 8:45	255	564	-101.3	7.04	1820	44.9	9.1	28.4	0.02	0.1	3.24	1090	23.7		0.00002	0.002	0.00025	0.0403	0.232	0.00004	0.0001	368	0.00001	0.0002	0.0002	0.0004	21.6	0.000005	18.3	0.0089	51.9	0.842	0.036	74.7	0.00212	0.0001	0.0002	392	0.00447	3.53	0.0002	5.11	0.0006	0.00002	0.000147	0.001	0.002	0.0004
W14	2020-12-30 11:45	207	2080	2422	7.97	1800	27.6	3.7	87.8	0.02	12.8	2.06	1040	25.4		0.00001	0.0035	0.0004	0.0567	0.181	0.00002	0.00005	378	0.000284	0.00041	0.0001	0.0806	0.01	0.000005	16.3	0.0089	58.8	0.278	0.0283	79.8	0.00169	0.00005	0.00026	362	0.0071	5.36	0.0001	6.12	0.0003	0.00001	0.00658	0.0005	0.0058	0.0002
W14	2021-01-26 10:50	134	3330	-25.1	7.66	2990	53.5	10	97.7	0.968	36.8	16.3	1760	63		0.00002	0.0278	0.00042	0.165	0.484	0.00004	0.0001	603	0.00002	0.0002	0.0002	0.00127	0.02	0.000005	69.4	0.0182	55.8	0.359	0.0641	165	0.0027	0.0001	0.00067	642	0.00488	2.32	0.0002	7.42	0.0006	0.00002	0.00601	0.001	0.002	0.0004
W14	2021-02-24 15:00	127	3230	110.1	7.66	2960	127	10.2	101.6	1.89	30.3	13	1820	51		0.00002	0.025	0.00033	0.158	0.469	0.00004	0.0001	567	0.000025	0.0002	0.0002	0.00199	0.02	0.000005	69.3	0.02	61.5	0.42	0.0692	155	0.00581	0.0001	0.00068	631	0.00512	2.12	0.0002	8.16	0.0006	0.00002	0.00583	0.001	0.002	0.0004
W14	2021-03-15 10:15	141	3130	148.7	7.05	2840	60.6	8.4	88	2.19	22.9	10.6	1550	36.8		0.00002	0.026	0.00042	0.163	0.383	0.00004	0.0001	488	0.000025	0.0002	0.0002	0.00162	0.02	0.000005	60.4	0.0122	65	0.39	0.0636	148	0.00388	0.0001	0.00059	576	0.00449	2.17	0.0002	9.24	0.0006	0.00002	0.00564	0.001	0.0027	0.0004
W14	2021-04-10 10:30	146	3100			2750	72.9			2.81	23.9	10.4	1680	41.7		0.00002	0.0238	0.00055	0.148	0.371	0.00004	0.0001	519	0.00004	0.0002	0.0002	0.0016	0.02	0.000005	69.3	0.0238	67.8	0.407	0.0585	149	0.00282	0.0001	0.00061	577	0.00422	2.22	0.0002	9.61	0.0006	0.00002	0.00631	0.001	0.002	0.0004
W14	2021-05-15 9:55			45.6	7.03			16.5	76.6			14.3				0.00002	0.037	0.00031	0.097	0.381	0.00004	0.0001	534	0.000015	0.0002	0.001	0.00206	0.02	0.000005	75.7	0.0166	43.1	0.398	0.0492	106	0.00238	0.0001	0.00039	587	0.00772	1.88	0.0002	9.14	0.0006	0.00002	0.00328	0.001	0.002	0.0004
W14	2021-06-22 11:10	84.3	2450	57.5	7.34	2100	14.4	18.5	100.4	1.42	25.2	8.7	1290	17.8		0.00002	0.039	0.00032	0.16	0.376	0.00004	0.0001	395	0.00001	0.0002	0.001	0.00454	0.02	0.000005	63.1	0.0182	40.1	0.257	0.0474	114	0.00254	0.0001	0.00035	500	0.0054	2.11	0.0002	10.6	0.0006	0.00002	0.00312	0.001	0.002	0.0004
W14	2021-07-13 16:15	76.6	3070	24	7.24	2880	24.1	23.4	67.4	0.986	34.8	11.4	1780	23		0.00005	0.0472	0.0005	0.183	0.48	0.0001	0.00025	558	0.00006	0.0005	0.0025	0.00187	0.05	0.000005	78.7	0.0171	46.2	0.373	0.0592	126	0.00439	0.00025	0.0005	607	0.00682	2.02	0.0005	12.5	0.0015	0.00005	0.00336	0.0025	0.0084	0.001
W14	2021-08-18 13:35	94.3	2190	35.9	7.69	1630	16.4	21.7	111.3	1.12	44.1	16.8	889	21.9		0.00001	0.0386	0.00032	0.129	0.184	0.00002	0.00005	225	0.000015	0.00016	0.0005	0.0016	0.01	0.000005	53.3	0.0181	34.8	0.154	0.0561	120	0.00284	0.00005	0.00037	292	0.00625	1.91	0.0001	8.82	0.0003	0.00001	0.00266	0.0005	0.0026	0.0002
W14	2021-09-11 11:05		2080	17.8	7.97			18.4	81.9	0.923	30.9	7.68	922	23.1		0.00002	0.0393	0.00037	0.177	0.171	0.00004	0.0001	263	0.000015	0.0002	0.001	0.00306	0.02	0.000005	59.8	0.0205	47.7	0.201	0.0576	104	0.00389	0.0001	0.0004	320	0.00571	2.36	0.0002	9.74	0.0006	0.00002	0.00314	0.001	0.0223	0.0004
W14	2021-10-14 11:20	126	2900	46.3	7.76	2540	20.5	11.5	80.2	1.27	31.9	10.4	1570	25.2		0.00002	0.028	0.00033	0.145	0.164	0.00004	0.0001	472	0.000015	0.00023	0.001	0.00335	0.047	0.000005	58.5	0.0203	65.8	0.382	0.0626	112	0.00822	0.0001	0.00047	604	0.00528	2.23	0.0002	10.5	0.0006	0.00002	0.00558	0.001	0.0029	0.0004
W14	2021-11-05 17:00	241	2040	164	7.35	1720	9.1	7.6	123.1	2.07	11.1	2.43	993	27		0.00002	0.0052	0.00038	0.0681	0.197	0.00004	0.0001	331	0.000147	0.00035	0.001	0.0587	0.02	0.000005	20.4	0.0117	57.9	0.244	0.03	79.1	0.00308	0.0001	0.00028	358	0.00515	4.95	0.0002	6.27	0.0006	0.00002	0.00612	0.001	0.0034	0.0004
W14	2021-12-07 9:25	152	2480	47.7	7.94	1960	68.3	10.1	128.2	1.43	31.4	8.47	1150	37.4		0.00002	0.0241	0.00058	0.0932	0.173	0.00004	0.0001	290	0.000035	0.00056	0.001	0.0187	0.02	0.000005	44.1	0.0379	71.7	0.301	0.0657	111	0.0101	0.0001	0.00057	368	0.00549	1.85	0.0002	8.8	0.0006	0.00002	0.00698	0.001	0.002	0.0004
W14	2022-01-24 15:10	128	2370			1900	18.2			1.44	29.2	8.32	1100	28		0.00002	0.024	0.00025	0.13	0.184	0.00004	0.0001	297	0.00004	0.00036	0.0005	0.0034	0.02	0.000005	60.7	0.0301	62.6	0.283	0.0761	120	0.00596	0.0001	0.00044	374	0.00564	1.82	0.0002	9.06	0.0006	0.00002	0.0108	0.001	0.002	0.0004
W16	2006-11-22 0:00	335	739			502	2			0.03	0.14	0.004	83																																			
W16	2006-12-19 0:00	383	780			536	2				0.1	0.066	64																																			
W16	2007-01-04 0:00	385	733			484	2			0.03	0.09	0.15	56																																			
W16	2007-01-10 0:00	366	744			500	2			0.03	0.08	0.09	54																																			
W16	2007-01-16 0:00	387	752			492	41			0.03	0.05	0.033	52																																			
W16	2007-01-30 0:00	371	735			484	2			0.31	0.05	0.058	48	0.81			0.005	0.0012	0.14	0.007	0.0001	0.0005	116	0.00002	0.0012	0.0032	0.002	0.02	0.0001	4.6	0.001	28.7	1.79	0.004	14.6	0.0005	0.0001	0.0002	18.4	0.0002	7.88	0.001	0.492	0.002	0.00005	0.0054	0.0056	0.001	
W16	2007-02-07 0:00	361	741			484	2			0.03	0.05	0.11	47	0.84																																		
W16	2007-02-15 0:00	364	742			470	2			0.05	0.1	0.101	51																																			
W16	2007-02-22 0:00	582	1600			1440	2			3.75	35	2	286	0.9																																		
W16	2007-03-02 0:00	369	762			473	181			0.022	0.17			1.4																																		
W16	2007-03-23 0:00	340	726			432	126			0.05	0.2	0.082	52	1.7																																		
W16	2007-04-17 0:00	185	438			318	31			0.18	1.1		67	2.4																																		
W16	2007-05-11 0:00	73	240			250	28			0.62	5.7	0.48	21.4	0.9			0.072	0.0007	0.056	0.022	0.0001	0.0005	29.2	0.00002	0.0009	0.0013	0.045	0.27	0.0001	2.1	0.002	10.1	0.114	0.003	5.9	0.0015	0.0001	0.0002	8.1	0.0002	4.66	0.001	0.238	0.0065	0.00005	0.0005	0.0034	0.008	
W16	2007-05-19 0:00	74	246			220	15			0.62	5.6	0.51	21.6	0.9			0.068	0.0006	0.057	0.02	0.0001	0.0005	31.3	0.00004	0.0006	0.001	0.05	0.22	0.0001	2	0.002	10.7	0.131	0.003	5.7	0.0012	0.0001	0.0002	7.3	0.0002	4.48	0.001	0.225	0.006	0.00005	0.0005	0.0024	0.012	
W16	2007-05-21 0:00																																															
W16	2007-05-30 0:00	79	259			244	8			0.64	5.4	0.37	25.1	1.1																																		
W16	2007-06-13 0:00	93	235			226	5			0.3	4.8	0.07	25.9	1.1			0.037	0.0005	0.056	0.019	0.0001	0.0005	33.8	0.00003	0.0005	0.0006	0.043	0.14	0.0001	2.4	0.002	11.6	0.079	0.003	7.4	0.0009	0.0001	0.0002	8.3	0.0002	4.59	0.001	0.237	0.0032	0.00005	0.0005	0.0013	0.004	
W16	2007-06-20 0:00	98	252			266	2			0.23	4.3	0.1	26.9	1.1																																		
W16	2007-06-27 0:00																																															
W16	2007-07-04 0:00																																															
W16	2007-07-05 0:00	115	269			258	2			0.24	3		30	1.2																																		
W16	2007-07-11 0:00	121	309			244	2			0.21	3.2	0.13	26	1			0.022	0.0007	0.066	0.02	0.0001	0.0005	37.1	0.00002	0.0004	0.0005	0.034	0.09	0.0001	2.5	0.002	13	0.036	0.004	8.7	0.0011	0.0001	0.0002	9.4	0.0004	4.84	0.001	0.286	0.0025	0.00005	0.0006	0.0012	0.008	
W16	2007-07-18 0:00	128	320			270	2			0.21	3.2	0.15	27	1.2																																		
W16	2007-07-25 0:00	137	336			276	2			0.19	2.9	0.17	30	1.3																																		
W16	2007-08-01 0:00																																															
W16	2007-08-09 0:00	152	377			282	2			0.32	3.7	0.31	34	1.6																																		
W16	2007-08-14 0:00	161	370			328	2			0.32	4.2	0.41	35	1.8																																		
W16	2007-08-29 0:00	178	420			334	2			0.47	7.4	0.68	39	2.2																																		
W16	2007-09-06 0:00	188	411			322	2			0.46	7.4	0.69	41	2.2																																		
W16	2007-09-11 0:00	174	401			316	2			0.53	8.51	0.74	39.9	2.32																																		
W16	2007-09-18 0:00	179	445			304	19			0.47	7.47	0.6	39.7	2.38																																		
W16	2007-09-25 0:00	163	409			320	2			0.48	8.33	0.77	40.2	2.42																																		
W16	2007-10-03 0:00	162	439			320	14			0.41	8.96	0.55	41.5	2.56																																		
W16	2007-10-11 0:00	162	462			306	2			0.36	6.8		40	2.51																																		
W16	2007-10-17 0:00	160	444			298	2			0.34	6.8	0.65		2.61																																		
W16	2007-10-22 0:00	162	462			322	8			0.3	8.73	0.63	40.4	2.5																																		
W16	2007-10-30 0:00	168	470			322	2			8.62	0.26	0.57	38.8	2.72																																		
W16	2007-11-08 0:00	177	492			352	4			0.35	9.11	0.61	40.7	3.37																																		
W16	2007-11-13 0:00	182	497			364	4			0.27	9.11	0.64	43	3.42																																		
W16	2007-11-20 0:00	184	510			374	3			0.17	8	0.52		2.96			0.017	0.0004	0.11	0.046	0.0001	0.0005	58.3	0.00004	0.0004	0.0009	0.025	0.06	0.0001	8	0.004	17.9	0.104	0.011	18.5	0.0005	0.0001	0.0012	15.1	0.0018	5.73	0.001	0.557	0.0019	0.00005	0.0017	0.0019	0.01	
W16	2007-11-27 0:00	182	477			368	2			0.25	7.7	0.54	40.7	3.74																																		
W16	2007-12-11 0:00	189	536			380	2			0.27	9.85	0.63	44.5	3.88																																		
W16	2007-12-18 0:00	192	465			412	2			0.35	8.6	0.44	49.7	3.77			0.017	0.0009	0.108	0.052	0.0001	0.0005	61.6	0.00002	0.0003	0.0007	0.029	0.06	0.0001	8.5	0.004	19.5	0.113	0.014	21.1	0.0006	0.0001	0.0012	17.6	0.0021	5.78	0.001	0.617	0.0023	0.00005	0.0021	0.0011	0.021	
W16	2007-12-26 0:00	203	491			378	5			0.34	9.75	0.64	43.7	3.63																																		
W16	2008-01-09 0:00	203	521			390	2			0.4	9.14	0.61	48	4.41																																		
W16	2008-01-16 0:00	208	547			394	5			0.52	9.27	0.6	47.1	4.31																																		

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	N-NO_2	N-NO_3	N-NH_3	SO_4-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W16	2008-01-22 0:00	208	570			412	2			0.52	8.69	0.67	51.8	4.83	
W16	2008-02-13 0:00	215	591			398	3			0.61	8.53	0.73	53.1	4.98	
W16	2008-03-14 0:00	218	540			400	2			0.39	7.28	0.75	56	5.3	
W16	2008-03-20 0:00									0.15	7.02	0.83			
W16	2008-03-26 0:00											1.09			
W16	2008-03-26 0:00	208	560			380	5			0.46	8.17	0.93	65.4	5.77	
W16	2008-04-10 0:00														
W16	2008-04-17 0:00											0.243			
W16	2008-04-22 0:00											0.79			
W16	2008-05-03 0:00														
W16	2008-05-04 0:00	27	76			102	8			0.05	0.51	0.12	7	0.71	
W16	2008-05-05 0:00	46	132			176	18			0.08	0.71	0.12	13.8	1.28	
W16	2008-05-07 0:00														
W16	2008-05-08 0:00	44	134			126	12			0.07	0.71	0.11	13.8	1.27	
W16	2008-05-09 0:00	60	187			224	12			0.09	0.94		20.6	1.98	
W16	2008-05-11 0:00	60	189			230	16			0.08	0.95		21.8	1.87	
W16	2008-05-13 0:00	59	178			188	12			0.08	0.96	0.05	22.4	1.78	
W16	2008-05-15 0:00	56	178			170	10			0.08	0.86	0.032	21.6	1.61	
W16	2008-05-18 0:00	67	212			210	8			0.1	1.02	0.056	26.5	2.07	
W16	2008-05-20 0:00	68	216			236	16			0.09	1.03	0.05	27	2.11	
W16	2008-05-27 0:00	71	207			222	7			0.09	1.28	0.11	27.5	2.27	
W16	2008-05-29 0:00	72	234			230	8			0.13	1.88	0.22	32	2.43	
W16	2008-06-05 0:00	76	246			254	4			0.16	2.05	0.3	39.3	2.46	
W16	2008-06-11 0:00	78	249			222	2			0.28	1.99	0.34	44.3	2.63	
W16	2008-06-17 0:00	80	273			246	3			0.25	1.82	0.38	43.8	2.55	
W16	2008-06-25 0:00	87	286			342	2			0.32	1.32	0.38	46.1	2.78	
W16	2008-06-26 0:00									0.28	1.23				
W16	2008-07-03 0:00	94	299			272	2			0.31	0.82	0.34	50.3	2.86	
W16	2008-07-08 0:00	96	300			302	2			0.27	0.66	0.29	48.2	2.88	
W16	2008-07-09 0:00									0.163	0.6				
W16	2008-07-22 0:00	83	307			284	4			0.11	0.22	0.33	50.4	2.85	
W16	2008-08-23 0:00	134	327			264	2			0.01	0.03		47.5	2.72	
W16	2008-08-25 0:00	131	348			272	4			0.01	0.03	0.53	44.9	2.66	
W16	2008-09-18 0:00	184	419			300	33			0.01	0.01	0.46	31.7	3.72	
W16	2008-10-08 0:00	138	424			308	12			0.18	5.22	0.94	73.8	2.64	
W16	2008-10-17 0:00	140	450			362	10			0.2	5.05	0.72	74.8	2.58	
W16	2008-11-18 0:00	172	571		8.47	436	57	7.6				0.49	80.9	6.6	
W16	2008-12-10 0:00	168	606		7.79	446	15	9.1				0.7	105	5.28	
W16	2008-12-17 0:00	148	466			192	8					0.76	78	2.78	
W16	2009-01-17 0:00	143	497		6.64	364	4	0.1		0.005	4.81		76	3.27	
W16	2009-01-18 0:00				7.7										
W16	2009-03-31 0:00				7.8			0.3	77						
W16	2009-04-21 0:00	62	194		8.1	140	5	3.8					23.4	1.22	
W16	2009-05-05 0:00	11	36			36	10						2.1	0.4	
W16	2009-06-20 0:00				7.71			14.8							
W16	2009-06-22 0:00	131	396			274	4						45.3	2.92	
W16	2009-10-27 0:00	78	262		7.1	184	2	3.4			3.58		28	9.79	
W16	2009-11-05 0:00	107	485			356	14				9.29		69.9	7.35	
W16	2009-12-02 0:00	123	554		7.88	364	2	1.6			10.1		79	23.9	
W16	2010-01-04 0:00	141	627		7.98	392	5				11.4		80.6	23	
W16	2010-02-01 0:00	94	207		7.17	388	5	1.1			11		73.9	20.5	
W16	2010-03-02 0:00	160	613		6.8	414	5	1.7			10.9		82.6	18.5	
W16	2010-04-05 0:00	156	650		6.73	418	4	2.3					88	18.2	
W16	2010-06-02 0:00	130	452		7.24	290	7	17.3		0.219	7.9	0.34	59	9.6	0.49
W16	2010-06-14 0:00	120	465		7.29	320	1	16.8		0.182	9.6	0.94	70	9.1	0.56
W16	2010-06-15 0:00	130	450		7.2	310	2	15.4		0.187	9.7	0.6	66	8.5	0.56
W16	2010-06-16 0:00	130	465		7.47	300	4	16.5		0.181	9.2	0.61	68	8.3	0.55
W16	2010-06-17 0:00	130	467		7.07	300	1	17.2		0.178	9.3	0.38	66	8.8	0.57
W16	2010-06-23 0:00	130	466		7.97	320	2	16.34	95.5	0.187	9.3	0.27	65	8	0.54
W16	2010-06-24 0:00	130	469		7.94	340	1	18.22	98.2	0.183	9.2	0.39	64	8.2	0.54
W16	2010-06-29 0:00	130	468		7.94	340	1	15.63	78.9	0.175	9.8	0.52	71	7.1	0.57
W16	2010-07-04 0:00	130	483		7.91	340	2	17.83	84	0.176	9.6	0.45	75	7.8	0.55
W16	2010-07-11 0:00	130	481		8.06	300	1	17.27	88.6	0.187	9.7	0.32	68	8	0.55
W16	2010-07-14 0:00				8.13			17.31	87.8						
W16	2010-07-19 0:00	130	487		8.07	320	3	16.97	92.5	0.188	9.6	0.25	68	7.6	0.56
W16	2010-07-25 0:00	130	491		7.77	360	10	15.09	67.2	0.214	9.8	0.18	69	7.1	0.59
W16	2010-08-02 0:00	140	496		7.89	340	4	17.45	73.3	0.006	10.6	0.16	67	7.1	0.59
W16	2010-08-05 0:00	130	495		7.97	310	3	19.37	80.4	0.178	10.6	0.18	67	6.3	0.57
W16	2010-08-10 0:00	140	512		7.88	340	2	16.98	42.6	0.172	11.3	0.23	72	6.7	0.54
W16	2010-08-15 0:00	130	514		8.37	310	3	17.96	87.4	0.175	11.5	0.058	74	5.9	0.55
W16	2010-08-22 0:00	140			8.24	340	19	14.66	80.5	0.152	10.5	0.065	76	6.5	0.59
W16	2010-08-29 0:00	140	514		7.86	370	3	13.01	63	0.136	10.7	0.005	78	7.1	0.51
W16	2010-09-06 0:00	140	531		7.76	380	1	12.87	60.4	0.147	12.4	0.21	73	7.1	0.65
W16	2010-09-10 0:00	140	545		7.79	390	2	13.12	69.8	0.136	12	0.091	74	7.3	
W16	2010-09-13 0:00	140	540		7.94	380	1	12.13	68.5	0.135	12.4	0.071	77	7.4	0.61
W16	2010-09-19 0:00	150	557		7.98	360	1	10.57	89.5	0.126	13	0.11	73	7	0.59
W16	2010-10-03 0:00	150	566			390	1			0.08	13.6	0.086	70	6.7	0.56
W16	2010-10-09 0:00	150	560		8.01	380	1	3.83	82.8	0.098	13.6	0.005	82	5.8	0.53
W16	2010-11-07 0:00	170	657		7.84	430	5	-0.01		0.096	16.1	0.33	99	5.6	0.66
W16	2010-12-06 0:00	170	658		7.74	420	6	-0.09	93.2	0.095	15.5	0.37	100	7	0.7
W16	2011-01-08 0:00	170	683		7.23	450	3	0.23	73.2	0.1	16.4	0.23	110	7.9	0.72
W16	2011-02-04 0:00	190	711		7.62	470	2	0.62		0.11	14.2	0.39	120	8.3	0.71
W16	2011-04-02 0:00	160	717			430	8			0.291	16.2	0.42	100	19	0.72
W16	2011-04-09 0:00	81	337			190	37			0.094	7.6	0.22	48	4.8	0.33
W16	2011-04-16 0:00	190	751			490	7			0.22	16.6	0.523	110	12	0.81
W16	2011-04-25 0:00	41	127			64	3			0.037	1.79	0.083	12	1.2	0.21
W16	2011-05-02 0:00	43	111			100	7			0.012	0.63		5	4.2	0.18
W16	2011-05-07 0:00	65	223			160	14			0.03	2.6	0.087	28	3.6	0.22
W16	2011-05-14 0:00	89				270	6			0.048	5.3	0.13	46	5.2	0.31
W16	2011-05-21 0:00	98	339			220	1			0.048	5.4	0.12	47	5.2	0.33
W16	2011-05-29 0:00	110	358			230	7			0.037	5.3	0.033	51	5.5	0.34
W16	2011-06-04 0:00	110	369			260	4			0.034	4.9	0.051	47		0.35
W16	2011-06-13 0:00	120	385			250	1			0.022	4.9				
W16	2011-06-27 0:00	130	402			270	6			0.025	4.7	0.065	49		
W16	2011-07-03 0:00	130	405			260	26			0.022	4.4	0.056	58		
W16	2011-07-09 0:00	130	400			280	5			0.023	4.2	0.049	46		
W16	2011-07-16 0:00	130	403			270	3			0.023	4.5	0.036	49	5.3	0.34
W16	2011-07-23 0:00	140	406			270	2			0.02	4.2	0.029	47		
W16	2011-08-07 0:00	130	372			240	6			0.027	4.3	0.038	37		
W16	2011-08-11 0:00	120	358			190	3			0.033	4.6	0.026			
W16	2011-08-28 0:00	130	368			240	3			0.034	4.5	0.012	36		
W16	2011-08-30 0:00	130	370			270	3			0.027	3.6	0.057			
W16	2011-09-05 0:00	130	374		7.98	300	2	10.9	76.8	0.028	4.2	0.042		4.3	
W16	2011-09-10 0:00	130	385		7.87	260	3	10.7	82	0.024	4.7	0.043		5.3	
W16	2011-09-24 0:00	140	400		7.71	270	4	8.6	68.9	0.019	4.3	0.023	41	4.6	
W16	2011-09-30 0:00	150	413		7.77	240	4	7.4	62.8	0.018	4.6	0.035	46	4.7	
W16	2011-10-06 0:00	150	426		7.72	260	2	5.9	56.6	0.05	5.3	0.029	41	4.4	
W16	2011-10-18 0:00	150	431		7.69	280	7	2.7	63.7	0.015	5.3	0.009	48	5	
W16	2011-11-13 0:00	302	792		7.77	546	3.7	0	77.6	0.032	8.77	0.0755		10	
W16	2011-11-21 0:00	165	456			284	5.1			0.012	4.98	0.0359		5.5	
W16	2012-02-13 0:00	188	494			298	4			0.012	4.52	0.0067		5.4	
W16	2012-03-24 0:00	191	510			322	1.3			0.01	4.81	0.005	56.3	5.7	0.39
W16	2012-03-31 16:45	178	472			284	26.8			0.01	4.29	0.0076	50.1	4.8	0.37
W16	2012-04-01 17:30	179	474			278	14.6			0.012	4.95	0.0118	40.2	4.9	0.37
W16	2012-04-02 16:45	161	426		7.7	280	19.1	0.6	56.6	0.013	3.76	0.005	43.2	4.1	0.35

Station	Date / Time	Dissolved Elements																			
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W16	2008-01-22 0:00																				
W16	2008-02-13 0:00																				
W16	2008-03-14 0:00																				
W16	2008-03-20 0:00																				
W16	2008-03-26 0:00																				
W16	2008-03-26 0:00																				
W16	2008-04-10 0:00																				
W16	2008-04-17 0:00																				
W16	2008-04-22 0:00																				
W16	2008-05-03 0:00		0.06	0.0002	0.026	0.005	0.00004		8.11		0.00022	0.0006	0.032	0.09	0.00002	2.76	0.001	2.25	0.055	0.00182	3.18
W16	2008-05-04 0:00		0.05	0.0002	0.023	0.005	0.00004		8.86		0.00022	0.0006	0.028	0.08	0.00001	1.96	0.001	2.15	0.0486	0.00215	3.04
W16	2008-05-05 0:00																				
W16	2008-05-07 0:00																				
W16	2008-05-08 0:00		0.09	0.0002	0.037	0.01	0.00004		18.2		0.00033	0.001	0.055	0.46	0.00001	4.53	0.001	4.39	0.119	0.0046	7.44
W16	2008-05-09 0:00		0.08	0.0007	0.043	0.013	0.00004		20.6		0.00054	0.0013	0.076	0.79	0.00001	5.93	0.001	5.6	0.184	0.00537	9.37
W16	2008-05-11 0:00		0.09	0.0008	0.043	0.013	0.00004		20.4		0.00066	0.0012	0.077	1.05	0.00001	5.81	0.001	5.7	0.185	0.00514	9.46
W16	2008-05-13 0:00		0.05	0.0013	0.044	0.009	0.00004		13.8		0.00037	0.0006	0.049	0.69	0.00001	3.39	0.001	3.91	0.113	0.00414	6.8
W16	2008-05-15 0:00		0.08	0.0002	0.041	0.009	0.00004		18.5		0.00058	0.0015	0.06	0.87	0.00001	4.49	0.001	4.59	0.136	0.0049	8.38
W16	2008-05-18 0:00		0.06	0.0002	0.049	0.014	0.00004		20.7		0.00059	0.0017	0.06	1.02	0.00001	5.98	0.002	5.77	0.191	0.00643	10.8
W16	2008-05-20 0:00		0.06	0.0015	0.048	0.013	0.00004		20.5		0.00058	0.0014	0.058	0.94	0.00001	5.94	0.002	5.72	0.196	0.00622	10.7
W16	2008-05-27 0:00			0.0009	0.051	0.025	0.00004		24.4		0.00054	0.0014	0.07	1.05	0.00001	6.89	0.002	6.64	0.205	0.00619	12.2
W16	2008-05-29 0:00			0.0003	0.051	0.029	0.00004		24.8		0.00055	0.0014	0.073	1.09	0.00001	7.07	0.002	6.86	0.193	0.00726	12.7
W16	2008-06-05 0:00	0.00001	0.01	0.0002	0.053	0.022	0.00004				0.00043	0.001	0.077	1.13	0.02		0.002		0.186	0.00882	
W16	2008-06-11 0:00	0.00001	0.01	0.0002	0.052	0.021	0.00004				0.00047	0.0013	0.073	1.12	0.01		0.002		0.211	0.0085	
W16	2008-06-17 0:00	0.00001	0.05	0.0014	0.054	0.022	0.00004				0.00038	0.0013	0.065	1.16			0.002		0.173	0.0089	
W16	2008-06-25 0:00	0.00002	0.05	0.0002	0.057	0.022	0.00004		29.8		0.00055	0.0026	0.066	1.28	0.00001	8.73	0.002	8.76	0.224	0.00849	15.5
W16	2008-06-26 0:00	0.00002	0.05	0.0008	0.058	0.023	0.00004		30.7		0.00054	0.0027	0.065	1.29	0.00001	9.01	0.002	9	0.231	0.0085	15.2
W16	2008-07-03 0:00	0.00001	0.056	0.0006	0.065	0.024	0.0001	0.0005	31.6	0.00007	0.0006	0.0017	0.054	1.22	0.0001	9.7	0.002	9.3	0.276	0.009	16.2
W16	2008-07-08 0:00	0.00001	0.05	0.0006	0.063	0.022	0.00004		33.8		0.00072	0.0011	0.058	1.35	0.00001	10.2	0.003	9.94	0.29	0.00813	15.4
W16	2008-07-09 0:00	0.00001	0.064	0.0006	0.068	0.023	0.0001	0.0005	30.6	0.00005	0.001	0.0172	0.054	1.36	0.0001	9.3	0.002	9.6	0.29	0.009	16
W16	2008-07-22 0:00	0.00001	0.037	0.0005	0.07	0.023	0.0001	0.0005	33.3	0.00001	0.0008	0.0005	0.043	1.12	0.0001	9.2	0.002	10.2	0.321	0.008	16.4
W16	2008-08-23 0:00	0.00001	0.026	0.0007	0.074	0.021	0.00004		36.5	0.00002	0.00058	0.001	0.025	0.89	0.00001	8.77	0.003	11.4	0.4	0.0068	15.5
W16	2008-08-25 0:00	0.00001	0.041	0.0005	0.071	0.022	0.00004		37.7	0.00001	0.00067	0.0009	0.024	1.04	0.00001	8.96	0.003	12.1	0.426	0.00645	16.6
W16	2008-09-18 0:00	0.00001	0.091	0.0003	0.081	0.027	0.00004		46.2	0.00002	0.00134	0.0018	0.02	0.57	0.00001	9.14	0.002	13.1	0.763	0.00332	17.2
W16	2008-10-08 0:00	0.0003	0.013	0.0007	0.079	0.032	0.00004		47.8	0.00009	0.0004	0.0009	0.104	0.194	0.00001	5.7	0.003	13.3	0.367	0.0186	15.7
W16	2008-10-17 0:00																				
W16	2008-11-18 0:00																				
W16	2008-12-10 0:00	0.00001	0.016	0.0006	0.09	0.049	0.00004	0.0001	65.7	0.00008	0.00049	0.0007	0.073	0.167	0.00001	12.8	0.006	19.4	0.455	0.0271	32.2
W16	2008-12-17 0:00	0.00001	0.026	0.0006	0.085	0.032	0.0001	0.0005	54.3	0.00009	0.0005	0.0005	0.123	0.3	0.00001	6.9	0.003	15.4	0.457	0.021	19.6
W16	2009-01-17 0:00	0.00001	0.029	0.0008	0.086	0.035	0.0001	0.0005	55.1	0.00012	0.0005	0.0005	0.121	0.31	0.0001	6.9	0.004	15.8	0.468	0.021	19.7
W16	2009-01-18 0:00																				
W16	2009-03-31 0:00	0.00001	0.012	0.0007	0.088	0.037	0.00004	0.0001	62	0.00006	0.00041	0.0005	0.072	0.12	0.00001	8.3	0.003	18.9	0.512	0.019	24.9
W16	2009-04-21 0:00																				
W16	2009-05-05 0:00	0.00001	0.098	0.0002	0.016	0.004	0.00004	0.0001	7.21	0.00557	0.00024	0.0006	0.027	0.14	0.00001	0.9	0.001	1.54	0.043	0.00074	3.1
W16	2009-06-20 0:00																				
W16	2009-06-22 0:00	0.00001	0.043	0.0003	0.072	0.019	0.00004	0.0001	44.1	0.00006	0.00016	0.0004	0.073	0.2	0.00002	5.7	0.002	13	0.17	0.0104	15.2
W16	2009-10-27 0:00																				
W16	2009-11-05 0:00																				
W16	2009-12-02 0:00																				
W16	2010-01-04 0:00	0.00001	0.03	0.0006	0.131	0.036	0.00004	0.001	65.3	0.00018	0.00029	0.0004	0.009	0.04	0.00001	5.8	0.003	18.4	0.36	0.0172	22.6
W16	2010-02-01 0:00																				
W16	2010-03-02 0:00																				
W16	2010-04-05 0:00																				
W16	2010-06-02 0:00		0.028	0.0005	0.08	0.1	0.0002	0.001	53		0.0005		0.03	0.094	0.0002	6	0.01	14	0.021	0.013	18
W16	2010-06-14 0:00		0.022	0.0005	0.076	0.1	0.0002	0.001	48		0.0005		0.055	0.071	0.0002	5	0.01	14	0.029	0.014	21
W16	2010-06-15 0:00		0.023	0.0005	0.076	0.1	0.0002	0.001	49		0.0005		0.055	0.074	0.0002	5	0.01	14	0.034	0.014	21
W16	2010-06-16 0:00		0.021	0.0005	0.078	0.1	0.0002	0.001	51		0.0005		0.06	0.075	0.0002	5	0.01	14	0.035	0.015	19
W16	2010-06-17 0:00		0.028	0.0006	0.076	0.1	0.0002	0.001	50		0.0005		0.058	0.078	0.0002	5	0.01	14	0.026	0.015	19
W16	2010-06-23 0:00		0.022	0.0005	0.078	0.1	0.0002	0.001	48		0.0005		0.058	0.055	0.0002	5	0.01	14	0.033	0.015	18
W16	2010-06-24 0:00		0.024	0.0005	0.078	0.1	0.0002	0.001	50		0.0005		0.052	0.075	0.0002	5	0.01	13	0.041	0.015	17
W16	2010-06-29 0:00		0.019	0.0005	0.079	0.1	0.0002	0.001	50		0.0005		0.07	0.08	0.0002	5	0.01	14	0.056	0.016	19
W16	2010-07-04 0:00		0.023	0.0005	0.088	0.1	0.0002	0.001	51		0.0005		0.074	0.098	0.0002	5	0.01	15	0.074	0.017	20
W16	2010-07-11 0:00		0.034	0.0005	0.072	0.1	0.0002	0.001	50		0.0005		0.054	0.062	0.0002	5	0.01	14	0.056	0.015	19
W16	2010-07-14 0:00																				
W16	2010-07-19 0:00		0.03	0.0006	0.084	0.1	0.0002	0.001	52		0.0005		0.053	0.065	0.0002	5	0.01	15	0.002	0.016	20
W16	2010-07-25 0:00		0.01	0.0005	0.101	0.1	0.0002	0.001	53		0.0005		0.027	0.036	0.0002	6	0.01	15	0.01	0.016	20
W16	2010-08-02 0:00		0.01	0.0006	0.102	0.1	0.0002	0.001	55		0.0005		0.016	0.022	0.0002	5	0.01	15	0.004	0.016	22
W16	2010-08-05 0:00		0.01	0.0004	0.081	0.1	0.0002	0.001	63		0.0005		0.007	0.02	0.0002	4	0.01	18	0.039	0.007	20
W16	2010-08-10 0:00		0.011	0.0006	0.106	0.1	0.0002	0.001	58		0.0005		0.033	0.049	0.0002	5	0.01	16	0.036	0.016	22
W16	2010-08-15 0:00		0.01	0.0007	0.101	0.1	0.0002	0.001	59		0.0005		0.039	0.047	0.0002	5	0.01	16	0.046	0.016	20
W16	2010-08-22 0:00		0.01	0.0006	0.1	0.1	0.0002	0.001	55		0.0005		0.037	0.028	0.0002	5	0.01	15	0.019	0.016	20
W16	2010-08-29 0:00		0.011	0.0006	0.097	0.1	0.0002	0.001	55		0.0005		0.036	0.025	0.0002	5	0.01	15	0.001	0.016	20
W16	2010-09-06 0:00		0.016	0.0006	0.102	0.1	0.0002	0.001	60		0.0005		0.015	0.033	0.0002	6	0.01	15	0.012	0.017	21
W16	2010-09-10 0:00		0.014	0.0006	0.107	0.1	0.0002	0.001	57		0.0005		0.019	0.026	0.0002	7	0.01	16	0.023	0.018	23
W16	2010-09-13 0:00		0.017	0.0006	0.11	0.1	0.0002	0.001	59		0.0005		0.02	0.046	0.0002	7	0.01	16	0.029	0.017	23
W16	2010-09-19 0:00		0.015	0.0006	0.109	0.1	0.0002	0.001	63		0.0005		0.024	0.042	0.0002	7	0.01	18	0.051	0.016	22
W16	2010-10-03 0:00	0.00002	0.011	0.0005	0.113	0.05	0.0001	0.001	66	0.00003	0.0005	0.001	0.0244	0.057	0.00002	6.27	0.005	16.9	0.079	0.015	21.9
W16	2010-10-09 0:00	0.00002	0.011	0.0005	0.109	0.05	0.0001	0.001	61.5	0.00004	0.0005	0.001	0.0296	0.055	0.00002	6.39	0.005	16.6	0.086	0.015	19.3
W16	2010-11-07 0:00	0.00002	0.01	0.0006	0.123	0.061	0.0001	0.001	77.1	0.00003	0.0005	0.001	0.0307	0.048	0.00002	6.59	0.005	21.4	0.116	0.02	28
W16	2010-12-06 0:00	0.00002	0.062	0.0006	0.12	0.051	0.0001	0.001	80.4	0.00011	0.0005	0.001	0.0389	0.202	0.00002	6.69	0.005	21.6	0.125	0.018	25.6
W16	2011-01-08 0:00	0.00002	0.019	0.0006	0.123	0.056	0.0001	0.001	76.3	0.00006	0.0005	0.001	0.033	0.077	0.00002	7.01	0.005	21.4	0.123	0.019	26.7
W16	2011-02-04 0:00	0.00002	0.017	0.0005	0.124	0.056	0.0001	0.001	77.8	0.00007	0.0005	0.001	0.0305	0.061	0.00002	8.02	0.005	24	0.169	0.017	32.8
W16	2011-04-02 0:00	0.00002	0.006	0.0004	0.105	0.056	0.0001	0.001	63.4	0.00006	0.0005	0.001	0.0242	0.026	0.00002	9.94	0.006	21	0.233	0.023	41.9
W16	2011-04-09 0:00	0.00002	0.006	0.0001	0.058	0.05	0.0001	0.001	33	0.00002	0.0005	0.001	0.0126	0.057	0.00002	3.43	0.005	9.34	0.103	0.008	12.6
W16	2011-04-16 0:00	0.00002	0.006	0.0004	0.127	0.057	0.0001	0.001	77.2	0.00011	0.0005	0.001	0.0261	0.029	0.00002	9.31	0.006	23.9	0.234	0.018	37
W16	2011-04-25 0:00	0.00002	0.005	0.0001	0.03	0.05	0.0001	0.001	13.8	0.00001	0.0005	0.001	0.0074	0.048	0.00002	1.12	0.005	3.02	0.036	0.002	3.71
W16	2011-05-02 0:00	0.00002	0.04	0.0002	0.032	0.05	0.0001	0.001	14.6	0.00003	0.0005	0.001	0.0307	0.125	0.00002	1.79	0.005	3.39	0.053	0.001	2.82
W16	2011-05-07 0:00	0.00002	0.037	0.0003	0.046	0.05	0.0001	0.001	22.4	0.00003	0.0005	0.001	0.0283	0.15	0.00002	2.15	0.005	6.83	0.167	0.003	8.32
W16	2011-05-14 0:00	0.00002	0.042	0.0004	0.062	0.05	0.0001	0.001	34.5	0.00005	0.0005	0.001	0.0313	0.151	0.00002	3.52	0.005	10.5	0.162	0.005	13.3
W16	2011-05-21 0:00	0.00002	0.139	0.0004	0.067	0.05	0.0001	0.001	39	0.00004	0.0005	0.001	0.0338	0.297	0.00002	3.71	0.005	11.2	0.171	0.005	13.6
W16	2011-05-29 0:00	0.00002	0.029	0.0004	0.069	0.05	0.0001	0.001	40.7	0.00002	0.0005	0.001	0.0319	0.137	0.00002	3.69	0.005	11.7	0.161	0.005	14.6
W16	2011-06-04 0:00	0.00002	0.031	0.0004	0.072	0.05	0.0001	0.001	40.1	0.00003	0.0005	0.001	0.0319	0.145	0.00002	3.61	0.005	12.5	0.158	0.006	15.1
W16	2011-06-13 0:00	0.00002	0.073	0.0004	0.077	0.05	0.0001	0.001	42.4	0.00021	0.0005	0.001	0.038	0.224	0.00002	4.03	0.005	13.8	0.131	0.007	16.1
W16	2011-06-27 0:00	0.00002	0.029	0.0004	0.075	0.05	0.0001	0.001	44.6	0.00004	0.0005	0.001	0.0322	0.14	0.00002	3.71	0.005	14.1	0.154	0.006	16.4
W16	2011-07-03 0:00	0.00002	0.234	0.0005	0.082	0.05	0.0001	0.001	48	0.00003	0.0005	0.001	0.0385	0.454	0.00002	3.96	0.005	15.5	0.165	0.006	17.8
W16	2011-07-09 0:00	0.00002	0.029	0.0004	0.076	0.05	0.0001	0.001	48.9	0.00002	0.0005	0.001	0.0294	0.115	0.00002	3.84	0.005	15.1	0.101	0.005	16.9
W16	2011-07-16 0:00	0.00002	0.019	0.0004	0.076	0.05	0.0001	0.001	45.5	0.00006	0.0005	0.001	0.0271	0.064	0.00002	3.8	0.005	14.7	0.019	0.006	16.6
W16	2011-07-23 0:00	0.00002	0.016	0.0004	0.073	0.05	0.0001	0.001	45.9	0.00002	0.0005	0.001	0.0259	0.049	0.00002	3.31	0.005	13.9	0.025	0.006	15.1
W16	2011-08-07 0:00	0.00002	0.02	0.0005	0.08	0.05	0.0001	0.001	47.5	0.00003	0.0005	0.001	0.0398	0.082	0.00002	2.91	0.005	14.4	0.02	0.005	13.7
W16	2011-08-11 0:00	0.00002	0.017	0.0004	0.077	0.05	0.0001	0.001	47.9	0.00002	0.0005	0.001	0.032	0.091	0.00002	2.76	0.005	13.5	0.006	0.004	12.4
W16	2011-08-28 0:00	0.00002	0.015	0.0004	0.079	0.05	0.0001	0.001	48.6	0.00002	0.0005	0.001	0.0297	0.065	0.00002	2.74	0.005	13.7	0.006	0.004	12.2
W16	2011-08-30 0:00	0.00002	0.018	0.0004	0.075	0.05	0.0001	0.001	46.5	0.00002	0.0005	0.001	0.0307	0.063	0.00002	2.69	0.005	13.7	0.007	0.004	12.5
W16	2011-09-05 0:00	0.00002	0.027	0.0004	0.077	0.05	0.0001	0.001	51	0.00002	0.0005	0.001	0.0303	0.105	0.00002	2.79	0.005	13.5	0.008	0.004	12.6
W16	2011-09-10 0:00	0.00002	0.016	0.0004	0.08	0.05	0.0001	0.001	49.7	0.00002	0.0005	0.001	0.0308	0.058	0.00002	3.02	0.005	14.7	0.008	0.004	13.7
W16	2011-09-24 0:00	0.00002	0.02	0.0004	0.08	0.05	0.0001	0.001	51.8	0.00002	0.0005	0.001	0.0297	0.066	0.00002	3.13	0.005	14.1	0.019	0.005	13.3
W16	2011-09-30 0:00	0.00002	0.023	0.0004	0.081	0.05	0.0001	0.001	48.5	0.00002	0.0005	0.001	0.0318	0.079	0.00002	3.05	0.005	15.4	0.024	0.005	14.4
W16	2011-10-06 0:00	0.00002	0.026	0.0004	0.084	0.05	0.0001	0.001	50.6	0.00003	0.0005	0.001	0.0315	0.089	0.00002	3.07	0.005	15.1	0.028	0.005	13.9
W16	2011-10-18 0:00	0.00002	0.013	0.0004	0.081	0.05	0.0001	0.001	50.6	0.00002	0.0005	0.001	0.0287	0.065	0.00002	3	0.005	15.4	0.026	0.005	14.5
W16	2011-11-13 0:00	0.00002	0.0162	0.00079	0.154	0.05	0.0001	0.001	93.2	0.000045	0.0005	0.001	0.0568	0.0934	0.00002	6.58	0.005	29.6	0.0555	0.0086	29.4
W16	2011-11-21 0:00	0.00002	0.0191	0.00041	0.0892	0.05	0.0001	0.001	61	0.000031	0.0005	0.001	0.03	0.072	0.00002	3.42	0.005	16.9	0.0289	0.0061	16.2
W16	2012-02-13 0:00	0.00002	0.006	0.00042	0.0855	0.05	0.0001	0.001	58	0.000018	0.0005	0.001	0.0181	0.0289	0.00001	3.6	0.005	17.9	0.0333	0.0062	16.8
W16	2012-03-24 0:00	0.00002	0.0063	0.00049	0.0849	0.05	0.0001	0.001	62.7	0.000025	0.0005	0.001	0.0245	0.0352	0.00001	3.84	0.005	19.4	0.0322	0.0059	18.3
W16	2012-03-31 16:45	0.00002	0.0056	0.00041	0.0852	0.05	0.0001	0.001	55.1	0.000025	0.0005	0.001	0.0244	0.029	0.00001	3.48	0.005	17.4	0.0331	0.0059	16.5
W16	2012-04-01 17:30	0.00002	0.0075	0.00038	0.0838	0.05	0.0001	0.001	57.3	0.000028	0.0005	0.001	0.0259	0.033	0.00001	3.48	0.005	17.3	0.0343	0.0058	16.5
W16	2012-04-02 16:45	0.00002	0.0058	0.00036	0.0765	0.05	0.0001	0.001	48.4	0.000021	0.0005	0.001	0.0294	0.0286	0.00001	3.16	0.005	14.9	0.0393	0.0052	13.6

Station	Date / Time	Dissolved Elements (cont.)													
		Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W16	2008-01-22 0:00														
W16	2008-02-13 0:00														
W16	2008-03-14 0:00														
W16	2008-03-20 0:00														
W16	2008-03-26 0:00														
W16	2008-03-26 0:00														
W16	2008-04-10 0:00														
W16	2008-04-17 0:00														
W16	2008-04-22 0:00														
W16	2008-05-03 0:00	0.001	0.0001	0.0008		0.0006	0.811	0.004	0.082	0.0025	0.00001	0.0006	0.00033	0.006	0.0002
W16	2008-05-04 0:00	0.001	0.0001	0.0009		0.0006	0.755	0.004	0.098	0.0016	0.00001	0.0006	0.00037	0.006	0.0002
W16	2008-05-05 0:00														
W16	2008-05-07 0:00														
W16	2008-05-08 0:00	0.005	0.0001	0.0007		0.0006	1.37	0.004	0.184	0.0036	0.00001	0.0006	0.00114	0.022	0.0003
W16	2008-05-09 0:00	0.007	0.0001	0.0007		0.0008	1.68	0.004	0.216	0.0032	0.00001	0.0006	0.00153	0.017	0.0004
W16	2008-05-11 0:00	0.009	0.0002	0.0011		0.0011	1.71	0.004	0.212	0.0045	0.00001	0.0006	0.00179	0.017	0.0004
W16	2008-05-13 0:00	0.006	0.0001	0.0008		0.0006	1.08	0.004	0.149	0.003	0.00001	0.0006	0.00105	0.011	0.0002
W16	2008-05-15 0:00	0.008	0.0001	0.0016		0.0006	1.25	0.004	0.197	0.0034	0.00001	0.0006	0.00153	0.01	0.0003
W16	2008-05-18 0:00	0.009	0.0001	0.0007		0.0006	1.49	0.004	0.225	0.0035	0.00001	0.0006	0.00179	0.016	0.0003
W16	2008-05-20 0:00	0.009	0.0002	0.0009		0.0006	1.22	0.004	0.232	0.0019	0.00001	0.0006	0.00162	0.014	0.0003
W16	2008-05-27 0:00	0.003	0.0001	0.0012		0.0006	1.42	0.004	0.243	0.0029	0.00001	0.0006	0.00161	0.017	0.0005
W16	2008-05-29 0:00	0.002	0.0001	0.0008		0.0015	1.44	0.004	0.265	0.0037	0.00001	0.0006	0.00169	0.016	0.0006
W16	2008-06-05 0:00	0.002	0.0001	0.0008		0.001		0.0001	0.309	0.004	0.00001	0.0005	0.00186	0.019	0.0006
W16	2008-06-11 0:00	0.003	0.0001	0.0007		0.002		0.0001	0.317	0.0035	0.00001	0.0005	0.00167	0.021	0.0006
W16	2008-06-17 0:00	0.001	0.0002	0.0008		0.0037		0.0001	0.315	0.0037	0.00001	0.0005	0.00218	0.018	0.0006
W16	2008-06-25 0:00	0.003	0.0001	0.0007		0.0006	2.86	0.0001	0.319	0.0029	0.00001	0.0005	0.0021	0.02	0.0007
W16	2008-06-26 0:00	0.003	0.0001	0.0008		0.0035	3.01	0.0001	0.327	0.0035	0.00001	0.0005	0.00229	0.02	0.0006
W16	2008-07-03 0:00	0.0026	0.0001	0.0021	16.9	0.002	3.5	0.001	0.358	0.0046	0.00005	0.0005	0.0021	0.026	
W16	2008-07-08 0:00	0.003	0.0001	0.0008		0.0019	3.17	0.0001	0.354	0.003	0.00001	0.0005	0.00205	0.02	0.0008
W16	2008-07-09 0:00	0.0088	0.0007	0.0011	16.5	0.0016	3.52	0.001	0.359	0.0053	0.00005	0.0005	0.002	0.024	
W16	2008-07-22 0:00	0.0018	0.0001	0.0014	17	0.0016	3.63	0.001	0.373	0.0028	0.00005	0.0005	0.0023	0.014	
W16	2008-08-23 0:00	0.004	0.0002	0.001	0.012	0.0024	4.07	0.0001	0.403	0.0022	0.00001	0.0006	0.00184	0.008	0.0003
W16	2008-08-25 0:00	0.004	0.0001	0.0008		0.0006	4.45	0.0001	0.383	0.004	0.00001	0.0005	0.00226	0.008	0.0003
W16	2008-09-18 0:00	0.002	0.0002	0.0033		0.0039	5.02	0.0001	0.442	0.0066	0.00001	0.0009	0.0038	0.005	0.0005
W16	2008-10-08 0:00	0.005	0.0001	0.0004		0.0064	4.22	0.0001	0.844	0.0016	0.00002	0.0016	0.00103	0.008	0.0003
W16	2008-10-17 0:00														
W16	2008-11-18 0:00														
W16	2008-12-10 0:00	0.001	0.0001	0.0018	35.7	0.0056	4.4	0.0002	1.2	0.0011	0.00001	0.0016	0.00059	0.012	0.0002
W16	2008-12-17 0:00	0.0011	0.0001	0.0003	25.1	0.0058	4.98	0.001	0.851	0.004	0.00005	0.0021	0.0012	0.017	
W16	2009-01-17 0:00	0.002	0.0001	0.0021	25.5	0.0058	5.22	0.001	0.885	0.0036	0.00005	0.0022	0.0018	0.015	
W16	2009-01-18 0:00														
W16	2009-03-31 0:00	0.002	0.0002	0.001	28.9	0.0041	5	0.0001	0.944	0.0008	0.00001	0.0022	0.00056	0.013	0.0002
W16	2009-04-21 0:00														
W16	2009-05-05 0:00	0.001	0.0008	0.0008	1.3	0.0006	1.01	0.0001	0.051	0.0037	0.00001	0.0004	0.00042	0.023	0.0002
W16	2009-06-20 0:00														
W16	2009-06-22 0:00	0.002	0.0001	0.0002	15.1	0.0024	3.53	0.0071	0.571	0.0029	0.00001	0.0008	0.00066	0.003	0.0003
W16	2009-10-27 0:00														
W16	2009-11-05 0:00														
W16	2009-12-02 0:00														
W16	2010-01-04 0:00	0.007	0.0004	0.0077	26.9	0.0028	3.89	0.0001	1.08	0.01	0.00001	0.0013	0.0005	0.02	0.0001
W16	2010-02-01 0:00														
W16	2010-03-02 0:00														
W16	2010-04-05 0:00														
W16	2010-06-02 0:00	0.001	0.0002	0.0005	60	0.0022	4.39	0.005	0.808	0.01	0.00005	0.0013	0.005		0.002
W16	2010-06-14 0:00	0.001	0.0002	0.0005	60	0.0025	4.4	0.005	0.988	0.01	0.00005	0.0018	0.005		0.002
W16	2010-06-15 0:00	0.001	0.0002	0.0005	60	0.0024	4.37	0.005	0.99	0.01	0.00005	0.0018	0.005		0.002
W16	2010-06-16 0:00	0.001	0.0002	0.0005	60	0.0027	4.18	0.005	1.05	0.01	0.00005	0.0018	0.005		0.002
W16	2010-06-17 0:00	0.001	0.0002	0.0005	60	0.0026	4.28	0.005	1.02	0.01	0.00005	0.0018	0.005		0.002
W16	2010-06-23 0:00	0.001	0.0002	0.0005	60	0.0025	3.98	0.005	0.985	0.01	0.00005	0.0017	0.005		0.002
W16	2010-06-24 0:00	0.001	0.0002	0.0005	60	0.0025	4.2	0.005	1.02	0.01	0.00005	0.0017	0.005		0.002
W16	2010-06-29 0:00	0.001	0.0002	0.0005	60	0.0025	4.82	0.005	1.13	0.01	0.00005	0.0017	0.005		0.002
W16	2010-07-04 0:00	0.001	0.0002	0.0005	60	0.0027	4.32	0.005	1.24	0.01	0.00005	0.0021	0.005		0.002
W16	2010-07-11 0:00	0.001	0.0002	0.0005	60	0.0029	3.95	0.005	1.06	0.01	0.00005	0.0017	0.005		0.002
W16	2010-07-14 0:00														
W16	2010-07-19 0:00	0.001	0.0002	0.0005	60	0.0028	4.11	0.005	1.1	0.01	0.00005	0.0019	0.005		0.002
W16	2010-07-25 0:00	0.001	0.0002	0.0005	60	0.0031	4.2	0.005	0.917	0.01	0.00005	0.0018	0.005		0.002
W16	2010-08-02 0:00	0.001	0.0002	0.0005	60	0.0033	4.67	0.005	0.969	0.01	0.00005	0.0018	0.005		0.002
W16	2010-08-05 0:00	0.001	0.0002	0.0005	60	0.0019	5.7	0.005	0.583	0.01	0.00005	0.0021	0.005		0.002
W16	2010-08-10 0:00	0.001	0.0002	0.0005	60	0.0038	4.68	0.005	1.07	0.01	0.00005	0.0019	0.005		0.002
W16	2010-08-15 0:00	0.001	0.0002	0.0005	60	0.0039	4.43	0.005	1.08	0.01	0.00005	0.0018	0.005		0.002
W16	2010-08-22 0:00	0.001	0.0002	0.0005	60	0.0039	4.3	0.005	0.993	0.01	0.00005	0.0017	0.005		0.002
W16	2010-08-29 0:00	0.001	0.0002	0.0005	60	0.0039	4.36	0.005	0.945	0.01	0.00005	0.0016	0.005		0.002
W16	2010-09-06 0:00	0.001	0.0002	0.0009	60	0.0045	4.56	0.005	1.05	0.01	0.00005	0.0016	0.005		0.002
W16	2010-09-10 0:00	0.001	0.0002	0.0005	60	0.0048	4.25	0.005	1.03	0.01	0.00005	0.0016	0.005		0.002
W16	2010-09-13 0:00	0.003	0.0002	0.0005	60	0.0045	4.68	0.005	1.04	0.01	0.00005	0.0015	0.005		0.002
W16	2010-09-19 0:00	0.001	0.0002	0.0005	60	0.0043	4.75	0.005	1.03	0.01	0.00005	0.0015	0.005		0.002
W16	2010-10-03 0:00	0.001	0.0002	0.0005	25	0.0043	5.27	0.005	0.981	0.005	0.00005	0.0014	0.005	0.005	0.0005
W16	2010-10-09 0:00	0.001	0.0002	0.0005	27	0.0041	4.73	0.005	1.11	0.005	0.00005	0.0016	0.005	0.005	0.0005
W16	2010-11-07 0:00	0.001	0.0002	0.0005	37	0.0053	5.57	0.005	1.69	0.005	0.00005	0.0026	0.005	0.005	0.0005
W16	2010-12-06 0:00	0.001	0.0002	0.0005	38	0.0051	5.57	0.005	1.61	0.005	0.00005	0.0026	0.005	0.005	0.0005
W16	2011-01-08 0:00	0.002	0.0002	0.0005	37	0.0054	5.37	0.005	1.59	0.005	0.00005	0.0025	0.005	0.005	0.0005
W16	2011-02-04 0:00	0.001	0.0002	0.0005	41	0.0048	5.36	0.005	1.54	0.005	0.00005	0.0024	0.005	0.008	0.0005
W16	2011-04-02 0:00	0.001	0.0002	0.0005	41	0.0059	4.31	0.005	1.31	0.005	0.00005	0.0021	0.005	0.005	0.0005
W16	2011-04-09 0:00	0.001	0.0002	0.0005	18	0.0021	2.05	0.005	0.675	0.005	0.00005	0.001	0.005	0.005	0.0005
W16	2011-04-16 0:00	0.001	0.0002	0.0005	40	0.0048	5.19	0.005	1.53	0.005	0.00005	0.0023	0.005	0.005	0.0005
W16	2011-04-25 0:00	0.001	0.0002	0.0005	4	0.0006	1.43	0.005	0.243	0.005	0.00005	0.0004	0.005	0.005	0.0005
W16	2011-05-02 0:00	0.001	0.0002	0.0005	3	0.0003	2.78	0.005	0.131	0.005	0.00005	0.0002	0.005	0.005	0.0005
W16	2011-05-07 0:00	0.001	0.0002	0.0005	8	0.0008	2.45	0.005	0.312	0.005	0.00005	0.0005	0.005	0.005	0.0005
W16	2011-05-14 0:00	0.001	0.0002	0.0005	14	0.0014	3.28	0.005	0.497	0.005	0.00005	0.001	0.005	0.005	0.0005
W16	2011-05-21 0:00	0.001	0.0002	0.0005	16	0.0015	3.83	0.005	0.534	0.006	0.00005	0.001	0.005	0.005	0.0005
W16	2011-05-29 0:00	0.001	0.0002	0.0005	17	0.0014	3.53	0.005	0.556	0.005	0.00005	0.0011	0.005	0.005	0.0005
W16	2011-06-04 0:00	0.002	0.0002	0.0005	16	0.0014	3.3	0.005	0.563	0.005	0.00005	0.0011	0.005	0.005	0.0005
W16	2011-06-13 0:00	0.002	0.0003	0.0005	17	0.0014	3.2	0.005	0.615	0.005	0.00005	0.0014	0.005	0.008	0.0005
W16	2011-06-27 0:00	0.001	0.0002	0.0005	17	0.0013	3.66	0.005	0.583	0.005	0.00005	0.0014	0.005	0.005	0.0005
W16	2011-07-03 0:00	0.002	0.0002	0.0005	21	0.0013	4.61	0.005	0.576	0.009	0.00005	0.0013	0.005	0.005	0.0005
W16	2011-07-09 0:00	0.001	0.0002	0.0005	19	0.0013	4.17	0.005	0.549	0.005	0.00005	0.0012	0.005	0.005	0.0005
W16	2011-07-16 0:00	0.002	0.0002	0.0005	18	0.0011	3.67	0.005	0.561	0.005	0.00005	0.0014	0.005	0.014	0.0005
W16	2011-07-23 0:00	0.001	0.0002	0.0005	17	0.0013	3.73	0.005	0.587	0.005	0.00005	0.0014	0.005	0.005	0.0005
W16	2011-08-07 0:00	0.001	0.0002	0.0005	16	0.0013	4.77	0.005	0.547	0.005	0.00005	0.0011	0.005	0.005	0.0005
W16	2011-08-11 0:00	0.001	0.0002	0.0005	14	0.0013	5.04	0.005	0.463	0.005	0.00005	0.001	0.005	0.005	0.0005
W16	2011-08-28 0:00	0.001	0.0002	0.0005	16	0.0013	5.07	0.005	0.486	0.005	0.00005	0.0008	0.005	0.005	0.0005
W16	2011-08-30 0:00	0.001	0.0002	0.0005	14	0.0013	4.59	0.005	0.486	0.005	0.00005	0.0009	0.005	0.005	0.0005
W16	2011-09-05 0:00	0.001	0.0002	0.0005	14	0.0014	5.17	0.005	0.496	0.005	0.00005	0.0009	0.005	0.005	0.0005
W16	2011-09-10 0:00	0.002	0.0002	0.0005	16	0.0014	4.99	0.005	0.534	0.005	0.00005	0.001	0.005	0.006	0.0005
W16	2011-09-24 0:00	0.001	0.0002	0.0005	16	0.0016	5.15	0.005	0.523	0.005	0.00005	0.0011	0.005	0.005	0.0005
W16	2011-09-30 0:00	0.001	0.0002	0.0005	17	0.0016	4.71	0.005	0.56	0.005	0.00005	0.0011	0.005	0.005	0.0005
W16	2011-10-06 0:00	0.001	0.0002	0.0005	16	0.0016	5.06	0.005	0.571	0.005	0.00005	0.0012	0.005	0.007	0.0005
W16	2011-10-18 0:00	0.001	0.0002	0.0005	18	0.0016	5.31	0.005	0.551	0.005	0.00005	0.0012	0.005	0.005	0.0005
W16	2011-11-13 0:00	0.0026	0.0002	0.0005	32.4	0.00341	8.27	0.005	1.06	0.005	0.00005	0.0022	0.005	0.0185	0.0005
W16	2011-11-21 0:00	0.0013	0.0002	0.0005	17.1	0.00174	5.63	0.005	0.617	0.005	0.00005	0.00141	0.005	0.0107	0.0005
W16	2012-02-13 0:00	0.001	0.0002	0.0005	19.9	0.00157	5.55	0.005	0.607	0.005	0.00005	0.00195	0.005	0.005	0.0005
W16	2012-03-24 0:00	0.0018	0.0002	0.0005	19.7	0.00167	6.02	0.005	0.622	0.005	0.00005	0.00192	0.005	0.0054	0.0005
W16	2012-03-31 16:45	0.001	0.0002	0.0005	18.4	0.00136	5.4	0.005	0.601	0.005	0.00005	0.00189	0.005	0.005	0.0005
W16	2012-04-01 17:30	0.001	0.0002	0.0005	18.4	0.00151	5.83	0.005	0.583	0.005	0.00005	0.00185	0.005	0.005	0.0005
W16	2012-04-02 16:45	0.001	0.0002	0.0005	14.4	0.00133	4.53	0.005	0.515	0.005	0.00005	0.00155	0.005	0.005	0.0005

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N-NO_2$	$N-NO_3$	$N-NH_3$	SO_4-D	Chlord	Fluord
		mg/L	μS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W16	2012-04-03 17:30	178	468			296	14			0.01	4.41	0.0123	44.4	4.7	0.37
W16	2012-04-04 16:00	168	444			288	20.7			0.014	4.26	0.0101	45.6	4.9	0.36
W16	2012-04-05 15:30	149	390			292	31.3			0.014	3.31	0.0099	36.1	3.9	0.32
W16	2012-04-06 14:30	173	458			320	42.1			0.013	4.08	0.009	47.4	4.5	0.35
W16	2012-04-08 15:30	179	478			300	9.3			0.01	4.31	0.0191	47.4	4.7	0.37
W16	2012-04-10 17:00	73.6	187		7.7	114	36.2	1.1	39.3	0.031	1.39	0.005	14.2	2.2	0.2
W16	2012-04-11 7:30	48.5	128		8.27	76	39.8	0.7	13.2	0.037	0.769	0.005	10.7	2	0.21
W16	2012-04-12 16:05	39.5	101		7.66	72	23	1.3	39.4	0.041	0.592	0.005	8.19	1.5	0.18
W16	2012-04-13 0:00	32.3	82.5		7.7	58	11	0.6	45.3	0.0132	0.476	0.089	4.43	0.6	0.12
W16	2012-04-14 12:00	44	118		7.73	54	5.9	1.2	49.2	0.015	0.838	0.012	8.05	1.2	0.16
W16	2012-04-15 10:50	47.4	120		7.68	62	2.5	1.3	38.3	0.0094	0.974	0.019	8.14	0.83	0.16
W16	2012-04-16 10:07	39.6	104		7.67	54	3.6	0.9	59	0.0095	0.786	0.012	6.94	1.1	0.14
W16	2012-04-17 12:00	38.8	102		7.83	56	3.2	1.5	46.7	0.0083	0.72	0.04	6.92	0.71	0.13
W16	2012-04-18 10:50	38.5	96		7.74	56	3.4	1.2	55.4	0.0076	0.612	0.0268	5.56	0.68	0.12
W16	2012-04-19 0:00	36.8	90.3		8.4	48	4.9	2.3	69	0.008	0.535	0.0212	6.61	0.84	0.12
W16	2012-04-20 17:00	32.2	82.1		8.37	40	3.7	1.2	61.3	0.007	0.449	0.013	3.46	0.68	0.11
W16	2012-04-21 15:40	31.1	79.3		7.62	46	17.8	0.9	63	0.0078	0.439	0.032	3.71	0.81	0.11
W16	2012-04-22 14:10	28.2	70.3		7.47	46	8.1	2.3	46.2	0.005	0.386	0.015	2.38	0.65	0.099
W16	2012-04-23 15:40	28.7	66.8		7.99	48	4.1	1.6	58.4	0.0058	0.338	0.013	2.83	0.61	0.11
W16	2012-04-24 17:00	26.7	65.5		8.06	40	2.3	1.2	47.1	0.005	0.345	0.0098	2.44	0.76	0.099
W16	2012-04-25 0:00	26.4	65			46	8.3			0.005	0.315	0.017	2.45	0.5	0.1
W16	2012-04-26 0:00	26	63.9	166.5	7.58	52	2.6	3.1	49.1	0.005	0.305	0.023	2.88	0.5	0.096
W16	2012-04-27 0:00	24	59.7	145.3	7.78	32	1.7	4.2	47.7	0.005	0.293	0.02	2.41	0.5	0.083
W16	2012-04-28 0:00	24.9	60.4			38	5.3			0.0053	0.191	0.025	0.5	0.55	0.11
W16	2012-04-29 0:00	20.1	42.9	98	9.03	24	4.4	1.5	43.6	0.005	0.115	0.021	0.5	0.5	0.09
W16	2012-04-30 0:00	16.5	43.3	49.1	8.27	26	7.7	2.9	43.1	0.005	0.113	0.015	0.5	0.5	0.39
W16	2012-05-01 15:00	20.6	48.4	82.3	7.67	52	5.7	5.9	46.5	0.005	0.161	0.02	1.08	0.5	0.084
W16	2012-05-02 0:00	21.9	53.8	94.9	7.36	26	1	4.6	54.1	0.0053	0.208	0.0084	2.05	0.5	0.086
W16	2012-05-03 11:30	32.6	85	127.3	7.72	70	4.1	4.5	47.9	0.005	0.298	0.02	0.82	1.5	0.11
W16	2012-05-04 3:30	51.9	142	96.4	7.16	76	4.3	7.6	50.9	0.0056	0.615	0.023	3.11	1.8	0.13
W16	2012-05-05 10:45	59	154	110.6	7.33	114	3.8	4	34	0.0053	0.713	0.017	3.1	2.3	0.14
W16	2012-05-06 14:35	86.3	226	115.2	7.41	156	5.7	4.4	42.1	0.005	1.26	0.019	19.3	2.8	0.2
W16	2012-05-07 0:00	77.1	201	75.7	7.35	140	10.7	5.3	43.7	0.0058	1.02	0.017	13.9	2.6	0.17
W16	2012-05-08 5:30	77.4	205	146.2	6.81	148	6.2	4.3	43.6	0.0088	1.04	0.088	14.7	2.7	0.17
W16	2012-05-09 17:50			94.9	7.32			7.6	62.2						
W16	2012-05-13 11:30	116	296	95.1	7.66	196	7	5.4	64.8	0.0073	1.82	0.063	28.2	3.4	0.23
W16	2012-05-14 15:35	116	300	71.9	8.02	212	6.6	6.6	86.6	0.0102	1.83	0.08	27.8	3.6	0.23
W16	2012-05-24 0:00	99.1	255	14.7	8.42	130	8.2	14.2	119.4	0.0122	1.71	0.025	21.1	3	0.18
W16	2012-06-03 0:00	92.8	248	45.9	8.31	140	12.7	12.8	83.8	0.0084	1.66	0.068	20	3.5	0.16
W16	2012-06-08 0:00	85.1	225	9.3	8.01	138	2.6	15.5	86.2	0.0083	1.49	0.026	19.6	2.5	0.15
W16	2012-06-15 16:07	82.3	231	32	7.71	168	3.5	14.7	79.3	0.0478	2.68	0.15	22	2.3	0.14
W16	2012-06-24 16:05	93.1	259		8.26	188	15.8	21.4	88.2	0.0451	3.19	0.043	25	2.5	0.16
W16	2012-06-28 9:45	99.4	272	22.3	8.28	172	2.7	17.8	70.1	0.0357	3.12	0.053	25	2.6	0.16
W16	2012-07-05 9:00	109	294	42.6	7.88	192	1.8	15.4	74.2	0.0289	3.12	0.0074	26.4	2.3	0.17
W16	2012-07-15 17:46	111	304	26.4	8.13	210	1.8	18.59	97.1	0.0226	2.92	0.012	29.5	2.8	0.18
W16	2012-07-17 16:15	116	311		8.22	196	2.9	16.3	79.7	0.022	2.14	0.025	28.4	2.6	0.18
W16	2012-07-24 15:04	120	320	17.6	8.49	206	4.3	18.2	74.9	0.0163	2.84	0.077	28.4	3	0.2
W16	2012-08-02 16:38	129	339	-7.6	8.14	218	1.8	17.2	86.3	0.0159	2.96	0.0055	31	2.6	0.22
W16	2012-08-07 10:45	133	349	1.5	8.13	250	6.9	15.6	80.6	0.05	3	0.025	19.8	21	0.21
W16	2012-08-16 10:15	135	356	60.1	8.1	248	9.4	16.8	83.2	0.0134	3.42	0.024	30.2	2.8	0.22
W16	2012-08-27 13:35	145	371	19.6	8.41	222	2.3	14.4	64.7	0.0112	3.15	0.005	35.9	3.4	0.22
W16	2012-09-03 9:15	143	371	34.2	7.98	246	2.3	11.9	73.3	0.0132	3.16	0.032	33.8	2.7	0.23
W16	2012-09-05 8:00	146	376	31.3	6.71	248	1.8	11.8	70.4	0.0164	3.38	0.012	34.1	3.2	0.24
W16	2012-09-10 13:55	146	381	104.3	7.92	244	5.5	9.9	64.5	0.0191	3.31	0.068	32.8	3.4	0.23
W16	2012-09-17 11:07	144	383	65.5	7.79	276	4.7	8.8	59.7	0.0203	3.86	0.11	33.9	3.3	0.23
W16	2012-09-24 9:35	146	391	75.1	7.67	252	8.1	8.1	68.4	0.0179	3.73	0.14	34.8	3.1	0.23
W16	2012-10-06 17:00	147	390	38.8	7.8	258	2.1	6.4	71.8	0.0153	3.82	0.21	36.7	3.2	0.24
W16	2012-10-12 8:25	150	389	90.9	7.77	272	2	4.7	61.7	0.0128	3.48	0.045	37.3	3.3	0.24
W16	2012-10-19 10:55	148	396	78.7	7.9	248	5.7	3	69.4	0.0107	3.45	0.048	42.4	3.5	0.22
W16	2012-10-22 7:20	152	391		8.4	244	2	2.2		0.0165	3.29	0.032	38.8	3	0.22
W16	2012-10-25 13:45	159	428		8.2	284	2.2	0.7		0.0114	4.15	0.045	40.4	3.6	0.24
W16	2012-11-04 0:00	160	424			262	1.5			0.0116	4.07	0.023	40.8	3.6	0.26
W16	2012-11-05 10:50			250.6	7.01			0.3	79.2						
W16	2012-11-09 14:45	156	414	189.4	7.93	272	4.7	1.4		0.0101	3.93	0.028	39.8	3.4	0.26
W16	2012-11-18 10:00	157	394	164.8	8	254	1.5	0		0.0114	1.85	0.024	41.2	3.8	0.24
W16	2012-11-24 0:00	159	420			260	1			0.0095	3.86	0.038	39.2	3.7	0.24
W16	2012-11-25 12:00			146.1	7.71			0.4	61.6						
W16	2013-03-07 0:00	177	451	-400.3	7.5	300	1	0.4	37.2	0.0079	3.24	0.058	41.1	3.5	0.29
W16	2013-03-09 8:00	182	464	-405.5	7.42	300	1.5	0.1	32.7	0.008	3.36	0.1	40.7	3.6	0.3
W16	2013-03-24 15:00	185	470	-414.1	7.3	288	8.5	0.1	30.2	0.0433	3.31	0.13	45.1	4.6	0.31
W16	2013-03-28 0:00	187	474	-411.8	10.05	286	5.2	0.5	31.4	0.0079	3.39	0.042	44.4	4.1	0.3
W16	2013-03-29 0:00	189	477	-410.6	7.99	296	1	0.3	27.9	0.053	3.84	0.047	47.7	4.2	0.32
W16	2013-03-30 0:00	189	476	-406.8	7.67	294	3.6	0.2	33.3	0.05	3.69	0.33	47.3	4.5	0.32
W16	2013-03-31 0:00	170	448	-411.6	7.51	286	4.8	0.3	23.3	0.05	3.65	0.06	47.9	4.8	0.29
W16	2013-04-01 11:30	137	387	-402.9	7.66	214	2.8	0.1	40.2	0.0162	4.69	0.08	45.6	4.4	0.22
W16	2013-04-02 10:00	159	429			242	2			0.0145	5.58	0.048	43.4	4.3	0.26
W16	2013-04-03 16:00	184	467	-409.9	7.44	284	2.3	1.1	29.5	0.008	3.33	0.11	46.1	4.4	0.3
W16	2013-04-04 17:00	186	463	-416.1	7.32	284	1.4	2.5	28	0.007	3.27	0.059	50.1	4.1	0.31
W16	2013-04-05 11:40	185	469	-410.9	7.45	278	1	0.3	27.1	0.0114	3.39	0.029	44.9	4.1	0.35
W16	2013-04-06 16:00	188	473	-410.7	7.7	288	1.4	0.5	34.7	0.05	3.46	0.029	45.8	4.1	0.33
W16	2013-04-07 17:10	176	443	-405.3	7.53	256	2.7	0.6	36.7	0.05	3.31	0.04	43.9	4.1	0.32
W16	2013-04-08 18:30	182	464	-408.2	7.78	292	6.4	0.6	29.7	0.0134	3.17	0.06	46.9	4.5	0.3
W16	2013-04-09 16:30	182	462	-378.4	7.5	298	5.7	0.7	31.6	0.0127	3.03	0.11	43	4.1	0.3
W16	2013-04-10 17:00	152	393	-354	7.58	236	7.1	1.2	42.5	0.0244	2.8	0.049	38.9	3.9	0.23
W16	2013-04-12 17:30	186	473		7.4	296	2.1	0.2		0.0099	3.2	0.023	46.8	4.6	0.3
W16	2013-04-13 16:50	185	468		7.6	286	2.1	0.3		0.0076	3.13	0.014	43.5	4.6	0.3
W16	2013-04-14 16:40	175	452		7.4	278	5.1	0.5		0.0206	3.16	0.13	44.6	4.5	0.28
W16	2013-04-15 16:30	182	473		7.7	302	2.5	0.4		0.0054	3.17	0.059	44.6	4.5	0.31
W16	2013-04-16 17:30				7.5			0.3							
W16	2013-04-17 17:30	183	474			294	1.7			0.0103	3.89	0.067	47.4	4.9	0.3
W16	2013-04-18 15:00	181	470	-423.4	7.53	282	1.2	0		0.0086	3.37	0.031	43.6	5	0.3
W16	2013-04-19 16:15	184	468	-411	8.31	308	2.4	0.1		0.0104	3.5	0.011	43.3	4	0.32
W16	2013-04-20 17:15	185	469	-406.1	7.87	294	5.3	1.4		0.0131	3.24	0.022	42.7	4.5	0.31
W16	2013-04-25 14:05	164	422	-140.7	7.95	254	6.7	0.5	45.6	0.0192	2.82	0.025	38.5	5.9	0.28
W16	2013-05-17 8:10			33.4	7.48			0.5	66.9						
W16	2013-05-18 9:20	35.5	101	44	7.89	112	19.6	0.9	64.2	0.021	0.778	0.032	0.5	4.3	0.1
W16	2013-05-18 10:15				8			3							
W16	2013-05-19 11:30			63.4	7.85			1.6	73.3						
W16	2013-05-20 8:30			39.7	7.49			1.6	69.8						
W16	2013-05-21 8:00				8.6			1.8							
W16	2013-05-22 9:15				8.2			2.3							
W16	2013-05-23 0:00	43.6	123	-4.3	8.07	112	18.3	5.5	64.2	0.0338	0.812	0.047	0.5	4.6	0.11
W16	2013-05-25 8:10			61.1	7.62			3.9	65.3						
W16	2013-05-26 8:00				7.8			7.8							
W16	2013-05-27 7:25				8.1			9.3							
W16	2013-05-28 10:00	53.5	172	62.3	7.45	142	10	14.1	56.9	0.0442	1.88	0.059	16.5	5.5	0.18
W16	2013-05-29 0:00														
W16	2013-06-06 15:00	79.9	252	35.5	7.3	190	9.2	15.3	79	0.0697	2.77	0.036	27.7	6.5	0.25
W16	2013-06-15 16:15	93.3	281		8.9	200	6.2	22.9		0.0404	2.36	0.024	29.2	7.2	0.26
W16	2013-06-20 0:00	98.9	291		8.8	248	6	20.9		0.0278	1.76	0.061	27.6	6.8	0.25
W16	2013-06-25 0:00	109	306	78.2	8.95	200	10.5	24.3	80.8	0.0203	1.77	0.03	29	7.4	0.26
W16	2013-07-01 0:00	116	317	50.2	8.96	184	24	21.7	96.6	0.0164	1.56	0.024	29.4	8	0.26
W16	2013-07-12 0:00	120	324	99.4	9	224	2	17	84.8	0.0104	1.35	0.032	32	8.7	0.26
W16	2013-07-21 11:40	125	328	65.6	8.99	246	5.1	16.9	94	0.0087	1.11	0.024	32.9	8.7	0.26
W16	2013-07-23 0:00	128	337		9.2	204	5.1	17.5		0.05	1.15	0.022	30.4	8.8	0.27

Station	Date / Time	Dissolved Elements																			
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W16	2012-04-03 17:30	0.00002	0.0051	0.00043	0.0838	0.05	0.0001	0.001	57.8	0.000015	0.0005	0.001	0.0269	0.0247	0.00001	3.61	0.005	17.9	0.0347	0.0059	17.2
W16	2012-04-04 16:00	0.00002	0.0173	0.00039	0.084	0.05	0.0001	0.001	55.8	0.000023	0.0005	0.001	0.0289	0.0551	0.00001	3.43	0.005	17	0.0405	0.0056	15.9
W16	2012-04-05 15:30	0.00002	0.021	0.00035	0.0783	0.05	0.0001	0.001	49.2	0.000028	0.0005	0.001	0.0317	0.0597	0.00001	3.19	0.005	14.7	0.0497	0.0048	13.3
W16	2012-04-06 14:30	0.00002	0.0094	0.00035	0.0814	0.05	0.0001	0.001	53.4	0.000022	0.0005	0.001	0.0265	0.0365	0.00001	3.33	0.005	16.2	0.0446	0.0052	14.7
W16	2012-04-08 15:30	0.00002	0.007	0.0004	0.0853	0.05	0.0001	0.001	59.6	0.000013	0.0005	0.001	0.0223	0.0327	0.00001	3.56	0.005	18.2	0.0328	0.0059	16.9
W16	2012-04-10 17:00	0.00002	0.0068	0.00015	0.052	0.05	0.0001	0.001	23.4	0.00002	0.0005	0.001	0.0212	0.0208	0.00001	1.76	0.005	6	0.0522	0.0023	5.33
W16	2012-04-11 7:30	0.00002	0.0094	0.00011	0.028	0.05	0.0001	0.001	12.9	0.00001	0.0005	0.001	0.0121	0.0181	0.00001	1.27	0.005	2.75	0.0144	0.0023	2.87
W16	2012-04-12 16:05	0.00002	0.006	0.0002	0.035	0.05	0.0001	0.001	14	0.000014	0.0005	0.001	0.0157	0.016	0.00001	1.27	0.005	3.13	0.0231	0.0018	3.32
W16	2012-04-13 0:00	0.00002	0.0064	0.00035	0.0794	0.05	0.0001	0.001	57.9	0.000012	0.0005	0.001	0.00658	0.0131	0.00001	3.56	0.005	18.1	0.0759	0.0064	16.7
W16	2012-04-14 12:00	0.00002	0.0072	0.00012	0.0344	0.05	0.0001	0.001	15.9	0.000014	0.0005	0.001	0.0155	0.0134	0.00001	1.17	0.005	3.88	0.0249	0.0016	3.6
W16	2012-04-15 10:50	0.00002	0.008	0.00012	0.0331	0.05	0.0001	0.001	15.2	0.00001	0.0005	0.001	0.0148	0.0156	0.00001	0.969	0.005	3.54	0.02	0.0013	3.3
W16	2012-04-16 10:07	0.00002	0.0085	0.00012	0.028	0.05	0.0001	0.001	13	0.000011	0.0005	0.001	0.0128	0.02	0.00001	0.849	0.005	3	0.0181	0.0011	2.7
W16	2012-04-17 12:00	0.00002	0.0083	0.00014	0.029	0.05	0.0001	0.001	13.1	0.000011	0.0005	0.001	0.0164	0.0269	0.00001	0.897	0.005	3.08	0.0338	0.0011	2.82
W16	2012-04-18 10:50	0.00002	0.0068	0.0001	0.0274	0.05	0.0001	0.001	13	0.00001	0.0005	0.001	0.0145	0.0246	0.00001	0.882	0.005	2.78	0.0358	0.001	2.39
W16	2012-04-19 0:00	0.00002	0.0106	0.00011	0.0262	0.05	0.0001	0.001	11.8	0.000012	0.0005	0.001	0.0154	0.0345	0.00001	0.83	0.005	2.44	0.0316	0.001	2.1
W16	2012-04-20 17:00	0.00002	0.0104	0.0001	0.0236	0.05	0.0001	0.001	10.7	0.000015	0.0005	0.001	0.0175	0.0299	0.00001	0.871	0.005	2.17	0.0279	0.001	1.83
W16	2012-04-21 15:40	0.00002	0.0091	0.0001	0.0245	0.05	0.0001	0.001	10.8	0.000011	0.0005	0.001	0.0167	0.0222	0.00001	0.778	0.005	2.14	0.0221	0.001	1.84
W16	2012-04-22 14:10	0.00002	0.0088	0.0001	0.0222	0.05	0.0001	0.001	10.2	0.000013	0.0005	0.001	0.0176	0.0292	0.00001	0.822	0.005	2.03	0.0284	0.001	1.7
W16	2012-04-23 15:40	0.00002	0.0106	0.0001	0.0216	0.05	0.0001	0.001	8.96	0.000014	0.0005	0.001	0.0145	0.0254	0.00001	0.798	0.005	1.72	0.0217	0.001	1.63
W16	2012-04-24 17:00	0.00002	0.0106	0.0001	0.0208	0.05	0.0001	0.001	9.29	0.000014	0.0005	0.001	0.0151	0.0242	0.00001	0.794	0.005	1.74	0.0236	0.001	1.44
W16	2012-04-25 0:00	0.00002	0.0099	0.0001	0.0204	0.05	0.0001	0.001	8.86	0.00001	0.0005	0.001	0.0154	0.0231	0.00001	0.745	0.005	1.73	0.0244	0.001	1.47
W16	2012-04-26 0:00	0.00002	0.0116	0.0001	0.0205	0.05	0.0001	0.001	8.71	0.00001	0.0005	0.001	0.0156	0.0267	0.00001	0.736	0.005	1.63	0.0252	0.001	1.42
W16	2012-04-27 0:00	0.00002	0.0084	0.0001	0.0178	0.05	0.0001	0.001	8.21	0.000012	0.0005	0.001	0.0131	0.0186	0.00001	0.633	0.005	1.46	0.0202	0.001	1.25
W16	2012-04-28 0:00	0.00002	0.0253	0.0001	0.0166	0.05	0.0001	0.001	7.94	0.00001	0.0005	0.001	0.0138	0.0398	0.00001	0.679	0.005	1.21	0.0103	0.001	0.954
W16	2012-04-29 0:00	0.00002	0.021	0.0001	0.015	0.05	0.0001	0.001	6.79	0.00001	0.0005	0.001	0.0116	0.0276	0.00001	0.503	0.005	0.879	0.0083	0.001	0.756
W16	2012-04-30 0:00	0.00002	0.0196	0.0001	0.0149	0.05	0.0001	0.001	6.49	0.000013	0.0005	0.001	0.0117	0.0249	0.00001	0.483	0.005	0.816	0.0088	0.001	0.708
W16	2012-05-01 15:00	0.00002	0.0184	0.0001	0.0122	0.05	0.0001	0.001	5.69	0.00001	0.0005	0.001	0.0111	0.032	0.00001	0.547	0.005	0.973	0.0126	0.001	0.879
W16	2012-05-02 0:00	0.00002	0.0093	0.0001	0.0112	0.05	0.0001	0.001	4.87	0.00001	0.0005	0.001	0.00795	0.0501	0.00001	0.397	0.005	0.796	0.0136	0.001	0.74
W16	2012-05-03 11:30	0.00002	0.0173	0.0001	0.012	0.05	0.0001	0.001	5.4	0.000012	0.0005	0.001	0.0109	0.0312	0.00001	0.476	0.005	0.873	0.0143	0.001	0.823
W16	2012-05-04 3:30	0.00002	0.16	0.00054	0.0373	0.05	0.0001	0.001	18.9	0.000109	0.0005	0.001	0.0509	0.333	0.00001	4.14	0.005	5.48	0.112	0.0013	4.38
W16	2012-05-05 10:45	0.00002	0.0451	0.00031	0.035	0.05	0.0001	0.001	19.2	0.000043	0.0005	0.001	0.0311	0.146	0.00001	1.58	0.005	5.37	0.093	0.0013	4.28
W16	2012-05-06 14:35	0.00002	0.0304	0.00036	0.0463	0.05	0.0001	0.001	27.9	0.000034	0.0005	0.001	0.0373	0.16	0.00001	1.97	0.005	8.1	0.113	0.0027	6.69
W16	2012-05-07 0:00	0.00002	0.0326	0.00033	0.0439	0.05	0.0001	0.001	26	0.000035	0.0005	0.001	0.0326	0.172	0.00001	1.91	0.005	7.59	0.126	0.0019	6.2
W16	2012-05-08 5:30	0.00002	0.0315	0.00032	0.044	0.05	0.0001	0.001	26.7	0.000032	0.0005	0.001	0.0299	0.171	0.00001	1.95	0.005	7.77	0.129	0.0018	6.38
W16	2012-05-09 17:50																				
W16	2012-05-13 11:30	0.00002	0.021	0.00038	0.0577	0.05	0.0001	0.001	36.4	0.000031	0.0005	0.001	0.0293	0.162	0.00001	2.3	0.005	11.4	0.162	0.0028	10.1
W16	2012-05-14 15:35	0.00002	0.0207	0.00039	0.0605	0.05	0.0001	0.001	37.2	0.000033	0.0005	0.001	0.0301	0.166	0.00001	2.43	0.005	11.9	0.169	0.003	11.1
W16	2012-05-24 0:00	0.00002	0.0749	0.00032	0.051	0.05	0.0001	0.001	29.4	0.000029	0.0005	0.001	0.0253	0.212	0.00001	1.91	0.005	8.75	0.128	0.0026	9.97
W16	2012-06-03 0:00	0.00002	0.0168	0.00031	0.0432	0.05	0.0001	0.001	25.8	0.000012	0.0005	0.001	0.0213	0.118	0.00001	1.93	0.005	8.06	0.0989	0.0023	10.3
W16	2012-06-08 0:00	0.00002	0.0116	0.00025	0.04	0.05	0.0001	0.001	23.9	0.000015	0.0005	0.001	0.0186	0.0922	0.00001	1.73	0.005	7.46	0.072	0.0022	9.28
W16	2012-06-15 16:07	0.00002	0.0104	0.00029	0.0438	0.05	0.0001	0.001	25.8	0.000015	0.0005	0.001	0.0212	0.0918	0.00001	1.88	0.005	7.99	0.0683	0.0024	8.98
W16	2012-06-24 16:05	0.00002	0.0092	0.00035	0.0523	0.05	0.0001	0.001	29.3	0.000016	0.0005	0.001	0.0232	0.0934	0.00001	1.95	0.005	8.9	0.0413	0.0027	9.03
W16	2012-06-28 9:45	0.00002	0.004	0.00035	0.0534	0.05	0.0001	0.001	32.6	0.000011	0.0005	0.001	0.0193	0.0692	0.00001	2.02	0.005	9.65	0.0032	0.0027	9.5
W16	2012-07-05 9:00	0.00002	0.0066	0.00033	0.0653	0.05	0.0001	0.001	34.4	0.00004	0.0005	0.001	0.0179	0.0732	0.00001	2.1	0.005	9.53	0.0137	0.0029	8.82
W16	2012-07-15 17:46	0.00002	0.0041	0.00038	0.0626	0.05	0.0001	0.001	36.5	0.00001	0.0005	0.001	0.0189	0.0713	0.00001	2.06	0.005	10.9	0.0027	0.0032	9.98
W16	2012-07-17 16:15	0.00002	0.0067	0.00037	0.0631	0.05	0.0001	0.001	38.1	0.00001	0.0005	0.001	0.0188	0.0617	0.00001	2.13	0.005	11.4	0.002	0.003	10.2
W16	2012-07-24 15:04	0.00002	0.0076	0.00036	0.0654	0.05	0.0001	0.001	38.8	0.00001	0.0005	0.001	0.0198	0.0687	0.00001	2.26	0.005	11.5	0.0027	0.0034	10.2
W16	2012-08-02 16:38	0.00002	0.003	0.00036	0.0692	0.05	0.0001	0.001	43.2	0.00001	0.0005	0.001	0.0161	0.0465	0.00001	2.24	0.005	12	0.0022	0.0033	10.1
W16	2012-08-07 10:45	0.00002	0.0058	0.00038	0.07	0.05	0.0001	0.001	42.4	0.00001	0.0005	0.001	0.0168	0.0465	0.00001	2.29	0.005	11.9	0.0052	0.0033	10.1
W16	2012-08-16 10:15	0.00002	0.003	0.00036	0.0708	0.05	0.0001	0.001	44.8	0.00001	0.0005	0.001	0.0164	0.0388	0.00001	2.19	0.005	12.4	0.0038	0.0034	10.2
W16	2012-08-27 13:35	0.00002	0.0036	0.00034	0.0727	0.05	0.0001	0.001	44.8	0.00001	0.0005	0.001	0.0176	0.0344	0.00001	2.41	0.005	12.7	0.0013	0.0036	10.4
W16	2012-09-03 9:15	0.00002	0.003	0.00037	0.0752	0.05	0.0001	0.001	44.8	0.00001	0.0005	0.001	0.0165	0.0257	0.00001	2.5	0.005	13.8	0.001	0.0037	11.3
W16	2012-09-05 8:00	0.00002	0.003	0.00038	0.0721	0.05	0.0001	0.001	44.5	0.00001	0.0005	0.001	0.0173	0.0264	0.00001	2.36	0.005	13.4	0.001	0.0037	11
W16	2012-09-10 13:55	0.00002	0.13	0.00037	0.0771	0.05	0.0001	0.001	46.8	0.000011	0.0005	0.001	0.0277	0.174	0.00001	2.56	0.005	14.2	0.0567	0.0036	11.5
W16	2012-09-17 11:07	0.00002	0.0053	0.00041	0.0767	0.05	0.0001	0.001	47.8	0.00001	0.0005	0.001	0.019	0.0312	0.00001	2.42	0.005	14	0.0033	0.0038	11.3
W16	2012-09-24 9:35	0.00002	0.0062	0.00038	0.0765	0.05	0.0001	0.001	49.1	0.00001	0.0005	0.001	0.0178	0.0368	0.00001	2.54	0.005	13.7	0.0015	0.0035	11
W16	2012-10-06 17:00														0.00001						
W16	2012-10-12 8:25														0.00001						
W16	2012-10-19 10:55	0.00002	0.003	0.00018	0.049	0.05	0.0001	0.001	33.3	0.000022	0.0005	0.001	0.023	0.0107	0.00001	1.93	0.005	8.46	0.0024	0.0019	6.68
W16	2012-10-22 7:20	0.00002	0.003	0.00036	0.0754	0.05	0.0001	0.001	50.1	0.00001	0.0005	0.001	0.0181	0.0207	0.00001	2.61	0.005	14.1	0.0013	0.0037	11.2
W16	2012-10-25 13:45	0.00002	0.003	0.00038	0.0793	0.05	0.0001	0.001	53.6	0.00001	0.0005	0.001	0.0186	0.0207	0.00001	2.78	0.005	16.3	0.0014	0.0041	12.8
W16	2012-11-04 0:00	0.00002	0.0124	0.00043	0.0883	0.05	0.0001	0.001	54.2	0.000059	0.0005	0.001	0.023	0.0394	0.00001	3.54	0.005	17.2	0.0018	0.0045	14.1
W16	2012-11-05 10:50																				
W16	2012-11-09 14:45	0.000005	0.00432	0.000382	0.0801	0.05	0.00001	0.000005	50.5	0.000007	0.000046	0.00013	0.0183	0.0213		2.86	0.00141	15.5	0.00118	0.00431	12.3
W16	2012-11-18 10:00	0.00002	0.0034	0.00042	0.0966	0.05	0.0001	0.001	64.8	0.00003	0.0005	0.001	0.019	0.0289	0.00001	3.28	0.005	18.6	0.0242	0.0043	13.4
W16	2012-11-24 0:00	0.00002	0.0388	0.00038	0.0778	0.05	0.0001	0.001	51.9	0.00007	0.0005	0.001	0.0264	0.105	0.00001	3	0.005	16	0.0109	0.0041	12.7
W16	2012-11-25 12:00																				
W16	2013-03-07 0:00	0.00002	0.003	0.00036	0.0779	0.05	0.0001	0.001	53.9	0.00001	0.0005	0.001	0.0148	0.02	0.00001	2.95	0.005	17.1	0.0018	0.0043	13.6
W16	2013-03-09 8:00	0.00002	0.0079	0.00037	0.0801	0.05	0.0001	0.001	55.2	0.000014	0.0005	0.001	0.0164	0.0366	0.00001	3.03	0.005	17.1	0.0014	0.0045	13.8
W16	2013-03-24 15:00	0.00002	0.0057	0.00038	0.0813	0.05	0.0001	0.001	55.5	0.000021	0.0005	0.001	0.0183	0.028	0.00001	3.33	0.005	18.2	0.0039	0.0043	14.8
W16	2013-03-28 0:00	0.00002	0.003	0.00036	0.0823	0.05	0.0001	0.001	54.9	0.000012	0.0005	0.001	0.0151	0.0229	0.00001	3.03	0.005	17.1	0.0017	0.0044	13.5
W16	2013-03-29 0:00	0.00002	0.0087	0.00044	0.0836	0.05	0.0001	0.001	57.5	0.00001	0.0005	0.001	0.0148	0.0204	0.00001	3.22	0.005	18.2	0.0025	0.0044	14.6
W16	2013-03-30 0:00	0.00002	0.003	0.0004	0.0821	0.05	0.0001	0.001	57.7	0.000026	0.0005	0.001	0.0158	0.0207	0.00001	3.29	0.005	17.7	0.0036	0.0042	14.3
W16	2013-03-31 0:00	0.00002	0.0067	0.00053	0.0772	0.05	0.0001	0.001	52.1	0.000021	0.0005	0.001	0.0251	0.017	0.00001	3.43	0.005	18.1	0.009	0.0047	14.9
W16	2013-04-01 11:30	0.00002	0.009	0.00046	0.0638	0.05	0.0001	0.001	40.8	0.000019	0.0005	0.001	0.0283	0.0134	0.00001	3.17	0.005	16.5	0.0133	0.0045	13.5
W16	2013-04-02 10:00	0.00002	0.003	0.00039	0.0669	0.05	0.0001	0.001	45.2	0.000022	0.0005	0.001	0.0272	0.0162	0.00001	3.35	0.005	17.7	0.0121	0.0044	14.6
W16	2013-04-03 16:00	0.00002	0.0359	0.00039	0.0798	0.05	0.0001	0.001	56.6	0.00001	0.0005	0.001	0.0185	0.103	0.00001	3.2	0.005	17.7	0.0052	0.0042	14.1
W16	2013-04-04 17:00	0.00002	0.0041	0.00032	0.0797	0.05	0.0001	0.001	57.1	0.00001	0.0005	0.001	0.0148	0.0245	0.00001	3.13	0.005	17.7	0.0028	0.0043	14.2
W16	2013-04-05 11:40	0.00002	0.0033	0.00033	0.0824	0.05	0.0001	0.001	55.5	0.00001	0.0005	0.001	0.0152	0.0228	0.00001	3.28	0.005	18.1	0.0025	0.0041	14.4
W16	2013-04-06 16:00	0.00002	0.0133	0.00044	0.0792	0.05	0.0001	0.001	57.2	0.00001	0.0005	0.001	0.0154	0.02	0.00001	3.1	0.005	18.2	0.0033	0.0044	14.4
W16	2013-04-07 17:10	0.00002	0.003	0.00043	0.0763	0.05	0.0001	0.001	54.6	0.000013	0.0005	0.001	0.0155	0.0193	0.00001	2.96	0.005	17.1	0.0039	0.0043	13.6
W16	2013-04-08 18:30	0.00002	0.0095	0.00037	0.0778	0.05	0.0001	0.001	57	0.000012	0.0005	0.001	0.0165	0.0404	0.00001	3.1	0.005	17.8	0.0031	0.0044	14.2
W16	2013-04-09 16:30	0.00002	0.003	0.00036	0.0794	0.05	0.0001	0.001	54.7	0.00001	0.0005	0.001	0.0159	0.0324	0.00001	3.15	0.005	17.4	0.006	0.0041	13.9
W16	2013-04-10 17:00	0.00002	0.0054	0.00034	0.0842	0.05	0.0001	0.001	46.2	0.000031	0.0005	0.001	0.0288	0.0206	0.00001	3.21	0.005	14.1	0.0343	0.0039	11
W16	2013-04-12 17:30	0.00002	0.003	0.00035	0.084	0.05	0.0001	0.001	56.9	0.00001	0.0005	0.001	0.0185	0.0371	0.00001	3.33	0.005	18.1	0.0237	0.0043	14.4
W16	2013-04-13 16:50	0.00002	0.003	0.00033	0.078	0.05	0.0001	0.001	53.7	0.00001	0.0005	0.001	0.0159	0.0383	0.00001	3.07	0.005	18.2	0.0152	0.0042	14.5
W16	2013-04-14 16:40	0.00002	0.0041	0.00034	0.088	0.05	0.0001	0.001	52.6	0.000026	0.0005	0.001	0.0275	0.0311	0.00001	3.52	0.005	17.5	0.0331	0.0046	14
W16	2013-04-15 16:30	0.00002	0.0066	0.00035	0.0782	0.05	0.0001	0.001	55.1	0.00001	0.0005	0.001	0.0167	0.0421	0.00001	3.01	0.005	17.6	0.012	0.0042	14.2
W16	2013-04-16 17:30																				
W16	2013-04-17 17:30	0.00002	0.003	0.00035	0.0715	0.05	0.0001	0.001	49.3	0.00001	0.0005	0.001	0.0146	0.0543	0.00001	2.63	0.005	15.8	0.0158	0.0039	12.6
W16	2013-04-18 15:00	0.00002	0.0054	0.00032	0.0711	0.05	0.0001	0.001	49.3	0.00001	0.0005	0.001	0.0149	0.0624	0.00001	2.67	0.005	16.1	0.0168	0.0039	12.9
W16	2013-04-19 16:15	0.00002	0.003	0.00032	0.0803	0.05	0.0001	0.001	59.3	0.00001	0.0005	0.001	0.0157	0.0698	0.00001	3.18	0.005	17.9	0.0165	0.0043	14.2
W16	2013-04-20 17:15	0.00002	0.003	0.00035	0.0811	0.05	0.0001	0.001	62.5	0.000015	0.0005	0.001	0.0198	0.0479	0.00001	3.45	0.005	17.8	0.0248	0.0043	14.2
W16	2013-04-25 14:05	0.00002	0.006	0.00027	0.0714	0.05	0.0001	0.001	48.8	0.000013	0.0005	0.001	0.0189	0.0499	0.00001	2.86	0.005	16	0.0249	0.0038	14
W16	2013-05-17 8:10																				
W16	2013-05-18 9:20	0.00002	0.0571	0.00029	0.0317	0.05	0.0001	0.001	12.3	0.000016	0.0005	0.001	0.0328	0.172	0.00001	1.52	0.005	3.35	0.0416	0.0011	3.36
W16	2013-05-18 10:15																				
W16	2013-05-19 11:30																				
W16	2013-05-20 8:30																				
W16	2013-05-21 8:00																				
W16	2013-05-22 9:15																				
W16	2013-05-23 0:00	0.00002	0.064	0.00027	0.0354	0.05	0.0001	0.001	14.7	0.000013	0.0005	0.001	0.0343	0.16	0.00001	1.91	0.005	4.07	0.0281	0.0015	5.22
W16	2013-05-25 8:10																				
W16	2013-05-26 8:00																				
W16	2013-05-27 7:25																				
W16	2013-05-28 10:00	0.00002	0.0391	0.00027	0.0396	0.05	0.0001	0.001	18.1	0.000015	0.0005	0.001	0.0367	0.12	0.00001	3.12	0.005	5.22	0.0379	0.0035	7.39
W16	2013-05-29 0:00																				
W16	2013-06-06 15:00	0.00002	0.0203	0.00041	0.0553	0.05	0.0001	0.001	26.3	0.000014	0.0005	0.001	0.0258	0.11	0.00001	4.53	0.005	8.59	0.0804	0.0067	11.1
W16	2013-06-15 16:15	0.00002	0.0055	0.00039	0.06	0.05	0.0001	0.001	29.9	0.000011	0.0005	0.001	0.0243	0.0836	0.00001	3.94	0.005	9.48	0.0798	0.0056	10.7
W16	2013-06-20 0:00	0.00002	0.006	0.00042	0.0638	0.05	0.0001	0.001	34.2	0.000012	0.0005	0.001	0.0225	0.102	0.00001	4.05	0.005	9.58	0.0745	0.0054	10.2
W16	2013-06-25 0:00	0.00002	0.0098	0.00044	0.0616	0.05	0.0001	0.001	31.4	0.000014	0.0005	0.001	0.0225	0.0825	0.00001	3.96	0.005	10.6	0.065	0.0058	11
W16	2013-07-01 0:00	0.00002	0.0112	0.00044	0.0619	0.05	0.0001	0.001	35.4	0.00001	0.0005	0.001	0.0222	0.0833	0.00001	3.74	0.005	11	0.0504	0.0059	11.4
W16	2013-07-12 0:00	0.00002	0.0079	0.00047	0.0643	0.05	0.0001	0.001	36	0.00001	0.0005	0.001	0.02	0.0643	0.00001	3.37	0.005	11.1	0.0264	0.0054	10.4
W16	2013-07-21 11:40	0.00002	0.0108	0.00047	0.0652	0.05	0.0001	0.001	39.7	0.00001	0.0005	0.001	0.0217	0.0801	0.00001	3.47	0.005	12.3	0.0389	0.0056	11.5
W16	2013-07-23 0:00	0.00002	0.0089	0.00048	0.0644	0.05	0.0001	0.001	39.5	0.00001	0.0005	0.001	0.0247	0.0813	0.00001	3.42	0.005	12.3	0.032	0.0056	11.4

Station	Date / Time	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W16	2012-04-03 17:30	0.001	0.0002	0.0005	17.6	0.00154	5.29	0.005	0.589	0.005	0.00005	0.00199	0.005	0.005	0.0005
W16	2012-04-04 16:00	0.001	0.0002	0.0005	16.6	0.00138	5.13	0.005	0.559	0.005	0.00005	0.0018	0.005	0.005	0.0005
W16	2012-04-05 15:30	0.001	0.0002	0.0005	13.9	0.00122	5.05	0.005	0.499	0.005	0.00005	0.00153	0.005	0.005	0.0005
W16	2012-04-06 14:30	0.001	0.0002	0.0005	15.9	0.00137	5.4	0.005	0.545	0.005	0.00005	0.0017	0.005	0.005	0.0005
W16	2012-04-08 15:30	0.0011	0.0002	0.0005	17.9	0.00158	5.76	0.005	0.617	0.005	0.00005	0.00195	0.005	0.005	0.0005
W16	2012-04-10 17:00	0.001	0.0002	0.0005	4.7	0.00057	2.69	0.005	0.239	0.005	0.00005	0.00063	0.005	0.005	0.0005
W16	2012-04-11 7:30	0.001	0.0002	0.0005	3	0.00053	1.45	0.005	0.132	0.005	0.00005	0.00025	0.005	0.005	0.0005
W16	2012-04-12 16:05	0.001	0.0002	0.0005	3	0.00057	1.46	0.005	0.148	0.005	0.00005	0.00037	0.005	0.005	0.0005
W16	2012-04-13 0:00	0.001	0.0002	0.0005	17	0.00085	5.2	0.005	0.611	0.005	0.00005	0.00294	0.005	0.005	0.0005
W16	2012-04-14 12:00	0.001	0.0002	0.0005	3.3	0.00047	1.93	0.005	0.162	0.005	0.00005	0.00034	0.005	0.005	0.0005
W16	2012-04-15 10:50	0.001	0.0002	0.0005	3	0.00042	1.72	0.005	0.157	0.005	0.00005	0.0003	0.005	0.005	0.0005
W16	2012-04-16 10:07	0.001	0.0002	0.0005	3	0.00032	1.5	0.005	0.132	0.005	0.00005	0.00026	0.005	0.005	0.0005
W16	2012-04-17 12:00	0.001	0.0002	0.0005	3	0.00035	1.53	0.005	0.133	0.005	0.00005	0.00028	0.005	0.005	0.0005
W16	2012-04-18 10:50	0.001	0.0002	0.0005	3	0.0003	1.65	0.005	0.122	0.005	0.00005	0.00022	0.005	0.005	0.0005
W16	2012-04-19 0:00	0.001	0.0002	0.0005	3	0.00024	1.42	0.005	0.114	0.005	0.00005	0.00021	0.005	0.0097	0.0005
W16	2012-04-20 17:00	0.001	0.0002	0.0005	3	0.00023	1.34	0.005	0.102	0.005	0.00005	0.00018	0.005	0.005	0.0005
W16	2012-04-21 15:40	0.001	0.0002	0.0005	3	0.00023	1.28	0.005	0.111	0.005	0.00005	0.00021	0.005	0.005	0.0005
W16	2012-04-22 14:10	0.001	0.0002	0.0005	3	0.00019	1.34	0.005	0.0923	0.005	0.00005	0.00016	0.005	0.005	0.0005
W16	2012-04-23 15:40	0.001	0.0002	0.0005	3	0.00023	1.09	0.005	0.0931	0.005	0.00005	0.00017	0.005	0.005	0.0005
W16	2012-04-24 17:00	0.001	0.0002	0.0005	3	0.00022	1.1	0.005	0.0903	0.005	0.00005	0.00016	0.005	0.005	0.0005
W16	2012-04-25 0:00	0.001	0.0002	0.0005	3	0.0002	1.07	0.005	0.087	0.005	0.00005	0.00015	0.005	0.005	0.0005
W16	2012-04-26 0:00	0.001	0.0002	0.0005	3	0.00016	1.05	0.005	0.0821	0.005	0.00005	0.00014	0.005	0.005	0.0005
W16	2012-04-27 0:00	0.001	0.0002	0.0005	3	0.00017	0.968	0.005	0.0736	0.005	0.00005	0.00011	0.005	0.005	0.0005
W16	2012-04-28 0:00	0.001	0.0002	0.0005	3	0.00013	0.987	0.005	0.0663	0.005	0.00005	0.0001	0.005	0.005	0.0005
W16	2012-04-29 0:00	0.001	0.0002	0.0005	3	0.0001	0.765	0.005	0.0562	0.005	0.00005	0.0001	0.005	0.005	0.0005
W16	2012-04-30 0:00	0.001	0.0002	0.0005	3	0.0001	0.67	0.005	0.0519	0.005	0.00005	0.0001	0.005	0.005	0.0005
W16	2012-05-01 15:00	0.001	0.0002	0.0005	3	0.0001	0.671	0.005	0.0477	0.005	0.00005	0.0001	0.005	0.005	0.0005
W16	2012-05-02 0:00	0.001	0.0002	0.0005	3	0.00011	0.557	0.005	0.043	0.005	0.00005	0.0001	0.005	0.005	0.0005
W16	2012-05-03 11:30	0.001	0.0002	0.0005	3	0.0001	0.577	0.005	0.0432	0.005	0.00005	0.0001	0.005	0.005	0.0005
W16	2012-05-04 3:30	0.0014	0.0002	0.0005	6.5	0.00035	2.82	0.005	0.16	0.009	0.00005	0.00039	0.005	0.0114	0.0005
W16	2012-05-05 10:45	0.001	0.0002	0.0005	3.8	0.0004	2.68	0.005	0.164	0.005	0.00005	0.00039	0.005	0.005	0.0005
W16	2012-05-06 14:35	0.001	0.0002	0.0005	7.2	0.00058	3.52	0.005	0.256	0.005	0.00005	0.00063	0.005	0.005	0.0005
W16	2012-05-07 0:00	0.001	0.0002	0.0005	5.9	0.00055	3.33	0.005	0.226	0.005	0.00005	0.00058	0.005	0.005	0.0005
W16	2012-05-08 5:30	0.001	0.0002	0.0005	6.6	0.00055	3.35	0.005	0.233	0.005	0.00005	0.00059	0.005	0.005	0.0005
W16	2012-05-09 17:50														
W16	2012-05-13 11:30	0.001	0.0002	0.0005	9.9	0.00082	4	0.005	0.351	0.005	0.00005	0.00093	0.005	0.005	0.0005
W16	2012-05-14 15:35	0.0011	0.0002	0.0005	10.7	0.0008	4.16	0.005	0.363	0.005	0.00005	0.00094	0.005	0.005	0.0005
W16	2012-05-24 0:00	0.001	0.0002	0.0005	7.9	0.00064	3.23	0.005	0.287	0.005	0.00005	0.00077	0.005	0.005	0.0005
W16	2012-06-03 0:00	0.001	0.0002	0.0005	7.2	0.00056	2.53	0.005	0.255	0.005	0.00005	0.00067	0.005	0.005	0.0005
W16	2012-06-08 0:00	0.001	0.0002	0.0005	6.5	0.00056	2.33	0.005	0.226	0.005	0.00005	0.00068	0.005	0.005	0.0005
W16	2012-06-15 16:07	0.001	0.0002	0.0005	7.2	0.00053	2.32	0.005	0.277	0.005	0.00005	0.0006	0.005	0.005	0.0005
W16	2012-06-24 16:05	0.001	0.0002	0.0005	8	0.00061	2.42	0.005	0.304	0.005	0.00005	0.00069	0.005	0.005	0.0005
W16	2012-06-28 9:45	0.001	0.0002	0.0005	9.2	0.00063	2.35	0.005	0.324	0.005	0.00005	0.00066	0.005	0.005	0.0005
W16	2012-07-05 9:00	0.001	0.0002	0.0005	10.5	0.00077	2.63	0.005	0.328	0.005	0.00005	0.0007	0.005	0.005	0.0005
W16	2012-07-15 17:46	0.001	0.0002	0.0005	9.7	0.00076	2.78	0.005	0.368	0.005	0.00005	0.0008	0.005	0.005	0.0005
W16	2012-07-17 16:15	0.001	0.0002	0.0005	10.1	0.00072	2.74	0.005	0.361	0.005	0.00005	0.00076	0.005	0.005	0.0005
W16	2012-07-24 15:04	0.001	0.0002	0.0005	11	0.00076	2.75	0.005	0.373	0.005	0.00005	0.0008	0.005	0.005	0.0005
W16	2012-08-02 16:38	0.001	0.0002	0.0005	12.1	0.0008	2.98	0.005	0.401	0.005	0.00005	0.00083	0.005	0.005	0.0005
W16	2012-08-07 10:45	0.001	0.0002	0.0005	12.6	0.00079	2.88	0.005	0.405	0.005	0.00005	0.00081	0.005	0.005	0.0005
W16	2012-08-16 10:15	0.001	0.0002	0.0005	13.1	0.00084	2.53	0.005	0.431	0.005	0.00005	0.00085	0.005	0.005	0.0005
W16	2012-08-27 13:35	0.001	0.0002	0.0005	11.8	0.00075	2.11	0.005	0.427	0.005	0.00005	0.00095	0.005	0.005	0.0005
W16	2012-09-03 9:15	0.001	0.0002	0.0005	12.7	0.00083	2.2	0.005	0.47	0.005	0.00005	0.00099	0.005	0.005	0.0005
W16	2012-09-05 8:00	0.001	0.0002	0.0005	13	0.0008	2.22	0.005	0.472	0.005	0.00005	0.00098	0.005	0.005	0.0005
W16	2012-09-10 13:55	0.001	0.0002	0.0005	12.8	0.00088	2.59	0.005	0.498	0.0067	0.00005	0.00099	0.005	0.005	0.0005
W16	2012-09-17 11:07	0.001	0.0002	0.0005	13.2	0.00096	2.73	0.005	0.508	0.005	0.00005	0.001	0.005	0.005	0.0005
W16	2012-09-24 9:35	0.001	0.0002	0.0005	13.2	0.00095	2.82	0.005	0.514	0.005	0.00005	0.00096	0.005	0.005	0.0005
W16	2012-10-06 17:00														
W16	2012-10-12 8:25														
W16	2012-10-19 10:55	0.001	0.0002	0.0005	6.7	0.00048	4.59	0.005	0.265	0.005	0.00005	0.00068	0.005		0.0005
W16	2012-10-22 7:20	0.001	0.0002	0.0005	13.4	0.00089	3.15	0.005	0.496	0.005	0.00005	0.00106	0.005	0.005	0.0005
W16	2012-10-25 13:45	0.001	0.0002	0.0005	15.9	0.0012	3.28	0.005	0.554	0.005	0.00005	0.00125	0.005	0.005	0.0005
W16	2012-11-04 0:00	0.0014	0.00037	0.0005	18.1	0.00106	3.11	0.005	0.583	0.005	0.00005	0.00132	0.005	0.0092	0.0005
W16	2012-11-05 10:50														
W16	2012-11-09 14:45	0.000841	0.00002	0.000118	16.4	0.000955	2.84	0.0002	0.512	0.0005	0.000002	0.00124	0.00024	0.00276	0.00011
W16	2012-11-18 10:00	0.001	0.0002	0.0005	19.6	0.00168	3.83	0.005	0.643	0.005	0.00005	0.00143	0.005	0.0059	0.0005
W16	2012-11-24 0:00	0.0018	0.0002	0.0005	13.9	0.00108	3.05	0.005	0.542	0.005	0.00005	0.00125	0.005		0.0005
W16	2012-11-25 12:00														
W16	2013-03-07 0:00	0.001	0.0002	0.0005	14.9	0.00097	3.98	0.005	0.566	0.005	0.00005	0.00157	0.005	0.005	0.0005
W16	2013-03-09 8:00	0.001	0.0002	0.0005	18.3	0.00107	4.01	0.005	0.591	0.005	0.00005	0.00162	0.005	0.0074	0.0005
W16	2013-03-24 15:00	0.0012	0.0002	0.0005	15.3	0.00095	4.07	0.005	0.595	0.005	0.00005	0.00166	0.005	0.0123	0.0005
W16	2013-03-28 0:00	0.001	0.0002	0.0005	14.9	0.00105	4.03	0.005	0.588	0.005	0.00005	0.00172	0.005	0.005	0.0005
W16	2013-03-29 0:00	0.001	0.0002	0.0005	16	0.001	4.24	0.005	0.608	0.005	0.00005	0.00159	0.005	0.005	0.0005
W16	2013-03-30 0:00	0.001	0.0002	0.0005	16	0.0009	4.32	0.005	0.596	0.005	0.00005	0.00153	0.005	0.005	0.0005
W16	2013-03-31 0:00	0.001	0.0002	0.0005	16.3	0.00104	3.54	0.005	0.553	0.005	0.00005	0.00155	0.005	0.005	0.0005
W16	2013-04-01 11:30	0.001	0.0002	0.0005	15	0.00093	2.66	0.005	0.448	0.005	0.00005	0.00137	0.005	0.005	0.0005
W16	2013-04-02 10:00	0.001	0.0002	0.0005	15.2	0.00101	2.99	0.005	0.473	0.005	0.00005	0.00148	0.005	0.0058	0.0005
W16	2013-04-03 16:00	0.001	0.0002	0.0005	15.3	0.00087	4.01	0.005	0.58	0.005	0.00005	0.00157	0.005	0.005	0.0005
W16	2013-04-04 17:00	0.001	0.0002	0.0005	15	0.001	4.04	0.005	0.59	0.005	0.00005	0.00156	0.005	0.005	0.0005
W16	2013-04-05 11:40	0.001	0.0002	0.0005	16.3	0.00101	4.12	0.005	0.589	0.005	0.00005	0.00158	0.005	0.005	0.0005
W16	2013-04-06 16:00	0.001	0.0002	0.0005	16.1	0.00102	4.13	0.005	0.586	0.005	0.00005	0.00166	0.005	0.005	0.0005
W16	2013-04-07 17:10	0.001	0.0002	0.0005	14.4	0.00099	3.97	0.005	0.56	0.005	0.00005	0.0016	0.005	0.005	0.0005
W16	2013-04-08 18:30	0.001	0.0002	0.0005	15	0.00097	3.99	0.005	0.594	0.005	0.00005	0.00166	0.005	0.005	0.0005
W16	2013-04-09 16:30	0.001	0.0002	0.0005	16	0.00105	4.05	0.005	0.569	0.005	0.00005	0.00155	0.005	0.005	0.0005
W16	2013-04-10 17:00	0.001	0.0002	0.0005	12.7	0.00091	2.7	0.005	0.489	0.005	0.00005	0.00128	0.005	0.005	0.0005
W16	2013-04-12 17:30	0.001	0.0002	0.0005	15.1	0.00097	4.06	0.005	0.604	0.005	0.00005	0.00164	0.005	0.005	0.0005
W16	2013-04-13 16:50	0.001	0.0002	0.0005	15.9	0.00077	4.05	0.005	0.576	0.005	0.00005	0.00154	0.005	0.005	0.0005
W16	2013-04-14 16:40	0.001	0.0002	0.0005	15.3	0.00096	3.54	0.005	0.574	0.005	0.00005	0.00141	0.005	0.005	0.0005
W16	2013-04-15 16:30	0.001	0.0002	0.0005	15.4	0.0009	4.11	0.005	0.579	0.005	0.00005	0.00152	0.005	0.005	0.0005
W16	2013-04-16 17:30														
W16	2013-04-17 17:30	0.001	0.0002	0.0005	12.7	0.00072	3.59	0.005	0.52	0.005	0.00005	0.00148	0.005	0.005	0.0005
W16	2013-04-18 15:00	0.001	0.0002	0.0005	13.3	0.00079	3.61	0.005	0.515	0.005	0.00005	0.00147	0.005	0.005	0.0005
W16	2013-04-19 16:15	0.001	0.0002	0.0005	15.7	0.00094	4.59	0.005	0.588	0.005	0.00005	0.00162	0.005	0.005	0.0005
W16	2013-04-20 17:15	0.001	0.0002	0.0005	15.2	0.00094	4.75	0.005	0.582	0.005	0.00005	0.00161	0.005	0.005	0.0005
W16	2013-04-25 14:05	0.001	0.0002	0.0005	13.8	0.00078	4.18	0.005	0.499	0.005	0.00005	0.0013	0.005	0.005	0.0005
W16	2013-05-17 8:10														
W16	2013-05-18 9:20	0.001	0.0002	0.0005	3	0.00022	1.84	0.005	0.119	0.005	0.00005	0.00017	0.005	0.005	0.0005
W16	2013-05-18 10:15														
W16	2013-05-19 11:30														
W16	2013-05-20 8:30														
W16	2013-05-21 8:00														
W16	2013-05-22 9:15														
W16	2013-05-23 0:00	0.001	0.0002	0.0005	3.2	0.0002	2.16	0.005	0.206	0.005	0.00005	0.00019	0.005	0.005	0.0005
W16	2013-05-25 8:10														
W16	2013-05-26 8:00														
W16	2013-05-27 7:25														
W16	2013-05-28 10:00	0.001	0.0002	0.0005	5.5	0.00033	1.96	0.005	0.472	0.005	0.00005	0.00024	0.005	0.005	0.0005
W16	2013-05-29 0:00														
W16	2013-06-06 15:00	0.0012	0.0002	0.0005	9.9	0.00052	2.38	0.005	0.789	0.005	0.00005	0.00044	0.005	0.005	0.0005
W16	2013-06-15 16:15	0.0011	0.0002	0.0005	9.9	0.00057	1.9	0.005	0.702	0.005	0.00005	0.00058	0.005	0.005	0.0005
W16	2013-06-20 0:00	0.001	0.0002	0.0005	10.9	0.00057	2.03	0.005	0.698	0.005	0.00005	0.00061	0.005	0.005	0.0005
W16	2013-06-25 0:00	0.0011	0.0002	0.0005	11.6	0.00052	1.89	0.005	0.675	0.005	0.00005	0.00071	0.005	0.005	0.0005
W16	2013-07-01 0:00	0.001	0.0002	0.0005	10.8	0.00052	2.11	0.005	0.648	0.005	0.00005	0.00078	0.005	0.005	0.0005
W16	2013-07-12 0:00	0.001	0.0002	0.0005	11.2	0.00053	2.2	0.005	0.633	0.005	0.00005	0.00081	0.005	0.005	0.0005
W16	2013-07-21 11:40	0.001	0.0002	0.0005	10.8	0.00047	2.06	0.005	0.638	0.005	0.00005	0.00089	0.005	0.005	0.0005
W16	2013-07-23 0:00	0.001	0.0002	0.0005	11.5	0.00051	2.06	0.005	0.597	0.005	0.00005	0.00091	0.005	0.005	0.0005

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N-NO_2$	$N-NO_3$	$N-NH_3$	SO_4-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W16	2013-07-31 16:00	120	325	72.5	9.16	188	13.8	19.7	107.8	0.0117	1.04	0.051	25.2	9	0.25
W16	2013-08-08 10:00	124	326	104.5	9.03	242	4.8	18.5	83.5	0.05	1.13	0.019	27.7	9.2	0.25
W16	2013-08-15 10:20	133	338		9.3	276	3.5	18.5		0.0077	1.01	0.084	26	9.3	0.25
W16	2013-08-19 15:20	133	349	82.7	8.79	212	2.5	17.1	75.4	0.0082	1.05	0.033	29	9.9	0.25
W16	2013-08-26 10:05	134	359	138.7	8.45	258	2.6	14.3	85.1	0.0073	1.04	0.021	25.6	10	0.25
W16	2013-09-02 14:15	134	358	75.6	8.43	236	5	14.6	82	0.0073	0.936	0.075	29	10	0.26
W16	2013-09-12 12:55	138	367	98.2	8.06	226	2.3	11.5	69.2	0.0095	0.904	0.093	29.7	11	0.26
W16	2013-09-17 13:30	145	366	127.8	7.77	192	2.8	10.1	73.6	0.005	0.817	0.029	33.4	11	0.28
W16	2013-09-28 14:55	146	364	171.7	7.68	258	2.7	7	58.3	0.005	0.02	0.022	33.7	11	0.25
W16	2013-10-03 16:00	142	363	125	7.67	242	2.9	6.3	69.6	0.0058	0.701	0.021	29.2	10	0.25
W16	2013-10-09 14:00	144	362	123.5	7.61	218	10	4.9	80.2	0.005	0.67	0.023	28.5	9.8	0.23
W16	2013-10-16 9:20	151	370	87.6	7.82	266	3.7	3.1	69.2	0.0056	0.712	0.034	30.8	9.8	0.26
W16	2013-10-22 14:45	153	378	99.8	8.02	260	5.3	3	97.6	0.005	0.655	0.03	29.1	9.7	0.26
W16	2013-10-28 17:05	150	378	145	7.93	256	6.5	2.4	90.1	0.005	0.658	0.012	28.6	10	0.26
W16	2013-11-07 13:30	154	377	106.2	8.12	234	7.5	1.1	94	0.005	0.682	0.021	29.4	9.6	0.26
W16	2013-11-14 10:45	157	395	174.3	7.84	228	7.6	2.4	72.5	0.0055	0.729	0.024	33.9	11	0.27
W16	2013-11-18 11:05	156	393	-207.4	8.27	242	9.8	1.3	69.7	0.005	0.75	0.022	34	10	0.27
W16	2013-12-01 11:40	158	403	-25.6	7.91	252	9.6	2.2	75.1	0.005	0.711	0.036	30	11	0.27
W16	2013-12-05 15:45	161	396	267.1	7.8	242	9.2	0.1	68.9	0.005	0.754	0.07	37.8	10	0.23
W16	2013-12-09 14:50	160	398	-4.5	8.1	228	5.4	1.2	62.5	0.005	0.751	0.042	43	10	0.25
W16	2013-12-16 11:45	163	412	282.5	6.73	258	10.7	0	139.6	0.005	0.747	0.034	34.8	11	0.27
W16	2013-12-23 13:40	181	447	96	7.71	291	4.4	0.9	68.7	0.005	0.88	0.05	33.6	12	0.32
W16	2014-01-02 15:30	147	364	258	7.6	222	3.4	1.3		0.0089	0.85	0.066	25.3	7.6	0.25
W16	2014-01-07 10:40	163	419	252	7.68	262	3.7	0	58.2	0.005	0.746	0.045	35	11	0.28
W16	2014-01-18 14:30	156	393	145.8	7.56	240	2.1	1.9	37.5	0.0054	0.773	0.046	30.7	9.4	0.25
W16	2014-01-21 13:30	162	409	171.2	7.67	248	2.3	0.3	40.7	0.0051	0.736	0.063	32.5	10	0.29
W16	2014-01-27 14:40	161	410	173.6	7.58	236	2.8	1.4	43.7	0.005	0.739	0.053	30.9	10	0.29
W16	2014-02-03 11:30	171	414	335.3	7.69	298	4.4	0.1	41.1	0.0052	0.724	0.061	35.5	11	0.34
W16	2014-02-13 17:10	167	428	245	7.54	228	3	0.3	42.8	0.0062	0.718	0.065	33.3	10	0.29
W16	2014-02-18 16:30	176	432	277.8	7.67	268	3.6	0.1	48.4	0.005	0.693	0.06	31.7	11	0.3
W16	2014-02-27 9:10	170	433	266.9	7.67	234	3	0	31.3	0.005	0.711	0.044	32.8	11	0.29
W16	2014-03-06 8:45	176	434	255.2	7.84	264	1.7	0.8	30.2	0.0068	0.693	0.078	37.8	11	0.3
W16	2014-03-10 15:20	177	437	178.6	7.8	259	1.7	0.2	38.8	0.0054	0.684	0.078	36.2	11	0.28
W16	2014-03-21 16:00	161	428	208.3	7.63	263	23.8	0	25.5	0.0214	0.631	0.059	24.5	21	0.31
W16	2014-03-27 11:00	174	434	192.4	7.52	274	1.4	0	23.1	0.0053	0.605	0.1	35.3	11	0.3
W16	2014-03-28 9:45			134.7	7.45			0.3	50.9						
W16	2014-03-29 9:00			143.9	7.5			0	57.9						
W16	2014-03-30 10:00			141.5	7.48			0.1	41.1						
W16	2014-03-31 8:00			127	7.42			0	37.2						
W16	2014-04-01 8:45			175	7.23			0	50						
W16	2014-04-02 9:15			187.6	7.44			0	40.7						
W16	2014-04-02 15:00	179	445	215	7.35	288	7	1.2	31.6	0.0072	0.635	0.082	36	11	0.3
W16	2014-04-03 8:05			173.9	7.44			0.7	35.8						
W16	2014-04-08 11:30	155	403	127.9	7.51	257	5.7	1.1	27.2	0.0067	1.1	0.095	33.3	10	0.29
W16	2014-04-16 13:50	109	293	155	7.51	170	24.1	0.8	32.4	0.0081	1.23	0.19	23	6.4	0.22
W16	2014-04-21 16:10	25	60.7	240.7	7.9	50	1	0.2	55.6	0.005	0.121	0.034	3.07	1.5	0.11
W16	2014-05-02 15:40	13.5	36.2	149.6	9.15	20	1.7	2.5	45.6	0.005	0.12	0.02	0.93	0.5	0.06
W16	2014-05-06 8:20	36.1	110		8.1	96	3.6	4.3		0.0159	1.05	0.23	11.2	2.1	0.12
W16	2014-05-17 9:20	73.9	244	131.6	7.24	170	9.2	11.5	83.1	0.0375	2.15	0.1	30.8	3.2	0.22
W16	2014-05-23 13:15	92.2	305	147.9	7.37	208	12.9	9.8	77.9	0.0347	2.54	0.14	41.6	4.6	0.26
W16	2014-05-27 10:30			122.9	7.56			11.6	95.4						
W16	2014-05-28 15:50	97.2	319	141.6	8.35	238	14.8	13.4	86.2	0.0298	2.71	0.099	44.4	4.8	0.29
W16	2014-05-29 8:35			111.3	8.34			12.3	91.2						
W16	2014-05-30 8:20			118.3	8.42			13.4	89.8						
W16	2014-05-31 9:05			119.1	8.42			14	93.2						
W16	2014-06-05 8:45	114	368	177.4	8.44	248	23.8	13.3	98.6	0.0265	2.71	0.013	52	4.8	0.32
W16	2014-06-10 11:20	124	390	167	8.94	262	17.6	15.8	100.7	0.0208	2.43	0.027	56	5	0.34
W16	2014-06-11 1:45														
W16	2014-06-17 8:45	131	421	125.8	8.86	328	11.1	15.4		0.0228	2.78	0.045	67.5	5.3	0.38
W16	2014-06-24 5:45	132	461	123.7	8.91	288	6.9	15.3	93.1	0.0377	3.56	0.057	77	5.7	0.44
W16	2014-06-30 22:45	123	444	136.5	9.09	296	5.9	17.9	98.9	0.0414	3.25	0.15	83.4	6.3	0.44
W16	2014-07-09 13:40	122	466	100.4	9.21	270	6.2	18.2	88.2	0.0505	3.72	0.059	90.4	6.5	0.49
W16	2014-07-15 15:40	127	474	141.8	9.06	296	6.3	18.1	100.7	0.0572	3.85	0.052	94.4	6.8	0.5
W16	2014-07-21 11:25	129	489	173.9	9.43	304	6.2	16.6	96.9	0.0548	4	0.046	93.7	6.8	0.51
W16	2014-07-31 11:30	133	501	130.4	8.76	302	2	16.4	90.1	0.0454	3.86	0.053	96.8	6.6	0.49
W16	2014-08-06 9:35	129	507	190.6	8.43	380	1.3	16.7	61.7	0.0433	3.52	0.092	104	7	0.51
W16	2014-08-14 9:50	141	516	115.6	8.22	302	17.1	15.5	64.1	0.0426	3.67	0.13	99.7	6.6	0.5
W16	2014-08-18 10:00	143	518	130.5	8.22	378	7	14.8	73.3	0.0413	3.38	0.1	98.2	6.4	0.47
W16	2014-08-26 15:35	139	514	155.5	8.36	360	11.3	13.8	89.6	0.0441	3.57	0.046	102	6.7	0.49
W16	2014-09-04 11:15	146	508	142.7	8.13	312	2.5	10.7	82.2	0.0394	3.12	0.35	96.7	6.2	0.47
W16	2014-09-04 16:15	147	517			318	2			0.0403	3.23	0.082	99.8	6.5	0.47
W16	2014-09-05 11:15														
W16	2014-09-12 10:15	141	499		8.1	384	3.8	9.4	77.2	0.0369	3.8	0.069	93.1	6.3	0.44
W16	2014-09-15 10:40	141	500	142.5	8.15	306	4.2	10.1	67.1	0.0386	3.24	0.11	89.9	6.2	0.46
W16	2014-09-25 8:50	146	505	153.2	7.97	314	2.3	7.5	65.1	0.0331	3.22	0.077	99.6	6.3	0.45
W16	2014-10-01 13:45	143	499	147.3	7.85	396	3.2	5.7	89	0.0286	3.12	0.095	93.2	6.7	0.45
W16	2014-10-08 15:10	139	492	174.9	7.98	326	7.8	3.2	81.9	0.0288	3.08	0.093	88.3	6.4	0.4
W16	2014-10-13 14:10	134	485	143.7	8.05	313	2.1	2.8	76.3	0.0303	3.15	0.097	85.9	6.6	0.39
W16	2014-10-20 11:30	142	483	209.8	8.01	316	2.5	1.5	88.1	0.0281	3.27	0.07	111	6.7	0.42
W16	2014-10-28 11:00	140	485	156.7	8.09	272	2.4	0.1	89.9	0.0309	3.51	0.073	87.3	7.1	0.44
W16	2014-11-05 15:15	123	438	202.9	7.89	272	24.9	-1.2	89.4	0.0319	3.52	0.046	82.7	7.8	0.4
W16	2014-11-10 10:15	122	442	179.4	7.88	266	5.9	-1.1	91.4	0.0365	3.79	0.092	76.2	7.1	0.42
W16	2014-12-18 14:00	71.1	304	149.1	7.72	174	4.6	-0.9	73.4	0.0672	3.48	0.21	54.2	6.5	0.27
W16	2014-12-22 13:45	71.3	305	129.3	7.74	174	2.1	-0.1	57.1	0.0857	3.87	0.16	52.4	5.7	0.26
W16	2015-01-02 11:45	44.9	188	124.8	7.91	96	2.7	-1.1	83	0.295	2.6	0.17	25.1	4.3	0.13
W16	2015-01-06 10:15	76.2	331	115.2	7.89	184		0.2	74.9	0.254	3.99	0.21	53.5	6.6	0.27
W16	2015-01-13 10:30	94.8	381	231.9	7.76	228	3.6	-1.3	61.3	0.133	3.55	0.16	65	6.9	0.33
W16	2015-01-21 14:35	108	406	138.6	8.08	236	1.1	-0.7	68.1	0.12	3.92	0.14	72.8	7.1	0.34
W16	2015-01-29 13:15	85.1	310	119.2	8.71	170	5.6	-0.8	71.8	0.0683	2.79	0.15	42.3	7.1	0.19
W16	2015-02-04 10:30	112	365	232.3	7.5	192	1.4	3	74	0.059	2.54	0.17	48.4	7.6	0.22
W16	2015-02-09 13:35	93.3	341	195.4	8.05	202	2.8	1.8	117.6	0.0629	2.63	0.16	52.5	8.1	0.22
W16	2015-02-18 14:55	93.9	336	130.4	7.77	188	3.7	1.4	72.1	0.0734	2.29	0.25	45	9.6	0.2
W16	2015-02-26 9:40	77	281	139.9	8.08	136	3.2	0.1	120.9	0.0846	1.71	0.28	38	9.1	0.13
W16	2015-03-03 8:30	75.7	283	121.1	8.39	156	12	0.3	79.5	0.123	1.67	0.29	43.5	10	0.15
W16	2015-03-09 10:50	88.9	315	185.9	8.09	170	4.2	0.5	79.2	0.122	1.82	0.24	40.5	8.9	0.16
W16	2015-03-17 16:00	96.6	355	205.5	7.63	210	2.5	0.2	90.2	0.11	2.41	0.22	50.7	8.9	0.22
W16	2015-03-25 16:00	97.9	363	165.3	7.55	194	8.7	0.3	70.6	0.118	2.61	0.24	50.5	9.4	0.23
W16	2015-03-29 7:00														
W16	2015-03-30 11:20	73.4	284	180	7.73	168	15	0	73.5	0.123	2.22	0.22	38.1	8.6	0.18
W16	2015-03-31 8:20			184.8	7.8			0	77.9						
W16	2015-04-01 8:50			216.9	7.75			0	76.9						
W16	2015-04-02 8:20			199.2	7.68			0.7	61.7						
W16	2015-04-03 7:40			155.4	7.87			0	90.5						
W16	2015-04-06 9:00	110	379	149	7.63	202	13.9	0.1	63.8	0.0576	2.44	0.14	58.6	7.7	0.27
W16	2015-04-07 7:30			175.7	7.6			0.8	59.4						
W16	2015-04-21 15:10	67.6	234	135.8	7.41	130	2.6	1.2	67.5	0.0758	2.1	0.084	29.3	5.8	0.16
W16	2015-04-29 15:15	56.3	176	135.2	7.48	110	4	3	57.3	0.0191	1.22	0.065	18	3.8	0.15
W16	2015-05-06 15:30	94.2	303	153	7.22	198	4.5	5.7	70.5	0.036	1.66	0.054	39	5.7	0.23
W16	2015-05-12 14:55	97.6	296	143.3	7.87	196	6.1	10.8	112.2	0.0514	1.63	0.044	31.4	5.7	0.2
W16	2015-05-18 10:30	99.3	298	114.9	8.12	198	17.9	15.4	97.1	0.0509	1.52	0.034	32.4	5.9	0.22
W16	2015-05-28 17:15	94.5	268	114.5	8.91	168	9.6	19.3	87.5	0.0565	1.34	0.035	24.6	5	0.17
W16	2015-06-04 9:35	90.3	250	92.6	8.72	114	5	14.4	83.7	0.0342	1.22	0.041	21.5	4.6	0.16
W16	2015-06-09 16:05	89.7	255	115.8	8.64	158	1	15.2	87.2	0.0384	1.24	0.034	22.6	4.7	0.16
W16	2015-06-15 14:35	102	276	100.1	8.78	172	5.5	17.9	96.5	0.0317	1.18	0.04	25.9	4.9	0.17
W16	2015-06-22 16:20	108	283	120	8.44	176	5.6	20.2	89.5	0.0288	1.03	0.061	26.5	5.5	0.2

Station	Date / Time	Dissolved Elements																			
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W16	2013-07-31 16:00	0.00002	0.0132	0.00047	0.0668	0.05	0.0001	0.001	39.2	0.00001	0.0005	0.001	0.0235	0.0787	0.00001	3.02	0.005	11.5	0.0119	0.0048	10.7
W16	2013-08-08 10:00	0.00002	0.0093	0.00052	0.0681	0.05	0.0001	0.001	36.7	0.00001	0.0005	0.001	0.0213	0.0662	0.00001	2.91	0.005	12.1	0.009	0.0047	10.3
W16	2013-08-15 10:20	0.00002	0.0115	0.00054	0.0708	0.05	0.0001	0.001	43.9	0.00001	0.0005	0.001	0.0211	0.0678	0.00001	2.92	0.005	12.3	0.014	0.0049	10.8
W16	2013-08-19 15:20	0.00002	0.0051	0.00056	0.0716	0.05	0.0001	0.001	42	0.000011	0.0005	0.001	0.0205	0.0643	0.00001	3.01	0.005	13	0.0243	0.0046	11.5
W16	2013-08-26 10:05	0.00002	0.0039	0.00052	0.0746	0.05	0.0001	0.001	42.7	0.00001	0.0005	0.001	0.019	0.0657	0.00001	2.93	0.005	13.2	0.035	0.005	11
W16	2013-09-02 14:15	0.00002	0.0037	0.00053	0.0713	0.05	0.0001	0.001	42.3	0.00001	0.0005	0.001	0.0209	0.0617	0.00001	2.9	0.005	13.5	0.0256	0.0047	11.9
W16	2013-09-12 12:55	0.00002	0.0043	0.00055	0.0737	0.05	0.0001	0.001	45.9	0.00001	0.0005	0.001	0.0191	0.0563	0.00001	3.06	0.005	13.9	0.0062	0.0047	12.2
W16	2013-09-17 13:30	0.00002	0.0053	0.00047	0.0685	0.05	0.0001	0.001	43.8	0.00001	0.0005	0.001	0.0176	0.0618	0.00001	2.76	0.005	13.2	0.0112	0.0045	10.9
W16	2013-09-28 14:55	0.00002	0.0049	0.00045	0.0663	0.05	0.0001	0.001	42.5	0.00001	0.0005	0.001	0.0164	0.0478	0.00001	2.67	0.005	13.1	0.0856	0.0044	11
W16	2013-10-03 16:00	0.00002	0.0051	0.00046	0.0704	0.05	0.0001	0.001	44.9	0.00001	0.0005	0.001	0.0156	0.044	0.00001	2.75	0.005	13.6	0.0949	0.0047	11.9
W16	2013-10-09 14:00	0.00002	0.005	0.00045	0.0696	0.05	0.0001	0.001	46.3	0.00001	0.0005	0.001	0.0155	0.0497	0.00001	2.82	0.005	13.7	0.131	0.0036	11.4
W16	2013-10-16 9:20	0.00002	0.0078	0.00044	0.0707	0.05	0.0001	0.001	42.7	0.00001	0.0005	0.001	0.0152	0.0602	0.00001	2.75	0.005	13.6	0.205	0.0043	11.2
W16	2013-10-22 14:45	0.00002	0.0068	0.00043	0.0718	0.05	0.0001	0.001	49	0.00001	0.0005	0.001	0.0163	0.0639	0.00001	3.08	0.005	14.5	0.197	0.0044	12.3
W16	2013-10-28 17:05	0.00002	0.0058	0.00052	0.0704	0.05	0.0001	0.001	47.4	0.00001	0.0005	0.001	0.0165	0.0631	0.00001	2.92	0.005	14.5	0.191	0.0042	12
W16	2013-11-07 13:30	0.00002	0.0053	0.00042	0.073	0.05	0.0001	0.001	46.8	0.00001	0.0005	0.001	0.0158	0.0582	0.00001	2.86	0.005	13.6	0.166	0.0041	11.1
W16	2013-11-14 10:45	0.00002	0.0055	0.00048	0.0755	0.05	0.0001	0.001	46.9	0.00001	0.0005	0.001	0.0166	0.0612	0.00001	2.82	0.005	14.1	0.196	0.0045	11.5
W16	2013-11-18 11:05	0.00002	0.0047	0.00046	0.0728	0.05	0.0001	0.001	52.8	0.00001	0.0005	0.001	0.0151	0.0563	0.00001	3.21	0.005	16.3	0.193	0.0044	13.6
W16	2013-12-01 11:40	0.000022	0.0038	0.00048	0.0717	0.05	0.0001	0.001	48.7	0.00001	0.0005	0.001	0.018	0.0537	0.00001	2.94	0.005	14.4	0.175	0.0042	12.7
W16	2013-12-05 15:45	0.00002	0.0061	0.00045	0.0759	0.05	0.0001	0.001	49.9	0.00001	0.0005	0.001	0.0152	0.057	0.00001	2.99	0.005	14.1	0.172	0.0044	12.1
W16	2013-12-09 14:50	0.00002	0.0039	0.00046	0.0735	0.05	0.0001	0.001	48.4	0.00001	0.0005	0.001	0.0147	0.0543	0.00001	2.97	0.005	14.1	0.151	0.0043	11.8
W16	2013-12-16 11:45	0.00002	0.0039	0.00044	0.0733	0.05	0.0001	0.001	51.5	0.00001	0.0005	0.001	0.0179	0.0554	0.00001	2.95	0.005	14.7	0.134	0.0046	12.3
W16	2013-12-23 13:40	0.00002	0.0043	0.00051	0.0839	0.05	0.0001	0.001	56.7	0.00001	0.0005	0.001	0.0246	0.0477	0.00001	3.62	0.005	17.4	0.157	0.0053	14.5
W16	2014-01-02 15:30	0.00002	0.0051	0.00042	0.0779	0.05	0.0001	0.001	46.7	0.00001	0.0005	0.001	0.0128	0.129	0.00001	2.65	0.005	12.4	0.32	0.0037	9.37
W16	2014-01-07 10:40	0.00002	0.0046	0.00044	0.0744	0.05	0.0001	0.001	49.5	0.00001	0.0005	0.001	0.0152	0.056	0.00001	3.19	0.005	16.1	0.0938	0.0046	13.3
W16	2014-01-18 14:30	0.00002	0.0034	0.00042	0.0734	0.05	0.0001	0.001	47	0.00001	0.0005	0.001	0.0135	0.073	0.00001	2.66	0.005	13.7	0.162	0.004	10.9
W16	2014-01-21 13:30	0.00002	0.0036	0.00043	0.0741	0.05	0.0001	0.001	48.6	0.00001	0.0005	0.001	0.0143	0.0688	0.00001	3.04	0.005	15.5	0.132	0.0042	12.8
W16	2014-01-27 14:40	0.00002	0.0064	0.00041	0.0712	0.05	0.0001	0.001	48.9	0.00001	0.0005	0.001	0.0151	0.071	0.00001	3	0.005	16	0.135	0.0041	13
W16	2014-02-03 11:30	0.00002	0.0037	0.00043	0.074	0.05	0.0001	0.001	50.5	0.00001	0.0005	0.001	0.0145	0.0474	0.00001	3.13	0.005	15.8	0.0938	0.0043	12.9
W16	2014-02-13 17:10	0.00002	0.0034	0.00042	0.0741	0.05	0.0001	0.001	46.8	0.00001	0.0005	0.001	0.0145	0.0455		2.84	0.005	15.4	0.104	0.0046	13
W16	2014-02-18 16:30	0.00002	0.0033	0.00043	0.071	0.05	0.0001	0.001	48.9	0.00001	0.0005	0.001	0.0136	0.0382	0.00001	2.88	0.005	15.3	0.0846	0.0046	12.7
W16	2014-02-27 9:10	0.00002	0.0035	0.0004	0.0729	0.05	0.0001	0.001	53.4	0.00001	0.0005	0.001	0.0135	0.0359	0.00001	2.91	0.005	16.3	0.0527	0.0043	12.7
W16	2014-03-06 8:45	0.00002	0.0032	0.0004	0.0712	0.05	0.0001	0.001	50.9	0.00001	0.0005	0.001	0.0133	0.0393	0.00001	3.24	0.005	16.7	0.0234	0.0043	13.5
W16	2014-03-10 15:20	0.00002	0.0155	0.00045	0.0743	0.05	0.0001	0.001	51.2	0.000013	0.0005	0.001	0.0152	0.0459	0.00001	3.08	0.005	16	0.0071	0.0046	12.7
W16	2014-03-21 16:00	0.00002	0.0065	0.00042	0.0818	0.05	0.0001	0.001	51	0.000033	0.0005	0.001	0.0225	0.0189	0.00001	3.5	0.005	15.3	0.0438	0.0045	12.3
W16	2014-03-27 11:00	0.00002	0.0038	0.0004	0.0741	0.05	0.0001	0.001	51	0.00001	0.0005	0.001	0.0135	0.0552	0.000014	3.42	0.005	16.5	0.0088	0.0044	13.3
W16	2014-03-28 9:45																				
W16	2014-03-29 9:00																				
W16	2014-03-30 10:00																				
W16	2014-03-31 8:00																				
W16	2014-04-01 8:45																				
W16	2014-04-02 9:15																				
W16	2014-04-02 15:00	0.00002	0.0066	0.00042	0.0727	0.05	0.0001	0.001	53.7	0.000015	0.0005	0.001	0.0153	0.0382	0.00001	3.15	0.005	16.7	0.0063	0.0042	13.5
W16	2014-04-03 8:05																				
W16	2014-04-08 11:30	0.00002	0.0044	0.00032	0.0596	0.05	0.0001	0.001	48.1	0.000014	0.0005	0.001	0.0116	0.0319	0.00001	3.47	0.005	13.8	0.0189	0.0046	13
W16	2014-04-16 13:50	0.00002	0.0054	0.00025	0.0475	0.05	0.0001	0.001	31.2	0.000029	0.0005	0.001	0.0132	0.0606	0.00001	3.32	0.005	9.47	0.123	0.0044	13.3
W16	2014-04-21 16:10	0.00002	0.0047	0.0001	0.0166	0.05	0.0001	0.001	7.75	0.000031	0.0005	0.001	0.0112	0.0103	0.00001	0.447	0.005	1.45	0.0212	0.001	1.64
W16	2014-05-02 15:40	0.00002	0.013	0.0001	0.0087	0.05	0.0001	0.001	4.21	0.000015	0.0005	0.001	0.01	0.011	0.00001	0.348	0.005	0.665	0.012	0.001	0.75
W16	2014-05-06 8:20	0.00002	0.0418	0.0002	0.0269	0.05	0.0001	0.001	12.3	0.000024	0.0005	0.001	0.0255	0.119	0.00005	1.78	0.005	3.41	0.0538	0.0019	4.28
W16	2014-05-17 9:20	0.00002	0.0261	0.0004	0.0505	0.05	0.0001	0.001	26.2	0.000024	0.0005	0.001	0.0274	0.163	0.00001	3.65	0.005	7.88	0.15	0.004	9.38
W16	2014-05-23 13:15	0.00002	0.0214	0.00051	0.0627	0.05	0.0001	0.001	32.2	0.000017	0.0005	0.001	0.0262	0.189	0.00001	4.37	0.005	9.57	0.226	0.0054	11.1
W16	2014-05-27 10:30																				
W16	2014-05-28 15:50	0.00002	0.02	0.00055	0.0683	0.05	0.0001	0.001	34.8	0.000018	0.0005	0.001	0.0303	0.208	0.00001	4.42	0.005	10.9	0.258	0.0062	12.1
W16	2014-05-29 8:35																				
W16	2014-05-30 8:20																				
W16	2014-05-31 9:05																				
W16	2014-06-05 8:45	0.00002	0.0075	0.00064	0.0708	0.05	0.0001	0.001	43.5	0.000016	0.0005	0.001	0.0278	0.172	0.00001	3.94	0.005	12.3	0.147	0.0059	11.2
W16	2014-06-10 11:20	0.00002	0.0058	0.00066	0.0739	0.05	0.0001	0.001	45	0.000012	0.0005	0.001	0.0262	0.131	0.00001	4.24	0.005	13.3	0.12	0.0059	12.3
W16	2014-06-11 1:45																				
W16	2014-06-17 8:45	0.00002	0.0056	0.00057	0.0716	0.05	0.0001	0.001	49.2	0.00001	0.0005	0.001	0.0217	0.0745	0.00001	4.93	0.005	15.1	0.0802	0.0073	13.3
W16	2014-06-24 5:45	0.00002	0.0102	0.00054	0.0701	0.05	0.0001	0.001	50	0.000014	0.0005	0.001	0.0186	0.078	0.00001	6.7	0.005	15.1	0.0931	0.0102	16.6
W16	2014-06-30 22:45	0.00002	0.0117	0.0005	0.0638	0.054	0.0001	0.001	49.6	0.00001	0.0005	0.001	0.0166	0.0671	0.00001	7.21	0.005	15.8	0.0771	0.011	18.1
W16	2014-07-09 13:40	0.00002	0.0114	0.00049	0.0641	0.063	0.0001	0.001	48.2	0.00001	0.0005	0.001	0.0133	0.067	0.00001	8.28	0.005	15.3	0.0631	0.0118	19.4
W16	2014-07-15 15:40	0.00002	0.0142	0.00049	0.0616	0.075	0.0001	0.001	51.4	0.00001	0.0005	0.001	0.0139	0.066	0.00001	8.5	0.005	16.2	0.053	0.0132	20.5
W16	2014-07-21 11:25	0.00002	0.0146	0.0005	0.0651	0.069	0.0001	0.001	53.3	0.00001	0.0005	0.001	0.014	0.0432	0.00001	8.75	0.005	16.5	0.031	0.0129	20.3
W16	2014-07-31 11:30	0.00002	0.0167	0.0006	0.0655	0.065	0.0001	0.001	50.9	0.00001	0.0005	0.001	0.0139	0.0434	0.00001	8.1	0.005	17	0.0107	0.0125	20.1
W16	2014-08-06 9:35	0.00002	0.0138	0.00058	0.0638	0.065	0.0001	0.001	54.7	0.00001	0.0005	0.001	0.0144	0.0373	0.00001	7.45	0.005	16.6	0.0087	0.0122	19.5
W16	2014-08-14 9:50	0.00002	0.0085	0.00051	0.0625	0.053	0.0001	0.001	56.7	0.00001	0.0005	0.001	0.0136	0.0346	0.00001	7.7	0.005	17.2	0.0138	0.0118	19.5
W16	2014-08-18 10:00	0.000025	0.0084	0.0006	0.0776	0.067	0.0001	0.001	52.9	0.00001	0.0005	0.001	0.0154	0.0351	0.00001	7.51	0.005	19	0.0231	0.0111	22.4
W16	2014-08-26 15:35	0.00002	0.003	0.00053	0.0697	0.055	0.0001	0.001	54.5	0.00001	0.0005	0.001	0.0132	0.0213	0.00001	7.45	0.005	17.8	0.0222	0.0114	18.8
W16	2014-09-04 11:15	0.00002	0.0095	0.00056	0.0729	0.053	0.0001	0.001	56.8	0.00001	0.0005	0.001	0.013	0.0214	0.00001	6.79	0.005	17.7	0.0154	0.0097	18.2
W16	2014-09-04 16:15	0.00002	0.003	0.00049	0.0691	0.059	0.0001	0.001	59.9	0.00001	0.0005	0.001	0.0122	0.0161	0.00001	6.8	0.005	18	0.0133	0.01	19.7
W16	2014-09-05 11:15																				
W16	2014-09-12 10:15	0.00002	0.0036	0.00049	0.0676	0.052	0.0001	0.001	58.4	0.00001	0.0005	0.001	0.0127	0.0187	0.00001	6.94	0.005	17.1	0.0143	0.0094	17.9
W16	2014-09-15 10:40	0.00002	0.0061	0.00044	0.0657	0.059	0.0001	0.001	53.2	0.00001	0.0005	0.001	0.0113	0.0116	0.00001	7.11	0.005	18.2	0.0088	0.0102	20.1
W16	2014-09-25 8:50	0.00002	0.0031	0.00044	0.0662	0.059	0.0001	0.001	55.2	0.00001	0.0005	0.001	0.0106	0.011	0.00001	6.9	0.005	16.6	0.0422	0.0092	17
W16	2014-10-01 13:45	0.00002	0.0086	0.00041	0.0685	0.054	0.0001	0.001	52.4	0.00001	0.0005	0.001	0.0113	0.0442	0.00001	6.72	0.005	16.9	0.167	0.0092	17.7
W16	2014-10-08 15:10	0.00002	0.0031	0.0004	0.065	0.051	0.0001	0.001	52.5	0.00001	0.0005	0.001	0.0121	0.0123	0.00001	6.15	0.005	16	0.0747	0.009	16.6
W16	2014-10-13 14:10	0.00002	0.005	0.00038	0.0627	0.054	0.0001	0.001	54.1	0.00001	0.0005	0.001	0.00978	0.0107	0.00001	7.02	0.005	15.9	0.0301	0.0088	17.5
W16	2014-10-20 11:30	0.00002	0.0044	0.00044	0.064	0.054	0.0001	0.001	58.6	0.00001	0.0005	0.001	0.00878	0.0105	0.00001	7.52	0.005	17.2	0.0037	0.0094	18.9
W16	2014-10-28 11:00	0.00002	0.0035	0.0004	0.0641	0.059	0.0001	0.001	53.2	0.00001	0.0005	0.001	0.0112	0.0066	0.00001	6.81	0.005	16.6	0.002	0.0097	18.5
W16	2014-11-05 15:15	0.00002	0.0056	0.00032	0.0588	0.063	0.0001	0.001	44.7	0.00001	0.0005	0.001	0.00704	0.0072	0.00001	7.2	0.005	14.7	0.0048	0.0093	18
W16	2014-11-10 10:15	0.00002	0.0068	0.00032	0.0597	0.065	0.0001	0.001	48.7	0.00001	0.0005	0.001	0.00762	0.0085	0.00001	7.44	0.005	13.9	0.006	0.0099	18.2
W16	2014-12-18 14:00	0.00002	0.0052	0.00023	0.0369	0.083	0.0001	0.001	27	0.00001	0.0005	0.001	0.00587	0.011	0.00001	6.89	0.005	9.79	0.0144	0.0091	16.4
W16	2014-12-22 13:45	0.00002	0.0055	0.00025	0.0401	0.091	0.0001	0.001	29.5	0.00001	0.0005	0.001	0.00507	0.0078	0.00001	7.55	0.005	9.42	0.0138	0.0097	16
W16	2015-01-02 11:45	0.00002	0.0066	0.00011	0.0129	0.082	0.0001	0.001	10.3	0.00001	0.0005	0.001	0.00158	0.0091	0.00001	4.53	0.005	3.52	0.0185	0.0058	20.7
W16	2015-01-06 10:15	0.00002	0.0059	0.00024	0.0337	0.095	0.0001	0.001	26.3	0.00001	0.0005	0.001	0.00369	0.0438	0.00001	6.81	0.005	8.22	0.0239	0.0099	19.8
W16	2015-01-13 10:30	0.00002	0.0056	0.00027	0.0511	0.085	0.0001	0.001	35.8	0.00001	0.0005	0.001	0.00532	0.0214	0.00001	6.75	0.005	11.7	0.0226	0.0107	19.2
W16	2015-01-21 14:35	0.00002	0.0043	0.00031	0.0526	0.08	0.0001	0.001	39.5	0.00001	0.0005	0.001	0.00513	0.0158	0.00001	7.25	0.005	12.2	0.0201	0.0094	18.7
W16	2015-01-29 13:15	0.00002	0.0048	0.00018	0.0273	0.094	0.0001	0.001	20.6	0.00001	0.0005	0.001	0.00355	0.0155	0.00001	5.63	0.005	7.28	0.0294	0.0076	29.3
W16	2015-02-04 10:30	0.00002	0.0199	0.00016	0.027	0.097	0.0001	0.001	21.5	0.000034	0.0005	0.001	0.0044	0.0182	0.00001	5.7	0.005	7.11	0.0358	0.006	39
W16	2015-02-09 13:35	0.00002	0.0051	0.00021	0.0315	0.095	0.0001	0.001	24.4	0.00001	0.0005	0.001	0.00431	0.0083	0.00001	6.02	0.005	7.99	0.0352	0.0085	28.7
W16	2015-02-18 14:55	0.00002	0.0057	0.00016	0.0251	0.105	0.0001	0.001	19.2	0.00001	0.0005	0.001	0.00357	0.0113	0.00001	6.43	0.005	6.57	0.0479	0.0089	36.3
W16	2015-02-26 9:40	0.00002	0.0105	0.00013	0.0189	0.113	0.0001	0.001	12.5	0.00001	0.0005	0.001	0.00382	0.0124	0.00001	6.34	0.005	5.02	0.0539	0.0099	34.5
W16	2015-03-03 8:30	0.00002	0.0246	0.00014	0.0174	0.117	0.0001	0.001	13.1	0.000013	0.0005	0.001	0.00709	0.0476	0.00001	6.16	0.005	5.04	0.0596	0.008	31.4
W16	2015-03-09 10:50	0.00002	0.006	0.00019	0.0211	0.114	0.0001	0.001	16.6	0.00001	0.0005	0.001	0.00254	0.0106	0.00001	5.82	0.005	5.7	0.053	0.0086	32.7
W16	2015-03-17 16:00	0.00002	0.0069	0.00018	0.0346	0.109	0.0001	0.001	23.3	0.00001	0.0005	0.001	0.00326	0.011	0.00001	6.22	0.005	7.8	0.0511	0.009	31.6
W16	2015-03-25 16:00	0.00002	0.0072	0.00021	0.0337	0.112	0.0001	0.001	25.9	0.00001	0.0005	0.001	0.00459	0.0113	0.00001	6.56	0.005	8.33	0.0546	0.0095	32.9
W16	2015-03-29 7:00																				
W16	2015-03-30 11:20	0.00002	0.008	0.00022	0.0277	0.12	0.0001	0.001	17.2	0.00001	0.0005	0.001	0.00824	0.0113	0.00001	5.59	0.005	5.88	0.0513	0.0091	27.9
W16	2015-03-31 8:20																				
W16	2015-04-01 8:50																				
W16	2015-04-02 8:20																				
W16	2015-04-03 7:40																				
W16	2015-04-06 9:00	0.00002	0.0058	0.00025	0.0454	0.075	0.0001	0.001	33.5	0.00001	0.0005	0.001	0.0102	0.0079	0.00001	5.57	0.005	10.8	0.0404	0.0073	24.3
W16	2015-04-07 7:30																				
W16	2015-04-21 15:10	0.00002	0.0102	0.00019	0.0317	0.05	0.0001	0.001	21.7	0.00001	0.0005	0.001	0.016	0.048	0.00001	3.2	0.005	6.26	0.0547	0.0037	13.1
W16	2015-04-29 15:15	0.00002	0.0134	0.00017	0.0315	0.05	0.0001	0.001	17.5	0.000012	0.0005	0.001	0.0174	0.0478	0.00001	2.21	0.005	4.93	0.0577	0.0019	6.46
W16	2015-05-06 15:30	0.00002	0.0142	0.0003	0.0497	0.05	0.0001	0.001	34.3	0.000012	0.0005	0.001	0.0192	0.132	0.00001	3.48	0.005	10.1	0.0923	0.0038	12.1
W16	2015-05-12 14:55	0.000028	0.0339	0.00035	0.0483	0.05	0.0001	0.001	31.8	0.000014	0.0005	0.001	0.0246	0.153	0.00001	3.38	0.005	10.1	0.0906	0.0037	13.4
W16	2015-05-18 10:30	0.00002	0.0103	0.00042	0.0462	0.05	0.0001	0.001	32	0.000012	0.0005	0.001	0.0211	0.191	0.00001	2.93	0.005	9.57	0.11	0.0034	12.8
W16	2015-05-28 17:15	0.00002	0.0414	0.00047	0.0413	0.061	0.0001	0.001	23.9	0.00001	0.0005	0.001	0.0166	0.17	0.00001	2.6	0.005	7.93	0.131	0.0032	13.2
W16	2015-06-04 9:35	0.00002	0.0227	0.00043	0.0381	0.066	0.0001	0.001	25.1	0.00001	0.0005	0.001	0.0136	0.131	0.00001	2.8	0.005	8.1	0.0916	0.0034	13
W16	2015-06-09 16:05	0.00002	0.0209	0.00043	0.0416	0.058	0.0001	0.001	26.2	0.00001	0.0005	0.001	0.0138	0.123	0.00001	2.65	0.005	8.32	0.123	0.0034	13.8
W16	2015-06-15 14:35	0.00002	0.0216	0.00048	0.0439	0.06	0.0001	0.001	28.3	0.000012	0.0005	0.001	0.0151	0.15	0.00001	2.83	0.005	8.83	0.144	0.0035	13.5
W16	2015-06-22 16:20	0.00002	0.0279	0.00054	0.0481	0.062	0.0001	0.001	30.5	0.00001	0.0005	0.001	0.0141	0.214	0.00001	3.05	0.005	9.21	0.149	0.004	13.3

Station	Date / Time	Dissolved Elements (cont.)													
		Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W16	2013-07-31 16:00	0.0011	0.0002	0.0005	10.1	0.00045	2.53	0.005	0.517	0.005	0.00005	0.00091	0.005	0.005	0.0005
W16	2013-08-08 10:00	0.0013	0.0002	0.0005	8.8	0.00045	2.73	0.005	0.519	0.005	0.00005	0.0008	0.005	0.005	0.0005
W16	2013-08-15 10:20	0.0011	0.0002	0.0005	9.8	0.00048	3.32	0.005	0.524	0.005	0.00005	0.00081	0.005	0.005	0.0005
W16	2013-08-19 15:20	0.0011	0.0002	0.0005	10.2	0.00069	3.02	0.005	0.543	0.005	0.00005	0.00102	0.005	0.005	0.0005
W16	2013-08-26 10:05	0.0011	0.0002	0.0005	10.8	0.00055	3.32	0.005	0.536	0.005	0.00005	0.00092	0.005	0.005	0.0005
W16	2013-09-02 14:15	0.0013	0.0002	0.0005	10.2	0.00057	3.18	0.005	0.503	0.005	0.00005	0.0009	0.005	0.005	0.0005
W16	2013-09-12 12:55	0.0012	0.0002	0.0005	11.6	0.00053	3.7	0.005	0.534	0.005	0.00005	0.0009	0.005	0.005	0.0005
W16	2013-09-17 13:30	0.0011	0.0002	0.0005	9.5	0.00052	3.55	0.005	0.5	0.005	0.00005	0.00087	0.005	0.005	0.0005
W16	2013-09-28 14:55	0.0012	0.0002	0.0005	10.1	0.00051	3.68	0.005	0.493	0.005	0.00005	0.00083	0.005	0.005	0.0005
W16	2013-10-03 16:00	0.0012	0.0002	0.0005	9	0.00051	3.86	0.005	0.502	0.005	0.00005	0.00091	0.005	0.005	0.0005
W16	2013-10-09 14:00	0.0011	0.0002	0.0005	10.2	0.00044	3.98	0.005	0.515	0.005	0.00005	0.00083	0.005	0.005	0.0005
W16	2013-10-16 9:20	0.0012	0.0002	0.0005	10	0.00046	3.9	0.005	0.514	0.005	0.00005	0.00089	0.005	0.005	0.0005
W16	2013-10-22 14:45	0.0012	0.0002	0.0005	11.3	0.00051	4.1	0.005	0.527	0.005	0.00005	0.00096	0.005	0.005	0.0005
W16	2013-10-28 17:05	0.0011	0.0002	0.0005	10.6	0.0004	4.35	0.005	0.519	0.005	0.00005	0.00095	0.005	0.005	0.0005
W16	2013-11-07 13:30	0.0012	0.0002	0.0005	10.2	0.00049	4.63	0.005	0.499	0.005	0.00005	0.00092	0.005	0.005	0.0005
W16	2013-11-14 10:45	0.0012	0.0002	0.0005	10	0.00053	4.17	0.005	0.557	0.005	0.00005	0.00098	0.005	0.005	0.0005
W16	2013-11-18 11:05	0.002	0.0002	0.0005	13.1	0.00055	4.5	0.005	0.559	0.005	0.00005	0.00098	0.005	0.005	0.0005
W16	2013-12-01 11:40	0.0011	0.0003	0.0005	9.1	0.0004	4.62	0.005	0.537	0.005	0.00005	0.00109	0.005	0.005	0.0005
W16	2013-12-05 15:45	0.0011	0.0002	0.0005	11.1	0.00056	4.76	0.005	0.54	0.005	0.00005	0.00103	0.005	0.005	0.0005
W16	2013-12-09 14:50	0.0012	0.0002	0.0005	11.3	0.0005	4.35	0.005	0.545	0.005	0.00005	0.00105	0.005	0.005	0.0005
W16	2013-12-16 11:45	0.0011	0.0002	0.0005	11.4	0.00053	4.9	0.005	0.545	0.005	0.00005	0.00112	0.005	0.005	0.0005
W16	2013-12-23 13:40	0.0013	0.0002	0.0005	13.4	0.00064	5.34	0.005	0.659	0.005	0.00005	0.00124	0.005	0.005	0.0005
W16	2014-01-02 15:30	0.001	0.0002	0.0005	7.1	0.00047	6.02	0.005	0.441	0.005	0.00005	0.00083	0.005	0.005	0.0005
W16	2014-01-07 10:40	0.0011	0.0002	0.0005	12.6	0.00049	4.7	0.005	0.576	0.005	0.00005	0.00124	0.005	0.005	0.0005
W16	2014-01-18 14:30	0.001	0.0002	0.0005	8.9	0.00047	4.71	0.005	0.501	0.005	0.00005	0.00104	0.005	0.005	0.0005
W16	2014-01-21 13:30	0.0011	0.0002	0.0005	10.8	0.00052	4.75	0.005	0.555	0.005	0.00005	0.00108	0.005	0.005	0.0005
W16	2014-01-27 14:40	0.0011	0.0002	0.0005	10.2	0.00047	4.81	0.005	0.536	0.005	0.00005	0.00106	0.005	0.007	0.0005
W16	2014-02-03 11:30	0.0011	0.0002	0.0005	11.8	0.00051	4.71	0.005	0.569	0.005	0.00005	0.00113	0.005	0.005	0.0005
W16	2014-02-13 17:10	0.0011	0.0002	0.0005	10.1	0.00066	3.96	0.005	0.569	0.005	0.00005	0.00115	0.005	0.005	0.0005
W16	2014-02-18 16:30	0.0011	0.0002	0.0005	10.8	0.00054	4.48	0.005	0.546	0.005	0.00005	0.00124	0.005	0.005	0.0005
W16	2014-02-27 9:10	0.0011	0.0002	0.0005	11.2	0.00048	4.84	0.005	0.543	0.005	0.00005	0.00127	0.005	0.005	0.0005
W16	2014-03-06 8:45	0.0011	0.0002	0.0005	11.8	0.00045	4.99	0.005	0.57	0.005	0.00005	0.00122	0.005	0.005	0.0005
W16	2014-03-10 15:20	0.0012	0.0002	0.0005	14.1	0.00055	4.65	0.005	0.556	0.005	0.00005	0.00125	0.005	0.0079	0.0005
W16	2014-03-21 16:00	0.001	0.0002	0.0005	8.7	0.00059	4.77	0.005	0.533	0.005	0.00005	0.00115	0.005	0.005	0.0005
W16	2014-03-27 11:00	0.0011	0.0002	0.0005	12	0.00046	5.1	0.005	0.588	0.005	0.00005	0.00123	0.005	0.005	0.0005
W16	2014-03-28 9:45														
W16	2014-03-29 9:00														
W16	2014-03-30 10:00														
W16	2014-03-31 8:00														
W16	2014-04-01 8:45														
W16	2014-04-02 9:15														
W16	2014-04-02 15:00	0.0012	0.0002	0.0005	12.2	0.00054	5.23	0.005	0.587	0.005	0.00005	0.00127	0.005	0.005	0.0005
W16	2014-04-03 8:05														
W16	2014-04-08 11:30	0.001	0.0002	0.0005	11.3	0.00053	4.31	0.005	0.599	0.005	0.00005	0.00104	0.005	0.005	0.0005
W16	2014-04-16 13:50	0.001	0.0002	0.0005	8	0.00056	2.93	0.005	0.538	0.005	0.00005	0.00061	0.005	0.005	0.0005
W16	2014-04-21 16:10	0.001	0.0002	0.0005	3	0.00018	0.929	0.005	0.0885	0.005	0.00005	0.00015	0.005	0.005	0.0005
W16	2014-05-02 15:40	0.001	0.0002	0.0005	3	0.0001	0.535	0.005	0.0485	0.005	0.00005	0.0001	0.005	0.005	0.0005
W16	2014-05-06 8:20	0.001	0.0002	0.0005	3.6	0.0004	1.49	0.005	0.26	0.005	0.00005	0.00017	0.005	0.005	0.0005
W16	2014-05-17 9:20	0.001	0.0002	0.0005	11.3	0.00081	2.31	0.005	0.613	0.005	0.00005	0.00055	0.005	0.005	0.0005
W16	2014-05-23 13:15	0.001	0.0002	0.0005	14	0.00074	2.88	0.005	0.814	0.005	0.00005	0.00063	0.005	0.005	0.0005
W16	2014-05-27 10:30														
W16	2014-05-28 15:50	0.0012	0.0002	0.0005	15.1	0.00087	3.04	0.005	0.862	0.005	0.00005	0.00075	0.005	0.005	0.0005
W16	2014-05-29 8:35														
W16	2014-05-30 8:20														
W16	2014-05-31 9:05														
W16	2014-06-05 8:45	0.0012	0.0002	0.0005	18.7	0.00085	2.43	0.005	0.903	0.005	0.00005	0.00105	0.005	0.005	0.0005
W16	2014-06-10 11:20	0.0012	0.0002	0.0005	20	0.00084	1.67	0.005	0.97	0.005	0.00005	0.00113	0.005	0.005	0.0005
W16	2014-06-11 1:45														
W16	2014-06-17 8:45	0.0012	0.0002	0.0005	24	0.00095	0.948	0.005	1.13	0.005	0.00005	0.00139	0.005	0.005	0.0005
W16	2014-06-24 5:45	0.0011	0.0002	0.0005	27.6	0.00111	0.728	0.005	1.51	0.005	0.00005	0.00137	0.005	0.005	0.0005
W16	2014-06-30 22:45	0.0011	0.0002	0.0005	30.4	0.00112	0.286	0.005	1.56	0.005	0.00005	0.00145	0.005	0.005	0.0005
W16	2014-07-09 13:40	0.001	0.0002	0.0005	32.7	0.00136	0.406	0.005	1.69	0.005	0.00005	0.00135	0.005	0.005	0.0005
W16	2014-07-15 15:40	0.001	0.0002	0.0005	35.3	0.00112	0.476	0.005	1.77	0.005	0.00005	0.00143	0.005	0.005	0.0005
W16	2014-07-21 11:25	0.001	0.0002	0.0005	31.8	0.00152	0.433	0.005	1.78	0.005	0.00005	0.00147	0.005	0.005	0.0005
W16	2014-07-31 11:30	0.001	0.0002	0.0005	44.6	0.00139	0.868	0.005	1.71	0.005	0.00005	0.00156	0.005	0.005	0.0005
W16	2014-08-06 9:35	0.001	0.0002	0.0005	37.3	0.0011	1.13	0.005	1.78	0.005	0.00005	0.00159	0.005	0.005	0.0005
W16	2014-08-14 9:50	0.001	0.0002	0.0005	36.2	0.00144	1.3	0.005	1.82	0.005	0.00005	0.0015	0.005	0.005	0.0005
W16	2014-08-18 10:00	0.001	0.0002	0.0005	31.8	0.0013	1.08	0.005	1.71	0.005	0.00005	0.00166	0.005	0.005	0.0005
W16	2014-08-26 15:35	0.001	0.0002	0.0005	35.4	0.00116	1.09	0.005	1.78	0.005	0.00005	0.00169	0.005	0.005	0.0005
W16	2014-09-04 11:15	0.001	0.0002	0.0005	35.6	0.00102	1.45	0.005	1.6	0.005	0.00005	0.00161	0.005	0.005	0.0005
W16	2014-09-04 16:15	0.001	0.0002	0.0005	34.2	0.00106	1.39	0.005	1.71	0.005	0.00005	0.00168	0.005	0.005	0.0005
W16	2014-09-05 11:15														
W16	2014-09-12 10:15	0.001	0.0002	0.0005	35.5	0.00109	1.54	0.005	1.52	0.005	0.00005	0.0016	0.005	0.005	0.0005
W16	2014-09-15 10:40	0.001	0.0002	0.0005	27.6	0.00091	1.52	0.005	1.59	0.005	0.00005	0.00145	0.005	0.005	0.0005
W16	2014-09-25 8:50	0.001	0.0002	0.0005	30.5	0.00092	1.49	0.005	1.55	0.005	0.00005	0.00158	0.005	0.005	0.0005
W16	2014-10-01 13:45	0.0011	0.0002	0.0005	28.7	0.00092	1.42	0.005	1.51	0.005	0.00005	0.00161	0.005	0.005	0.0005
W16	2014-10-08 15:10	0.001	0.0002	0.0005	29	0.00088	1.38	0.005	1.45	0.005	0.00005	0.00145	0.005	0.005	0.0005
W16	2014-10-13 14:10	0.001	0.0002	0.0005	30.8	0.00103	1.49	0.005	1.45	0.005	0.00005	0.00151	0.005	0.005	0.0005
W16	2014-10-20 11:30	0.001	0.0002	0.0005	30.4	0.00113	1.2	0.005	1.5	0.005	0.00005	0.00132	0.005	0.005	0.0005
W16	2014-10-28 11:00	0.001	0.0002	0.0005	28.9	0.00097	0.947	0.005	1.51	0.005	0.00005	0.00145	0.005	0.005	0.0005
W16	2014-11-05 15:15	0.001	0.0002	0.0005	26.2	0.00097	0.88	0.005	1.38	0.005	0.00005	0.00116	0.005	0.005	0.0005
W16	2014-11-10 10:15	0.001	0.0002	0.0005	23.7	0.00102	1.3	0.005	1.37	0.005	0.00005	0.00116	0.005	0.005	0.0005
W16	2014-12-18 14:00	0.001	0.0002	0.0005	20.2	0.00101	0.896	0.005	1.03	0.005	0.00005	0.00066	0.005	0.005	0.0005
W16	2014-12-22 13:45	0.001	0.0002	0.0005	19	0.00138	1.09	0.005	1.11	0.005	0.00005	0.00076	0.005	0.005	0.0005
W16	2015-01-02 11:45	0.001	0.0002	0.0005	9	0.00065	0.478	0.005	0.531	0.005	0.00005	0.00019	0.005	0.005	0.0005
W16	2015-01-06 10:15	0.001	0.0002	0.0005	18.9	0.00107	1.1	0.005	1.08	0.005	0.00005	0.00062	0.005	0.005	0.0005
W16	2015-01-13 10:30	0.001	0.0002	0.0005	23.6	0.00109	1.45	0.005	1.3	0.005	0.00005	0.00105	0.005	0.005	0.0005
W16	2015-01-21 14:35	0.001	0.0002	0.0005	25.3	0.0011	1.92	0.005	1.17	0.005	0.00005	0.00087	0.005	0.0057	0.0005
W16	2015-01-29 13:15	0.001	0.0002	0.0005	15.3	0.00091	0.901	0.005	0.79	0.005	0.00005	0.00048	0.005	0.005	0.0005
W16	2015-02-04 10:30	0.001	0.0002	0.0005	15.4	0.00089	0.905	0.005	0.74	0.005	0.00005	0.00049	0.005	0.005	0.0005
W16	2015-02-09 13:35	0.001	0.0002	0.0005	18.1	0.00101	1.05	0.005	0.813	0.005	0.00005	0.0006	0.005	0.0087	0.0005
W16	2015-02-18 14:55	0.001	0.0002	0.0005	16.4	0.00102	0.912	0.005	0.79	0.005	0.00005	0.00043	0.005	0.0062	0.0005
W16	2015-02-26 9:40	0.0012	0.0002	0.0005	12.5	0.00112	0.565	0.005	0.781	0.005	0.00005	0.00024	0.005	0.005	0.0005
W16	2015-03-03 8:30	0.001	0.0002	0.0005	14.5	0.00106	0.653	0.005	0.674	0.005	0.00005	0.00024	0.005	0.005	0.0005
W16	2015-03-09 10:50	0.001	0.0002	0.0005	14.8	0.00095	0.902	0.005	0.681	0.005	0.00005	0.00033	0.005	0.005	0.0005
W16	2015-03-17 16:00	0.001	0.0002	0.0005	17.7	0.00147	1.23	0.005	0.82	0.005	0.00005	0.00059	0.005	0.005	0.0005
W16	2015-03-25 16:00	0.001	0.0002	0.0005	17.3	0.00117	1.37	0.005	0.854	0.005	0.00005	0.0006	0.005	0.005	0.0005
W16	2015-03-29 7:00														
W16	2015-03-30 11:20	0.001	0.0002	0.0005	14.3	0.00123	1.29	0.005	0.656	0.005	0.00005	0.00028	0.005	0.005	0.0005
W16	2015-03-31 8:20														
W16	2015-04-01 8:50														
W16	2015-04-02 8:20														
W16	2015-04-03 7:40														
W16	2015-04-06 9:00	0.001	0.0002	0.0005	18.6	0.00133	1.83	0.005	0.834	0.005	0.00005	0.00084	0.005	0.005	0.0005
W16	2015-04-07 7:30														
W16	2015-04-21 15:10	0.001	0.0002	0.0005	9.2	0.00054	1.58	0.005	0.437	0.005	0.00005	0.00043	0.005	0.005	0.0005
W16	2015-04-29 15:15	0.001	0.0002	0.0005	5.3	0.00036	1.78	0.005	0.303	0.005	0.00005	0.00032	0.005	0.005	0.0005
W16	2015-05-06 15:30	0.001	0.0002	0.0005	13	0.00058	2.59	0.005	0.616	0.005	0.00005	0.00082	0.005	0.005	0.0005
W16	2015-05-12 14:55	0.001	0.0002	0.0005	13.7	0.00053	2.64	0.005	0.559	0.005	0.00005	0.00072	0.005	0.005	0.0005
W16	2015-05-18 10:30	0.001	0.0002	0.0005	10.7	0.00052	1.78	0.005	0.483	0.005	0.00005	0.00069	0.005	0.005	0.0005
W16	2015-05-28 17:15	0.001	0.0002	0.0005	7.9	0.00049	0.1	0.005	0.377	0.005	0.00005	0.00057	0.005	0.005	0.0005
W16	2015-06-04 9:35	0.001	0.0002	0.0005	8.7	0.00041	0.235	0.005	0.386	0.005	0.00005	0.00052	0.005	0.005	0.0005
W16	2015-06-09 16:05	0.001	0.0002	0.0005	9.1	0.00045	0.176	0.005	0.365	0.005	0.00005	0.00054	0.005	0.005	0.0005
W16	2015-06-15 14:35	0.001	0.0002	0.0005	9.2	0.00039	0.288	0.005	0.397	0.005	0.00005	0.00061	0.005	0.005	0.0005
W16	2015-06-22 16:20	0.001	0.0002	0.0005	11.9	0.00039	0.628	0.005	0.422	0.005	0.00005	0.00058	0.005	0.005	0.0005

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species						Dissolved Elements																																	
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	N-NO$_2$	N-NO$_3$	N-NH$_3$	SO$_4$-D	Chlord	Fluord	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	μS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W16	2015-06-29 16:40	108	282	139.7	8.14	172	25.1	19.2	88.6	0.0493	0.946	0.077	26.1	5.4	0.18	0.00002	0.0335	0.00049	0.0492	0.07	0.0001	0.001	32.8	0.00001	0.0005	0.001	0.0154	0.264	0.00001	3.21	0.005	9.88	0.191	0.0038	15.7	0.001	0.0002	0.0005	13	0.00037	0.867	0.005	0.436	0.005	0.00005	0.00061	0.005	0.005	0.0005
W16	2015-07-06 10:20	97.7	275	121.6	8.07	165	8.8	17.5	87.1	0.0683	1.2	0.09	25.2	5	0.17	0.00002	0.0154	0.00044	0.0443	0.071	0.0001	0.001	27.2	0.000012	0.0005	0.001	0.0135	0.216	0.00001	2.98	0.005	9.09	0.245	0.0039	14.9	0.001	0.0002	0.0005	8.2	0.0004	0.881	0.005	0.391	0.005	0.00005	0.00057	0.005	0.005	0.0005
W16	2015-07-13 13:35	99.7	272	152.9	8.9	158	7.9	19.8	109.6	0.0508	1.08	0.037	26.5	5.3	0.18	0.00002	0.0063	0.00039	0.0387	0.067	0.0001	0.001	27.2	0.00001	0.0005	0.001	0.0132	0.119	0.00001	2.87	0.005	8.8	0.14	0.0035	13.9	0.001	0.0002	0.0005	9.3	0.00049	0.88	0.005	0.357	0.005	0.00005	0.00052	0.005	0.005	0.0005
W16	2015-07-20 9:15	107	287	139.1	8.84	164	6.1	17.5	82.9	0.0371	1.03	0.03	25.9	4.8	0.19	0.00002	0.0102	0.00036	0.0429	0.082	0.0001	0.001	31.1	0.00001	0.0005	0.001	0.0116	0.0786	0.00001	3.14	0.005	10.1	0.0071	0.0043	15.7	0.001	0.0002	0.0005	11.6	0.00044	1.13	0.005	0.451	0.005	0.00005	0.00077	0.005	0.005	0.0005
W16	2015-07-29 14:10	108	290	107.8	9.08	178	10	17.8	105.7	0.0299	0.807	0.063	27	5.5	0.21	0.00002	0.0153	0.00049	0.0364	0.074	0.0001	0.001	29.6	0.000018	0.0005	0.001	0.0127	0.0961	0.00001	2.79	0.005	9.46	0.0201	0.0042	15.4	0.001	0.0002	0.0005	11.2	0.00039	1.1	0.005	0.403	0.005	0.00005	0.00064	0.005	0.005	0.0005
W16	2015-08-05 11:10			91.6	9			16.7	110.5																																								
W16	2015-08-14 10:45	125	318	97.2	8.99	170	8	15.1	86	0.0255	0.345	0.055	29.6	6.4	0.21	0.00002	0.0127	0.00051	0.0409	0.072	0.0001	0.001	33.8	0.00001	0.0005	0.001	0.0134	0.1	0.00001	2.91	0.005	10.6	0.139	0.0045	15.7	0.001	0.0002	0.0005	13.3	0.00047	0.436	0.005	0.437	0.005	0.00005	0.00078	0.005	0.005	0.0005
W16	2015-08-20 9:00			146.4	8.89			13.7	89.4																																								
W16	2015-08-24 11:05			133.6	8.86			13.3	87.7																																								
W16	2015-09-01 13:47			155.8	8.21			9.1	70.6																																								
W16	2015-09-08 10:25			99.4	8.37			8.9	78.4																																								
W16	2015-09-11 15:50	132	347	137.9	8.28	198	5.3	10.1	76.7	0.014	0.958	0.061	32.4	7	0.23	0.00002	0.0085	0.00054	0.0472	0.056	0.0001	0.001	37.6	0.00001	0.0005	0.001	0.0144	0.0555	0.00001	2.61	0.005	12.7	0.0049	0.0044	13.9	0.001	0.0002	0.0005	9.3	0.0005	0.56	0.005	0.472	0.005	0.00005	0.00089	0.005	0.005	0.0005
W16	2015-09-15 14:00			172.8	8.37			9.7	87.9																																								
W16	2015-09-25 15:40			155.7	8.25			7.2	82																																								
W16	2015-09-28 11:00	142	369	139.4	7.95	228	5.7	6.1	92.5	0.0138	0.962	0.024	35.3	7.2	0.24	0.00002	0.0089	0.00045	0.0535	0.05	0.0001	0.001	44.4	0.00001	0.0005	0.001	0.013	0.0617	0.00001	2.9	0.005	13.5	0.0269	0.0039	14.6	0.001	0.0002	0.0005	13.1	0.00054	0.496	0.005	0.496	0.005	0.00005	0.00085	0.005	0.005	0.0005
W16	2015-09-28 11:30			158.3	7.88			6.1	88.8																																								
W16	2015-10-08 15:50	144	384	193.7	8.26	218	10.8	3.5	80.2	0.0135	0.896	0.062	35.7	7.9	0.23	0.00002	0.0108	0.00039	0.0485	0.05	0.0001	0.001	41.6	0.00001	0.0005	0.001	0.0126	0.0553	0.00001	2.61	0.005	13.5	0.0625	0.0038	14.6	0.001	0.0002	0.0005	13.9	0.00036	0.338	0.005	0.503	0.005	0.00005	0.00098	0.005	0.005	0.0005
W16	2015-10-16 15:00			157.1	8.23			1.3	87																																								
W16	2015-10-23 15:40			49.6	8.44			5.9	85.3																																								
W16	2015-10-29 15:35			41.6	8.25			4	97.1																																								
W16	2015-11-02 11:30			75	8.13			2.7	78.2																																								
W16	2015-11-10 14:45	150	394	40	8.39	220	10.9	2.3	81.6	0.011	0.955	0.053	36.5	7.8	0.26	0.00004	0.0082	0.00044	0.0572	0.05	0.0001	0.001	45.3	0.00001	0.0005	0.001	0.0128	0.0683	0.00001	3.06	0.005	14.3	0.0303	0.0038	14.2	0.001	0.0002	0.0005	12.2	0.00034	1.01	0.005	0.508	0.005	0.00005	0.00094	0.005	0.005	0.0005
W16	2015-12-06 17:00	149	419	97.1	8.07	225	3.5	0.3	61.1	0.0095	0.913	0.081	41	8.7	0.25	0.00002	0.0531	0.00039	0.057	0.05	0.0001	0.001	43.8	0.000095	0.0005	0.001	0.0125	0.0747	0.00001	3.33	0.005	15.8	0.0085	0.0044	16	0.0011	0.0002	0.0005	11.2	0.00039	0.591	0.005	0.582	0.005	0.00005	0.00117	0.005	0.005	0.0005
W16	2015-12-10 17:00																																																
W16	2015-12-22 14:10																																																
W16	2016-01-02 15:00	172	433	133.1	7.67	224	3.2	1	41.4	0.0066	0.863	0.091	43.6	8.8	0.27	0.00002	0.0083	0.00039	0.0571	0.05	0.0001	0.001	51.2	0.000017	0.0005	0.001	0.0116	0.0595	0.00001	3.2	0.005	16	0.004	0.0036	16.1	0.001	0.0002	0.0005	12.3	0.00041	1.04	0.005	0.57	0.005	0.00005	0.00128	0.005	0.005	0.0005
W16	2016-01-09 13:35			133.6	7.56			1	47.5																																								
W16	2016-01-12 15:20			-24	7.85			2.1	72.3																																								
W16	2016-01-18 15:25			143.7	7.42			2.7	66.9																																								
W16	2016-01-31 11:25			61.6	7.77			0.9	39.2																																								
W16	2016-02-06 10:25	180	451	7.2	7.61	268	1.2	0.5	27.8	0.0072	0.85	0.15	41.7	9.5	0.27	0.00002	0.0285	0.00088	0.063	0.061	0.0001	0.001	53.6	0.00001	0.0005	0.001	0.0102	0.043	0.00001	3.09	0.005	17	0.0038	0.0039	16.5	0.001	0.0002	0.0005	13.2	0.00045	2.02	0.005	0.578	0.005	0.00005	0.00149	0.005	0.005	0.0005
W16	2016-02-11 11:20			89.1	7.56			0.6	39.6																																								
W16	2016-02-20 15:10			115.4	7.87			0.5	85.8																																								
W16	2016-02-28 9:40			37.8	7.44			0.5	27																																								
W16	2016-03-06 16:45	184	466	68.2	7.44	256	1.7	0.5	21.9	0.0059	0.805	0.11	43.9	9.8	0.27	0.00002	0.0061	0.00032	0.0628	0.05	0.0001	0.001	54.4	0.00001	0.0005	0.001	0.00881	0.0313	0.00001	3.28	0.005	16.8	0.0021	0.0041	16	0.001	0.0002	0.0005	16.6	0.00041	2.24	0.005	0.598	0.005	0.00005	0.00139	0.005	0.005	0.0005
W16	2016-03-13 7:26			87.6	7.85			0	52.9																																								
W16	2016-03-20 16:45			81.9	7.21			2	17.6																																								
W16	2016-03-25 11:15			100	7.47			0.8	19.2																																								
W16	2016-04-04 16:30	45.5	169	145	8.44	90.3	12	1.4	77.8	0.0477	2.24	0.135	19.1	4.47		0.00001	0.0049	0.00012	0.0189	0.054	0.00002	0.00005	13.6	0.0000092	0.0001	0.0001	0.0123	0.01	0.000005	2.39	0.001	3.95	0.0431	0.003	9.24	0.0005	0.00005	0.0001	5.93	0.00068	0.702	0.0001	0.213	0.0003	0.00001	0.000271	0.0005	0.001	0.0003
W16	2016-04-05 8:45			135.9	8.04			0.8	67.5																																								
W16	2016-04-06 8:05			137.2	7.69			1.5	66.7																																								
W16	2016-04-07 9:30			117.6	8.03			1.3	98.2																																								
W16	2016-04-08 9:20			142.5	7.82			0.8	68.6																																								
W16	2016-04-09 8:10			131.9	8			2.2	61.2																																								
W16	2016-04-12 15:45			157.9	7.67			4.5	63.5																																								
W16	2016-04-22 7:40	76.5	229	129.1	7.6	123	9.3	5.1	68.7	0.0212	1.27	0.0643	22.2	4.39		0.00001	0.0222	0.00027	0.0368	0.037	0.00002	0.00005	25.9	0.0000122	0.0001	0.00013	0.0264	0.066	0.0000125	2.37	0.001	7.93	0.0395	0.00243	8.78	0.00075	0.00005	0.0001	7.95	0.000535	2.13	0.0001	0.292	0.00044	0.00001	0.000561	0.0005	0.0013	0.0003
W16	2016-04-29 8:15	85	244	111.1	7.71	137	3	7.2	71.1	0.0218	1.4	0.0413	24.2	4.65		0.00001	0.0194	0.00029	0.0381	0.037	0.00002	0.00005	29.8	0.0000115	0.0001	0.00011	0.0263	0.07	0.0000072	2.52	0.001	8.63	0.0273	0.0024	9.64	0.00075	0.00005	0.0001	8.24	0.000552	2.29	0.0001	0.303	0.00038	0.00001	0.000536	0.0005	0.001	0.0003
W16	2016-04-30 8:05																																																
W16	2016-05-03 17:00	104	297	130.2	7.71	170	6	9.2	82.1	0.0282	2.22	0.0173	31.5	5.26		0.00001	0.015	0.0003	0.044	0.039	0.00002	0.00005	36.3	0.000013	0.0001	0.0001	0.0248	0.066	0.000005	2.83	0.0011	10.6	0.0181	0.00272	10.5	0.00071	0.00005	0.0001	10.9	0.00079	2.53	0.0001	0.395	0.00037	0.00001	0.000747	0.0005	0.001	0.0003
W16	2016-05-15 17:05			95.7	8.58			16.4	144.6																																								
W16	2016-05-19 12:00	120	336	86.4	9.11	205	13.3	13.7	135	0.0366	3.37	0.0125	41.5	5.22		0.00001	0.0118	0.00028	0.0516	0.032	0.00002	0.00005	45.4	0.000005	0.0001	0.0001	0.0226	0.038	0.000005	2.81	0.0011	12.5	0.0108	0.00276	10.9	0.00078	0.00005	0.0001	13.9	0.00113	2.41	0.0001	0.453	0.0003	0.00001	0.000924	0.0005	0.001	0.0003
W16	2016-05-24 9:00	116	335	98.8	9.18	201	12	13.4	107.6	0.0385	3.36	0.0136	39	4.47		0.00001	0.015	0.00037	0.0507	0.032	0.00002	0.00005	45.9	0.000008	0.0001	0.00013	0.023	0.05	0.000005	2.79	0.001	12.5	0.00969	0.00281	11.6	0.00085	0.00005	0.0001	14.9	0.00119	2.31	0.0001	0.461	0.00055	0.00001	0.000927	0.0005	0.0017	0.0003
W16	2016-06-05 16:20			71.1	9.12			15.8	101.6																																								
W16	2016-06-14 8:00	111	330	93.8	8.87	203	3	15.7	92.2	0.0547	4.42	0.0308	41.4	4.33		0.00001	0.0086	0.00027	0.0482	0.044	0.00002	0.00005	43.3	0.0000056	0.0001	0.00025	0.0186	0.038	0.000005	3.06	0.001	11.8	0.0135	0.00299	12.2	0.00069	0.00005	0.0001	15	0.00129	1.08	0.0001	0.442	0.0003	0.00001	0.000909	0.0005	0.001	0.0003
W16	2016-06-24 8:10	118	358	69.2	8.73	218	8.8	17.9	89.5	0.0467	4.77	0.0253	45.8	4.6		0.00001	0.0069	0.00032	0.0563	0.046	0.00002	0.00005	46.9	0.0000077	0.0001	0.0001	0.0191	0.02	0.000005	3.3	0.0013	12.5	0.0131	0.00347	12.7	0.0007	0.00005	0.0001	15.7	0.00144	1.32	0.0001	0.483	0.00036	0.00001	0.00105	0.0005	0.001	0.0003
W16	2016-06-25 8:00																																																
W16	2016-06-28 8:15	118	349	58.7	8.75	219	3.3	18	83	0.0524	5.02	0.0266	46.6	4.74		0.00001	0.0049	0.00034	0.0552	0.047	0.00002	0.00005	46.5	0.000005	0.0001	0.0001	0.0186	0.02	0.000005	3.22	0.0014	12.3	0.00399	0.00335	12.5	0.00063	0.00005	0.0001	15.8	0.00136	1.34	0.0001	0.475	0.0003	0.00001	0.00102	0.0005	0.0024	0.0003
W16	2016-07-10 8:00	122	391	124.4	8.34	240	3.3	18.7	95.3	0.0659	5.53	0.0907	54.8	5.75		0.00001	0.0076	0.00035	0.0593	0.049	0.00002	0.00005	49.1	0.000006	0.0001	0.0001	0.0185	0.015	0.000005	3.99	0.0011	12.9	0.00152	0.0051	15.5	0.00069	0.00008	0.0001	19.7	0.00154	1.61	0.0001	0.599	0.0003	0.00001	0.001	0.0005	0.0063	0.0003
W16	2016-07-14 8:45	124	411	94.9	8.67	244	3.3	19.7	79.2	0.0661	5.6	0.0251	55.6	5.84		0.00001	0.0065	0.00038	0.0619	0.047	0.00002	0.00005	49.4	0.0000068	0.0001	0.0001	0.0177	0.015	0.000005	4.23	0.0013	13	0.0023	0.0049	15.9	0.00064	0.00005	0.0001	19.9	0.00154	1.75	0.0001	0.574	0.0003	0.00001	0.001	0.0005	0.0021	0.0003
W16	2016-07-20 8:30	126	401	87	7.85	239	3	16.8	65.3	0.0542	4.71	0.116	53.2	5.59		0.00001	0.0099	0.00035	0.0594	0.043	0.00002	0.00005	51.3	0.0000104	0.0001	0.0001	0.0183	0.028	0.000005	3.52	0.001	13.7	0.0728	0.00415	14.6	0.00064	0.00005	0.0001	18.4	0.00157	2.13	0.0001	0.559	0.00037	0.00001	0.00104	0.0005	0.0012	0.0003
W16	2016-07-26 10:05	125	380	80.9	7.96	234	3.3	16	70.9	0.0574	4.52	0.0928	51.9	5.51		0.00001	0.0079	0.00038	0.0649	0.047	0.00002	0.00005	48.9	0.0000134	0.0001	0.0001	0.0192	0.029	0.000005	3.46	0.001	13.2	0.0985	0.00381	15.3	0.00066	0.00005	0.0001	17.5	0.00143	2.11	0.0001	0.541	0.00034	0.00001	0.00098	0.0005	0.0027	0.0003
W16	2016-08-02 15:35	126	391	98	8.46	234	3.3	17.9	112.4	0.0545	4.52	0.0265	51	5.25		0.00001	0.008	0.00035	0.0586	0.043	0.00002	0.00005	51.1	0.0000111	0.0001	0.0001	0.0183	0.024	0.000005	3.36	0.0013	13.5	0.0846	0.00369	13.4	0.00059	0.00005	0.0001	17.5	0.00128	2.37	0.0001	0.534	0.00032	0.00001	0.000959	0.0005	0.0017	0.0003
W16	2016-08-11 14:50	131	424	113.9	8.2	270	3	17.4	85	0.0447	4.6	0.0314	51.5	5.17		0.00001	0.0052	0.00034	0.0617	0.042	0.00002	0.00005	53.9	0.0000129	0.0001	0.0001	0.0179	0.027	0.000005	3.43	0.0014	13.8	0.0706	0.0035	13.4	0.00063	0.00005	0.0001	18.4	0.00136	2.49	0.0001	0.503	0.00038	0.00001	0.000948	0.0005	0.001	0.0003
W16	2016-08-17 14:50	140	413	125.8	8.38	249	3	16.5	86.7	0.0421	4.77	0.0264	54.5	5.31		0.00001	0.0051	0.00036	0.0617	0.044	0.00002	0.00005	52.7	0.0000075	0.0001	0.0001	0.0181	0.025	0.000005	3.28	0.0012	13.9	0.0388	0.00382	13.8	0.00065	0.00005	0.0001	18.2	0.00154	2.66	0.0001	0.568	0.00033	0.00001	0.00105	0.0005	0.001	0.0003
W16	2016-08-23 8:30	145	415	113.8	8.39	254	4	15.3	69.9	0.035	4.8	0.0181	55.9	5.36		0.00001	0.0047	0.00035	0.0554	0.046	0.00002	0.00005	54.4	0.0000069	0.0001	0.0001	0.0157	0.025	0.000005	3.34	0.0015	14.3	0.0112	0.00386	12.5	0.00054	0.00005	0.0001	19	0.00116	2.73	0.0001	0.583	0.0003	0.00001	0.00104	0.0005	0.0015	0.0003
W16	2016-08-30 8:40	147	430	127.9	7.85	266	3	14.2	80.6	0.0354	4.97	0.0413	58.4	5.44		0.00001	0.0093	0.00034	0.0651	0.043	0.00002	0.00005	58.4	0.0000051	0.0001	0.0001	0.0184	0.032	0.000005	3.36	0.0013	14.5	0.00562	0.00397	15.1	0.00074	0.00005	0.0001	18.8	0.00142	2.85	0.0001	0.61	0.0005	0.00001	0.00109	0.0005	0.0028	0.0003
W16	2016-09-06 12:46	150	435	88.6	7.85	268	4.7	13.8	81.8	0.0318	5.07	0.0446	60	5.56		0.00001	0.0067	0.00035	0.0705	0.041	0.00002	0.00005	57.5	0.0000052	0.0001	0.00011	0.0173	0.028	0.000005	3.33	0.001	15.4	0.00376	0.00412	13.7	0.00066	0.00005	0.0001	20.2	0.00142	3.12	0.0001	0.644	0.00055	0.00001	0.00116	0.0005	0.001	0.0003
W16	2016-09-13 7:50	160	451	117.3	7.94	274	3	11.7	72.9	0.03	5.15	0.0576	60.9	5.58		0.00001	0.0037	0.00031	0.0707	0.037	0.00002	0.00005	57.1	0.0000053	0.0001	0.0001	0.0162	0.019	0.000005	3.13	0.0011	14.8	0.00144	0.00372	13.6	0.00059	0.00005	0.0001	19.5	0.00154	3.15	0.0001	0.635	0.0003	0.00001	0.00114	0.0005	0.001	0.0003
W16	2016-09-19 14:30	147	436	149.7	7.64	268	8.7	11	63.3	0.0264	5.14	0.0501	61.4	5.49		0.00001	0.0044	0.00031	0.0699	0.036	0.00002	0.00005	58.2	0.000005	0.0001	0.00011	0.0163	0.019	0.000005	3.23	0.001	15.5	0.00304	0.00395	13.2	0.0005	0.00005	0.0001	19.2	0.00129	3.21	0.0001	0.641	0.0003	0.00001	0.00126	0.0005	0.001	0.0003
W16	2016-09-20 14:30																																																
W16	2016-09-27 16:25	160	435	152.2	7.53	281	3	8.9	66.4	0.0219	5.38	0.0373	63.9	5.6		0.00001	0.0019	0.00032	0.072	0.036	0.00002	0.00005	57.6	0.0000068	0.0001	0.0001	0.0161	0.015	0.000005	3.35	0.0013	16.3	0.00369	0.0035	13.9	0.00061	0.00005	0.0001	22.2	0.0015	3.47	0.0001	0.621	0.0003	0.00001	0.00118	0.0005	0.001	0.0003
W16	2016-10-04 11:45	164	446	127.2	7.82	293	3.3	5.8	66.4	0.0202	5.68	0.0384	66	5.8		0.00001	0.0019	0.00034	0.0752	0.037	0.00002	0.00005	63.3	0.000005	0.0001	0.0001	0.0154	0.02	0.000005	3.43	0.001	16.6	0.00362	0.0035	14	0.00063	0.00005	0.0001	23.4	0.00164	3.68	0.0001	0.672	0.0003	0.00001	0.00127	0.0005	0.0013	0.0003
W16	2016-10-10 8:05	167	456	116.4	7.77	296	7.3	3.7	56.8	0.0137	5.73	0.0301	67.8	5.97		0.00001	0.0018	0.00032	0.0774	0.038	0.00002	0.00005	62.2	0.000005	0.0001	0.0001	0.0148	0.021	0.000005	3.22	0.0018	17.1	0.00348	0.00352	14.1	0.00064	0.00005	0.0001	23	0.00159	3.47	0.0001	0.639	0.0003	0.00001	0.0013	0.0005	0.0013	0.0003
W16	2016-10-17 15:15	164	441	137.6	7.74	285	14.8	1.6	49.2	0.0169	5.34	0.0319	64	5.99		0.00001	0.003	0.0003	0.0749	0.035	0.00002	0.00005	60	0.000005	0.0001	0.0001	0.0153	0.019	0.000005	3.21	0.001	16.5	0.0167	0.00334	13.2	0.00057	0.00005	0.0001	19.9	0.00147	3.74	0.0001	0.639	0.0003	0.00001	0.00124	0.0005	0.001	0.0003
W16	2016-10-24 16:05	164	482	151	7.8	290	3.9	2.5	48	0.0125	5.5	0.0271	66.4	6.01		0.00001	0.0013	0.00035	0.075	0.032	0.00002	0.00005	60.1	0.0000074	0.0001	0.00011	0.0148	0.027	0.000005	3.36	0.0014	17	0.0063	0.00351	14.2	0.00068	0.00005	0.00019	22.7	0.00154	3.5	0.0001	0.635	0.0003	0.00001	0.00129	0.0005	0.0058	0.0003
W16	2016-11-25 10:50	185	523	86.2	5.65	318	3	1.2	39.7	0.0136	5.36	0.0508	69.4	6.44		0.00001	0.0015	0.00037	0.0828	0.037	0.00002	0.00005	68.7	0.0000075	0.0001	0.0001	0.0149	0.024	0.000005	3.73	0.0014	19	0.0201	0.00391	15.7	0.00066	0.00005	0.0001	23.5	0.00154	3.91	0.0001	0.753	0.0003	0.00001	0.00146	0.0005	0.0043	0.0003
W16	2016-11-29 11:30			149.1	7.88			1.3	55.2																																								
W16	2016-12-07 13:30	193	525	177.9	7.65	316	3	1.1	33	0.0127	5.2	0.0562	69.5	6.47		0.00001	0.0035	0.00037	0.0756	0.035	0.00002	0.00005	63.8	0.0000135	0.0001	0.00011	0.0145	0.03	0.000005	3.54	0.0015	18.6	0.0154	0.00398	15.2	0.00066	0.00005	0.00012	25	0.00143	4.06	0.0001	0.724	0.0003	0.00001	0.00163	0.0005	0.003	0.0003
W16	2017-01-13 14:45	191	533	125.5	7.53	319	3	0.8	15.2	0.0113	4.82	0.0643	70.6	6.76		0.00001	0.0041	0.00032	0.0864	0.034	0.00002	0.00005	66.9	0.0000088	0.0001	0.00011	0.0154	0.035	0.000005	3.72	0.0013	19.4	0.00518	0.00374	15.8	0.00071	0.00005	0.00012	24.4	0.00139	4.25	0.0001	0.713	0.0003	0.00001	0.00144	0.0005	0.0035	0.0003
W16	2017-02-03 14:45	198	563	104.1	7.84	338	3.4	0.7	8.6	0.0106	4.86	0.0806	75.6	7.34		0.00001	0.0019	0.00036	0.0888	0.037	0.00002	0.00005	74.1	0.0000087	0.0001	0.00011	0.015	0.039	0.000005	3.92	0.0018	20.2	0.013	0.00427	16.6	0.00072	0.00005	0.0001	26.1	0.0015	4.54	0.0001	0.767	0.0003	0.00001	0.00171	0.0005	0.0069	0.0003
W16	2017-03-14 9:30	204	563	148.6	8.04	375	3.2	2.1	33.6	0.0199	3.89	0.0879	71.5	7.23		0.00001	0.0057	0.00037	0.0935	0.036	0.00002	0.00005	69.8	0.0000168	0.00012	0.00012	0.0173	0.088	0.000005	3.97	0.0012	22	0.226	0.00415	17.3	0.0008	0.00005	0.0001	25.5	0.00135	4.8	0.0001	0.758	0.00036	0.00001	0.00174	0.0005	0.0045	0.0003
W16	2017-04-02 14:45	212	578	90.3	7.66	363	34	0.6	9.8	0.0225	4.02	0.105	78.9	8.1		0.00001	0.0039	0.00035	0.0916	0.037	0.00002	0.00005	71.9	0.0000291	0.0001	0.0001	0.0219	0.082	0.000005	3.93	0.0014	20.9	0.325	0.00464	17.9	0.00101	0.00005	0.00011	25.3	0.0012	4.79	0.0001	0.782	0.0003	0.00001	0.00161	0.0005	0.0055	0.0003
W16	2017-04-17 16:20	98.4	275	197.9	7.34	180	15.8	2.4	22.9	0.0457	1.76	0.113	34.6	4.71		0.00001	0.0104	0.00025	0.0532	0.04	0.00002	0.00005	34.2	0.0000195	0.00013	0.0001	0.0212	0.058	0.000005	2.09	0.001	10.2	0.261	0.00202	9.28	0.0005	0.00005	0.0001	13.1	0.000608	2.67	0.0001	0.357	0.00061	0.00001	0.000776	0.0005	0.0013	0.0003
W16	2017-04-25 8:25	22.6	76	296.3	7.44	47	3	0.4	44.3	0.0438	0.807	0.13	9.03	1.07		0.00001	0.0185	0.0001	0.0141	0.025	0.00002	0.00005	7.06	0.0000105	0.0001	0.0001	0.0109	0.018	0.000005	0.9	0.001	1.52	0.0338	0.000653	4.31	0.0005	0.00005	0.0001	2.95	0.000145	0.446	0.0001	0.0843	0.00035	0.00001	0.000109	0.0005	0.0011	0.0003
W16	2017-04-28 9:15	27.6	80.8	228.8	7.76	48.8	3.1	0.9	45.1	0.0268	0.635	0.11	9.09	1.25		0.00001	0.0129	0.0001	0.0193	0.037	0.00002	0.00005	10.1	0.0000241	0.0001	0.0001	0.0126	0.039	0.000005	1.19	0.001	2.49	0.0757	0.000997	4.97	0.0005	0.00005	0.0001	4.39	0.000249	0.848	0.0001	0.114	0.0004	0.00001	0.000199	0.0005	0.0016	0.0003
W16	2017-04-30 17:30	78.2	246	173.6	6.96	169	5.4	6.5	63.9	0.0832	1.8	0.163	31.6	3.8		0.00001	0.0218	0.0002	0.0429	0.046	0.00002	0.00005	27.9	0.0000236	0.0001	0.0001	0.0272	0.087	0.000005	2.26	0.001	7.91	0.187	0.00197	11.2	0.0005	0.00005	0.0001	11	0.000473	2.02	0.0001	0.305	0.0009	0.00001	0.000609	0.0005	0.0015	0.0003
W16	2017-05-01 7:33	28.8	97.9	111.2	7.71	71	3.6	3.8	50.7	0.0596	0.97	0.163	12.3	1.58		0.00001	0.0108	0.00011	0.0194	0.039	0.00002	0.00005	12.9	0.0000119	0.0001	0.0001	0.0118	0.044	0.000005	1.42	0.001	3.17	0.0787	0.00115	7.33	0.0005	0.00005	0.0001	5.79	0.000302	0.962	0.0001	0.15	0.00039	0.00001	0.000231	0.0005	0.001	0.0003
W16	2017-05-05 16:00			202.3	6.91		3.3	6.4	52.2																																								
W16	2017-05-08 16:55	129	362			212	7.2			0.0591	2.08	0.0832	47.5	5.42		0.00001	0.0079	0.00027	0.0636	0.042	0.00002	0.00005	44	0.0000245	0.0001	0.0001	0.0292	0.07	0.000005	2.68	0.001	12.5	0.264	0.00286	12.3	0.00061	0.00005	0.0001	16	0.000834	3.11	0.0001	0.465	0.0009	0.00001	0.00101	0.0005	0.0011	0.0003
W16	2017-05-15 14:45	117	323	101.4	7.76	191	14.7	10.7	72	0.0676	2.05	0.0435	43.3	4.95		0.00001	0.0105	0.00026	0.0557	0.041	0.00002	0.00005	35.5	0.0000108	0.0001	0.0001	0.0265	0.074	0.000005	2.68	0.0014	10.8	0.168	0.00256	13.5	0.0006	0.00005	0.0001	14.5	0.000591	2.79	0.0001	0.386	0.00054	0.00001	0.000857	0.0005	0.001	0.0003
W16	2017-05-22 9:00	113	323	118.1	8.42	192	4.4	10.5	80.3	0.0639	1.93	0.0144	45	4.97		0.00001	0.0057	0.00027	0.0544	0.04	0.00002	0.00005	39.6	0.0000116	0.0001	0.0001	0.0231	0.062	0.000005	2.65	0.0015	10.3	0.0461	0.00259	13.2	0.00072	0.00005	0.0001	14.7	0.000546	2.4	0.0001	0.421	0.0003	0.00001	0.000807	0.0005	0.001	0.0003
W16	2017-05-29 9:00	120	335	91.8	8.54	195	10	12.8	113.4	0.0447	1.82	0.0117	45.1	5.03		0.00001	0.0122	0.00026	0.0528	0.037	0.00002	0.00005	39.8	0.0000095	0.0001	0.0001	0.0262	0.068	0.000005	2.4	0.0013	11	0.0206	0.00275	12	0.00077	0.00005	0.0001	15	0.000566	2.34	0.0001	0.428	0.00083	0.00001	0.000836	0.0005	0.001	0.0003
W16	2017-06-05 14:40	119	324	163.5	7.98	192	7.5	14.1	110.9	0.0341	1.77	0.0125	43.5	4.62		0.00001	0.0053	0.00032	0.0564	0.029	0.00002	0.00005	39.8	0.0000057	0.0001	0.00014	0.03	0.041	0.000005	2.33	0.001	11.4	0.0153	0.00249	11.4	0.00082	0.00005	0.0001	13.2	0.000625	2.04	0.0001	0.397	0.00062	0.00001	0.000769	0.0005	0.001	0.0003
W16	2017-06-12 10:50	119	336	235.4	7.58	204	8.1	15	87.3	0.0262	2.19	0.0268	47.9	4.4		0.00001	0.006	0.00039	0.0649	0.025	0.00002	0.00005	43.9	0.0000102	0.0001	0.00017	0.0305	0.06	0.000005	2.54	0.001	12.7	0.0181	0.00235	11.3	0.001	0.00005	0.0001	15.8	0.000802	2.38	0.0001	0.414	0.00072	0.00001	0.000761	0.0005	0.001	0.0003
W16	2017-06-19 9:00	121	342	103.4	7.98	200	3	15.1	70	0.0861	2.35	0.0565	47.5	4.07		0.00001	0.011	0.00038	0.0571	0.029	0.00002	0.00005	39.9	0.000008	0.0001	0.0002	0.0273	0.105	0.000005	2.29	0.0011	12.2	0.0314	0.00246	10.8	0.00103	0.00005	0.0001	15.9	0.000671	2.61	0.0001	0.413	0.0015	0.00001	0.000847	0.00051	0.001	0.0003
W16	2017-06-26 8:30	121	342	99.6	8.07	208	3	16.7	76.4	0.118	2.63	0.0629	48.1	3.98		0.00001	0.0162	0.00038	0.0641	0.029	0.00002	0.00005	44	0.000013	0.0001	0.00019	0.0286	0.111	0.000005	2.56	0.0011	12.7	0.0521	0.00228	11.8	0.00102	0.00005	0.0001	16.3	0.0008	2.87	0.0001	0.398	0.001	0.00001	0.000749	0.00051	0.0011	0.0003
W16	2017-07-03 8:45	134	370	84.6	8.43	224	20.3	16.7	89.9	0.0917	2.82	0.041	52.1	4.2		0.00001	0.0129	0.0004	0.065	0.028	0.00002	0.00005	46.9	0.0000083	0.0001	0.0001	0.0287	0.117	0.000005	2.5	0.001	13.3	0.0587	0.00251	11.4	0.00097	0.00005	0.0001	17.7	0.000784	2.81	0.0001	0.44	0.00066	0.00001	0.000909	0.0005	0.001	0.0003
W16	2017-07-10 9:40	135	386	168.4	7.63	227	3	18.5	60.7	0.0753	2.72	0.0388	53.6	4.36		0.00001	0.0341	0.00047	0.0648	0.029	0.00002	0.00005	47.5	0.0000353	0.00011	0.00022	0.047	0.141	0.000005	2.43	0.0018	14.5	0.0667	0.00256	11.3	0.00127	0.000096	0.0016	18.2	0.000824	2.76	0.0001	0.462	0.0009	0.00001	0.000998	0.00054	0.0037	0.0003
W16	2017-07-15 10:45																																																
W16	2017-07-16 7:45			198.9	7.4			18.5	72.7																																								
W16	2017-07-17 8:30	140	401	186.6	7.5	237	4.4	18.6	73.7	0.0592	2.84	0.0432	56.3	4.76		0.00001	0.0132	0.00043	0.0694	0.026	0.00002	0.00005	48.7	0.0000075	0.0001	0.00017	0.0283	0.11	0.000005	2.55	0.001	15.5	0.0635	0.0024	12.3	0.001	0.00005	0.0001	19.1	0.000762	2.71	0.0001	0.445	0.00072	0.00001	0.000843	0.0005	0.0013	0.0003
W16	2017-07-18 16:00			268.7	7.29			19.2	76.5																																								
W16	2017-07-19 8:25			243.5	7.45			18.3	61.1																																								
W16	2017-07-20 8:15			251.1	7.24			18.6	71.5																																								
W16	2017-07-21 9:35			261	7.11			19.4	72.8																																								
W16	2017-07-22 7:40			217.6	7.24			18.6	56.8																																								
W16	2017-07-23 7:50																																																
W16	2017-07-24 8:20	139	415	162.7	7.61	239	3.2	19.1	72.7	0.0486	2.6	0.049	56.6	4.84		0.00001	0.0109	0.00045	0.0705	0.029	0.00002	0.00005	53	0.000011	0.0001	0.00018	0.0294	0.113	0.000005	2.64	0.0011	14.7	0.0689	0.00267	12.3	0.0012	0.00005	0.0001	18.7	0.000861	2.83	0.0001	0.491	0.0006	0.00001	0.00099	0.0005	0.001	0.0003
W16	2017-07-25 9:40			265.8	15.26			38.2	142.6																																								
W16	2017-07-26 6:40			177.1	7.47			19.7	59																																								
W16	2017-07-31 9:00	144	415	101.6	7.92	248	3.7	18.5	65.5	0.0414	2.44	0.0555	57.5	5.24		0.00001	0.0142	0.00041	0.0682	0.028	0.00002	0.00005	55.2	0.0000059	0.0001	0.00016	0.0339	0.108	0.000005	2.44	0.0012	16.1	0.088	0.00267	13.5	0.001	0.00005	0.0001	19.3	0.000798	2.87	0.0001	0.482	0.0012	0.00001	0.000981	0.00053	0.001	0.0003
W16	2017-08-02 9:20	144	433	119.6	7.87	243	3	19.1	80.7	0.0379	2.43	0.0553	58.6	5.28		0.00001	0.0122	0.00046	0.0732	0.025	0.00002	0.00005	51.3	0.0000102	0.0001	0.00015	0.0312	0.109	0.000005	2.62	0.0011	15.4	0.0826	0.00288	12.5	0.00081	0.00005	0.0001	20.5	0.000721	2.95	0.0001	0.507	0.0008	0.00001	0.00106	0.0005	0.0012	0.0003
W16	2017-08-07 9:20	155	427	147	7.7	250	20.7	19.9	92.9	0.0314	2.36	0.0566	60.2	5.74		0.00001	0.0096	0.00048	0.0744	0.026	0.00002	0.00005	48.7	0.00001	0.0001	0.00016	0.0315	0.114	0.000005	2.69	0.0011	16	0.0899	0.00258	12.9	0.00089	0.00005	0.0001	19.5	0.000741	2.85	0.0001	0.482	0.00047	0.00001	0.00114	0.0005	0.0015	0.0003
W16	2017-08-09 7:15			125.7	7.92			19.7	82.7																																								
W16	2017-08-10 6:50			140.8	7.97			19.3	59.8																																								

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species						Dissolved Elements																																	
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N\text{-}NO_2$	$N\text{-}NO_3$	$N\text{-}NH_3$	SO_4-D	Chlord	Fluord	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W16	2017-08-11 8:00			137.7	7.89			19.2	71.7																																								
W16	2017-08-12 8:20			162.5	7.02			18.5	55.8																																								
W16	2017-08-13 7:40			141	7.74			18.2	59.1																																								
W16	2017-08-14 8:20	164	437	128.3	7.88	259	8.7	17.2	56.9	0.0259	2.2	0.0478	61.6	6.25		0.00001	0.0063	0.00042	0.0722	0.027	0.00002	0.00005	52.1	0.0000085	0.0001	0.00016	0.0266	0.091	0.000005	2.6	0.0011	15.1	0.0524	0.00271	12.6	0.00089	0.00005	0.0001	18.9	0.000725	2.97	0.0001	0.52	0.0003	0.00001	0.00115	0.0005	0.001	0.0003
W16	2017-08-15 9:00			128.6	7.84			15.8	63																																								
W16	2017-08-16 8:05			182.5	7.7			15.5	64.3																																								
W16	2017-08-17 8:05			162	7.63			15.5	66.3																																								
W16	2017-08-18 8:10			178.3	7.58			15	64.6																																								
W16	2017-08-19 7:25			168.3	7.78			14.2	62.3																																								
W16	2017-08-20 8:45			203.3	7.32			13.8	62.3																																								
W16	2017-08-21 9:00	163	440	142.1	7.72	263	3	14.1	76.9	0.0228	1.99	0.0379	61.8	6.46		0.00001	0.0051	0.00041	0.0751	0.028	0.00002	0.00005	55.8	0.0000071	0.0001	0.0001	0.0267	0.071	0.000005	2.72	0.0016	16.4	0.0254	0.00271	12.9	0.00076	0.00005	0.0001	20.2	0.000726	3	0.0001	0.522	0.00037	0.00001	0.00111	0.0005	0.001	0.0003
W16	2017-08-22 9:50			138.9	8.05			14	62.7																																								
W16	2017-08-23 8:40																																																
W16	2017-08-23 12:20	168	439			264	8			0.0189	1.99	0.0386	60.2	6.31		0.00001	0.0053	0.00043	0.0795	0.027	0.00002	0.00005	55	0.0000094	0.0001	0.0001	0.0282	0.069	0.000005	2.86	0.0013	16.6	0.0404	0.00271	13.3	0.0008	0.00005	0.0001	19.8	0.000693	3.01	0.0001	0.527	0.0003	0.00001	0.00108	0.0005	0.001	0.0003
W16	2017-08-24 7:50			203.5	7.5			14.1	77.1																																								
W16	2017-08-25 7:20			163.8	7.82			14.1	77.1																																								
W16	2017-08-26 8:35			179	7.43			14	72.5																																								
W16	2017-08-27 8:00			199.9	7.72			13.2	69.1																																								
W16	2017-08-28 9:10	167	439	159.6	7.96	267	7.3	13.2	60	0.018	1.94	0.0272	60.6	6.45		0.00001	0.0055	0.00044	0.0783	0.026	0.00002	0.00005	58.1	0.0000109	0.0001	0.00013	0.028	0.059	0.000005	2.87	0.001	16.4	0.0156	0.00269	13.4	0.00079	0.00005	0.0001	20	0.000777	3.07	0.0001	0.538	0.00034	0.00001	0.00114	0.0005	0.0015	0.0003
W16	2017-08-29 12:35			140.2	7.98			13.3	84.7																																								
W16	2017-08-30 10:10			175.1	7.47			13.1	75.7																																								
W16	2017-08-31 9:20			178.7	7.34			12.7	64.6																																								
W16	2017-09-01 7:45			186.8	7.29			12.5	69.8																																								
W16	2017-09-02 9:05			145.5	7.58			11.5	69																																								
W16	2017-09-03 8:15			172.5	7.23			11.5	76.9																																								
W16	2017-09-04 9:50	171	455	154.2	7.48	268	4	12	77.1	0.0174	1.8	0.0334	60.3	6.55		0.00001	0.0061	0.00043	0.0759	0.028	0.00002	0.00005	57.2	0.0000485	0.0001	0.00013	0.0268	0.047	0.000005	3.07	0.0012	17.1	0.022	0.00283	13.4	0.00076	0.00005	0.0001	20.1	0.000673	3.16	0.0001	0.571	0.0003	0.00001	0.00118	0.0005	0.002	0.0003
W16	2017-09-05 10:30			165.3	7.47			12.3	63.1																																								
W16	2017-09-06 8:10			168.1	7.34			12.3	88.6																																								
W16	2017-09-07 7:40			193.5	7.14			11.9	88.4																																								
W16	2017-09-08 7:50			234	7.02			10.5	71.7																																								
W16	2017-09-09 8:00			216	7.27			11.5	80.4																																								
W16	2017-09-10 8:15			228.1	7.1			11.2	72.4																																								
W16	2017-09-11 8:05	171	446	223.2	7.04	272	3	10.9	71.9	0.0141	1.85	0.0429	62.5	6.69		0.00001	0.004	0.00042	0.0761	0.029	0.00002	0.00005	58.1	0.0000075	0.0001	0.00011	0.0244	0.04	0.000005	2.92	0.0011	17.1	0.0286	0.0029	13.9	0.00075	0.00005	0.0001	22.6	0.000771	3.38	0.0001	0.565	0.0003	0.00001	0.00119	0.0005	0.001	0.0003
W16	2017-09-12 9:40			174.6	7.36			9.9	77.6																																								
W16	2017-09-13 8:10																																																
W16	2017-09-18 9:25	180	460	177.3	7.28	276	3	9.6	53.4	0.0121	1.91	0.0427	64.7	6.67		0.00001	0.0046	0.00044	0.0758	0.025	0.00002	0.00005	55.5	0.0000077	0.0001	0.0001	0.023	0.046	0.000005	2.72	0.001	17.3	0.0419	0.00273	12.7	0.00069	0.00005	0.0001	21.5	0.000668	3.43	0.0001	0.565	0.0003	0.00001	0.00121	0.0005	0.0013	0.0003
W16	2017-09-19 15:10			170.4	7.38			10.3	76.5																																								
W16	2017-09-25 10:25																																																
W16	2017-09-25 10:25	176	471	252.9	7.55	285	3	9.1	63.6	0.0117	1.92	0.0424	66.5	6.79		0.00001	0.0327	0.00043	0.0873	0.028	0.00002	0.00005	59.8	0.000005	0.0001	0.00012	0.0272	0.093	0.000005	3.22	0.0011	19.2	0.064	0.00276	15.4	0.00081	0.00005	0.0001	22.5	0.000787	3.73	0.0001	0.582	0.00151	0.00001	0.00129	0.0005	0.0043	0.0003
W16	2017-09-30 15:05			232	7.43			8.1	79.1																																								
W16	2017-10-02 10:05	186	472	237.4	7.52	288	3.1	6.3	69.3	0.0111	1.9	0.0607	68	6.81		0.00001	0.0051	0.00038	0.0753	0.024	0.00002	0.00005	58.2	0.0000081	0.0001	0.0001	0.0217	0.06	0.000005	2.82	0.001	18.5	0.147	0.0027	13.6	0.00071	0.00005	0.0001	22.9	0.000736	3.74	0.0001	0.574	0.0003	0.00001	0.00137	0.0005	0.0011	0.0003
W16	2017-10-09 10:30	191	489	174.2	7.53	299	63.5	5.4	79.8	0.0085	1.88	0.0726	69.6	7.04		0.00001	0.0034	0.00044	0.0845	0.025	0.00002	0.00005	63	0.0000075	0.0001	0.0001	0.0217	0.048	0.000005	2.96	0.0012	19	0.202	0.00271	14.3	0.00077	0.00005	0.0001	24.9	0.000767	3.91	0.0001	0.611	0.0003	0.00001	0.0013	0.0005	0.001	0.0003
W16	2017-10-16 11:30			251.2	7.53			2.5	69.7																																								
W16	2017-11-06 10:10			271.4	7.39			0.3	74.8																																								
W16	2017-11-13 15:10	202	507	263.9	7.22	319	3	2.1	84.2	0.008	1.89	0.0881	71.2	7.41		0.00001	0.0037	0.00041	0.0859	0.027	0.00002	0.00005	69.9	0.0000096	0.0001	0.00011	0.0207	0.068	0.000005	3.2	0.0014	21.3	0.263	0.00317	15	0.00071	0.00005	0.0001	25.3	0.000711	4.75	0.0001	0.677	0.0003	0.00001	0.00144	0.0005	0.0024	0.0003
W16	2017-12-07 10:50	211	523	268.1	7.73	328	3	1.9	63.8	0.0075	1.81	0.0862	73.4	7.52		0.00001	0.0037	0.00043	0.0844	0.03	0.00002	0.00005	71.6	0.0000098	0.0001	0.0001	0.0208	0.063	0.000005	3.33	0.0015	20.6	0.248	0.00313	15.7	0.00089	0.00005	0.0001	23.6	0.000657	4.28	0.0001	0.702	0.0003	0.00001	0.00147	0.0005	0.0037	0.0003
W16	2018-01-16 14:00	212	541	160.3	7.93	331	10	1.1	79.9	0.0066	1.71	0.066	75.8	7.72		0.00001	0.0031	0.00036	0.0868	0.027	0.00002	0.00005	71.1	0.0000143	0.0001	0.0001	0.0207	0.063	0.000005	3.37	0.0011	21.5	0.152	0.00341	16.2	0.00078	0.00005	0.0001	24.5	0.000748	4.71	0.0001	0.721	0.00031	0.00001	0.00148	0.0005	0.0045	0.0003
W16	2018-02-13 17:00	212	580	187.9	7.62	339	3	0.3	57.3	0.0056	1.67	0.0577	76.4	8.01		0.00001	0.0022	0.00038	0.0893	0.029	0.00002	0.00005	77.4	0.0000085	0.0001	0.0001	0.0196	0.065	0.000005	3.72	0.0013	21.4	0.0671	0.0032	17.2	0.00071	0.00005	0.0001	26.6	0.00071	4.9	0.0001	0.714	0.0003	0.00001	0.00165	0.0005	0.0016	0.0003
W16	2018-03-13 14:50	160	510	187.1	8.07	305	44.7	0.6	50	0.0216	1.52	0.101	92	9.94		0.00001	0.0134	0.00038	0.0714	0.023	0.00002	0.00005	62.3	0.000154	0.00011	0.00028	0.0553	0.033	0.000005	4.08	0.0012	18.3	0.0672	0.00397	14.7	0.00074	0.000112	0.00026	30.5	0.000726	3.29	0.0001	0.625	0.00061	0.00001	0.00124	0.0005	0.0281	0.00043
W16	2018-04-09 14:50	217	577	111.6	7.94	342	35.9	1	62.51	0.0096	1.56	0.0693	80	9.32		0.00001	0.0125	0.00039	0.0842	0.029	0.00002	0.00005	69.9	0.000154	0.00013	0.00026	0.0513	0.043	0.000005	3.8	0.0021	23.3	0.0745	0.00393	18.3	0.00088	0.00005	0.00032	27.4	0.00075	4.66	0.0001	0.764	0.00111	0.00001	0.00178	0.0005	0.015	0.0003
W16	2018-05-08 15:31	67	198	186.7	7.26	193	19	6.3	109.9	0.0054	0.389	0.0162	24	3.01	0.15	0.00001	0.0485	0.00039	0.0482	0.01		0.00005	27	0.0000303	0.00015	0.00024	0.0574	0.209	0.0000059	1.83	0.001	6.96	0.115	0.00154	4.93	0.00105	0.000056	0.0001	7.81	0.00037	2.61	0.0001	0.231	0.00221	0.00001	0.00049	0.00054	0.0015	0.0003
W16	2018-05-14 14:10	125	339	144.7	7.67	198	13.5	7.4	86.1	0.0049	0.717	0.0161	43.8	5.16	0.209	0.00001	0.0289	0.00037	0.0677	0.013	0.00002	0.00005	44.6	0.0000218	0.00013	0.00018	0.0464	0.165	0.000005	2.29	0.0011	13.9	0.145	0.00207	9.11	0.00109	0.00005	0.0001	14.3	0.000464	3.3	0.0001	0.407	0.00127	0.00001	0.000879	0.0005	0.0024	0.0003
W16	2018-05-19 7:50	134	365	162	8.05	207	5.4	10.8	94.5	0.0075	0.769	0.0058	46.8	5.44		0.00001	0.0192	0.0004	0.0712	0.014	0.00002	0.00005	43.2	0.0000169	0.00012	0.00017	0.0459	0.133	0.000005	2.44	0.0011	14.9	0.148	0.00226	10.3	0.00095	0.00005	0.0001	16.3	0.000532	3.49	0.0001	0.441	0.0009	0.00001	0.000969	0.0005	0.0043	0.0003
W16	2018-05-21 9:50	135	366	146	8.2	215	4.4	11.4	87.2	0.0085	0.892	0.0123	48.6	5.5		0.00001	0.0203	0.00038	0.0742	0.015	0.00002	0.00005	48.4	0.000018	0.00012	0.00013	0.0453	0.127	0.000005	2.52	0.0012	13.7	0.136	0.00216	10.2	0.00085	0.00005	0.0001	16	0.00055	3.53	0.0001	0.447	0.00084	0.00001	0.000955	0.0005	0.001	0.0003
W16	2018-05-22 9:15			151.4	8.24			10.5	88.1																																								
W16	2018-05-23 9:50			163.3	8.24			11.2	79.7																																								
W16	2018-05-24 7:50	134	362	191.7	8.26	219	3.8	11.5	88.6	0.0091	1	0.0086	49.5	5.43		0.00001	0.0344	0.00057	0.083	0.013	0.00002	0.00005	46.4	0.0000332	0.00017	0.0002	0.052	0.103	0.000005	3.07	0.001	17.3	0.112	0.00226	12.1	0.00128	0.00005	0.0001	16.4	0.000604	3.7	0.0001	0.477	0.00128	0.00001	0.000923	0.00056	0.0021	0.0003
W16	2018-05-25 8:30			126.2	8.17			11.2	91.6																																								
W16	2018-05-26 8:20			148.3	8.27			11.3	92.1																																								
W16	2018-05-27 9:00			161.7	8.33			12.3	102.7																																								
W16	2018-05-28 8:50	134	362	156	8.39	224	4.8	12	93.9	0.0111	1.16	0.0103	52.3	5.53		0.00001	0.0141	0.0004	0.0702	0.014	0.00002	0.00005	50.7	0.0000149	0.0001	0.00015	0.0441	0.078	0.000005	2.71	0.0012	16	0.052	0.00232	10.9	0.00099	0.00005	0.0001	17.6	0.000678	3.48	0.0001	0.477	0.00032	0.00001	0.00108	0.0005	0.001	0.0003
W16	2018-05-31 9:00			140	8.64			12.8	127.6																																								
W16	2018-06-01 8:45			141.5	8.69			13.2	106.1																																								
W16	2018-06-02 8:40			142.5	8.58			12.6	90.9																																								
W16	2018-06-03 8:15			145	8.61			12.8	85.2																																								
W16	2018-06-04 10:15	142	407	141.7	8.06	234	10.1	14	112	0.0115	1.53	0.0065	55.3	5.31		0.00001	0.0126	0.00042	0.0679	0.015	0.00002	0.00005	51.3	0.00001	0.0001	0.0001	0.0398	0.056	0.000005	2.68	0.0012	15.7	0.0263	0.00262	10.9	0.00088	0.00005	0.0001	17.8	0.000809	3.26	0.0001	0.503	0.00036	0.00001	0.00114	0.0005	0.001	0.0003
W16	2018-06-05 11:00	140	403	110.9	8.67	295		15.4	95	0.0126	1.54	0.009	56.2	5.3		0.00001	0.0162	0.00042	0.0696	0.014	0.00002	0.00005	51.3	0.0000148	0.0001	0.00013	0.0445	0.059	0.000005	2.81	0.0012	14.2	0.0254	0.00254	11.5	0.00084	0.00005	0.0001	19.7	0.000829	3.29	0.0001	0.493	0.00074	0.00001	0.00117	0.00053	0.001	0.0003
W16	2018-06-06 9:25			115.6	8.66			14.6	82.3																																								
W16	2018-06-07 9:20			92.1	8.13			14.6	112																																								
W16	2018-06-08 9:00			123.8	8.61			14.4	83.6																																								
W16	2018-06-09 8:50			131.2	8.58			14.7	98.7																																								
W16	2018-06-10 8:05			131.8	8.54			14.9	105.6																																								
W16	2018-06-12 10:15	143	404	145	8.02	242	3.8	14.8	96	0.0106	1.91	0.014	59.4	5.05		0.00001	0.0208	0.00045	0.0689	0.014	0.00002	0.00005	53.1	0.0000105	0.0001	0.0001	0.0373	0.069	0.000006	2.7	0.0012	16.5	0.0207	0.00252	11.2	0.00101	0.00005	0.0001	19	0.000961	3.43	0.0001	0.5	0.00079	0.00001	0.00116	0.0005	0.0019	0.0003
W16	2018-06-13 8:50																																																
W16	2018-06-18 17:00	151	416	156.1	8.26	246	4.4	18	77.9	0.0102	2	0.0202	61.5	5.12		0.00001	0.0118	0.00036	0.0671	0.014	0.00002	0.00005	51.6	0.0000114	0.0001	0.0001	0.0347	0.056	0.000005	2.56	0.0012	15.5	0.0256	0.00264	10.7	0.00085	0.00005	0.0001	20.1	0.000901	3.21	0.0001	0.493	0.00047	0.00001	0.00122	0.0005	0.001	0.0003
W16	2018-06-25 16:00	152	428	181.9	8.1	255	7.3	17.8	66.5	0.0097	1.97	0.0302	63.7	5.27		0.00001	0.0102	0.00041	0.0754	0.013	0.00002	0.00005	54.9	0.0000113	0.0001	0.00018	0.0348	0.059	0.000005	2.82	0.0022	17.1	0.0327	0.0027	11.3	0.00091	0.00005	0.0001	19.5	0.000902	3.13	0.0001	0.54	0.0005	0.00001	0.00128	0.0005	0.001	0.0003
W16	2018-07-02 8:00	152	420	149.1	8.1	253	123	15.5	82.1	0.0088	1.99	0.0354	62.7	4.87		0.00001	0.0167	0.00046	0.0729	0.014	0.00002	0.00005	54.4	0.0000085	0.0001	0.0001	0.0329	0.082	0.000005	2.59	0.0011	17.1	0.04	0.00265	11.3	0.00097	0.00005	0.0001	20.8	0.000894	3.39	0.0001	0.507	0.00075	0.00001	0.00123	0.00052	0.001	0.0003
W16	2018-07-09 8:00	152	423	121	8.12	259	3	19	76.7	0.0089	1.96	0.0358	63.3	4.77		0.00001	0.0148	0.00045	0.0761	0.014	0.00002	0.00005	59.6	0.0000074	0.0001	0.00015	0.0316	0.079	0.000005	2.54	0.0011	17.3	0.0435	0.00279	11.3	0.00102	0.00005	0.0001	20.8	0.000848	3.33	0.0001	0.549	0.00057	0.00001	0.00127	0.00056	0.001	0.0003
W16	2018-07-11 13:35	157	433	183.5	8	257	3	17.5	82.5	0.0072	1.88	0.0404	62.2	4.76		0.00001	0.0171	0.00044	0.0728	0.012	0.00002	0.00005	56.5	0.0000113	0.0001	0.00018	0.0332	0.091	0.000005	2.47	0.0011	17.1	0.0446	0.00256	10.8	0.00099	0.00005	0.0001	19.4	0.000821	3.29	0.0001	0.521	0.00091	0.00001	0.00119	0.00056	0.001	0.0003
W16	2018-07-16 11:15	158	429	146.5	8.16	256	3	15.8	88.9	0.0093	1.85	0.0498	63.7	4.8		0.00001	0.0141	0.00044	0.071	0.013	0.00002	0.00005	54.2	0.0000062	0.0001	0.00019	0.0299	0.081	0.000005	2.52	0.0012	16.5	0.0392	0.00255	11	0.001	0.00005	0.0001	21.8	0.000859	3.35	0.0001	0.506	0.00064	0.00001	0.00125	0.0005	0.001	0.0003
W16	2018-07-23 15:10	192	464	122.2	8.29	282	6.3	20.1	81.9	0.0097	1.72	0.0411	64.6	4.97	0.221	0.00001	0.0129	0.00046	0.0731	0.016	0.00002	0.00005	56.8	0.000011	0.0001	0.0002	0.0307	0.065	0.000005	2.69	0.0013	17.4	0.0259	0.00282	11.8	0.001	0.00005	0.0001	23.8	0.000936	3.22	0.0001	0.528	0.00064	0.00001	0.00125	0.0005	0.001	0.0003
W16	2018-07-30 9:05	163	452	135.1	8.28	269	3	19.9	59.1	0.0109	1.64	0.0154	65.4	5.09		0.00001	0.0052	0.00046	0.077	0.014	0.00002	0.00005	59.9	0.0000052	0.0001	0.00013	0.0295	0.032	0.000005	2.73	0.0012	18.6	0.00278	0.00281	12.1	0.00094	0.00005	0.0001	21.4	0.000847	3.22	0.0001	0.555	0.0003	0.00001	0.00132	0.0005	0.001	0.0003
W16	2018-08-06 9:40	171	445	122.4	8.37	272	3.4	18.8	71.6	0.0111	1.53	0.0094	66.3	5.13		0.00001	0.0041	0.00048	0.0748	0.015	0.00002	0.00005	59	0.0000068	0.0001	0.00012	0.0275	0.016	0.000005	2.65	0.0013	18	0.00179	0.00289	12	0.00092	0.00005	0.0001	23.4	0.000831	3.32	0.0001	0.54	0.0003	0.00001	0.00137	0.0005	0.001	0.0003
W16	2018-08-09 8:35			164.6	8.19			16.7	77.9																																								
W16	2018-08-10 9:30			192.6	8.14			15.6	66.2																																								
W16	2018-08-13 13:50	167	467	172.6	7.96	285	5.2	18.7	86.7	0.0107	1.7	0.0119	70.9	5.31		0.00001	0.0042	0.00047	0.0812	0.014	0.00002	0.00005	64.7	0.000005	0.0001	0.0001	0.0312	0.02	0.000005	2.91	0.0012	20.6	0.00318	0.00296	13.3	0.00097	0.00005	0.0001	22.3	0.000789	3.24	0.0001	0.605	0.0003	0.00001	0.00127	0.0005	0.001	0.0003
W16	2018-08-20 10:00	168	476	163.9	8.12	279	3	14.8	57.9	0.0091	1.72	0.0181	70.1	5.11		0.00001	0.004	0.00045	0.0744	0.017	0.00002	0.00005	60.7	0.0000062	0.0001	0.00029	0.0289	0.024	0.000005	2.69	0.0012	19.1	0.00144	0.00306	12.4	0.00087	0.00005	0.0001	24.9	0.000793	3.36	0.0001	0.585	0.0003	0.00001	0.00137	0.0005	0.001	0.0003
W16	2018-08-27 11:00	162	451	122.2	8.05	264	6.6	13.8	68.4	0.0084	1.66	0.0102	70.5	5.3		0.00001	0.0122	0.00045	0.0799	0.01	0.00002	0.00005	48.6	0.000009	0.0001	0.00012	0.0288	0.023	0.000005	2.82	0.001	18.9	0.00247	0.00227	12.9	0.0008	0.00005	0.0001	25.1	0.000767	3.51	0.0001	0.445	0.0003	0.00001	0.000999	0.0005	0.001	0.0003
W16	2018-09-03 9:35	173	478	151.1	7.87	278	3	11	60.4	0.0097	1.64	0.0248	69.8	5.67		0.00001	0.0046	0.00041	0.0708	0.014	0.00002	0.00005	59.1	0.0000068	0.0001	0.00013	0.0269	0.023	0.000005	2.53	0.0012	18.1	0.0739	0.00284	12.1	0.00076	0.00005	0.0001	23	0.000752	3.52	0.0001	0.554	0.00037	0.00001	0.00129	0.0005	0.001	0.0003
W16	2018-09-12 16:20	178	465	144.5	8.04	280	3	11.6	97	0.0082	1.48	0.0069	68	5.51		0.00001	0.0019	0.00038	0.0758	0.014	0.00002	0.00005	60.9	0.000005	0.0001	0.0001	0.0251	0.011	0.000005	2.58	0.0013	17.5	0.00191	0.00296	12	0.0009	0.00005	0.0001	21.2	0.000571	3.32	0.0001	0.61	0.0003	0.00001	0.00144	0.0005	0.001	0.0003
W16	2018-09-17 16:50	182	478	127.4	7.99	285	5.6	10.1	80.7	0.0067	1.39	0.0084	69.6	5.85		0.00001	0.0024	0.00043	0.0699	0.015	0.00002	0.00005	60.3	0.000005	0.0001	0.00011	0.0262	0.016	0.000005	2.47	0.0012	18.4	0.0176	0.00293	12.5	0.00074	0.00005	0.0001	23.2	0.000732	3.67	0.0001	0.56	0.0003	0.00001	0.00132	0.0005	0.001	0.0003
W16	2018-09-24 10:40	128	470	156.7	7.95	255	5.3	7.1	73.6	0.0055	1.33	0.0162	68.9	5.88		0.00001	0.0029	0.00041	0.0743	0.016	0.00002	0.00005	63	0.0000051	0.0001	0.0001	0.0264	0.014	0.000005	2.96	0.0013	19.2	0.00378	0.00304	12.8	0.00089	0.00005	0.0001	23.2	0.00067	3.67	0.0001	0.595	0.0003	0.00001	0.00135	0.0005	0.001	0.0003
W16	2018-10-01 9:25	183	488	177.7	7.77	285	3.3	6.1	77.7	0.0056	1.25	0.011	67.8	6		0.00001	0.0031	0.00044	0.0714	0.015	0.00002	0.00005	59.8	0.000005	0.0001	0.00012	0.024	0.015	0.000005	2.73	0.0013	19.2	0.0144	0.00278	13.3	0.00077	0.00005	0.0001	24.1	0.00071	3.91	0.0001	0.558	0.0003	0.00001	0.00121	0.0005	0.001	0.0003
W16	2018-10-08 10:30	187	484	137.8	8.06	295	5.2	1.5	80.7	0.0059	1.24	0.0127	70.7	6.33		0.00001	0.0021	0.00042	0.0802	0.015	0.00002	0.00005	62.5	0.000006	0.0001	0.00012	0.0248	0.018	0.000005	2.89	0.0013	20.8	0.00255	0.00314	13.8	0.00081	0.00005	0.0001	24.3	0.00071	4.07	0.0001	0.635	0.0003	0.00001	0.00131	0.0005	0.0021	0.0003
W16	2018-10-15 15:00	157	446	147.4	8.12	238	13.3	2.2	86.8	0.0048	1.09	0.008	65.1	5.74		0.00001	0.0141	0.00028	0.0515	0.01	0.00002	0.00005	42.5	0.000005	0.0001	0.0001	0.0201	0.026	0.000005	1.91	0.001	14	0.00257	0.00207	9.54	0.00053	0.00005	0.0001	16.1	0.000401	2.52	0.0001	0.422	0.00117	0.00001	0.000939	0.0005	0.001	0.0003
W16	2018-11-19 14:30	197	489	205.1	8.21	303	3	3.3	67.6	0.003	1.15	0.0251	71.7	6.49		0.00001	0.0021	0.00039	0.0737	0.017	0.00002	0.00005	63.9	0.0000057	0.0001	0.00013	0.0231	0.015	0.000005	2.77	0.0014	21.1	0.00256	0.00303	13.8	0.0011	0.00005	0.0001	24.3	0.000737	4.06	0.0001	0.603	0.0003	0.00001	0.00145	0.0005		0.0003
W16	2018-12-01 11:00	196	509	181.3	8.1	312	3	1.2	98.9	0.0025	1.13	0.0276	70.8	6.51	0.262	0.00001	0.0047	0.0004	0.0812	0.016	0.00002	0.00005	71.2	0.0000094	0.0001	0.0001	0.0242	0.015	0.000005	3.15	0.0014	22.2	0.00255	0.00334	15.1	0.00078	0.00005	0.0001	25.6	0.000873	4.3	0.0001	0.701	0.0003	0.00001	0.00154	0.0005	0.004	0.0003
W16	2019-01-04 11:40	196	505	211.1	7.79	309	16.4	0	63.1	0.01	1.06	0.0322	72.1	6.79		0.00001	0.0016	0.00036	0.0773	0.016	0.00002	0.00005	70.5	0.0000099	0.0001	0.00011	0.0238	0.014	0.000005	2.91	0.0016	20.6	0.0041	0.00337	13.7	0.00074	0.00005	0.0001	24.6	0.000618	4.35	0.0001	0.686	0.0003	0.00001	0.00153	0.0005	0.0067	0.0003
W16	2019-02-11 15:45	207	527	262.2	7.69	319	3.7	0.1	6.8	0.002	1.03	0.0389	72.4	7.48		0.00001	0.0018	0.00042	0.0801	0.02	0.00002	0.00005	70.4	0.000175	0.0001	0.00015	0.0233	0.016	0.000005	3.23	0.0015	21.8	0.00836	0.00355	14.7	0.00083	0.00005	0.00011	25.2	0.000744	4.57	0.0001	0.681	0.0003	0.00001	0.00169	0.0005	0.0249	0.0003
W16	2019-03-11 15:15	207	525		7.91	320	3	0.4	37.1	0.0023	0.967	0.0233	74.6	7.34		0.00001	0.0022	0.00044	0.0842	0.018	0.00002	0.00005	68.2	0.0000685	0.0001	0.00019	0.0228	0.019	0.000005	3.34	0.0015	22.1	0.0164	0.00342	15.5	0.00085	0.00005	0.0001	26	0.000629	4.9	0.0001	0.637	0.0003	0.00001	0.00166	0.0005	0.0171	0.0003
W16	2019-04-22 11:15	53.7	150	179	7.55	76.1	4.1	4.5	64.5	0.0012	0.214	0.0059	15.1	2.15		0.00001	0.0085	0.0001	0.0224	0.01	0.00002	0.00005	16.2	0.0000076	0.0001	0.0001	0.00754	0.014	0.000005	0.99	0.001	4.78	0.0274	0.000781	3.63	0.0005	0.00005	0.0001	5.42	0.000211	1.22	0.0001	0.145	0.0003	0.00001	0.00026	0.0005	0.0019	0.0003
W16	2019-04-24 9:25			215.2	8.11			2.5	56.7																																								
W16	2019-04-30 10:35			208	7.64			6.1	73.1																																								
W16	2019-05-06 15:40	175	454	283.6	7.55	264	3	7.9	140.5	0.0022	0.368	0.0072	58.8	6.14		0.00001	0.0014	0.00034	0.06	0.015	0.00002	0.00005	58.5	0.000005	0.0001	0.0001	0.0181	0.013	0.000005	2.43	0.0012	18.8	0.00971	0.00267	12.5	0.00054	0.00005	0.0001	21.3	0.000433	3.42	0.0001	0.53	0.0003	0.00001	0.00131	0.0005	0.001	0.0003
W16	2019-05-13 9:35			201.7	7.72			9.3	98.4																																								
W16	2019-05-20 13:10			169.4	8.29			13.5	111.3																																								
W16	2019-05-27 9:16																																																
W16	2019-06-03 13:30	185	459	142.9	8.56	276	3.7	14.8	88.6	0.001	0.005	0.0087	63.3	6.83		0.00001	0.002	0.00037	0.0656	0.015	0.00002	0.00005	60.1	0.0000051	0.0001	0.0001	0.0164	0.017	0.000005	2.84	0.0012	19.7	0.00572	0.00316	12.6	0.00053	0.00005	0.0001	22.6	0.000382	1.82	0.0001	0.567	0.0003	0.00001	0.00146	0.0005	0.001	0.0003
W16	2019-06-10 11:00			134.9	8.6			15.4	117																																								
W16	2019-06-17 8:50			158.5	8.27			16.5	85.1																																								
W16	2019-06-24 11:20			111.3	8.51			21.1	88.6																																								
W16	2019-07-01 13:25			140.1	8.41			21.4	79.6																																								
W16	2019-07-08 8:50	201	482	125.9	8.44	298	3	20	72.8	0.001	0.005	0.005	64.7	7.42		0.00001	0.0014	0.00051	0.0759	0.016	0.00002	0.00005	65.9	0.000005	0.0001	0.0001	0.0137	0.01	0.000005	3.2	0.0013	21.4	0.00247	0.00376	14.4	0.00065	0.00005	0.0001	23.4	0.000424	1.89	0.0001	0.65	0.0003	0.00001	0.00161	0.0005	0.001	0.0003
W16	2019-07-15 8:50			93.9	8.51			18.2	66.9																																								
W16	2019-07-22 7:20			35.7	7.85			18.6	65.3																																								

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N-NO_2$	$N-NO_3$	$N-NH_3$	SO_4-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W16	2019-08-06 8:30	225		96.2	8.19	321	3	18.3	69.3	0.001	0.0101	0.0199	65.4	7.81	
W16	2019-08-13 11:50	212	498	148.9	8.03	303	6	16.2	58.6	0.001	0.0141	0.0187	65.7	7.96	0.304
W16	2019-08-20 9:25	215	518	125.2	7.97	308	4.6	13	61.5	0.0015	0.0654	0.0113	65.4	7.86	
W16	2019-08-26 15:25			123	8.2			13.2	85.9						
W16	2019-09-01 11:35	210	515	149.4	8.33	313	3	12.7	82.9	0.001	0.005	0.0114	64.7	7.95	
W16	2019-09-10 8:45			239.8	8.3			11.7	76.1						
W16	2019-09-16 15:00			210.7	7.99			11.5	66.8						
W16	2019-09-23 9:00			128.1	7.01			9.8	66.7						
W16	2019-10-14 16:50	221	512	227.9	8.05	327	3.5	3	87.9	0.001	0.0262	0.0112	65.5	8.35	
W16	2019-11-09 13:45	214	510	162.5	6.98	300	53.2	3	34.9	0.002	0.0988	0.0739	56.8	9.07	
W16	2019-12-23 13:40	241	555	184.6	7.69	349	3.2		68.6	0.0018	0.051	0.0611	70.3	8.82	0.326
W16	2020-01-20 13:50	253	576	251.6	6.68	389	3	0.2	23.1	0.0011	0.0632	0.0956	72.6	9.17	
W16	2020-02-24 11:10	260	607	51.6	7.25	397	6.9	1.1	2.8	0.0029	0.0412	0.156	72.8	9.38	
W16	2020-03-23 10:50	270	619	-59.7	7.46	396	4	0.5	1.2	0.0015	0.0164	0.273	75.9	9.92	
W16	2020-04-20 9:25	70.2	364	133.1	7.51	236	5	0.7	67.3	0.0587	3.1	0.133	86.2	6.19	
W16	2020-04-26 17:07			122.6	7.45			3.4	96.1						
W16	2020-05-02 10:00	61.3	231	154.1	7.27	194	11	1.8	81.2	0.0307	2.19	0.0382	44.6	3.4	
W16	2020-05-07 16:00			176.8	7.47			5.6	64.4						
W16	2020-05-13 16:25	67.7	239	141.7	7.76	193	18	13.4	76.9	0.0272	1.63	0.0248	43	3.32	
W16	2020-05-18 11:00			140.1	7.65			11.2	74.8						
W16	2020-05-25 11:30	74	265	144.6	7.87	200	3	14.3	72.7	0.0259	1.5	0.0147	46.8	3.74	
W16	2020-06-01 11:50			143.4	7.68			13.7	74.1						
W16	2020-06-08 1:10	80.4	292	93.7	8.06	210	3.5	15.3	87.6	0.0192	1.3	0.0135	51.4	4.14	
W16	2020-06-09 17:45														
W16	2020-06-11 13:50	82.6	300	166.4	8.3	214	6.1	17	79.8	0.0174	1.21	0.0227	52.3	4.14	
W16	2020-06-17 9:20			190.1	8.29			17	64.2						
W16	2020-06-22 16:15			163.6	7.77			16.4	58.6						
W16	2020-06-29 17:00			182.4	7.65			17	68.8						
W16	2020-07-06 14:25	113	365	168.1	7.62	252	3	18.6	63.6	0.0176	1.22	0.0466	61.9	5.69	
W16	2020-07-13 8:00			161.3	7.34			16.5	47.1						
W16	2020-07-18 15:30	116	364	140.3	7.66	256	27.2	21.5	57.9	0.0162	1.13	0.0615	62.3	5.1	
W16	2020-07-20 11:50			224.6	6.63			18.9	60.8						
W16	2020-07-29 8:30			199.9	7.55			14.6	66						
W16	2020-08-03 16:00														
W16	2020-08-10 9:40	136	422	231.1	7.6	280	3	14.3	49.7	0.0212	0.868	0.0176	68.2	5.83	
W16	2020-08-17 9:05			89.2	7.83			14.1	87.9						
W16	2020-08-25 15:05			241.1	6.64			15.2	79.3						
W16	2020-08-31 8:35			170.7	7.89			12	58.5						
W16	2020-09-06 11:47	154	453	167.3	7.76	310	3	11.2	73.3	0.0197	1.22	0.0582	79.5	5.45	
W16	2020-09-14 9:00			144.1	8.1			8.4	66.6						
W16	2020-09-21 14:25	160	455	186.9	7.84	319	5.5	8.1	73.2	0.015	1.29	0.0208	83.4	5.48	
W16	2020-09-25 16:50			130.3	7.31			7.9	69.7						
W16	2020-09-28 13:30			174.3	7.68			6.8	59.6						
W16	2020-10-05 9:00	169	495	156.4	7.47	339	3	5.8	65.7	0.0098	1.37	0.0497	87	6.67	
W16	2020-10-12 6:55	170	498	180.6	7.79	345	3.6	4.4	66.7	0.0092	1.4	0.0345	90.1	6.15	
W16	2020-10-13 7:35			197.3	7.68			4.2	71						
W16	2021-02-10 15:45	193	554	116.3	6.86	376	3	0.5	32.1	0.0073	1.48	0.0503	95.3	6.98	
W16	2021-03-22 15:55	209	597	105.4	7.65	394	4.5	0	62.8	0.0058	1.52	0.0486	104	7.72	
W16	2021-04-19 15:00	180	549			356	32			0.0051	1.28	0.0373	93.9	7.24	
W16	2021-05-01 14:45			221.3	6.42			2.3	77.9						
W16	2021-05-04 11:20			205.6	7.59			3	75.9						
W16	2021-05-07 13:55	42.4	148	206.2	7.11	143	4.7	5.4	77.3	0.0126	0.835	0.0105	20.7	1.32	
W16	2021-05-10 10:40	41.7	137	167.9	7.23	125	9.1	5.1	74	0.0102	0.671	0.0141	16.8	1.16	
W16	2021-05-10 16:15			147.2	7.21			6	91.93						
W16	2021-05-11 10:10														
W16	2021-05-12 10:10	50.6	154	174.1	7.37		2.6	7.1	75.2	0.0096	0.67	0.0145	18.4	1.4	
W16	2021-05-17 8:50	51.7	157	216	6.96	137		9.5	82.4	0.0094	0.765	0.0204	19.5	1.49	0.132
W16	2021-05-17 14:30	50.7	162			142	3.4			0.008	0.706	0.0243	21	1.6	0.126
W16	2021-05-17 14:35	84.3	275			200	3.3			0.0078	1.16	0.021	43.4	3.43	0.164
W16	2021-05-17 14:40	50.8	158			137	3.2			0.0069	0.725	0.0216	19.9	1.49	0.121
W16	2021-05-26 11:30														
W16	2021-05-26 14:55	52.2	156	190.6	6.79	128	14.6	13.4	84.2	0.0093	0.647	0.0222	17.5	1.57	
W16	2021-05-31 15:00	55.7	167	173.6	7.43	136	24.6	13.3	93.9	0.0101	0.529	0.0147	17.7	1.58	
W16	2021-06-07 16:55	61.2	169	159.7	7.28	138	5.8	16.2	108.5	0.0053	0.417	0.0191	18.5	1.7	
W16	2021-06-14 9:00	63.6	176	127.4	7.48	138	5.7	16	84.6	0.0052	0.318	0.0136	18.9	1.75	
W16	2021-06-22 7:20	64.6	174	143.8	8.28	132	11.3	16.7	58.6	0.0028	0.0099	0.0134	18	1.71	
W16	2021-06-23 11:20	70.3	185	141.6	7.88	166	11	20.4	74	0.001	0.005	0.0163	18.9	1.81	0.183
W16	2021-07-03 14:30	74.8	196	125.6	8	144	2.1	23.8	80.3	0.001	0.005	0.011	19.6	1.91	
W16	2021-07-05 10:20			109.1	7.91			20.7	71.4						
W16	2021-07-12 9:55			151.1	7.78			16.2	61.5						
W16	2021-07-15 7:15														
W16	2021-07-15 7:15			132.2	6.84			16.4	54.3						
W16	2021-07-20 17:05			58.2	8.08			20.1	66						
W16	2021-07-26 11:50			111.1	7.59			18	47.9						
W16	2021-08-02 16:15			131.9	7.56			14.4	70.2						
W16	2021-08-06 9:15	106	292		6.97	199	1	15.2	59.8	0.021	0.273	0.12	37.1	3.59	
W16	2021-08-09 16:55			190.6	7.14			15.6	61.6						
W16	2021-08-09 16:55														
W16	2021-08-10 15:10	111	295	107.3	7.37	203	2.8	15.4	59.4	0.0217	0.281	0.112	37.3	3.65	
W16	2021-08-16 13:10														
W16	2021-08-17 14:15	111	303	129.4	7.13	210	1.8	14.5	101	0.0262	0.303	0.0604	38.4	3.75	
W16	2021-08-21 8:50			74.4	7.22			13.5	74.9						
W16	2021-08-23 13:15			122.5	7.72			13.3	77.7						
W16	2021-08-25 10:30	117	317	108	7.5	216	1.2	13.2	85.1	0.0283	0.35	0.0441	40.6	4	
W16	2021-08-29 12:10	119	323	118.2	7.59	218	1	12.7	81.1	0.0208	0.371	0.036	41.1	4.05	
W16	2021-09-06 11:05	120	323	102	7.63	220	1	12.7	80.8	0.0154	0.374	0.018	42.9	4.17	
W16	2021-09-14 13:05	128	334	135.4	7.58	222	1	11.5	82.1	0.0058	0.36	0.0126	42.1	4.11	
W16	2021-09-20 13:10	121	332	112.8	7.72	218	1	10	75	0.0048	0.372	0.0301	42.8	4.27	
W16	2021-09-28 10:55	110	366	75.6	7.76	216	1.1	6.6	70.1	0.0069	0.381	0.0412	43.3	4.32	
W16	2021-10-04 14:40	132	351	85.7	7.68	233	1	5.5	64.3	0.0083	0.404	0.0465	45.7	4.64	
W16	2021-10-11 10:45	124	355	92.9	7.74	224	1.2	4	68.7	0.0056	0.389	0.0365	44	4.46	
W16	2021-10-15 14:15			81.4	7.88			3	75.1						
W16	2021-10-17 16:05	130	349	106.5	7.95	229	1	2.8	59.7	0.0054	0.427	0.0314	44.7	4.51	
W16	2021-10-26 10:20	128	288	87.7	8	202	64.2	0.5	83.4	0.0026	0.588	0.02	27.6	3	
W16	2021-11-02 13:55	144	383	92.3	7.61	245	22.8	0.4	89.3	0.0028	0.509	0.0257	41.2	5.21	
W16	2021-11-08 14:50	133	345	119.3	7.63	242	6.3	2.1	52.6	0.0053	0.42	0.0193	43.2	4.43	
W16	2021-11-16 16:45														
W16	2021-12-28 14:30	159	389	85	7.94	258	1.3	7.2	71.8	0.001	0.472	0.0365	48.1	5.51	
W2	1993-09-30 0:00		197			137	17			0.0005	0.048	0.0003		1	
W2	1994-05-15 0:00		94			67	154			0.005	0.008	0.0003		1.7	
W2	1994-06-07 0:00		175			123	19			0.004	0.08	0.015		0.9	
W2	1994-07-08 0:00		173			117	48			0.004	0.039	0.006		1.1	
W2	1994-08-10 0:00		270			183	3			0.002	0.026	0.0003		1.2	
W2	1994-09-26 0:00		205			128	11			0.002	0.0003	0.0003		0.5	
W2	1995-06-15 0:00														
W2	1995-07-25 0:00	89.8	184			125	18			0.003	0.009	0.0003	12.5	3.4	0.2
W2	1995-09-20 0:00	72.5	136			127	55			0.004	0.045	0.0003	9.9	1.7	0.83
W2	1996-05-20 0:00		210			162	6			0.025	0.05			0.6	
W2	1996-07-16 0:00					138	204			0.0015	0.05			0.7	
W2	1996-09-09 0:00					144	55			0.0015	0.2			0.7	
W2	1996-10-15 0:00					186	12			0.0015	0.05			1	
W2	1997-05-01 0:00					115	300			0.25	0.1				
W2	1997-08-01 0:00					157	657			0.025	0.31				
W2	1998-05-02 0:00		127			100	150								
W2	1998-05-02 15:00	54	127			100	150			0.008	0.005				

Station	Date / Time	Dissolved Elements																			
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W16	2019-08-06 8:30	0.00001	0.002	0.0006	0.0749	0.017	0.00002	0.00005	69.9	0.000005	0.0001	0.0001	0.0134	0.01	0.000005	3	0.0013	23.9	0.00153	0.00375	15.7
W16	2019-08-13 11:50	0.00001	0.0021	0.00062	0.0765	0.017	0.00002	0.00005	62.1	0.000005	0.0001	0.0001	0.0132	0.01	0.000005	2.92	0.0013	20.2	0.00509	0.00385	14.5
W16	2019-08-20 9:25	0.00001	0.0021	0.00061	0.078	0.018	0.00002	0.00005	65	0.000005	0.0001	0.0001	0.0147	0.01	0.000005	2.95	0.0014	22.7	0.00146	0.00368	14.5
W16	2019-08-26 15:25																				
W16	2019-09-01 11:35	0.00001	0.0039	0.00055	0.0817	0.017	0.00002	0.00005	72.2	0.000005	0.0001	0.0001	0.0142	0.011	0.000005	3.36	0.0013	22.8	0.00096	0.00362	16
W16	2019-09-10 8:45																				
W16	2019-09-16 15:00																				
W16	2019-09-23 9:00																				
W16	2019-10-14 16:50	0.00001	0.0013	0.00054	0.0833	0.017	0.00002	0.00005	76.9	0.000005	0.0001	0.0001	0.0127	0.011	0.000005	3.32	0.0014	25.4	0.00171	0.00338	15.5
W16	2019-11-09 13:45	0.00001	0.0079	0.0005	0.0876	0.016	0.00002	0.00005	64.8	0.000181	0.0001	0.00017	0.0156	0.05	0.000005	3.54	0.0013	21.2	0.11	0.00322	15.4
W16	2019-12-23 13:40	0.00001	0.0011	0.00052	0.0924	0.019	0.00002	0.00005	78.5	0.000005	0.0001	0.0001	0.0136	0.027	0.000005	3.58	0.0015	25.4	0.122	0.00381	17.1
W16	2020-01-20 13:50	0.00001	0.0045	0.00059	0.0998	0.02	0.00002	0.00005	81.2	0.0000176	0.0001	0.00012	0.0162	0.045	0.000005	3.76	0.0015	25.5	0.257	0.0039	18.1
W16	2020-02-24 11:10	0.00001	0.001	0.00048	0.0983	0.017	0.00002	0.00005	84.2	0.0000567	0.0001	0.0001	0.0098	0.173	0.000005	3.42	0.0016	28.4	0.88	0.00361	17.7
W16	2020-03-23 10:50	0.00001	0.0026	0.00064	0.114	0.018	0.00002	0.00005	74.4	0.0000212	0.00016	0.0001	0.00872	0.851	0.000005	3.5	0.0014	25.6	1.36	0.00346	17
W16	2020-04-20 9:25	0.00001	0.0081	0.00036	0.0563	0.01	0.00002	0.00005	48.5	0.0000302	0.00017	0.0001	0.0207	0.064	0.000005	2.87	0.0012	12.7	0.494	0.00281	8.57
W16	2020-04-26 17:07																				
W16	2020-05-02 10:00	0.00001	0.0689	0.00059	0.05	0.01	0.00002	0.00005	33.2	0.0000457	0.00019	0.00034	0.0738	0.236	0.0000084	2.02	0.0012	8.64	0.164	0.00222	5.56
W16	2020-05-07 16:00																				
W16	2020-05-13 16:25	0.00001	0.0619	0.00052	0.0548	0.01	0.00002	0.00005	33.7	0.0000394	0.0002	0.00032	0.0778	0.214	0.000006	2.17	0.0011	9.85	0.183	0.00208	6.63
W16	2020-05-18 11:00																				
W16	2020-05-25 11:30	0.00001	0.0521	0.00057	0.0532	0.01	0.000028	0.00005	36.4	0.0000354	0.0001	0.00034	0.0758	0.186	0.000005	2.37	0.0013	10.2	0.02	0.00233	6.95
W16	2020-06-01 11:50																				
W16	2020-06-08 1:10	0.00001	0.0347	0.00054	0.0528	0.012	0.00002	0.00005	39.2	0.0000302	0.0001	0.00029	0.0716	0.154	0.000005	2.15	0.0011	10.7	0.0276	0.00258	7.53
W16	2020-06-09 17:45																				
W16	2020-06-11 13:50	0.00001	0.0291	0.00052	0.0528	0.012	0.00002	0.00005	40.1	0.0000212	0.0001	0.0003	0.0673	0.145	0.000005	2.06	0.0012	10.8	0.0262	0.00259	7.01
W16	2020-06-17 9:20																				
W16	2020-06-22 16:15																				
W16	2020-06-29 17:00																				
W16	2020-07-06 14:25	0.00001	0.0092	0.00052	0.061	0.013	0.00002	0.00005	47.6	0.0000147	0.0001	0.00026	0.0588	0.124	0.000005	2.53	0.0014	13.9	0.048	0.00304	9.01
W16	2020-07-13 8:00																				
W16	2020-07-18 15:30	0.00001	0.0142	0.00051	0.0657	0.011	0.00002	0.00005	53.3	0.0000148	0.0001	0.0002	0.0594	0.121	0.000005	2.65	0.0014	14	0.0748	0.0032	9.46
W16	2020-07-20 11:50																				
W16	2020-07-29 8:30																				
W16	2020-08-03 16:00																				
W16	2020-08-10 9:40	0.00001	0.005	0.00048	0.0618	0.013	0.00002	0.00005	55.5	0.0000064	0.0001	0.0002	0.0447	0.057	0.000005	2.7	0.0015	16.9	0.00337	0.00323	11.7
W16	2020-08-17 9:05	0.00001	0.0031	0.0005	0.0636	0.013	0.00002	0.00005	59.4	0.000005	0.0001	0.0002	0.0427	0.037		2.61	0.0015	16.3	0.00124	0.00323	11.4
W16	2020-08-25 15:05	0.00001	0.0049	0.00043	0.0612	0.013	0.00002	0.00005	55	0.00001	0.0001	0.00014	0.0371	0.037		2.32	0.0013	16.6	0.00339	0.00316	10.5
W16	2020-08-31 8:35	0.00001	0.0054	0.00042	0.0642	0.012	0.00002	0.00005	59.2	0.00001	0.0001	0.00014	0.0353	0.043		2.33	0.0013	18	0.00602	0.003	11
W16	2020-09-06 11:47	0.00001	0.0048	0.00043	0.0676	0.011	0.00002	0.00005	63.6	0.0000078	0.0001	0.0002	0.0355	0.05	0.000005	2.6	0.0013	18.1	0.00752	0.00282	11.1
W16	2020-09-14 9:00	0.00001	0.006	0.00041	0.0655	0.013	0.00002	0.00005	61.2	0.0000074	0.0001	0.00029	0.0318	0.066		2.45	0.0014	18.2	0.0297	0.00291	11
W16	2020-09-21 14:25	0.00001	0.0038	0.00043	0.0675	0.012	0.00002	0.00005	65.1	0.00001	0.0001	0.00021	0.0314	0.05	0.000005	2.52	0.0014	19.4	0.0294	0.00291	11.6
W16	2020-09-25 16:50																				
W16	2020-09-28 13:30	0.00001	0.0107	0.00041	0.0682	0.012	0.00002	0.00005	64.5	0.0000072	0.0001	0.00021	0.0316	0.062		2.57	0.0013	18.6	0.0473	0.00295	11.6
W16	2020-10-05 9:00	0.00001	0.003	0.00041	0.0748	0.012	0.00002	0.00005	71.9	0.0000081	0.0001	0.00033	0.0325	0.041	0.000005	2.96	0.0015	20.5	0.0606	0.00306	12.7
W16	2020-10-12 6:55	0.00001	0.0047	0.00042	0.0721	0.013	0.00002	0.00005	73	0.0000088	0.0001	0.00013	0.03	0.036	0.000005	3	0.0014	22.6	0.00216	0.00305	12.6
W16	2020-10-13 7:35																				
W16	2021-02-10 15:45	0.00001	0.0022	0.00035	0.0706	0.015	0.00002	0.00005	81.6	0.000318	0.0001	0.00021	0.023	0.025	0.000005	3.06	0.0018	21.8	0.00168	0.00362	12.6
W16	2021-03-22 15:55	0.00001	0.004	0.00038	0.0756	0.014	0.00002	0.00005	74.9	0.000112	0.0001	0.00021	0.0236	0.029	0.000005	3.32	0.0017	23.2	0.00424	0.00343	14
W16	2021-04-19 15:00	0.00001	0.0221	0.00037	0.0784	0.014	0.00002	0.00005	74.3	0.0000143	0.0001	0.00015	0.0268	0.058	0.000005	3.15	0.0019	20.7	0.019	0.00321	13.1
W16	2021-05-01 14:45																				
W16	2021-05-04 11:20																				
W16	2021-05-07 13:55	0.000011	0.104	0.00034	0.0358	0.01	0.00002	0.00005	22.6	0.0000361	0.00016	0.0005	0.0866	0.162	0.000005	2.21	0.001	5.74	0.051	0.00137	3.46
W16	2021-05-10 10:40	0.00001	0.0924	0.00031	0.0325	0.01	0.00002	0.00005	19.8	0.0000309	0.00015	0.0005	0.0763	0.144	0.000005	1.89	0.001	5.01	0.0445	0.00111	3.78
W16	2021-05-10 16:15																				
W16	2021-05-11 10:10																				
W16	2021-05-12 10:10	0.00001	0.0942	0.0003	0.0369	0.01	0.00002	0.00005	20.2	0.0000304	0.00016	0.0005	0.0802	0.149	0.0000076	2	0.001	5.49	0.046	0.00122	4.23
W16	2021-05-17 8:50	0.00001	0.081	0.0003	0.0353	0.01	0.00002	0.00005	21	0.0000283	0.00014	0.0005	0.0728	0.138	0.0000051	2.05	0.001	5.63	0.0481	0.00136	5.64
W16	2021-05-17 14:30	0.000011	0.0824	0.00037	0.0361	0.01	0.00002	0.00005	23.1	0.000034	0.00014	0.0005	0.0715	0.14	0.000005	1.94	0.001	5.96	0.0469	0.00129	4.73
W16	2021-05-17 14:35	0.00001	0.0531	0.00036	0.0455	0.011	0.00002	0.00005	35.9	0.0000262	0.0001	0.0005	0.0597	0.107	0.0000057	2.36	0.001	10	0.0498	0.00199	6.77
W16	2021-05-17 14:40	0.000011	0.0806	0.00033	0.0341	0.011	0.00002	0.00005	21.5	0.0000327	0.00014	0.0005	0.0706	0.137	0.000005	1.95	0.001	5.61	0.0456	0.00131	5.06
W16	2021-05-26 11:30																				
W16	2021-05-26 14:55	0.000011	0.0691	0.00034	0.0347	0.014	0.00002	0.00005	20.1	0.0000288	0.00012	0.0005	0.0827	0.14	0.0000064	1.91	0.001	4.85	0.0347	0.00153	6.7
W16	2021-05-31 15:00	0.000012	0.0765	0.00037	0.0376	0.013	0.00002	0.00005	22.9	0.0000273	0.0001	0.0005	0.0995	0.143	0.000005	1.95	0.001	5.53	0.00939	0.00164	7.3
W16	2021-06-07 16:55	0.00001	0.0865	0.0004	0.0391	0.011	0.00002	0.00005	21.8	0.000022	0.0001	0.0005	0.096	0.165	0.0000064	2.13	0.001	6.11	0.00707	0.00167	6.88
W16	2021-06-14 9:00	0.00001	0.0592	0.00041	0.0379	0.011	0.00002	0.00005	21.8	0.000018	0.0001	0.0005	0.0922	0.137	0.0000076	1.93	0.001	6.06	0.00861	0.00189	6.45
W16	2021-06-22 7:20	0.00001	0.0162	0.00041	0.0405	0.011	0.00002	0.00005	23.3	0.0000149	0.0001	0.0005	0.088	0.114	0.000005	1.95	0.001	6.18	0.00651	0.00218	6.13
W16	2021-06-23 11:20	0.00001	0.0179	0.00042	0.0413	0.011	0.00002	0.00005	27	0.0000147	0.0001	0.0005	0.0925	0.126	0.000005	2.1	0.001	6.73	0.0226	0.00226	6.71
W16	2021-07-03 14:30	0.00001	0.0152	0.00047	0.0397	0.012	0.00002	0.00005	29.8	0.0000149	0.0001	0.0005	0.0832	0.129	0.000005	2.06	0.001	6.5	0.0347	0.00234	6.62
W16	2021-07-05 10:20																				
W16	2021-07-12 9:55																				
W16	2021-07-15 7:15																				
W16	2021-07-15 7:15																				
W16	2021-07-20 17:05																				
W16	2021-07-26 11:50																				
W16	2021-08-02 16:15																				
W16	2021-08-06 9:15	0.00001	0.024	0.0005	0.0576	0.011	0.00002	0.00005	36.9	0.0000227	0.00011	0.0005	0.0589	0.227	0.000005	2.41	0.0011	10.3	0.242	0.00248	7.86
W16	2021-08-09 16:55																				
W16	2021-08-09 16:55																				
W16	2021-08-10 15:10	0.00001	0.0201	0.0005	0.0568	0.011	0.00002	0.00005	36.2	0.0000228	0.0001	0.0005	0.0576	0.193		2.37	0.0011	10.5	0.184	0.00254	7.91
W16	2021-08-16 13:10																				
W16	2021-08-17 14:15	0.00001	0.0283	0.00048	0.0532	0.011	0.00002	0.00005	37.9	0.000014	0.0001	0.0005	0.0524	0.171	0.000005	2.3	0.0011	10.6	0.0676	0.00251	7.58
W16	2021-08-21 8:50																				
W16	2021-08-23 13:15																				
W16	2021-08-25 10:30	0.00001	0.0112	0.00048	0.0549	0.013	0.00002	0.00005	42.6	0.00001	0.0001	0.0005	0.0499	0.103	0.000005	2.44	0.0012	12.2	0.0115	0.00287	8.72
W16	2021-08-29 12:10	0.00001	0.0109	0.0005	0.0517	0.012	0.00002	0.00005	42.6	0.0000087	0.0001	0.0005	0.0483	0.108	0.000005	2.51	0.0012	11.9	0.0215	0.00274	8.8
W16	2021-09-06 11:05	0.00001	0.0082	0.00045	0.0535	0.012	0.00002	0.00005	42.1	0.0000095	0.0001	0.0005	0.0447	0.096	0.000005	2.4	0.0011	12	0.0181	0.00261	8.41
W16	2021-09-14 13:05	0.00001	0.0106	0.0004	0.0539	0.012	0.00002	0.00005	42	0.0000084	0.0001	0.0005	0.0433	0.1	0.000005	2.33	0.0012	11.5	0.00829	0.00273	7.97
W16	2021-09-20 13:10	0.00001	0.0073	0.00042	0.0538	0.012	0.00002	0.00005	41	0.0000074	0.0001	0.0005	0.0417	0.086	0.000005	2.48	0.0011	11.7	0.0024	0.00274	8.41
W16	2021-09-28 10:55	0.00001	0.0063	0.00044	0.0543	0.011	0.00002	0.00005	43.6	0.000005	0.0001	0.0005	0.0416	0.081	0.000005	2.54	0.0013	12.3	0.00264	0.00285	8.89
W16	2021-10-04 14:40	0.00001	0.0057	0.00043	0.0554	0.012	0.00002	0.00005	45	0.000005	0.0001	0.0005	0.0409	0.088	0.000005	2.47	0.0014	13.1	0.00527	0.00271	8.41
W16	2021-10-11 10:45	0.00001	0.0058	0.00042	0.055	0.012	0.00002	0.00005	44.3	0.00001	0.0001	0.0005	0.0391	0.072	0.000005	2.44	0.0014	11.9	0.00194	0.0025	8.74
W16	2021-10-15 14:15																				
W16	2021-10-17 16:05	0.00001	0.0062	0.00043	0.0584	0.02	0.00002	0.00005	43.6	0.000005	0.0001	0.0005	0.0395	0.076	0.000005	2.56	0.0012	11.6	0.00152	0.00272	8.96
W16	2021-10-26 10:20	0.00001	0.0046	0.0003	0.057	0.01	0.00002	0.00005	42.6	0.0000211	0.0001	0.0005	0.0272	0.05	0.000005	2.26	0.0012	9.8	0.0602	0.0019	6.57
W16	2021-11-02 13:55	0.00001	0.0055	0.00041	0.065	0.011	0.00002	0.00005	51.3	0.0000084	0.0001	0.0005	0.0336	0.066	0.000005	2.69	0.0015	13.4	0.0182	0.0028	9.21
W16	2021-11-08 14:50	0.00001	0.0104	0.00043	0.0591	0.011	0.00002	0.00005	51	0.0000142	0.0001	0.0005	0.043	0.134	0.000005	3.11	0.0012	14.7	0.012	0.0031	10.2
W16	2021-11-16 16:45	0.00001	0.0055	0.00037	0.0555	0.011	0.00002	0.00005	46.5	0.0000793	0.00047	0.0005	0.0427	0.077		3	0.0013	13.4	0.00263	0.00299	9.36
W16	2021-12-28 14:30	0.00001	0.006	0.00041	0.0554	0.012	0.00002	0.00005	46.7	0.0000436	0.0001	0.0005	0.0367	0.08	0.000005	2.76	0.0017	13.3	0.0132	0.00339	9.53
W2	1993-09-30 0:00	0.00005	0.034	0.0004	0.043	0.05	0.0025	0.05	27.5	0.0001	0.0005	0.0005	0.003	0.397		0.72		9.06	0.009	0.0005	5.53
W2	1994-05-15 0:00	0.00005	0.063	0.0004	0.035	0.05	0.0025	0.05	13.1	0.0001	0.0005	0.0005	0.006	0.531		0.79		4.15	0.041	0.0005	2.46
W2	1994-06-07 0:00	0.00005	0.033	0.0004	0.046	0.05	0.0025	0.05	22.4	0.0001	0.0005	0.0005	0.004	0.366		0.81		7.9	0.0025	0.0005	4.47
W2	1994-07-08 0:00	0.00005	0.042	0.0004	0.045	0.05	0.0025	0.05	22.5	0.0001	0.0005	0.0005	0.005	0.393		0.67		7.26	0.007	0.0005	4.23
W2	1994-08-10 0:00	0.00005	0.019	0.0003	0.063	0.05	0.0025	0.05	33.7	0.0001	0.0005	0.0005	0.002	0.063		1.16		11.2	0.019	0.0005	6.83
W2	1994-09-26 0:00	0.00005	0.02	0.0003	0.042	0.05	0.0025	0.05	25.8	0.0001	0.0005	0.0005	0.003	0.286		0.79		8.25	0.01	0.0005	5.05
W2	1995-06-15 0:00	0.00005	0.019	0.0003	0.059	0.05	0.0025	0.05	32.4	0.0001	0.0005	0.0005	0.003	0.032		1.37		11.1	0.006	0.0005	7.75
W2	1995-07-25 0:00	0.00005	0.029	0.0003	0.044	0.05	0.0025	0.05	23.8	0.0001	0.0005	0.0005	0.003	0.118		1.14		7.62	0.012	0.0005	5.02
W2	1995-09-20 0:00	0.00005	0.049	0.0004	0.04	0.05	0.0025	0.05	19.7	0.0001	0.0005	0.0005	0.003	0.249		0.98		5.56	0.021	0.0005	3.87
W2	1996-05-20 0:00	0.0005	0.005	0.01	0.0486		0.0001	0.01	26.3	0.00025	0.0005	0.0005	0.0001	0.64		1.8		9.94	0.0054	0.0025	7.09
W2	1996-07-16 0:00	0.0005	0.05	0.01	0.0381		0.0001	0.01	16.9	0.00025	0.0005	0.0005	0.006	0.301		0.8		4.78	0.0176	0.0025	3.66
W2	1996-09-09 0:00	0.0005	0.06	0.01	0.0362		0.0001	0.01	19.8	0.00025	0.0005	0.0005	0.004	0.231		0.7		5.38	0.0161	0.0025	3.52
W2	1996-10-15 0:00	0.0005	0.03	0.01	0.0407		0.0001	0.01	22.6	0.00025	0.0005	0.0005	0.005	0.185		0.7		6.58	0.0112	0.0025	4.32
W2	1997-05-01 0:00	0.0005	0.07	0.01	0.0283		0.0001	0.01	10.9	0.00025	0.0005	0.0005	0.006	0.338		1.6		2.78	0.0323	0.0025	2.05
W2	1997-08-01 0:00	0.0005	0.05	0.01	0.328		0.0004	0.01	20.3	0.00025	0.001	0.0005	0.005	0.416		0.05		5.65	0.0817	0.0025	3.78
W2	1998-05-02 0:00																				
W2	1998-05-02 15:00	0.01	0.2	0.2	0.03	0.1	0.005	0.1	16.2	0.01	0.01	0.01	0.01	0.19		2	0.01	5.5	0.035	0.03	3

Station	Date / Time	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W16	2019-08-06 8:30	0.0005	0.00005	0.0001	23.9	0.000455	2.39	0.0001	0.615	0.0003	0.00001	0.0013	0.0005	0.0013	0.0003
W16	2019-08-13 11:50	0.00061	0.00005	0.0001	22.7	0.000484	2.35	0.0001	0.632	0.0003	0.00001	0.00142	0.0005	0.001	0.0003
W16	2019-08-20 9:25	0.00062	0.00005	0.0001	23.6	0.000518	2.43	0.0001	0.644	0.0003	0.00001	0.0014	0.0005	0.001	0.0003
W16	2019-08-26 15:25														
W16	2019-09-01 11:35	0.00059	0.00005	0.0001	21.4	0.000348	2.02	0.0001	0.696	0.0003	0.00001	0.00147	0.0005	0.001	0.0003
W16	2019-09-10 8:45														
W16	2019-09-16 15:00														
W16	2019-09-23 9:00														
W16	2019-10-14 16:50	0.00062	0.00005	0.0001	22.2	0.000394	2.69	0.0001	0.736	0.0003	0.00001	0.00138	0.0005	0.001	0.0003
W16	2019-11-09 13:45	0.00099	0.000082	0.00018	19.5	0.000363	3.77	0.0001	0.669	0.00048	0.00001	0.0012	0.0005	0.009	0.0003
W16	2019-12-23 13:40	0.00065	0.00005	0.0001	23.3	0.000414	3.32	0.0001	0.794	0.0003	0.00001	0.00166	0.0005	0.0071	0.0003
W16	2020-01-20 13:50	0.00055	0.00005	0.0001	25.7	0.000378	3.91	0.0001	0.845	0.0003	0.00001	0.00158	0.0005	0.018	0.0002
W16	2020-02-24 11:10	0.00071	0.00005	0.00015	24.5	0.00036	4.13	0.0001	0.873	0.0003	0.00001	0.00143	0.0005	0.0302	0.0002
W16	2020-03-23 10:50	0.00076	0.00005	0.0001	24.6	0.000327	4.33	0.0001	0.782	0.0003	0.00001	0.0014	0.0005	0.0269	0.0002
W16	2020-04-20 9:25	0.00053	0.00005	0.0001	23.1	0.000931	1.91	0.0001	0.461	0.00078	0.00001	0.00058	0.0005	0.0026	0.0002
W16	2020-04-26 17:07														
W16	2020-05-02 10:00	0.00139	0.00005	0.0001	15.7	0.00134	2.92	0.0001	0.298	0.00244	0.00001	0.000496	0.00061	0.0027	0.00042
W16	2020-05-07 16:00														
W16	2020-05-13 16:25	0.00159	0.000054	0.0001	14.8	0.000728	3.18	0.0001	0.307	0.00208	0.00001	0.000476	0.00065	0.005	0.00045
W16	2020-05-18 11:00														
W16	2020-05-25 11:30	0.00164	0.00005	0.0001	16.3	0.000804	2.72	0.0001	0.339	0.00141	0.00001	0.000665	0.00059	0.0031	0.00044
W16	2020-06-01 11:50														
W16	2020-06-08 1:10	0.00145	0.00005	0.0001	16.9	0.000876	2.58	0.0001	0.356	0.001	0.00001	0.000688	0.00053	0.0011	0.0004
W16	2020-06-09 17:45														
W16	2020-06-11 13:50	0.00138	0.00005	0.0001	18.2	0.000868	2.6	0.0001	0.364	0.00079	0.00001	0.000667	0.00052	0.001	0.00039
W16	2020-06-17 9:20														
W16	2020-06-22 16:15														
W16	2020-06-29 17:00														
W16	2020-07-06 14:25	0.00132	0.00005	0.0001	21.1	0.000904	2.72	0.0001	0.429	0.00047	0.00001	0.000878	0.0005	0.0013	0.00031
W16	2020-07-13 8:00														
W16	2020-07-18 15:30	0.00114	0.00005	0.0001	21.8	0.000906	2.69	0.0001	0.496	0.00051	0.00001	0.000972	0.00066	0.0015	0.00031
W16	2020-07-20 11:50														
W16	2020-07-29 8:30														
W16	2020-08-03 16:00														
W16	2020-08-10 9:40	0.00118	0.00005	0.0001	24.7	0.000812	3.2	0.0001	0.525	0.0003	0.00001	0.00114	0.0005	0.001	0.00026
W16	2020-08-17 9:05	0.00102	0.00005	0.0001	24.1	0.000826	3.33	0.0001	0.496	0.0003	0.00001	0.00104	0.0005	0.001	0.00022
W16	2020-08-25 15:05	0.00097	0.000098	0.0001	24.8	0.00144	3.12	0.0001	0.508	0.00052	0.00001	0.00107	0.0005	0.001	0.00022
W16	2020-08-31 8:35	0.00098	0.00005	0.0001	27	0.000901	3.57	0.0001	0.55	0.0003	0.00001	0.00114	0.0005	0.001	0.00023
W16	2020-09-06 11:47	0.00104	0.00005	0.0001	28	0.000955	3.86	0.0001	0.541	0.0003	0.00001	0.0011	0.0005	0.001	0.00022
W16	2020-09-14 9:00	0.001	0.00005	0.0001	29.1	0.000962	3.93	0.0001	0.558	0.0003	0.00001	0.00121	0.0005	0.001	0.00024
W16	2020-09-21 14:25	0.00099	0.00005	0.0001	28.2	0.00103	3.8	0.0001	0.627	0.0003	0.00001	0.00113	0.0005	0.001	0.00023
W16	2020-09-25 16:50														
W16	2020-09-28 13:30	0.001	0.00005	0.0001	31.1	0.00107	4.41	0.0001	0.612	0.00045	0.00001	0.00116	0.0005	0.001	0.00023
W16	2020-10-05 9:00	0.00102	0.00005	0.0001	29	0.000892	4.14	0.0001	0.645	0.0003	0.00001	0.00112	0.0005	0.001	0.00021
W16	2020-10-12 6:55	0.00066	0.00005	0.0001	29.3	0.00104	4.32	0.0001	0.656	0.00042	0.00001	0.00117	0.0005	0.0013	0.00021
W16	2020-10-13 7:35														
W16	2021-02-10 15:45	0.00094	0.00005	0.0001	35.9	0.00105	5.16	0.0001	0.781	0.0003	0.00001	0.00149	0.0005	0.0022	0.00021
W16	2021-03-22 15:55	0.00102	0.00005	0.0001	37.5	0.001	5.77	0.0001	0.735	0.00033	0.00001	0.0015	0.0005	0.0068	0.0002
W16	2021-04-19 15:00	0.0005	0.00005	0.0001	32.4	0.000983	5.09	0.0001	0.69	0.00238	0.00001	0.00141	0.0005	0.0027	0.00052
W16	2021-05-01 14:45														
W16	2021-05-04 11:20														
W16	2021-05-07 13:55	0.00109	0.00005	0.0001	6.97	0.000686	2.72	0.0001	0.194	0.00258	0.00001	0.000283	0.0005	0.0036	0.00042
W16	2021-05-10 10:40	0.00114	0.00005	0.0001	5.33	0.000528	2.4	0.0001	0.154	0.00217	0.00001	0.00025	0.0005	0.0027	0.00038
W16	2021-05-10 16:15														
W16	2021-05-11 10:10														
W16	2021-05-12 10:10	0.00123	0.00005	0.0001	6.6	0.000527	2.72	0.0001	0.176	0.00212	0.00001	0.000292	0.0005	0.0024	0.00038
W16	2021-05-17 8:50	0.00129	0.00005	0.0001	6.65	0.000484	2.44	0.0001	0.184	0.00171	0.00001	0.000287	0.0005	0.0026	0.00037
W16	2021-05-17 14:30	0.00135	0.00005	0.0001	7.44	0.000549	2.69	0.0001	0.182	0.00184	0.00001	0.000312	0.0005	0.0034	0.00038
W16	2021-05-17 14:35	0.00112	0.00005	0.0001	14.7	0.000754	3.33	0.0001	0.32	0.00168	0.00001	0.000617	0.0005	0.0023	0.0003
W16	2021-05-17 14:40	0.00123	0.00005	0.0001	6.83	0.000533	2.54	0.0001	0.179	0.00194	0.00001	0.000305	0.0005	0.0028	0.00038
W16	2021-05-26 11:30														
W16	2021-05-26 14:55	0.00115	0.00005	0.0001	6.14	0.000523	2.4	0.0001	0.178	0.00199	0.00001	0.000295	0.0005	0.0023	0.00038
W16	2021-05-31 15:00	0.0013	0.00005	0.0001	6.04	0.000467	2.52	0.0001	0.19	0.00297	0.00001	0.000276	0.00054	0.0021	0.0004
W16	2021-06-07 16:55	0.00151	0.00005	0.0001	6.44	0.000419	2.81	0.0001	0.18	0.00352	0.00001	0.000296	0.00061	0.0021	0.00037
W16	2021-06-14 9:00	0.00138	0.00005	0.0001	6.67	0.000443	2.88	0.0001	0.186	0.00185	0.00001	0.000279	0.00052	0.0019	0.00039
W16	2021-06-22 7:20	0.00138	0.00005	0.0001	6.27	0.00045	2.24	0.0001	0.192	0.00159	0.00001	0.000291	0.0005	0.0011	0.00035
W16	2021-06-23 11:20	0.00149	0.00005	0.0001	6.84	0.000634	1.48	0.0001	0.202	0.00186	0.00001	0.000322	0.00056	0.001	0.00034
W16	2021-07-03 14:30	0.0013	0.00005	0.0001	6.42	0.000524	1.65	0.0001	0.209	0.00111	0.00001	0.000303	0.00052	0.0135	0.00033
W16	2021-07-05 10:20														
W16	2021-07-12 9:55														
W16	2021-07-15 7:15														
W16	2021-07-15 7:15														
W16	2021-07-20 17:05														
W16	2021-07-26 11:50														
W16	2021-08-02 16:15														
W16	2021-08-06 9:15	0.00126	0.00005	0.0001	12	0.000494	3.5	0.0001	0.322	0.0011	0.00001	0.000504	0.0005	0.0017	0.00028
W16	2021-08-09 16:55														
W16	2021-08-09 16:55														
W16	2021-08-10 15:10	0.00109	0.00005	0.0001	12.6	0.000568	3.59	0.0001	0.327	0.00093	0.00001	0.000527	0.0005	0.0014	0.00029
W16	2021-08-16 13:10														
W16	2021-08-17 14:15	0.00114	0.00005	0.0001	13.6	0.000555	3.67	0.0001	0.331	0.00109	0.00001	0.000524	0.0005	0.0036	0.00029
W16	2021-08-21 8:50														
W16	2021-08-23 13:15														
W16	2021-08-25 10:30	0.00095	0.00005	0.0001	13.6	0.000682	3.69	0.0001	0.388	0.00052	0.00001	0.000625	0.0005	0.0013	0.00028
W16	2021-08-29 12:10	0.00104	0.00005	0.0001	14.2	0.000516	4.03	0.0001	0.368	0.00044	0.00001	0.000586	0.0005	0.0011	0.00027
W16	2021-09-06 11:05	0.00098	0.00005	0.0001	15	0.000504	3.76	0.0001	0.363	0.0006	0.00001	0.000619	0.0005	0.001	0.00027
W16	2021-09-14 13:05	0.00097	0.00005	0.0001	14.2	0.000465	3.9	0.0001	0.379	0.00053	0.00001	0.000645	0.0005	0.0011	0.00025
W16	2021-09-20 13:10	0.00092	0.00005	0.0001	14.9	0.000447	4.08	0.0001	0.371	0.00034	0.00001	0.000632	0.0005	0.001	0.00023
W16	2021-09-28 10:55	0.00085	0.00005	0.0001	14.3	0.000454	4.21	0.0001	0.404	0.0003	0.00001	0.000684	0.0005	0.0014	0.00024
W16	2021-10-04 14:40	0.00087	0.00005	0.0001	14.9	0.000466	4.24	0.0001	0.378	0.00031	0.00001	0.000623	0.0005	0.001	0.00023
W16	2021-10-11 10:45	0.00082	0.00005	0.0001	15.6	0.000481	4.24	0.0001	0.385	0.0003	0.00001	0.000609	0.0005	0.001	0.00022
W16	2021-10-15 14:15														
W16	2021-10-17 16:05	0.001	0.00005	0.0001	15.8	0.000469	4.46	0.0001	0.39	0.0003	0.00001	0.000635	0.0005	0.0012	0.00024
W16	2021-10-26 10:20	0.00058	0.00005	0.0001	8.91	0.000439	6.44	0.0001	0.274	0.0003	0.00001	0.000541	0.00065	0.0132	0.0002
W16	2021-11-02 13:55	0.00081	0.00005	0.0001	13.3	0.000425	4.87	0.0001	0.423	0.0003	0.00001	0.000612	0.0005	0.0039	0.00021
W16	2021-11-08 14:50	0.00105	0.00005	0.0001	15.3	0.000588	4.57	0.0001	0.449	0.00072	0.00001	0.000742	0.0005	0.0025	0.00022
W16	2021-11-16 16:45	0.00109	0.000056	0.00011	15.1	0.000485	4.39	0.0001	0.426	0.0003	0.00001	0.000695	0.0005	0.0103	0.00025
W16	2021-12-28 14:30	0.00097	0.00005	0.0001	15.3	0.000545	5.13	0.0001	0.449	0.0003	0.00001	0.000856	0.0005	0.0055	0.00023
W2	1993-09-30 0:00	0.0005	0.0005	0.00005		0.00025	5.85		0.202			0.00033	0.015	0.0025	
W2	1994-05-15 0:00	0.002	0.0005	0.00005		0.00025	3.07		0.096			0.00013	0.015	0.0025	
W2	1994-06-07 0:00	0.002	0.0005	0.00005		0.00025	4.9		0.18			0.00032	0.015	0.0025	
W2	1994-07-08 0:00	0.0005	0.0005	0.00005		0.00025	5.32		0.166			0.00024	0.015	0.0025	
W2	1994-08-10 0:00	0.0005	0.0005	0.00005		0.00025	5.49		0.3			0.00062	0.015	0.0025	
W2	1994-09-26 0:00	0.0005	0.0005	0.00005		0.00025	5.64		0.193			0.00035	0.015	0.0025	
W2	1995-06-15 0:00	0.0005	0.0005	0.00005		0.00025	4.7		0.288	0.01		0.00095	0.015	0.0025	
W2	1995-07-25 0:00	0.0005	0.0005	0.00005		0.00025	5.07		0.205	0.01		0.00048	0.015	0.0025	
W2	1995-09-20 0:00	0.002	0.0005	0.00005		0.00025	5.98		0.136	0.01		0.00024	0.015	0.0025	
W2	1996-05-20 0:00	0.001	0.0025	0.01		0.01	5.51		0.22			0.03	0.001	0.004	
W2	1996-07-16 0:00	0.004	0.0025	0.01		0.01	5.67		0.126			0.03	0.001	0.002	
W2	1996-09-09 0:00	0.001	0.0025	0.01		0.01	6.87		0.124			0.03	0.005	0.0005	
W2	1996-10-15 0:00	0.001	0.0025	0.01		0.01	7.2		0.164			0.03	0.004	0.009	
W2	1997-05-01 0:00	0.003	0.0025	0.01		0.01	3.61					0.03	0.001	0.007	
W2	1997-08-01 0:00	0.004	0.0025	0.01		0.01	5.48					0.03	0.004	0.01	
W2	1998-05-02 0:00														
W2	1998-05-02 15:00	0.05	0.05	0.2		0.2	3.88	0.03	0.122	0.01	0.2		0.03	0.009	

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	N-NO_2	N-NO_3	N-NH_3	SO_4-D	Chlord	Fluord
		mg/L	μS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W2	1998-08-09 0:00	123	247			179	1			0.001	0.094				
W2	1999-08-26 0:00		225			174	1			0.025	0.025				
W2	2000-05-05 0:00		61			117	126			0.001	0.012				
W2	2001-05-11 0:00		100			99	62			0.25	0.0025				
W2	2002-07-29 0:00		181			220	134			0.001	0.037				
W2	2003-08-24 0:00		200			153	169			0.007	0.073				
W2	2004-07-29 0:00		243			180	535			0.05	0.09				
W2	2005-05-27 0:00	67.1	346			218	99.5			0.0025	0.0904	0.046	9.64	1	
W2	2005-06-30 0:00	140	287			190	3			0.001	0.0621	0.02	22.1	1.23	
W2	2005-07-28 0:00		305			194	3			0.001	0.0124	0.02		0.66	
W2	2005-08-30 0:00	143	268			193	3.5			0.001	0.0141	0.029	12.6	0.53	
W2	2005-09-28 0:00	115	243			170	9			0.001	0.0458	0.02	11.6	0.72	
W2	2005-10-15 0:00		249			179	5.5			0.001	0.133	0.02		0.88	
W2	2006-04-05 0:00		173		8.1	122	120			0.001	0.0169	0.0067		0.81	0.31
W2	2006-04-06 0:00		161		8.5	158	102			0.0011	0.023	0.0093		0.65	0.33
W2	2006-04-07 0:00		507			354	106			0.0012	0.116	0.006		2.6	0.57
W2	2006-04-08 0:00	261	519		8.1	342	4.1			0.0012	0.076	0.01	43.6	1.5	0.75
W2	2006-04-09 0:00	273	576		8.3	394	3			0.001	0.0426	0.0133	63.1	1.79	0.8
W2	2006-04-10 0:00	245	507		8.5	337	3			0.0011	0.016	0.016	55.8	1.57	0.65
W2	2006-04-11 0:00	224	471		8.5	309	3			0.001	0.0134	0.0087	47.8	1.37	0.62
W2	2006-04-12 0:00	210	462		8.4	293	3			0.001	0.0088	0.005	44.4	1.32	0.587
W2	2006-04-13 0:00	218	468		8.4	296	3			0.001	0.005	0.005	44.5	1.32	0.578
W2	2006-04-14 0:00	218	465		8.4	196	3			0.001	0.0102	0.005	44.4	1.29	0.565
W2	2006-04-15 0:00	222	478		8.6	303	3			0.001	0.005	0.005	44.9	1.32	0.569
W2	2006-04-16 0:00	235	496		8.4	304	22.4			0.001	0.005	0.0173	46.3	1.48	0.579
W2	2006-04-17 0:00	286	602		8.5	393	3			0.001			58.2	2	0.73
W2	2006-04-18 0:00	246	520		8.4	334	3			0.001	0.005	0.005	49.3	1	0.64
W2	2006-04-19 0:00	222	458		8.5	292	3			0.001	0.005	0.005	39.5	1	0.57
W2	2006-04-20 0:00	235	442		8.5	278	3			0.001	0.005	0.005	38	1	0.59
W2	2006-04-21 0:00	203	423		8.45	281	3			0.001	0.005	0.005	36.3	1	0.55
W2	2006-04-22 0:00	165	348		8.45	222	3			0.001	0.005	0.005	27	1	0.45
W2	2006-04-23 0:00	135	268		8.45	170	3.7				0.005	0.005	18.7	1	0.33
W2	2006-04-24 0:00	103	212		8.55	140	4.2			0.001	0.005		13.4	1	0.28
W2	2006-04-25 0:00	77	151		8.5	128	22.1			0.001	0.005		8.41	1	0.19
W2	2006-04-26 0:00	78	161		8.6	139	14.1			0.001	0.005		9.62	1	0.19
W2	2006-04-27 0:00	75.2	165		8.1	146	20.6			0.001	0.005		10.1	1.13	0.18
W2	2006-04-28 0:00	71.2	149		8.1	73	20.6			0.001	0.005		8.73	1.07	0.17
W2	2006-04-29 0:00	76.7	156		8.3	144	17.6			0.001	0.005		8.69	1.05	0.18
W2	2006-04-30 0:00	74.5	161		8.5	148	17.6			0.001	0.005		8.72	1.01	0.18
W2	2006-05-01 0:00	79.8	169		8.3	161	23.1			0.001	0.005		9.28	0.98	0.19
W2	2006-05-02 0:00		139		8.3	129	51.4			0.0015	0.005			0.81	0.16
W2	2006-05-03 0:00		117		8.2	102	116			0.001	0.005			0.73	0.14
W2	2006-05-05 0:00		76			86	141			0.001	0.005			0.5	0.11
W2	2006-05-06 0:00		74			88	110			0.001	0.005			0.5	0.11
W2	2006-05-08 0:00		81			94	40.9			0.001	0.005			0.5	0.11
W2	2006-05-10 0:00	34.5	83.4			101	98.3			0.0013	0.0082		3.4	0.5	0.112
W2	2006-05-14 17:30	32.1	81.3			103	232			0.0012	0.0083	0.05	3.21	0.5	0.136
W2	2006-05-17 13:00	63.1	116			115	59.6			0.0016	0.0171		5.43	0.57	0.158
W2	2006-05-20 13:00	70.6	136			115	28.1			0.001	0.0237		7.6	0.54	0.179
W2	2006-05-23 14:00	72.2	166			129	22.1			0.001	0.0368	0.0147	10.7	0.55	0.211
W2	2006-05-26 14:00	94.3	193			145	11.4			0.0016	0.0463		13.2	0.54	0.227
W2	2006-05-29 13:00	82	148			119	79.9			0.0014	0.0415		8.76	0.5	0.192
W2	2006-06-02 11:00	91.8	159			140	257			0.0024	0.0567	0.04	9.14	0.5	0.21
W2	2006-06-07 15:32	83.4	179			142	47.1			0.0013	0.0716	0.038	10.6	0.5	0.209
W2	2006-06-15 0:00	117	248			166	2				0.1	0.01	19		
W2	2006-06-23 0:00	132	300			222	2				0.05	0.01	20.9		
W2	2006-06-28 0:00	133	286			170	7				0.05	0.003			
W2	2006-07-07 0:00	135	259			204	2				0.076		21.7		
W2	2006-07-12 0:00	132	298				2				0.09	0.008	21.3		
W2	2006-07-31 13:30	142	309				2				0.07	0.003	22.5		
W2	2006-08-02 0:00	152	319				2				0.06	0.006	20.9		
W2	2006-08-23 0:00	148	316			216					0.03	0.002	22.3		
W2	2006-08-30 0:00	150	317			220	2				0.03	0.005	13.9		
W2	2006-09-06 0:00	149	322				2				0.03	0.004	21.3		
W2	2006-09-13 0:00	156	320				2				0.003	0.008	22		
W2	2006-09-20 0:00	150	317				2				0.03	0.006	22.3		
W2	2006-09-28 0:00	151	329			124	2				0.03	0.008	20.9		
W2	2006-10-04 0:00	152	321				2				0.04	0.053	23.7		
W2	2006-10-12 0:00	146	319			202	2				0.04	0.006	20.9		
W2	2006-10-18 0:00	194	443			187	1			0.005	0.08			1.3	
W2	2006-10-28 0:00	151	323			298	2			0.03	0.06	0.01	22	1.42	
W2	2007-04-17 0:00	197	400			320	101				0.1		32	2.7	
W2	2007-04-26 0:00	44	89			136	98				0.1		3.4	1.4	
W2	2007-05-19 0:00	104	240			172	2				0.6		15.1	0.9	
W2	2007-05-30 0:00	116	264			186	2				0.8		19.6	1	
W2	2007-06-20 0:00	137	283			188	2				0.9		21.4	1.1	
W2	2007-06-27 0:00														
W2	2007-07-04 0:00														
W2	2007-07-18 0:00	154	310			210	4				0.5		21.2	1.3	
W2	2007-08-15 0:00	166	306			238	2				0.3		21	1.2	
W2	2007-09-18 0:00	144	266			200	10			0.02	0.04		12	0.99	
W2	2007-10-17 0:00	132	275			192	2			0.02	0.34			1.21	
W2	2008-04-22 0:00	169	341			256	2			0.02	0.02		26.8	1.35	
W2	2008-05-13 0:00	77	159			128	5			0.02	0.02		8.43	0.82	
W2	2008-05-20 0:00	89	192			170	5			0.03	0.02		10.2	0.91	
W2	2008-06-03 0:00	116	253			154	2			0.03	0.04		15.1	1.01	
W2	2008-07-08 0:00	138	292			232	2			0.01	0.06		20.8	1.14	
W2	2008-07-23 0:00	92	221			178	10			0.03	0.15		10.6	0.79	
W2	2008-08-07 0:00														
W2	2008-08-28 0:00	113	244			202	59			0.02	0.12		15	1.5	
W2	2008-08-31 0:00	118	272			206	35			0.01	0.16		18.5	1.55	
W2	2008-09-07 0:00	139	319			302	48			0.04	0.16		25.4	2.21	
W2	2008-09-11 0:00	129	279			264	28			0.04	0.09	0.1	20.8	1.89	
W2	2008-09-19 0:00	147	320			244	9			0.01	0.08	0.12	20.9	2.33	
W2	2008-10-08 0:00	113	223			162	3			0.01	0.15	0.07	12.3	1.12	
W2	2008-10-29 0:00														
W2	2008-11-18 0:00	150	321		8.23	250	2	0.8					23.2	1.73	
W2	2009-04-22 0:00	134	291		8.2	222	100	0.3					21.5	1.4	
W2	2009-04-30 0:00	23	54		7.4	64	72	0.5	295				1.02	0.54	
W2	2009-05-05 0:00	24	54			52	87						1.4	0.5	
W2	2009-05-27 0:00	110	252		7.98	176	8	13.7					17.9	0.87	
W2	2009-06-17 0:00	122	280		8.17	138	2	6.7					18	1.22	
W2	2009-06-26 20:00		305			180	8			0.005	0.1	0.007			
W2	2009-06-27 0:00				8.21			7.94	108.2						
W2	2009-06-28 0:00				8.29			10.16	107.8						
W2	2009-06-29 0:00	130	371		7.9	230	40	7.95	105.2	0.044	2.23	0.005	29	2.6	0.43
W2	2009-06-30 0:00				8.26			7.99	107.4						
W2	2009-06-30 9:00														
W2	2009-07-01 0:00		383		8.32	250	21	8.43	110.5						
W2	2009-07-02 0:00		423		8.2	270	7	9.2	108.9						
W2	2009-07-03 0:00		391		8.18	240	10	9.85	105.5						
W2	2009-07-04 8:30				8.2			9.19	104.9						
W2	2009-07-05 16:00	150	396		8.17	240	10	9.75	105.6	0.024	2.19	0.005	41	2.7	0.43
W2	2009-07-06 0:00				8.11			11.9	107.6						
W2	2009-07-07 0:00				8.2			8.65	105.3						

Station	Date / Time	Dissolved Elements																																	
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W2	1998-08-09 0:00	0.01	0.2	0.2	0.06	0.1	0.005	0.1	39.1	0.01	0.01	0.01	0.01	0.05		2	0.01	11.5	0.047	0.03	8	0.05	0.05	0.2		0.2	5.31	0.03	0.33	0.01	0.2		0.03	0.005	
W2	1999-08-26 0:00	0.000025	0.0249	0.005	0.0492	0.019	0.000005	0.0007	27.8	0.00003	0.000015	0.00049	0.00296	0.136		0.9		9.08	0.00772	0.00099	5.7	0.0015	0.00015	0.0025		0.002	5.07		0.242				0.00079	0.0014	
W2	2000-05-05 0:00	0.00008	0.39	0.0001	0.0213	0.001	0.00001	0.0012	8.6	0.00006	0.00023	0.00094	0.00457	0.305		1.9		2.53	0.0307	0.00025	1.9	0.0018	0.00015	0.00015		0.0001			0.0491				0.00084	0.007	
W2	2001-05-11 0:00	0.000025	0.2	0.0004	0.0306	0.007	0.00001	0.0013	12.8	0.00003	0.00049	0.00037	0.00487	0.283		1.6		3.97	0.0436	0.00052	2.5	0.0173	0.00015	0.00015		0.0001			0.0882				0.00114	0.0055	
W2	2002-07-29 0:00	0.00005	0.032	0.0008	0.051	0.009	0.00005	0.00025	26	0.000005	0.0001	0.0009	0.004	5.17		1.1		8.85	0.195	0.0005	5.7	0.0012	0.00005	0.0001		0.0002	12.5		0.209			0.00025	0.0011	0.0005	
W2	2003-08-24 0:00	0.00005	0.056	0.0008	0.057	0.006	0.00005	0.00025	26	0.000005	0.0001	0.0008	0.004	0.38		0.9		8.7	0.006	0.0005	5.8	0.0012	0.0001	0.0001		0.0001	6.77		0.197				0.0024	0.003	
W2	2004-07-29 0:00	0.00005	0.037	0.0007	0.069	0.008	0.00005	0.00025	41.1	0.000005	0.0003	0.0011	0.002	26.2		5.4		15	0.668	0.001	9	0.0018	0.00005	0.0001		0.0001	9.59		0.227			0.0009	0.0019	0.001	
W2	2005-05-27 0:00	0.00002	0.0271	0.0005	0.082	0.1	0.001		45.9		0.0003		0.0033	0.164	0.00002	2	0.005	13.91	0.00852	0.001	5	0.0015		0.0005		0.001		0.0005		0.02	0.0002	0.00081	0.03	0.005	
W2	2005-06-30 0:00	0.00001	0.0073	0.00044	0.0574	0.01	0.0005	0.0005	36.9		0.0001	0.0005	0.0021	0.039		2	0.005	12.3	0.00684	0.00108	8.6	0.00102	0.00005	0.0001		0.001	5.4	0.0001	0.307	0.01	0.0001	0.0011	0.001	0.0015	
W2	2005-07-28 0:00	0.00001	0.0071	0.00044	0.0604	0.01	0.0005	0.0005	39.6		0.0001	0.0005	0.00208	0.05		2	0.005	13.2	0.014	0.00127	8.7	0.00112	0.00005	0.0001		0.001	5.31	0.0001	0.341	0.01	0.0001	0.00127	0.001	0.0011	
W2	2005-08-30 0:00	0.00002	0.0119	0.00058	0.059	0.1	0.001		35.7	0.000017	0.0003		0.0024	0.234	0.00002	2	0.005	11.7	0.0152	0.001	7	0.0015		0.0005		0.001		0.0005		0.01	0.0002	0.00077	0.03	0.005	
W2	2005-09-28 0:00	0.00002	0.0141	0.00059	0.055	0.1	0.001		35.2	0.000017	0.0003		0.0025	0.338	0.00002	2	0.005	11.2	0.0341	0.001	6.2	0.0017		0.0005		0.001		0.0005		0.01	0.0002	0.00055	0.03	0.005	
W2	2005-10-15 0:00	0.00001	0.0129	0.00053	0.0492	0.01	0.0005	0.0005	35.9		0.0001	0.0005	0.00271	0.246		2	0.005	11.5	0.0208	0.000859	6.3	0.00141	0.00005	0.0001		0.001	6.19	0.0001	0.256	0.01	0.0001	0.000713	0.001	0.001	
W2	2006-04-05 0:00																																		
W2	2006-04-06 0:00																																		
W2	2006-04-07 0:00	0.00001	0.0549	0.00106	0.108	0.01	0.0005	0.0005	68.8		0.00017	0.0005	0.0032	0.106		6.7	0.005	31.4	0.0429	0.00173	20.2	0.001	0.00005	0.00011		0.001	11.6	0.0001	0.6	0.01	0.0001	0.00368	0.001	0.0015	
W2	2006-04-08 0:00																																		
W2	2006-04-09 0:00																																		
W2	2006-04-10 0:00																																		
W2	2006-04-11 0:00																																		
W2	2006-04-12 0:00																																		
W2	2006-04-13 0:00																																		
W2	2006-04-14 0:00																																		
W2	2006-04-15 0:00																																		
W2	2006-04-16 0:00																																		
W2	2006-04-17 0:00	0.00001	0.0082	0.00063	0.093	0.01	0.0005	0.0005	70.1		0.0001	0.0005	0.0017	0.063		4.4	0.005	31.4	0.042	0.002	20.2	0.0005	0.00005	0.0001		0.001	10.8	0.0001	0.7	0.01	0.0001	0.00273	0.001	0.0012	
W2	2006-04-18 0:00																																		
W2	2006-04-19 0:00																																		
W2	2006-04-20 0:00																																		
W2	2006-04-21 0:00																																		
W2	2006-04-22 0:00																																		
W2	2006-04-23 0:00																																		
W2	2006-04-24 0:00	0.00001	0.0119	0.00038	0.037	0.01	0.0005	0.0005	25.4		0.00011	0.0005	0.0013	0.054		3.1	0.005	10.9	0.0378	0.000729	6.1	0.0006	0.00005	0.0001		0.001	4.54	0.0001	0.2	0.01	0.0001	0.00048	0.001	0.0018	
W2	2006-04-25 0:00																																		
W2	2006-04-26 0:00																																		
W2	2006-04-27 0:00																																		
W2	2006-04-28 0:00																																		
W2	2006-04-29 0:00																																		
W2	2006-04-30 0:00																																		
W2	2006-05-01 0:00																																		
W2	2006-05-02 0:00																																		
W2	2006-05-03 0:00																																		
W2	2006-05-05 0:00																																		
W2	2006-05-06 0:00																																		
W2	2006-05-08 0:00	0.00001	0.0654	0.00038	0.026	0.01	0.0005	0.0005	12.2		0.00015	0.0005	0.0054	0.194		2	0.005	3.8	0.0209	0.000307	2	0.0014	0.000091	0.0001		0.001	2.69	0.0001	0.1	0.01	0.0001	0.00012	0.001	0.0024	
W2	2006-05-10 0:00																																		
W2	2006-05-14 17:30	0.00001	0.0626	0.00055	0.0308	0.01	0.0005	0.0005	12.8		0.00026	0.0005	0.00582	0.425		2	0.005	3.79	0.0594	0.000441	2.1	0.00165	0.000064	0.0001		0.001	3.11	0.0001	0.0801	0.01	0.0001	0.00015	0.001	0.001	
W2	2006-05-17 13:00																																		
W2	2006-05-20 13:00																																		
W2	2006-05-23 14:00	0.00001	0.0234	0.00054	0.0401	0.01	0.0005	0.0005	23.1		0.0001	0.0005	0.00494	0.253		2	0.005	8.14	0.00274	0.000977	4.7	0.0017	0.00005	0.0001		0.001	4.14	0.0001	0.162	0.01	0.0001	0.00048	0.001	0.001	
W2	2006-05-26 14:00																																		
W2	2006-05-29 13:00																																		
W2	2006-06-02 11:00	0.00001	0.0318	0.00074	0.0425	0.01	0.0005	0.0005	23		0.00018	0.0005	0.0038	0.463		2	0.005	7.73	0.0399	0.000913	5.4	0.00183	0.000063	0.00013		0.001	4.19	0.0001	0.162	0.01	0.0001	0.000477	0.0015	0.0012	
W2	2006-06-07 15:32																																		
W2	2006-06-15 0:00		0.009	0.0006	0.057	0.003	0.0001	0.0005	36.3	0.00001	0.0001	0.0005	0.002	0.04		0.4	0.001	11.7	0.005	0.001	8.4	0.001	0.0001	0.0002	6.4	0.0002	5.8	0.001	0.288	0.0006	0.00005	0.0009	0.0012	0.001	
W2	2006-06-23 0:00		0.01	0.0004	0.064	0.002	0.0001	0.0005	40.8	0.00001	0.0001	0.0006	0.002	0.05		1.4	0.001	12.6	0.016	0.001	8.2	0.0014	0.0001	0.0002	7.2	0.0002	5.54	0.001	0.344	0.0006	0.00005	0.0012	0.001	0.004	
W2	2006-06-28 0:00		0.008	0.0006	0.058	0.004	0.0001	0.0005	33	0.00001	0.0001	0.0007	0.003	0.03		1.1	0.001	11.4	0.005	0.001	7.9	0.0011	0.0001	0.0002	6.6	0.0002	5.49	0.001	0.304	0.0006	0.00005	0.0012	0.0011	0.001	
W2	2006-07-07 0:00		0.005	0.0006	0.065	0.006	0.0001	0.0007	34.7	0.00001	0.0001	0.0012	0.002	0.02		1.1	0.002	12.9	0.008	0.001	8.3	0.0016	0.0001	0.0002	7.8	0.0002	6.5	0.001	0.358	0.0009	0.00005	0.0012	0.0034	0.002	
W2	2006-07-12 0:00		0.005	0.0005	0.063	0.006	0.0001	0.0007	36.1	0.00001	0.0001	0.0012	0.002	0.02		1.4	0.002	12.9	0.01	0.002	8.9	0.0006	0.0001	0.0002	7.9	0.0002	5.69	0.001	0.37	0.0007	0.00005	0.0009	0.0019	0.001	
W2	2006-07-31 13:30		0.007	0.0004	0.068	0.006	0.0001	0.0005	39	0.00001	0.0001	0.0005	0.001	0.04		1.4	0.001	13.5	0.011	0.001	8.9	0.0005	0.0001	0.0002	7.5	0.0002	6.03	0.001	0.256	0.0006	0.00005	0.0015	0.0003	0.001	
W2	2006-08-02 0:00		0.005	0.0005	0.065	0.006	0.0001	0.0005	3.8	0.00001	0.0001	0.0006	0.002	0.02		0.8	0.002	0.9	0.008	0.001	9.1	0.0007	0.0001	0.0002	7.8	0.0002	3.79	0.001	0.289	0.0005	0.00005	0.0015	0.0015	0.001	
W2	2006-08-23 0:00		0.007	0.0004	0.063	0.006	0.0001	0.0005	39.3	0.00001	0.0001	0.0007	0.002	0.05		1.2	0.002	13.4	0.02	0.001	9	0.0009	0.0001	0.0002	7.1	0.0002	5.81	0.001	0.39	0.0006	0.00005	0.0015	0.0014	0.003	
W2	2006-08-30 0:00		0.007	0.0005	0.06	0.006	0.0001	0.0005	40	0.00001	0.0001	0.0009	0.002	0.06		1.4	0.002	13.1	0.013	0.001	9.3	0.0005	0.0001	0.0002	6.8	0.0002	5.77	0.001	0.37	0.0005	0.00005	0.0016	0.0016	0.001	
W2	2006-09-06 0:00		0.005	0.0005	0.06	0.005	0.0001	0.0005	42.2	0.00001	0.0001	0.0006	0.003	0.05		1.4	0.002	13.6	0.018	0.001	9.8	0.001	0.0001	0.0002	7.3	0.0002	5.75	0.001	0.407	0.0005	0.00005	0.0016	0.0019	0.001	
W2	2006-09-13 0:00		0.005	0.0004	0.057	0.007	0.0001	0.0005	40.7	0.00001	0.0001	0.001	0.002	0.06		1.3	0.002	13.8	0.012	0.001	9.6	0.0009	0.0001	0.0002	7.2	0.0002	5.27	0.001	0.372	0.0007	0.00005	0.0016	0.0015	0.001	
W2	2006-09-20 0:00		0.005	0.0004	0.059	0.005	0.0001	0.0005	42.4	0.00001	0.0001	0.0007	0.002	0.06		1.4	0.003	14.1	0.02	0.001	8.9	0.0005	0.0001	0.0002	7.7	0.0002	5.76	0.001	0.366	0.0005	0.00005	0.0018	0.0015	0.002	
W2	2006-09-28 0:00		0.008	0.0004	0.061	0.004	0.0001	0.0005	42.1	0.00001	0.0001	0.0005	0.002	0.04		1.4	0.002	13.5	0.013	0.001	9.5	0.0006	0.0001	0.0002	6.7	0.0002	6.13	0.001	0.39	0.0006	0.00005	0.0015	0.0016	0.002	
W2	2006-10-04 0:00		0.005	0.0002	0.059	0.004	0.0001	0.0005	41.8	0.00001	0.0001	0.0005	0.001	0.05		1.4	0.002	13.5	0.012	0.001	8.7	0.0008	0.0001	0.0002	7.6	0.0002	6.02	0.001	0.378	0.0008	0.00005	0.0015	0.0012	0.001	
W2	2006-10-12 0:00		0.006	0.0004	0.058	0.005	0.0001	0.0005	41.6	0.00001	0.0001	0.0005	0.002	0.03		1.3	0.002	13.2	0.018	0.001	8.3	0.0008	0.0001	0.0002	7	0.0002	6.05	0.001	0.39	0.0008	0.00005	0.0015	0.0009	0.001	
W2	2006-10-18 0:00		0.006	0.0003	0.064	0.005	0.0001	0.0005	42.7	0.00001	0.0001	0.0005	0.002	0.02		1.4	0.002	13.1	0.025	0.001	9.7	0.0011	0.0001	0.0002	7.8	0.0002	5.82	0.001	0.42	0.0005	0.00005	0.0018	0.0009	0.002	
W2	2006-10-28 0:00		0.007	0.0004	0.067	0.006	0.0001	0.0005	42	0.00003	0.0001	0.0069	0.002	0.02	0.0001	1.4	0.002	14	0.028	0.001	8.8	0.0009	0.0001	0.0002	8.2	0.0002	6.07	0.001	0.407	0.0009	0.00005	0.0017	0.0021	0.002	
W2	2007-04-17 0:00		0.032	0.0008	0.071	0.005	0.0001	0.0005	51	0.00002	0.0002	0.0017	0.002	0.05		5.2	0.003	21.5	0.046	0.001	14.7	0.0011	0.0001	0.0002	11.4	0.0004	9.97	0.001	0.483	0.0028	0.00005	0.0014	0.0043	0.008	
W2	2007-04-26 0:00		0.058	0.0004	0.028	0.003	0.0001	0.0005	14.5	0.00002	0.0002	0.0005	0.003	0.14	0.0001	2.3	0.001	3.9	0.045	0.001	3.2	0.0014	0.0003	0.0002	1.4	0.0002	3.46	0.001	0.099	0.0005	0.00005	0.0005	0.0007	0.009	
W2	2007-05-19 0:00		0.008	0.0005	0.048	0.005	0.0001	0.0005	29.4	0.00001	0.0001	0.0011	0.003	0.13	0.0001	1.3	0.001	10.4	0.01	0.001	6.3	0.0008	0.0001	0.0002	5	0.0002	5.29	0.001	0.248	0.001	0.00005	0.001	0.0014	0.001	
W2	2007-05-30 0:00		0.005	0.0004	0.053	0.004	0.0001	0.0005	32.6	0.00001	0.0001	0.0008	0.004	0.03	0.0001	1.4	0.002	10.8	0.005	0.001	7.5	0.0005	0.0001	0.0002	6.1	0.0002	4.33	0.001	0.29	0.001	0.00005	0.0013	0.001	0.002	
W2	2007-06-20 0:00		0.016	0.0005	0.061	0.008	0.0001	0.0005	39.6	0.00001	0.0001	0.0005	0.003	0.05	0.0001	1.4	0.001	12.1	0.006	0.001	9	0.0005	0.0001	0.0002	7	0.0002	5.05	0.001	0.351	0.001	0.00005	0.0014	0.0014	0.002	
W2	2007-06-27 0:00																																		
W2	2007-07-04 0:00																																		
W2	2007-07-18 0:00		0.013	0.0006	0.065	0.006	0.0001	0.0005	41.9	0.00001	0.0001	0.0005	0.004	0.06	0.0001	1.2	0.002	13.8	0.007	0.001	9	0.0005	0.0001	0.0002	6.5	0.0002	6.2	0.001	0.368	0.0009	0.00005	0.0015	0.001	0.003	
W2	2007-08-15 0:00		0.009	0.0005	0.067	0.007	0.0001	0.0005	42.4	0.00001	0.0001	0.0005	0.003	0.08	0.0001	1.3	0.002	13.2	0.008	0.001	9.8	0.0014	0.0001	0.0002	6.6	0.0002	6.06	0.001	0.371	0.0008	0.00005	0.0016	0.0018	0.005	
W2	2007-09-18 0:00		0.016	0.0005	0.055	0.004	0.0001	0.0005	34.5	0.00001	0.0001	0.0006	0.002	0.17	0.0001	1	0.002	10.5	0.015	0.001	7.5	0.0014	0.0001	0.0002	3.9	0.0002	5.98	0.001	0.308	0.0008	0.00005	0.001	0.0009	0.007	
W2	2007-10-17 0:00		0.008	0.0004	0.054	0.005	0.0001	0.0005	37.1	0.00001	0.0001	0.0007	0.001	0.1		1.1	0.002	11.3	0.016	0.001	7.3	0.0005	0.0001	0.001	4.9	0.0002	6.22	0.001	0.317	0.0007	0.00005	0.0011	0.0009	0.001	
W2	2008-04-22 0:00		0.02	0.0002	0.056	0.005	0.00004		38.4		0.00014	0.0006	0.002	0.02	0.00001	2.87	0.002	16.1	0.022	0.00073	11.1	0.001	0.0001	0.0008		0.0006	3.67	0.004	0.419	0.0008	0.00001	0.0012	0.00026	0.003	0.0001
W2	2008-05-13 0:00		0.02	0.0011	0.035	0.005	0.00004		18.5		0.00009	0.0006	0.002	0.12	0.00001	0.45	0.001	5.71	0.0093	0.00055	4.47	0.002	0.0001	0.0006		0.0006	2.02	0.004	0.154	0.0007	0.00001	0.0006	0.00057	0.002	0.0002
W2	2008-05-20 0:00		0.03		0.038	0.005	0.00004		23.7		0.00009	0.0014	0.003	0.11	0.00001	1.32	0.001	7.22	0.0055	0.00091	6.15	0.002	0.0001	0.0007		0.0006	2.01	0.004	0.203	0.0009	0.00001	0.0007	0.00064	0.003	0.0002
W2	2008-06-03 0:00																																		
W2	2008-07-08 0:00	0.00001	0.01	0.0007	0.056	0.004	0.00004		39.4		0.00006	0.0012	0.002	0.02	0.00001	1.28	0.002	12.1	0.0049	0.00099	8.54	0.001	0.0002	0.0007		0.0006	4.49	0.0001	0.344	0.0007	0.00001	0.0014	0.0006	0.003	0.0004
W2	2008-07-23 0:00	0.00001	0.018	0.0006	0.049	0.005	0.0001	0.0005	31	0.00001	0.0002	0.0005	0.004	0.11	0.0001	0.8	0.001	9.4	0.005	0.001	7.6	0.0013	0.0001	0.0014	3.7	0.0002	5.58	0.001	0.262	0.0007	0.00005	0.0008	0.0008	0.004	
W2	2008-08-07 0:00	0.00032	0.005	0.0003	0.063	0.007	0.0001	0.0011	40.8	0.00001	0.0002	0.0005	0.002	0.04	0.0001	1.3	0.002	12.3	0.007	0.001	9.7	0.0007	0.0001	0.0009	6.8	0.0002	5.48	0.001	0.374	0.0005	0.00005	0.0016	0.001	0.004	
W2	2008-08-28 0:00	0.00001	0.047	0.0006	0.06	0.007	0.00004		34.2	0.00001	0.0002	0.0011	0.013	0.33	0.00001	1.95	0.001	9.65	0.0185	0.00214	9.13	0.002	0.0002	0.0005		0.0006	5.69	0.0001	0.247	0.0036	0.00001	0.0007	0.0014	0.003	0.0004
W2	2008-08-31 0:00																																		
W2	2008-09-07 0:00																																		
W2	2008-09-11 0:00																																		
W2	2008-09-19 0:00	0.00001	0.036	0.0007	0.06	0.014	0.00004		37.6	0.00001	0.00042	0.0021	0.015	0.31	0.00001	4.03	0.001	11	0.0908	0.00254	11.1	0.002	0.0001	0.0008		0.0013	5.42	0.0001	0.317	0.0026	0.00001	0.0009	0.00156	0.003	0.0004
W2	2008-10-08 0:00	0.00006	0.011	0.0005	0.05	0.005	0.00004		28.5	0.00001	0.00011	0.0009	0.006	0.112	0.00001	1	0.001	8.47	0.0176	0.00096	5.5	0.002	0.0001	0.0003		0.0006	5.6	0.0002	0.248	0.0013	0.00001	0.0007	0.00069	0.002	0.0003
W2	2008-10-29 0:00	0.00001	0.005	0.0004	0.054	0.006	0.00004		43.9	0.00001	0.00007	0.0008	0.004	0.06	0.00001	1.5	0.002	14.4	0.0091	0.00098	9.6	0.001	0.0001	0.001		0.0006	6.72	0.0006	0.344	0.0014	0.00001	0.0011	0.00055	0.007	0.0002
W2	2008-11-18 0:00	0.00001	0.016	0.0003	0.067	0.006	0.0001	0.0005	39.4	0.00002	0.0001	0.0005	0.005	0.05	0.0001	1.5	0.002	12.5	0.016	0.001	10.6	0.0012	0.0001	0.0009	7.4	0.0002	5.69	0.001	0.407	0.0011	0.00005	0.0017	0.0005	0.006	
W2	2009-04-22 0:00	0.00001	0.055	0.0005	0.049	0.004	0.00004	0.0001	36.6	0.00004	0.00031	0.0005	0.006	0.08	0.00001	3.2	0.002	14.5	0.0344	0.00072	9.7	0.001	0.0003	0.0016	7.8	0.0006	5.91	0.0001	0.32	0.0047	0.00002	0.0005	0.00053	0.005	0.0003
W2	2009-04-30 0:00	0.00001	0.076	0.0003	0.016	0.005	0.00004	0.0001	8.18		0.00016	0.0008	0.01	0.14	0.00001	2	0.001	2.25	0.0263	0.00018	1.6	0.001	0.0003	0.0009	0.6	0.0006	1.87	0.0001	0.046	0.0028	0.00001	0.0004	0.00043	0.02	0.0002
W2	2009-05-05 0:00	0.00001	0.102	0.0003	0.02	0.004	0.00004	0.0001	9.87	0.00008	0.00021	0.0012	0.006	0.28	0.00001	1.5	0.001	2.55	0.0301	0.00029	1.6	0.001	0.0002	0.0011	0.7	0.0006	1.99	0.0001	0.052	0.0043	0.00001	0.0004	0.00068	0.006	0.0003
W2	2009-05-27 0:00	0.00001	0.013	0.0004	0.051	0.004	0.00004	0.0001	30.4	0.00025	0.00011	0.0015	0.01	0.1	0.00001	1.4	0.001	9.89	0.003	0.00145	7.5	0.001	0.0003	0.0013	5.5	0.0006	4.16	0.0001	0.253	0.0011	0.00001	0.0012	0.0007	0.004	0.0001
W2	2009-06-17 0:00	0.00001	0.013	0.0004	0.051	0.004	0.00004	0.0001	34	0.00001	0.00011	0.0004	0.003	0.04	0.00001	1.4	0.001	10.8	0.0033	0.00142	8.1	0.001	0.0001	0.0002	6.1	0.0006	4.29	0.0001	0.33	0.0005	0.00001	0.0008	0.00051	0.001	0.0002
W2	2009-06-26 20:00	0.00002	0.007	0.0004	0.059	0.05	0.0001	0.001	39	0.00001	0.0005		0.0029	0.022	0.00002	1.45	0.005	12.1	0.003	0.002	8.54	0.001	0.0002	0.0005	8	0.0001	5.5	0.005	0.331	0.005	0.00005	0.0014	0.005	0.005	0.0005
W2	2009-06-27 0:00																																		
W2	2009-06-28 0:00																																		
W2	2009-06-29 0:00	0.00002	0.027	0.0005	0.079	0.05	0.0001	0.001	43.2	0.00002	0.0005		0.0167	0.127	0.00002	3.55	0.005	13.6	0.003	0.008	13.3	0.001	0.0002	0.0005	15	0.0015	5.14	0.005	0.406	0.005	0.00005	0.0013	0.005	0.005	0.0005
W2	2009-06-30 0:00																																		
W2	2009-06-30 9:00																																		
W2	2009-07-01 0:00																																		
W2	2009-07-02 0:00																																		
W2	2009-07-03 0:00																																		
W2	2009-07-04 8:30																																		
W2	2009-07-05 16:00	0.00002	0.017	0.0005	0.08	0.05	0.0001	0.001	50	0.00002	0.0005		0.0194	0.081	0.00002	4.09	0.005	14	0.004	0.007	13.9	0.001	0.0002	0.0005	14	0.0014	4.86	0.005	0.464	0.005	0.00005	0.0013	0.005	0.005	0.0005
W2	2009-07-06 0:00																																		
W2	2009-07-07 0:00																																		

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N\text{-}NO_2$	$N\text{-}NO_3$	$N\text{-}NH_3$	SO_4-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W2	2009-07-08 0:00				8.17			12.01	106.7						
W2	2009-07-08 10:00						9								
W2	2009-07-09 0:00				8.46			13.03	112						
W2	2009-07-09 9:00						10								
W2	2009-07-10 0:00				8.4		9	11.83	114.4						
W2	2009-07-11 0:00				8.38		7	12	115.5						
W2	2009-07-12 9:00	160	407		8.39	270	6	11.07	116.2	0.022	2.15	0.005	39	2.8	0.41
W2	2009-07-13 0:00				8.4			9.72	114.2						
W2	2009-07-14 0:00				8.42			9.76	110						
W2	2009-07-15 0:00		403		8.36	260	11	10.33	104.7						
W2	2009-07-16 0:00	160	404		8.41	240	10	7.93	106.7	0.026	1.96	0.007	47	3.1	0.43
W2	2009-07-17 0:00	160	404		8.3	230	8	7.62	111.2	0.025	2.02	0.005	46	3	0.46
W2	2009-07-18 0:00	84	331		8.61	210	31	7.81	112.4	0.125	5.8	0.83	46	8.6	0.37
W2	2009-07-19 0:00		368		8.34	220		7.86	117.5						
W2	2009-07-20 0:00				8.19			8.9	124.5						
W2	2009-07-21 0:00				8.34			8.39	121	0.045	2.7	0.029			
W2	2009-07-22 11:00		348		8.43	210	5	9.09	122.3						
W2	2009-07-22 13:00		345			230	6								
W2	2009-07-23 0:00				8.32			9.37	110.5						
W2	2009-07-24 14:00		366		8.37	220	17	10.47	115.2						
W2	2009-07-25 10:00	140	382		8.39	240	14	8.44	111.4	0.055	2.9	0.013	42	5.6	0.38
W2	2009-07-26 0:00		373		8.43	230	11	10.19	116.2						
W2	2009-07-27 0:00		375		8.4	230	8	12.02	150.2						
W2	2009-07-28 0:00	107	342		7.94	224	12	10.69	152.1				37.9	5.65	
W2	2009-07-29 0:00		351		7.9	210	4	9.17	86						
W2	2009-07-30 0:00		350		7.79	200	4	8.84							
W2	2009-07-31 0:00		362		8.36	210	4	9.48							
W2	2009-08-01 0:00	140	390		8.1	230	5	11.13		0.014	1.56	0.01	38	6.2	0.37
W2	2009-08-02 0:00		395		7.87	240	4	13.65							
W2	2009-08-03 0:00		394		8.13	240	4	7.96							
W2	2009-08-04 0:00		405		8	260	7	7.97							
W2	2009-08-05 0:00		400		8.34	240	4	8.35							
W2	2009-08-08 0:00		319			200	4			0.005	0.38	0.005			
W2	2009-08-09 0:00				7.85			7.17	93.6						
W2	2009-08-10 0:00				7.8			9.6							
W2	2009-08-11 0:00	140	302			234	2						24	1.91	
W2	2009-08-12 0:00	140	316			220	4			0.005	0.33	0.005	19	2.2	0.32
W2	2009-08-14 0:00		364		7.87	260	18	7.49	102.3						
W2	2009-08-15 0:00	120	377		7.83	220	15	8.64	146.5	0.04	3.4	0.012	38	11	0.27
W2	2009-08-16 0:00		376		7.79	230	13	9.35	102.1						
W2	2009-08-17 0:00		375		7.87	240	17	9.75	110						
W2	2009-08-18 0:00		369		7.84	240	100	9.06	89.4						
W2	2009-08-19 0:00	120	357		7.96	220	550	8.26		0.014	3.2	0.005	30	10	0.26
W2	2009-08-20 0:00	120	363		8.1	210	33	8.23		0.023	3.4	0.005	32	11	0.28
W2	2009-08-21 0:00	120	368		8.08	220	21	8.22		0.024	3.6	0.005	33	11	0.28
W2	2009-08-22 0:00	120	374		7.93	230	15	9.54		0.024	3.8	0.005	35	12	0.29
W2	2009-08-23 0:00	120	376		8.08	230	20	9.42		0.025	3.8	0.005	35	12	0.29
W2	2009-08-24 0:00	110	381		8.07	180	13	8.62	101.8	0.029	4	0.005	34	14	0.28
W2	2009-08-25 0:00		382		7.97	240	13	8.8	99.8						
W2	2009-08-26 0:00		370		8.01	240	22	8.72	113.2						
W2	2009-08-27 0:00		367		8.02	240	15	7.82	110.7						
W2	2009-08-28 0:00		379		7.97	240	15	9.69	104						
W2	2009-08-29 0:00		385		8.04	250	13	9.13	103.5						
W2	2009-08-30 0:00	110	382		7.87	230	71	9.51	102.7	0.023	4.5	0.005	39	20	0.26
W2	2009-08-31 0:00		371		7.95	230	50	8.61	105.1						
W2	2009-09-01 0:00		380		7.94	230	20	8.01	106.5						
W2	2009-09-02 0:00		386		7.97	240	14	7.67	104.4						
W2	2009-09-03 0:00		391		7.95	250	13	7.23	105.7						
W2	2009-09-04 0:00		393		7.91	230	14	7.83	101.5						
W2	2009-09-05 0:00		394		8	250	11	8.06	106.5						
W2	2009-09-06 0:00	100	396		8.07	240	12	7.39	106	0.012	4.8	0.005	42	22	0.25
W2	2009-09-07 0:00		393		8.13	240	7	6.87	106.2						
W2	2009-09-08 0:00		395		8.24	240	10	7.05	106.6						
W2	2009-09-09 0:00		396		8.2	250	17	6.98	105						
W2	2009-09-10 0:00		399		8.14	260	8	6.31	106.5						
W2	2009-09-11 0:00		398		8.2	260	7	7.73	108.6						
W2	2009-09-12 0:00		400		8.39	270	7	7.08	111.9						
W2	2009-09-13 0:00	110	383		8.19	270	6	7.45	109.6	0.019	4.6	0.005			
W2	2009-09-14 0:00		400		8.22	250	6	6.4	109.1						
W2	2009-09-15 0:00		404		8.12	260	7	5.49	110						
W2	2009-09-16 0:00		404		8.25	260	4	6.84	106.1						
W2	2009-09-17 0:00		406		8.02	250	6	7.06	105.7						
W2	2009-09-18 0:00		404		8.45	250	6	5.23	107.6						
W2	2009-09-19 0:00		408		8.21	250	4	5.77	110						
W2	2009-09-20 0:00		410		8.24	230	4	5.93	109.8	0.014	5.1	0.005			
W2	2009-09-21 0:00		405		7.93	270	4	5.94	110.4						
W2	2009-09-22 0:00		408		8.08	240	4	4.41	108						
W2	2009-09-23 0:00		402		8.28	250	4	6.04	110.5						
W2	2009-09-24 0:00		396		8.09	240	5	5.51	108.3						
W2	2009-09-25 0:00		400		8.12	250	5	5.71	107.9						
W2	2009-09-26 0:00		403		8.24	230	4	5.95	110.3	0.012	5.3	0.005			
W2	2009-09-27 0:00		398		8.13	270	5	4.07	113						
W2	2009-09-28 0:00		406		8.11	240	5	2.78	112.2						
W2	2009-09-29 0:00		427		8.33	240	4	1.45	77.8						
W2	2009-09-30 0:00		428		8.02	260	4	2.17	40.3						
W2	2009-10-01 0:00		420		7.82	250	5	3.53							
W2	2009-10-02 0:00		378		7.79	240	4	2.38	99.3						
W2	2009-10-03 0:00		423		7.65	190	6	2.16	114.2						
W2	2009-10-04 0:00		416		7.7	270	5	2.79	105.5	0.014	4.9	0.005			
W2	2009-10-05 0:00		418		7.8	270	4	2.63	118						
W2	2009-10-06 0:00		408		8.03	270	7	3.08	119						
W2	2009-10-07 0:00		422		8.1	280	4	1.95	119.5						
W2	2009-10-08 0:00		419		8.03	270	5	2.22	117.2						
W2	2009-10-09 0:00		423		8	270	5	2.29	118.5						
W2	2009-10-10 0:00		427		8.05	260	4	2.25	96.1						
W2	2009-10-11 0:00		429		8.11	270	4	1.75	95.3	0.013	5.7	0.005			
W2	2009-10-12 0:00		431		8.16	260	6	0.99							
W2	2009-10-13 0:00		447		8.13	260	9	-0.08	117.2						
W2	2009-10-14 0:00		453		8.43	240	9	-0.08	133.2						
W2	2009-10-15 0:00		458		8.4	270	4	-0.08	132						
W2	2009-10-16 0:00		457		7.7	240	9	-0.07	132.8						
W2	2009-10-17 0:00		456		8.2	240	12	0	137.1						
W2	2009-10-18 0:00		449		8.3	240	4	1.14	140						
W2	2009-10-19 0:00		446		8.3	200	4	1.38	133.7						
W2	2009-10-20 0:00	130	422		8.25	180	4	0.08	124.6	0.005	4.6	0.005			0.32
W2	2009-10-21 0:00		401		8.21	220	4	0.73	116.5						
W2	2009-10-22 0:00		396		8.25	200	47	0.84	99.6						
W2	2009-10-23 0:00		398		8.13	200	4	1.28	100.5						
W2	2009-10-24 0:00		393		8.09	210	4	0.57	93.3						
W2	2009-10-25 0:00	130	395		8.11	220	4	0.52	98	0.005	3.9	0.005			
W2	2009-10-26 0:00		396		8.16	230	4	1.23	95.9						
W2	2009-10-27 0:00	130	395		8.05	220	4	0.83	92.9	0.005	3.8	0.005			
W2	2009-10-28 0:00		388		8.12	210	4	0.66	94.6						
W2	2009-10-29 0:00		389		7.79	240	4	0.16	115.5						
W2	2009-10-30 0:00		395		7.81	230	4	-0.05	113.2						

Station	Date / Time	Dissolved Elements																															
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W2	2009-07-12 9:00	0.00002	0.013	0.0005	0.084	0.05	0.0001	0.001	48.4	0.00001	0.0005		0.0163	0.063	0.00002	3.81	0.005	14.4	0.003	0.007	13.4	0.001	0.0002	0.0005	16	0.0011	5.35	0.005	0.487	0.005	0.00005	0.0014	0.005	0.005	0.0005
W2	2009-07-16 0:00	0.00002	0.016	0.0005	0.077	0.05	0.0001	0.001	48.2	0.00001	0.0005		0.0227	0.077	0.00002	4.01	0.005	14.2	0.002	0.007	13.7	0.001	0.0002	0.0005	16	0.0013	5.31	0.005	0.479	0.005	0.00005	0.0014	0.005	0.005	0.0005
W2	2009-07-17 0:00	0.00002	0.015	0.0005	0.077	0.05	0.0001	0.001	47.2	0.00001	0.0005		0.0226	0.076	0.00002	4.04	0.005	13.8	0.003	0.008	13.4	0.001	0.0002	0.0005	16	0.0013	5.28	0.005	0.468	0.005	0.00005	0.0014	0.005	0.005	0.0005
W2	2009-07-18 0:00	0.00002	0.046	0.0009	0.116	0.05	0.0001	0.001	37.1	0.00003	0.0005		0.0192	0.097	0.00003	3.02	0.005	9.37	0.093	0.015	10.4	0.001	0.0003	0.0008	15	0.0021	3.14	0.005	0.569	0.007	0.00005	0.0012	0.005	0.005	0.0005
W2	2009-07-21 0:00	0.00002	0.011	0.0004	0.068	0.05	0.0001	0.001	43	0.00002	0.0005		0.0084	0.043	0.00007	2.66	0.005	12.8	0.004	0.007	10.8	0.001	0.0002	0.0005	13	0.0009	5.01	0.005	0.415	0.005	0.00005	0.0013	0.005	0.005	0.0005
W2	2009-07-25 10:00	0.00002	0.013	0.0005	0.078	0.05	0.0001	0.001	43.5	0.00002	0.0005		0.0128	0.052	0.00002	3.38	0.005	12.3	0.002	0.009	11.5	0.001	0.0002	0.0005	15	0.0014	4.97	0.005	0.488	0.005	0.00005	0.0012	0.005	0.005	0.0005
W2	2009-08-01 0:00	0.00002	0.035	0.0005	0.083	0.05	0.0001	0.001	52.3	0.00003	0.0005		0.0097	0.047	0.00004	3.46	0.005	13.6	0.003	0.008	13.2	0.001	0.0002	0.0005	15	0.0012	5.23	0.005	0.52	0.005	0.00005	0.0013	0.005	0.005	0.0005
W2	2009-08-11 0:00	0.00001	0.008	0.0004	0.053	0.004	0.00004	0.001	36.6	0.00001	0.00007	0.0009	0.001	0.05		1.4	0.001	11.4	0.0046	0.0019	8.4	0.001	0.0009	0.0002	8.1	0.0006	5.46	0.0001	0.319	0.0007	0.00001	0.0011	0.0005	0.001	0.0002
W2	2009-08-12 0:00	0.00002	0.007	0.0004	0.06	0.05	0.0001	0.001	39.9	0.00001	0.0005		0.0028	0.042	0.00002	1.65	0.005	11.9	0.005	0.002	8.72	0.001	0.0002	0.0005	7	0.0002	5.94	0.005	0.377	0.005	0.00005	0.0013	0.005	0.005	0.0005
W2	2009-08-15 0:00	0.00002	0.016	0.0004	0.078	0.05	0.0001	0.001	44.7	0.00001	0.0005		0.0037	0.027	0.00002	2.75	0.005	12.7	0.001	0.009	12.5	0.001	0.0002	0.0005	15	0.0011	4.65	0.005	0.476	0.005	0.00005	0.0009	0.005	0.005	0.0005
W2	2009-08-19 0:00	0.00002	0.023	0.0006	0.087	0.05	0.0001	0.001	42.5	0.00001	0.0005		0.0036	0.041	0.00002	2.54	0.005	12.2	0.001	0.008	11.6	0.001	0.0002	0.0005	13	0.001	4.99	0.005	0.449	0.005	0.00005	0.0008	0.005	0.005	0.0005
W2	2009-08-22 0:00	0.00002	0.018	0.0004	0.086	0.05	0.0001	0.001	46	0.00002	0.0005		0.0035	0.035	0.00002	2.82	0.005	12.7	0.002	0.009	12.5	0.001	0.0002	0.0005	16	0.0011	4.79	0.005	0.501	0.005	0.00005	0.0008	0.005	0.005	0.0005
W2	2009-08-30 0:00	0.00002	0.072	0.0003	0.092	0.05	0.0001	0.001	44.9	0.00001	0.0005		0.0079	0.033	0.00002	2.66	0.005	13.3	0.005	0.008	14.8	0.001	0.0002	0.0005	15	0.0011	4.69	0.005	0.526	0.005	0.00005	0.0006	0.005	0.005	0.0005
W2	2009-09-06 0:00	0.00002	0.03	0.0004	0.088	0.05	0.0001	0.001	42.7	0.00001	0.0005		0.0016	0.024	0.00002	2.37	0.005	11.8	0.002	0.009	13.6	0.001	0.0002	0.0005	15	0.0011	4.33	0.005	0.512	0.005	0.00005	0.0005	0.005	0.005	0.0005
W2	2009-09-13 0:00	0.00002	0.048	0.0003	0.095	0.05	0.0001	0.001	46.8	0.00001	0.0005		0.0015	0.032	0.00002	2.47	0.005	12.8	0.01	0.009	14.5	0.001	0.0002	0.0005	16	0.0011	4.4	0.005	0.542	0.005	0.00005	0.0006	0.005	0.005	0.0005
W2	2009-09-20 0:00	0.00002	0.038	0.0004	0.093	0.05	0.0001	0.001	46.8	0.00002	0.0005		0.0015	0.029	0.00006	2.53	0.005	12.7	0.013	0.01	14.5	0.001	0.0002	0.0005	17	0.0013	4.4	0.005	0.565	0.005	0.00005	0.0006	0.005	0.005	0.0005
W2	2009-09-26 0:00	0.00002	0.033	0.0004	0.095	0.05	0.0001	0.001	45.9	0.00002	0.0005		0.0015	0.03	0.00003	2.52	0.005	12.9	0.013	0.01	13.6	0.001	0.0002	0.0005	17	0.0012	4.87	0.005	0.562	0.005	0.00005	0.0006	0.005	0.005	0.0005
W2	2009-10-04 0:00	0.00002	0.032	0.0004	0.092	0.05	0.0001	0.001	47.8	0.00002	0.0005		0.0013	0.025	0.00006	2.51	0.005	13.2	0.017	0.011	13.7	0.001	0.0002	0.0005	19	0.0013	4.31	0.005	0.589	0.005	0.00005	0.0007	0.005	0.005	0.0005
W2	2009-10-11 0:00	0.00002	0.039	0.0004	0.094	0.05	0.0001	0.001	51.2	0.00001	0.0005		0.0014	0.029	0.00002	2.62	0.005	14.1	0.032	0.011	14.9	0.001	0.0002	0.0005	20	0.0014	4.68	0.005	0.606	0.005	0.00005	0.0006	0.005	0.005	0.0005
W2	2009-10-20 0:00	0.00002	0.018	0.0003	0.09	0.05	0.0001	0.001	51.2	0.00001	0.0005		0.0016	0.029	0.00002	2.34	0.005	13.9	0.013	0.008	13.3	0.001	0.0002	0.0005	17	0.0013	5.62	0.005	0.623	0.005	0.00005	0.001	0.005	0.005	0.0005
W2	2009-10-25 0:00	0.00002	0.014	0.0003	0.08	0.05	0.0001	0.001	48.3	0.00001	0.0005		0.0016	0.026	0.00002	2.11	0.005	13.4	0.009	0.007	12.1	0.001	0.0002	0.0005	15	0.0008	4.85	0.005	0.537	0.005	0.00005	0.001	0.005	0.005	0.0005
W2	2009-10-27 0:00	0.00002	0.014	0.0004	0.081	0.05	0.0001	0.001	48	0.00002	0.0005		0.0015	0.042	0.00007	2.01	0.005	13.1	0.01	0.007	11.7	0.001	0.0002	0.0005	14	0.0009	5.44	0.005	0.529	0.005	0.00005	0.001	0.005	0.005	0.0005

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N\text{-}NO_2$	$N\text{-}NO_3$	$N\text{-}NH_3$	SO_4-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W2	2009-11-05 0:00				7.65			1.3							
W2	2009-11-06 0:00	134	313			230	2				0.95		25	6.01	
W2	2010-04-07 0:00	250	580		7.81	382	34	1					52	5	
W2	2010-04-19 0:00	92	189		7.69	174	49	1.1			0.02		10	1.49	
W2	2010-04-20 0:00	64	134		7.76	148	12	1			0.04		6.5	1.26	
W2	2010-04-21 0:00	38	86		6.88	130	19	1			0.02		4.5	0.97	
W2	2010-04-22 0:00	43	98		6.93	130	8	1			0.06		3.7	1.01	
W2	2010-04-23 0:00	45	96		7.64	114	5	0	152.7				4	0.95	
W2	2010-04-24 0:00	45	97		7.53	120	3		111.3				3.9	0.97	
W2	2010-04-25 0:00	41	89		7.78	110	15	0	81.1				3.5	0.77	
W2	2010-04-26 0:00	42	83		7.23	60	21	0.01	151.6	0.03	0.1	0.045	0.5	1.8	0.12
W2	2010-04-27 0:00	38	77		7.63	70	31	0	122.2	0.009	0.08	0.025	0.5	1.5	0.11
W2	2010-04-28 0:00	36	73		7.87	70	41	0	17	0.03	0.1	0.55	0.5	1	0.1
W2	2010-04-29 0:00	39	78		7.87	74	37	-0.02	11.5	0.02	0.04	0.026	0.5	1.1	0.11
W2	2010-04-30 0:00	39	79		7.9	70	71	0.18	54		0.2	0.005	0.5	1.7	0.12
W2	2010-05-01 0:00	48	102		7.11	98	38	0	89.2	0.006	0.03	0.035	0.5	1.6	0.14
W2	2010-05-02 0:00	58	129		7.88	94	27	0	45.6	0.006	0.09	0.022	0.5	1.4	0.15
W2	2010-05-03 0:00	58	122		7.98	68	25	0.35	17.5	0.006	0.02	0.024	0.5	1.5	0.17
W2	2010-05-04 0:00	64	133		7.89	72	11	0	101.2		0.2	0.028	0.5	1.6	0.17
W2	2010-05-05 0:00	69	144		7.95	100	6	0	74.8	0.005	0.02	0.01	3.3	1.3	0.18
W2	2010-05-06 0:00	74	155		8.09	130	5	0	132.3	0.005	0.03	0.05	5.5	1.1	0.17
W2	2010-05-07 0:00	78	160		8.13	120	4	0	64.8	0.005	0.02	0.01	7.9	1.2	0.19
W2	2010-05-08 0:00	81	169		8.04	120	5	0	127.2	0.005	0.02	0.018	8.1	1.1	0.2
W2	2010-05-09 0:00	81	159		8.01	140	4	0.08	142.1	0.007	0.12	0.01	2.7	0.5	0.2
W2	2010-05-10 0:00	89	192		8.18	130	4	0.04	142.5	0.009	0.11	0.034	13	1.9	0.23
W2	2010-05-11 0:00	93	199			110	4			0.005	0.04	0.12	13	3.9	0.17
W2	2010-05-12 0:00	98	209			150	4			0.005	0.03	0.02	14	1.4	0.16
W2	2010-05-13 0:00	98	209			110	4			0.005	0.08	0.016	14	1.3	0.22
W2	2010-05-14 0:00	110	236		7.8	170	4	1.4		0.005	0.05	0.12	17	1.7	0.24
W2	2010-05-15 0:00	110	232		7.93	170	4	1.5		0.005	0.04	0.065	15	1.6	0.23
W2	2010-05-16 0:00	110	229		7.97	160	4	2.8		0.005	0.03	0.084	14	1.4	0.24
W2	2010-05-17 0:00	100	235		7.87	170	4	1.2		0.005	0.05	0.028	15	1.5	0.24
W2	2010-05-18 0:00	110	242		7.86	160	1	4.5		0.005	0.03	0.07	15	1.2	0.27
W2	2010-05-19 0:00	110	231		7.76	150	1	2.4		0.005	0.05	0.04	16	1.2	0.28
W2	2010-05-20 0:00	110	230		7.26	160	1	4.4		0.005	0.03	0.03	16	1.2	0.26
W2	2010-05-21 0:00	110	239		7.67	160	1	2.6		0.005	0.05	0.011	16	1.7	0.29
W2	2010-05-22 0:00	110	240		7.85	170	7	2.7		0.005	0.05	0.006	16	1.6	0.31
W2	2010-05-23 0:00	110	238		7.91	160	2	3		0.005	0.05	0.005	16	1.8	0.3
W2	2010-05-24 0:00	110	243		7.84	160	1	2.5		0.005	0.05	0.08	15	1	0.31
W2	2010-05-25 0:00	120	260		7.62	140	1	5.6		0.005	0.04	0.07	17	1.7	0.29
W2	2010-05-26 0:00	120	258		7.87	150	37	2.6		0.005	0.08	0.18	17	1.7	0.29
W2	2010-05-27 0:00	120	260		7.98	160	6	2.7		0.005	0.09	0.025	17	1.2	0.3
W2	2010-05-28 0:00	120	263		7.97	160	20	3.4		0.005	0.08	0.008	17	1.6	0.37
W2	2010-05-29 0:00	130	270		7.97	180	44	3.7		0.005	0.1	0.21	19	2	0.32
W2	2010-05-30 0:00	130	280		7.95	190	1	2.7		0.005	0.09	0.007	19	1.6	0.35
W2	2010-05-31 0:00	130	277		7.95	170	1	3.8		0.005	0.12		18	1.5	0.31
W2	2010-06-01 0:00	130	286		7.67	160	2	5.8		0.005	0.16	0.025	23	1.9	0.28
W2	2010-06-02 0:00	130	284		7.68	160	2	4.1		0.005	0.13		19	1.6	0.29
W2	2010-06-03 0:00	140	293		7.52	190	21	4.4		0.005	0.14	0.005	20	1.9	0.29
W2	2010-06-04 0:00	140	298		7.4	160	1	6.2		0.005	0.13	0.042	21	2.1	0.29
W2	2010-06-05 0:00	140	296		7.85	180	4	4.7		0.005	0.13	0.26	21	1.9	0.3
W2	2010-06-06 0:00	150	299		7.92	190	4	5.2		0.005	0.12	0.19	21	1.6	0.3
W2	2010-06-10 0:00	130	298		7.82	180	1	6.8		0.005	0.05	0.022	24	5.3	0.31
W2	2010-06-11 0:00	140	306		7.88	190	1	7.9		0.005	0.04	0.012	24	2.1	0.31
W2	2010-06-12 0:00	140	304		7.89	190	1	5.5		0.005	0.03	0.016	23	2.1	0.31
W2	2010-06-13 0:00	140	316		7.92	200	1	6		0.005	0.02	0.051	25	2.4	0.29
W2	2010-06-14 0:00	140	310		6.63	190	1	6.5		0.005	0.06	0.039	63	3.4	0.3
W2	2010-06-15 0:00	150	306		7.42	180	1	7.2		0.005	0.08	0.023	26	2.1	0.29
W2	2010-06-16 0:00	150	320		7.32	180	1	6.5		0.005	0.07	0.043	26	2.2	0.28
W2	2010-06-17 0:00	150	320		7.1	170	1	4.6		0.005	0.1	0.026	28	2.1	0.28
W2	2010-06-18 0:00	160	351		7.13	180	1	6.1		0.005	0.17		26	2.2	0.3
W2	2010-06-19 0:00	170	514		7.31	170	1	5.3		0.013	6.7	0.005	64	10	0.46
W2	2010-06-20 0:00	140	302		7.19	190	1	5.7		0.005	0.41		22	2.3	0.32
W2	2010-06-21 0:00	140	312		7.19	200	1	6.4		0.005	0.36		25	1.9	0.31
W2	2010-06-22 0:00	130	297		8	180	4	4.54	107.3	0.005	0.43	0.009	15	1.7	0.32
W2	2010-06-23 0:00	130	277		7.9	170	1	4.76	113.9	0.005	0.36	0.4	19	1.5	0.31
W2	2010-06-24 0:00	130	281		7.95	160	1	5.02	111	0.005	0.38	0.005	20	1.9	0.31
W2	2010-06-25 0:00	130	291		7.76	170	1	4.97	104.1	0.005	0.38	0.01	20	1.8	0.33
W2	2010-06-26 0:00	140	299		7.78	160	1	5.47	106	0.005	0.39	0.017	23	1.7	0.32
W2	2010-06-27 0:00	140	308		7.53	190	1	5.29	103.3	0.005	0.26	0.011	24	1.7	0.29
W2	2010-06-28 0:00	140	304		7.49	190	1	5.47	102.6	0.005	0.15	0.019	23	1.9	0.28
W2	2010-06-29 0:00	140	309		7.89	200	1	7.14	105.5	0.005	0.12	0.018	23	1.7	0.29
W2	2010-06-30 0:00	140	306		7.94	190	1	6.64	101.3	0.005	0.04	0.018	23	1.6	0.29
W2	2010-07-01 0:00	100	220		8.13	190	87	5.59	108.6	0.005	0.1		9.1	0.9	0.25
W2	2010-07-02 0:00	110	226		7.13	180	66	6.33	106.5	0.005	0.16		9.5	1	0.24
W2	2010-07-03 0:00	110	240		8.11	180	26	6.05	104.9	0.005	0.18		12	1	0.25
W2	2010-07-04 0:00	120	252		8.16	170	17	6.62	105	0.005	0.27		14	1.1	0.26
W2	2010-07-05 0:00	120	267		8.14	180	8	5.8	104.6	0.005	0.34		15	1.2	0.28
W2	2010-07-06 0:00	130	284		8.07	190	4	5.63	103.8	0.005	0.38	0.018	18	1.4	0.28
W2	2010-07-07 0:00	140	300		8.11	190	6	8.84	101.8	0.005	0.45	0.014	22	1.7	0.3
W2	2010-07-08 0:00	140	310		8.15	200	3	7.96	102.7	0.005	0.49	0.011	23	1.9	0.3
W2	2010-07-09 0:00	130	316		8.02	170	2	6.14	101.1	0.005	0.53	0.03	24	1.8	0.29
W2	2010-07-10 0:00	150	321		8.15	170	2	6.8	99	0.005	0.53	0.03	26	1.7	0.3
W2	2010-07-11 0:00	150	325		8.03	170	2	6.37	94.7	0.005	0.4	0.036	28	2.1	0.29
W2	2010-07-12 0:00	150	332		8.11	170	1	7.7	100.2	0.005	0.53	0.063	26	2.4	0.35
W2	2010-07-13 0:00	160	330		7.82	180	1	6.11	95.5	0.005	0.51	0.02	26	2.3	0.28
W2	2010-07-14 0:00	150	323		8.31	220	2	6.87	99	0.005	0.35	0.009	24	2.5	0.31
W2	2010-07-15 0:00	110	270		8.26	170	97	7.64	113	0.013	1.31	0.02	17	3.5	0.26
W2	2010-07-16 0:00	120	296		7.9	200	37	8.37	106.3	0.015	1.78	0.1	21	5.3	0.26
W2	2010-07-17 0:00	120	312		7.85	210	20	7.21	108.1	0.014	2.11	0.005	26	7.4	0.28
W2	2010-07-18 0:00	130	347		7.75	240	12	7.27	107.8	0.011	2.68		28	7.8	0.3
W2	2010-07-19 0:00	130	372		8.25	230	6	8.18	104.1	0.013	3.3		33	9.9	0.29
W2	2010-07-20 0:00	130	388		7.98	230	4	8.76	97.5	0.01	3.6	0.006	38	11	0.31
W2	2010-07-21 0:00	130	394		7.47	250	4	9.23	85	0.011	3.8	0.018	38	11	0.34
W2	2010-07-22 0:00	120	375		8.19	240	7	9.25	69.6	0.009	3.3	0.013	34	9.6	0.33
W2	2010-07-23 0:00	120	301		7.82	210	83	8.09	55.2	0.005	1.95	0.009	28	6.1	0.33
W2	2010-07-24 0:00	120	301		7.68	230	20	7.08	95.8	0.01	1.98	0.017	25	6.2	0.3
W2	2010-07-25 0:00	120	315		8.03	210	13	6.97	83.3	0.007	1.98	0.02	27	6.5	0.27
W2	2010-07-27 0:00	130	348		8.11	230	5	9.09	47.5	0.008	2.57	0.017	29	7.8	0.3
W2	2010-07-28 0:00	130	361		8.1	200	4	7.71	40.7	0.005	2.9	0.22	34	9.4	0.32
W2	2010-07-29 0:00	130	345		8.02	220	5	8.51	78.9	0.006	2.7	0.016	29	13	0.31
W2	2010-07-30 0:00	130	363		7.95	200	3	7.88	77.4	0.006	3.3	0.023	35	9.3	0.33
W2	2010-07-31 0:00	130	360		8	220	3	8.52	77.3	0.005	3.1	0.012	31	9.4	0.32
W2	2010-08-01 0:00	130	397		8.02	250	4	8.34	77.5	0.006	6.7	0.028	36	11	0.33
W2	2010-08-02 0:00	140	410		7.99	260	3	9.64	78.4	0.009	4.4	0.047	41	12	0.35
W2	2010-08-03 0:00	130	413		8.03	240	4	9.06	79.2	0.007	4.6	0.12	44	12	0.35
W2	2010-08-04 0:00	130	419		8.14	260	3	11.22	85	0.007	4.9	0.019	42	12	0.38
W2	2010-08-05 0:00	140	422		8.09	280	3	9.63	78.8	0.006	5	0.015	45	13	0.35
W2	2010-08-06 0:00	130	426		8.1	250	3	10.07	80.1	0.008	4.9	0.38	45	14	0.34
W2	2010-08-07 0:00	140	418		8.08	280	3	8.35	78.8	0.005	4.7	0.025	42	14	0.33
W2	2010-08-08 0:00	130	419		8.11	290	3	8.5	79.9	0.006	4.8		44	13	0.35
W2	2010-08-09 0:00	130	413		8.08	250	5	8.84	87.3	0.006	4.4	0.027	44	12	0.33
W2	2010-08-10 0:00	140	419		8.09	270	3	8.14	39.8	0.005	4.8	0.04	45	12	0.35
W2	2010-08-11 0:00	130	389		8.43	240	18	9.03	80.8	0.005	4.3	0.042	44	11	0.33
W2	2010-08-12 0:00	130	380		8.54	240	9	7.16	82.8	0.005	3.7	0.042	37	9.7	0.32

Station	Date / Time	Dissolved Elements																	
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W2	2009-11-05 0:00																		
W2	2009-11-06 0:00	0.00001	0.009	0.0004	0.065	0.011	0.00004	0.001	39.5	0.00002	0.00011	0.0004	0.002	0.03	0.00008	1.5	0.002	12.2	0.0086
W2	2010-04-07 0:00	0.00001	0.005	0.0004	0.097	0.006	0.00004	0.001	66.7	0.00005	0.00032	0.0006	0.008	0.04	0.00001	4	0.003	27.5	0.0337
W2	2010-04-19 0:00	0.00001	0.012	0.0004	0.035	0.004	0.00004	0.001	23.4	0.00001	0.00041	0.0004	0.005	0.06	0.00001	2.5	0.001	7.8	0.0468
W2	2010-04-20 0:00	0.00001	0.05	0.0004	0.028	0.004	0.00004	0.001	17.9	0.00026	0.00046	0.0004	0.009	0.14	0.00001	2.3	0.001	5.2	0.0363
W2	2010-04-21 0:00	0.00001	0.07	0.0005	0.024	0.006	0.00004	0.001	12.3	0.00001	0.00055	0.0004	0.009	0.15	0.00002	1.9	0.001	3.6	0.0268
W2	2010-04-22 0:00	0.00001	0.039	0.0004	0.025	0.004	0.00004	0.001	14	0.00001	0.00002	0.0004	0.005	0.14	0.00002	1.9	0.001	4.1	0.002
W2	2010-04-23 0:00	0.00001	0.047	0.0004	0.026	0.004	0.00004	0.001	14.3	0.00002	0.00007	0.0004	0.005	0.15	0.00001	1.8	0.001	4.2	0.0011
W2	2010-04-24 0:00	0.00001	0.048	0.0004	0.026	0.004	0.00004	0.001	14.2	0.00001	0.00007	0.0004	0.004	0.19	0.00001	1.7	0.001	4.2	0.0014
W2	2010-04-25 0:00	0.00001	0.057	0.0004	0.025	0.004	0.00004	0.001	12.4	0.00001	0.00006	0.0004	0.004	0.21	0.00001	1.4	0.001	3.7	0.0009
W2	2010-04-26 0:00	0.00002	0.063	0.0004	0.027	0.05	0.0001	0.001	13.2	0.00001	0.0005		0.004	0.23	0.00002	1.38	0.005	3.53	0.001
W2	2010-04-27 0:00	0.00002	0.075	0.0005	0.025	0.05	0.0001	0.001	11.3	0.00001	0.0005		0.0038	0.322	0.00002	1.25	0.005	2.97	0.001
W2	2010-04-28 0:00	0.00002	0.1	0.0005	0.025	0.05	0.0001	0.001	10.9	0.00003	0.0005		0.0047	0.374	0.00002	1.21	0.005	2.88	0.001
W2	2010-04-29 0:00	0.00002	0.103	0.0005	0.027	0.05	0.0001	0.001	11.4	0.00017	0.0005		0.0046	0.505	0.00002	1.13	0.005	3.02	0.002
W2	2010-04-30 0:00	0.00002	0.094	0.0006	0.03	0.05	0.0001	0.001	10.5	0.00001	0.0005		0.0037	0.481	0.00002	0.96	0.005	2.97	0.001
W2	2010-05-01 0:00	0.00002	0.064	0.0005	0.031	0.05	0.0001	0.001	13.6	0.00002	0.0005		0.0035	0.38	0.00002	1.02	0.005	3.87	0.001
W2	2010-05-02 0:00	0.00002	0.053	0.0005	0.034	0.05	0.0001	0.001	16.3	0.00001	0.0005		0.0031	0.37	0.00002	1.11	0.005	4.74	0.001
W2	2010-05-03 0:00	0.00002	0.043	0.0006	0.034	0.05	0.0001	0.001	15.8	0.00001	0.0005		0.0028	0.385	0.00002	1.02	0.005	4.61	0.001
W2	2010-05-04 0:00	0.00002	0.032	0.0005	0.034	0.05	0.0001	0.001	17.2	0.00002	0.0005		0.0029	0.352	0.00002	1.02	0.005	5	0.001
W2	2010-05-05 0:00	0.00002	0.026	0.0006	0.036	0.05	0.0001	0.001	19.9	0.00001	0.0005		0.0029	0.312	0.00002	1.11	0.005	5.67	0.001
W2	2010-05-06 0:00	0.00002	0.024	0.0005	0.036	0.05	0.0001	0.001	21.1	0.00001	0.0005		0.0026	0.324	0.00002	1.09	0.005	6.1	0.001
W2	2010-05-07 0:00	0.00002	0.021	0.0005	0.038	0.05	0.0001	0.001	21.1	0.00001	0.0005		0.0026	0.273	0.00002	1.09	0.005	6.32	0.001
W2	2010-05-08 0:00	0.00002	0.019	0.0004	0.041	0.05	0.0001	0.001	22.4	0.00001	0.0005		0.0025	0.235	0.00002	1.14	0.005	6.85	0.001
W2	2010-05-09 0:00	0.00002	0.016	0.0005	0.039	0.05	0.0001	0.001	23.3	0.00001	0.0005		0.0028	0.214	0.00002	1.12	0.005	7.05	0.001
W2	2010-05-10 0:00	0.00002	0.016	0.0004	0.042	0.05	0.0001	0.001	24.7	0.00004	0.0005		0.003	0.199	0.00002	1.18	0.005	7.81	0.001
W2	2010-05-11 0:00	0.00002	0.014	0.0005	0.044	0.05	0.0001	0.001	26.6	0.00001	0.0005		0.0022	0.148	0.00006	1.2	0.005	8.04	0.001
W2	2010-05-12 0:00	0.00002	0.014	0.0005	0.046	0.05	0.0001	0.001	27.8	0.00001	0.0005		0.0023	0.129	0.00002	1.25	0.005	8.44	0.001
W2	2010-05-13 0:00	0.00002	0.012	0.0004	0.044	0.05	0.0001	0.001	27.4	0.00001	0.0005		0.0022	0.086	0.00002	1.23	0.005	8.35	0.001
W2	2010-05-14 0:00	0.00002	0.018	0.0004	0.048	0.05	0.0001	0.001	29.9	0.00005	0.0005		0.0061	0.066	0.00002	1.33	0.005	8.93	0.001
W2	2010-05-15 0:00	0.00002	0.01	0.0004	0.049	0.05	0.0001	0.001	30.5	0.00001	0.0005		0.0022	0.06	0.0002	1.28	0.005	8.96	0.001
W2	2010-05-16 0:00	0.00002	0.015	0.0004	0.048	0.05	0.0001	0.001	30.5	0.00001	0.0005		0.002	0.065	0.0002	1.28	0.005	9.05	0.001
W2	2010-05-17 0:00	0.00002	0.011	0.0004	0.049	0.05	0.0001	0.001	32	0.00001	0.0005		0.0027	0.052	0.0002	1.38	0.005	9.45	0.001
W2	2010-05-18 0:00	0.00002	0.008	0.0003	0.048	0.05	0.0001	0.001	32.1	0.00001	0.0005		0.0019	0.047	0.00002	1.32	0.005	10.2	0.001
W2	2010-05-19 0:00	0.00002	0.007	0.0003	0.045	0.05	0.0001	0.001	30.5	0.00001	0.0005		0.0019	0.057	0.00002	1.22	0.005	10.1	0.001
W2	2010-05-20 0:00	0.00002	0.007	0.0004	0.045	0.05	0.0001	0.001	30.2	0.00001	0.0005		0.0019	0.061	0.00002	1.19	0.005	10.4	0.001
W2	2010-05-21 0:00		0.01	0.0004	0.049	0.1	0.0002	0.001	31		0.0005		0.002	0.057	0.0002	1	0.01	9	0.001
W2	2010-05-22 0:00		0.01	0.0004	0.048	0.1	0.0002	0.001	31		0.0005		0.002	0.06	0.0002	1	0.01	10	0.001
W2	2010-05-23 0:00		0.01	0.0004	0.048	0.1	0.0002	0.001	30		0.0005		0.002	0.066	0.0002	1	0.01	9	0.001
W2	2010-05-24 0:00		0.01	0.0004	0.048	0.1	0.0002	0.001	31		0.0005		0.002	0.061	0.0002	1	0.01	9	0.001
W2	2010-05-25 0:00		0.01		0.055	0.1	0.0005	0.001	34		0.0005		0.002	0.043	0.00002	1	0.01	12	0.001
W2	2010-05-26 0:00		0.01		0.051	0.1	0.0005	0.001	33		0.0005		0.002	0.049	0.00002	1	0.01	11	0.001
W2	2010-05-27 0:00		0.01		0.055	0.1	0.0005	0.001	36		0.0005		0.002	0.037	0.00002	1	0.01	13	0.001
W2	2010-05-28 0:00		0.01	0.0004	0.055	0.1	0.0002	0.001	35		0.0005		0.002	0.032	0.00002	1	0.01	11	0.001
W2	2010-05-29 0:00		0.011	0.0004	0.056	0.1	0.0002	0.001	34		0.0005		0.002	0.051	0.00002	1	0.01	10	0.001
W2	2010-05-30 0:00		0.01	0.0004	0.058	0.1	0.0002	0.001	36		0.0005		0.002	0.028	0.00002	1	0.01	11	0.001
W2	2010-05-31 0:00		0.01	0.0004	0.054	0.1	0.0002	0.001	33		0.0005		0.002	0.031	0.00002	1	0.01	11	0.001
W2	2010-06-01 0:00		0.01	0.0004	0.056	0.1	0.0002	0.001	37		0.0005		0.002	0.026	0.0002	1	0.01	11	0.002
W2	2010-06-02 0:00		0.01	0.0004	0.055	0.1	0.0002	0.001	36		0.0005		0.002	0.026	0.0002	1	0.01	11	0.001
W2	2010-06-03 0:00		0.01	0.0004	0.058	0.1	0.0002	0.001	36		0.0005		0.002	0.02	0.0002	1	0.01	10	0.002
W2	2010-06-04 0:00		0.01	0.0004	0.065	0.1	0.0002	0.001	38		0.0005		0.002	0.022	0.0002	2	0.01	11	0.01
W2	2010-06-05 0:00		0.01	0.0004	0.065	0.1	0.0002	0.001	41		0.0005		0.002	0.024		2	0.01	12	0.009
W2	2010-06-06 0:00		0.01	0.0004	0.066	0.1	0.0002	0.001	41		0.0005		0.002	0.02		2	0.01	12	0.007
W2	2010-06-10 0:00		0.01	0.0004	0.062	0.1	0.0002	0.001	37		0.0005		0.002	0.02	0.0002	2	0.01	12	0.001
W2	2010-06-11 0:00		0.01	0.0004	0.063	0.1	0.0002	0.001	36		0.0005		0.002	0.02	0.0002	2	0.01	12	0.001
W2	2010-06-12 0:00		0.01	0.0004	0.066	0.1	0.0002	0.001	38		0.0005		0.002	0.02	0.0002	2	0.01	12	0.001
W2	2010-06-13 0:00		0.01	0.0004	0.067	0.1	0.0002	0.001	39		0.0005		0.002	0.02	0.0002	2	0.01	12	0.001
W2	2010-06-14 0:00		0.01	0.0004	0.063	0.1	0.0002	0.001	38		0.0005		0.002	0.02	0.0002	2	0.01	12	0.003
W2	2010-06-15 0:00		0.01	0.0004	0.065	0.1	0.0002	0.001	38		0.0005		0.002	0.02	0.0002	2	0.01	12	0.007
W2	2010-06-16 0:00		0.01	0.0004	0.069	0.1	0.0002	0.001	39		0.0005		0.002	0.02	0.0002	2	0.01	11	0.004
W2	2010-06-17 0:00		0.01	0.0004	0.066	0.1	0.0002	0.001	39		0.0005		0.002	0.02	0.0002	2	0.01	12	0.001
W2	2010-06-18 0:00		0.01	0.0004	0.066	0.1	0.0002	0.001	38		0.0005		0.002	0.02	0.0002	2	0.01	12	0.001
W2	2010-06-19 0:00		0.01	0.0004	0.061	0.1	0.0002	0.001	36		0.0005		0.002	0.02	0.0002	1	0.01	12	0.001
W2	2010-06-20 0:00		0.01	0.0004	0.061	0.1	0.0002	0.001	37		0.0005		0.002	0.024	0.0002	1	0.01	12	0.003
W2	2010-06-21 0:00		0.01	0.0004	0.062	0.1	0.0002	0.001	38		0.0005		0.002	0.02	0.0002	1	0.01	12	0.002
W2	2010-06-22 0:00		0.01	0.0004	0.058	0.1	0.0002	0.001	35		0.0005		0.002	0.032	0.0002	1	0.01	11	0.001
W2	2010-06-23 0:00		0.011	0.0004	0.056	0.1	0.0002	0.001	32		0.0005		0.002	0.037	0.0002	1	0.01	10	0.002
W2	2010-06-24 0:00		0.01	0.0004	0.056	0.1	0.0002	0.001	35		0.0005		0.002	0.032	0.0002	1	0.01	11	0.003
W2	2010-06-25 0:00		0.01	0.0004	0.062	0.1	0.0002	0.001	35		0.0005		0.002	0.028	0.0002	1	0.01	12	0.002
W2	2010-06-26 0:00		0.01	0.0004	0.064	0.1	0.0002	0.001	36		0.0005		0.002	0.023	0.0002	1	0.01	12	0.004
W2	2010-06-27 0:00		0.01	0.0004	0.063	0.1	0.0002	0.001	38		0.0005		0.002	0.02	0.0002	1	0.01	11	0.004
W2	2010-06-28 0:00		0.01	0.0004	0.064	0.1	0.0002	0.001	37		0.0005		0.002	0.02	0.0002	2	0.01	11	0.002
W2	2010-06-29 0:00		0.01	0.0004	0.064	0.1	0.0002	0.001	40		0.0005		0.002	0.035	0.0002	1	0.01	11	0.003
W2	2010-06-30 0:00		0.01	0.0004	0.066	0.1	0.0002	0.001	38		0.0005		0.002	0.02	0.0002	2	0.01	11	0.001
W2	2010-07-01 0:00		0.026	0.0005	0.049	0.1	0.0002	0.001	28		0.0005		0.003	0.161	0.0002	1	0.01	9	0.002
W2	2010-07-02 0:00		0.023	0.0005	0.055	0.1	0.0002	0.001	29		0.0005		0.002	0.143	0.0002	1	0.01	7	0.002
W2	2010-07-03 0:00		0.02	0.0005	0.054	0.1	0.0002	0.001	32		0.0005		0.003	0.126	0.0002	1	0.01	9	0.001
W2	2010-07-04 0:00		0.019	0.0005	0.054	0.1	0.0002	0.001	31		0.0005		0.003	0.093	0.0002	1	0.01	10	0.003
W2	2010-07-05 0:00		0.018	0.0004	0.058	0.1	0.0002	0.001	33		0.0005		0.003	0.082	0.0002	1	0.01	10	0.003
W2	2010-07-06 0:00		0.011	0.0005	0.061	0.1	0.0002	0.001	34		0.0005		0.003	0.058	0.0002	1	0.01	11	0.002
W2	2010-07-07 0:00		0.01	0.0005	0.067	0.1	0.0002	0.001	37		0.0005		0.002	0.037	0.0002	1	0.01	12	0.004
W2	2010-07-08 0:00		0.01	0.0004	0.067	0.1	0.0002	0.001	38		0.0005		0.003	0.033	0.0002	1	0.01	12	0.004
W2	2010-07-09 0:00		0.01	0.0004	0.063	0.1	0.0002	0.001	37		0.0005		0.002	0.028	0.0002	1	0.01	11	0.004
W2	2010-07-10 0:00		0.01	0.0004	0.065	0.1	0.0002	0.001	38		0.0005		0.002	0.025	0.0002	1	0.01	11	0.005
W2	2010-07-11 0:00		0.01	0.0004	0.065	0.1	0.0002	0.001	38		0.0005		0.002	0.022	0.0002	1	0.01	12	0.004
W2	2010-07-12 0:00		0.01	0.0004	0.065	0.1	0.0002	0.001	39		0.0005		0.002	0.023	0.0002	1	0.01	12	0.003
W2	2010-07-13 0:00		0.01	0.0004	0.068	0.1	0.0002	0.001	40		0.0005		0.002	0.025	0.0002	1	0.01	12	0.004
W2	2010-07-14 0:00		0.01	0.0004	0.068	0.1	0.0002	0.001	39		0.0005		0.002	0.023	0.0002	2	0.01	12	0.001
W2	2010-07-15 0:00		0.023	0.0006	0.055	0.1	0.0002	0.001	32		0.0005		0.003	0.135	0.0002	1	0.01	10	0.002
W2	2010-07-16 0:00		0.02	0.0005	0.061	0.1	0.0002	0.001	35		0.0005		0.003	0.106	0.0002	1	0.01	10	0.002
W2	2010-07-17 0:00		0.02	0.0005	0.063	0.1	0.0002	0.001	37		0.0005		0.003	0.094	0.0002	2	0.01	11	0.002
W2	2010-07-18 0:00		0.028	0.0005	0.069	0.1	0.0002	0.001	37		0.0005		0.002	0.091	0.0002	2	0.01	12	0.008
W2	2010-07-19 0:00		0.015	0.0004	0.076	0.1	0.0002	0.001	40		0.0005		0.002	0.047	0.0002	2	0.01	12	0.003
W2	2010-07-20 0:00		0.016	0.0005	0.084	0.1	0.0002	0.001	45		0.0005		0.002	0.038	0.0002	2	0.01	13	0.003
W2	2010-07-21 0:00		0.015	0.0005	0.084	0.1	0.0002	0.001	47		0.0005		0.002	0.042	0.0002	2	0.01	13	0.003
W2	2010-07-22 0:00		0.018	0.0005	0.08	0.1	0.0002	0.001	43		0.0005		0.002	0.058	0.0002	2	0.01	12	0.002
W2	2010-07-23 0:00		0.018	0.0005	0.063	0.1	0.0002	0.001	35		0.0005		0.003	0.11	0.0002	2	0.01	11	0.004
W2	2010-07-24 0:00		0.016	0.0005	0.064	0.1	0.0002	0.001	36		0.0005		0.002	0.128	0.0002	2	0.01	11	0.001
W2	2010-07-25 0:00		0.017	0.0005	0.068	0.1	0.0002	0.001	36		0.0005		0.002	0.09	0.0002	2	0.01	11	0.004
W2	2010-07-27 0:00		0.016	0.0005	0.072	0.1	0.0002	0.001	41		0.0005		0.002	0.058	0.0002	2	0.01	13	0.005
W2	2010-07-28 0:00		0.013	0.0004	0.071	0.1	0.0002	0.001	40		0.0005		0.001	0.054	0.0002	2	0.01	12	0.005
W2	2010-07-29 0:00		0.016	0.0004	0.071	0.1	0.0002	0.001	41		0.0005		0.002	0.063	0.0002	2	0.01	13	0.005
W2	2010-07-30 0:00		0.017	0.0005	0.077	0.1	0.0002	0.001	42		0.0005		0.001	0.049	0.0002	2	0.01	13	0.001
W2	2010-07-31 0:00		0.017	0.0004	0.077	0.1	0.0002	0.001	43		0.0005		0.002	0.047	0.0002	2	0.01	13	0.001
W2	2010-08-01 0:00		0.017	0.0005	0.084	0.1	0.0002	0.001	46		0.0005		0.002	0.045	0.0002	3	0.01	14	0.003
W2	2010-08-02 0:00		0.015	0.0005	0.087	0.1	0.0002	0.001	47		0.0005		0.002	0.036	0.0002	3	0.01	15	0.001
W2	2010-08-03 0:00		0.013	0.0005	0.082	0.1	0.0002	0.001	48		0.0005		0.002	0.034	0.0002	3	0.01	14	0.002
W2	2010-08-04 0:00		0.016	0.0005	0.083	0.1	0.0002	0.001	50		0.0005		0.002	0.048	0.0002	3	0.01	14	0.007
W2	2010-08-05 0:00		0.018	0.0005	0.086	0.1	0.0002	0.001	50		0.0005		0.002	0.047	0.0002	3	0.01	15	0.007
W2	2010-08-06 0:00		0.014	0.0004	0.086	0.1	0.0002	0.001	45		0.0005		0.002	0.035	0.0002	3	0.01	14	0.008
W2	2010-08-07 0:00		0.015	0.0004	0.085	0.1	0.0002	0.001	46		0.0005		0.002	0.046	0.0002	3	0.01	14	0.006
W2	2010-08-08 0:00		0.015	0.0004	0.083	0.1	0.0002	0.001	46		0.0005		0.002	0.045	0.0002	3	0.01	14	0.006
W2	2010-08-09 0:00		0.021	0.0005	0.081	0.1	0.0002	0.001	47		0.0005		0.002	0.057	0.0002	3	0.01	14	0.006
W2	2010-08-10 0:00		0.017	0.0004	0.085	0.1	0.0002	0.001	48		0.0005		0.002	0.054	0.0002	3	0.01	14	0.005
W2	2010-08-11 0:00		0.017	0.0005	0.082	0.1	0.0002	0.001	46		0.0005		0.002	0.075	0.0002	3	0.01	14	0.005
W2	2010-08-12 0:00		0.019	0.0005	0.075	0.1	0.0002	0.001	43		0.0005		0.002	0.097	0.0002	2	0.01	13	0.005

Station	Date / Time	Dissolved Elements															
		Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W2	2009-11-05 0:00																
W2	2009-11-06 0:00	0.0022	9.2	0.002	0.0001	0.0007	8.3	0.0006	5.13	0.0001	0.448	0.01	0.00001	0.0012	0.0004	0.002	0.0002
W2	2010-04-07 0:00	0.0014	18.8	0.001	0.0002	0.0021	17.3	0.0006	9	0.0001	0.642	0.01	0.00001	0.0016	0.0004	0.004	0.0003
W2	2010-04-19 0:00	0.0006	5.2	0.001	0.0002	0.0024	3.4	0.0006	4.24	0.0001	0.193	0.01	0.00001	0.0004	0.0003	0.005	0.0001
W2	2010-04-20 0:00	0.0005	3.6	0.001	0.0002	0.0039	2.2	0.0006	3.53	0.0001	0.132	0.01	0.00001	0.0004	0.0005	0.006	0.0001
W2	2010-04-21 0:00	0.0002	2.4	0.001	0.0004	0.0041	1.5	0.0006	2.58	0.0001	0.083	0.01	0.00001	0.0004	0.0004	0.007	0.0002
W2	2010-04-22 0:00	0.0002	2.6	0.002	0.0001	0.0002	1.2	0.0006	2.8	0.0001	0.096	0.01	0.00001	0.0004	0.0004	0.008	0.0003
W2	2010-04-23 0:00	0.0003	2.7	0.001	0.0002	0.0002	1.3	0.0006	2.98	0.0001	0.099	0.01	0.00001	0.0004	0.0004	0.001	0.0002
W2	2010-04-24 0:00	0.0004	2.7	0.001	0.0001	0.0002	1.3	0.0006	3.07	0.0001	0.101	0.01	0.00001	0.0004	0.0005	0.002	0.0003
W2	2010-04-25 0:00	0.0003	2.4	0.001	0.0001	0.0002	1.2	0.0006	2.77	0.0001	0.093	0.01	0.00001	0.0004	0.0006	0.001	0.0003
W2	2010-04-26 0:00	0.001	2.32	0.001	0.0002	0.0005	3	0.0001	3.43	0.005	0.09	0.005	0.00005	0.0001	0.005	0.005	0.0005
W2	2010-04-27 0:00	0.001	2.02	0.001	0.0002	0.0005	3	0.0001	3.06	0.005	0.076	0.005	0.00005	0.0001	0.005	0.005	0.0005
W2	2010-04-28 0:00	0.001	2.1	0.001	0.0002	0.0005	3	0.0001	3.1	0.005	0.072	0.005	0.00005	0.0001	0.005	0.005	0.0005
W2	2010-04-29 0:00	0.001	2.18	0.002	0.0002	0.0005	3	0.0001	3.12	0.005	0.081	0.005	0.00005	0.0001	0.005	0.005	0.0005
W2	2010-04-30 0:00	0.001	2.16	0.002	0.0002	0.0005	3	0.0001	2.83	0.005	0.075	0.005	0.00005	0.0001	0.005	0.005	0.0005
W2	2010-05-01 0:00	0.001	2.66	0.002	0.0002	0.0005	3	0.0001	3.31	0.005	0.099	0.005	0.00005	0.0001	0.005	0.005	0.0005
W2	2010-05-02 0:00	0.001	3.17	0.001	0.0002	0.0005	3	0.0001	3.76	0.005	0.118	0.005	0.00005	0.0002	0.005	0.005	0.0005
W2	2010-05-03 0:00	0.001	3.17	0.001	0.0002	0.0005	3	0.0001	3.47	0.005	0.117	0.005	0.00005	0.0002	0.005	0.005	0.0005
W2	2010-05-04 0:00	0.001	3.45	0.001	0.0002	0.0005	3	0.0001	3.79	0.005	0.131	0.005	0.00005	0.0002	0.005	0.005	0.0005
W2	2010-05-05 0:00	0.001	3.74	0.001	0.0002	0.0005	3	0.0001	4.26	0.005	0.148	0.005	0.00005	0.0003	0.005	0.005	0.0005
W2	2010-05-06 0:00	0.001	4.01	0.001	0.0002	0.0005	4	0.0001	4.61	0.005	0.161	0.005	0.00005	0.0004	0.005	0.005	0.0005
W2	2010-05-07 0:00	0.001	4.23	0.004	0.0002	0.0005	3	0.0001	4.36	0.005	0.163	0.005	0.00005	0.0004	0.005	0.005	0.0005
W2	2010-05-08 0:00	0.001	4.62	0.001	0.0002	0.0005	4	0.0001	4.37	0.005	0.174	0.005	0.00005	0.0004	0.005	0.005	0.0005
W2	2010-05-09 0:00	0.001	4.74	0.001	0.0002	0.0005	3	0.0001	4.46	0.005	0.186	0.005	0.00005	0.0005	0.005	0.005	0.0005
W2	2010-05-10 0:00	0.001	5.24	0.001	0.0002	0.0005	5	0.0001	4.44	0.005	0.199	0.005	0.00005	0.0006	0.005	0.005	0.0005
W2	2010-05-11 0:00	0.001	5.38	0.001	0.0002	0.0005	4	0.0001	5.23	0.005	0.219	0.005	0.00005	0.0006	0.005	0.005	0.0005
W2	2010-05-12 0:00	0.001	5.68	0.001	0.0002	0.0005	4	0.0001	5.33	0.005	0.224	0.005	0.00005	0.0007	0.005	0.005	0.0005
W2	2010-05-13 0:00	0.001	5.69	0.001	0.0002	0.0005	4	0.0001	4.97	0.005	0.226	0.005	0.00005	0.0007	0.005	0.005	0.0005
W2	2010-05-14 0:00	0.001	6.04	0.001	0.0002	0.0005	6	0.0001	5.19	0.005	0.258	0.005	0.00005	0.0009	0.005	0.005	0.0005
W2	2010-05-15 0:00	0.001	6.09	0.001	0.0002	0.0005	5	0.0001	5.24	0.005	0.252	0.005	0.00005	0.0007	0.005	0.005	0.0005
W2	2010-05-16 0:00	0.001	6.09	0.001	0.0002	0.0005	5	0.0001	5.03	0.005	0.251	0.005	0.00005	0.0008	0.005	0.005	0.0005
W2	2010-05-17 0:00	0.001	6.46	0.001	0.0002	0.0005	6	0.0001	4.97	0.005	0.266	0.005	0.00005	0.0009	0.005	0.005	0.0005
W2	2010-05-18 0:00	0.001	7.19	0.001	0.0002	0.0005	6	0.0002	4.99	0.005	0.248	0.005	0.00005	0.0008	0.005	0.005	0.0005
W2	2010-05-19 0:00	0.001	7.15	0.001	0.0002	0.0005	5	0.0002	4.97	0.005	0.226	0.005	0.00005	0.0007	0.005	0.005	0.0005
W2	2010-05-20 0:00	0.001	7.21	0.001	0.0002	0.0005	5	0.0002	4.99	0.005	0.223	0.005	0.00005	0.0008	0.005	0.005	0.0005
W2	2010-05-21 0:00	0.001	7	0.001	0.0002	0.0005	60	0.0008	4.95	0.005	0.251	0.01	0.00005	0.0008	0.005		0.002
W2	2010-05-22 0:00	0.001	7	0.001	0.0002	0.0005	60	0.0008	4.82	0.005	0.252	0.01	0.00005	0.0009	0.005		0.002
W2	2010-05-23 0:00	0.001	7	0.001	0.0002	0.0005	60	0.0008	4.78	0.005	0.256	0.01	0.00005	0.0008	0.005		0.002
W2	2010-05-24 0:00	0.001	6	0.001	0.0002	0.0005	60	0.0008	4.52	0.005	0.265	0.01	0.00005	0.0009	0.005		0.002
W2	2010-05-25 0:00	0.001	9		0.0002	0.0005	60	0.001	5.17	0.005	0.31	0.01	0.00005	0.0009	0.005		0.002
W2	2010-05-26 0:00	0.001	8		0.0002	0.0005	60	0.001	4.79	0.005	0.297	0.01	0.00005	0.0009	0.005		0.002
W2	2010-05-27 0:00	0.002	9		0.0002	0.0005	60	0.001	5.26	0.005	0.325	0.01	0.00005	0.0009	0.005	0.01	
W2	2010-05-28 0:00	0.002	7	0.001	0.0002	0.0005	60	0.0008	5.13	0.005	0.311	0.01	0.00005	0.0011	0.005		0.002
W2	2010-05-29 0:00	0.002	7	0.001	0.0002	0.0005	60	0.0008	4.79	0.005	0.324	0.01	0.00005	0.0012	0.005		0.002
W2	2010-05-30 0:00	0.002	7	0.002	0.0002	0.0005	60	0.0008	5.09	0.005	0.338	0.01	0.00005	0.0013	0.005		0.002
W2	2010-05-31 0:00	0.002	8	0.001	0.0002	0.0005	60	0.0008		0.005	0.314	0.01	0.00005	0.0011	0.005		0.002
W2	2010-06-01 0:00	0.002	8	0.001	0.0002	0.0005	60	0.0008	5.23	0.005	0.338	0.01	0.00005	0.0013	0.005		0.002
W2	2010-06-02 0:00	0.002	7	0.001	0.0002	0.0005	60	0.0008	4.99	0.005	0.326	0.01	0.00005	0.0013	0.005		0.002
W2	2010-06-03 0:00	0.002	7	0.001	0.0002	0.0005	60	0.0008	4.53	0.005	0.322	0.01	0.00005	0.0013	0.005		0.002
W2	2010-06-04 0:00	0.002	8	0.001	0.0002	0.0005	60	0.0008	5.26	0.005	0.344	0.01	0.00005	0.0014	0.005		0.002
W2	2010-06-05 0:00	0.002	8	0.001	0.0002	0.0005	60	0.0008	5.27	0.005	0.371	0.01	0.00005	0.0014	0.005	0.01	
W2	2010-06-06 0:00	0.002	8	0.001	0.0002	0.0005	60	0.0008	4.9	0.005	0.373	0.01	0.00005	0.0015	0.005		0.002
W2	2010-06-10 0:00	0.002	9	0.001	0.0002	0.0005	60	0.0008	5.46	0.005	0.361	0.01	0.00005	0.0013	0.005		0.002
W2	2010-06-11 0:00	0.002	9	0.001	0.0002	0.0005	60	0.0008	5.31	0.005	0.363	0.01	0.00005	0.0015	0.005		0.002
W2	2010-06-12 0:00	0.002	9	0.001	0.0002	0.0005	60	0.0008	5.34	0.005	0.372	0.01	0.00005	0.0015	0.005		0.002
W2	2010-06-13 0:00	0.001	10	0.001	0.0002	0.0005	60	0.0008	5.4	0.005	0.385	0.01	0.00005	0.0015	0.005		0.002
W2	2010-06-14 0:00	0.002	10	0.001	0.0002	0.0005	60	0.0008	5.35	0.005	0.373	0.01	0.00005	0.0015	0.005		0.002
W2	2010-06-15 0:00	0.001	9	0.001	0.0002	0.0005	60	0.0008	5.21	0.005	0.379	0.01	0.00005	0.0015	0.005		0.002
W2	2010-06-16 0:00	0.001	9	0.001	0.0002	0.0005	60	0.0008	4.92	0.005	0.416	0.01	0.00005	0.0015	0.005		0.002
W2	2010-06-17 0:00	0.001	9	0.001	0.0002	0.0005	60	0.0008	5.3	0.005	0.388	0.01	0.00005	0.0014	0.005		0.002
W2	2010-06-18 0:00	0.002	8	0.001	0.0002	0.0005	60	0.0008	5.13	0.005	0.38	0.01	0.00005	0.0014	0.005		0.002
W2	2010-06-19 0:00	0.002	8	0.001	0.0002	0.0005	60	0.0008	4.95	0.005	0.347	0.01	0.00005	0.0014	0.005		0.002
W2	2010-06-20 0:00	0.002	8	0.001	0.0002	0.0005	60	0.0008	5.36	0.005	0.36	0.01	0.00005	0.0013	0.005		0.002
W2	2010-06-21 0:00	0.002	8	0.001	0.0002	0.0005	60	0.0008	5.36	0.005	0.375	0.01	0.00005	0.0013	0.005		0.002
W2	2010-06-22 0:00	0.002	8	0.001	0.0002	0.0005	60	0.0008	5.31	0.005	0.342	0.01	0.00005	0.0011	0.005		0.002
W2	2010-06-23 0:00	0.002	7	0.001	0.0002	0.0005	60	0.0008	5.25	0.005	0.319	0.01	0.00005	0.0011	0.005		0.002
W2	2010-06-24 0:00	0.002	8	0.001	0.0002	0.0005	60	0.0008	5.51	0.005	0.333	0.01	0.00005	0.0011	0.005		0.002
W2	2010-06-25 0:00	0.002	9	0.001	0.0002	0.0005	60	0.0008	5.67	0.005	0.372	0.01	0.00005	0.0011	0.005		0.002
W2	2010-06-26 0:00	0.002	9	0.001	0.0002	0.0005	60	0.0008	5.58	0.005	0.386	0.01	0.00005	0.0012	0.005		0.002
W2	2010-06-27 0:00	0.002	8	0.001	0.0002	0.0005	60	0.0008	6.12	0.005	0.376	0.01	0.00005	0.0012	0.005		0.002
W2	2010-06-28 0:00	0.002	8	0.001	0.0002	0.0005	60	0.0008	5.9	0.005	0.377	0.01	0.00005	0.0012	0.005		0.002
W2	2010-06-29 0:00	0.002	8	0.001	0.0002	0.0005	60	0.0008	5.48	0.005	0.383	0.01	0.00005	0.0012	0.005		0.002
W2	2010-06-30 0:00	0.002	9	0.001	0.0002	0.0005	60	0.0008	6.05	0.005	0.385	0.01	0.00005	0.0012	0.005		0.002
W2	2010-07-01 0:00	0.001	7	0.002	0.0002	0.0005	60	0.0008	5.95	0.005	0.246	0.01	0.00005	0.0005	0.005		0.002
W2	2010-07-02 0:00	0.001	5	0.001	0.0002	0.0005	60	0.0008	5.95	0.005	0.249	0.01	0.00005	0.0005	0.005		0.002
W2	2010-07-03 0:00	0.001	7	0.002	0.0002	0.0005	60	0.0008	6.33	0.005	0.267	0.01	0.00005	0.0006	0.005		0.002
W2	2010-07-04 0:00	0.001	7	0.001	0.0002	0.0005	60	0.0008	6.08	0.005	0.279	0.01	0.00005	0.0007	0.005		0.002
W2	2010-07-05 0:00	0.002	8	0.002	0.0002	0.0005	60	0.0008	6.08	0.005	0.305	0.01	0.00005	0.0008	0.005		0.002
W2	2010-07-06 0:00	0.002	8	0.001	0.0002	0.0005	60	0.0008	6.06	0.005	0.321	0.01	0.00005	0.0009	0.005		0.002
W2	2010-07-07 0:00	0.002	9	0.001	0.0002	0.0005	60	0.0008	6.1	0.005	0.358	0.01	0.00005	0.001	0.005		0.002
W2	2010-07-08 0:00	0.002	9	0.001	0.0002	0.0005	60	0.0008	6.02	0.005	0.371	0.01	0.00005	0.0012	0.005		0.002
W2	2010-07-09 0:00	0.002	8	0.001	0.0002	0.0005	60	0.0008	5.58	0.005	0.359	0.01	0.00005	0.0012	0.005		0.002
W2	2010-07-10 0:00	0.002	9	0.001	0.0002	0.0005	60	0.0008	5.54	0.005	0.376	0.01	0.00005	0.0013	0.005		0.002
W2	2010-07-11 0:00	0.002	9	0.001	0.0002	0.0005	60	0.0008	5.48	0.005	0.382	0.01	0.00005	0.0013	0.005		0.002
W2	2010-07-12 0:00	0.002	9	0.001	0.0002	0.0005	60	0.0008	5.67	0.005	0.381	0.01	0.00005	0.0013	0.005		0.002
W2	2010-07-13 0:00	0.002	9	0.001	0.0002	0.0005	60	0.0008	5.81	0.005	0.394	0.01	0.00005	0.0013	0.005		0.002
W2	2010-07-14 0:00	0.002	9	0.001	0.0002	0.0005	60	0.0008	5.52	0.005	0.382	0.01	0.00005	0.0013	0.005		0.002
W2	2010-07-15 0:00	0.003	8	0.002	0.0002	0.0005	60	0.0008	5.85	0.005	0.296	0.01	0.00005	0.0006	0.005		0.002
W2	2010-07-16 0:00	0.003	9	0.001	0.0002	0.0005	60	0.0008	5.84	0.005	0.345	0.01	0.00005	0.0007	0.005		0.002
W2	2010-07-17 0:00	0.004	10	0.001	0.0002	0.0005	60	0.0008	5.85	0.005	0.381	0.01	0.00005	0.0007	0.005		0.002
W2	2010-07-18 0:00	0.004	12	0.001	0.0002	0.0005	60	0.0008	5.79	0.005	0.417	0.01	0.00005	0.0008	0.005		0.002
W2	2010-07-19 0:00	0.005	13	0.001	0.0002	0.0005	60	0.0008	5.93	0.005	0.468	0.01	0.00005	0.0009	0.005		0.002
W2	2010-07-20 0:00	0.005	14	0.001	0.0002	0.0005	60	0.0009	5.75	0.005	0.511	0.01	0.00005	0.0009	0.005		0.002
W2	2010-07-21 0:00	0.006	14	0.001	0.0002	0.0005	60	0.001	5.77	0.005	0.517	0.01	0.00005	0.0009	0.005		0.002
W2	2010-07-22 0:00	0.005	13	0.001	0.0002	0.0005	60	0.0009	5.65	0.005	0.49	0.01	0.00005	0.0009	0.005		0.002
W2	2010-07-23 0:00	0.004	11	0.002	0.0002	0.0005	60	0.0008	6.11	0.005	0.372	0.01	0.00005	0.0006	0.005		0.002
W2	2010-07-24 0:00	0.003	11	0.001	0.0002	0.0005	60	0.0008	5.9	0.005	0.386	0.01	0.00005	0.0006	0.005		0.002
W2	2010-07-25 0:00	0.004	10	0.001	0.0002	0.0005	60	0.0008	5.76	0.005	0.392	0.01	0.00005	0.0006	0.005		0.002
W2	2010-07-27 0:00	0.004	13	0.001	0.0002	0.0005	60	0.0008	6.19	0.005	0.436	0.01	0.00005	0.0008	0.005		0.002
W2	2010-07-28 0:00	0.004	13	0.001	0.0002	0.0005	60	0.0009	5.72	0.005	0.441	0.01	0.00005	0.0008	0.005		0.002
W2	2010-07-29 0:00	0.004	13	0.001	0.0002	0.0005	60	0.0008	6.28	0.005	0.436	0.01	0.00005	0.0008	0.005		0.002
W2	2010-07-30 0:00	0.005	14	0.001	0.0002	0.0005	60	0.0009	6.16	0.005	0.472	0.01	0.00005	0.0008	0.005		0.002
W2	2010-07-31 0:00	0.004	14	0.001	0.0002	0.0005	60	0.0009	6.27	0.005	0.473	0.01	0.00005	0.0009	0.005		0.002
W2	2010-08-01 0:00	0.006	16	0.001	0.0002	0.0005	60	0.0012	6.14	0.005	0.523	0.01	0.00005	0.0009	0.005		0.002
W2	2010-08-02 0:00	0.006	17	0.001	0.0002	0.0005	60	0.0013	6.02	0.005	0.539	0.01	0.00005	0.0009	0.005		0.002
W2	2010-08-03 0:00	0.006	15	0.001	0.0002	0.0005	60	0.0014	5.69	0.005	0.546	0.01	0.00005	0.0008	0.005		0.002
W2	2010-08-04 0:00	0.006	15	0.001	0.0002	0.0005	60	0.0014	5.74	0.005	0.567	0.01	0.00005	0.0008	0.005		0.002
W2	2010-08-05 0:00	0.007	17	0.001	0.0002	0.0005	60	0.0015	5.86	0.005	0.571	0.01	0.00005	0.0008	0.005		0.002
W2	2010-08-06 0:00	0.007	15	0.001	0.0002	0.0005	60	0.0014	5.15	0.005	0.579	0.01	0.00005	0.0009	0.005		0.002
W2	2010-08-07 0:00	0.006	16	0.001	0.0002	0.0005	60	0.0014	5.45	0.005	0.575	0.01	0.00005	0.0009	0.005		0.002
W2	2010-08-08 0:00	0.006	15	0.001	0.0002	0.0005	60	0.0014	5.41	0.005	0.578	0.01	0.00005	0.0009	0.005		0.002
W2	2010-08-09 0:00	0.006	16	0.001	0.0002	0.0005	60	0.0014	5.96	0.005	0.568	0.01	0.00005	0.0009	0.005		0.002
W2	2010-08-10 0:00	0.006	17	0.001	0.0002	0.0005	60	0.0014	5.85	0.005	0.6	0.01	0.00005	0.0009	0.005		0.002
W2	2010-08-11 0:00	0.006	16	0.001	0.0002	0.0005	60	0.0014	5.98	0.005	0.576	0.01	0.00005	0.0009	0.005		0.002
W2	2010-08-12 0:00	0.005	14	0.001	0.0002	0.0005	60	0.0012	5.82	0.005	0.511	0.01	0.00005	0.0008	0.005		0.002

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N-NO_2$	$N-NO_3$	$N-NH_3$	SO_4-D	Chlord	Fluord
		mg/L	μS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W2	2010-08-13 0:00	130	344		7.83	190	3	8.95	85.9	0.005	2.18	0.045	32	6.4	0.31
W2	2010-08-14 0:00	130	417		8.09	260	7	8.54	88.1	0.026	4.7	0.023	44	12	0.34
W2	2010-08-15 0:00	130	436		7.76	280	6	8.87	90.1	0.009	5.7	0.03	50	13	0.34
W2	2010-08-16 0:00	140	451		8.5	270	5	9.29	92.7	0.008	5.7	0.026	50	14	0.34
W2	2010-08-17 0:00	140	463		8.43	270	4	10.15	91.1	0.012	6.4	0.035	55	14	0.35
W2	2010-08-18 0:00	130	413		8.53	270	310	10.08	96.7	0.005	4.5	0.038	42	11	0.33
W2	2010-08-19 0:00	110	291		8.35	210	72	8.3	90.6	0.006	2.05	0.01	25	5.5	0.31
W2	2010-08-20 0:00	110	309		7.31	210	53	7.61	92.8	0.006	2.1	0.1	27	5.9	0.28
W2	2010-08-21 0:00	120	342		7.87	200	28	6.91	94.7	0.009	2.9	0.019	30	8.4	0.32
W2	2010-08-22 0:00	120			8.46	260	19	7.26	94.8	0.005	3.6	0.005	38	10	0.31
W2	2010-08-23 0:00	120	375		8.15	250	18	8.6	89.1	0.006	3.7		41	13	0.35
W2	2010-08-24 0:00	130	370		8.22	250	24	5.78	89.5	0.009	3.8	0.005	37	9.1	0.33
W2	2010-08-25 0:00	120	417		8.17	250	13	7.34	91.3	0.017	5.5	0.005	47	12	0.27
W2	2010-08-26 0:00	120	419		8.21	280	9	6.65	85.7	0.019	5.5	0.08	55	14	0.27
W2	2010-08-27 0:00	120	420		8.12	260	7	6.02	79.6	0.021	5.5	0.033	53	15	0.27
W2	2010-08-28 0:00	120	426		8.22	250	8	5.52	76.6	0.019	5.5	0.028	54	15	0.28
W2	2010-08-29 0:00	120	435		8.23	300	6	6.22	73.7	0.016	6	0.01	54	15	0.27
W2	2010-08-30 0:00	130	381		8.26	230	19	5.75	66.9	0.005	3.5	0.036	37	9.7	0.3
W2	2010-08-31 0:00	130	443		8.28	300	6	7.26	63.9	0.015	5.9	0.043	53	16	0.33
W2	2010-09-01 0:00	130	441		8.28	280	6	6.66	57.3	0.011	6.4	0.015	50	14	0.36
W2	2010-09-02 0:00	130	428		8.2	270	6	6.75	82.9	0.012	6.4	0.049	49	15	0.35
W2	2010-09-03 0:00	130	432		8.13	300	7	7.67	81.4	0.011	6.1	0.028	47	14	0.35
W2	2010-09-04 0:00	130	413		8.12	280	5	7.04	81.9	0.01	5.7	0.019	49	15	0.35
W2	2010-09-05 0:00	130	424		8.15	280	5	5.63	80.4	0.009	6.2	0.043	48	14	0.36
W2	2010-09-06 0:00	130	431		8.19	240	6	8.05	83.1	0.013	6.7	0.12	49	14	0.35
W2	2010-09-07 0:00	120	431		8.11	330	5	6.98	83.8	0.012	6.3	0.037	56	13	0.35
W2	2010-09-08 0:00	130	435		8.2	380	6	7.31	91.5	0.015	6	0.033	50	13	0.3
W2	2010-09-09 0:00	130	439		8.33	350	28	7.63	85.3	0.008	6.1	0.005	55	12	0.35
W2	2010-09-10 0:00	120	398		7.53	280	18	6.3	83.4	0.01	5.1	0.1	39	11	
W2	2010-09-11 0:00	120	426		8.07	340	11	5.85	83.4	0.018	6.3	0.049	56	12	0.34
W2	2010-09-12 0:00	120	427		8.15	300	8	6.76	84.2	0.013	6	0.03	48	13	0.3
W2	2010-09-13 0:00	120	430		8.12	320	5	5.76	86.3	0.014	6.5	0.029	51	27	0.32
W2	2010-09-14 0:00	120	439		7.2	300	7	4.99	80.6	0.013	6.8	0.044	49	13	0.34
W2	2010-09-15 0:00	130	424		8.01	280	5	4.34	84.7	0.005	5.6	0.005	41	13	0.34
W2	2010-09-16 0:00	130	432		8.02	290	4	4.99	103.5	0.007	6.1	0.022	47	12	0.37
W2	2010-09-17 0:00	130	426		8.05	270	5	3.68	113.9	0.008	6.3	0.039	45	9.2	0.39
W2	2010-09-18 0:00	130	432		8.14	270	3	4.82	103.4	0.008	6.3	0.025	49	9.2	0.35
W2	2010-09-19 0:00	130	445		8.18	290	5	2.82	106.4	0.011	7	0.018	48	9.8	0.41
W2	2010-09-20 0:00	130	443		8.19	280	5	2.2	78.2	0.008	6.9	0.035	52	10	0.36
W2	2010-09-21 0:00	130	443		8.19	280	4	1.79	55.1	0.01	7	0.046	55	11	0.37
W2	2010-09-22 0:00	130	453		8.19	270	3	1.86	98.6	0.012	7	0.047	57	11	0.38
W2	2010-09-23 0:00	130	441		8.06	300	4	0.83	93.3	0.014	6.7	0.044	55	10	0.37
W2	2010-09-24 0:00	130	459		7.99	320	3	1.27	95.1	0.014	7.7	0.017	59	12	0.37
W2	2010-09-25 0:00	130	466		8.1	300	3	2.32	95.5	0.019	8.1	0.032	61	11	0.37
W2	2010-09-26 0:00	130	464		8.11	310	4	2.1	96.8	0.019	7.8	0.011	60	12	0.36
W2	2010-09-27 0:00	130	469		8.11	310	6	2.35	98.3	0.019	8.2	0.022	62	13	0.37
W2	2010-09-28 0:00	130	472		8.11	310	4	2.43	99.6		8.4	0.005	55	12	0.29
W2	2010-09-29 0:00	130	474		8.17	300	3	2.54	101.9		8.6	0.06	56	13	0.36
W2	2010-10-01 0:00	130	444			280	7				7.3	0.023	50	11	0.36
W2	2010-10-02 0:00	120	395			250	15				5.4	0.047	39	8.4	0.31
W2	2010-10-03 0:00	120	360			240	4				3.6	0.041	30	7.1	0.31
W2	2010-10-04 0:00	120	426			270	6				7.3	0.035	47	9.5	0.34
W2	2010-10-05 0:00	130	412		8.09	260	3	1.43	102.4	0.005	5.5	0.013	44	10	0.32
W2	2010-10-06 0:00	130	409		8.15	270	2	2.05	104.3	0.005	5.4	0.005	48	9.9	0.32
W2	2010-10-07 0:00	130	407		8.11	260	5	0.43	103.4	0.005	5.6	0.012	44	9.5	0.33
W2	2010-10-08 0:00	140	415		8.15	260	3	-0.18	104.1	0.005	5.3	0.005	46	11	0.31
W2	2010-10-09 0:00	140	443		8.16	300	3	-0.1	103.4	0.009	6.7	0.014	53	11	0.35
W2	2010-10-10 0:00	140	447		7.85	290	4	1.47	107.1	0.006	6.4	0.061	53	11	0.38
W2	2010-10-11 0:00	140	438			310	3			0.007	6.4	0.039	46	11	0.37
W2	2010-10-12 0:00	140	453		8.11	270	3	1.17	109.4	0.008	6.6	0.058	51	11	0.36
W2	2010-10-13 0:00	140	453		8.31	280	2	1.49	114.2	0.011	7	0.027	62	11	0.04
W2	2010-10-14 0:00	140	458		8.27	300	3	0.66	111.2	0.011	7.2	0.015	60	11	0.37
W2	2010-10-15 0:00	140	465		8.18	280	3	0.5	110.7	0.013	7.3	0.032	61	12	0.37
W2	2010-10-16 0:00	140	475		8.2	280	3	0.31	109.5	0.015	7.6	0.026	64	11	0.37
W2	2010-10-17 0:00	140	485			320	2			0.015	7.4	0.092	59	13	0.39
W2	2010-10-18 0:00	140	481		8.28	320	6	1.96	107.9	0.018	7.2	0.088	58	13	0.39
W2	2010-10-19 0:00	140	505		8.33	330	3	1.23	109.6	0.029	8.3	0.082	67	13	0.4
W2	2010-10-20 0:00	140	475		8.25	300	20	1.33	110.6	0.006	6.4	0.064	53	14	0.37
W2	2010-10-21 0:00	150	514		7.87	330	2	-0.2	114.2	0.013	7.3	0.075	67	14	0.38
W2	2010-10-22 0:00	150	540			340	2			0.015	8.7	0.05	74	15	0.35
W2	2010-10-23 0:00	150	541		8.17	340	2	-0.2	104.5	0.013	8.7	0.005	74	15	0.36
W2	2010-10-25 0:00	150	535		8.28	320	1	-0.05	95.8	0.015	8.8	0.06	71	14	0.38
W2	2010-10-26 0:00				8.23			2.84	94.5						
W2	2010-10-27 0:00	150	524		8.39	340	2	0.45	81.4	0.013	8.6	0.007	76	14	0.41
W2	2010-10-28 0:00	150	528		8.27	350	11	-0.19	85	0.015	8.9	0.076	75	14	0.41
W2	2010-10-29 0:00	150	522		8.26	310	4	0.08	76.9	0.01	8.4	0.076	71	13	0.38
W2	2010-10-30 0:00	150	503		8.26	300	1	0.08	70.5	0.006	7.6	0.022	68	11	0.33
W2	2010-10-31 0:00	150	480		8.03	290	1	-0.21	54	0.005	5.7	0.047	56	9.9	0.3
W2	2010-11-01 0:00	150	461		7.41	310	2	0.1	82.4	0.005	7.2	0.031	62	11	0.37
W2	2010-11-02 0:00	150	486		7.64	290	1	0.5	74.4	0.005	5.9	0.029	62	10	0.34
W2	2010-11-07 0:00	160	424		7.06	260	1	-0.21		0.005	2.84	0.022	43	5.4	0.33
W2	2010-11-16 13:00	150	408		7.28	260	3	-0.24	95	0.005	2.7	0.071	47	6.9	0.34
W2	2010-11-29 0:00	150	414		8.05	240	1	-0.24	105.7	0.005	2.27	0.083	48	5.9	0.32
W2	2010-12-06 0:00	190	489			310	5	1.11	104.6	0.027	2.5	0.11	59	7.6	0.33
W2	2010-12-10 0:00	170	463		7.25	310	2	0.21	72.1	0.013	2.11	0.044	52	4.8	0.33
W2	2010-12-14 0:00	230	595			360	4			0.031	2.36	0.061	66	9.7	0.42
W2	2011-04-04 0:00	230	533			310	4			0.005	0.25	0.011	52	4.9	0.5
W2	2011-04-11 0:00	190	437			270	18			0.01	0.19	0.018	41	3.1	0.48
W2	2011-04-21 0:00	140	301			180	6			0.005	0.06	0.008	25	2.5	0.36
W2	2011-04-27 0:00	51	114			98	5			0.005	0.02	0.008	5	2.9	0.15
W2	2011-05-05 0:00	36	79			78	110			0.007	0.02	0.018	0.5	2.1	0.1
W2	2011-05-10 0:00	46	93			96	73			0.005	0.03	0.006	0.5	2	0.13
W2	2011-05-15 0:00	65				98	140			0.012	0.1	0.027	0.5	1.6	0.18
W2	2011-05-23 0:00	88	195			140	26			0.008	0.14	0.269	8.6	1.4	0.22
W2	2011-05-30 0:00	110	243			150	18			0.005	0.28	0.015	15	1.6	0.29
W2	2011-06-07 0:00	80	177			140	370			0.017	0.16	0.038	7.1		0.24
W2	2011-06-13 0:00	110	247			160	76			0.009	0.26				
W2	2011-06-16 0:00	110	239			170	190			0.006	0.24	0.033			
W2	2011-06-20 0:00	110	242			170	250			0.021	0.21				
W2	2011-06-27 0:00	120	248			160	66			0.007	0.16	0.023	13		
W2	2011-07-03 0:00	110	236			150	61			0.006	0.16	0.015	11		
W2	2011-07-09 0:00	110	246			160	76			0.007	0.17	0.012	11		
W2	2011-07-19 0:00	110	228			170	150			0.009	0.14	0.023	7		
W2	2011-07-26 0:00	130	267			190	43			0.007	0.18	0.047	15		
W2	2011-08-02 0:00	72	149			130	710			0.01	0.04			2	0.19
W2	2011-08-16 0:00	110	227			180	120			0.008	0.12	0.018			
W2	2011-08-29 0:00	120	241			180	47			0.005	0.11	0.006			
W2	2011-09-08 0:00	120	257		8.03	180	13	2.9	98	0.005	0.12	0.008		1.6	
W2	2011-09-12 0:00	120	256		8.04	170	29	2.2	139.5	0.005	0.11	0.11		1.9	
W2	2011-09-19 0:00	120	253		8.06	180	29	2	101.4	0.005	0.12	0.008	9.2	1.9	
W2	2011-09-27 0:00	120	254		8.07	210	33	1.6	99.3	0.005	0.12	0.015	8.4	1.9	
W2	2011-10-06 0:00	140	291		7.92	180	4	0	86.3	0.005	0.22	0.013	15	2	
W2	2011-10-11 0:00	130	270		7.79	160	13	0.5	89.2	0.005	0.17	0.037		1.3	
W2	2011-10-19 0:00	140	293		7.81	180	4	0	96.2	0.005	0.4	0.021	13	1.4	
W2	2011-10-26 0:00	140	297		8.01	180	15	0	93.2	0.005	0.26	0.018		1.4	

Station	Date / Time	Dissolved Elements																	
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W2	2010-08-13 0:00		0.014	0.0005	0.072	0.1	0.0002	0.001	45		0.0005		0.002	0.095	0.0002	2	0.01	13	0.007	0.004
W2	2010-08-14 0:00		0.017	0.0005	0.086	0.1	0.0002	0.001	47		0.0005		0.002	0.069	0.0002	3	0.01	14	0.004	0.006
W2	2010-08-15 0:00		0.021	0.0005	0.087	0.1	0.0002	0.001	49		0.0005		0.002	0.064	0.0002	3	0.01	15	0.005	0.007
W2	2010-08-16 0:00		0.019	0.0005	0.092	0.1	0.0002	0.001	50		0.0005		0.003	0.061	0.0002	3	0.01	15	0.005	0.008
W2	2010-08-17 0:00		0.015	0.0004	0.094	0.1	0.0002	0.001	50		0.0005		0.001	0.041	0.0002	3	0.01	15	0.004	0.008
W2	2010-08-18 0:00		0.017	0.0006	0.085	0.1	0.0002	0.001	45		0.0005		0.002	0.092	0.0002	3	0.01	13	0.013	0.007
W2	2010-08-19 0:00		0.02	0.0006	0.061	0.1	0.0002	0.001	31		0.0005		0.003	0.187	0.0002	1	0.01	10	0.01	0.003
W2	2010-08-20 0:00		0.022	0.0006	0.066	0.1	0.0002	0.001	34		0.0005		0.002	0.147	0.0002	1	0.01	10	0.006	0.004
W2	2010-08-21 0:00		0.018	0.0006	0.073	0.1	0.0002	0.001	40		0.0005		0.002	0.149	0.0002	2	0.01	12	0.005	0.005
W2	2010-08-22 0:00		0.019	0.0005	0.075	0.1	0.0002	0.001	42		0.0005		0.002	0.125	0.0002	2	0.01	12	0.005	0.005
W2	2010-08-23 0:00		0.018	0.0005	0.075	0.1	0.0002	0.001	42		0.0005		0.002	0.103	0.00002	2	0.01	13	0.007	0.005
W2	2010-08-24 0:00		0.022	0.0005	0.077	0.1	0.0002	0.001	45	0.0002	0.0005		0.003	0.136	0.00002	2	0.01	13	0.006	0.005
W2	2010-08-25 0:00		0.018	0.0005	0.081	0.1	0.0002	0.001	46		0.0005		0.002	0.098	0.0002	2	0.01	12	0.005	0.007
W2	2010-08-26 0:00		0.019	0.0005	0.08	0.1	0.0002	0.001	46		0.0005		0.002	0.097	0.0002	2	0.01	13	0.006	0.007
W2	2010-08-27 0:00		0.019	0.0004	0.082	0.1	0.0002	0.001	48		0.0005		0.002	0.098	0.0002	2	0.01	14	0.006	0.007
W2	2010-08-28 0:00		0.019	0.0004	0.084	0.1	0.0002	0.001	49		0.0005		0.002	0.097	0.0002	3	0.01	14	0.006	0.007
W2	2010-08-29 0:00		0.025	0.0005	0.081	0.1	0.0002	0.001	47		0.0005		0.002	0.08	0.0002	3	0.01	14	0.006	0.007
W2	2010-08-30 0:00		0.019	0.0004	0.076	0.1	0.0002	0.001	45		0.0005		0.002	0.129	0.0002	2	0.01	13	0.004	0.005
W2	2010-08-31 0:00		0.026	0.0004	0.087	0.1	0.0002	0.001	49		0.0005		0.002	0.081	0.0002	3	0.01	14	0.005	0.008
W2	2010-09-01 0:00		0.027	0.0005	0.085	0.1	0.0002	0.001	48		0.0005		0.003	0.095	0.0002	3	0.01	14	0.007	0.008
W2	2010-09-02 0:00		0.027	0.0005	0.082	0.1	0.0002	0.001	49		0.0005		0.002	0.091	0.0002	3	0.01	14	0.008	0.008
W2	2010-09-03 0:00		0.022	0.0005	0.081	0.1	0.0002	0.001	47		0.0005		0.002	0.099	0.0002	3	0.01	15	0.008	0.008
W2	2010-09-04 0:00		0.02	0.0005	0.078	0.1	0.0002	0.001	47		0.0005		0.002	0.096	0.0002	3	0.01	13	0.007	0.007
W2	2010-09-05 0:00		0.02	0.0005	0.081	0.1	0.0002	0.001	48		0.0005		0.002	0.103	0.0002	3	0.01	13	0.006	0.007
W2	2010-09-06 0:00		0.021	0.0005	0.085	0.1	0.0002	0.001	48		0.0005		0.002	0.086	0.0002	3	0.01	13	0.008	0.008
W2	2010-09-07 0:00		0.03	0.0005	0.081	0.1	0.0002	0.001	50		0.0005		0.002	0.093	0.0002	3	0.01	15	0.009	0.008
W2	2010-09-08 0:00		0.044	0.0005	0.086	0.1	0.0002	0.001	46		0.0005		0.002	0.09	0.0002	3	0.01	14	0.008	0.008
W2	2010-09-09 0:00		0.021	0.0005	0.084	0.1	0.0002	0.001	50		0.0005		0.002	0.099	0.0002	3	0.01	15	0.007	0.008
W2	2010-09-10 0:00		0.02	0.0005	0.079	0.1	0.0002	0.001	43		0.0005		0.002	0.12	0.0002	2	0.01	13	0.007	0.007
W2	2010-09-11 0:00		0.02	0.0005	0.08	0.1	0.0002	0.001	49		0.0005		0.002	0.107	0.0002	3	0.01	14	0.007	0.008
W2	2010-09-12 0:00		0.02	0.0005	0.082	0.1	0.0002	0.001	48		0.0005		0.002	0.101	0.0002	3	0.01	15	0.007	0.008
W2	2010-09-13 0:00		0.022	0.0005	0.085	0.1	0.0002	0.001	48		0.0005		0.002	0.102	0.0002	3	0.01	14	0.01	0.008
W2	2010-09-14 0:00		0.019	0.0005	0.088	0.1	0.0002	0.001	49		0.0005		0.002	0.099	0.0002	3	0.01	15	0.009	0.009
W2	2010-09-15 0:00		0.057	0.0005	0.087	0.1	0.0002	0.001	48		0.0005		0.002	0.216	0.0002	3	0.01	14	0.022	0.007
W2	2010-09-16 0:00		0.024	0.0005	0.083	0.1	0.0002	0.001	51		0.0005		0.003	0.106	0.0002	3	0.01	15	0.01	0.007
W2	2010-09-17 0:00		0.02	0.0005	0.083	0.1	0.0002	0.001	50		0.0005		0.002	0.104	0.0002	3	0.01	15	0.009	0.007
W2	2010-09-18 0:00		0.021	0.0005	0.083	0.1	0.0002	0.001	52		0.0005		0.002	0.1	0.0002	3	0.01	15	0.01	0.008
W2	2010-09-19 0:00		0.021	0.0005	0.084	0.1	0.0002	0.001	51		0.0005		0.002	0.09	0.0002	3	0.01	15	0.01	0.008
W2	2010-09-20 0:00		0.018	0.0004	0.08	0.1	0.0002	0.001	51	0.0001	0.0005		0.003	0.088	0.0002	3	0.01	14	0.011	0.008
W2	2010-09-21 0:00		0.018	0.0004	0.083	0.1	0.0002	0.001	49		0.0005		0.003	0.083	0.0002	3	0.01	15	0.011	0.009
W2	2010-09-22 0:00		0.018	0.0004	0.081	0.1	0.0002	0.001	51		0.0005		0.002	0.075	0.0002	3	0.01	14	0.011	0.009
W2	2010-09-23 0:00		0.018	0.0004	0.079	0.1	0.0002	0.001	50		0.0005		0.002	0.073	0.0002	3	0.01	15	0.011	0.008
W2	2010-09-24 0:00	0.00002	0.028	0.0004	0.085	0.05	0.0001	0.001	51.2	0.00001	0.0005		0.0023	0.074	0.00007	3.03	0.005	15.1	0.011	0.009
W2	2010-09-25 0:00	0.00002	0.018	0.0004	0.085	0.05	0.0001	0.001	50.8	0.00001	0.0005		0.0022	0.067	0.00003	3.16	0.005	15.4	0.011	0.009
W2	2010-09-26 0:00	0.00002	0.02	0.0006	0.086	0.05	0.0001	0.001	51.3	0.00001	0.0005		0.0023	0.067	0.00002	3.26	0.005	15.5	0.012	0.009
W2	2010-09-27 0:00	0.00002	0.019	0.0005	0.09	0.05	0.0001	0.001	51.5	0.00001	0.0005		0.0023	0.062	0.00002	3.29	0.005	15.4	0.013	0.009
W2	2010-09-28 0:00	0.00002	0.017	0.0004	0.087	0.05	0.0001	0.001	51.3	0.00004	0.0005		0.0022	0.061	0.00004	3.15	0.005	14.9	0.014	0.009
W2	2010-09-29 0:00	0.00002	0.017	0.0004	0.088	0.05	0.0001	0.001	51	0.00001	0.0005		0.0022	0.052	0.00004	3.47	0.005	15.2	0.014	0.009
W2	2010-10-01 0:00	0.00002	0.019	0.0004	0.084	0.05	0.0001	0.001	47.6	0.00001	0.0005		0.0023	0.067	0.00003	3.09	0.005	14.5	0.015	0.008
W2	2010-10-02 0:00	0.00002	0.024	0.0004	0.072	0.05	0.0001	0.001	43.1	0.00001	0.0005		0.0019	0.125	0.00002	2.48	0.005	12.6	0.014	0.006
W2	2010-10-03 0:00	0.00002	0.016	0.0004	0.066	0.05	0.0001	0.001	41	0.00001	0.0005		0.0017	0.111	0.00002	2.17	0.005	12.2	0.011	0.004
W2	2010-10-04 0:00	0.00002	0.021	0.0004	0.075	0.05	0.0001	0.001	46.8	0.00001	0.0005		0.0025	0.093	0.00002	2.65	0.005	14.2	0.012	0.007
W2	2010-10-05 0:00	0.00002	0.019	0.0004	0.075	0.05	0.0001	0.001	46.7	0.00002	0.0005		0.0018	0.081	0.00002	2.7	0.005	13.4	0.012	0.006
W2	2010-10-06 0:00	0.00002	0.018	0.0004	0.074	0.05	0.0001	0.001	46.4	0.00002	0.0005		0.0018	0.079	0.00002	2.73	0.005	13.2	0.012	0.006
W2	2010-10-07 0:00	0.00002	0.023	0.0005	0.072	0.05	0.0001	0.001	47	0.00001	0.0005		0.0018	0.081	0.00002	2.62	0.005	13.2	0.012	0.006
W2	2010-10-08 0:00	0.00002	0.017	0.0004	0.077	0.05	0.0001	0.001	48.7	0.00001	0.0005		0.0016	0.074	0.00002	2.85	0.005	13.5	0.012	0.006
W2	2010-10-09 0:00	0.00002	0.016	0.0004	0.079	0.05	0.0001	0.001	49.9	0.00003	0.0005		0.002	0.057	0.00002	3.01	0.005	14.3	0.013	0.007
W2	2010-10-10 0:00	0.00002	0.02	0.0004	0.081	0.05	0.0001	0.001	50.1	0.00002	0.0005		0.002	0.058	0.00002	3.07	0.005	14.2	0.013	0.007
W2	2010-10-11 0:00	0.00002	0.02	0.0004	0.081	0.05	0.0001	0.001	49.7	0.00002	0.0005		0.0021	0.065	0.00002	3.04	0.005	14.4	0.013	0.007
W2	2010-10-12 0:00	0.00002	0.019	0.0004	0.081	0.05	0.0001	0.001	49.8	0.00001	0.0005		0.0021	0.063	0.00002	3.01	0.005	14.3	0.014	0.007
W2	2010-10-13 0:00	0.00002	0.022	0.0005	0.084	0.05	0.0001	0.001	56.1	0.00002	0.0005		0.0023	0.062	0.00003	3.24	0.005	15.9	0.015	0.008
W2	2010-10-14 0:00	0.00002	0.02	0.0005	0.087	0.05	0.0001	0.001	60.7	0.00001	0.0005		0.0024	0.069	0.00002	3.4	0.005	17.6	0.016	0.009
W2	2010-10-15 0:00	0.00002	0.019	0.0005	0.084	0.05	0.0001	0.001	59.1	0.00001	0.0005		0.0021	0.065	0.00002	3.25	0.005	16.8	0.018	0.008
W2	2010-10-16 0:00	0.00002	0.019	0.0004	0.088	0.05	0.0001	0.001	58.3	0.00001	0.0005		0.0024	0.06	0.00002	3.45	0.005	17.8	0.018	0.009
W2	2010-10-17 0:00	0.00002	0.016	0.0004	0.085	0.05	0.0001	0.001	54	0.00001	0.0005		0.0023	0.047	0.00002	3.19	0.005	16.1	0.018	0.008
W2	2010-10-18 0:00	0.00002	0.014	0.0004	0.085	0.05	0.0001	0.001	54.8	0.00001	0.0005		0.0019	0.048	0.00002	3.13	0.005	16.1	0.016	0.008
W2	2010-10-19 0:00	0.00002	0.016	0.0004	0.089	0.05	0.0001	0.001	55.9	0.00001	0.0005		0.0025	0.051	0.00002	3.22	0.005	16.5	0.019	0.008
W2	2010-10-20 0:00																			
W2	2010-10-21 0:00	0.00002	0.014	0.0004	0.089	0.05	0.0001	0.001	57.8	0.00001	0.0005		0.0016	0.037	0.00002	3.14	0.005	17.4	0.016	0.007
W2	2010-10-22 0:00	0.00002	0.011	0.0004	0.092	0.05	0.0001	0.001	59.7	0.00001	0.0005		0.0015	0.026	0.00002	3.21	0.005	17.6	0.013	0.008
W2	2010-10-23 0:00	0.00002	0.01	0.0004	0.092	0.05	0.0001	0.001	59.3	0.00001	0.0005		0.0014	0.025	0.00002	3.22	0.005	17.8	0.013	0.008
W2	2010-10-25 0:00	0.00002	0.011	0.0004	0.088	0.05	0.0001	0.001	57.8	0.00001	0.0005		0.0016	0.024	0.00002	3.22	0.005	16.9	0.01	0.008
W2	2010-10-26 0:00																			
W2	2010-10-27 0:00	0.00002	0.02	0.0004	0.091	0.05	0.0001	0.001	62.6	0.00001	0.0005		0.0016	0.029	0.00002	3.46	0.005	18.4	0.011	0.008
W2	2010-10-28 0:00	0.00002	0.021	0.0004	0.091	0.05	0.0001	0.001	60.1	0.00001	0.0005		0.0016	0.024	0.00002	3.53	0.005	18.8	0.011	0.009
W2	2010-10-29 0:00	0.00002	0.019	0.0004	0.09	0.05	0.0001	0.001	59.6	0.00002	0.0005		0.0025	0.052	0.00002	3.61	0.005	17.9	0.014	0.008
W2	2010-10-30 0:00	0.00002	0.014	0.0004	0.086	0.05	0.0001	0.001	58.3	0.00001	0.0005		0.0021	0.034	0.00002	3.49	0.005	17.9	0.011	0.008
W2	2010-10-31 0:00	0.00002	0.008	0.0003	0.088	0.05	0.0001	0.001	56.5	0.00001	0.0005		0.002	0.031	0.00003	2.98	0.005	18.6	0.022	0.005
W2	2010-11-01 0:00	0.00002	0.023	0.0004	0.089	0.05	0.0001	0.001	64.7	0.00003	0.0005		0.0027	0.047	0.00004	3.76	0.005	19.5	0.019	0.008
W2	2010-11-02 0:00	0.00002	0.008	0.0003	0.087	0.05	0.0001	0.001	58.4	0.00001	0.0005		0.0018	0.03	0.00003	3.06	0.005	18.3	0.015	0.006
W2	2010-11-07 0:00	0.00002	0.007	0.0003	0.08	0.05	0.0001	0.001	51.2	0.00001	0.0005		0.0016	0.04	0.00002	2.29	0.005	16.1	0.015	0.003
W2	2010-11-16 13:00	0.00002	0.007	0.0002	0.08	0.05	0.0001	0.001	49.4	0.00001	0.0005		0.0018	0.02	0.00002	1.97	0.005	14.8	0.022	0.002
W2	2010-11-29 0:00	0.00002	0.004	0.0003	0.077	0.05	0.0001	0.001	49.4	0.00001	0.0005		0.0017	0.019	0.00002	1.97	0.005	15.5	0.017	0.002
W2	2010-12-06 0:00	0.00002	0.037	0.0004	0.097	0.05	0.0001	0.001	63.8		0.0005		0.0135	0.114	0.00002	3.59	0.005	18.8	0.039	0.002
W2	2010-12-10 0:00	0.00002	0.007	0.0003	0.086	0.05	0.0001	0.001	55.5	0.00004	0.0005		0.003	0.025	0.00002	2.26	0.005	17.4	0.013	0.002
W2	2010-12-14 0:00	0.00002	0.007	0.0005	0.122	0.05	0.0001	0.001	72	0.00003	0.0005		0.0043	0.042	0.00002	3.53	0.005	26.1	0.021	0.003
W2	2011-04-04 0:00	0.00002	0.008	0.0006	0.101	0.05	0.0001	0.001	57.8	0.00001	0.0005		0.0073	0.023	0.00002	3.58	0.005	22.2	0.028	0.002
W2	2011-04-11 0:00	0.00002	0.01	0.0004	0.078	0.05	0.0001	0.001	48.6	0.00002	0.0005		0.0057	0.036	0.00002	2.85	0.005	19.3	0.029	0.002
W2	2011-04-21 0:00	0.00002	0.009	0.0004	0.055	0.05	0.0001	0.001	35.5	0.00002	0.0005		0.0046	0.088	0.00002	2.66	0.005	12.7	0.028	0.001
W2	2011-04-27 0:00	0.00002	0.027	0.0004	0.028	0.05	0.0001	0.001	15.1	0.00002	0.0005		0.0065	0.194	0.00002	2.1	0.005	4.72	0.03	0.001
W2	2011-05-05 0:00	0.00002	0.061	0.0005	0.031	0.05	0.0001	0.001	11.1	0.00002	0.0005		0.0056	0.303	0.00002	1.46	0.005	3.06	0.061	0.001
W2	2011-05-10 0:00	0.00002	0.063	0.0006	0.035	0.05	0.0001	0.001	13	0.00002	0.0005		0.007	0.462	0.00002	1.18	0.005	3.69	0.058	0.001
W2	2011-05-15 0:00	0.00002	0.03	0.0008	0.045	0.05	0.0001	0.001	18.9	0.00001	0.0005		0.0031	0.73	0.00002	1.11	0.005	5.59	0.071	0.001
W2	2011-05-23 0:00	0.00002	0.02	0.0007	0.052	0.05	0.0001	0.001	23.4	0.00001	0.0005		0.0019	0.681	0.00002	1.13	0.005	7.33	0.049	0.001
W2	2011-05-30 0:00	0.00002	0.017	0.0005	0.055	0.05	0.0001	0.001	30.8	0.00001	0.0005		0.0026	0.222	0.00002	1.33	0.005	9.71	0.005	0.002
W2	2011-06-07 0:00	0.00002	0.029	0.0008	0.048	0.05	0.0001	0.001	23.4	0.00001	0.0005		0.0031	0.503	0.00002	0.84	0.005	6.97	0.026	0.001
W2	2011-06-13 0:00	0.00002	0.041	0.0006	0.06	0.05	0.0001	0.001	30.1	0.00013	0.0005		0.0049	0.225	0.00002	1.14	0.005	10.4	0.01	0.002
W2	2011-06-16 0:00	0.00002	0.031	0.0007	0.053	0.05	0.0001	0.001	32.2	0.00002	0.0005		0.0025	0.28	0.00002	1.03	0.005	9.62	0.018	0.001
W2	2011-06-20 0:00	0.00002	0.041	0.0006	0.06	0.05	0.0001	0.001	30.5	0.00006	0.0005		0.0029	0.207	0.00002	0.97	0.005	9.55	0.014	0.001
W2	2011-06-27 0:00	0.00002	0.031	0.0007	0.062	0.05	0.0001	0.001	33.5	0.00002	0.0005		0.0042	0.249	0.00002	0.99	0.005	10.3	0.007	0.002
W2	2011-07-03 0:00	0.00002	0.033	0.0007	0.06	0.05	0.0001	0.001	31.7	0.00001	0.0005		0.0028	0.324	0.00002	0.87	0.005	10.1	0.009	0.001
W2	2011-07-09 0:00	0.00002	0.034	0.0007	0.063	0.05	0.0001	0.001	35.1	0.00006	0.0005		0.0033	0.353	0.00002	0.88	0.005	9.9	0.017	0.001
W2	2011-07-19 0:00	0.00002	0.041	0.0009	0.062	0.05	0.0001	0.001	29.9	0.00001	0.0005		0.0026	0.499	0.00005	0.68	0.005	8.72	0.034	0.001
W2	2011-07-26 0:00	0.00002	0.025	0.001	0.061	0.05	0.0001	0.001	33.8	0.00001	0.0005		0.0042	0.475	0.00002	0.85	0.005	10	0.047	0.001
W2	2011-08-02 0:00	0.00002	0.078	0.0009	0.051	0.05	0.0001	0.001	21.1	0.00002	0.0005		0.007	0.695	0.00002	0.52	0.005	5.7	0.064	0.001
W2	2011-08-16 0:00	0.00002	0.043	0.001	0.064	0.05	0.0001	0.001	27.8	0.00001	0.0005		0.0067	0.603	0.00002	0.7	0.005	8.99	0.108	0.001
W2	2011-08-29 0:00	0.00002	0.027	0.0009	0.061	0.05	0.0001	0.001	32.4	0.00001	0.0005		0.0019	0.682	0.00002	0.7	0.005	9.08	0.108	0.001
W2	2011-09-08 0:00	0.00002	0.054	0.001	0.064	0.05	0.0001	0.001	35.8	0.00001	0.0005		0.0051	0.811	0.00002	0.83	0.005	10.3	0.132	0.001
W2	2011-09-12 0:00	0.00002	0.024	0.0009	0.066	0.05	0.0001	0.001	37.2	0.00001	0.0005		0.0018	0.671	0.00002	0.91	0.005	10.8	0.138	0.001
W2	2011-09-19 0:00	0.00002	0.027	0.0008	0.061	0.05	0.0001	0.001	34.6	0.00001	0.0005		0.0026	0.59	0.00002	0.82	0.005	9.8	0.129	0.001
W2	2011-09-27 0:00	0.00002	0.05	0.0008	0.06	0.05	0.0001	0.001	39.1	0.00002	0.0005		0.004	0.745	0.00002	0.89	0.005	11.1	0.112	0.001
W2	2011-10-06 0:00	0.00002	0.025	0.0007	0.06	0.05	0.0001	0.001	39	0.00001	0.0005		0.0021	0.455	0.00002	0.93	0.005	11.7	0.096	0.001
W2	2011-10-11 0:00	0.00002	0.021	0.0007	0.062	0.05	0.0001	0.001	38.2	0.00003	0.0005		0.0024	0.458	0.00002	0.89	0.005	11.7	0.095	0.001
W2	2011-10-19 0:00	0.00002	0.012	0.0006	0.061	0.05	0.0001	0.001	42.8	0.00001	0.0005		0.0014	0.43	0.00002	0.93	0.005	11.2	0.11	0.001
W2	2011-10-26 0:00	0.00002	0.011	0.0006	0.063	0.05	0.0001	0.001	40	0.00001	0.0005		0.0015	0.298	0.00002	0.93	0.005	11.5	0.098	0.001

Station	Date / Time	Dissolved Elements (cont.)													
		Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W2	2010-08-13 0:00	12	0.001	0.0002	0.0005	60	0.0008	6.76	0.005	0.493	0.01	0.00005	0.0009	0.005		0.002
W2	2010-08-14 0:00	16	0.001	0.0002	0.0005	60	0.0014	6.06	0.005	0.559	0.01	0.00005	0.001	0.005		0.002
W2	2010-08-15 0:00	17	0.001	0.0002	0.0005	60	0.0019	5.56	0.005	0.626	0.01	0.00005	0.001	0.005		0.002
W2	2010-08-16 0:00	18	0.001	0.0002	0.0005	60	0.002	5.76	0.005	0.669	0.01	0.00005	0.001	0.005		0.002
W2	2010-08-17 0:00	19	0.001	0.0002	0.0005	60	0.0022	5.59	0.005	0.705	0.01	0.00005	0.001	0.005		0.002
W2	2010-08-18 0:00	14	0.001	0.0002	0.0005	60	0.0018	5.16	0.005	0.609	0.01	0.00005	0.0009	0.005		0.002
W2	2010-08-19 0:00	9	0.002	0.0002	0.0005	60	0.0008	5.45	0.005	0.375	0.01	0.00005	0.0005	0.005		0.002
W2	2010-08-20 0:00	9	0.002	0.0002	0.0005	60	0.001	5.66	0.005	0.416	0.01	0.00005	0.0006	0.005		0.002
W2	2010-08-21 0:00	12	0.001	0.0002	0.0005	60	0.0012	6.29	0.005	0.472	0.01	0.00005	0.0006	0.005		0.002
W2	2010-08-22 0:00	13	0.001	0.0002	0.0005	60	0.0014	5.79	0.005	0.517	0.01	0.00005	0.0007	0.005		0.002
W2	2010-08-23 0:00	14	0.001	0.0002	0.0005	60	0.0014	5.73	0.005	0.527	0.01	0.00005	0.0008	0.005		0.002
W2	2010-08-24 0:00	14	0.001	0.0002	0.0005	60	0.0014	6.32	0.005	0.546	0.01	0.00005	0.0008	0.005		0.002
W2	2010-08-25 0:00	13	0.001	0.0002	0.0005	60	0.0022	5.84	0.005	0.62	0.01	0.00005	0.0008	0.005		0.002
W2	2010-08-26 0:00	15	0.001	0.0002	0.0005	60	0.0021	5.54	0.005	0.634	0.01	0.00005	0.0008	0.005		0.002
W2	2010-08-27 0:00	17	0.001	0.0002	0.0005	60	0.002	5.39	0.005	0.672	0.01	0.00005	0.0008	0.005		0.002
W2	2010-08-28 0:00	18	0.001	0.0002	0.0005	60	0.002	5.46	0.005	0.686	0.01	0.00005	0.0008	0.005		0.002
W2	2010-08-29 0:00	17	0.001	0.0002	0.0005	60	0.0022	5.41	0.005	0.649	0.01	0.00005	0.0008	0.005		0.002
W2	2010-08-30 0:00	15	0.001	0.0002	0.0005	60	0.0012	5.69	0.005	0.601	0.01	0.00005	0.0009	0.005		0.002
W2	2010-08-31 0:00	18	0.001	0.0002	0.0005	60	0.0021	5.32	0.005	0.713	0.01	0.00005	0.0009	0.005		0.002
W2	2010-09-01 0:00	17	0.001	0.0002	0.0005	60	0.0022	5.48	0.005	0.709	0.01	0.00005	0.0009	0.005		0.002
W2	2010-09-02 0:00	17	0.002	0.0002	0.0005	60	0.0022	5.46	0.005	0.7	0.01	0.00005	0.0008	0.005		0.002
W2	2010-09-03 0:00	17	0.001	0.0002	0.0008	60	0.0021	5.39	0.005	0.685	0.01	0.00005	0.0008	0.005		0.002
W2	2010-09-04 0:00	15	0.001	0.0002	0.0008	60	0.002	5.57	0.005	0.678	0.01	0.00005	0.0008	0.005		0.002
W2	2010-09-05 0:00	15	0.001	0.0002	0.0009	60	0.0021	5.62	0.005	0.691	0.01	0.00005	0.0008	0.005		0.002
W2	2010-09-06 0:00	15	0.001	0.0002	0.0009	60	0.0022	5.45	0.005	0.743	0.01	0.00005	0.0009	0.005		0.002
W2	2010-09-07 0:00	17	0.001	0.0002	0.0005	60	0.0022	6.03	0.005	0.702	0.01	0.00005	0.0008	0.005		0.002
W2	2010-09-08 0:00	18	0.001	0.0002	0.0005	60	0.0024	4.98	0.005	0.701	0.01	0.00005	0.0009	0.005	0.01	0.002
W2	2010-09-09 0:00	17	0.001	0.0002	0.0005	60	0.0022	5.91	0.005	0.707	0.01	0.00005	0.0008	0.005		0.002
W2	2010-09-10 0:00	15	0.001	0.0002	0.0005	60	0.0021	5.48	0.005	0.625	0.01	0.00005	0.0007	0.005		0.002
W2	2010-09-11 0:00	16	0.001	0.0002	0.0005	60	0.0022	6.06	0.005	0.689	0.01	0.00005	0.0007	0.005		0.002
W2	2010-09-12 0:00	16	0.001	0.0002	0.0005	60	0.0021	5.96	0.005	0.715	0.01	0.00005	0.0008	0.005		0.002
W2	2010-09-13 0:00	17	0.001	0.0002	0.0005	60	0.0023	5.68	0.005	0.738	0.01	0.00005	0.0008	0.005		0.002
W2	2010-09-14 0:00	18	0.001	0.0002	0.0005	60	0.0024	5.61	0.005	0.76	0.01	0.00005	0.0008	0.005		0.002
W2	2010-09-15 0:00	17	0.001	0.0002	0.0005	60	0.0018	5.77	0.005	0.727	0.01	0.00005	0.0008	0.005		0.002
W2	2010-09-16 0:00	16	0.001	0.0002	0.0005	60	0.0021	5.84	0.005	0.715	0.01	0.00005	0.0009	0.005		0.002
W2	2010-09-17 0:00	16	0.001	0.0002	0.0005	60	0.0021	5.89	0.005	0.704	0.01	0.00005	0.001	0.005		0.002
W2	2010-09-18 0:00	16	0.001	0.0002	0.0005	60	0.0021	6	0.005	0.735	0.01	0.00005	0.0011	0.005	0.01	0.002
W2	2010-09-19 0:00	17	0.001	0.0002	0.0005	60	0.0023	5.63	0.005	0.754	0.01	0.00005	0.0011	0.005		0.002
W2	2010-09-20 0:00	15	0.001	0.0002	0.0005	60	0.0024	5.64	0.005	0.758	0.01	0.00005	0.0011	0.005		0.002
W2	2010-09-21 0:00	18	0.001	0.0002	0.0005	60	0.0023	5.33	0.005	0.746	0.01	0.00005	0.0011	0.005		0.002
W2	2010-09-22 0:00	16	0.001	0.0002	0.0005	60	0.0025	5.37	0.005	0.8	0.01	0.00005	0.0012	0.005		0.002
W2	2010-09-23 0:00	18	0.001	0.0002	0.0005	60	0.0023	5.72	0.005	0.703	0.01	0.00005	0.0012	0.005		0.002
W2	2010-09-24 0:00	18.4	0.001	0.0002	0.0005	21	0.0025	5.49	0.005	0.798	0.005	0.00005	0.0012	0.005	0.005	0.0005
W2	2010-09-25 0:00	19	0.001	0.0002	0.0005	21	0.0025	5.37	0.005	0.816	0.005	0.00005	0.0012	0.005	0.005	0.0005
W2	2010-09-26 0:00	17.4	0.001	0.0002	0.0005	21	0.0026	5.22	0.005	0.821	0.005	0.00005	0.0013	0.005	0.005	0.0005
W2	2010-09-27 0:00	17.6	0.001	0.0002	0.0005	22	0.0026	5.21	0.005	0.878	0.005	0.00005	0.0012	0.005	0.005	0.0005
W2	2010-09-28 0:00	18.7	0.001	0.0002	0.0005	21	0.0025	5.33	0.005	0.836	0.005	0.00005	0.0011	0.005	0.005	0.0005
W2	2010-09-29 0:00	19.6	0.001	0.0002	0.0005	22	0.0026	5.24	0.005	0.859	0.005	0.00005	0.0011	0.005	0.005	0.0005
W2	2010-10-01 0:00	17.6	0.001	0.0002	0.0005	20	0.0023	5.26	0.005	0.8	0.005	0.00005	0.0011	0.005	0.005	0.0005
W2	2010-10-02 0:00	14.1	0.001	0.0002	0.0005	15	0.0017	5.53	0.005	0.654	0.005	0.00005	0.0009	0.005	0.005	0.0005
W2	2010-10-03 0:00	12.4	0.001	0.0002	0.0005	12	0.0011	5.93	0.005	0.578	0.005	0.00005	0.0009	0.005	0.005	0.0005
W2	2010-10-04 0:00	16.4	0.001	0.0002	0.0005	20	0.002	5.63	0.005	0.691	0.005	0.00005	0.0009	0.005	0.005	0.0008
W2	2010-10-05 0:00	13.5	0.001	0.0002	0.0005	16	0.0017	5.61	0.005	0.696	0.005	0.00005	0.001	0.005	0.005	0.0005
W2	2010-10-06 0:00	13.4	0.001	0.0002	0.0005	16	0.0016	5.62	0.005	0.659	0.005	0.00005	0.001	0.005	0.005	0.0005
W2	2010-10-07 0:00	13.4	0.001	0.0002	0.0005	16	0.0017	5.58	0.005	0.637	0.005	0.00005	0.001	0.005	0.005	0.0005
W2	2010-10-08 0:00	13.1	0.001	0.0002	0.0005	16	0.0016	5.82	0.005	0.675	0.005	0.00005	0.0011	0.005	0.005	0.0005
W2	2010-10-09 0:00	14.9	0.001	0.0002	0.0005	18	0.002	5.52	0.005	0.708	0.005	0.00005	0.0011	0.005	0.005	0.0005
W2	2010-10-10 0:00	14.9	0.001	0.0002	0.0005	19	0.0019	5.34	0.005	0.743	0.005	0.00005	0.0013	0.005	0.005	0.0005
W2	2010-10-11 0:00	15	0.001	0.0002	0.0005	18	0.0019	5.33	0.005	0.736	0.005	0.00005	0.0012	0.005	0.005	0.0005
W2	2010-10-12 0:00	14.8	0.001	0.0002	0.0005	18	0.0019	5.31	0.005	0.753	0.005	0.00005	0.0012	0.005	0.005	0.0005
W2	2010-10-13 0:00	16.8	0.001	0.0002	0.0005	21	0.0021	6.23	0.005	0.767	0.005	0.00005	0.0015	0.005	0.005	0.0005
W2	2010-10-14 0:00	18.8	0.001	0.0002	0.0005	23	0.0023	6.68	0.005	0.826	0.005	0.00005	0.0016	0.005	0.005	0.0005
W2	2010-10-15 0:00	18.2	0.001	0.0002	0.0005	22	0.0023	6.34	0.005	0.814	0.005	0.00005	0.0014	0.005	0.005	0.0005
W2	2010-10-16 0:00	19.6	0.001	0.0002	0.0005	23	0.0024	6	0.005	0.858	0.005	0.00005	0.0014	0.005	0.005	0.0005
W2	2010-10-17 0:00	17.8	0.001	0.0002	0.0005	22	0.0023	5.3	0.005	0.838	0.005	0.00005	0.0013	0.005	0.005	0.0005
W2	2010-10-18 0:00	17.8	0.001	0.0002	0.0005	21	0.0021	5.29	0.005	0.843	0.005	0.00005	0.0013	0.005	0.005	0.0005
W2	2010-10-19 0:00	18.9	0.001	0.0002	0.0005	24	0.0023	5.23	0.005	0.922	0.005	0.00005	0.0014	0.005	0.005	0.0005
W2	2010-10-20 0:00															
W2	2010-10-21 0:00	18	0.001	0.0002	0.0005	24	0.0021	5.51	0.005	0.85	0.005	0.00005	0.0014	0.005	0.005	0.0005
W2	2010-10-22 0:00	18.5	0.001	0.0002	0.0005	27	0.0022	5.29	0.005	0.884	0.005	0.00005	0.0015	0.005	0.005	0.0005
W2	2010-10-23 0:00	18.6	0.001	0.0002	0.0005	28	0.0022	5.24	0.005	0.889	0.005	0.00005	0.0016	0.005	0.005	0.0005
W2	2010-10-25 0:00	18.4	0.001	0.0002	0.0005	26	0.0023	5.1	0.005	0.911	0.005	0.00005	0.0015	0.005	0.005	0.0005
W2	2010-10-26 0:00															
W2	2010-10-27 0:00	20.4	0.001	0.0002	0.0005	27	0.0025	5.58	0.005	0.956	0.005	0.00005	0.0015	0.005	0.005	0.0005
W2	2010-10-28 0:00	20.7	0.001	0.0002	0.0005	27	0.0024	5.46	0.005	0.961	0.005	0.00005	0.0016	0.005	0.005	0.0005
W2	2010-10-29 0:00	21.3	0.001	0.0002	0.0005	26	0.0024	5.63	0.005	0.936	0.005	0.00005	0.0016	0.005	0.005	0.0005
W2	2010-10-30 0:00	20.4	0.001	0.0002	0.0005	25	0.0021	5.88	0.005	0.862	0.005	0.00005	0.0016	0.005	0.005	0.0005
W2	2010-10-31 0:00	19.4	0.001	0.0002	0.0005	23	0.0016	6.15	0.005	0.766	0.005	0.00005	0.0018	0.005	0.005	0.0005
W2	2010-11-01 0:00	22.3	0.001	0.0002	0.0005	26	0.0023	6.5	0.005	0.892	0.005	0.00005	0.0017	0.005	0.005	0.0005
W2	2010-11-02 0:00	19.5	0.001	0.0002	0.0005	22	0.0017	6.07	0.005	0.772	0.005	0.00005	0.0018	0.005	0.005	0.0005
W2	2010-11-07 0:00	14.3	0.001	0.0002	0.0005	16	0.0008	6.07	0.005	0.672	0.005	0.00005	0.0019	0.005	0.005	0.0005
W2	2010-11-16 13:00	13.2	0.001	0.0002	0.0005	16	0.0007	6.04	0.005	0.559	0.005	0.00005	0.0019	0.005	0.005	0.0005
W2	2010-11-29 0:00	12.5	0.001	0.0002	0.0005	16	0.0006	5.6	0.005	0.57	0.005	0.00005	0.0023	0.005	0.005	0.0005
W2	2010-12-06 0:00	15.4	0.004	0.0002	0.0005	20	0.0006	7.61	0.005	0.712	0.005	0.00005	0.0025	0.005	0.016	0.0005
W2	2010-12-10 0:00	14	0.001	0.0002	0.0005	18	0.0005	6.45	0.005	0.618	0.005	0.00005	0.0024	0.005	0.014	0.0005
W2	2010-12-14 0:00	20.4	0.002	0.0002	0.0005	33	0.0007	8.65	0.005	0.849	0.005	0.00005	0.0033	0.005	0.02	0.0005
W2	2011-04-04 0:00	16.6	0.001	0.0002	0.0005	19	0.0004	8.28	0.005	0.576	0.005	0.00005	0.0024	0.005	0.005	0.0005
W2	2011-04-11 0:00	12.7	0.001	0.0002	0.0005	15	0.0003	6.74	0.005	0.527	0.005	0.00005	0.0018	0.005	0.005	0.0005
W2	2011-04-21 0:00	8.12	0.002	0.0002	0.0005	7	0.0002	6.4	0.005	0.36	0.005	0.00005	0.0009	0.005	0.005	0.0005
W2	2011-04-27 0:00	2.82	0.001	0.0002	0.0005	3	0.0001	3.45	0.005	0.116	0.005	0.00005	0.0001	0.005	0.005	0.0005
W2	2011-05-05 0:00	1.84	0.002	0.0002	0.0005	3	0.0001	2.81	0.005	0.071	0.005	0.00005	0.0001	0.005	0.005	0.0005
W2	2011-05-10 0:00	2.23	0.002	0.0002	0.0005	3	0.0001	3.25	0.005	0.09	0.005	0.00005	0.0002	0.005	0.005	0.0005
W2	2011-05-15 0:00	3.73	0.002	0.0002	0.0005	3	0.0001	4.3	0.005	0.14	0.005	0.00005	0.0004	0.005	0.005	0.0005
W2	2011-05-23 0:00	4.78	0.002	0.0002	0.0005	5	0.0001	4.5	0.005	0.236	0.005	0.00005	0.0007	0.005	0.005	0.0005
W2	2011-05-30 0:00	6.7	0.001	0.0002	0.0005	5	0.0001	5.2	0.005	0.297	0.005	0.00005	0.0009	0.005	0.005	0.0005
W2	2011-06-07 0:00	5.5	0.002	0.0002	0.0005	4	0.0002	5.56	0.005	0.181	0.005	0.00005	0.0007	0.005	0.005	0.0005
W2	2011-06-13 0:00	7.08	0.002	0.0002	0.0005	5	0.0001	4.85	0.005	0.29	0.005	0.00005	0.001	0.005	0.006	0.0005
W2	2011-06-16 0:00	7.14	0.002	0.0002	0.0005	6	0.0001	6.53	0.005	0.231	0.005	0.00005	0.0011	0.005	0.005	0.0005
W2	2011-06-20 0:00	6.87	0.002	0.0002	0.0005	5	0.0001	5.16	0.005	0.263	0.005	0.00005	0.001	0.005	0.005	0.0005
W2	2011-06-27 0:00	7.16	0.002	0.0002	0.0005	5	0.0002	6.15	0.005	0.276	0.005	0.00005	0.001	0.005	0.005	0.0005
W2	2011-07-03 0:00	7.02	0.002	0.0002	0.0005	5	0.0001	6.48	0.005	0.249	0.005	0.00005	0.0007	0.005	0.005	0.0005
W2	2011-07-09 0:00	6.66	0.002	0.0002	0.0005	4	0.0001	6.76	0.005	0.252	0.005	0.00005	0.0008	0.005	0.005	0.0005
W2	2011-07-19 0:00	5.73	0.002	0.0002	0.0005	3	0.0001	6.03	0.005	0.231	0.005	0.00005	0.0008	0.005	0.005	0.0005
W2	2011-07-26 0:00	6.45	0.002	0.0002	0.0005	4	0.0002	6.4	0.005	0.27	0.005	0.00005	0.0009	0.005	0.005	0.0005
W2	2011-08-02 0:00	4.31	0.002	0.0002	0.0005	3	0.0001	6.08	0.005	0.148	0.005	0.00005	0.0004	0.005	0.005	0.0005
W2	2011-08-16 0:00	5.68	0.002	0.0004	0.0005	3	0.0001	5.9	0.005	0.224	0.005	0.00005	0.0006	0.005	0.007	0.0005
W2	2011-08-29 0:00	5.51	0.002	0.0002	0.0005	3	0.0001	6.69	0.005	0.236	0.005	0.00005	0.0007	0.005	0.005	0.0005
W2	2011-09-08 0:00	6.08	0.002	0.0002	0.0005	3	0.0001	6.9	0.005	0.268	0.005	0.00005	0.0008	0.005	0.005	0.0005
W2	2011-09-12 0:00	6.42	0.002	0.0002	0.0005	3	0.0001	7.41	0.005	0.278	0.005	0.00005	0.0008	0.005	0.005	0.0005
W2	2011-09-19 0:00	5.89	0.002	0.0002	0.0005	3	0.0001	6.68	0.005	0.248	0.005	0.00005	0.0007	0.005	0.005	0.0005
W2	2011-09-27 0:00	6.57	0.002	0.0002	0.0005	4	0.0001	6.93	0.005	0.246	0.005	0.00005	0.0007	0.005	0.005	0.0005
W2	2011-10-06 0:00	7	0.002	0.0002	0.0005	5	0.0001	6.72	0.005	0.295	0.005	0.00005	0.001	0.005	0.005	0.0005
W2	2011-10-11 0:00	6.8	0.002	0.0002	0.0005	5	0.0001	7.02	0.005	0.278	0.005	0.00005	0.0008	0.005	0.005	0.0005
W2	2011-10-19 0:00	6.83	0.001	0.0002	0.0005	5	0.0002	7.71	0.005	0.307	0.005	0.00005	0.001	0.005	0.005	0.0005
W2	2011-10-26 0:00	6.99	0.001	0.0002	0.0005	5	0.0002	7.18	0.005	0.321	0.005	0.00005	0.001	0.005	0.005	0.0005

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N-NO_2$	$N-NO_3$	$N-NH_3$	SO_4-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W2	2011-10-30 0:00	150	311		7.8	170	7	0	93.9	0.005	0.28	0.014		1.3	
W2	2011-11-03 0:00	150	308		7.7	150	4	0	86.6	0.005	0.27	0.005		1.6	
W2	2011-11-08 0:00	150	313		7.61	206	25.8	0	100.4	0.005	0.3	0.0264		1.4	
W2	2011-11-13 0:00	158	342		8	210	6.3	0	101.1	0.005	0.478	0.0168		2	
W2	2011-11-22 0:00	169	371			208	1			0.005	0.807	0.0055		2.2	
W2	2011-11-28 0:00	171	375			238	6.8			0.005	0.344	0.0121	26.9	2.5	0.33
W2	2012-04-06 11:00	199	442		7.99	286	4.3	0	98.9	0.005	0.048	0.0067	37.6	3.2	0.39
W2	2012-04-12 0:00	185	408		7.78	260	2	0.2	88.3	0.005	0.02	0.005	29.9	2.3	0.43
W2	2012-04-14 14:17	156	344		7.95	196	7.1	0	96.3	0.005	0.02	0.0081	23.2	2.2	0.39
W2	2012-04-15 13:35	131	286		8.13	170	31.2	0	91	0.005	0.02	0.0082	18	1.8	0.35
W2	2012-04-16 14:20	110	246		8.23	164	39.9	0	98.5	0.005	0.02	0.011	12.7	2	0.3
W2	2012-04-17 16:40				8.07			0	100.4						
W2	2012-04-18 17:00				8.11			0	105.1						
W2	2012-04-19 8:33				8			0	98.7						
W2	2012-04-20 7:15				7.48			0	92						
W2	2012-04-21 9:04				7.44			0	101.9						
W2	2012-04-22 8:55	49.5	113		7.54	108	29.6	0	103.6	0.005	0.172	0.0079	0.5	1.7	0.11
W2	2012-04-23 13:15				7.61			0.2	111.6						
W2	2012-04-24 6:31	54.9	125		8.04	120	32.3	0	111.2	0.005	0.387	0.0051	0.5	1.9	0.13
W2	2012-04-25 14:30				7.81			0.4	99.8						
W2	2012-04-26 0:00	56.9	138	153.2	7.63	128	202	0.5	99.1	0.005	0.441	0.018	0.5	2	0.15
W2	2012-04-27 14:00				7.7			0.6	97.5						
W2	2012-04-28 14:25			82.9	7.59			0.8	98.9						
W2	2012-04-29 0:00	52.1	129	67.3	7.49	112	390	0.8	99.5	0.0057	0.466	0.031	0.5	1.3	0.15
W2	2012-04-30 0:00	57.8	143	55.8	7.65	112	597	0.7	91.7	0.0467	0.534	0.042	1.36	1.4	0.15
W2	2012-05-01 9:55			68	7.23			0.5	92.9						
W2	2012-05-02 12:30			85.4	7.23			2.4	62.9						
W2	2012-05-03 9:15			86.3	7.44			0.2	93.3						
W2	2012-05-07 0:00	65.6	146	52.1	7.68	106	581	1.8	77.2	0.044	0.138	0.048	0.74	2.3	0.17
W2	2012-05-10 14:40			56.7	8.07			1.5	103						
W2	2012-05-12 18:30	70.3	150	20.8	7.9	146	619	2.2	100.3	0.038	0.108	0.0599	3.88	1.3	0.2
W2	2012-05-18 15:50	95.8	203	125.1	8.11	146	276	2.8	91.9	0.0188	0.123	0.055	6.52	1.5	0.21
W2	2012-05-20 12:30	88.7	187	6	7.84	144	207	2.3		0.0162	0.119	0.045	4.68	1.9	0.2
W2	2012-05-25 12:15	95.8	211	36.9	7.76	140	897	2.9	95.9	0.037	0.134	0.2	7.04	2.4	0.24
W2	2012-06-02 0:00	123	262	39.8	8.04	164	301	3.2	94.7	0.0439	0.173	0.11	10.7	1.7	0.28
W2	2012-06-06 0:00	123	257	42.6	7.74	134	272	5.3	94.7	0.0185	0.157	0.046	10.1	2.2	0.29
W2	2012-06-09 0:00	115	243	11.1	7.77	160	540	5.3	100	0.0089	0.143	0.11	9.89	2.2	0.28
W2	2012-06-13 8:20	108	234	42.6	7.78	160	2600	4.3	96	0.0135	0.163	0.051	9.81	1.9	0.26
W2	2012-06-15 9:45	96	208	25.5	7.89	170	1410	4.6	98.6	0.0071	0.113	0.23	8.45	2.1	0.24
W2	2012-06-19 7:40	110	234	55.2	7.75	160	1030	5.6	97.7	0.0376	0.15	0.2	9.37	2.1	0.26
W2	2012-06-22 14:00	118	247		8.1	188	385	9.2	95.2	0.0067	0.17	0.042	10	1.7	0.28
W2	2012-06-29 8:10	137	287	26.4	7.93	192	157	7.2	97.1	0.0114	0.207	0.077	11.8	2.2	0.3
W2	2012-07-08 9:09	134	283	34.6	8.03	180	150	6	94.2	0.0055	0.164	0.041	9.1	1.9	0.29
W2	2012-07-11 10:24	134	277	40.6	8.02	184	1010	5.8	92.7	0.005	0.155	0.035	9.74	1.5	0.28
W2	2012-07-17 14:25	142	296		8.17	194	557	9.4	101.1	0.0065	0.137	0.11	11.6	1.3	0.3
W2	2012-07-24 9:00	141	291	48.2	8.04	202	1150	8.1	97	0.0074	0.121	0.17	9.01	1.4	0.32
W2	2012-07-31 16:40	152	304	11.9	8.01	194	165	8.3	92.4	0.0086	0.215	0.021	10.2	1.5	0.34
W2	2012-08-07 9:20	151	309	31.7	8.01	204	2100	7.3	94.5		0.2	0.11	11.7	1.6	0.32
W2	2012-08-10 13:00	154	308	-66.2	8.24	214	228	8.1	101.5	0.0089	0.191	0.025	9.48	1.2	0.33
W2	2012-08-13 16:50	147	288	10.2	8	196	224	9.4	107.2		0.2	0.14	9.09	1.6	0.3
W2	2012-08-16 16:00	154	312	-11.1	8.03	214	124	8.7	106.3	0.005	0.164	0.012	10.3	9	0.32
W2	2012-08-23 7:15	159	317	38.1	7.91	208	75.8	7	89.8		0.2	0.049	10.7	1.8	0.33
W2	2012-08-25 16:30	158	318	29.1	8.29	212	443	8.4	90	0.005	0.103	0.0054	10.4	1.6	0.34
W2	2012-08-27 11:50	156	308	24.2	8.32	202	169	6.6	92.1	0.005	0.119	0.0056	10.3	1.8	0.3
W2	2012-09-03 16:12	154	309	-5.2	8.27	198	85.1	6	97.8	0.005	0.106	0.0066	9.73	1.4	0.3
W2	2012-09-12 14:10	127	261	60.7	6.3	174	401	1.2	92.2	0.0051	0.082	0.009	9.56	1.8	0.34
W2	2012-09-19 14:40	145	295	45.3	7.95	208	11.7	3.5	94.2	0.005	0.105	0.16	12.5	1.7	0.3
W2	2012-09-24 17:10	147	308	52.17	7.95	200	9.3	5.3	96.4	0.005	0.06	0.11	11.9	1.4	0.26
W2	2012-10-04 14:45	143	298	67.3	7.4	206	62.8	1	96.65	0.005	0.145	0.098	11.4	1.5	0.27
W2	2012-10-12 15:30	151	308	88.2	7.83	210	21	0	100.2	0.005	0.158	0.011	14.5	2.1	0.28
W2	2012-10-16 10:49	144	302	54.8	7.88	188	30	0.2	103.7	0.005	0.163	0.017	12.6	1.8	0.25
W2	2012-10-19 17:30	147	311	70.2	8.7		32.4	0	94	0.005	0.169	0.089	14.9	1.9	0.25
W2	2012-10-22 7:45	171	348		8.6	226	4.1	0.2		0.005	0.25	0.016	17.6	1.8	0.26
W2	2012-11-11 8:30	175	384	94.7	7.47	236	1	-0.1		0.005	0.232	0.005	27.4	3.4	0.25
W2	2013-04-12 10:00	290	671		8.2	464	2.2	0.2		0.005	0.02	0.071	82.8	6.1	0.58
W2	2013-04-16 17:00	237	545		8	364	25.4	0.2		0.005	0.02	0.021	50.5	3.7	0.52
W2	2013-04-24 15:35	207	469	-76	8.94	282	7	0.1	93.8	0.005	0.321	0.019	43.5	3.4	0.55
W2	2013-04-27 11:30			-95	8.69			0.2	95.1						
W2	2013-04-29 16:10	197	479	121.6	8.57	314	8.5	0	100.8	0.0152	1.46	0.021	42	4.7	0.42
W2	2013-04-30 5:15	183	446	-92.6	8.3	268	1	-0.1	104.9	0.0142	1.55	0.022	46.6	5.5	0.38
W2	2013-04-30 16:50	182	436	-45.6	8.4	292	24.5	-0.1	115.9	0.0218	1.55	0.029	41	5.3	0.37
W2	2013-05-07 15:30	83.7	198	40.9	8.39	170	88.3	0	95.9	0.0074	0.386	0.026	5.97	3.1	0.19
W2	2013-05-09 15:53	56.7	132	62.8	7.61	104	306	0.1	96.5	0.005	0.207	0.041	0.5	3.1	0.13
W2	2013-05-12 17:20	24.1	59.6	34.6	7.11	78	26.5	0.7	95.9	0.009	0.02	0.12	0.71	2.3	0.093
W2	2013-05-15 17:30	40.7	87.6	86.6	8.1	78	216	0.7	94.2	0.0067	0.02	0.062	0.5	1.5	0.12
W2	2013-05-19 17:55	74.6	177	73.9	8.17	134	79	0.6	92.4	0.005	0.397	0.044	7.14	3.6	0.17
W2	2013-05-20 0:00														
W2	2013-05-24 15:20	64.9	162	-65.4	9.42	128	134	2.5	96.3	0.0227	0.594	0.055	7.69	3.4	0.17
W2	2013-05-29 7:00	83.3	209	9.3	8.1	146	238	0.8	99	0.024	1.01	0.051	13.8	3.8	0.23
W2	2013-05-31 14:40	94.6	239	62.7	8.41	178	324	5.4	95.6	0.0383	1.33	0.062	19.1	4.7	0.27
W2	2013-06-06 9:30	108	225	88.6	7.56	156	159	2.1	99	0.0094	0.097	0.089	9.57	1.8	0.25
W2	2013-06-16 11:00	124	261		8.8	176	99	7		0.0108	0.143	0.078	10.8	2.5	0.3
W2	2013-06-18 9:20	127	274		8.4	194	60	8.8		0.0077	0.167	0.052	12.9	1.7	0.3
W2	2013-06-25 9:15	146	312	62.1	8.03	188	21.8	7.6	95	0.0054	0.213	0.036	15.8	1.6	0.34
W2	2013-07-02 8:45	122	261	71.8	8.03	162	221	7.6	91.5	0.0085	0.166	0.093	11.3	1.8	0.3
W2	2013-07-11 12:25	133	279	121.8	8.15	204	112	7.5	92.4	0.0058	0.175	0.063	13.8	1.6	0.31
W2	2013-07-19 8:45	154	317	51.9	8.16	202	17.4	8.2	95	0.0056	0.203	0.027	15.3	1.7	0.36
W2	2013-07-23 10:20	120	247	87.3	8.16	160	707	6.4	95.8		0.2	0.086	10.2	1.5	0.24
W2	2013-07-30 12:00	130	278	91.3	8.14	192	66.7	8.4	100.9	0.005	0.159	0.084	10.3	1.7	0.3
W2	2013-08-08 14:20	149	308	131.1	8.23	232	33.5	11	83.3		0.2	0.028	13	2	0.33
W2	2013-08-16 10:55	156	323		8.1	204	13.4	12.3		0.0077	0.238	0.067	15.2	1.5	0.35
W2	2013-08-21 7:40	154	317	181.1	7.71	192	23.9	7	97.6	0.005	0.14	0.025	13.2	1.3	0.32
W2	2013-08-22 11:10	155	319	136.4	8.02	214	30	6.6	99.3	0.005	0.157	0.025	12.3	1.6	0.32
W2	2013-08-27 10:15	144	300	178.6	7.82	164	55.5	5.3	96.8	0.0053	0.13	0.03	9.23	1.7	0.28
W2	2013-09-03 15:50	141	298	122	8.01	214	74.7	6.8	95.3	0.007	0.122	0.049	10	1.8	0.28
W2	2013-09-09 12:45	153	319	146	8.02	224	16.1	5	85.2	0.005	0.088	0.024	14.1	1.8	0.3
W2	2013-09-18 10:15	140	290	177.6	7.62	184	118	2.1	89.7	0.005	0.087	0.032	12.9	2.1	0.26
W2	2013-09-20 12:50	140	298	91.7	7.91	214	295	3.6	108.3	0.0054	0.06	0.032	14.2	2.1	0.29
W2	2013-09-24 9:50	131	287	179.9	7.57	156	48.2	1.9	96.6	0.005	0.096	0.064	14.2	1.8	0.28
W2	2013-10-03 10:10	142	300	148.1	7.57	252	17.3	0.3	96.3	0.005	0.129	0.023	13.9	2.1	0.27
W2	2013-10-11 11:15	146	314	90.5	7.81	208	32.6	0.1	100	0.005	0.123	0.023	15.3	1.8	0.25
W2	2013-10-18 9:30	153	318	163.4	7.81	234	6.5	0	103.9	0.005	0.182	0.037	16.7	2	0.29
W2	2013-10-21 6:40	149	319	206	8.15	202	2.3	0.01	96	0.005	0.186	0.032	14.9	2	0.28
W2	2013-10-31 13:50	150	318	119	7.98	210	19.5	0	101.6	0.005	0.197	0.031	14.9	1.7	0.29
W2	2013-11-08 14:10	172	364	97.9	8.04	234	2.5	0.1	90.3	0.005	0.259	0.018	20.9	2.3	0.36
W2	2013-11-14 14:00	175	383	175.9	7.78	202	39.9	0	98	0.005	0.262	0.055	26.1	2.2	0.34
W2	2013-11-18 14:50	184	401	-235.6	7.73	256	290	0	83	0.005	0.257	0.024	28.7	2.7	0.34
W2	2014-04-06 14:00	341	799	131	8.38	544	15	0	93.7	0.005	0.109	0.017	90.2	13	0.75
W2	2014-04-08 10:05	215	522	127.6	8.37	344	1.4	0	88.1	0.005	0.043	0.012	48.2	9.8	0.52
W2	2014-04-17 15:30	156	365	136.2	8.41	218	152	0	96.2	0.0072	0.26	0.026	27.4	7.2	0.33
W2	2014-04-21 7:30			111.7	8.2			0	98.7						
W2	2014-04-21 7:30	99.6	236			158	7.7			0.005	0.175	0.035	12	3.9	0.22
W2	2014-04-22 15:10	62.7	144	209.1	8	136	62	-0.1	95.5	0.0084	0.051	0.05	0.5	2.8	0.16
W2	2014-05-01 15:30	52.9	125	139	8.36	120	145	1.1	102.3	0.005	0.272	0.026	0.5	2.1	0.13
W2	2014-05-05 8:00	60.7	136	117.4	8.22	122	54.4	0.3	99.7	0.005	0.054	0.021	0.5	1.7	0.14

Station	Date / Time	Dissolved Elements																
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W2	2011-10-30 0:00	0.00002	0.012	0.0005	0.065	0.05	0.0001	0.001	39.1	0.00001	0.0005		0.0019	0.218	0.00002	1.03	0.005	11.9
W2	2011-11-03 0:00	0.00002	0.013	0.0005	0.065	0.05	0.0001	0.001	40.6	0.00001	0.0005		0.0018	0.228	0.00002	1.21	0.005	12.7
W2	2011-11-08 0:00	0.00002	0.0215	0.0005	0.07	0.05	0.0001	0.001	47	0.00006	0.0005		0.0124	0.218	0.00002	1.29	0.005	14.6
W2	2011-11-13 0:00	0.00002	0.0123	0.00045	0.0706	0.05	0.0001	0.001	37.4	0.00001	0.0005		0.00171	0.166	0.00002	1.27	0.005	13.5
W2	2011-11-22 0:00	0.00002	0.0075	0.00036	0.0726	0.05	0.0001	0.001	48.1	0.00001	0.0005		0.00206	0.0771	0.00002	1.28	0.005	15.3
W2	2011-11-28 0:00	0.00002	0.0303	0.00041	0.0776	0.05	0.0001	0.001	44	0.000037	0.0005		0.00283	0.0907	0.00002	1.62	0.005	15.7
W2	2012-04-06 11:00	0.00002	0.0066	0.0005	0.0895	0.05	0.0001	0.001	52.3	0.000017	0.0005		0.00597	0.0265	0.00001	3.74	0.005	18.4
W2	2012-04-12 0:00	0.00002	0.013	0.00037	0.0777	0.05	0.0001	0.001	48.6	0.000047	0.0005		0.00468	0.0439	0.00001	3.09	0.005	18
W2	2012-04-14 14:17	0.00002	0.006	0.00042	0.0625	0.05	0.0001	0.001	39.9	0.000012	0.0005		0.0028	0.0506	0.00001	2.87	0.005	15.1
W2	2012-04-15 13:35	0.00002	0.0067	0.00046	0.0551	0.05	0.0001	0.001	33.5	0.00001	0.0005		0.00358	0.0561	0.00001	2.76	0.005	12.2
W2	2012-04-16 14:20	0.00002	0.0095	0.00041	0.0481	0.05	0.0001	0.001	29.2	0.000018	0.0005		0.00379	0.0835	0.00001	2.59	0.005	10.6
W2	2012-04-17 16:40																	
W2	2012-04-18 17:00																	
W2	2012-04-19 8:33																	
W2	2012-04-20 7:15																	
W2	2012-04-21 9:04																	
W2	2012-04-22 8:55	0.00002	0.041	0.00043	0.0291	0.05	0.0001	0.001	16.6	0.000024	0.0005		0.0055	0.271	0.00001	1.96	0.005	4.7
W2	2012-04-23 13:15																	
W2	2012-04-24 6:31	0.00002	0.0412	0.00052	0.0318	0.05	0.0001	0.001	17.1	0.000023	0.0005		0.00564	0.403	0.00001	1.74	0.005	4.89
W2	2012-04-25 14:30																	
W2	2012-04-26 0:00	0.00002	0.0445	0.00056	0.0403	0.05	0.0001	0.001	17.8	0.000016	0.0005		0.00603	0.363	0.00001	1.6	0.005	5.21
W2	2012-04-27 14:00																	
W2	2012-04-28 14:25																	
W2	2012-04-29 0:00	0.00002	0.0426	0.00062	0.044	0.05	0.0001	0.001	20.8	0.00002	0.0005		0.00498	0.656	0.00001	1.5	0.005	4.96
W2	2012-04-30 0:00	0.00002	0.0364	0.0007	0.0476	0.05	0.0001	0.001	18.8	0.000017	0.0005		0.00489	0.609	0.00001	1.49	0.005	5.29
W2	2012-05-01 9:55																	
W2	2012-05-02 12:30																	
W2	2012-05-03 9:15																	
W2	2012-05-07 0:00	0.00002	0.0365	0.00076	0.0509	0.05	0.0001	0.001	20.3	0.000018	0.0005		0.00396	0.761	0.00001	1.28	0.005	5.54
W2	2012-05-10 14:40																	
W2	2012-05-12 18:30	0.00002	0.032	0.00084	0.0493	0.05	0.0001	0.001	20.7	0.00002	0.0005		0.00259	0.905	0.00001	1.07	0.005	5.8
W2	2012-05-18 15:50	0.00002	0.0406	0.00081	0.0539	0.05	0.0001	0.001	24.8	0.000012	0.0005		0.00239	0.852	0.00001	1.05	0.005	8.03
W2	2012-05-20 12:30	0.00002	0.0201	0.00076	0.0539	0.05	0.0001	0.001	25.8	0.00001	0.0005		0.0023	0.597	0.00001	1.02	0.005	7.92
W2	2012-05-25 12:15	0.00002	0.0297	0.00082	0.0518	0.05	0.0001	0.001	26.7	0.000012	0.0005		0.00193	0.628	0.00001	1.06	0.005	8.42
W2	2012-06-02 0:00	0.00002	0.0307	0.00069	0.0532	0.05	0.0001	0.001	33	0.000011	0.0005		0.00192	0.369	0.00001	1.1	0.005	9.9
W2	2012-06-06 0:00	0.00002	0.0179	0.00064	0.0551	0.05	0.0001	0.001	31.2	0.00001	0.0005		0.00194	0.346	0.00001	1.1	0.005	10
W2	2012-06-09 0:00	0.00002	0.0397	0.00076	0.0529	0.05	0.0001	0.001	32.8	0.000012	0.0005		0.00299	0.421	0.00001	1.11	0.005	9.58
W2	2012-06-13 8:20	0.00002	0.0336	0.00073	0.051	0.05	0.0001	0.001	30.6	0.00001	0.0005		0.00202	0.332	0.00001	0.996	0.005	9.33
W2	2012-06-15 9:45	0.00002	0.0327	0.00077	0.0528	0.05	0.0001	0.001	28.5	0.000011	0.0005		0.00222	0.432	0.00001	0.8	0.005	8.19
W2	2012-06-19 7:40	0.00002	0.037	0.0007	0.0588	0.05	0.0001	0.001	32.6	0.000012	0.0005		0.0021	0.437	0.00001	0.897	0.005	9.27
W2	2012-06-22 14:00	0.00002	0.0318	0.00069	0.065	0.05	0.0001	0.001	30.8	0.00001	0.0005		0.00199	0.349	0.00001	0.899	0.005	9.67
W2	2012-06-29 8:10	0.00002	0.0301	0.00077	0.0673	0.05	0.0001	0.001	37.3	0.000013	0.0005		0.00228	0.374	0.00001	1.12	0.005	11.6
W2	2012-07-08 9:09	0.00002	0.0312	0.0009	0.067	0.05	0.0001	0.001	35.9	0.000012	0.0005		0.00181	0.489	0.00001	0.945	0.005	11.2
W2	2012-07-11 10:24	0.00002	0.0482	0.00085	0.0683	0.05	0.0001	0.001	35.6	0.000015	0.0005		0.00183	0.49	0.00001	0.891	0.005	10.2
W2	2012-07-17 14:25	0.00002	0.0505	0.00087	0.0762	0.05	0.0001	0.001	40.7	0.000016	0.0005		0.00193	0.48	0.00001	1.02	0.005	11.9
W2	2012-07-24 9:00	0.00002	0.0332	0.00097	0.074	0.05	0.0001	0.001	39.5	0.00001	0.0005		0.00185	0.516	0.00001	1.04	0.005	11.6
W2	2012-07-31 16:40	0.00002	0.0253	0.00093	0.0742	0.05	0.0001	0.001	39.7	0.00001	0.0005		0.00162	0.5	0.00001	1.11	0.005	12.2
W2	2012-08-07 9:20	0.00002	0.025	0.00092	0.0767	0.05	0.0001	0.001	41.6	0.00001	0.0005		0.0015	0.61	0.00001	1.06	0.005	12.1
W2	2012-08-10 13:00	0.00002	0.0347	0.00099	0.0756	0.05	0.0001	0.001	38.6	0.000016	0.0005		0.00195	0.591	0.00001	1.13	0.005	12.7
W2	2012-08-13 16:50	0.00002	0.0327	0.00094	0.0723	0.05	0.0001	0.001	38.9	0.00001	0.0005		0.00174	0.579	0.00001	1.07	0.005	12.3
W2	2012-08-16 16:00	0.00002	0.0229	0.00088	0.0739	0.05	0.0001	0.001	41.3	0.00001	0.0005		0.00145	0.557	0.00001	1.06	0.005	12.7
W2	2012-08-23 7:15	0.00002	0.0293	0.00095	0.0766	0.05	0.0001	0.001	40.3	0.00001	0.0005		0.00172	0.625	0.00001	1.22	0.005	13.4
W2	2012-08-25 16:30	0.00002	0.0284	0.00094	0.0759	0.05	0.0001	0.001	42.1	0.00001	0.0005		0.00188	0.51	0.00001	1.23	0.005	12.8
W2	2012-08-27 11:50	0.00002	0.0219	0.00084	0.0728	0.05	0.0001	0.001	39.1	0.00001	0.0005		0.00164	0.609	0.00001	1.13	0.005	12.6
W2	2012-09-03 16:12	0.00002	0.0184	0.00095	0.0718	0.05	0.0001	0.001	40.4	0.00001	0.0005		0.00183	0.683	0.00001	1.07	0.005	12.7
W2	2012-09-12 14:10	0.00002	0.0253	0.00078	0.0629	0.05	0.0001	0.001	36.4	0.00001	0.0005		0.0022	0.56	0.00001	0.815	0.005	10.8
W2	2012-09-19 14:40	0.00002	0.0184	0.00087	0.0679	0.05	0.0001	0.001	41.3	0.00001	0.0005		0.00183	0.699	0.00001	0.992	0.005	12.2
W2	2012-09-24 17:10	0.00002	0.0155	0.0008	0.0688	0.05	0.0001	0.001	40.3	0.00001	0.0005		0.00162	0.558	0.00001	1.1	0.005	11.8
W2	2012-10-04 14:45														0.00001			
W2	2012-10-12 15:30														0.00001			
W2	2012-10-16 10:49	0.00002	0.0129	0.00069	0.062	0.05	0.0001	0.001	45	0.000023	0.0005		0.00167	0.546	0.00001	0.937	0.005	12.2
W2	2012-10-19 17:30																	
W2	2012-10-22 7:45	0.00002	0.0102	0.00056	0.0727	0.05	0.0001	0.001	45.8	0.00001	0.0005		0.00172	0.3	0.00001	1.15	0.005	14.8
W2	2012-11-11 8:30	0.00002	0.0059	0.00032	0.0832	0.05	0.0001	0.001	43.4	0.00001	0.0005		0.00196	0.0272	0.00001	1.49	0.005	14.2
W2	2013-04-12 10:00	0.00002	0.0147	0.00101	0.156	0.05	0.0001	0.001	73.2	0.000011	0.0005		0.0161	0.0512	0.00001	8.95	0.005	31.1
W2	2013-04-16 17:00	0.00002	0.011	0.00075	0.108	0.05	0.0001	0.001	59	0.00001	0.0005		0.012	0.0354	0.00001	5.97	0.005	24.7
W2	2013-04-24 15:35	0.00002	0.0077	0.00045	0.0789	0.05	0.0001	0.001	50.4	0.000011	0.0005		0.00426	0.0393	0.00001	4.42	0.005	22.3
W2	2013-04-27 11:30																	
W2	2013-04-29 16:10	0.00002	0.0064	0.00052	0.0832	0.05	0.0001	0.001	53.9	0.000013	0.0005		0.00543	0.0339	0.00001	4.33	0.005	21
W2	2013-04-30 5:15	0.00002	0.0052	0.00048	0.0764	0.05	0.0001	0.001	49.5	0.00001	0.0005		0.00496	0.0275	0.00001	3.76	0.005	19.3
W2	2013-04-30 16:50	0.00002	0.0038	0.00041	0.0763	0.05	0.0001	0.001	48.4	0.000013	0.0005		0.0056	0.0211	0.00001	3.51	0.005	18.9
W2	2013-05-07 15:30	0.00002	0.0141	0.00036	0.0396	0.05	0.0001	0.001	24.1	0.000015	0.0005		0.0056	0.106	0.00001	2.38	0.005	7.98
W2	2013-05-09 15:53	0.00002	0.0341	0.00042	0.0331	0.05	0.0001	0.001	17.1	0.000015	0.0005		0.00682	0.151	0.00001	2.05	0.005	5.36
W2	2013-05-12 17:20	0.00002	0.201	0.00046	0.0285	0.05	0.0001	0.001	11.7	0.000016	0.0005		0.00846	0.555	0.00001	1.53	0.005	2.6
W2	2013-05-15 17:30	0.00002	0.0446	0.00052	0.0318	0.05	0.0001	0.001	12.7	0.00001	0.0005		0.00408	0.441	0.00001	1.24	0.005	3.68
W2	2013-05-19 17:55	0.00002	0.029	0.00054	0.0488	0.05	0.0001	0.001	23	0.00001	0.0005		0.00725	0.413	0.00001	1.49	0.005	6.94
W2	2013-05-20 0:00																	
W2	2013-05-24 15:20	0.00002	0.0241	0.00059	0.0444	0.05	0.0001	0.001	19.1	0.00001	0.0005		0.011	0.385	0.00001	1.69	0.005	6.16
W2	2013-05-29 7:00	0.00002	0.0199	0.00067	0.0557	0.05	0.0001	0.001	24	0.00001	0.0005		0.0076	0.572	0.00001	1.97	0.005	7.43
W2	2013-05-31 14:40	0.00002	0.0224	0.00085	0.0607	0.05	0.0001	0.001	28.6	0.00001	0.0005	0.001	0.00769	0.635	0.00001	2.26	0.005	8.74
W2	2013-06-06 9:30	0.00002	0.0196	0.00096	0.0535	0.05	0.0001	0.001	29.2	0.00001	0.0005		0.00216	0.68	0.00001	1.15	0.005	9.22
W2	2013-06-16 11:00	0.00002	0.0168	0.00093	0.0605	0.05	0.0001	0.001	32.8	0.00001	0.0005		0.00194	0.367	0.00001	1.11	0.005	10.2
W2	2013-06-18 9:20	0.00002	0.0186	0.00083	0.0608	0.05	0.0001	0.001	34.3	0.00001	0.0005		0.00273	0.371	0.00001	1.16	0.005	10.6
W2	2013-06-25 9:15	0.00002	0.018	0.00063	0.0663	0.05	0.0001	0.001	38.2	0.00001	0.0005		0.00201	0.168	0.00001	1.42	0.005	12.7
W2	2013-07-02 8:45	0.00002	0.0259	0.00099	0.0611	0.05	0.0001	0.001	33.2	0.00001	0.0005		0.00182	0.337	0.00001	1.02	0.005	10.4
W2	2013-07-11 12:25	0.00002	0.028	0.00081	0.0601	0.05	0.0001	0.001	33.6	0.00001	0.0005		0.00182	0.317	0.00001	0.971	0.005	11.2
W2	2013-07-19 8:45	0.00002	0.0164	0.00073	0.0669	0.05	0.0001	0.001	42.5	0.00001	0.0005		0.00176	0.297	0.00001	1.35	0.005	13.3
W2	2013-07-23 10:20	0.00002	0.0346	0.00081	0.0598	0.05	0.0001	0.001	31.4	0.00001	0.0005		0.00227	0.414	0.00001	0.767	0.005	10.4
W2	2013-07-30 12:00	0.00002	0.0291	0.00091	0.0654	0.05	0.0001	0.001	39.3	0.00001	0.0005		0.00231	0.495	0.00001	1.06	0.005	11.5
W2	2013-08-08 14:20	0.00002	0.0197	0.00088	0.0678	0.05	0.0001	0.001	38	0.00001	0.0005		0.00172	0.371	0.00001	1.13	0.005	12.2
W2	2013-08-16 10:55	0.00002	0.0193	0.00075	0.0681	0.05	0.0001	0.001	41.4	0.00001	0.0005		0.00177	0.349	0.00001	1.19	0.005	12.6
W2	2013-08-21 7:40	0.00002	0.0184	0.00077	0.0666	0.05	0.0001	0.001	42	0.00001	0.0005		0.00168	0.393	0.00001	1.21	0.005	13.2
W2	2013-08-22 11:10	0.00002	0.0183	0.00085	0.0657	0.05	0.0001	0.001	40.9	0.00001	0.0005		0.00161	0.363	0.00001	1.12	0.005	13.3
W2	2013-08-27 10:15	0.00002	0.0236	0.00083	0.0694	0.05	0.0001	0.001	38.5	0.00001	0.0005		0.00147	0.487	0.00001	1.01	0.005	12.1
W2	2013-09-03 15:50	0.00002	0.0263	0.00093	0.0678	0.05	0.0001	0.001	36.1	0.00001	0.0005		0.00169	0.526	0.00001	0.91	0.005	12.1
W2	2013-09-09 12:45	0.00002	0.0179	0.00097	0.0739	0.05	0.0001	0.001	43.7	0.00001	0.0005		0.00165	0.579	0.00001	1.18	0.005	12.8
W2	2013-09-18 10:15	0.00002	0.0223	0.00085	0.0639	0.05	0.0001	0.001	39	0.00001	0.0005		0.00169	0.46	0.00001	0.993	0.005	11.5
W2	2013-09-20 12:50	0.00002	0.022	0.00084	0.067	0.05	0.0001	0.001	42	0.00001	0.0005		0.00219	0.477	0.00001	1	0.005	11.7
W2	2013-09-24 9:50	0.00002	0.0196	0.00083	0.0631	0.05	0.0001	0.001	37.7	0.00001	0.0005		0.00187	0.536	0.00001	0.833	0.005	11.6
W2	2013-10-03 10:10	0.00002	0.0155	0.00081	0.0633	0.05	0.0001	0.001	38.7	0.00001	0.0005		0.00167	0.598	0.00001	0.989	0.005	12.7
W2	2013-10-11 11:15	0.00002	0.0206	0.00073	0.0636	0.05	0.0001	0.001	42.9	0.00001	0.0005		0.00193	0.495	0.00001	1.03	0.005	13.2
W2	2013-10-18 9:30	0.00002	0.0115	0.0007	0.063	0.05	0.0001	0.001	42.3	0.00001	0.0005		0.00142	0.504	0.00001	1.03	0.005	12.8
W2	2013-10-21 6:40	0.00002	0.0113	0.00071	0.068	0.05	0.0001	0.001	43.8	0.00001	0.0005		0.00155	0.466	0.00001	1.06	0.005	13.3
W2	2013-10-31 13:50	0.00002	0.0097	0.00055	0.064	0.05	0.0001	0.001	41.2	0.00001	0.0005		0.00134	0.224	0.00001	1.07	0.005	13.1
W2	2013-11-08 14:10	0.00002	0.0072	0.00044	0.0696	0.05	0.0001	0.001	47.1	0.00001	0.0005		0.00145	0.128	0.00001	1.27	0.005	15.4
W2	2013-11-14 14:00	0.00002	0.0062	0.00043	0.0772	0.05	0.0001	0.001	47	0.00001	0.0005		0.0017	0.0782	0.00001	1.34	0.005	15.3
W2	2013-11-18 14:50	0.00002	0.0061	0.00039	0.0825	0.05	0.0001	0.001	56.7	0.00001	0.0005		0.00178	0.0795	0.00001	1.6	0.005	17.9
W2	2014-04-06 14:00	0.00002	0.0112	0.00122	0.163	0.05	0.0001	0.001	90.7	0.000015	0.0005		0.0123	0.0434	0.00001	9.56	0.0053	38.6
W2	2014-04-08 10:05	0.00002	0.0067	0.00057	0.083	0.05	0.0001	0.001	57.2	0.000014	0.0005		0.00648	0.0302	0.00001	4.44	0.005	22
W2	2014-04-17 15:30	0.00002	0.0055	0.00041	0.064	0.05	0.0001	0.001	41.6	0.00001	0.0005		0.0056	0.0293	0.00001	2.78	0.005	15.1
W2	2014-04-21 7:30																	
W2	2014-04-21 7:30	0.00002	0.012	0.00038	0.0459	0.05	0.0001	0.001	28.7	0.000014	0.0005		0.00686	0.0865	0.00001	2.62	0.005	9.53
W2	2014-04-22 15:10	0.00002	0.0233	0.00036	0.0319	0.05	0.0001	0.001	18.1	0.000017	0.0005		0.00706	0.103	0.00001	2.12	0.005	5.61
W2	2014-05-01 15:30	0.00002	0.0461	0.00047	0.0341	0.05	0.0001	0.001	15.4	0.000012	0.0005		0.00713	0.269	0.00001	1.58	0.005	4.39
W2	2014-05-05 8:00	0.00002	0.03	0.00056	0.0348	0.05	0.0001	0.001	17.7	0.000012	0.0005		0.00422	0.302	0.00001	1.28	0.005	5.27

Station	Date / Time	Dissolved Elements (cont.)																
		Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W2	2011-10-30 0:00	0.082	0.001	7.19	0.001	0.0002	0.0005	5	0.0002	7.57	0.005	0.326	0.005	0.00005	0.0011	0.005	0.005	0.0005
W2	2011-11-03 0:00	0.09	0.001	7.59	0.001	0.0002	0.0005	5	0.0002	6.95	0.005	0.366	0.005	0.00005	0.0011	0.005	0.005	0.0005
W2	2011-11-08 0:00	0.123	0.0013	8.94	0.0018	0.0002	0.0005	6.1	0.00024	7.74	0.005	0.363	0.005	0.00005	0.00118	0.005	0.0062	0.0005
W2	2011-11-13 0:00	0.0726	0.0017	8.42	0.0014	0.0002	0.0005	6.8	0.00022	5.4	0.005	0.358	0.005	0.00005	0.00138	0.005	0.005	0.0005
W2	2011-11-22 0:00	0.0164	0.0013	9.29	0.0011	0.0002	0.0005	8.4	0.00022	8.21	0.005	0.434	0.005	0.00005	0.00159	0.005	0.005	0.0005
W2	2011-11-28 0:00	0.0193	0.0014	10.1	0.0012	0.0002	0.0005	10.1	0.00018	6.4	0.005	0.483	0.005	0.00005	0.00183	0.005	0.005	0.0005
W2	2012-04-06 11:00	0.0207	0.001	12.5	0.001	0.0002	0.0005	12.4	0.00021	8.7	0.005	0.425	0.005	0.00005	0.00137	0.005	0.005	0.0005
W2	2012-04-12 0:00	0.0131	0.001	12.1	0.0011	0.0002	0.0005	10.3	0.00019	7.94	0.005	0.429	0.005	0.00005	0.00103	0.005	0.008	0.0005
W2	2012-04-14 14:17	0.0138	0.001	9.94	0.001	0.0002	0.0005	8.5	0.00018	6.76	0.005	0.356	0.005	0.00005	0.00084	0.005	0.005	0.0005
W2	2012-04-15 13:35	0.015	0.001	8.07	0.001	0.0002	0.0005	6.5	0.00012	5.81	0.005	0.3	0.005	0.00005	0.00063	0.005	0.005	0.0005
W2	2012-04-16 14:20	0.0229	0.001	6.82	0.001	0.0002	0.0005	5.2	0.00013	5.31	0.005	0.27	0.005	0.00005	0.00051	0.005	0.005	0.0005
W2	2012-04-17 16:40																	
W2	2012-04-18 17:00																	
W2	2012-04-19 8:33																	
W2	2012-04-20 7:15																	
W2	2012-04-21 9:04																	
W2	2012-04-22 8:55	0.0446	0.001	2.96	0.0011	0.0002	0.0005	3	0.00015	3.54	0.005	0.114	0.005	0.00005	0.00014	0.005	0.005	0.0005
W2	2012-04-23 13:15																	
W2	2012-04-24 6:31	0.064	0.001	3.19	0.0012	0.0002	0.0005	3	0.00017	3.38	0.005	0.118	0.005	0.00005	0.00018	0.005	0.005	0.0005
W2	2012-04-25 14:30																	
W2	2012-04-26 0:00	0.0874	0.001	3.71	0.0014	0.0002	0.0005	3	0.00023	3.44	0.005	0.133	0.005	0.00005	0.00033	0.005	0.005	0.0005
W2	2012-04-27 14:00																	
W2	2012-04-28 14:25																	
W2	2012-04-29 0:00	0.116	0.001	3.74	0.0015	0.0002	0.0005	3	0.00029	4.32	0.005	0.113	0.005	0.00005	0.00032	0.005	0.005	0.0005
W2	2012-04-30 0:00	0.15	0.0011	4.14	0.002	0.0002	0.0005	3.4	0.00027	3.6	0.005	0.12	0.005	0.00005	0.00041	0.005	0.005	0.0005
W2	2012-05-01 9:55																	
W2	2012-05-02 12:30																	
W2	2012-05-03 9:15																	
W2	2012-05-07 0:00	0.158	0.001	4.05	0.0018	0.0002	0.0005	3	0.00019	4.35	0.005	0.13	0.005	0.00005	0.00046	0.005	0.005	0.0005
W2	2012-05-10 14:40																	
W2	2012-05-12 18:30	0.17	0.001	3.89	0.0017	0.0002	0.0005	3	0.00013	4.4	0.005	0.135	0.005	0.00005	0.00054	0.005	0.005	0.0005
W2	2012-05-18 15:50	0.112	0.001	5.14	0.0017	0.0002	0.0005	10.4	0.00012	4.89	0.005	0.173	0.005	0.00005	0.0007	0.005	0.005	0.0005
W2	2012-05-20 12:30	0.0422	0.0011	5.05	0.0019	0.0002	0.0005	3	0.00012	4.92	0.005	0.192	0.005	0.00005	0.00079	0.005	0.005	0.0005
W2	2012-05-25 12:15	0.19	0.0012	5.44	0.0016	0.0002	0.0005	3.2	0.00013	4.78	0.005	0.193	0.005	0.00005	0.0011	0.005	0.005	0.0005
W2	2012-06-02 0:00	0.0897	0.0013	6.43	0.0015	0.0002	0.0005	4.7	0.00011	5.76	0.005	0.242	0.005	0.00005	0.00115	0.005	0.005	0.0005
W2	2012-06-06 0:00	0.0497	0.0015	6.56	0.0018	0.0002	0.0005	3.9	0.00012	5.05	0.005	0.251	0.005	0.00005	0.00104	0.005	0.005	0.0005
W2	2012-06-09 0:00	0.0884	0.0013	6.48	0.0018	0.0002	0.0005	4.1	0.00012	5.82	0.005	0.229	0.005	0.00005	0.00113	0.005	0.005	0.0005
W2	2012-06-13 8:20	0.0886	0.0013	6.48	0.0016	0.0002	0.0005	3.8	0.00014	5.58	0.005	0.22	0.005	0.00005	0.00103	0.005	0.005	0.0005
W2	2012-06-15 9:45	0.105	0.0011	5.95	0.0019	0.0002	0.0005	3.1	0.00014	5.91	0.005	0.19	0.005	0.00005	0.00078	0.005	0.005	0.0005
W2	2012-06-19 7:40	0.0756	0.0012	6.26	0.0019	0.0002	0.0005	3.9	0.00015	6.13	0.005	0.224	0.005	0.00005	0.00089	0.005	0.005	0.0005
W2	2012-06-22 14:00	0.0681	0.0016	6.43	0.0017	0.0002	0.0005	3.2	0.0001	5.33	0.005	0.245	0.005	0.00005	0.00109	0.005	0.005	0.0005
W2	2012-06-29 8:10	0.0477	0.0016	7.69	0.0016	0.0002	0.0005	4.5	0.00016	6.14	0.005	0.294	0.005	0.00005	0.00133	0.005	0.005	0.0005
W2	2012-07-08 9:09	0.0504	0.0015	7.23	0.0017	0.0002	0.0005	4.1	0.00015	6.52	0.005	0.287	0.005	0.00005	0.0011	0.005	0.005	0.0005
W2	2012-07-11 10:24	0.111	0.0013	6.84	0.0017	0.0002	0.0005	4	0.00011	5.76	0.005	0.255	0.005	0.00005	0.00119	0.005	0.005	0.0005
W2	2012-07-17 14:25	0.0845	0.0017	7.68	0.0016	0.0002	0.0005	4	0.00015	6.72	0.005	0.3	0.005	0.00005	0.00132	0.005	0.005	0.0005
W2	2012-07-24 9:00	0.0846	0.0016	7.71	0.0017	0.0002	0.0005	4	0.00015	6.54	0.005	0.286	0.005	0.00005	0.00127	0.005	0.005	0.0005
W2	2012-07-31 16:40	0.0574	0.0015	7.58	0.0017	0.0002	0.0005	4.9	0.00011	6.82	0.005	0.313	0.005	0.00005	0.00139	0.005	0.005	0.0005
W2	2012-08-07 9:20	0.0713	0.0015	7.77	0.0014	0.0002	0.0005	4.5	0.00014	7.09	0.005	0.318	0.005	0.00005	0.00138	0.005	0.005	0.0005
W2	2012-08-10 13:00	0.0688	0.0015	7.89	0.0017	0.0002	0.0005	3.9	0.00018	6.46	0.005	0.317	0.005	0.00005	0.00131	0.005	0.005	0.0005
W2	2012-08-13 16:50	0.0552	0.0015	7.74	0.0015	0.0002	0.0005	4.1	0.00013	6.9	0.005	0.31	0.005	0.00005	0.00133	0.005	0.005	0.0005
W2	2012-08-16 16:00	0.0526	0.0016	7.69	0.0013	0.0002	0.0005	4.7	0.00015	6.9	0.005	0.344	0.005	0.00005	0.00131	0.005	0.005	0.0005
W2	2012-08-23 7:15	0.0428	0.0016	8.24	0.0014	0.0002	0.0005	4.8	0.00011	6.78	0.005	0.346	0.005	0.00005	0.00136	0.005	0.005	0.0005
W2	2012-08-25 16:30	0.0605	0.0016	7.88	0.0014	0.0002	0.0005	4.2	0.00011	6.96	0.005	0.338	0.005	0.00005	0.00137	0.005	0.005	0.0005
W2	2012-08-27 11:50	0.0637	0.0015	7.64	0.0016	0.0002	0.0005	3.8	0.00015	6.85	0.005	0.326	0.005	0.00005	0.00122	0.005	0.005	0.0005
W2	2012-09-03 16:12	0.0705	0.0014	7.63	0.0017	0.0002	0.0005	4.2	0.0001	6.94	0.005	0.333	0.005	0.00005	0.00117	0.005	0.005	0.0005
W2	2012-09-12 14:10	0.0822	0.001	6.68	0.0019	0.0002	0.0005	3.8	0.00012	6.6	0.005	0.263	0.005	0.00005	0.00081	0.005	0.005	0.0005
W2	2012-09-19 14:40	0.0854	0.0012	7.47	0.0017	0.0002	0.0005	4	0.0001	7.25	0.005	0.309	0.005	0.00005	0.00101	0.005	0.005	0.0005
W2	2012-09-24 17:10	0.0662	0.0012	7.08	0.0016	0.0002	0.0005	4.4	0.00014	7.12	0.005	0.315	0.005	0.00005	0.00101	0.005	0.005	0.0005
W2	2012-10-04 14:45																	
W2	2012-10-12 15:30																	
W2	2012-10-16 10:49	0.0604	0.0011	7.28	0.0015	0.0002	0.0005	4.5	0.00013	7.39	0.005	0.311	0.005	0.00005	0.00103	0.005	0.005	0.0005
W2	2012-10-19 17:30																	
W2	2012-10-22 7:45	0.0312	0.0014	8.56	0.0015	0.0002	0.0005	6.2	0.00016	7.59	0.005	0.386	0.005	0.00005	0.00128	0.005	0.005	0.0005
W2	2012-11-11 8:30	0.0376	0.001	8.5	0.0012	0.0002	0.0005	8.8	0.00017	5.69	0.005	0.448	0.005	0.00005	0.00196	0.005	0.005	0.0005
W2	2013-04-12 10:00	0.0538	0.001	26.1	0.0016	0.0002	0.0005	26.1	0.00027	14.6	0.005	0.613	0.005	0.00005	0.00171	0.005	0.005	0.0005
W2	2013-04-16 17:00	0.0297	0.001	19.4	0.0012	0.0002	0.0005	17.5	0.00018	11.8	0.005	0.498	0.005	0.00005	0.00121	0.005	0.005	0.0005
W2	2013-04-24 15:35	0.0201	0.001	15.7	0.001	0.0002	0.0005	14.7	0.00026	9.75	0.005	0.434	0.005	0.00005	0.00082	0.005	0.005	0.0005
W2	2013-04-27 11:30																	
W2	2013-04-29 16:10	0.0157	0.0016	15.7	0.001	0.0002	0.0005	15.9	0.00064	7.19	0.005	0.491	0.005	0.00005	0.00094	0.005	0.005	0.0005
W2	2013-04-30 5:15	0.0129	0.0017	15.1	0.001	0.0002	0.0005	14.8	0.00061	6.11	0.005	0.462	0.005	0.00005	0.00086	0.005	0.005	0.0005
W2	2013-04-30 16:50	0.0111	0.0017	14.9	0.001	0.0002	0.0005	13.9	0.00056	5.5	0.005	0.466	0.005	0.00005	0.00094	0.005	0.005	0.0005
W2	2013-05-07 15:30	0.0414	0.001	5.81	0.001	0.0002	0.0005	4.5	0.00023	3.82	0.005	0.205	0.005	0.00005	0.00034	0.005	0.005	0.0005
W2	2013-05-09 15:53	0.0638	0.001	3.75	0.0011	0.0002	0.0005	3	0.0001	3.19	0.005	0.13	0.005	0.00005	0.00018	0.005	0.005	0.0005
W2	2013-05-12 17:20	0.0614	0.001	1.5	0.0013	0.0002	0.0005	3	0.0001	2.32	0.005	0.0919	0.005	0.00005	0.0001	0.005	0.005	0.0005
W2	2013-05-15 17:30	0.0822	0.001	2.42	0.0015	0.0002	0.0005	3	0.0001	2.64	0.005	0.0826	0.005	0.00005	0.00016	0.005	0.005	0.0005
W2	2013-05-19 17:55	0.0969	0.0012	5.16	0.0014	0.0002	0.0005	4.1	0.00021	3.66	0.005	0.189	0.005	0.00005	0.00053	0.005	0.005	0.0005
W2	2013-05-20 0:00																	
W2	2013-05-24 15:20	0.119	0.0016	5.6	0.0012	0.0002	0.0005	3.5	0.00017	3.14	0.005	0.172	0.005	0.00005	0.00042	0.005	0.005	0.0005
W2	2013-05-29 7:00	0.271	0.0025	6.94	0.0013	0.0002	0.0005	5	0.0002	3.2	0.005	0.268	0.005	0.00005	0.00057	0.005	0.005	0.0005
W2	2013-05-31 14:40	0.182	0.0029	8.22	0.0013	0.0002	0.0005	6.2	0.00024	3.93	0.005	0.304	0.005	0.00005	0.00077	0.005	0.005	0.0005
W2	2013-06-06 9:30	0.0652	0.0014	6.36	0.0016	0.0002	0.0005	3.8	0.00012	4.92	0.005	0.229	0.005	0.00005	0.00089	0.005	0.005	0.0005
W2	2013-06-16 11:00	0.0256	0.0015	6.89	0.0015	0.0002	0.0005	4.3	0.00014	5.65	0.005	0.268	0.005	0.00005	0.00116	0.005	0.005	0.0005
W2	2013-06-18 9:20	0.0154	0.0016	7.28	0.0013	0.0002	0.0005	4.8	0.00011	6	0.005	0.283	0.005	0.00005	0.00124	0.005	0.005	0.0005
W2	2013-06-25 9:15	0.0122	0.0017	8.54	0.0012	0.0002	0.0005	6.8	0.00014	5.84	0.005	0.358	0.005	0.00005	0.00154	0.005	0.005	0.0005
W2	2013-07-02 8:45	0.0165	0.0017	7.72	0.0016	0.0002	0.0005	5	0.00014	6.19	0.005	0.249	0.005	0.00005	0.00122	0.005	0.005	0.0005
W2	2013-07-11 12:25	0.0128	0.0015	7.58	0.0014	0.0002	0.0005	4.4	0.00017	6.33	0.005	0.275	0.005	0.00005	0.00121	0.005	0.005	0.0005
W2	2013-07-19 8:45	0.0092	0.0017	8.78	0.0014	0.0002	0.0005	6.2	0.00012	6.82	0.005	0.361	0.005	0.00005	0.0014	0.005	0.005	0.0005
W2	2013-07-23 10:20	0.0441	0.0012	7.15	0.0018	0.0002	0.0005	3	0.00012	6.27	0.005	0.228	0.005	0.00005	0.00097	0.005	0.005	0.0005
W2	2013-07-30 12:00	0.0149	0.0014	7.08	0.0018	0.0002	0.0005	4.9	0.00014	6.57	0.005	0.273	0.005	0.00005	0.00121	0.005	0.005	0.0005
W2	2013-08-08 14:20	0.0121	0.0016	7.74	0.0015	0.0002	0.0005	5.1	0.00013	6.36	0.005	0.332	0.005	0.00005	0.00129	0.005	0.005	0.0005
W2	2013-08-16 10:55	0.0091	0.0017	8.21	0.0014	0.0002	0.0005	4.3	0.00012	6.84	0.005	0.369	0.005	0.00005	0.00137	0.005	0.005	0.0005
W2	2013-08-21 7:40	0.0104	0.0016	8.19	0.0013	0.0002	0.0005	4.5	0.00013	7.13	0.005	0.359	0.005	0.00005	0.00133	0.005	0.005	0.0005
W2	2013-08-22 11:10	0.0129	0.0015	8.3	0.0015	0.0002	0.0005	4.2	0.00012	6.56	0.005	0.35	0.005	0.00005	0.00128	0.005	0.005	0.0005
W2	2013-08-27 10:15	0.0324	0.0013	7.57	0.0016	0.0002	0.0005	4.3	0.00013	7.23	0.005	0.327	0.005	0.00005	0.00111	0.005	0.005	0.0005
W2	2013-09-03 15:50	0.038	0.0012	7.7	0.0017	0.0002	0.0005	4	0.00013	6.58	0.005	0.298	0.005	0.00005	0.00102	0.005	0.005	0.0005
W2	2013-09-09 12:45	0.0304	0.0016	8.22	0.0017	0.0002	0.0005	5.2	0.00012	7.36	0.005	0.367	0.005	0.00005	0.00123	0.005	0.005	0.0005
W2	2013-09-18 10:15	0.0685	0.0011	7.29	0.0017	0.0002	0.0005	4.7	0.0001	7.16	0.005	0.29	0.005	0.00005	0.00092	0.005	0.005	0.0005
W2	2013-09-20 12:50	0.0644	0.0012	7.16	0.0017	0.0002	0.0005	5.1	0.00013	6.94	0.005	0.293	0.005	0.00005	0.00097	0.005	0.005	0.0005
W2	2013-09-24 9:50	0.0664	0.001	7.25	0.0018	0.0002	0.0005	4.6	0.00011	6.99	0.005	0.28	0.005	0.00005	0.00091	0.005	0.005	0.0005
W2	2013-10-03 10:10	0.057	0.0012	7.76	0.002	0.0002	0.0005	4.6	0.00013	6.72	0.005	0.313	0.005	0.00005	0.00096	0.005	0.005	0.0005
W2	2013-10-11 11:15	0.0434	0.001	8.03	0.0016	0.0002	0.0005	5.9	0.00015	6.64	0.005	0.324	0.005	0.00005	0.00106	0.005	0.005	0.0005
W2	2013-10-18 9:30	0.0457	0.0011	8.04	0.0014	0.0002	0.0005	5.7	0.00014	6.42	0.005	0.322	0.005	0.00005	0.00115	0.005	0.005	0.0005
W2	2013-10-21 6:40	0.0382	0.0013	7.85	0.0015	0.0002	0.0005	5.4	0.00015	7.23	0.005	0.348	0.005	0.00005	0.00115	0.005	0.005	0.0005
W2	2013-10-31 13:50	0.0396	0.0012	8	0.0013	0.0002	0.0005	5.4	0.00013	6.66	0.005	0.349	0.005	0.00005	0.00118	0.005	0.005	0.0005
W2	2013-11-08 14:10	0.0128	0.0013	9.3	0.0012	0.0002	0.0005	7.5	0.00016	7.25	0.005	0.417	0.005	0.00005	0.00143	0.005	0.005	0.0005
W2	2013-11-14 14:00	0.0201	0.0014	9.34	0.0011	0.0002	0.0005	7.4	0.00016	6.64	0.005	0.465	0.005	0.00005	0.0019	0.005	0.005	0.0005
W2	2013-11-18 14:50	0.0294	0.0014	11.1	0.0013	0.0002	0.0005	9.6	0.00015	7.19	0.005	0.499	0.005	0.00005	0.00223	0.005	0.005	0.0005
W2	2014-04-06 14:00	0.0489	0.002	30.4	0.0015	0.0002	0.0005	27.8	0.0005	14.2	0.005	0.778	0.005	0.00005	0.00291	0.005	0.005	0.0005
W2	2014-04-08 10:05	0.0156	0.0014	17.9	0.001	0.0002	0.0005	15.6	0.0003	9.15	0.005	0.463	0.005	0.00005	0.00114	0.005	0.005	0.0005
W2	2014-04-17 15:30	0.0093	0.002	11.1	0.001	0.0002	0.0005	9.2	0.00033	5.34	0.005	0.424	0.005	0.00005	0.00093	0.005	0.005	0.0005
W2	2014-04-21 7:30																	
W2	2014-04-21 7:30	0.0239	0.0013	6.92	0.001	0.0002	0.0005	5.5	0.00019	4.58	0.005	0.26	0.005	0.00005	0.00046	0.005	0.005	0.0005
W2	2014-04-22 15:10	0.0366	0.001	3.79	0.001	0.0002	0.0005	3	0.00011	3.29	0.005	0.148	0.005	0.00005	0.0002	0.005	0.005	0.0005
W2	2014-05-01 15:30	0.073	0.001	3.77	0.0013	0.0002	0.0005	3	0.00014	3	0.005	0.131	0.005	0.00005	0.00023	0.005	0.005	0.0005
W2	2014-05-05 8:00	0.0732	0.001	3.61	0.0015	0.0002	0.0005	3	0.00011	3.62	0.005	0.145	0.005	0.00005	0.0003	0.005	0.005	0.0005

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species						Dissolved Elements																																	
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	N-NO_2	N-NO_3	N-NH_3	SO_4-D	Chlord	Fluord	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W2	2014-05-17 15:00																																																
W2	2014-05-17 15:00	108	284	113.1	7.63	190	143	6	97.6	0.0235	1.27	0.08	26.8	4.1	0.27	0.00002	0.0208	0.00064	0.0659	0.05	0.0001	0.001	33.7	0.00001	0.0005		0.00879	0.345	0.00001	2.26	0.005	9.97	0.0472	0.0028	8.49	0.001	0.0002	0.0005	9.8	0.00047	4.25	0.005	0.375	0.005	0.00005	0.00098	0.005	0.005	0.0005
W2	2014-05-19 14:00																																																
W2	2014-05-19 14:00	113	281	117.4	7.62	192	472	3.3	96.7	0.0182	1.06	0.1	26	3.4	0.27	0.00002	0.016	0.00062	0.063	0.05	0.0001	0.001	33.1	0.00001	0.0005		0.00631	0.357	0.00001	1.98	0.005	10.6	0.021	0.0025	8.11	0.0012	0.0002	0.0005	8.4	0.00041	4.28	0.005	0.366	0.005	0.00005	0.00098	0.005	0.005	0.0005
W2	2014-05-25 7:45			138.1	7.62			3.4	97.6																																								
W2	2014-05-26 7:45																																																
W2	2014-05-27 7:45	104	256	65.7	7.43	152	187	3.3	98	0.0243	0.759	0.069	19.3	2.8	0.28	0.00002	0.014	0.00061	0.0678	0.05	0.0001	0.001	31.5	0.00001	0.0005		0.00522	0.345	0.00001	1.89	0.005	9.64	0.0042	0.0022	7.61	0.0015	0.0002	0.0005	8.2	0.0003	4.62	0.005	0.363	0.005	0.00005	0.00053	0.005	0.005	0.0005
W2	2014-06-07 15:20			96.1	7.57			7.2	96																																								
W2	2014-06-07 15:20	125	270	96.1	7.57	188	18.2	7.2	96	0.0114	0.193	0.061	12.8	1.9	0.31	0.00002	0.0149	0.00065	0.0587	0.05	0.0001	0.001	34.5	0.00001	0.0005		0.0026	0.205	0.00001	1.23	0.005	10.7	0.0122	0.0014	7.44	0.0013	0.0002	0.0005	4.7	0.00011	5.93	0.005	0.307	0.005	0.00005	0.00113	0.005	0.005	0.0005
W2	2014-06-12 17:00																																																
W2	2014-06-12 17:00	134	287	132.8	8.28	192	41.2	8.2	92.3	0.0087	0.153	0.037	14.5	2.3	0.32	0.00002	0.0112	0.00061	0.0631	0.05	0.0001	0.001	34.8	0.00001	0.0005		0.00192	0.142	0.00001	1.32	0.005	11.1	0.0128	0.0014	8.19	0.0013	0.0002	0.0005	4.6	0.00012	5.19	0.005	0.329	0.005	0.00005	0.00123	0.005	0.005	0.0005
W2	2014-06-20 15:00			131.9	8.35			6.4	97.6																	0.0023																							
W2	2014-06-20 15:00	140	311	131.9	8.35	174	1.3	6.4	97.6	0.005	0.094	0.015	17.3	2.1	0.34	0.00002	0.0137	0.00052	0.0632	0.05	0.0001	0.001	37.8	0.00001	0.0005		0.00223	0.116	0.00001	1.38	0.005	12.9	0.0089	0.0016	8.9	0.001	0.0002	0.0005	6	0.00013	5.09	0.005	0.375	0.005	0.00005	0.00148	0.005	0.005	0.0005
W2	2014-06-24 15:00			137.3	8.43			8.1	97.9																																								
W2	2014-06-24 15:00	150	311	137.3	8.43	202	1	8.1	97.9	0.005	0.054	0.013	19.7	2	0.35	0.00002	0.0118	0.0005	0.0668	0.05	0.0001	0.001	39.6	0.00001	0.0005		0.00206	0.103	0.00001	1.41	0.005	12.9	0.0093	0.0016	8.84	0.0011	0.0002	0.0005	6.2	0.00012	4.99	0.005	0.387	0.005	0.00005	0.00153	0.005	0.005	0.0005
W2	2014-06-30 7:45	151	333	127.1	8.3	214	1	8.7	94.2	0.005	0.049	0.04	19.6	2.4	0.36	0.00002	0.0118	0.00045	0.0684	0.05	0.0001	0.001	41.1	0.00001	0.0005		0.0022	0.0555	0.00001	1.52	0.005	13.4	0.015	0.0016	8.95	0.0019	0.0002	0.0005	6.7	0.00011	4.58	0.005	0.418	0.005	0.00005	0.00156	0.005	0.005	0.0005
W2	2014-07-01 15:00			198.3	8.31			8.9	98.3																																								
W2	2014-07-09 10:35			111.9	8.35			7.6	87.2																																								
W2	2014-07-09 10:35	152	332	111.9	8.35	182	2.1	7.6	87.2	0.005	0.068	0.026	21.3	2	0.37	0.00002	0.0091	0.00045	0.0697	0.05	0.0001	0.001	40.9	0.000014	0.0005		0.0023	0.0616	0.00001	1.46	0.005	13.4	0.0148	0.0015	8.54	0.001	0.0002	0.0005	6.8	0.00013	5.03	0.005	0.42	0.005	0.00005	0.00156	0.005	0.005	0.0005
W2	2014-07-17 14:45			152.3	7.51			7.8	96.1																																								
W2	2014-07-17 14:45	158	349	152.3	7.51	210	64.1	7.8	96.1	0.005	0.075	0.014	21.4	2.2	0.34	0.00002	0.0062	0.00044	0.0701	0.05	0.0001	0.001	43.1	0.00001	0.0005		0.0021	0.0533	0.00001	1.45	0.005	14.9	0.0221	0.0013	9.98	0.0012	0.0002	0.0005	3.2	0.00021	4.88	0.005	0.419	0.005	0.00005	0.00179	0.005	0.005	0.0005
W2	2014-07-23 7:40			76.7	7.58			6.4	94.9																																								
W2	2014-07-23 14:30	138	300	83.7	7.78	170	11.9	8.1	96.7	0.005	0.092	0.021	14.4	1.8	0.36	0.00002	0.0131	0.00066	0.0562	0.05	0.0001	0.001	35.6	0.00001	0.0005		0.00226	0.189	0.00001	1.09	0.005	12.3	0.0066	0.0014	8.16	0.0013	0.0002	0.0005	6.9	0.00019	6.09	0.005	0.349	0.005	0.00005	0.00112	0.005	0.005	0.0005
W2	2014-07-29 14:20			131.3	7.97			8.6	95.8																																								
W2	2014-07-29 14:20	154	320	131.3	7.97	204	19.4	8.6	95.8	0.005	0.123	0.011	14.3	1.9	0.36	0.00002	0.0181	0.00045	0.0627	0.05	0.0001	0.001	42.2	0.00001	0.0005		0.00195	0.221	0.00001	1.41	0.005	13.1	0.0063	0.0013	9.17	0.0013	0.0002	0.0005	5.7	0.00011	6.67	0.005	0.363	0.005	0.00005	0.00123	0.005	0.005	0.0005
W2	2014-08-07 9:40			211.1	8.08			6.6	111.6																																								
W2	2014-08-07 9:40	154	333	211.1	8.08	196	4.2	6.6	111.6	0.005	0.118	0.014	18.4	1.8	0.34	0.00002	0.0162	0.00062	0.0664	0.05	0.0001	0.001	42.4	0.00001	0.0005		0.00267	0.223	0.00001	1.41	0.005	14.2	0.0091	0.0016	9.94	0.0013	0.0002	0.0005	6.5	0.00017	6.45	0.005	0.4	0.005	0.00005	0.00144	0.005	0.005	0.0005
W2	2014-08-11 7:35			122.3	8.12			7.5	84.4																																								
W2	2014-08-13 14:30			138.1	8.16			8	95																																								
W2	2014-08-13 14:30	165	345	138.1	8.16	208	4.4	8	95	0.005	0.107	0.014	18.1	1.9	0.35	0.00002	0.0081	0.00063	0.0723	0.05	0.0001	0.001	44.3	0.00001	0.0005		0.00169	0.142	0.00001	1.54	0.005	13.7	0.0107	0.0016	8.87	0.0011	0.0002	0.0005	6.3	0.0001	6.5	0.005	0.443	0.005	0.00005	0.00167	0.005	0.005	0.0005
W2	2014-08-18 15:40			154	8.22			7.5	97																																								
W2	2014-08-18 15:40	165	343	154	8.22	210	11.4	7.5	97	0.005	0.063	0.015	17.8	2.2	0.35	0.00002	0.0094	0.00057	0.0663	0.05	0.0001	0.001	39.8	0.00001	0.0005		0.0022	0.158	0.00001	1.58	0.005	14.6	0.0087	0.0015	9.38	0.001	0.0002	0.0005	7.7	0.0001	5.53	0.005	0.427	0.005	0.00005	0.0016	0.005	0.005	0.0005
W2	2014-08-26 9:00			193.3	8.21			5.9	99.1																																								
W2	2014-08-26 9:00	160	339	193.3	8.21	216	7.3	5.9	99.1	0.005	0.072	0.061	14.8	1.5	0.35	0.00002	0.0086	0.00064	0.0641	0.05	0.0001	0.001	40.4	0.00001	0.0005		0.00164	0.232	0.00001	1.4	0.005	14	0.0073	0.0015	8.81	0.0011	0.0002	0.0005	5.7	0.00011	5.44	0.005	0.422	0.005	0.00005	0.00154	0.005	0.005	0.0005
W2	2014-09-01 14:00			141.1	8.22			2.9	100.1																																								
W2	2014-09-01 14:00	166	343	141.1	8.22	202	2	2.9	100.1	0.005	0.056	0.039	16	1.8	0.34	0.00002	0.0069	0.00055	0.0651	0.05	0.0001	0.001	43.5	0.00001	0.0005		0.0015	0.174	0.00001	1.41	0.005	14.6	0.0085	0.0016	8.9	0.0011	0.0002	0.0005	6.7	0.00012	6.12	0.005	0.432	0.005	0.00005	0.00159	0.005	0.005	0.0005
W2	2014-09-03 14:30			154.5	8.26			3.5	101.7																																								
W2	2014-09-11 15:40			196.6	7.89			3.9	113.1																																								
W2	2014-09-11 15:40	165	336	196.6	7.89	236	2.4	3.9	113.1	0.005	0.02	0.016	16.1	2	0.36	0.00002	0.0075	0.00048	0.0636	0.05	0.0001	0.001	40.9	0.00001	0.0005		0.00173	0.155	0.00001	1.46	0.005	13.9	0.0085	0.0014	8.95	0.0012	0.0002	0.0005	5.4	0.0001	5.75	0.005	0.41	0.005	0.00005	0.00154	0.005	0.005	0.0005
W2	2014-09-16 11:05			167.6	8.1			4.2	93.7																																								
W2	2014-09-16 11:05	160	339	167.6	8.1	224	3.3	4.2	93.7	0.005	0.02	0.022	17.4	2.1	0.36	0.00002	0.0087	0.00049	0.0658	0.05	0.0001	0.001	39.9	0.00001	0.0005		0.00148	0.113	0.00001	1.61	0.005	14.7	0.0099	0.0015	9.26	0.001	0.0002	0.0005	6.1	0.0001	5.65	0.005	0.446	0.005	0.00005	0.00149	0.005	0.005	0.0005
W2	2014-09-22 14:55			180.4	8.21			3	96.5																																								
W2	2014-09-22 14:55	162	325	180.4	8.21	210	19.7	3	96.5	0.005	0.02	0.019	14.4	1.8	0.36	0.00002	0.0081	0.00057	0.0605	0.05	0.0001	0.001	39.2	0.00001	0.0005		0.00147	0.158	0.00001	1.59	0.005	13.3	0.0095	0.0013	8.29	0.0012	0.0002	0.0005	5.1	0.0001	5.6	0.005	0.383	0.005	0.00005	0.00127	0.005	0.005	0.0005
W2	2014-09-30 14:45			149.8	8.13			-0.1	99																																								
W2	2014-09-30 14:45	139	296	149.8	8.13	192	6.9	-0.1	99	0.005	0.058	0.013	15	3.1	0.31	0.00002	0.0088	0.00055	0.0558	0.05	0.0001	0.001	36.2	0.00001	0.0005		0.00157	0.205	0.00001	1.01	0.005	11.9	0.0154	0.0011	7.58	0.0016	0.0002	0.0005	5	0.0001	5.65	0.005	0.332	0.005	0.00005	0.00111	0.005	0.005	0.0005
W2	2014-10-07 13:40			148.7	8.16			-1.2	100.7																																								
W2	2014-10-07 13:40	157	324	148.7	8.16	210	5.3	-1.2	100.7	0.005	0.088	0.023	16.7	1.9	0.31	0.00002	0.0076	0.00054	0.0574	0.05	0.0001	0.001	44	0.00001	0.0005		0.00155	0.182	0.00001	1.08	0.005	13.4	0.0109	0.0012	8.4	0.0014	0.0002	0.0005	6.2	0.00012	6.8	0.005	0.37	0.005	0.00005	0.00133	0.005	0.005	0.0005
W2	2014-10-14 15:10	155	321	200.5	7.8	198	1	-0.8	98.5	0.005	0.143	0.0063	15.7	1.8	0.3	0.00002	0.0086	0.0005	0.0564	0.05	0.0001	0.001	41.7	0.00001	0.0005		0.00137	0.163	0.00001	1.22	0.005	13	0.0095	0.0012	8.29	0.0011	0.0002	0.0005	6.4	0.0001	6.69	0.005	0.36	0.005	0.00005	0.00131	0.005	0.005	0.0005
W2	2014-10-25 14:10	155	333	158.2	7.77	202	1	-1.2	93.1	0.005	0.151	0.026	17.7	2.1	0.35	0.00004	0.0085	0.00051	0.0587	0.1	0.0002	0.002	42	0.00002	0.001		0.002	0.193	0.00001	1	0.01	14.5	0.0078	0.002	9.04			0.001	1670	0.00026	5.79	0.01	0.392	0.01	0.0001	0.00149	0.01		0.001
W2	2014-10-31 15:20	181	377	257.4	7.69	228	1	-1.4	94.17	0.005	0.175	0.0091	20.5	2.1	0.34	0.00002	0.0058	0.00038	0.0692	0.05	0.0001	0.001	54	0.00001	0.0005		0.00169	0.0609	0.00001	1.57	0.005	16.8	0.0125	0.0014	10.4	0.001	0.0002	0.0005	8	0.00011	7.56	0.005	0.476	0.005	0.00005	0.00197	0.005	0.005	0.0005
W2	2014-11-06 15:50	179	377	214.4	7.85	246	3.2	-1.7	96	0.005	0.165	0.005	22.7	3.3	0.36	0.00002	0.0065	0.00035	0.0679	0.05	0.0001	0.001	47.7	0.00001	0.0005		0.00135	0.0548	0.00001	1.41	0.005	15.4	0.0102	0.0012	9.68	0.001	0.0002	0.0005	7.4	0.00012	6.18	0.005	0.457	0.005	0.00005	0.0019	0.005	0.005	0.0005
W2	2014-11-12 7:00	173	385	195.3	7.91	224	1.1	-1.1	90.8	0.005	0.173	0.018	26.1	2.7	0.34	0.00002	0.0056	0.00031	0.0732	0.05	0.0001	0.001	50	0.00001	0.0005		0.0016	0.0481	0.00001	1.54	0.005	16.1	0.0177	0.0012	10.6	0.001	0.0002	0.0005	7.7	0.0001	6.5	0.005	0.499	0.005	0.00005	0.00216	0.005	0.005	0.0005
W2	2014-12-10 15:30																																																
W2	2014-12-11 7:50	159	510	96	8.04	282	1.6	-1.9	96.3	0.0174	2.03	0.037			0.43	0.00002	0.0053	0.0004	0.092	0.05	0.0001	0.001	57.9	0.00001	0.0005		0.00336	0.0323	0.00001	4.25	0.005	20.1	0.0342	0.0053	16.9	0.001	0.0002	0.0005	25.6	0.00066	4.24	0.005	0.706	0.005	0.00005	0.00209	0.005	0.005	0.0005
W2	2014-12-12 8:15																																																
W2	2014-12-13 8:10			106.3	7.88			-1.4	98.2																																								
W2	2014-12-14 7:40			154.2	7.94			-1.9	124.4																																								
W2	2014-12-15 8:30	176	554	213.8	7.81	348	1.1	-2	84.4	0.0128	2.6	0.0083	92.5	7.9	0.47	0.00002	0.003	0.00039	0.105	0.05	0.0001	0.001	65.1	0.00001	0.0005		0.00435	0.0277	0.00001	5.54	0.005	22.2	0.0147	0.0059	19.3	0.001	0.0002	0.0005	30.3	0.00069	4.54	0.005	0.844	0.005	0.00005	0.00209	0.005	0.005	0.0005
W2	2014-12-16 9:45	158	507	154.8	7.81	316	1.4	-1.9	81.6	0.0124	2.38	0.013	86.7	7.1	0.43	0.00002	0.003	0.00039	0.0939	0.05	0.0001	0.001	59.9	0.00001	0.0005		0.0037	0.0284	0.00001	5.18	0.005	19.7	0.0124	0.0056	17.9	0.001	0.0002	0.0005	28.6	0.00069	4.03	0.005	0.787	0.005	0.00005	0.00185	0.005	0.005	0.0005
W2	2014-12-19 8:35	173	467	151.5	7.92	294	1.4	-2	101.2	0.0052	1.36	0.0091	60.8	5.7	0.025	0.00002	0.0032	0.00034	0.083	0.05	0.0001	0.001	61.8	0.00001	0.0005		0.00273	0.0263	0.00001	3.7	0.005	19.7	0.0146	0.0031	15.1	0.001	0.0002	0.0005	25.4	0.00038	5.66	0.005	0.689	0.005	0.00005	0.00214	0.005	0.005	0.0005
W2	2014-12-20 8:30	165	449	191.1	7.62	288	1.3	-1.9	108.4	0.005	1.05	0.0091	54.5	4.6	0.33	0.00002	0.0038	0.00029	0.0853	0.05	0.0001	0.001	55.4	0.00001	0.0005		0.00221	0.0235	0.00001	3.06	0.005	17.4	0.0238	0.0023	12.6	0.001	0.0002	0.0005	19.2	0.00031	5.62	0.005	0.641	0.005	0.00005	0.00227	0.005	0.005	0.0005
W2	2014-12-21 9:00			99.1	7.97			-1.9	95.4																																								
W2	2014-12-21 9:00																																																
W2	2015-04-05 17:30	233	541	158.5	8.29	328	1	-0.1	105.3	0.005	0.128	0.011	51.8	4.5	0.54	0.00002	0.0122	0.00052	0.0939	0.05	0.0001	0.001	62.6	0.00001	0.0005		0.00566	0.0472	0.00001	3.49	0.005	23.7	0.0263	0.0019	16.3	0.001	0.0002	0.0005	16.6	0.0003	8.33	0.005	0.633	0.005	0.00005	0.00204	0.005	0.005	0.0005
W2	2015-04-10 14:20	134	405	175.8	8.34	242	2.3	-0.1	97.9	0.0089	1.38	0.0059	55	5.2	0.38	0.00002	0.0057	0.00042	0.0718	0.05	0.0001	0.001	44.6	0.000011	0.0005		0.00427	0.0652	0.00001	4.16	0.005	15	0.0916	0.0046	13.9	0.001	0.0002	0.0005	21.9	0.00049	4.01	0.005	0.628	0.005	0.00005	0.00138	0.005	0.005	0.0005
W2	2015-04-14 15:30			213.6	8.34				93.8																																								
W2	2015-04-14 15:30	169	386	213.6	8.34	210	1		93.8	0.005	0.205	0.013	32.9	3.3	0.41	0.00002	0.011	0.00054	0.0672	0.05	0.0001	0.001	42.6	0.000012	0.0005		0.00638	0.128	0.00001	3.39	0.005	16.3	0.0538	0.0022	11.7	0.001	0.0002	0.0005	11.1	0.00028	6.5	0.005	0.556	0.005	0.00005	0.00137	0.005	0.005	0.0005
W2	2015-04-20 7:45	76.6	190	176.8	8.06	124	4.7	0	97.6	0.0096	0.425	0.034	14	2.7	0.18	0.00002	0.0131	0.0004	0.0427	0.05	0.0001	0.001	21.8	0.00001	0.0005		0.00542	0.165	0.00001	2.7	0.005	7.1	0.0617	0.0017	6.99	0.001	0.0002	0.0005	4.8	0.00022	3.72	0.005	0.261	0.005	0.00005	0.00046	0.005	0.005	0.0005
W2	2015-04-30 16:30	59.5	156	199.3	7.92	136	219	0.3	98.2		0.35	0.09	0.56	2.9	0.16	0.00002	0.0389	0.00051	0.0423	0.05	0.0001	0.001	19.5	0.00001	0.0005		0.00651	0.236	0.00001	1.77	0.005	5.54	0.107	0.0012	4.71	0.0013	0.0002	0.0005	5.7	0.00016	4.25	0.005	0.209	0.005	0.00005	0.00036	0.005	0.005	0.0005
W2	2015-05-09 14:15	85.3	217	133.3	7.6	152	150	2.5	104.8	0.005	0.452	0.028	17.7	2.8	0.21	0.00002	0.0225	0.00049	0.0477	0.05	0.0001	0.001	26.6	0.00001	0.0005		0.00392	0.218	0.00001	1.76	0.005	8.33	0.0636	0.0013	6.8	0.0012	0.0002	0.0005	5.9	0.00018	4.34	0.005	0.274	0.005	0.00005	0.00066	0.005	0.005	0.0005
W2	2015-05-14 13:30	94	251	135.6	7.75	160	102	5.4	97.9	0.0106	0.698	0.031	22.4	3.6	0.25	0.00002	0.0144	0.00056	0.0516	0.05	0.0001	0.001	27.6	0.00001	0.0005		0.006	0.203	0.00001	2.09	0.005	9.29	0.0099	0.0022	9.2	0.0011	0.0002	0.0005	6.8	0.00024	3.68	0.005	0.327	0.005	0.00005	0.00079	0.005	0.005	0.0005
W2	2015-05-19 7:45	101	235	70.9	7.89	158	36.3	4.2	91.2	0.005	0.191	0.029	14.7	2.1	0.29	0.00002	0.0124	0.0005	0.0464	0.05	0.0001	0.001	27.9	0.00001	0.0005		0.00264	0.261	0.00001	1.48	0.005	8.54	0.0043	0.0014	6.64	0.001	0.0002	0.0005	4.9	0.00015	4.37	0.005	0.307	0.005	0.00005	0.00078	0.005	0.005	0.0005
W2	2015-05-28 15:20	145	362	146.6	7.89	214	8.7	7.4	96	0.005	0.746	0.035	26	4.2	0.33	0.00002	0.017	0.00041	0.0661	0.05	0.0001	0.001	38.1	0.00001	0.0005		0.00258	0.0547	0.00001	2.05	0.005	13.1	0.0045	0.0023	10.7	0.001	0.0002	0.0005	10.8	0.00026	4.04	0.005	0.49	0.005	0.00005	0.00147	0.005	0.005	0.0005
W2	2015-06-05 15:30	138	309	131.9	7.74	142	2.6	6.7	89.7	0.005	0.114	0.0057	20.1	2.2	0.35	0.00002	0.0091	0.00046	0.0657	0.05	0.0001	0.001	40	0.00001	0.0005		0.00201	0.0615	0.00001	1.75	0.005	12.8	0.0078	0.0017	9.22	0.001	0.0002	0.0005	8.2	0.00012	5.9	0.005	0.455	0.005	0.00005	0.00148	0.005	0.005	0.0005
W2	2015-06-11 10:00	143	334	142.7	7.7	196	1	5.7	89.5	0.005	0.142	0.02	24.4	2.5	0.36	0.00002	0.0061	0.00039	0.0661	0.05	0.0001	0.001	42.6	0.00001	0.0005		0.00184	0.0414	0.00001	1.64	0.005	14.4	0.0101	0.0016	9.72	0.001	0.0002	0.0005	9	0.00012	5.61	0.005	0.434	0.005	0.00005	0.00156	0.005	0.005	0.0005
W2	2015-06-15 9:45	154	351	154.9	7.87	198	1.3	6.5	88.8	0.005	0.181	0.03	28.2	2.4	0.34	0.00002	0.0073	0.00039	0.0686	0.05	0.0001	0.001	42.8	0.00001	0.0005		0.00176	0.0339	0.00001	1.66	0.005	13.8	0.0126	0.0015	9.71	0.001	0.0002	0.0005	8.7	0.0001	5.82	0.005	0.461	0.005	0.00005	0.00165	0.005	0.005	0.0005
W2	2015-06-25 8:45	160	371	143.5	7.77	212	4.3	7.9	87.1	0.005	0.112	0.016	32	3	0.29	0.00002	0.0147	0.00038	0.081	0.05	0.0001	0.001	53.2	0.00001	0.0005		0.00194	0.0466	0.00001	2.02	0.005	15.1	0.0271	0.0012	10.4	0.001	0.0002	0.0005	9.6	0.00015	6.44	0.005	0.537	0.005	0.00005	0.00174	0.005	0.005	0.0005
W2	2015-06-29 15:10	161	350	171.3	7.88	228	1	7.6	95.2	0.005	0.125	0.03	23.6	2.5	0.35	0.00002	0.0188	0.00041	0.0689	0.05	0.0001	0.001	48.1	0.00001	0.0005		0.00165	0.0407	0.00001	1.73	0.005	15.2	0.0107	0.0017	10.1	0.001	0.0002	0.0005	9.3	0.00019	6.47	0.005	0.481	0.005	0.00005	0.00171	0.005	0.005	0.0005
W2	2015-07-02 15:20	154	348		7.83	216	3	7.2		0.005	0.119	0.011	25.5	2.5	0.36	0.00002	0.0078	0.0004	0.0667	0.05	0.0001	0.001	43.5	0.00001	0.0005		0.00166	0.0404	0.00001	1.64	0.005	14.4	0.0118	0.0015	9.96	0.001	0.0002	0.0005	9	0.00011	6.12	0.005	0.459	0.005	0.00005	0.00172	0.005	0.005	0.0005
W2	2015-07-09 9:10	161	350	172.7	7.83	172	2	5.2	99.7	0.005	0.124	0.015	22.8	2.3	0.37	0.00002	0.0078	0.00043	0.0693	0.05	0.0001	0.001	48	0.00001	0.0005		0.00152	0.0491	0.00001	1.86	0.005	14.2	0.0101	0.0014	9.85	0.001	0.0002	0.0005	7.6	0.00012	7.33	0.005	0.451	0.005	0.00005	0.0018	0.005	0.005	0.0005
W2	2015-07-17 9:10	164	356	151.4	7.8	208	1.1	5.3	89.2	0.005	0.096	0.031	24	2.3	0.35	0.00002	0.0132	0.00047	0.0681	0.05	0.0001	0.001	41.6	0.00001	0.0005		0.00185	0.056	0.00001	1.56	0.005	14.3	0.0149	0.0014	9.88	0.001	0.0002	0.0005	8	0.00011	6.08	0.005	0.441	0.005	0.00005	0.00171	0.005	0.005	0.0005
W2	2015-07-23 9:25	164	366	160.5	7.8	192	1.2	5.1	86.5	0.005	0.079	0.018	25.4	2.4	0.3	0.00002	0.0136	0.00044	0.0693	0.05	0.0001	0.001	46	0.00001	0.0005		0.00151	0.0512	0.00001	1.67	0.005	14	0.018	0.0014	9.52	0.001	0.0002	0.0005	11.2	0.00012	6.78	0.005	0.463	0.005	0.00005	0.00179	0.005	0.005	0.0005
W2	2015-07-27 9:55	161	362	165.8	7.78	214	1	7.2	92.5	0.005	0.081	0.046	26.5	2.8	0.34	0.00002	0.0112	0.00045	0.0686	0.05	0.0001	0.001	46.2	0.00001	0.0005		0.00146	0.0542	0.00001	1.66	0.005	13.9	0.0222	0.0013	10.8	0.001	0.0002	0.0005	11.9	0.0001	6.22	0.005	0.472	0.005	0.00005	0.00171	0.005	0.005	0.0005
W2	2015-08-04 13:40	165	366	126.2	7.97	246	1	7	96.4	0.005	0.086	0.031	25	2.3	0.39	0.00002	0.0104	0.00039	0.0677	0.05	0.0001	0.001	46.1	0.00001	0.0005		0.00169	0.0527	0.00001	1.56	0.005	14.3	0.0148	0.0014	10.2	0.001	0.0002	0.0005	7.1	0.0001	6.12	0.005	0.464	0.005	0.00005	0.00186	0.005	0.005	0.0005
W2	2015-08-13 17:30	164	346	163.4	8.09	204	2.6	6.7	94.9	0.005	0.052	0.039	18	1.6	0.38	0.00002	0.014	0.00048	0.0649	0.05	0.0001	0.001	42.6	0.00001	0.0005		0.00188	0.0738	0.00001	1.35	0.005	15	0.0073	0.0016	10.4	0.001	0.0002	0.0005	8.5	0.0001	6.16	0.005	0.443	0.005	0.00005	0.00146	0.005	0.005	0.0005
W2	2015-08-22 10:25	166	347	144.7	7.89	202	1.3	4.6	66.3	0.005	0.056	0.026	18.5	1.8	0.39	0.00002	0.0105	0.00055	0.0654	0.05	0.0001	0.001	42.2	0.00001	0.0005		0.00183	0.109	0.00001	1.57	0.005	15.2	0.0079	0.0013	10.4	0.001	0.0002	0.0005	6.1	0.0001	5.66	0.005	0.471	0.005	0.00005	0.00162	0.005	0.005	0.0005
W2	2015-08-25 13:55	163	345	165.9	8.12	202	13.6	5.6	101.6	0.005	0.056	0.018	18.8	1.7	0.39	0.00002	0.014	0.0005	0.0674	0.05	0.0001	0.001	49.4	0.00001	0.0005		0.00182	0.0886	0.00001	1.58	0.005	15.5	0.0068	0.0016	9.85	0.0013	0.0002	0.0005	5.3	0.00011	6.94	0.005	0.476	0.005	0.00005	0.00171	0.005	0.005	0.0005
W2	2015-09-01 11:15	143	307	125.2	8.06	204	12.2	3.2	100.6	0.005	0.049	0.027	16.9	1.7	0.35	0.00002	0.0151	0.00071	0.0647	0.05	0.0001	0.001	43.6	0.00001	0.0005		0.00232	0.19	0.00001	1.28	0.005	14.4	0.0061	0.0015	9.65	0.0014	0.0002	0.0005	5.3	0.0001	7.06	0.005	0.411	0.005	0.00005	0.00117	0.005	0.005	0.0005
W2	2015-09-08 14:55	154	333	171.3	8.11	188	1	3.3	98.5	0.005	0.02	0.043	17.4	2.2	0.38	0.00002	0.0165	0.0005	0.0586	0.05	0.0001	0.001	42	0.00001	0.0005		0.00208	0.101	0.00001	1.21	0.005	14.7	0.0057	0.0014	9.63	0.0011	0.0002	0.0005	8.2	0.00011	6.48	0.005	0.424	0.005	0.00005	0.00142	0.005	0.005	0.0005
W2	2015-09-18 9:30	153	337	167.5	8.06	222	1	2.3	90.7	0.005	0.02	0.0099	18.9	2	0.36	0.00002	0.0106	0.00045	0.0592	0.05	0.0001	0.001	43.6	0.00001	0.0005		0.00194	0.107	0.00001	1.34	0.005	14.7	0.0066	0.0012	9.49	0.0012	0.0002	0.0005	7	0.00011	6.9	0.005	0.409	0.005	0.00005	0.00133	0.005	0.005	0.0005
W2	2015-09-22 10:30			143.4	7.88			2.4	91.8																																								
W2	2015-09-22 10:30	153	335	143.4	7.88	226	1	2.4	91.8	0.005	0.023	0.033	18	2.4	0.37	0.00002	0.007	0.00045	0.0585	0.05	0.0001	0.001	43.4	0.00001	0.0005		0.00165	0.107	0.00001	1.27	0.005	14.4	0.0056	0.0013	9.52	0.001	0.0002	0.0005	6	0.0001	6.74	0.005	0.41	0.005	0.00005	0.00144	0.005	0.005	0.0005
W2	2015-09-28 14:00	160	339	180.2	7.87	218	1	1.9	91.7	0.005	0.042	0.024	17.6	1.9	0.36	0.00002	0.0084	0.00041	0.0606	0.05	0.0001	0.001	42.1	0.00001	0.0005		0.00176	0.0803	0.00001	1.37	0.005	15.4	0.0058	0.0014	9.61	0.0012	0.0002	0.0005	7	0.00014	6.77	0.005	0.39	0.005	0.00005	0.00129	0.005	0.005	0.0005
W2	2015-09-28 14:45	169	332	173	8.12	216	1	2.2	96	0.005	0.036	0.047	18.1	1.9	0.37	0.00002	0.0078	0.00045	0.06	0.05	0.0001	0.001	42.7	0.00001	0.0005		0.00162	0.0786	0.00001	1.41	0.005	15.4	0.0055	0.0014	9.94	0.001	0.0002	0.0005	7.7	0.00013	6.74	0.005	0.416	0.005	0.00005	0.00127	0.005	0.005	0.0005
W2	2015-10-05 9:30			142.7	7.92			0	99.1																																								
W2	2015-10-05 9:30	165	360	142.7	7.92	236	1	0	99.1	0.005	0.086	0.013	20.4	2.2	0.37	0.00002	0.0097	0.0005	0.0603	0.05	0.0001	0.001	43.3	0.00001	0.0005		0.00183	0.0595	0.00001	1.3	0.005	15.6	0.0072	0.0014	9.97	0.001	0.0002	0.0005	7	0.0001	6.56	0.005	0.42	0.005	0.00005	0.0016	0.005	0.005	0.0005
W2	2015-10-13 9:55			199	7.72			0.3	78.5																																								
W2	2015-10-13 9:55	153	325	199	7.72	206	1	0.3	78.5	0.005	0.077	0.02	16.1	2	0.34	0.00002	0.0099	0.00047	0.0531	0.05	0.0001	0.001	36.3	0.00001	0.0005		0.00147	0.0926	0.00001	1.06	0.005	13.4	0.0043	0.0012	8.85	0.001	0.0002	0.0005	5	0.0001	5.52	0.005	0.374	0.005	0.00005	0.00131	0.005	0.005	0.0005
W2	2015-10-20 15:00	155	340	6	7.77	208	1.2	0.5	93.5	0.005	0.097	0.019	19.8	1.9	0.35	0.00002	0.0085	0.00042	0.059	0.05	0.0001	0.001	40.9	0.00001	0.0005		0.00149	0.0693	0.00001	1.28	0.005	14.3	0.0042	0.0013	8.79	0.001	0.0002	0.0005	8.1	0.00011	6.41	0.005	0.412	0.005	0.00005	0.00128	0.005	0.005	0.0005
W2	2015-10-26 10:00	166	367	41.7	7.94	210	1	0.2	86	0.005	0.117	0.016	21.7	2.5	0.37	0.00002	0.0065	0.00038	0.0672	0.05	0.0001	0.001	46.6	0.00001	0.0005		0.00186	0.046	0.00001	1.39	0.005	15.3	0.0092	0.0013	10.1	0.0012	0.0002	0.0005	7.9	0.0001	6.8	0.005	0.467	0.005	0.00005	0.00169	0.005	0.005	0.0005
W2	2015-11-02 14:00			108.3	7.8			0.5	94.6																																								
W2	2015-11-02 14:00	180	394	108.3	7.8	248	2.4	0.5	94.6	0.005	0.153	0.019	26	2.4	0.35	0.00002	0.0093	0.0004	0.0691	0.05	0.0001	0.001	51.6	0.00001	0.0005		0.00187	0.0437	0.00001	1.6	0.005	17.1	0.0112	0.0015	11.3	0.0011	0.0002	0.0005	9.3	0.0001	7.26	0.005	0.498	0.005	0.00005	0.00192	0.005	0.005	0.0005
W2	2015-11-11 13:00	175	388	136.4	8.03	202	2.7	1	96	0.005	0.12	0.041	27.7	2.7	0.32	0.00002	0.0091	0.00025	0.0747	0.05	0.0001	0.001	45.7	0.00001	0.0005		0.00213	0.0362	0.00001	1.36	0.005	14.8	0.0156	0.0012	10.8	0.0012	0.0002	0.0005	8.7	0.00015	5.05	0.005	0.506	0.005	0.00005	0.00228	0.005	0.005	0.0005
W2	2016-03-31 11:15	215	473	137.5	8.41	273	14.7	0	101.5	0.001	0.0098	0.005	43.2	3.64		0.00001	0.0052	0.00053	0.0753	0.01	0.00002	0.00005	55.6	0.0000086	0.0001	0.0002	0.00399	0.024	0.000005	3.65	0.0023	23.2	0.0221	0.000947	15	0.00072	0.00005	0.0001	14.8	0.000251	8.78	0.0001	0.587	0.0003	0.00001	0.00172	0.0005	0.001	0.0003
W2	2016-04-04 15:30	134	295	103	8.18	160	22	0	97.4	0.001	0.005	0.005	16.4	1.6		0.00001	0.0083	0.00047	0.052	0.01	0.00002	0.00005	36.3	0.0000134	0.0001	0.00018	0.0055	0.062	0.0000057	2.92	0.0015	13.4	0.0217	0.000865	8.45	0.00086	0.00005	0.0001	5.72	0.000151	6.51	0.0001	0.315	0.00035	0.00001	0.000676	0.0005	0.0023	0.0003
W2	2016-04-08 11:10																																																
W2	2016-04-12 11:15	54.4	126	128.8	7.64	67	91.3	0.2	107.2	0.001	0.005	0.0182	5.28	0.94		0.00001	0.0597	0.00042	0.033	0.01	0.00002	0.00005	17.5	0.0000128	0.00015	0.00072	0.00796	0.17	0.0000156	1.49	0.001	5.3	0.0285	0.00046	3.56	0.00169	0.00005	0.0001	2.12	0.000105	3.97	0.0001	0.131	0.00111	0.00001	0.000168	0.00055	0.0017	0.00037
W2	2016-04-20 7:50																																																
W2	2016-04-21 10:50	85.3	199	127.6	7.96	106	8.7	0	112.4	0.001	0.0083	0.0111	12.1	1.69		0.00001	0.0232	0.00048	0.0414	0.01	0.00002	0.00005	25.5	0.0000068	0.0001	0.00031	0.00556	0.142	0.0000117	1.33	0.001	8.34	0.0055	0.000888	5.62	0.00145	0.00005	0.0001	4.39	0.00014	4.35	0.0001	0.209	0.00062	0.00001	0.000524	0.00061	0.0013	0.00032
W2	2016-04-27 8:15	94.9	227	140	7.95	122	4	0.2	99.5	0.001	0.0717	0.005	14.6	2.17		0.00001	0.0158	0.00049	0.0442	0.01	0.00002	0.00005	30.5	0.0000067	0.00012	0.00025	0.00433	0.189	0.0000073	1.37	0.0011	9.33	0.0113	0.00107	6.61	0.00119	0.00005	0.0001	5.09	0.000138	4.55	0.0001	0.243	0.00052	0.00001	0.000661	0.00073	0.0011	0.0003
W2	2016-05-03 9:30	106	241	105	8.09	129	3.3	0.7	99.4	0.001	0.0303	0.005	15	1.92		0.00001	0.0093	0.00048	0.0461	0.01	0.00002	0.00005	30.3	0.0000063	0.0001	0.00023	0.00296	0.157	0.000005	1.31	0.0011	9.83	0.00662	0.00112	6.68	0.0011	0.00005	0.0001	5.08	0.00011	4.53	0.0001	0.259	0.00039	0.00001	0.000742	0.0007	0.001	0.0003
W2	2016-05-07 13:35																																																
W2	2016-05-09 10:40			119	7.95			1.3	104.6																																								
W2	2016-05-11 8:50	106	235	120.6	7.9	127	10.7	0.4	97.72	0.001	0.02	0.0069	13.1	1.48		0.00001	0.0112	0.00055	0.0458	0.01	0.00002	0.00005	31.7	0.000005	0.0001	0.00028	0.0028	0.184	0.0000068	1.12	0.001	9.41	0.00876	0.00104	6.15	0.00132	0.00005	0.0001	4.61	0.000121	4.75	0.0001	0.245	0.00065	0.00001	0.000697	0.00073	0.0013	0.0003
W2	2016-05-16 8:05			155.2	7.7			1.3	93.3																																								

Attachment 3: Sitewide Database

		General Parameters								Anions & Nitrogen Species						Dissolved Elements																																	
Station	Date / Time	Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	N-NO$_2$	N-NO$_3$	N-NH$_3$	SO$_4$-D	Chlord	Fluord	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W2	2016-05-16 8:05	123	275	155.2	7.7	147	5.3	1.3	93.3	0.001	0.0862	0.005	15.6	1.69		0.00001	0.0098	0.00049	0.0506	0.01	0.00002	0.00005	35.4	0.000005	0.0001	0.0002	0.00218	0.128	0.000005	1.29	0.001	11	0.00422	0.00138	7.04	0.00097	0.00005	0.0001	5.38	0.000134	4.75	0.0001	0.303	0.00063	0.00001	0.000986	0.00064	0.001	0.0003
W2	2016-05-17 10:50			192.4	8			1.7	106.3																																								
W2	2016-05-25 8:55	124	274	135.1	7.95	152	20	2.1	95.2	0.0015	0.288	0.005	16.9	1.89		0.00001	0.0135	0.00057	0.0521	0.01	0.00002	0.00005	36.8	0.000005	0.0001	0.00022	0.00286	0.163	0.000005	1.32	0.001	11.8	0.0118	0.00164	7.87	0.00121	0.00005	0.0001	6.39	0.000186	4.86	0.0001	0.337	0.00054	0.00001	0.00116	0.00076	0.0018	0.0003
W2	2016-05-27 11:20																																																
W2	2016-06-03 11:15	143	306	132.4	8.04	176	6	3.8	86.5	0.0023	0.251	0.0057	21	2.13		0.00001	0.0078	0.00044	0.0602	0.01	0.00002	0.00005	41.4	0.000005	0.0001	0.00018	0.00229	0.058	0.000005	1.51	0.0013	13	0.00484	0.00169	9.83	0.00104	0.00005	0.0001	6.93	0.000167	5.22	0.0001	0.36	0.00033	0.00001	0.00135	0.00071	0.0027	0.0003
W2	2016-06-07 11:50	136	291	120.7	8.12	168	12.7	3.8	97.4	0.0012	0.2	0.0074	18.8	1.85		0.00001	0.0093	0.00052	0.0578	0.01	0.00002	0.00005	41.5	0.000005	0.0001	0.00023	0.00223	0.087	0.000005	1.43	0.001	12.7	0.00443	0.00163	8.9	0.00114	0.00005	0.0001	6.47	0.000143	5.41	0.0001	0.351	0.00051	0.00001	0.0013	0.00082	0.001	0.0003
W2	2016-06-09 16:16			103	7.96			6.4	97.5																																								
W2	2016-06-17 16:35	152	328	172.2	7.83	187	3.3	8.5	91.6	0.001	0.258	0.0071	22.2	2.24		0.00001	0.0063	0.00047	0.0652	0.01	0.00002	0.00005	44.9	0.000005	0.0001	0.00021	0.0024	0.036	0.000005	1.63	0.0014	14	0.0061	0.00168	10	0.00094	0.00005	0.0001	8.22	0.000164	5.5	0.0001	0.408	0.0003	0.00001	0.00155	0.00072	0.001	0.0003
W2	2016-06-18 8:20			125.1	7.84			6.6	91.1																																								
W2	2016-06-23 8:25			201.7	7.81			6.8	88.5																																								
W2	2016-06-23 8:25	158	344	201.7	7.81	196	8	6.8	88.5	0.0019	0.0987	0.005	23.9	2.3		0.00001	0.0049	0.00041	0.072	0.01	0.00002	0.00005	48	0.000005	0.0001	0.00019	0.00217	0.03	0.000005	1.78	0.0019	14.2	0.015	0.00133	9.97	0.00101	0.00005	0.0001	8.49	0.000152	5.66	0.0001	0.442	0.0003	0.00001	0.00167	0.00053	0.001	0.0003
W2	2016-06-28 13:52	144	341	90.8	7.9	189	3	8.9	84.9	0.001	0.103	0.0097	25.7	2.59		0.00001	0.0056	0.00037	0.0757	0.01	0.00002	0.00005	48.5	0.000005	0.0001	0.00018	0.00224	0.037	0.000005	1.68	0.0021	14.4	0.0194	0.0013	9.87	0.00105	0.00005	0.0001	8.81	0.000103	5.68	0.0001	0.455	0.0003	0.00001	0.00175	0.00053	0.0011	0.0003
W2	2016-07-07 14:20	167	351	122.5	7.95	198	3	8.2	93	0.001	0.0135	0.005	22.8	2.09		0.00001	0.0044	0.00038	0.0697	0.01	0.00002	0.00005	47.3	0.000005	0.0001	0.00017	0.00201	0.029	0.000005	1.61	0.0021	14.4	0.0102	0.00145	10.2	0.00094	0.00005	0.0001	7.78	0.000103	5.83	0.0001	0.45	0.0003	0.00001	0.0018	0.00057	0.0013	0.0003
W2	2016-07-12 9:10	167	342	132.2	8.02	199	3.3	7.7	90.6	0.001	0.0918	0.005	21.5	1.96		0.00001	0.0058	0.00043	0.0695	0.01	0.00002	0.00005	47.7	0.000005	0.0001	0.00021	0.00188	0.034	0.000005	1.71	0.0016	15.1	0.00841	0.00165	10.3	0.00095	0.00005	0.0001	7.7	0.000109	6	0.0001	0.464	0.0003	0.00001	0.00165	0.00065	0.001	0.0003
W2	2016-07-19 8:30			110	7.98			9	88.2																																								
W2	2016-07-19 8:30	170	360	110	7.98	206	3	9	88.2	0.001	0.0947	0.005	25.1	2.4		0.00001	0.004	0.00041	0.0742	0.01	0.00002	0.00005	49.4	0.000005	0.0001	0.00015	0.00183	0.036	0.000005	1.68	0.0021	14.8	0.0177	0.00131	10.2	0.00093	0.00005	0.0001	8.58	0.000103	5.98	0.0001	0.472	0.0003	0.00001	0.00178	0.00052	0.001	0.0003
W2	2016-07-25 10:50			107.8	8.11			7	89.6																																								
W2	2016-07-26 13:10	139	286	88.1	8.11	161	106	7.9	96.7	0.001	0.0632	0.0269	13.9	1.3		0.00001	0.0133	0.00068	0.0645	0.01	0.00002	0.00005	39.8	0.000005	0.0001	0.00035	0.00292	0.138	0.000005	1.03	0.001	12.2	0.00885	0.00118	8.99	0.00156	0.00005	0.0001	4.88	0.000123	6.14	0.0001	0.349	0.00081	0.00001	0.000954	0.00106	0.001	0.0003
W2	2016-08-02 10:55	167	349	127.7	7.94	199	3	7.7	97.7	0.001	0.188	0.0052	20.4	2.01		0.00001	0.0112	0.00057	0.0702	0.01	0.00002	0.00005	48.8	0.000005	0.0001	0.00021	0.00268	0.095	0.000005	1.5	0.0019	15.2	0.00749	0.00157	10.1	0.00101	0.00005	0.0001	6.95	0.000137	6.41	0.0001	0.457	0.00074	0.00001	0.00152	0.00076	0.0015	0.0003
W2	2016-08-09 11:30	173	345	152.6	8.03	198	6.7	9.2	91.5	0.001	0.225	0.005	18.3	1.89		0.00001	0.0086	0.00065	0.0726	0.01	0.00002	0.00005	47.2	0.000005	0.0001	0.00022	0.00246	0.148	0.000005	1.67	0.0016	14.3	0.0071	0.00157	9.7	0.00116	0.00005	0.0001	6.53	0.000162	6.05	0.0001	0.435	0.00038	0.00001	0.00133	0.00078	0.001	0.0003
W2	2016-08-15 11:10			114.6	7.86			7.6	96.9																																								
W2	2016-08-15 11:10	180	353			210	3			0.001	0.302	0.0069	21.3	2.14		0.00001	0.0068	0.0006	0.0679	0.01	0.00002	0.00005	50.6	0.000005	0.0001	0.00026	0.0023	0.158	0.000005	1.59	0.0018	15.3	0.00704	0.00156	10.1	0.00123	0.00005	0.0001	7.25	0.000167	6.36	0.0001	0.447	0.00039	0.00001	0.00145	0.00075	0.001	0.0003
W2	2016-08-17 7:50			118.1	8.06			7	97.9																																								
W2	2016-08-17 7:50	176	349	118.1	8.06	209	3	7	97.9	0.001	0.221	0.0061	21.1	2.1		0.00001	0.0063	0.00056	0.0662	0.01	0.00002	0.00005	52	0.000005	0.0001	0.00021	0.00204	0.15	0.000005	1.62	0.0016	16	0.00764	0.00151	9.75	0.00111	0.00005	0.0001	7.53	0.000168	6.51	0.0001	0.444	0.00031	0.00001	0.00153	0.00066	0.0017	0.0003
W2	2016-08-18 11:40			114.8	7.92			6.8	99.6																																								
W2	2016-08-23 13:05	179	357	126.1	8.2	210	3	7.1	99.5	0.001	0.258	0.0071	21.5	2.17		0.00001	0.0075	0.00059	0.0701	0.01	0.00002	0.00005	50.5	0.000005	0.0001	0.00026	0.0021	0.128	0.000005	1.55	0.0018	15.3	0.00701	0.00169	10.4	0.00101	0.00005	0.0001	7.32	0.00015	6.21	0.0001	0.463	0.00038	0.00001	0.00153	0.00072	0.0012	0.0003
W2	2016-08-31 10:00			146.2	7.67			6.2	106.1																																								
W2	2016-08-31 10:00	171	340	146.2	7.67	209	3	6.2	106.1	0.001	0.536	0.0052	22.7	2.42		0.00001	0.0083	0.00056	0.0674	0.01	0.00002	0.00005	51.2	0.000005	0.0001	0.00029	0.00267	0.15	0.000005	1.55	0.0016	14.8	0.00557	0.00177	11.3	0.00127	0.00005	0.0001	7.44	0.000209	6.03	0.0001	0.442	0.00039	0.00001	0.00125	0.00075	0.0013	0.0003
W2	2016-09-06 11:02			148.6	7.86			6.7	95.1																																								
W2	2016-09-06 11:02	144	304	148.6	7.86	178	11.6	6.7	95.1	0.0022	0.767	0.005	21.7	2.17		0.00001	0.0083	0.00055	0.0635	0.015	0.00002	0.00005	41	0.000005	0.0001	0.0003	0.0027	0.123	0.000005	1.43	0.001	12.4	0.00412	0.00197	9.21	0.0011	0.00005	0.0001	7.23	0.000207	5.3	0.0001	0.407	0.0004	0.00001	0.000864	0.00069	0.0075	0.0003
W2	2016-09-13 15:21			124.7	8.18			7.4	94																																								
W2	2016-09-13 15:21	154	320	124.7	8.18	188	6	7.4	94	0.0018	0.879	0.005	22.8	2.27		0.00001	0.0068	0.00047	0.0637	0.014	0.00002	0.00005	42.2	0.000005	0.0001	0.00017	0.00252	0.095	0.000005	1.52	0.001	13	0.00421	0.00167	9.5	0.00104	0.00005	0.0001	7.85	0.000292	5.23	0.0001	0.385	0.00033	0.00001	0.000839	0.0006	0.001	0.0003
W2	2016-09-20 15:25			127.6	8.15			4.4	95.4																																								
W2	2016-09-20 15:25	141	301	127.6	8.15	175	3	4.4	95.4	0.001	0.78	0.005	21.4	2.2		0.00001	0.0078	0.00042	0.0569	0.012	0.00002	0.00005	39.9	0.000005	0.0001	0.00019	0.00261	0.099	0.000005	1.43	0.001	12.7	0.00557	0.00162	9.01	0.00109	0.00005	0.0001	6.97	0.000193	5.06	0.0001	0.37	0.00034	0.00001	0.000898	0.00053	0.003	0.0003
W2	2016-09-27 11:40																																																
W2	2016-09-27 11:40	146	297	165	7.65	176	3	2.1	100.8	0.001	0.775	0.005	20.8	2.06		0.00001	0.0055	0.00042	0.0572	0.012	0.00002	0.00005	37.9	0.000005	0.0001	0.00021	0.00226	0.096	0.000005	1.38	0.0013	12.6	0.00471	0.00139	9.43	0.00102	0.00005	0.0001	7.2	0.000198	5.15	0.0001	0.353	0.0003	0.00001	0.000892	0.0005	0.001	0.0003
W2	2016-10-03 10:30	155	298	127.6	7.52	187	3	0	89.9	0.001	0.709	0.0054	21.8	2.14		0.00001	0.0052	0.00044	0.0598	0.012	0.00002	0.00005	42	0.0000053	0.0001	0.0002	0.00202	0.077	0.000005	1.54	0.001	13.3	0.00699	0.00143	9.82	0.00096	0.00005	0.0001	7.37	0.000219	5.59	0.0001	0.384	0.0003	0.00001	0.0011	0.0005	0.001	0.0003
W2	2016-10-12 7:10			104.9	7.91			-0.1	93.2																																								
W2	2016-10-12 7:10	173	371	104.9	7.91	219	4	-0.1	93.2	0.001	0.993	0.0054	31	3.08		0.00001	0.004	0.00032	0.0709	0.012	0.00002	0.00005	48.1	0.000005	0.0001	0.00016	0.00208	0.03	0.000005	1.65	0.002	16	0.00844	0.00145	11	0.00092	0.00005	0.0001	10.1	0.000257	5.6	0.0001	0.487	0.0003	0.00001	0.00163	0.0005	0.0017	0.0003
W2	2016-10-18 8:10			108.1	7.79			-0.1	89.4																																								
W2	2016-10-18 8:10	175	401	108.1	7.79	243	3	-0.1	89.4	0.0018	2.16	0.005	43.1	4.04		0.00001	0.0038	0.00035	0.0748	0.015	0.00002	0.00005	49.7	0.000005	0.0001	0.00012	0.00338	0.035	0.000005	2	0.001	17.3	0.00724	0.00194	12.3	0.00071	0.00005	0.0001	13.9	0.000526	5.25	0.0001	0.518	0.0003	0.00001	0.00165	0.0005	0.001	0.0003
W2	2016-10-23 17:10	176	404	115.5	7.87	245	3	0	90	0.0019	2.11	0.0055	43.3	4.06		0.00001	0.0034	0.00037	0.0737	0.015	0.00002	0.00005	51.3	0.000005	0.0001	0.00014	0.00317	0.03	0.000005	2.08	0.0015	17.7	0.00508	0.00201	11.7	0.00074	0.00005	0.0001	13.4	0.000524	5.29	0.0001	0.53	0.0003	0.00001	0.00166	0.0005	0.0012	0.0003
W2	2016-10-24 15:10	177	421			246	3.1			0.001	2.09	0.005	42.7	4.07		0.00001	0.004	0.0004	0.074	0.014	0.00002	0.00005	51.7	0.000005	0.0001	0.00014	0.00328	0.03	0.000005	2.02	0.0017	17.3	0.00441	0.00203	12.2	0.00078	0.00005	0.00011	14.6	0.000588	5.34	0.0001	0.534	0.0003	0.00001	0.00174	0.0005	0.0023	0.0003
W2	2016-10-31 15:30	180	383	70.4	8.29	220	3	0.4	96.6	0.001	0.666	0.0054	33.4	3.3		0.00001	0.0029	0.00026	0.0659	0.01	0.00002	0.00005	47.8	0.000005	0.0001	0.00012	0.00161	0.021	0.000005	1.57	0.0016	13.7	0.00902	0.00115	9.43	0.00074	0.00005	0.0001	10.1	0.000189	5.49	0.0001	0.492	0.0003	0.00001	0.00206	0.0005	0.001	0.0003
W2	2016-11-06 7:35			79.2	7.83			0.4	94.7																																								
W2	2016-11-06 7:35	179	373	79.2	7.83	219	3	0.4	94.7	0.001	0.497	0.005	31.5	3.12		0.00001	0.0028	0.00031	0.0751	0.01	0.00002	0.00005	47.5	0.000005	0.0001	0.00012	0.00172	0.026	0.000005	1.64	0.0015	14.8	0.0125	0.00113	10.5	0.00086	0.00005	0.0001	10.1	0.000168	5.82	0.0001	0.492	0.0003	0.00001	0.00214	0.0005	0.001	0.0003
W2	2017-04-10 14:10			63.1	7.87			3.2	129.7																																								
W2	2017-04-11 8:30	173	381	143.1	7.61	273	3	0	104.4	0.001	0.005	0.0074	36.3	3.16		0.00001	0.0108	0.00052	0.0578	0.01	0.00002	0.00005	39.7	0.0000172	0.0001	0.00017	0.00806	0.028	0.000005	3.78	0.0021	19.5	0.0178	0.00105	12.4	0.0007	0.00005	0.0001	11.5	0.00029	6.78	0.0001	0.411	0.0003	0.00001	0.00144	0.0005	0.0019	0.0003
W2	2017-04-16 16:20																																																
W2	2017-04-16 16:20	131	274	190.2	7.2	218	3	0	108.7	0.001	0.005	0.0054	17.5	2.19		0.00001	0.0162	0.00047	0.0499	0.01	0.00002	0.00005	33.9	0.0000185	0.0001	0.00023	0.00955	0.051	0.000005	3.06	0.0017	14.1	0.0251	0.000846	8.53	0.00096	0.00005	0.0001	6.61	0.00016	6.7	0.0001	0.321	0.00037	0.00001	0.000894	0.0005	0.0022	0.0003
W2	2017-04-18 15:10	169	337	147.2	7.64	256	3	0	104.8	0.001	0.005	0.0082	21.6	2.45		0.00001	0.0156	0.00054	0.061	0.01	0.00002	0.00005	41.2	0.0000161	0.00012	0.00027	0.00933	0.057	0.0000053	3.43	0.0021	17	0.0314	0.00104	10.1	0.00104	0.00005	0.0001	8.33	0.000254	8.09	0.0001	0.386	0.00035	0.00001	0.00128	0.0005	0.0017	0.0003
W2	2017-04-25 14:30	129	267	152.9	7.49	195	22.2	0	95	0.001	0.005	0.006	14.1	1.6		0.00001	0.0147	0.00044	0.0507	0.01	0.00002	0.00005	29.7	0.0000116	0.00015	0.00023	0.00777	0.071	0.000005	3.06	0.0019	13.6	0.0299	0.000955	8.84	0.00087	0.000123	0.0001	5.55	0.000182	5.46	0.0001	0.295	0.00044	0.00001	0.000883	0.0005	0.0034	0.0003
W2	2017-04-26 17:20																																																
W2	2017-04-27 16:55																																																
W2	2017-04-27 16:55	85.8	173	192.8	6.99	97.7	21.3	0.1	101	0.001	0.005	0.0089	7.41	1.27		0.00001	0.0201	0.00044	0.0415	0.01	0.00002	0.00005	21.9	0.0000135	0.00015	0.00024	0.00766	0.087	0.0000053	2.58	0.0014	7.95	0.0686	0.000526	4.91	0.00101	0.00005	0.0001	2.71	0.00011	4.25	0.0001	0.183	0.00083	0.00001	0.000458	0.0005	0.0032	0.0003
W2	2017-04-28 16:45																																																
W2	2017-04-29 15:10																																																
W2	2017-04-30 16:30			157.6	7.99				130																																								
W2	2017-04-30 16:30	65.4	145	157.6	7.99	143	24		130	0.001	0.005	0.014	5.76	1.31		0.00001	0.0604	0.00048	0.0393	0.01	0.00002	0.00005	20.3	0.0000217	0.00021	0.00034	0.0173	0.185	0.0000064	2.09	0.001	6.27	0.0785	0.000518	3.98	0.00135	0.000071	0.0001	2.12	0.000104	4.2	0.0001	0.156	0.00276	0.00001	0.000312	0.00064	0.003	0.0003
W2	2017-05-01 8:40	65.6	145	162	7.74	141	3.2	0.1	96.3	0.001	0.005	0.0093	5.89	1.34		0.00001	0.0409	0.00045	0.038	0.01	0.00002	0.00005	20	0.0000136	0.00017	0.00036	0.00995	0.166	0.0000057	1.86	0.001	6.21	0.0289	0.000452	3.86	0.00147	0.00005	0.0001	2.23	0.000102	4.12	0.0001	0.156	0.00083	0.00001	0.000273	0.00052	0.0037	0.00032
W2	2017-05-02 8:30	73.6	161	93.1	7.81	143	3	-0.1	99.6	0.001	0.005	0.0092	7.89	1.58		0.00001	0.0367	0.00047	0.039	0.01	0.00002	0.00005	21.3	0.000012	0.00015	0.00033	0.00863	0.137	0.0000062	1.9	0.001	6.66	0.0254	0.00053	4.25	0.00147	0.00005	0.0001	2.77	0.000114	4.24	0.0001	0.169	0.00077	0.00001	0.000331	0.00053	0.0013	0.00034
W2	2017-05-03 11:00																																																
W2	2017-05-05 15:15			161.9	7.1			1	99.7																																								
W2	2017-05-05 15:15			161.9	7.1		49.3	1	99.7																																								
W2	2017-05-09 8:20			136.6	7.36			0.4	102.3																																								
W2	2017-05-09 8:20	83.5	180	136.6	7.36	99.3	4.8	0.4	102.3	0.001	0.0265	0.0075	9.97	1.36		0.00001	0.0216	0.00052	0.0406	0.01	0.00002	0.00005	22.4	0.0000103	0.00014	0.00051	0.00615	0.164	0.000005	1.49	0.001	8.25	0.0197	0.000761	5.32	0.00153	0.00005	0.0001	3.49	0.000127	4.31	0.0001	0.199	0.00071	0.00001	0.00047	0.00064	0.0012	0.00034
W2	2017-05-16 10:40	98.6	207	115	7.69	120	6.7	1.5	104.3	0.001	0.0935	0.0062	13.6	1.69		0.00001	0.0173	0.00053	0.0463	0.01	0.00002	0.00005	28.4	0.0000104	0.00012	0.00033	0.00499	0.159	0.000005	1.34	0.001	8.85	0.0126	0.00106	6.26	0.00156	0.00005	0.0001	4.4	0.000155	4.56	0.0001	0.24	0.0006	0.00001	0.000635	0.00068	0.001	0.00031
W2	2017-05-24 10:05			145.1	7.58			1	95.3																																								
W2	2017-05-24 10:05	162	338	145.1	7.58	197	10	1	95.3	0.0013	0.136	0.0336	24.4	2.92		0.00001	0.0097	0.00072	0.0687	0.01	0.00002	0.00005	43.4	0.0000073	0.00014	0.00025	0.00305	0.338	0.000005	1.74	0.001	15.2	0.0336	0.00157	10.8	0.0013	0.00005	0.0001	8.6	0.000161	6.03	0.0001	0.417	0.00062	0.00001	0.00135	0.00096	0.001	0.0003
W2	2017-05-31 7:35			146.9	8.02			1.4	91.8																																								
W2	2017-05-31 7:35	119	269	146.9	8.02	147	3.4	1.4	91.8	0.0016	0.255	0.0052	19.8	2.08		0.00001	0.0133	0.00061	0.0534	0.011	0.00002	0.00005	30.6	0.0000056	0.00014	0.00024	0.00386	0.168	0.000005	1.35	0.0013	11.5	0.0492	0.00174	8.35	0.00129	0.00005	0.00011	6.89	0.000183	4.48	0.0001	0.309	0.00083	0.00001	0.00112	0.00107	0.001	0.0003
W2	2017-06-06 7:30			199.2	7.28			1	99.9																																								
W2	2017-06-06 7:30	111	242	199.2	7.28	139	144	1	99.9	0.0042	0.363	0.0348	19.8	2.16		0.00001	0.0166	0.0007	0.0537	0.01	0.00002	0.00005	29.2	0.000005	0.00018	0.0003	0.00463	0.272	0.000005	1.19	0.001	10.2	0.138	0.00166	7.83	0.00155	0.00005	0.0001	6.49	0.000178	4.38	0.0001	0.275	0.00114	0.00001	0.000929	0.00128	0.001	0.0003
W2	2017-06-13 13:55																																																
W2	2017-06-13 13:55	106	224	157.5	7.29	130	527	4.3	98.9	0.0036	0.365	0.0726	18.3	1.87		0.00001	0.0274	0.00077	0.0526	0.01	0.00002	0.00005	27.8	0.000005	0.00017	0.00035	0.00445	0.302	0.000005	0.95	0.001	8.91	0.0408	0.0014	7.02	0.0017	0.000055	0.00013	6.11	0.000239	4.61	0.0001	0.245	0.0014	0.00001	0.000861	0.00181	0.001	0.00037
W2	2017-06-20 14:10																																																
W2	2017-06-20 14:10	132	288	111	8.04	163	21.7	5.9	94.2	0.0011	0.31	0.01	21.6	1.89		0.00001	0.0178	0.00058	0.0621	0.01	0.00002	0.00005	36.3	0.000005	0.0001	0.00027	0.00347	0.097	0.000005	1.28	0.001	11.8	0.00536	0.0016	8.88	0.00137	0.00005	0.0001	6.9	0.000177	5.4	0.0001	0.341	0.00094	0.00001	0.00113	0.00115	0.001	0.0003
W2	2017-06-27 7:45																																																
W2	2017-06-27 7:45	150	319	113.6	7.96	183	7.4	6	87.7	0.0012	0.307	0.0133	24.8	2.1		0.00001	0.0079	0.00049	0.0662	0.01	0.00002	0.00005	40.8	0.000005	0.0001	0.00017	0.00276	0.055	0.000005	1.43	0.0014	13.1	0.00924	0.00163	9.38	0.00107	0.00005	0.0001	8.67	0.000205	5.63	0.0001	0.38	0.00035	0.00001	0.00142	0.00087	0.001	0.0003
W2	2017-07-04 7:40																																																
W2	2017-07-04 7:40	163	345	116.2	7.89	193	4.1	7.4	103	0.0013	0.184	0.0141	24.1	2.13		0.00001	0.0065	0.00046	0.0709	0.01	0.00002	0.00005	42.4	0.000005	0.0001	0.00012	0.00212	0.031	0.000005	1.6	0.001	14.1	0.017	0.00138	9.78	0.001	0.00005	0.0001	8.21	0.000196	5.77	0.0001	0.416	0.0003	0.00001	0.00171	0.00069	0.001	0.0003
W2	2017-07-11 8:10																																																
W2	2017-07-11 8:10	169	353	102.7	8.07	192	61.3	6.7	94	0.001	0.146	0.0097	21.8	1.73		0.00001	0.0105	0.00051	0.0659	0.01	0.00002	0.00005	39.3	0.000005	0.0001	0.00017	0.00245	0.05	0.000005	1.5	0.0013	15.2	0.022	0.00153	10.2	0.00103	0.00023	0.0001	7.33	0.000158	5.7	0.0001	0.394	0.00055	0.00001	0.00179	0.00084	0.0026	0.0003
W2	2017-07-18 9:35			282.9	7.41			7.8	79																																								
W2	2017-07-18 9:35	167	354	282.9	7.41	209	5.2	7.8	79	0.0047	0.171	0.0085	34.8	2.79		0.00001	0.0086	0.00039	0.0741	0.01	0.00002	0.00005	44.6	0.000005	0.0001	0.00015	0.0023	0.036	0.000005	1.55	0.0016	14.7	0.0214	0.00119	9.78	0.00103	0.00005	0.0001	8.57	0.000138	5.7	0.0001	0.443	0.0006	0.00001	0.00165	0.00058	0.0014	0.0003
W2	2017-07-27 11:30																																																
W2	2017-07-27 11:30	153	315	182.1	7.67	184	50.7	6.6	91.8	0.001	0.111	0.0113	19	1.46		0.00001	0.0102	0.00048	0.0604	0.01	0.00002	0.00005	43.1	0.000005	0.0001	0.00022	0.00229	0.061	0.000005	1.3	0.0017	15.1	0.00707	0.00153	10.6	0.0012	0.00005	0.0001	5.45	0.000173	5.93	0.0001	0.408	0.0003	0.00001	0.00155	0.00098	0.001	0.0003
W2	2017-08-01 9:50																																																
W2	2017-08-01 9:50	168	350	113.5	7.81	197	34.8	6.7	97.3	0.0012	0.196	0.0061	22.1	1.79		0.00001	0.0096	0.00062	0.0733	0.01	0.00002	0.00005	42.8	0.000005	0.0001	0.00043	0.00269	0.06	0.000005	1.51	0.0017	16	0.00643	0.00175	10.8	0.00131	0.00005	0.0001	7.18	0.000197	5.98	0.0001	0.435	0.0003	0.00001	0.00162	0.00103	0.001	0.0003
W2	2017-08-08 9:35																																																
W2	2017-08-08 9:35	144	348	149.7	7.81	185	4.7	8.3	90	0.001	0.148	0.007	26.1	2.39		0.00001	0.0071	0.00044	0.0739	0.01	0.00002	0.00005	42.9	0.000005	0.0001	0.00015	0.002	0.044	0.000005	1.63	0.0021	14.8	0.0171	0.00125	10.6	0.00097	0.00005	0.0001	8.67	0.000137	5.8	0.0001	0.433	0.0003	0.00001	0.00175	0.00067	0.001	0.0003
W2	2017-08-15 14:20	158	349	148.4	7.84	195	3	7.5	87	0.001	0.111	0.005	27.6	2.53		0.00001	0.0044	0.00035	0.0707	0.01	0.00002	0.00005	44.7	0.000005	0.0001	0.0001	0.0017	0.046	0.000005	1.62	0.002	13.7	0.0224	0.00117	9.75	0.00092	0.00005	0.0001	8.72	0.000132	5.76	0.0001	0.467	0.0003	0.00001	0.00216	0.0005	0.001	0.0003
W2	2017-08-22 14:50	177	358	161.4	7.94	204	3	7.4	94.9	0.001	0.11	0.005	23.4	1.95		0.00001	0.004	0.00039	0.0666	0.01	0.00002	0.00005	45.7	0.000005	0.0001	0.00011	0.00147	0.055	0.000005	1.46	0.0023	14.4	0.0126	0.00135	9.49	0.00082	0.00005	0.0001	7.94	0.00013	5.65	0.0001	0.452	0.0003	0.00001	0.00192	0.00055	0.001	0.0003
W2	2017-08-23 15:20	178	366			207	3			0.001	0.103	0.005	24	2.06		0.00001	0.0099	0.00047	0.0735	0.01	0.00002	0.00005	46	0.000005	0.0001	0.00018	0.00225	0.067	0.000005	1.68	0.002	15.5	0.0155	0.00142	10.5	0.00089	0.00005	0.0001	8.08	0.000155	5.87	0.0001	0.47	0.00042	0.00001	0.00189	0.00068	0.001	0.0003
W2	2017-08-29 10:50																																																
W2	2017-08-29 10:50	172	353	172.6	7.9	203	3	6.3	97.4	0.001	0.0768	0.005	24.4	2.08		0.00001	0.0073	0.00042	0.0697	0.01	0.00002	0.00005	46.4	0.000005	0.0001	0.00016	0.00167	0.074	0.000005	1.56	0.0017	15.4	0.0203	0.00133	10.2	0.00092	0.00005	0.0001	8.55	0.000133	5.91	0.0001	0.475	0.0003	0.00001	0.002	0.00058	0.001	0.0003
W2	2017-09-05 9:10	183	375	158.7	7.51	210	8.7	6.2	91.7	0.001	0.0286	0.0091	24.4	2.14		0.00001	0.0034	0.00041	0.075	0.01	0.00002	0.00005	46.1	0.0000051	0.0001	0.00015	0.00166	0.052	0.000005	1.86	0.0018	15.6	0.0167	0.00139	10.3	0.00089	0.00005	0.0001	8.01	0.000116	5.93	0.0001	0.484	0.0003	0.00001	0.00195	0.00059	0.001	0.0003
W2	2017-09-05 10:10			158.7	7.51			6.2	91.7																																								
W2	2017-09-12 15:23	167	336	189.2	7.44	191	3	3.8	110.2	0.001	0.0249	0.005	19.7	1.63		0.00001	0.0049	0.00048	0.0607	0.01	0.00002	0.00005	43	0.000005	0.0001	0.00019	0.00165	0.052	0.000005	1.46	0.0016	14.5	0.00785	0.00149	9.79	0.00096	0.00005	0.0001	7.08	0.000144	6.14	0.0001	0.44	0.0003	0.00001	0.00168	0.00064	0.001	0.0003
W2	2017-09-12 18:23																																																
W2	2017-09-19 8:30			231.9	6.99			3.9	90.7																																								
W2	2017-09-19 8:30	181	346	231.9	6.99	202	3.6	3.9	90.7	0.001	0.0141	0.005	22.5	1.91		0.00001	0.0047	0.0004	0.0671	0.01	0.00002	0.00005	43.2	0.000005	0.0001	0.00018	0.00163	0.046	0.000005	1.55	0.0014	15.2	0.0122	0.00133	9.48	0.0009	0.00005	0.0001	7.52	0.000114	5.91	0.0001	0.448	0.0003	0.00001	0.0018	0.0005	0.001	0.0003
W2	2017-09-26 9:45			192.6	7.6			1.3	87.4																																								
W2	2017-09-26 9:45	175	348	192.6	7.6	200	5	1.3	87.4	0.001	0.012	0.005	21.6	1.83		0.00001	0.004	0.00041	0.0705	0.01	0.00002	0.00005	42.6	0.000005	0.0001	0.0002	0.00188	0.05	0.000005	1.78	0.0016	16.4	0.0135	0.00136	10.9	0.00106	0.00005	0.0001	7.4	0.000116	6.25	0.0001	0.434	0.0003	0.00001	0.00176	0.00051	0.0052	0.0003
W2	2017-10-03 13:40	174	358	192.5	7.47	199	23.9	0.8	100.8	0.001	0.0162	0.005	22	1.9		0.00001	0.0045	0.00036	0.0685	0.01	0.00002	0.00005	43.9	0.0000051	0.0001	0.00013	0.0017	0.06	0.000005	1.56	0.0015	15.5	0.0184	0.0013	10.1	0.00103	0.00005	0.0001	7.43	0.000074	6.28	0.0001	0.465	0.0003	0.00001	0.00212	0.0005	0.0016	0.0003
W2	2017-10-04 7:20			184.7	7.41			2	108.5																																								
W2	2017-10-04 7:20	173	339	184.7	7.41	195	3	2	108.5	0.001	0.0514	0.005	21.2	1.98		0.00001	0.0044	0.00039	0.0622	0.01	0.00002	0.00005	41.9	0.000005	0.0001	0.00018	0.0016	0.053	0.000005	1.56	0.0016	14.4	0.00829	0.00137	9.98	0.00083	0.00005	0.0001	7.35	0.000087	6.07	0.0001	0.442	0.0003	0.00001	0.00169	0.0005	0.001	0.0003
W2	2017-10-11 8:15			193	7.53			0	96																																								
W2	2017-10-11 8:15	177	346	193	7.53	205	3	0	96	0.001	0.0785	0.005	22.4	2.04		0.00001	0.0032	0.00043	0.0615	0.01	0.00002	0.00005	46.4	0.000005	0.0001	0.00014	0.00145	0.074	0.000005	1.56	0.0017	15.8	0.00798	0.0013	10.3	0.00086	0.00005	0.0001	7.98	0.000094	6.22	0.0001	0.459	0.0003	0.00001	0.00172	0.0005	0.001	0.0003
W2	2017-10-17 14:45			203.3	7.52			0	88.9																																								
W2	2017-10-17 14:45	178	351	203.3	7.52	208	3	0	88.9	0.001	0.126	0.005	23.7	1.99		0.00001	0.0029	0.00035	0.06	0.01	0.00002	0.00005	47.6	0.000005	0.0001	0.00012	0.00147	0.036	0.000005	1.58	0.0024	15.3	0.0105	0.00126	10.7	0.00081	0.00005	0.0001	7.89	0.00008	6.07	0.0001	0.491	0.0003	0.00001	0.00208	0.0005	0.0012	0.0003
W2	2017-10-24 9:40			195	7.86			0	86.7																																								
W2	2017-10-24 9:40	180	365	195	7.86	220	52.4	0	86.7	0.001	0.11	0.005	27.1	2.39	0.351	0.00001	0.0046	0.00035	0.0687	0.01	0.00002	0.00005	51.3	0.0000134	0.0001	0.0001	0.00263	0.033	0.000005	1.75	0.0024	17.4	0.0114	0.00109	11.2	0.00096	0.00005	0.0001	8.49	0.000083	6.03	0.0001	0.481	0.0003	0.00001	0.00203	0.0005	0.0058	0.0003
W2	2018-04-10 16:40	153	402	190.6	8.18	237	95.3	0.3	97	0.0014	0.179	0.0071	23.6	39.2		0.00001	0.0167	0.00083	0.0844	0.022	0.00002	0.00005	52.5	0.0000075	0.00011	0.00027	0.0184	0.03	0.000005	5.49	0.0217	12.3	0.0454	0.00219	11	0.00064	0.00005	0.00019	8.74	0.000346	4.37	0.0001	0.557	0.00155	0.00001	0.00218	0.0008	0.0012	0.0003
W2	2018-04-17 13:25	242	508	178.9	8.06	319	3	0.2	126.3	0.001	0.005	0.005	51.8	3.93		0.00001	0.0101	0.00055	0.0869	0.01	0.00002	0.00005	67	0.0000097	0.0001	0.00023	0.0101	0.018	0.000005	4.7	0.0041	27.6	0.0251	0.00127	19.1	0.00072	0.00005	0.0001	16.8	0.000285	9.51	0.0001	0.666	0.00045	0.00001	0.00208	0.0005	0.001	0.0003

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species						Dissolved Elements																																	
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N-NO_2$	$N-NO_3$	$N-NH_3$	SO_4-D	Chlord	Fluord	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W2	2018-04-24 14:15	128	262	186.2	7.8	156	181	0	60.5	0.001	0.005	0.0103	22	1.83		0.00001	0.0144	0.00034	0.0416	0.01	0.00002	0.00005	31	0.0000145	0.0001	0.00017	0.00975	0.039	0.000005	2.95	0.0016	12.9	0.0186	0.000767	8.68	0.00056	0.00005	0.0001	7.03	0.000182	4.84	0.0001	0.317	0.00114	0.00001	0.000878	0.0005	0.0013	0.0003
W2	2018-05-01 14:35	48.9	110	228.9	7.53	61.8	40.3	0	101.9	0.001	0.005	0.0162	4.7	0.99		0.00001	0.0736	0.00044	0.0303	0.01	0.00002	0.00005	16.7	0.0000141	0.00016	0.00039	0.0134	0.126	0.0000084	1.82	0.001	4.87	0.0467	0.000403	3.1	0.00151	0.00005	0.0001	1.82	0.000082	3.15	0.0001	0.119	0.00219	0.00001	0.000139	0.00061	0.0035	0.00044
W2	2018-05-07 7:25			229.4	6.83			0.1	132.5																																								
W2	2018-05-07 7:25	47.7	104	229.4	6.83	58.1	30.9	0.1	132.5	0.001	0.005	0.012	4.51	0.89		0.00001	0.0578	0.00047	0.0277	0.01	0.00002	0.00005	15	0.0000083	0.00016	0.00039	0.00896	0.183	0.0000064	1.35	0.001	4.49	0.0222	0.000382	2.93	0.0016	0.00005	0.0001	1.54	0.000087	3.14	0.0001	0.107	0.00132	0.00001	0.000133	0.00064	0.0012	0.00037
W2	2018-05-15 8:50			122.9	8.1			0.5	105.8																																								
W2	2018-05-15 8:50	91.1	194	122.9	8.1	108	3	0.5	105.8	0.001	0.005	0.0102	10.8	1.25	0.245	0.00001	0.0241	0.00054	0.0414	0.01	0.00002	0.00005	25.8	0.0000084	0.00014	0.00033	0.0057	0.153	0.000005	1.21	0.001	8.74	0.0123	0.000798	5.55	0.00164	0.00005	0.0001	3.56	0.000147	4.28	0.0001	0.22	0.00111	0.00001	0.000561	0.00074	0.001	0.00036
W2	2018-05-17 16:40	96.7	203	150.2	8.15	111	10.6	3.8	109.1	0.001	0.005	0.0082	11.2	1.15		0.00001	0.023	0.0006	0.0421	0.01	0.00002	0.00005	23.5	0.0000104	0.00011	0.00032	0.00477	0.229	0.000005	1.28	0.001	9.08	0.0169	0.000865	6.33	0.00145	0.00005	0.0001	4.2	0.000124	4.53	0.0001	0.228	0.00097	0.00001	0.000662	0.00104	0.001	0.00033
W2	2018-05-22 14:00			151.9	8.25			3.5	99																																								
W2	2018-05-22 14:00	117	242	151.9	8.25	140	3.1	3.5	99	0.001	0.025	0.0053	15.7	1.4		0.00001	0.0118	0.00051	0.053	0.01	0.00002	0.00005	31.4	0.0000066	0.0001	0.00019	0.0035	0.064	0.000005	1.56	0.0012	11.5	0.00437	0.00114	8.23	0.00103	0.00005	0.0001	4.97	0.0001	4.55	0.0001	0.326	0.00046	0.00001	0.00102	0.00075	0.001	0.0003
W2	2018-05-29 14:30			179.3	8.22			3.2	97.5																																								
W2	2018-05-29 14:30	128	262	179.3	8.22	150	3	3.2	97.5	0.001	0.005	0.005	17.3	1.47		0.00001	0.008	0.00047	0.0516	0.01	0.00002	0.00005	32.8	0.000005	0.0001	0.0002	0.00316	0.044	0.000005	1.51	0.0013	11.8	0.00276	0.00136	8.3	0.00094	0.00005	0.0001	6.21	0.000124	4.87	0.0001	0.333	0.00034	0.00001	0.00132	0.00072	0.001	0.0003
W2	2018-06-05 14:45	116	257	199	8.01	139	7.7	4.2	62	0.001	0.0145	0.005	16.3	1.47		0.00001	0.0152	0.00058	0.0527	0.01	0.00002	0.00005	30.7	0.000006	0.0001	0.00023	0.00339	0.101	0.000005	1.27	0.0012	11.2	0.00974	0.00131	8.13	0.00134	0.00005	0.0001	4.9	0.000146	4.55	0.0001	0.306	0.0009	0.00001	0.00117	0.00087	0.0021	0.0003
W2	2018-06-12 13:30			160.4	8.42			2.8	113.6																																								
W2	2018-06-12 13:30	142	315	160.4	8.42	170	5.6	2.8	113.6	0.002	0.165	0.0065	19.9	0.79		0.00001	0.0065	0.00055	0.0604	0.01	0.00002	0.00005	38.1	0.0000056	0.0001	0.00012	0.00328	0.057	0.0000151	1.52	0.0014	14.2	0.00442	0.00197	9.85	0.00119	0.00005	0.0001	7.93	0.000161	4.86	0.0001	0.374	0.00043	0.00001	0.00165	0.0007	0.001	0.0003
W2	2018-06-19 14:10	154	330	176.7	7.97	194	3	6.7	102.8	0.0017	0.247	0.0065	28.2	2.46		0.00001	0.005	0.00047	0.0674	0.01	0.00002	0.00005	41.8	0.000005	0.0001	0.0001	0.00282	0.044	0.000005	1.75	0.0016	15.3	0.00403	0.00209	10.7	0.00099	0.00005	0.0001	8.42	0.000204	4.41	0.0001	0.433	0.00034	0.00001	0.0021	0.00068	0.001	0.0003
W2	2018-06-24 15:55			165	7.98			5.8	102.9																																								
W2	2018-06-26 15:40	136	321	210.6	8.03	173	24.7	4.8	94.9	0.0029	0.381	0.0076	25.8	2.07		0.00001	0.0095	0.00054	0.065	0.01	0.00002	0.00005	37.1	0.000005	0.0001	0.00025	0.00356	0.069	0.000005	1.52	0.0024	13.8	0.00637	0.00215	9.6	0.00118	0.00005	0.00011	8.75	0.000238	4.83	0.0001	0.393	0.00065	0.00001	0.00151	0.00096	0.0023	0.0003
W2	2018-07-03 9:50	146	307	173.6	7.98	177	17.7	6.1	70	0.0014	0.205	0.0077	24.8	1.83		0.00001	0.0111	0.00054	0.0672	0.01	0.00002	0.00005	36.7	0.000005	0.0001	0.00023	0.00356	0.074	0.000005	1.49	0.0014	13.8	0.00367	0.00178	9.52	0.00126	0.00005	0.0001	8.24	0.000158	5.48	0.0001	0.378	0.00052	0.00001	0.00137	0.00093	0.001	0.0003
W2	2018-08-11 15:45	162	348	191.5	7.98	197	4.4	6.1	88.1	0.001	0.175	0.005	25.2	1.83		0.00001	0.0077	0.00054	0.0666	0.01	0.00002	0.00005	43.7	0.000005	0.0001	0.00022	0.00257	0.049	0.000005	1.35	0.0015	16	0.00377	0.0019	10.6	0.00099	0.00005	0.0001	7.83	0.000153	5.56	0.0001	0.452	0.00045	0.00001	0.00155	0.00076	0.001	0.0003
W2	2018-08-14 11:45	168	370	170.3	7.92	204	3	6.9	92	0.001	0.0878	0.0074	25.3	1.96		0.00001	0.0044	0.00044	0.0752	0.01	0.00002	0.00005	47	0.000005	0.0001	0.0001	0.00211	0.03	0.000005	1.61	0.0018	16.5	0.00929	0.0014	10.8	0.00096	0.00005	0.0001	8.34	0.000146	5.7	0.0001	0.48	0.0003	0.00001	0.00175	0.00063	0.001	0.0003
W2	2018-08-18 15:05			200.4	7.89			5	111.6																																								
W2	2018-08-26 9:10	164	329	120.1	7.88	187	3	3.6	108.2	0.001	0.0605	0.005	18.8	1.32		0.00001	0.0058	0.00051	0.0613	0.01	0.00002	0.00005	42.2	0.0000078	0.0001	0.00024	0.00216	0.073	0.000005	1.35	0.0015	14.9	0.00393	0.0015	9.96	0.00112	0.00005	0.0001	6.15	0.000133	5.87	0.0001	0.434	0.00058	0.00001	0.00165	0.00066	0.001	0.0003
W2	2018-08-28 14:30	161	324	133.3	8.07	188	14.2	11.7	106.7	0.001	0.065	0.005	22.1	1.62		0.00001	0.0072	0.00051	0.0668	0.01	0.00002	0.00005	42	0.000005	0.0001	0.00023	0.00267	0.057	0.000005	1.35	0.0015	14.7	0.00371	0.00158	9.9	0.00088	0.00005	0.0001	7.06	0.000141	5.42	0.0001	0.412	0.0006	0.00001	0.00149	0.00066	0.001	0.0003
W2	2018-09-04 10:45			142	7.81			3.5	92.7																																								
W2	2018-09-04 10:45	169	351	142	7.81	195	3	3.5	92.7	0.001	0.0791	0.005	23.7	1.9		0.00001	0.0104	0.00039	0.0634	0.01	0.00002	0.00005	42.1	0.000005	0.0001	0.0002	0.00289	0.054	0.000005	1.41	0.0017	14	0.00784	0.00134	9.81	0.00153	0.00005	0.0001	7.35	0.000142	5.5	0.0001	0.415	0.00092	0.00001	0.00185	0.00058	0.001	0.0003
W2	2018-09-10 10:15	179	360	152.2	7.98	206	3	2.2	95	0.001	0.0659	0.005	25.3	2.04		0.00001	0.0038	0.00034	0.0648	0.01	0.00002	0.00005	45.6	0.0000058	0.0001	0.00017	0.00174	0.036	0.000005	1.52	0.002	13.9	0.00941	0.00137	9.98	0.00087	0.00005	0.0001	7.89	0.000159	5.19	0.0001	0.49	0.0003	0.00001	0.00198	0.0005	0.001	0.0003
W2	2018-09-18 14:45	174	356	165.4	7.74	199	3	0.5	94.9	0.001	0.005	0.005	23.4	1.91		0.00001	0.0072	0.00037	0.0616	0.01	0.00002	0.00005	43.1	0.000005	0.0001	0.00021	0.00201	0.054	0.000005	1.42	0.0017	14.6	0.00951	0.00123	9.81	0.00096	0.00005	0.0001	7.87	0.000111	6.06	0.0001	0.446	0.00035	0.00001	0.00167	0.0005	0.001	0.0003
W2	2018-09-25 14:30	163	349	224.3	8.12	192	4.2	1.5	102.3	0.001	0.005	0.005	23.9	1.88		0.00001	0.0038	0.00034	0.0611	0.01	0.00002	0.00005	42.5	0.000005	0.0001	0.0001	0.00163	0.032	0.000005	1.57	0.0018	14.7	0.00662	0.00133	9.54	0.00083	0.00005	0.0001	7.67	0.000115	5.66	0.0001	0.426	0.0003	0.00001	0.0018	0.0005	0.001	0.0003
W2	2019-04-09 13:40	306	624	145.4	8.33	364	3	0.1	96.8	0.001	0.005	0.0076	55.6	4.11		0.00001	0.0041	0.00063	0.0904	0.01	0.00002	0.00005	62.7	0.0000052	0.0001	0.00035	0.00257	0.019	0.000005	4.76	0.0043	31.5	0.00981	0.00208	21.5	0.0006	0.00005	0.0001	17.9	0.000537	9.87	0.0001	0.771	0.0003	0.00001	0.00469	0.00053	0.001	0.0003
W2	2019-04-16 9:40	189	386	164.6	7.88	220	3	0	132.3	0.001	0.005	0.005	23.1	1.77		0.00001	0.0062	0.00042	0.0602	0.01	0.00002	0.00005	46	0.000007	0.0001	0.00019	0.00211	0.028	0.000005	3.04	0.0024	20.6	0.0114	0.00147	12.2	0.00053	0.00005	0.0001	8.46	0.000219	7.11	0.0001	0.517	0.0003	0.00001	0.00184	0.00051	0.001	0.0003
W2	2019-04-23 8:40	133	273	144.3	8.04	149	3	0.1	111.4	0.001	0.005	0.0052	15.4	1.42		0.00001	0.0051	0.0004	0.0496	0.01	0.00002	0.00005	31	0.000005	0.0001	0.00017	0.00246	0.042	0.000005	2.79	0.0015	11.3	0.0108	0.000992	7.38	0.0005	0.00005	0.0001	5.23	0.000204	5.37	0.0001	0.303	0.0003	0.00001	0.00112	0.0005	0.001	0.0003
W2	2019-04-30 8:35	152	307	251.7	7.48	177	3	0	110.3	0.001	0.005	0.005	18.8	1.42		0.00001	0.0047	0.00043	0.0525	0.01	0.00002	0.00005	37.6	0.000005	0.0001	0.00017	0.00194	0.028	0.000005	2.31	0.002	16	0.00258	0.00119	9.41	0.00055	0.00005	0.0001	7.05	0.000238	5.78	0.0001	0.384	0.0003	0.00001	0.00135	0.0005	0.001	0.0003
W2	2019-05-07 10:30	122	262	243.8	8	140	3	0.7	100	0.001	0.005	0.005	14.4	1.22		0.00001	0.012	0.00046	0.0438	0.01	0.00002	0.00005	30.1	0.0000065	0.0001	0.00016	0.00707	0.075	0.000005	1.71	0.0013	11.5	0.00271	0.00103	7.26	0.00059	0.00005	0.0001	5.32	0.000153	5.23	0.0001	0.308	0.0009	0.00001	0.00118	0.00056	0.001	0.0003
W2	2019-05-14 8:55	114	235	243.5	7.68	176	3.2	0.2	96.9	0.001	0.005	0.0061	12.8	1.35		0.00001	0.0063	0.00042	0.043	0.01	0.00002	0.00005	27.1	0.000005	0.0001	0.00018	0.00259	0.055	0.000005	1.34	0.0011	10.2	0.0012	0.00101	6.22	0.00081	0.00005	0.0001	4.33	0.000121	4.52	0.0001	0.281	0.0003	0.00001	0.000895	0.0005	0.001	0.0003
W2	2019-05-21 8:00	116	223	221.2	7.96	132	3.8	1.2	112	0.001	0.005	0.005	12.3	1.15		0.00001	0.005	0.00038	0.0401	0.01	0.00002	0.00005	30.8	0.000005	0.0001	0.00016	0.0021	0.042	0.000005	1.25	0.001	10.4	0.00125	0.00109	6.41	0.00074	0.00005	0.0001	4.23	0.000089	3.89	0.0001	0.302	0.0003	0.00001	0.000912	0.0005	0.001	0.0003
W2	2019-05-28 8:05	123	269	198.5	7.8	159	3	3	98.8	0.001	0.005	0.0053	14.4	1.31		0.00001	0.005	0.00042	0.0473	0.01	0.00002	0.00005	30.2	0.000005	0.0001	0.00014	0.00192	0.057	0.000005	1.42	0.0011	11.7	0.0018	0.00135	7.43	0.00068	0.00005	0.0001	4.8	0.000129	4.17	0.0001	0.334	0.0003	0.00001	0.00114	0.00055	0.001	0.0003
W2	2019-06-04 9:45	87.3	183	144.1	7.79	100	75.7	0.7	96.3	0.001	0.0165	0.0174	8.64	0.99		0.00001	0.0227	0.00061	0.0378	0.01	0.00002	0.00005	23.1	0.0000051	0.00014	0.00037	0.00405	0.187	0.000005	0.72	0.001	8.23	0.024	0.000962	5.93	0.00161	0.00005	0.0001	3.35	0.000166	5.1	0.0001	0.221	0.00109	0.00001	0.000643	0.00103	0.001	0.00037
W2	2019-06-11 8:30	135	279	188.5	6.95	158	8.8	3.5	106.4	0.0032	0.0703	0.0108	18.6	1.63		0.00001	0.0078	0.00048	0.0505	0.01	0.00002	0.00005	34.9	0.0000135	0.0001	0.00021	0.00233	0.058	0.000005	1.15	0.0013	12.1	0.00475	0.00163	8.29	0.00093	0.00005	0.0001	6.21	0.000168	5.25	0.0001	0.377	0.00046	0.00001	0.00143	0.00066	0.0012	0.0003
W2	2019-06-18 7:45	159	329	201.1	7.65	185	6.7	6.2	87.5	0.001	0.0987	0.0075	21.5	1.75		0.00001	0.0059	0.00045	0.0633	0.01	0.00002	0.00005	41	0.0000073	0.0001	0.00016	0.00191	0.018	0.000005	1.35	0.0016	13.9	0.00501	0.00178	9.62	0.00083	0.00005	0.0001	7.91	0.000137	5.59	0.0001	0.434	0.0003	0.00001	0.00181	0.00057	0.001	0.0003
W2	2020-04-20 8:35	114	259	114.7	7.75	192	34.2	0.1	100.9	0.001	0.005	0.0055	24.9	2.17		0.00001	0.0178	0.00044	0.0408	0.01	0.00002	0.00005	34.6	0.0000198	0.0001	0.0001	0.00708	0.042	0.000005	3.35	0.0015	15.2	0.0105	0.000718	9.77	0.00066	0.00005	0.0001	7.82	0.000132	4.56	0.0001	0.324	0.00116	0.00001	0.000505	0.0005	0.0015	0.0002
W2	2020-04-28 6:35			149.6	7.63			0	95.25																																								
W2	2020-04-28 6:35	55.9	145	149.6	7.63	144	3.2	0	95.25	0.001	0.005	0.0129	6.16	1.21		0.00001	0.0846	0.00054	0.0343	0.01	0.00002	0.00005	19.8	0.0000287	0.00012	0.00048	0.013	0.177	0.0000108	1.67	0.001	7	0.00921	0.000444	3.87	0.00175	0.00005	0.0001	2.61	0.00016	4.32	0.0001	0.157	0.00276	0.00001	0.000206	0.00055	0.0034	0.00059
W2	2020-05-05 5:55			199.4	7.01			0	98.5																																								
W2	2020-05-05 5:55	35.1	73.1	199.4	7.01	53.7	44.9	0	98.5	0.001	0.0115	0.011	2.38	0.45		0.00001	0.105	0.00049	0.0267	0.01	0.00002	0.00005	12.2	0.0000119	0.00013	0.00053	0.0115	0.213	0.0000117	1.01	0.001	3.58	0.00567	0.000247	2.06	0.00168	0.000125	0.0001	0.9	0.000104	2.93	0.0001	0.0817	0.00158	0.00001	0.000088	0.00058	0.0026	0.0006
W2	2020-05-12 6:00			142.9	8			0.2	93.4																																								
W2	2020-05-12 6:00	77.1	158	142.9	8	130	5.5	0.2	93.4	0.001	0.005	0.0128	8.34	1.03		0.00001	0.03	0.00055	0.0363	0.01	0.00002	0.00005	20.8	0.0000101	0.00011	0.00041	0.00636	0.144	0.000005	1.03	0.001	7.19	0.00358	0.000707	4.98	0.00152	0.00005	0.0001	3.18	0.000161	4.06	0.0001	0.191	0.00089	0.00001	0.000373	0.00076	0.001	0.00043
W2	2020-05-19 5:05			131.5	7.99			0.5	82																																								
W2	2020-05-19 17:05	113	236	131.5	7.99	164	3	0.5	82	0.001	0.005	0.005	15.9	1.5		0.00001	0.0184	0.00049	0.045	0.01	0.00002	0.00005	29.5	0.000005	0.0001	0.00026	0.00498	0.086	0.000005	1.28	0.0011	11.7	0.00185	0.00109	8.33	0.00114	0.00006	0.0001	5.42	0.000119	4.86	0.0001	0.295	0.00125	0.00001	0.000876	0.00071	0.0013	0.00023
W2	2020-05-25 8:05	116	251	134.4	8.01	158	3	3.2	80	0.001	0.0183	0.0092	16.3	1.48		0.00001	0.0082	0.00047	0.0454	0.01	0.00002	0.00005	28.8	0.0000069	0.0001	0.00016	0.00246	0.074	0.000005	1.3	0.0012	11.2	0.00141	0.00125	7.78	0.00084	0.00005	0.0001	5.57	0.000141	4.25	0.0001	0.311	0.00037	0.00001	0.00118	0.00062	0.001	0.0002
W2	2020-06-01 8:10	125	276	155.8	6.98	175	3	1.2	92.3	0.001	0.005	0.005	18.9	1.54		0.00001	0.0078	0.00054	0.0475	0.01	0.00002	0.00005	33.3	0.000005	0.0001	0.00021	0.00285	0.076	0.000005	1.29	0.0013	12.3	0.00191	0.00134	8.46	0.00101	0.00005	0.0001	6.32	0.000157	4.75	0.0001	0.329	0.0004	0.00001	0.00124	0.00066	0.001	0.0002
W2	2020-06-08 15:35	129	279	196.3	8.03	180	3	4.1	87.7	0.001	0.0099	0.005	18.9	1.5		0.00001	0.0069	0.00054	0.0491	0.01	0.00002	0.00005	34.3		0.0001	0.00025	0.00288	0.074	0.000005	1.18	0.0012	11.9	0.00174	0.00151	8.82	0.00106	0.00005	0.0001	6.3	0.000191	4.83	0.0001	0.347	0.0004	0.00001	0.00132	0.00077	0.001	0.0002
W2	2020-06-11 15:05	138	300	193.7	7.94	187	3	4.6	89.8	0.001	0.005	0.005	20.6	1.64		0.00001	0.0058	0.00045	0.0483	0.01	0.00002	0.00005	36.1	0.000005	0.0001	0.00018	0.00221	0.053	0.000005	1.13	0.0013	12.4	0.00166	0.00153	8.51	0.00087	0.00005	0.0001	6.78	0.000205	4.83	0.0001	0.356	0.00031	0.00001	0.00143	0.00064	0.001	0.0002
W2	2020-06-15 8:20	152	324	147.2	8.08	200	3	4.8	74.5	0.001	0.0388	0.005	22.5	1.93		0.00001	0.0052	0.00049	0.0539	0.01	0.00002	0.00005	39.8	0.000005	0.0001	0.00015	0.00182	0.046	0.000005	1.2	0.0014	13	0.00182	0.00169	8.88	0.00076	0.00005	0.0001	7.34	0.00021	4.68	0.0001	0.394	0.0003	0.00001	0.0017	0.0006	0.001	0.0002
W2	2020-06-22 8:35	144	317	135.2	7.74	194	3	3.3	86.4	0.001	0.0677	0.007	19.7	1.52		0.00001	0.0058	0.00048	0.054	0.01	0.00002	0.00005	35.8	0.000005	0.0001	0.00018	0.00196	0.049	0.000005	1.23	0.0015	13.3	0.00315	0.00165	9.3	0.00087	0.00005	0.0001	6.73	0.00018	5.37	0.0001	0.368	0.0003	0.00001	0.00159	0.00071	0.001	0.0002
W2	2020-07-08 8:35	170	363	190.6	7.91	225	3	4.6	83.9	0.001	0.0458	0.005	23.9	1.89		0.00001	0.0057	0.00058	0.0613	0.01	0.00002	0.00005	45.7	0.000005	0.0001	0.00018	0.00179	0.036	0.000005	1.35	0.0017	15.5	0.0123	0.00186	10.6	0.00078	0.00005	0.0001	8.78	0.000164	5.6	0.0001	0.484	0.0003	0.00001	0.00217	0.00064	0.001	0.0002
W2	2020-07-13 9:25	154	332	166.7	7.74	204	3	5.5	83.4	0.001	0.0294	0.0057	19	1.42		0.00001	0.01	0.00045	0.0577	0.01	0.00002	0.00005	40.8	0.000005	0.0001	0.00023	0.00245	0.042	0.000005	1.31	0.0016	14.2	0.00441	0.00168	9.66	0.00086	0.00005	0.0001	7.06	0.000143	5.27	0.0001	0.406	0.00085	0.00001	0.00152	0.00064	0.001	0.0002
W2	2020-07-15 6:30	132	279	197.8	7.42	180	4.9	6	93.4	0.001	0.0161	0.0053	15.5	1.07		0.00001	0.0095	0.0005	0.0513	0.01	0.00002	0.00005	34.1	0.000005	0.0001	0.00029	0.00264	0.056	0.000005	1.15	0.0014	12.2	0.00371	0.00141	8.47	0.00113	0.00005	0.0001	5.6	0.000158	5.52	0.0001	0.33	0.00046	0.00001	0.00109	0.00075	0.001	0.00024
W2	2020-07-20 7:40	144	310	154.4	7.84	202	3	7	84.7	0.001	0.0204	0.0062	18.8	1.33		0.00001	0.0075	0.00051	0.0659	0.01	0.00002	0.00005	43.3	0.000005	0.0001	0.0003	0.00253	0.042	0.000005	1.33	0.0017	13.6	0.00575	0.00165	10	0.00085	0.00005	0.0001	6.29	0.000133	5.53	0.0001	0.442	0.00031	0.00001	0.00134	0.00095	0.0016	0.00022
W2	2020-07-22 11:00	147	322	205.1	7.86	200	3	7.1	88	0.001	0.0148	0.0052	21.1	1.54		0.00001	0.0046	0.00045	0.0658	0.01	0.00002	0.00005	38.4	0.000005	0.0001	0.00024	0.00227	0.03	0.000005	1.36	0.0017	14	0.00826	0.0014	9.79	0.00092	0.00005	0.0001	7.41	0.000138	5.74	0.0001	0.403	0.0003	0.00001	0.00142	0.00069	0.001	0.0002
W2	2020-07-27 7:20	156	336	154.1	7.6	210	3	6.1	85.2	0.001	0.0088	0.005	22.6	1.71		0.00001	0.005	0.00041	0.0653	0.01	0.00002	0.00005	39.4	0.000005	0.0001	0.00016	0.00228	0.03	0.000005	1.59	0.0018	13.9	0.0115	0.00132	9.87	0.00079	0.00005	0.0001	8	0.000164	5.68	0.0001	0.406	0.0003	0.00001	0.00161	0.00062	0.001	0.0002
W2	2020-08-04 5:20			157	7.17			6.6	85.3																																								
W2	2020-08-04 5:20	160	340	157	7.17	209	3	6.6	85.3	0.0013	0.0262	0.0088	23.9	1.78		0.00001	0.0055	0.0004	0.0636	0.012	0.00002	0.00005	39.3	0.000005	0.0001	0.00024	0.00282	0.029	0.000005	1.37	0.0018	12.6	0.0111	0.00125	9.38	0.00068	0.00005	0.0001	7.42	0.000169	5.49	0.00012	0.423	0.0003	0.00001	0.00136	0.00066	0.001	0.0002
W2	2020-08-11 6:15	170	340	185.4	7.87	215	3	6.7	96.2	0.001	0.0094	0.005	21.4	1.58		0.00001	0.0066	0.00043	0.062	0.011	0.00002	0.00005	39.7	0.000005	0.0001	0.00021	0.00204	0.038	0.000005	1.41	0.0017	14.1	0.00877	0.00134	9.15	0.00084	0.00005	0.0001	7.31	0.000132	5.8	0.0001	0.412	0.00054	0.00001	0.00153	0.00066	0.001	0.0002
W2	2020-08-17 14:20	163	321	141.2	7.83	211	7.3	6.2	99.4	0.001	0.0221	0.0056	18.3	1.23		0.00001	0.0076	0.00058	0.0558	0.01	0.00002	0.00005	41	0.000005	0.0001	0.00034	0.00234	0.057	0.000005	1.17	0.0016	13.1	0.00503	0.00154	9.28	0.00094	0.00005	0.0001	6.51	0.000148	6.12	0.0001	0.398	0.00039	0.00001	0.00132	0.00076	0.001	0.00021
W2	2020-08-25 6:50			171	7.69			6.1	94.9																																								
W2	2020-08-25 6:50	136	281	171	7.69	189	9.6	6.1	94.9	0.001	0.005	0.0058	13.9	0.98		0.00001	0.0104	0.00051	0.0539	0.01	0.00002	0.00005	38.1	0.000005	0.0001	0.00032	0.0024	0.074	0.000005	1.07	0.0013	12.8	0.00467	0.00142	8.38	0.00126	0.00005	0.0001	5.09	0.000111	6.5	0.0001	0.383	0.00056	0.00001	0.00101	0.00073	0.001	0.00027
W2	2020-09-01 6:30	144	306	155.9	7.96	208	3	5.2	89	0.001	0.0331	0.0214	17	1.22		0.00001	0.0093	0.00052	0.061	0.01	0.00002	0.00005	44.2	0.000005	0.0001	0.00032	0.00247	0.068	0.000005	1.18	0.0015	16	0.00658	0.00144	11.2	0.00114	0.00005	0.0001	5.66	0.00013	6.43	0.0001	0.444	0.00045	0.00001	0.00107	0.00073	0.001	0.00024
W2	2020-09-08 5:30			183.1	7.75			4.5	90.7																																								
W2	2020-09-08 5:30	147	307	183.1	7.75	202	3	4.5	90.7	0.0015	0.006	0.0059	18.5	1.38		0.00001	0.0271	0.00055	0.0592	0.01	0.00002	0.00005	39.1	0.000018	0.0001	0.00026	0.00509	0.14	0.000005	1.4	0.0014	13.8	0.00882	0.00152	9.25	0.00119	0.000063	0.0001	6.56	0.000144	6.34	0.00014	0.393	0.00208	0.00001	0.0013	0.00078	0.0026	0.00021
W2	2020-09-15 6:35			336.4	8.1			1.6	97.8																																								
W2	2020-09-15 6:35	141	303	336.4	8.1	193	3	1.6	97.8	0.001	0.005	0.005	18.8	1.47		0.00001	0.008	0.0005	0.0543	0.01	0.00002	0.00005	36.4	0.000005	0.0001	0.0003	0.00224	0.086	0.000005	1.13	0.0014	12.8	0.00642	0.00128	8.44	0.00109	0.00005	0.0001	6.51	0.000134	5.94	0.0001	0.373	0.00041	0.00001	0.00119	0.00062	0.001	0.00022
W2	2020-09-21 15:20	147	283	193.4	8.03	199	3	1.5	92	0.001	0.005	0.005	19.1	1.48		0.00001	0.0067	0.00046	0.0526	0.01	0.00002	0.00005	38.9	0.000005	0.0001	0.00032	0.00205	0.063	0.000005	1.18	0.0015	13.8	0.0063	0.00118	8.8	0.00103	0.00005	0.0001	6.38	0.000108	5.78	0.0001	0.389	0.0004	0.00001	0.00125	0.00054	0.001	0.0002
W2	2020-09-22 6:30			134.6	8.07			0.7	98.5																																								
W2	2020-09-22 6:30	147	280	134.6	8.07	203	3	0.7	98.5	0.001	0.005	0.0068	19.1	1.46		0.00001	0.006	0.00045	0.0548	0.01	0.00002	0.00005	41.2	0.000005	0.0001	0.0003	0.00199	0.068	0.000005	1.17	0.0015	14	0.00646	0.00119	9.29	0.00105	0.00005	0.0001	6.22	0.000094	5.86	0.0001	0.391	0.0003	0.00001	0.0012	0.00053	0.001	0.0002
W2	2020-09-29 6:15			187.4	7.89			1	103.7																																								
W2	2020-09-29 6:15	145	302	187.4	7.89	193	3	1	103.7	0.001	0.005	0.0138	19	1.44		0.00001	0.0058	0.00046	0.0505	0.01	0.00002	0.00005	36.3	0.000005	0.0001	0.00028	0.00177	0.057	0.000005	1.1	0.0014	12.9	0.00468	0.00123	8.38	0.00099	0.00005	0.0001	5.98	0.0001	5.84	0.0001	0.357	0.0003	0.00001	0.00119	0.00054	0.001	0.0002
W2	2020-10-06 5:35	140	294	204.3	7.94	194	3.1	2.7	97.5	0.001	0.005	0.0058	18.1	1.47		0.00001	0.0079	0.00058	0.0568	0.01	0.00002	0.00005	37.8	0.0000129	0.0001	0.00027	0.00235	0.066	0.000005	1.38	0.0015	13.2	0.00475	0.00133	8.89	0.00112	0.00005	0.0001	6.13	0.000096	6.07	0.0001	0.378	0.00041	0.00001	0.00104	0.00063	0.001	0.0002
W2	2020-10-13 5:30			184.3	7.73			0.6	95.2																																								
W2	2020-10-13 5:30	154	322	184.3	7.73	221	3	0.6	95.2	0.001	0.12	0.0051	27.7	2.06		0.00001	0.0059	0.00047	0.0626	0.01	0.00002	0.00005	44.7	0.0000058	0.0001	0.00022	0.00278	0.064	0.000005	1.18	0.0016	14.6	0.00398	0.00165	9.73	0.00103	0.00005	0.0001	7.84	0.000177	5.83	0.0001	0.441	0.00034	0.00001	0.00118	0.00055	0.001	0.0002
W2	2021-04-19 14:35	173	404			262	60.4			0.001	0.005	0.005	38.2	3.09		0.00001	0.0121	0.00051	0.0622	0.01	0.00002	0.00005	44	0.0000139	0.0001	0.00017	0.00569	0.032	0.000005	4.37	0.0025	19.5	0.0109	0.000526	13.2	0.0006	0.00005	0.0001	11.5	0.000293	7.67	0.0001	0.379	0.00095	0.00001	0.000792	0.0005	0.001	0.0002
W2	2021-04-26 12:00	60.6	136			131	55.3			0.001	0.0082	0.0167	5.63	1		0.00001	0.0516	0.00046	0.0315	0.01	0.00002	0.00005	18.2	0.0000297	0.00012	0.0005	0.0131	0.143	0.0000093	2.84	0.001	6.46	0.0126	0.000467	3.4	0.00129	0.00005	0.0001	2.12	0.000145	4.37	0.0001	0.153	0.00188	0.00001	0.000152	0.0005	0.0038	0.00037
W2	2021-05-04 6:40			146.9	7.29			0.2	100.4																																								
W2	2021-05-04 6:40	26.3	69.8	146.9	7.29	89.4	31.3	0.2	100.4	0.001	0.0136	0.0166	1.38	0.31		0.00001	0.109	0.00042	0.0243	0.01	0.00002	0.00005	11.3	0.0000179	0.00016	0.0005	0.0119	0.196	0.0000066	1.56	0.001	3.29	0.0198	0.000232	1.33	0.00152	0.00005	0.0001	0.59	0.000081	2.6	0.0001	0.0788	0.00137	0.00001	0.000081	0.00057	0.0026	0.0005
W2	2021-05-11 6:30			170.3	7.32			0.3	99.6																																								
W2	2021-05-11 6:30	43.4	98.3	170.3	7.32	90	37.3	0.3	99.6	0.001	0.005	0.0122	3.23	0.5		0.00001	0.0594	0.00049	0.0283	0.01	0.00002	0.00005	14.4	0.0000122	0.00013	0.0005	0.00825	0.248	0.000005	1.2	0.001	4.3	0.00697	0.00042	2.58	0.00156	0.00005	0.0001	1.22	0.00011	3.09	0.0001	0.0952	0.00132	0.00001	0.000153	0.00067	0.001	0.00048
W2	2021-05-18 6:45			170	7.6			0	100																																								
W2	2021-05-18 6:45	65.5	146	170	7.6	115	4	0	100	0.001	0.005	0.005	6.47	0.72	0.185	0.00001	0.042	0.00053	0.0338	0.01	0.00002	0.00005	19.8	0.0000138	0.0001	0.0005	0.0101	0.221	0.0000057	0.996	0.001	6.24	0.00429	0.00065	3.95	0.0017	0.00005	0.0001	2.27	0.000141	4.4	0.0001	0.162	0.0021	0.00001	0.000368	0.00067	0.0023	0.00047
W2	2021-05-25 6:30			181.7	7.3				97.1																																								
W2	2021-05-25 6:30	50.7	116	181.7	7.3	112	83.4	1.8	97.1	0.001	0.005	0.0254	4.51	0.51		0.00001	0.0643	0.00066	0.037	0.01	0.00002	0.00005	18.8	0.0000119	0.00019	0.00052	0.00718	0.468	0.0000051	0.638	0.001	5.6	0.0172	0.000534	3.63	0.00223	0.00005	0.0001	1.72	0.000147	4.52	0.0001	0.135	0.00174	0.00001	0.000206	0.00109	0.001	0.00065
W2	2021-05-26 13:53	57.8	131	206.5	6.79	113	87.6	2.3	100.5	0.0012	0.0149	0.014	5.66	0.6		0.00001	0.0502	0.0007	0.0334	0.01	0.00002	0.00005	18.2	0.0000084	0.00018	0.00053	0.0066	0.312	0.000005	0.607	0.001	5.89	0.0231	0.000589	3.9	0.00215	0.00005	0.0001	1.96	0.000143	4.64	0.0001	0.147	0.00191	0.00001	0.00026	0.00109	0.001	0.00069
W2	2021-05-31 8:40	80.1	184	437.8	14.4	137	41.4	2.8	193	0.001	0.0204	0.0134	9.55	0.87		0.00001	0.03	0.00061	0.0414	0.01	0.00002	0.00005	24.5	0.0000064	0.00018	0.0005	0.00493	0.268	0.000005	0.819	0.001	8.18	0.0412	0.000972	6.34	0.0018	0.00005	0.0001	3.18	0.000141	4.97	0.0001	0.203	0.00117	0.00001	0.000515	0.00121	0.001	0.00046
W2	2021-06-08 9:30	148	324	190.9	7.34	203	1	7.9	15.4	0.001	0.0743	0.0077	21.7	1.84	0.358	0.00001	0.0086	0.00051	0.0685	0.01	0.00002	0.00005	42.1	0.0000056	0.0001	0.0005	0.00292	0.067	0.000005	1.46	0.0016	14.4	0.00788	0.00136	9.55	0.00112	0.00005	0.0001	7.47	0.000205	6.08	0.0001	0.405	0.00044	0.00001	0.00138	0.00069	0.001	0.0002
W2	2021-06-08 14:25																																																
W2	2021-06-08 14:25	104	216	93.2	7.63	155	14.3	4.3	121.7	0.001	0.0335	0.0086	12	1.06		0.00001	0.0174	0.00058	0.0439	0.01	0.00002	0.00005	27.4	0.000005	0.0001	0.0005	0.00362	0.125	0.000005	0.904	0.0011	9.13	0.00298	0.00116	6.32	0.00138	0.00005	0.00011	4.44	0.000169	5.52	0.0001	0.241	0.00072	0.00001	0.000731	0.00092	0.001	0.00037
W2	2021-06-28 8:00	140	300	152.1	7.97	193	1	5.7	98.9	0.001	0.074	0.0065	18.9	1.58		0.00001	0.0098	0.0005	0.0616	0.01	0.00002	0.00005	36.4	0.000005	0.0001	0.0005	0.00269	0.044	0.000005	1.36	0.0014	13.6	0.00467	0.00147	9.6	0.00109	0.00005	0.0001	6.95	0.000198	5.97	0.0001	0.378	0.0009	0.00001	0.0013	0.00069	0.001	0.0002
W2	2021-06-28 15:40	122	271	124.5	7.63	173	50.1	6.2	92.7	0.001	0.0542	0.0075	16.4	1.34		0.00001	0.0118	0.00055	0.0544	0.01	0.00002	0.00005	32.8	0.000005	0.0001	0.0005	0.00316	0.068	0.000005	1.16	0.0012	11.6	0.00266	0.00143	7.99	0.00128	0.00005	0.0001	5.14	0.000144	5.42	0.0001	0.334	0.00048	0.00001	0.00103	0.0008	0.001	0.00025
W2	2021-08-10 14:25	154	319	140	7.7	198	5.5	6.9	92.4	0.001	0.032	0.0051	17	1.39		0.00001	0.0058	0.00051	0.0606	0.01	0.00002	0.00005	37.2	0.000005	0.0001	0.0005	0.00211	0.044	0.000005	1.29	0.0016	13.1	0.00568	0.0015	9.02	0.00089	0.00005	0.0001	5.62	0.000145	6.21	0.0001	0.399	0.00037	0.00001	0.00142	0.00071	0.001	0.0002
W2	2021-08-16 9:25	156	327	123.1	7.6	204	4	4.9	91.9	0.001	0.0564	0.005	18	1.49		0.00001	0.011	0.0005	0.0622	0.01	0.00002	0.00005	40.4	0.00001	0.0001	0.0005	0.00288	0.057	0.000005	1.36	0.0017	13.7	0.0106	0.00135	9.23	0.00096	0.00005	0.0001	6.41	0.000223	6.29	0.0001	0.398	0.0009	0.00001	0.00142	0.00065	0.001	0.0002
W2	2021-08-24 8:35	162	341	110.2	7.92	219	7.4	4.9	85	0.001	0.0622	0.0051	21.8	1.87		0.00001	0.0058	0.00043	0.0684	0.01	0.00002	0.00005	44.2	0.000005	0.0001	0.0005	0.00227	0.05	0.000005	1.52	0.002	15.2	0.0125	0.00133	10	0.00061	0.00005	0.0001	7.74	0.000163	6.46	0.0001	0.442	0.00034	0.00001	0.00174	0.0006	0.001	0.0002
W2	2021-08-29 8:30	162	347	96	7.97	214	1.6	5.4	76.3	0.001	0.0522	0.005	21.5	1.85		0.00001	0.0137	0.00043	0.0633	0.01	0.00002	0.00005	42.8	0.000005	0.0001	0.0005	0.00227	0.053	0.000005	1.52	0.0019	14.2	0.0114	0.00137	10.1	0.00087	0.00005	0.0001	7.31	0.000156	6.26	0.0001	0.437	0.00086	0.00001	0.00166	0.00051	0.001	0.0002
W2	2021-09-07 15:15	164	346	119.7	8.03	214	1.3	5.2	74	0.001	0.0191	0.005	21.7	1.87		0.00001	0.0042	0.0004	0.0627	0.01	0.00002	0.00005	42.1	0.000005	0.0001	0.0005	0.00182	0.037	0.000005	1.54	0.0018	14.4	0.00927	0.00134	9.67	0.00079	0.00005	0.0001	7.85	0.000169	5.86	0.0001	0.447	0.0003	0.00001	0.0017	0.0005	0.001	0.0002
W2	2021-09-13 10:15			202.4	7.35			3.4	92.2																																								
W2	2021-09-13 10:15	184	348	202.4	7.35	226	1	3.4	92.2	0.001	0.0179	0.005	21.3	1.81		0.00001	0.006	0.00037	0.0647	0.01	0.00002	0.00005	42.4	0.000005	0.0001	0.0005	0.00212	0.038	0.000005	1.53	0.0021	14.1	0.0103	0.00136	9.29	0.0008	0.00005	0.0001	7.7	0.000169	6.01	0.0001	0.438	0.00034	0.00001	0.00173	0.0005	0.001	0.0002
W2	2021-09-20 8:15	158	333	113.9	7.83	207	1	1.6	99.8	0.001	0.0057	0.005	21.5	1.89		0.00001	0.0043	0.00035	0.0619	0.01	0.00002	0.00005	39.7	0.000005	0.0001	0.0005	0.0018	0.034	0.000005	1.58	0.0017	13.9	0.0091	0.0013	9.52	0.00079	0.00005	0.0001	7.58	0.000124	6.05	0.0001	0.433	0.0003	0.00001	0.00168	0.0005	0.001	0.0002
W2	2021-09-22 8:00	159	321	117	7.86	203	6.7	1.2	130.4	0.001	0.005	0.005	19.3	1.86		0.00001	0.0057	0.00042	0.0566	0.01	0.00002	0.00005	37	0.0000056	0.0001	0.0005	0.00183	0.042	0.000005	1.6	0.0015	13.6	0.00757	0.00156	9.52	0.00076	0.00005	0.0001	7.07	0.000143	5.98	0.0001	0.4	0.00037	0.00001	0.0015	0.0005	0.001	0.0002
W2	2021-09-23 14:30	162	320	124.2	8.02	204	1.2	1.8	118.8	0.001	0.005	0.211	19.6	1.86		0.00001	0.0051	0.00043	0.0571	0.01	0.00002	0.00005	37.2	0.000005	0.0001	0.0005	0.00168	0.037	0.000005	1.51	0.0016	13.7	0.00765	0.00157	9.62	0.00072	0.00005	0.0001	6.58	0.00011	5.65	0.0001	0.402	0.0003	0.00001	0.00146	0.0005	0.001	0.0002
W2	2021-09-28 10:00			79.7	7.81			0.4	87.1																																								
W2	2021-09-28 10:00	152	343	79.7	7.81	200	1	0.4	87.1	0.001	0.0081	0.005	18.5	1.75		0.00001	0.0058	0.00035	0.0549	0.01	0.00002	0.00005	39.3	0.000005	0.0001	0.0005	0.0019	0.034	0.000005	1.49	0.002	13.3	0.00723	0.00132	9.54	0.00068	0.00005	0.0001	5.99	0.000119	5.94	0.0001	0.411	0.00035	0.00001	0.00146	0.00051	0.001	0.0002
W2	2021-10-05 15:08	155	323	18.8	8.04	202	1	1	101.1	0.001	0.0128	0.005	18.9	1.6		0.00001	0.0047	0.00042	0.0566	0.01	0.00002	0.00005	38.8	0.000005	0.0001	0.0005	0.00178	0.041	0.000005	1.25	0.0017	14.1	0.00572	0.00134	8.52	0.00077	0.00005	0.0001	6.45	0.000124	6.24	0.0001	0.386	0.0003	0.00001	0.00131	0.00058	0.001	0.0002
W2	2021-10-05 15:55			18.8	8.04			1	101.1																																								
W2	2021-10-12 15:45			124.4	7.67			1	119																																								
W2	2021-10-12 15:45	156	335	124.4	7.67	209	1	1	119	0.001	0.006	0.005	20.2	1.71		0.00001	0.0072	0.0004	0.0569	0.01	0.00002	0.00005	44	0.0000077	0.0001	0.0005	0.00185	0.035	0.000005	1.45	0.0019	13.4	0.00632	0.00124	9.52	0.00071	0.00005	0.0001	7.03	0.000107	5.81	0.0001	0.404	0.0003	0.00001	0.00147	0.0005	0.001	0.0002
W2	2021-10-19 15:45	167	357	78.1	7.73	222	3.3	0.6	103.1	0.001	0.0368	0.005	24.9	2.22		0.00001	0.0061	0.00033	0.0762	0.01	0.00002	0.00005	43.8	0.0000088	0.0001	0.0005	0.00229	0.025	0.000005	1.61	0.002	13	0.00509	0.00109	10.3	0.00095	0.00005	0.0001	9.22	0.000109	6.21	0.0001	0.486	0.00038	0.00001	0.00186	0.0005	0.0014	0.0002
W2	2021-10-26 9:05			90.7	7.94			0.2	93.1																																								
W2	2021-10-26 9:05	164	346	90.7	7.94	222	99.2	0.2	93.1	0.001	0.0512	0.005	25.4	2.23		0.00001	0.0052	0.00032	0.0653	0.01	0.00002	0.00005	46	0.0000135	0.0001	0.0005	0.00259	0.021	0.000005	1.51	0.0022	14.3	0.00666	0.00122	9.78	0.0008	0.00005	0.0001	8.09	0.000136	6.26	0.0001	0.453	0.0003	0.00001	0.00184	0.0005	0.0018	0.0002

Attachment 3: Sitewide Database

		General Parameters								Anions & Nitrogen Species					
Station	Date / Time	Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N\text{-}NO_2$	$N\text{-}NO_3$	$N\text{-}NH_3$	SO_4-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W2	2021-11-02 9:30	169	374	78.7	7.69	227	80.3	2.3	80.9	0.001	0.0574	0.005	25.7	2.38	
W3	1994-05-15 0:00		125			86	360			0.004	0.016	0.016		1.6	
W3	1994-06-07 0:00		209			138	20			0.009	0.082	0.027		1	
W3	1994-07-08 0:00		249			150	25			0.004	0.055	0.027		1.2	
W3	1994-08-10 0:00		382			238	13			0.004	0.108	0.0025		1.3	
W3	1994-09-26 0:00		262			158	9			0.004	0.04	0.006		0.9	
W3	1995-06-15 0:00	148	337			248	1			0.002	0.043	0.0025	35.4	1	0.26
W3	1995-07-25 0:00	139	296			200	6			0.003	0.048	0.0025	25.9	1.4	0.18
W3	1995-09-20 0:00	123	248			199	3			0.004	0.026	0.006	22.7	1.3	0.15
W3	1996-05-20 0:00		240			178	13			0.25	0.05			0.7	
W3	1996-07-16 0:00					162	99			0.0015	0.05			0.8	
W3	1996-09-09 0:00					204	12			0.0015	0.05			0.9	
W3	1996-10-15 0:00					209	2.5			0.0015	0.1			0.8	
W3	1997-05-01 0:00					119	130			0.025	0.05				
W3	1999-08-26 0:00		360			246	5			0.025	0.07				
W3	2000-05-05 0:00		58			127	57			0.001	0.002				
W3	2001-05-01 0:00		100			116	5			0.25	0.025				
W3	2002-07-29 0:00		159			200	128			0.0001	0.023				
W3	2003-08-24 0:00		207			153	14			0.002	0.019				
W3	2004-07-29 0:00		330			217	5			0.05	0.03				
W3	2005-05-27 0:00	61.2	188			141	8.5			0.001	0.0121	0.02	2.4	0.5	
W3	2005-06-30 0:00	153	341			224	3			0.001	0.0519	0.02	45.5	0.86	
W3	2005-07-29 0:00		322			198	25.7			0.001	0.0284	0.02		0.5	
W3	2005-08-29 0:00	122	267			182	7.5			0.001	0.005	0.042	25.5	0.5	
W3	2005-09-28 0:00	101	238			174	8			0.001	0.0132	0.02	23.9	0.5	
W3	2005-10-15 0:00		245			176	3			0.001	0.0393	0.023		0.5	
W3	2006-03-02 0:00	193	463			279	3			0.001	1.65	0.07	50.4	6.2	
W3	2006-04-04 0:00		731			487	3			0.0019	0.116	0.018		2.82	0.513
W3	2006-04-05 0:00		1270		8.5	940	18.6			0.001	0.005	0.016		2.38	0.87
W3	2006-04-06 0:00		661		8.4	442	3.6			0.0016	0.005	0.0093		2.09	0.519
W3	2006-04-07 0:00		539			354	5.6			0.0017	0.0125	0.0073		2.08	0.42
W3	2006-04-08 0:00	190	434		7.7	288	6.4			0.0017	0.064	0.01	58.1	1.58	0.336
W3	2006-04-09 0:00	164	391		8.5	252	6.4			0.001	0.005	0.0107	53.1	1.46	0.34
W3	2006-04-10 0:00	165	400		8.45	256	8.9			0.001	0.0146	0.005	56.2	1.1	0.314
W3	2006-04-11 0:00	177	424		8.5	276	5.4			0.001	0.0225	0.005	63.1	0.95	0.32
W3	2006-04-12 0:00	197	479		8.5	305	6.9			0.001	0.0094	0.005	74.9	1.18	0.36
W3	2006-04-13 0:00	224	551		8.5	361	4.4			0.001	0.0061	0.005	84.2	1.47	0.387
W3	2006-04-14 0:00	220	533		8.6	316	3			0.001	0.005	0.005	78.9	1.41	0.402
W3	2006-04-15 0:00	239	575		8.6	363	3			0.001	0.249	0.012	81.5	1.33	0.405
W3	2006-04-16 0:00	364	822		8.55	554	3.4			0.0014	0.0992	0.03	124	2.27	0.532
W3	2006-04-17 0:00	368	872		8.6	585	3			0.0012	0.0694	0.048	136	2.24	0.57
W3	2006-04-18 0:00	337	756		8.6	504	3.7			0.001	0.005	0.005	120	2.03	0.574
W3	2006-04-19 0:00	208	473		8.6	294	4.2			0.001	0.005	0.005	65.6	1	0.369
W3	2006-04-20 0:00	201	462		8.5	285	4.2			0.001	0.005	0.005	60.3	0.95	0.356
W3	2006-04-21 0:00	178	426		8.45	266	3			0.001	0.005	0.005	55	0.8	0.315
W3	2006-04-22 0:00	182	427		8.5	266	7.7			0.001	0.005	0.005	58.6	0.84	0.292
W3	2006-04-23 0:00	152	341		8.55	210	12.7			0.001	0.005	0.005	42.7	0.64	0.233
W3	2006-04-24 0:00	103	271		8.45	182	11.7			0.001	0.005	0.02	35.3	0.88	0.238
W3	2006-04-25 0:00	84.4	212		8.6	165	16.1			0.001	0.005		26.4	1.15	0.203
W3	2006-04-26 0:00	75.4	211		8.4	174	6.6			0.001	0.005		29.9	0.88	0.167
W3	2006-04-27 0:00	84.2	215		8	168	6.6			0.001	0.005		28.5	0.83	0.17
W3	2006-04-28 0:00	73.1	186		7.9	174	3			0.001	0.005		23.9	0.73	0.14
W3	2006-04-29 0:00	87.4	220		8.5	177	4.1			0.001	0.005		29.3	0.72	0.15
W3	2006-04-30 0:00	77.9	199		8.4	159	3.1			0.001	0.005		25.4	0.63	0.15
W3	2006-05-01 0:00	81.6	199		8.3	170	4.6			0.001	0.005		24.7	0.64	0.16
W3	2006-05-02 0:00		155		8.2	137	4.9			0.001	0.005			0.6	0.122
W3	2006-05-03 0:00		143		8.2	126	30.9			0.001	0.005			0.55	0.126
W3	2006-05-04 0:00				8.2										
W3	2006-05-05 0:00		77			100	40.4			0.001	0.005			0.5	0.064
W3	2006-05-06 0:00		76			102	82.9			0.001	0.005			0.5	0.069
W3	2006-05-08 0:00		69			122	18.4			0.001	0.005	0.02		0.5	0.063
W3	2006-05-10 0:00	29.9	82.2			118	13.8			0.001	0.005		5.48	0.5	0.078
W3	2006-05-14 14:30	35.5	93			116	46.8			0.001	0.005	0.049	6.85	0.5	0.158
W3	2006-05-17 15:00	43.2	105			131	7.1			0.001	0.005		7.66	0.5	0.105
W3	2006-05-20 16:00	55.4	125			126	6.1			0.001	0.005		10.3	0.5	0.136
W3	2006-05-23 16:00	68.4	161			133	17.8			0.001	0.005	0.012	15.4	0.5	0.149
W3	2006-05-26 16:00	74	166			139	5.9			0.0015	0.013		19	0.5	0.143
W3	2006-05-29 16:00	55.2	120			120	13.4			0.001	0.0075		11.9	0.5	0.122
W3	2006-06-02 16:00	68.7	136			129	26.4			0.001	0.005	0.022	12.2	0.5	0.127
W3	2006-06-07 16:57	69.7	143			134	7.1			0.0011	0.0179	0.043	14.3	0.5	0.126
W3	2006-06-15 0:00	134	323			196	2				0.12	0.013	34		
W3	2006-06-23 0:00	164	382			266	4				0.03	0.007	47		
W3	2006-06-28 0:00	138	334			212	4				0.025	0.002			
W3	2006-07-07 0:00	158	319			249	14				0.086		38		
W3	2006-07-12 0:00	164	372				2				0.11	0.006	39		
W3	2006-07-20 0:00	174	378				16				0.03	0.006	42		
W3	2006-07-26 0:00	171	405				2				0.04	0.007	45		
W3	2006-08-02 0:00	182	422				18				0.12	0.016	40		
W3	2006-08-10 0:00	183	430				6				0.12	0.013	45		
W3	2006-08-18 0:00														
W3	2006-08-25 0:00	175	413			282	4				0.03	0.02	43		
W3	2006-08-30 0:00	178	406			294	2				0.03	0.004	39		
W3	2006-09-06 0:00	186	416				2				0.03	0.003	38		
W3	2006-09-13 0:00	183	407				4				0.008	0.006	42.9		
W3	2006-09-20 0:00	190	423				2				0.03	0.004	42		
W3	2006-09-28 0:00														
W3	2006-09-29 0:00	191	434			160	2				0.03	0.006	43		
W3	2006-10-04 0:00	180	413				2				0.03	0.073	43		
W3	2006-10-12 0:00	184	430			280	2				0.03	0.006	42		
W3	2006-10-18 0:00	152	335			247	1			0.005	0.05	0.05		0.9	
W3	2006-10-28 0:00	205	456			130	14				0.25	0.029	42	1.12	
W3	2006-11-01 0:00	210	445			290	2				0.23	0.05	42	1.06	
W3	2006-11-09 0:00	214	469			304	2				0.23	0.071	42	1.21	
W3	2006-11-16 0:00	248	518			324	2				0.03	0.1	40	1.46	
W3	2006-11-23 0:00	202	480			320	2				0.31	0.032	46		
W3	2006-11-30 0:00	215	480			296	12			0.005	0.39	0.05	44		
W3	2006-12-06 0:00	204	478			240	5				0.37	0.017	41	1.13	
W3	2006-12-13 0:00	208	469			320	33				0.46	0.002	42	1.28	
W3	2006-12-20 0:00	210	485			308	3				0.5	0.002	42	1.5	
W3	2006-12-28 0:00	206	460			308	14				0.5	0.002	43	1.9	
W3	2007-01-04 0:00	193	463			298	18				0.56	0.05	43	2.18	
W3	2007-01-10 0:00	204	482			288	4				0.59	0.05	42	2.39	
W3	2007-02-07 0:00														
W3	2007-02-22 0:00														
W3	2007-03-02 0:00														
W3	2007-03-08 0:00														
W3	2007-03-14 0:00														
W3	2007-03-23 0:00														
W3	2007-03-29 0:00														
W3	2007-04-03 0:00														
W3	2007-04-11 0:00														
W3	2007-04-17 0:00	203	461			332	24				0.2		48	4	
W3	2007-04-27 0:00	130	313			274	2				1.6	0.05	31	2.5	
W3	2007-05-04 0:00	106	264			252	6			0.16	2.9	0.07	22.1	1.7	
W3	2007-05-11 0:00	118	317			280	2			0.19	4	0.05	25.9	1.9	

		Dissolved Elements																			
Station	Date / Time	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W2	2021-11-02 9:30	0.00001	0.005	0.00032	0.0714	0.01	0.00002	0.00005	47.2	0.0000081	0.0001	0.0005	0.00314	0.019	0.000005	1.73	0.0026	14.3	0.00606	0.00116	10.2
W3	1994-05-15 0:00	0.00005	0.078	0.0004	0.048	0.05	0.0025	0.05	15.7	0.0001	0.0005	0.0005	0.008	0.966		0.85		5.65	0.188	0.0005	3.43
W3	1994-06-07 0:00	0.00005	0.039	0.0004	0.061	0.05	0.0025	0.05	24.7	0.0001	0.0005	0.0005	0.005	0.797		0.88		9.5	0.086	0.001	6.08
W3	1994-07-08 0:00	0.00005	0.045	0.0004	0.058	0.05	0.0025	0.05	26.5	0.0001	0.0005	0.0005	0.007	0.516		0.64		9.64	0.112	0.0005	5.7
W3	1994-08-10 0:00	0.00005	0.023	0.0004	0.067	0.05	0.0025	0.05	41.6	0.0001	0.0005	0.0005	0.004	0.399		1.26		16.6	0.131	0.002	11.4
W3	1994-09-26 0:00	0.00005	0.026	0.0003	0.054	0.05	0.0025	0.05	31.4	0.0001	0.0005	0.0005	0.004	0.82		0.81		11	0.168	0.001	6.66
W3	1995-06-15 0:00	0.00005	0.018	0.0003	0.059	0.05	0.0025	0.05	42.9	0.0001	0.0005	0.0005	0.003	0.038		1.5		16.1	0.025	0.0005	11.6
W3	1995-07-25 0:00	0.00005	0.022	0.0003	0.048	0.05	0.0025	0.05	34.7	0.0001	0.0005	0.0005	0.004	0.109		1.29		13.5	0.014	0.001	9.51
W3	1995-09-20 0:00	0.00005	0.03	0.0004	0.05	0.05	0.0025	0.05	30	0.0001	0.0005	0.0005	0.005	0.364		1.14		11.3	0.059	0.0005	8.83
W3	1996-05-20 0:00	0.0005	0.005	0.01	0.04		0.0001	0.01	22.6	0.00025	0.0005	0.0005	0.004	0.077		1.5		10.9	0.0669	0.0025	7.87
W3	1996-07-16 0:00	0.0005	0.06	0.01	0.0443		0.0001	0.01	20	0.00025	0.001	0.0005	0.01	0.339		0.4		6.8	0.0249	0.0025	5.25
W3	1996-09-09 0:00	0.0005	0.04	0.01	0.0473		0.0001	0.01	30.6	0.00025	0.0005	0.0005	0.007	0.255		0.7		11.9	0.0246	0.0025	7.47
W3	1996-10-15 0:00	0.0005	0.03	0.01	0.0498		0.0001	0.01	32.1	0.00025	0.0005	0.0005	0.006	0.207		0.8		12.8	0.0223	0.0025	8.12
W3	1997-05-01 0:00	0.0005	0.14	0.01	0.0297		0.0001	0.01	10.2	0.00025	0.0005	0.0005	0.015	0.407		0.8		3.14	0.0508	0.0025	1.99
W3	1999-08-26 0:00	0.000025	0.0294	0.005	0.0605	0.019	0.00005	0.0002	40.9	0.00003	0.000015	0.00028	0.00402	0.0368		1		16.5	0.0132	0.00172	10.1
W3	2000-05-05 0:00	0.000025	0.458	0.0001	0.022	0.001	0.00001	0.0002	8.5	0.00009	0.00027	0.00093	0.00866	0.53		1.7		2.79	0.0464	0.00021	1.7
W3	2001-05-01 0:00	0.000025	0.195	0.0003	0.0268	0.006	0.000005	0.0002	11.9	0.00003	0.00012	0.00031	0.00665	0.231		1.7		4.6	0.0344	0.00049	2.5
W3	2002-07-29 0:00	0.00005	0.044	0.0006	0.044	0.007	0.00005	0.00025	21.9	0.000005	0.0001	0.0008	0.007	6.26		0.9		9	0.19	0.0005	5.1
W3	2003-08-24 0:00	0.00005	0.036	0.0005	0.048	0.008	0.00005	0.00025	25.6	0.000005	0.00005	0.0006	0.007	0.33		0.6		10.9	0.011	0.001	6.5
W3	2004-07-29 0:00	0.00005	0.192	0.0004	0.066	0.065	0.0001	0.00025	34.9	0.00002	0.0004	0.0011	0.005	0.7		1.3		15.6	0.039	0.002	9.4
W3	2005-05-27 0:00	0.00002	0.0267		0.041	0.1	0.001		22		0.0003	0.001	0.0066	0.116	0.00002	2	0.005	9.48	0.0094	0.001	5.2
W3	2005-06-30 0:00	0.00001	0.008	0.00034	0.0507	0.01	0.0005	0.0005	38.5		0.0001	0.0005	0.00336	0.042		2	0.005	17.4	0.0052	0.00163	11.7
W3	2005-07-29 0:00	0.00001	0.0113	0.00041	0.0553	0.01	0.0005	0.0005	38		0.0001	0.0005	0.00478	0.134		2	0.005	17.3	0.0311	0.00158	9.7
W3	2005-08-29 0:00	0.00002	0.0184		0.057	0.1	0.001		31.8		0.0003	0.001	0.005	0.306	0.00002	2	0.005	13.6	0.0657	0.0013	8
W3	2005-09-28 0:00	0.00002	0.0257		0.055	0.1	0.001		30.4		0.0003	0.001	0.0057	0.421	0.00002	2	0.005	12.8	0.102	0.0011	7.7
W3	2005-10-15 0:00	0.00001	0.0223	0.00043	0.0475	0.01	0.0005	0.0005	31.6		0.00016	0.0005	0.00608	0.39		2	0.005	13.4	0.112	0.00122	7.5
W3	2006-03-02 0:00	0.00001	0.0033	0.0002	0.0794	0.01	0.0005	0.0005	63.6		0.0001	0.0005	0.00163	0.03		2	0.005	18.6	0.00139	0.00127	10.4
W3	2006-04-04 0:00																				
W3	2006-04-05 0:00																				
W3	2006-04-06 0:00																				
W3	2006-04-07 0:00	0.00001	0.0122	0.00042	0.0653	0.01	0.0005	0.0005	51.3		0.0001	0.0005	0.00428	0.03		4.8	0.0056	35.7	0.0178	0.00353	22.4
W3	2006-04-08 0:00																				
W3	2006-04-09 0:00																				
W3	2006-04-10 0:00																				
W3	2006-04-11 0:00																				
W3	2006-04-12 0:00																				
W3	2006-04-13 0:00																				
W3	2006-04-14 0:00																				
W3	2006-04-15 0:00																				
W3	2006-04-16 0:00																				
W3	2006-04-17 0:00	0.00001	0.0161	0.00051	0.1	0.01	0.0005	0.0005	82.5		0.00015	0.0005	0.00648	0.03		6.6	0.0096	64.3	0.0354	0.00504	36.7
W3	2006-04-18 0:00																				
W3	2006-04-19 0:00																				
W3	2006-04-20 0:00																				
W3	2006-04-21 0:00																				
W3	2006-04-22 0:00																				
W3	2006-04-23 0:00																				
W3	2006-04-24 0:00	0.00001	0.071	0.00033	0.0369	0.01	0.0005	0.0005	24.3		0.0001	0.0005	0.0135	0.134		3.3	0.005	17.7	0.0324	0.00204	10.9
W3	2006-04-25 0:00																				
W3	2006-04-26 0:00																				
W3	2006-04-27 0:00																				
W3	2006-04-28 0:00																				
W3	2006-04-29 0:00																				
W3	2006-04-30 0:00																				
W3	2006-05-01 0:00																				
W3	2006-05-02 0:00																				
W3	2006-05-03 0:00																				
W3	2006-05-04 0:00																				
W3	2006-05-05 0:00																				
W3	2006-05-06 0:00																				
W3	2006-05-08 0:00	0.00001	0.124	0.00031	0.027	0.01	0.0005	0.0005	11.1		0.0002	0.0005	0.0185	0.22		2	0.005	3.8	0.0255	0.00032	2
W3	2006-05-10 0:00																				
W3	2006-05-14 14:30	0.00001	0.0846	0.0004	0.0323	0.01	0.0005	0.0005	13.8		0.00026	0.0005	0.0146	0.285		2	0.005	4.32	0.0901	0.000572	2.3
W3	2006-05-17 15:00																				
W3	2006-05-20 16:00																				
W3	2006-05-23 16:00	0.00001	0.0383	0.00043	0.0367	0.01	0.0005	0.0005	19		0.00011	0.0005	0.0102	0.167		2	0.005	8.52	0.0292	0.00101	5.3
W3	2006-05-26 16:00																				
W3	2006-05-29 16:00																				
W3	2006-06-02 16:00	0.00001	0.0507	0.00049	0.0351	0.01	0.0005	0.0005	19.1		0.0001	0.0005	0.0116	0.198		2	0.005	7.63	0.00826	0.000854	4.9
W3	2006-06-07 16:57																				
W3	2006-06-15 0:00		0.009	0.0004	0.061	0.004	0.0001	0.0005	40.7	0.00001	0.0001	0.0005	0.005	0.04		0.6	0.001	16.3	0.005	0.001	10.8
W3	2006-06-23 0:00		0.006	0.0004	0.065	0.004	0.0001	0.0005	46.6	0.00001	0.0001	0.0006	0.003	0.03		1.4	0.001	18	0.006	0.002	11
W3	2006-06-28 0:00		0.015	0.0004	0.056	0.004	0.0001	0.0005	39	0.00001	0.0001	0.0005	0.008	0.03		1.4	0.001	16.9	0.005	0.002	10.2
W3	2006-07-07 0:00		0.005	0.0004	0.067	0.007	0.0001	0.0007	40.9	0.00001	0.0001	0.0014	0.005	0.03		1.2	0.002	18.8	0.005	0.002	11.3
W3	2006-07-12 0:00		0.005	0.0004	0.07	0.007	0.0001	0.0007	42.6	0.00001	0.0001	0.0014	0.004	0.02		1.5	0.002	18.6	0.005	0.002	11
W3	2006-07-20 0:00		0.007	0.0003	0.084	0.004	0.0001	0.0005	48.6	0.00001	0.0001	0.0005	0.004	0.04		1.6	0.001	21.2	0.01	0.001	13.1
W3	2006-07-26 0:00		0.005	0.0002	0.082	0.002	0.0001	0.0005	51.5	0.00001	0.0001	0.0005	0.002	0.03		1.7	0.001	19.6	0.012	0.001	13
W3	2006-08-02 0:00		0.017	0.0005	0.086	0.006	0.0001	0.0005	45.7	0.00001	0.0002	0.0007	0.003	0.08		2.1	0.001	11.9	0.135	0.001	13.6
W3	2006-08-10 0:00		0.021	0.0006	0.078	0.008	0.0001	0.0005	50.1	0.00001	0.0001	0.0011	0.006	0.04		1.7	0.002	18.8	0.085	0.002	13.3
W3	2006-08-18 0:00																				
W3	2006-08-25 0:00		0.009	0.0004	0.082	0.004	0.0001	0.0005	48.1	0.00001	0.0002	0.0007	0.003	0.04		1.5	0.002	20.4	0.041	0.001	12.2
W3	2006-08-30 0:00		0.007	0.0004	0.07	0.005	0.0001	0.0005	46.9	0.00001	0.0002	0.0016	0.004	0.05		1.4	0.002	18.1	0.027	0.002	11.4
W3	2006-09-06 0:00		0.005	0.0004	0.074	0.005	0.0001	0.0005	51.7	0.00001	0.0001	0.0008	0.004	0.05		1.6	0.002	19.7	0.03	0.002	12.7
W3	2006-09-13 0:00		0.006	0.0003	0.071	0.007	0.0001	0.0005	50.6	0.00001	0.0001	0.002	0.003	0.05		1.6	0.002	20.3	0.018	0.002	13.4
W3	2006-09-20 0:00		0.006	0.0003	0.074	0.006	0.0001	0.0005	52.2	0.00001	0.0001	0.0007	0.003	0.06		1.6	0.002	20.9	0.021	0.002	12.1
W3	2006-09-28 0:00																				
W3	2006-09-29 0:00		0.009	0.0004	0.077	0.004	0.0001	0.0005	51.3	0.00001	0.0001	0.0006	0.003	0.03		1.6	0.002	20	0.032	0.002	13.2
W3	2006-10-04 0:00		0.005	0.0005	0.071	0.004	0.0001	0.0005	49.4	0.00001	0.0001	0.0006	0.002	0.06		1.6	0.002	19.3	0.038	0.002	12.7
W3	2006-10-12 0:00		0.007	0.0004	0.072	0.006	0.0001	0.0005	51.7	0.00001	0.0001	0.0005	0.003	0.05		1.4	0.002	19.6	0.046	0.002	12.6
W3	2006-10-18 0:00		0.005	0.0004	0.083	0.007	0.0001	0.0005	54.8	0.00001	0.0001	0.0005	0.003	0.03		1.4	0.002	19.2	0.069	0.001	11.9
W3	2006-10-28 0:00		0.005	0.0004	0.078	0.017	0.0001	0.0005	48.4	0.00003	0.0002		0.001	0.06	0.0001	1.7	0.004	25	0.27	0.002	14
W3	2006-11-01 0:00		0.006	0.0003	0.078	0.016	0.0001	0.0005	48.5	0.00001	0.0002	0.0008	0.002	0.05	0.0001	1.8	0.004	25.6	0.307	0.002	13.9
W3	2006-11-09 0:00		0.005	0.0002	0.069	0.02	0.0001	0.0005	51.6	0.00001	0.0002	0.0014	0.001	0.01	0.0001	1.9	0.003	25.6	0.334	0.002	15.4
W3	2006-11-16 0:00		0.006	0.0006	0.095	0.011	0.0001	0.0005	63.1	0.00002	0.0008	0.0009	0.002	0.29	0.0001	1.7	0.003	26.5	2.16	0.003	15.3
W3	2006-11-23 0:00		0.005	0.0003	0.075	0.018	0.0001	0.0005	53.3	0.00003	0.0001	0.0014	0.003	0.06	0.0001	2	0.003	27	0.136	0.002	16.3
W3	2006-11-30 0:00		0.005	0.0003	0.056	0.019	0.0001	0.0005	49.3	0.00005	0.0001	0.0014	0.004	0.01	0.0001	2	0.004	26	0.006	0.002	15.9
W3	2006-12-06 0:00		0.006	0.0004	0.056	0.022	0.0001	0.0005	50.9	0.00004	0.0001	0.0018	0.003	0.01		2	0.004	26.2	0.006	0.003	15.8
W3	2006-12-13 0:00		0.005	0.0004	0.058	0.018	0.0001	0.0005	47.6	0.00001	0.0001	0.0006	0.001	0.01	0.0001	1.9	0.003	26.8	0.008	0.002	15.2
W3	2006-12-20 0:00		0.005	0.0003	0.056	0.017	0.0001	0.0005	47	0.00001	0.0001	0.0012	0.001	0.01	0.0001	1.9	0.003	25.6	0.007	0.002	14.2
W3	2006-12-28 0:00		0.005	0.0003	0.058	0.021	0.0001	0.0005	50.2	0.00001	0.0001	0.0005	0.001	0.01	0.0001	1.5	0.004	26.9	0.016	0.002	16.6
W3	2007-01-04 0:00		0.005	0.0003	0.06	0.016	0.0001	0.0005	48.8	0.00001	0.0001	0.0005	0.001	0.01	0.0001	2	0.004	27	0.007	0.002	14.7
W3	2007-01-10 0:00		0.005	0.0002	0.062	0.017	0.0001	0.0005	51	0.00001	0.0001	0.0008	0.001	0.01	0.0001	2	0.004	26.9	0.008	0.002	15.1
W3	2007-02-07 0:00																				
W3	2007-02-22 0:00																				
W3	2007-03-02 0:00																				
W3	2007-03-08 0:00																				
W3	2007-03-14 0:00																				
W3	2007-03-23 0:00																				
W3	2007-03-29 0:00																				
W3	2007-04-03 0:00																				
W3	2007-04-11 0:00																				
W3	2007-04-17 0:00		0.026	0.0011	0.092	0.014	0.0001	0.0005	59.3	0.00001	0.0006	0.0008	0.008	0.27		2.8	0.002	23.8	0.785	0.001	14.1
W3	2007-04-27 0:00		0.041	0.0005	0.066	0.007	0.0001	0.0005	46.1	0.00002	0.0002	0.0005	0.007	0.09	0.0001	2.6	0.002	12.6	0.05	0.002	9.6
W3	2007-05-04 0:00		0.045	0.0007	0.058	0.009	0.0001	0.0005	38.6	0.00003	0.0002	0.0009	0.014	0.08	0.0001	2.2	0.001	11.1	0.048	0.002	7.2
W3	2007-05-11 0:00		0.026	0.0005	0.061	0.013	0.0001	0.0005	45.7	0.00001	0.0003	0.0008	0.018	0.07	0.0001	2.2	0.002	12.9	0.057	0.003	8.3

		Dissolved Elements (continued)													
Station	Date / Time	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W2	2021-11-02 9:30	0.00053	0.00005	0.0001	8.81	0.000161	5.8	0.0001	0.488	0.0003	0.00001	0.00199	0.00059	0.0015	0.0002
W3	1994-05-15 0:00	0.001	0.0005	0.00005		0.00025	3.29		0.102			0.00014	0.015	0.0025	
W3	1994-06-07 0:00	0.001	0.0005	0.00005		0.00025	5.08		0.17			0.00026	0.015	0.0025	
W3	1994-07-08 0:00	0.002	0.0005	0.00005		0.00025	5.62		0.176			0.0002	0.015	0.0025	
W3	1994-08-10 0:00	0.001	0.0005	0.00005		0.00025	6.19		0.33			0.00068	0.015	0.0025	
W3	1994-09-26 0:00	0.0005	0.0005	0.00005		0.00025	5.79		0.195			0.0003	0.015	0.0025	
W3	1995-06-15 0:00	0.0005	0.0005	0.00005		0.00025	4.99		0.337	0.01		0.00115	0.015	0.0025	
W3	1995-07-25 0:00	0.0005	0.0005	0.00005		0.00025	5.41		0.269	0.01		0.0006	0.015	0.0025	
W3	1995-09-20 0:00	0.002	0.0005	0.00005		0.00025	5.64		0.221	0.01		0.00035	0.015	0.0025	
W3	1996-05-20 0:00	0.001	0.0025	0.01		0.01	4.87		0.184				0.001	0.004	
W3	1996-07-16 0:00	0.003	0.0025	0.01		0.01	5.52		0.127				0.001	0.003	
W3	1996-09-09 0:00	0.001	0.0025	0.01		0.01	6.32		0.208				0.006	0.0005	
W3	1996-10-15 0:00	0.003	0.0025	0.01		0.01	6.57		0.243				0.005	0.006	
W3	1997-05-01 0:00	0.003	0.0025	0.01		0.01	3.16		0.058			0.03	0.001	0.037	
W3	1999-08-26 0:00	0.001	0.00015	0.0025		0.002	5.29		0.337				0.00031	0.0007	
W3	2000-05-05 0:00	0.0016	0.00015	0.00015		0.0001			0.0422				0.00055	0.0083	
W3	2001-05-01 0:00	0.0014	0.00015	0.00015		0.0001			0.0769				0.00065	0.0059	
W3	2002-07-29 0:00	0.0012	0.00005	0.0001		0.0002	12.4		0.149			0.00025	0.0008	0.001	
W3	2003-08-24 0:00	0.0008	0.00005	0.0001		0.0001			0.185				0.0009	0.002	
W3	2004-07-29 0:00	0.0018	0.0002	0.0001		0.0001	5.78		0.299						
W3	2005-05-27 0:00	0.0014		0.0005				0.0005		0.01	0.0002	0.00031	0.03	0.005	
W3	2005-06-30 0:00	0.00078	0.000241	0.0001			5.89	0.0001	0.297	0.01	0.0001	0.000903	0.001	0.0116	
W3	2005-07-29 0:00	0.00115	0.00005	0.0001			5.56	0.0001	0.279	0.01	0.0001	0.000717	0.001	0.0015	
W3	2005-08-29 0:00	0.0014		0.0005				0.0005		0.01	0.0002	0.00045	0.03	0.005	
W3	2005-09-28 0:00	0.0014		0.0005				0.0005		0.01	0.0002	0.00034	0.03	0.005	
W3	2005-10-15 0:00	0.00121	0.00005	0.0001			6.16	0.0001	0.225	0.01	0.0001	0.00042	0.001	0.0018	
W3	2006-03-02 0:00	0.0005	0.00005	0.0001			6.08	0.0001	0.355	0.01	0.0001	0.00279	0.001	0.0088	
W3	2006-04-04 0:00														
W3	2006-04-05 0:00														
W3	2006-04-06 0:00														
W3	2006-04-07 0:00	0.0005	0.00005	0.0001			9.83	0.0001	0.449	0.01	0.0001	0.00113	0.001	0.0017	
W3	2006-04-08 0:00														
W3	2006-04-09 0:00														
W3	2006-04-10 0:00														
W3	2006-04-11 0:00														
W3	2006-04-12 0:00														
W3	2006-04-13 0:00														
W3	2006-04-14 0:00														
W3	2006-04-15 0:00														
W3	2006-04-16 0:00														
W3	2006-04-17 0:00	0.00065	0.00005	0.0001			13.5	0.00017	0.737	0.01	0.0001	0.00244	0.001	0.0017	
W3	2006-04-18 0:00														
W3	2006-04-19 0:00														
W3	2006-04-20 0:00														
W3	2006-04-21 0:00														
W3	2006-04-22 0:00														
W3	2006-04-23 0:00														
W3	2006-04-24 0:00	0.00056	0.00005	0.0001			4.58	0.0001	0.212	0.01	0.0001	0.000548	0.001	0.0017	
W3	2006-04-25 0:00														
W3	2006-04-26 0:00														
W3	2006-04-27 0:00														
W3	2006-04-28 0:00														
W3	2006-04-29 0:00														
W3	2006-04-30 0:00														
W3	2006-05-01 0:00														
W3	2006-05-02 0:00														
W3	2006-05-03 0:00														
W3	2006-05-04 0:00														
W3	2006-05-05 0:00														
W3	2006-05-06 0:00														
W3	2006-05-08 0:00	0.00136	0.000052	0.0001			2.51	0.0001	0.057	0.01	0.0001	0.000067	0.001	0.0057	
W3	2006-05-10 0:00														
W3	2006-05-14 14:30	0.00159	0.00007	0.0001			2.95	0.00027	0.0843	0.01	0.0001	0.000123	0.001	0.0024	
W3	2006-05-17 15:00														
W3	2006-05-20 16:00														
W3	2006-05-23 16:00	0.00152	0.00005				3.58	0.0001	0.134	0.01	0.0001	0.000286	0.001	0.001	
W3	2006-05-26 16:00														
W3	2006-05-29 16:00														
W3	2006-06-02 16:00	0.00204	0.00005	0.0001			3.94	0.0001	0.124	0.01	0.0001	0.00019	0.001	0.0013	
W3	2006-06-07 16:57														
W3	2006-06-15 0:00	0.0009	0.0001	0.0002	11.7	0.0002	5.73	0.001	0.323	0.0008	0.00005	0.0009	0.0012	0.001	
W3	2006-06-23 0:00	0.001	0.0001	0.0002	13.8	0.0002	5.77	0.001	0.405	0.0007	0.00005	0.0014	0.0009	0.003	
W3	2006-06-28 0:00	0.0012	0.0001	0.0002	12.9	0.0002	6.49	0.001	0.304	0.0009	0.00005	0.0008	0.0009	0.002	
W3	2006-07-07 0:00	0.0014	0.0001	0.0002	14.6	0.0002	7	0.001	0.387	0.0013	0.00005	0.001	0.0012	0.001	
W3	2006-07-12 0:00	0.0005	0.0001	0.0002	14.4	0.0002	5.86	0.001	0.408	0.001	0.00005	0.0008	0.002	0.001	
W3	2006-07-20 0:00	0.0005	0.0001	0.0002	16.8	0.0002	6.88	0.001	0.294	0.001	0.00005	0.0011	0.0013	0.001	
W3	2006-07-26 0:00	0.0005	0.0001	0.0002	16.7	0.0002	6.02	0.001	0.301	0.0007	0.00005	0.001	0.0007	0.001	
W3	2006-08-02 0:00	0.0008	0.0001	0.0002	50.1	0.0002	4.57	0.001	0.284	0.0018	0.00005	0.0021	0.0022	0.002	
W3	2006-08-10 0:00	0.0007	0.0001	0.0002	15.8	0.0002	6.02	0.001	0.389	0.0016	0.00005	0.0018	0.0021	0.003	
W3	2006-08-18 0:00														
W3	2006-08-25 0:00	0.0009	0.0001	0.0002	15.7	0.0002	6.7	0.001	0.31	0.0005	0.00005	0.0009	0.002	0.003	
W3	2006-08-30 0:00	0.0007	0.0001	0.0002	13.5	0.0002	6.15	0.001	0.322	0.0005	0.00005	0.0011	0.0018	0.002	
W3	2006-09-06 0:00	0.001	0.0001	0.0002	14.6	0.0002	6.44	0.001	0.4	0.001	0.00005	0.0011	0.0018	0.002	
W3	2006-09-13 0:00	0.0008	0.0001	0.0002	14.3	0.0002	6.02	0.001	0.372	0.0012	0.00005	0.0012	0.0016	0.002	
W3	2006-09-20 0:00	0.0005	0.0001	0.0002	15.5	0.0002	6.4	0.001	0.379	0.0005	0.00005	0.0013	0.0019	0.002	
W3	2006-09-28 0:00														
W3	2006-09-29 0:00	0.0005	0.0001	0.0002	15	0.0002	6.49	0.001	0.401	0.0011	0.00005	0.0011	0.0006	0.002	
W3	2006-10-04 0:00	0.0006	0.0001	0.0002	14.8	0.0002	6.2	0.001	0.384	0.0012	0.00005	0.0011	0.0012	0.001	
W3	2006-10-12 0:00	0.0006	0.0001	0.0002	14.8	0.0004	6.37	0.001	0.392	0.0018	0.00005	0.0011	0.001	0.002	
W3	2006-10-18 0:00	0.001	0.0001	0.0002	15	0.0002	6.33	0.001	0.424	0.0009	0.00005	0.0012	0.0011	0.002	
W3	2006-10-28 0:00	0.0005	0.0001	0.0002	15.5	0.0004	6.48	0.001	0.574	0.0012	0.00005	0.0019	0.0031	0.001	
W3	2006-11-01 0:00	0.0025	0.0001	0.0002	14.6	0.0002	6.31	0.001	0.654	0.0013	0.00005	0.0022	0.0007	0.005	
W3	2006-11-09 0:00	0.0009	0.0001	0.0002	15.2	0.0006	6.36	0.001	0.634	0.0013	0.00005	0.0016	0.0029	0.002	
W3	2006-11-16 0:00	0.0008	0.0001	0.0002	14.9	0.0002	6.98	0.001	0.566	0.0012	0.00005	0.0024	0.0034	0.002	
W3	2006-11-23 0:00	0.0005	0.0002	0.0002	15.2	0.0004	6.44	0.001	0.584	0.0012	0.00005	0.0026	0.0031	0.002	
W3	2006-11-30 0:00	0.0005	0.0005	0.0002	15.4	0.0004	6.34	0.001	0.652	0.0012	0.00005	0.0022	0.0026	0.005	
W3	2006-12-06 0:00	0.0005	0.0001	0.0002	17.4	0.0004	6.49	0.001	0.638	0.0021	0.00005	0.0016	0.0053	0.004	
W3	2006-12-13 0:00	0.0006	0.0001	0.0002	15.2	0.0002	6.53	0.001	0.661	0.0019	0.00005	0.0023	0.0015	0.012	
W3	2006-12-20 0:00	0.0005	0.0001	0.0002	15	0.0004	6.3	0.001	0.656	0.0012	0.00005	0.0023	0.0022	0.003	
W3	2006-12-28 0:00	0.0005	0.0001	0.0002	15.4	0.0006	6.36	0.001	0.659	0.0018	0.00005	0.0022	0.0012	0.001	
W3	2007-01-04 0:00	0.0005	0.0001	0.0002	15.7	0.0004	6.58	0.001	0.661	0.0014	0.00005	0.0024	0.0007	0.006	
W3	2007-01-10 0:00	0.0005	0.0002	0.0002	16.2	0.0002	6.7	0.001	0.646	0.0014	0.00005	0.0023	0.0019	0.001	
W3	2007-02-07 0:00														
W3	2007-02-22 0:00														
W3	2007-03-02 0:00														
W3	2007-03-08 0:00														
W3	2007-03-14 0:00														
W3	2007-03-23 0:00														
W3	2007-03-29 0:00														
W3	2007-04-03 0:00														
W3	2007-04-11 0:00														
W3	2007-04-17 0:00	0.0014	0.0001	0.0002	17	0.0002	6.55	0.001	0.432	0.0034	0.00005	0.0013	0.0025	0.003	
W3	2007-04-27 0:00	0.0015	0.0001	0.0002	10.8	0.0002	5.24	0.001	0.287	0.0005	0.00005	0.0024	0.001	0.004	
W3	2007-05-04 0:00	0.0011	0.0001	0.0002	7.6	0.0002	5.2	0.001	0.238	0.002	0.00005	0.0021	0.001	0.003	
W3	2007-05-11 0:00	0.0006	0.0001	0.0002	9.6	0.0002	5.57	0.001	0.299	0.0017	0.00005	0.0022	0.0014	0.005	

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N\text{-}NO_2$	$N\text{-}NO_3$	$N\text{-}NH_3$	SO_4-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W3	2007-05-19 0:00	128	352			250	10			0.06	4.5	0.05	27.4	2	
W3	2007-05-25 0:00	127	314			236	34				4.6	0.05	25	1.8	
W3	2007-05-30 0:00	126	341			260	13				4.8	0.06	25	1.7	
W3	2007-06-05 0:00	128	330			238	9			0.08	5.2	0.05	26	1.9	
W3	2007-06-13 0:00	144	316			232	6				4.8	0.05	26	1.9	
W3	2007-06-20 0:00	147	346			244	6				4.4	0.05	26	1.7	
W3	2007-06-27 0:00														
W3	2007-06-28 0:00	153	328			256	7			0.08	3.5	0.05	27	1.9	
W3	2007-07-04 0:00														
W3	2007-07-05 0:00	159	339			258	6				3		27	1.8	
W3	2007-07-11 0:00	162	369			248	2				3	0.05	28	1.8	
W3	2007-07-18 0:00	169	383			284	2				2.9	0.05	29	0.4	
W3	2007-07-25 0:00	175	387			270	4				2.4	0.05	30	5	
W3	2007-07-26 0:00														
W3	2007-08-01 0:00	175	366			304	2				2	0.05	31	2	
W3	2007-08-09 0:00	183	395			262	10				1.5	0.05	32	2	
W3	2007-08-15 0:00	191	385			318	6				1.8	0.05	32	2.4	
W3	2007-08-24 0:00	198	406			288	2				1.5	0.05	34	2.1	
W3	2007-08-29 0:00	202	394			304	2				1.6	0.05	34	2.4	
W3	2007-09-06 0:00	209	398			300	5				2.8	0.05	36	2.8	
W3	2007-09-11 0:00	208	395			310	4				3.17	0.05	35.2	2.98	
W3	2007-09-17 0:00	204	447			318	26				3.41	0.05	36.5	3.17	
W3	2007-09-25 0:00	202	443			302	2				2.27	0.05	37.5	2.89	
W3	2007-10-03 0:00	184	410			276	2				2.82	0.05	36	3.06	
W3	2007-10-10 0:00	183	453			290	3				3.5		38	2.7	
W3	2007-10-17 0:00	184	442			300	2				3.75	0.05		2.7	
W3	2007-10-22 0:00	182	465			290	2				4.08	0.05	39.7	2.7	
W3	2007-10-30 0:00	186	464			288	2					0.05	39.1	3.44	
W3	2007-11-08 0:00	194	469			304	2				3.08	0.05	40.6	3.37	
W3	2007-11-13 0:00	203	472			320	2				2.55	0.06	41.2	3.45	
W3	2007-11-20 0:00	208	490			328	4				2.61	0.05		4.13	
W3	2007-11-27 0:00	215	455			316	2				2.23	0.05	40.9	3.62	
W3	2007-12-06 0:00	216	495			316	2				1.8	0.05	41.1	3.92	
W3	2007-12-11 0:00	211	498			322	4				1.58	0.05	39.9	3.74	
W3	2007-12-18 0:00	214	419			352	2				1.5	0.05	39.3	3.77	
W3	2007-12-26 0:00	233	462			330	5				1.39	0.05	38.4	3.77	
W3	2008-01-03 0:00	228	472			322	2				1.34	0.05	40.2	3.93	
W3	2008-01-09 0:00	228	485			338	2				1.16	0.05	40.2	6.97	
W3	2008-01-15 0:00	243	509			336	2				1.1	0.05	40.1	4.25	
W3	2008-01-22 0:00	232	515			348	2				1.02	0.05	39.8	4.22	
W3	2008-01-30 0:00	238	538			346	10				0.88	0.05	39.8	0.14	
W3	2008-02-07 0:00	250	519			364	8				0.86	0.05	42.6	4.41	
W3	2008-02-13 0:00	259	571			360	2				0.77	0.05	42.3	4.66	
W3	2008-02-20 0:00	252	557			350	2				0.78	0.08	42.4	4.59	
W3	2008-02-27 0:00	248	506			358	8				0.76	0.05	43.4	4.6	
W3	2008-03-03 0:00	254	507			360	4				0.72	0.05	42	4.85	
W3	2008-03-14 0:00	253	508			356	2				0.69	0.05	42.6	4.56	
W3	2008-03-19 0:00	254	564			352	2				0.7	0.05	44.2	4.65	
W3	2008-03-26 0:00	254	514			350	2				0.68	0.05	44.8	4.61	
W3	2008-04-03 0:00	253	554			362	3				0.69	0.05	49.3	3.38	
W3	2008-04-10 0:00	254				370	2				0.61	0.05	50.6	3.45	
W3	2008-04-17 0:00	258	575			372	6				0.53	0.05	50.7	4.73	
W3	2008-04-22 0:00	252	523			378	2				0.47	0.05	49.8	4.74	
W3	2008-05-01 0:00	83	173			264	15				0.1	0.05	11.7	1.43	
W3	2008-05-04 0:00	178	394			304	5				0.52	0.05	34.5	2.12	
W3	2008-05-05 0:00	170	364			302	9				0.19	0.05	27.9	2.81	
W3	2008-05-08 0:00	190	422			304	3				0.23	0.05	31.7	3.18	
W3	2008-05-11 0:00	210	466			338	2				0.23		35	3.53	
W3	2008-05-13 0:00	241	499			338	2				0.28	0.05	40.3	4.42	
W3	2008-05-15 0:00	247	544			340	3				0.26	0.006	41	0.19	
W3	2008-05-18 0:00	233	504			324	7				0.24	0.009	37.8	0.13	
W3	2008-05-20 0:00	246	523			364	2				0.26	0.05	41.3	4.39	
W3	2008-05-27 0:00	244	474			336	2			0.01	0.2	0.05	36.3	4.37	
W3	2008-05-29 0:00	257	528			352	2			0.01	0.22	0.05	39.2	4.72	
W3	2008-06-03 0:00	261	552			328	2			0.01	0.21	0.05	40.8	4.29	
W3	2008-06-05 0:00	261	516			368	2			0.01	0.2	0.05	40.4	4.23	
W3	2008-06-11 0:00	261	504			338	2			0.01	0.19	0.05	41.2	4.35	
W3	2008-06-17 0:00	258	533			332	2			0.01	0.21	0.05	37.9	4.04	
W3	2008-06-25 0:00	258	522			422	2			0.01	0.14	0.05	38.2	3.86	
W3	2008-07-03 0:00	264	530			282	2			0.01	0.15	0.05	37.7	3.86	
W3	2008-07-08 0:00	266	528			368	2			0.01	0.13	0.05	36.9	3.93	
W3	2008-07-15 0:00	233	536			340	3			0.01	0.12	0.05	35.9	3.77	
W3	2008-07-22 0:00	250	496			310	2			0.01	0.14	0.05	32.8	3.79	
W3	2008-07-30 0:00	273	532			330	5			0.01	0.13	0.05	3.29	3.66	
W3	2008-08-06 0:00											0.05			
W3	2008-08-12 0:00	249	527			330	3			0.01	0.16	0.05	30.5	4.17	
W3	2008-08-21 0:00	270	517			384	2			0.01	0.11	0.05	29.3	3.86	
W3	2008-08-25 0:00														
W3	2008-08-26 0:00														
W3	2008-08-27 0:00	154	403			292	70			0.07	0.47	0.17	36.6	3.42	
W3	2008-08-28 0:00	161	393			290	40			0.05	0.24	0.3	34.8	3.51	
W3	2008-08-29 0:00	131	376			288	98			0.04	0.16		33.8	3.47	
W3	2008-08-30 0:00	156	380			284	58			0.06	0.27		33.1	3.26	
W3	2008-09-01 0:00	156	383			270	18			0.07	0.34	0.23	34.7	3.14	
W3	2008-09-03 0:00	171	374			300	8			0.06	0.28	0.22	34.6	3.18	
W3	2008-09-04 0:00	170	397			128	10			0.06	0.17		34.4	3.24	
W3	2008-09-05 0:00	164	391			306	30			0.07	0.19		35	3.14	
W3	2008-09-06 0:00	170	400			304	8			0.07	0.28		34.2	3.15	
W3	2008-09-07 0:00	162	386			300	27			0.07	0.17		35.9	3.23	
W3	2008-09-10 0:00	177	388			330	25			0.01	0.08	0.38	32	3.27	
W3	2008-09-17 0:00	189	424			376	23			0.01	0.07	0.36	31.8	3.75	
W3	2008-09-22 0:00	191	416			338	24			0.01	0.04	0.37	29.7	3.82	
W3	2008-09-24 0:00	174	445			376	32			0.12	1.96		49.6	3.33	
W3	2008-09-30 0:00	203	467			362	7			0.08	0.91	0.3	42.3	3.26	
W3	2008-10-08 0:00	222	445			296	2			0.01	0.12	0.13	35.8	3.01	
W3	2008-10-17 0:00	232	494			334	5			0.01	0.11	0.05	36.5	3.22	
W3	2008-10-24 0:00	246	514			356	4					0.05	39	0.54	
W3	2008-10-28 0:00														
W3	2008-11-04 0:00	239	522		8.5	384	2					0.05	40	0.82	
W3	2008-11-12 0:00	255	542		8.2	388	2	2.2				0.05	43.1	1.6	
W3	2008-11-18 0:00	261	556		7.96	414	7	0.3				0.05	46.2	3.3	
W3	2008-11-24 0:00				8.32										
W3	2008-11-26 0:00	129	303		8.32	238	44					0.05	27.5	1.97	
W3	2008-12-05 0:00	254	565		8.15	392	2	1.6				0.05	51.8	4.14	
W3	2008-12-10 0:00	243	547		7.24	386	4	2.1				0.05	49.7	3.27	
W3	2008-12-18 0:00	261	562			362	2					0.05	59.2	3.25	
W3	2008-12-24 0:00	256	570		7.17	422	30						61.3	5.9	
W3	2009-01-02 0:00	254	560		6.98	390	4	0.1					57.6	4.6	
W3	2009-01-09 0:00	251	577		7.17	448	6	0.4					71.8	3.1	
W3	2009-01-15 0:00	226	565		7.6	420	6	0.2					77.5	3.5	
W3	2009-01-20 0:00	253	596		7.3	398	3	0.1					75.8	3.68	
W3	2009-01-28 0:00	258	593		7.12	392	4	0.2					74.8	3.64	
W3	2009-02-02 0:00	229	546		6.95	330	4	0.8					67.8	3.28	
W3	2009-02-12 0:00				6.9			1.3							
W3	2009-02-15 0:00	251	576			396	2						68.5	3.2	

Station	Date / Time	Dissolved Elements																			
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W3	2007-05-19 0:00		0.009	0.0007	0.069	0.012	0.0001	0.0005	45.8	0.00001	0.0004	0.0008	0.016	0.11	0.0001	2	0.002	14.2	0.094	0.002	8.6
W3	2007-05-25 0:00		0.017	0.0004	0.064	0.011	0.0001	0.0005	45.1	0.00001	0.0003	0.001	0.014	0.05	0.0001	1.9	0.001	13.1	0.058	0.002	8.9
W3	2007-05-30 0:00		0.009	0.0004	0.071	0.01	0.0001	0.0005	43.9	0.00001	0.0003	0.0012	0.012	0.06	0.0001	1.9	0.001	12.7	0.05	0.002	9.6
W3	2007-06-05 0:00																				
W3	2007-06-13 0:00	0.0001	0.014	0.0004	0.066	0.012	0.0001	0.0005	47	0.00001	0.0003	0.0008	0.014	0.04	0.0001	1.9	0.002	13.8	0.031	0.002	9.7
W3	2007-06-20 0:00		0.013	0.0006	0.069	0.017	0.0001	0.0005	49.2	0.00001	0.0003	0.0008	0.014	0.04	0.0001	2	0.002	13.5	0.038	0.003	9.6
W3	2007-06-27 0:00																				
W3	2007-06-28 0:00		0.006	0.0008	0.073	0.02	0.0001	0.0005	49.8	0.00001	0.0002	0.001	0.013	0.03	0.0001	2	0.002	14.4	0.005	0.003	10
W3	2007-07-04 0:00																				
W3	2007-07-05 0:00		0.011	0.0005	0.075	0.015	0.0001	0.0005	47.7	0.00001	0.0002	0.0005	0.013	0.03	0.0001	2	0.002	13.5	0.033	0.003	9.6
W3	2007-07-11 0:00		0.01	0.0006	0.075	0.014	0.0001	0.0005	48.8	0.00001	0.0002	0.0005	0.011	0.03	0.0001	1.8	0.002	14	0.031	0.003	9.8
W3	2007-07-18 0:00		0.01	0.0004	0.075	0.016	0.0001	0.0005	51.7	0.00001	0.0002	0.0005	0.012	0.03	0.0001	2	0.002	15.6	0.032	0.004	10.2
W3	2007-07-25 0:00		0.009	0.0005	0.074	0.014	0.0001	0.0005	54.3	0.00001	0.0003	0.0005	0.01	0.04	0.0001	2.2	0.002	15.4	0.044	0.003	11.4
W3	2007-07-26 0:00		0.009	0.0005	0.08	0.012	0.0001	0.0005	53.6	0.00002	0.0002	0.0009	0.01	0.04	0.0001	2.2	0.001	15.1	0.043	0.003	10.8
W3	2007-08-01 0:00		0.009	0.0002	0.077	0.014	0.0001	0.0005	50.6	0.00001	0.0003	0.0005	0.01	0.04	0.0001	2	0.002	14.8	0.058	0.003	10.8
W3	2007-08-09 0:00		0.005	0.0004	0.079	0.014	0.0001	0.0005	53.9	0.00001	0.0001	0.0005	0.007	0.03	0.0001	1.8	0.002	15.7	0.044	0.002	11.1
W3	2007-08-15 0:00		0.025	0.0003	0.081	0.017	0.0001	0.0005	54	0.00001	0.0002	0.0005	0.008	0.04	0.0001	2	0.002	16.3	0.047	0.003	11.6
W3	2007-08-24 0:00																				
W3	2007-08-29 0:00		0.006	0.0005	0.082	0.014	0.0001	0.0005	54.9	0.00001	0.0002	0.0005	0.005	0.03	0.0001	1.8	0.002	16.8	0.07	0.002	11.3
W3	2007-09-06 0:00		0.008	0.0006	0.09	0.018	0.0001	0.0005	57.4	0.00001	0.0002	0.001	0.008	0.06	0.0001	2.3	0.002	17.4	0.113	0.003	12.4
W3	2007-09-11 0:00		0.007	0.0004	0.082	0.02	0.0001	0.0005	58.2	0.00001	0.0003	0.0006	0.008	0.03	0.0001	2.2	0.002	17.4	0.08	0.003	12.3
W3	2007-09-17 0:00		0.01	0.0004	0.091	0.02	0.0001	0.0005	55.5	0.00001	0.0001	0.0005	0.008	0.04	0.0001	2.4	0.002	16.9	0.071	0.003	12.6
W3	2007-09-25 0:00		0.005	0.0003	0.088	0.013	0.0001	0.0005	55.1	0.00001	0.0001	0.0006	0.004	0.03	0.0001	2	0.002	17.8	0.076	0.002	12.2
W3	2007-10-03 0:00		0.007	0.0004	0.087	0.015	0.0001	0.0005	56.5	0.00001	0.0002	0.0005	0.005	0.08	0.0001	2	0.002	18.8	0.127	0.002	12
W3	2007-10-10 0:00		0.011	0.0004	0.09	0.016	0.0001	0.0005	60.5	0.00001	0.0002	0.0006	0.007	0.03	0.0001	2.2	0.002	18.7	0.054	0.003	12.9
W3	2007-10-17 0:00		0.005	0.0004	0.086	0.018	0.0001	0.0005	58.8	0.00001	0.0001	0.0005	0.004	0.05		2	0.002	18.8	0.063	0.002	12.7
W3	2007-10-22 0:00		0.006	0.0003	0.083	0.015	0.0001	0.0005	60.8	0.00001	0.0001	0.0005	0.004	0.02	0.0001	1.8	0.002	19.7	0.061	0.002	12.5
W3	2007-10-30 0:00		0.005	0.0003	0.084	0.015	0.0001	0.0005	58.7	0.00001	0.0001	0.0005	0.004	0.02	0.0001	1.9	0.002	18.2	0.065	0.002	12.8
W3	2007-11-08 0:00		0.008	0.0004	0.083	0.015	0.0001	0.0005	55.8	0.00001	0.0002	0.0005	0.004	0.03	0.0001	2	0.002	19.9	0.073	0.002	14.4
W3	2007-11-13 0:00		0.005	0.0004	0.085	0.014	0.0001	0.0005	59.6	0.00001	0.0002	0.0005	0.003	0.03	0.0001	1.8	0.002	20.3	0.078	0.002	13.8
W3	2007-11-20 0:00		0.008	0.0005	0.095	0.02	0.0001	0.0005	62.6	0.00001	0.0002	0.0007	0.007	0.02	0.0001	2.5	0.002	20	0.067	0.004	14.5
W3	2007-11-27 0:00		0.005	0.0003	0.083	0.016	0.0001	0.0005	60.2	0.00001	0.0002	0.0005	0.004	0.03	0.0001	1.8	0.002	20.6	0.079	0.002	13.8
W3	2007-12-06 0:00		0.005	0.0003	0.091	0.017	0.0001	0.0005	63.1	0.00001	0.0001	0.0005	0.003	0.01	0.0001	2	0.002	22.8	0.067	0.002	14.9
W3	2007-12-11 0:00		0.005	0.0005	0.089	0.017	0.0001	0.0005	63	0.00001	0.0002	0.0005	0.004	0.02	0.0001	2	0.002	22	0.067	0.002	14.7
W3	2007-12-18 0:00		0.005	0.0005	0.089	0.017	0.0001	0.0005	60.9	0.00001	0.0001	0.0005	0.003	0.01	0.0001	2	0.002	21.7	0.054	0.002	14.8
W3	2007-12-26 0:00		0.005	0.0005	0.086	0.015	0.0001	0.0005	64.4	0.00001	0.0001	0.0024	0.003	0.01	0.0001	2.1	0.002	23.2	0.005	0.007	15.2
W3	2008-01-03 0:00		0.005	0.0004	0.087	0.014	0.0001	0.0005	64.4	0.00001	0.0002	0.0005	0.003	0.05	0.0001	2	0.002	23	0.105	0.002	15
W3	2008-01-09 0:00		0.005	0.0003	0.098	0.018	0.0001	0.0005	64.9	0.00001	0.0002	0.0005	0.003	0.05	0.0001	2	0.002	23.1	0.117	0.002	15
W3	2008-01-15 0:00		0.007	0.0004	0.091	0.018	0.0001	0.0005	65.3	0.00001	0.0002	0.0005	0.003	0.06	0.0001	2	0.002	22.9	0.131	0.003	14.8
W3	2008-01-22 0:00		0.005	0.0005	0.091	0.018	0.0001	0.0005	67.3	0.00001	0.0001	0.0008	0.003	0.07	0.0001	2	0.003	23.7	0.145	0.002	15.8
W3	2008-01-30 0:00		0.006	0.0002	0.097	0.02	0.0001	0.0005	67.6	0.00002	0.0001	0.0006	0.003	0.1	0.0001	2	0.002	23.7	0.164	0.002	15.7
W3	2008-02-07 0:00		0.008	0.0006	0.1	0.022	0.0001	0.0005	69.3	0.00001	0.0002	0.0005	0.004	0.1	0.0001	2.4	0.003	26.2	0.179	0.003	17.2
W3	2008-02-13 0:00	0.00001	0.005	0.0003	0.101	0.016	0.0001	0.0005	72.1	0.00001	0.0001	0.0013	0.004	0.06	0.0001	2.4	0.002	26.2	0.117	0.002	17.4
W3	2008-02-20 0:00	0.00001	0.006	0.0005	0.097	0.018	0.0001	0.0005	69.6	0.00002	0.0001	0.0011	0.005	0.06	0.0001	5.4	0.004	25.6	0.113	0.002	16.9
W3	2008-02-27 0:00	0.00001	0.005	0.0003	0.095	0.023	0.0001	0.0005	70.9	0.00001	0.0002	0.0005	0.003	0.06	0.0001	2.1	0.002	25	0.123	0.003	16.6
W3	2008-03-03 0:00	0.00001	0.008	0.0004	0.097	0.018	0.0001	0.0005	70.5	0.00001	0.0002	0.0005	0.003	0.06	0.0001	2.1	0.002	25	0.12	0.003	16.5
W3	2008-03-14 0:00	0.00001	0.005	0.0004	0.095	0.019	0.0001	0.0005	71.2	0.00001	0.0003	0.0013	0.003	0.06	0.0001	2	0.002	25.2	0.104	0.002	17.2
W3	2008-03-19 0:00			0.0002	0.092	0.015	0				0.00014	0.0016	0.002	0.06	0.01		0.002		0.103	0.00221	
W3	2008-03-26 0:00	0.00001	0.005	0.0004	0.096	0.019	0.0001	0.0005	74.3	0.00001	0.0002	0.0015	0.004	0.07	0.0001	2.2	0.002	25.9	0.112	0.002	16.7
W3	2008-04-03 0:00	0.00001	0.012	0.0003	0.096	0.018	0.0001	0.0005	65.9	0.00002	0.0002	0.0012	0.003	0.05	0.0001	2.1	0.003	24.9	0.124	0.002	16.6
W3	2008-04-10 0:00	0.00001	0.009	0.0003	0.095	0.014	0.0001	0.0005	66.5	0.00001	0.0001	0.001	0.005	0.04	0.0001	5.6	0.004	25.2	0.117	0.002	16.8
W3	2008-04-17 0:00	0.00001	0.005	0.0003	0.096	0.019	0.0001	0.0005	70.7	0.00001	0.0002	0.0005	0.004	0.05	0.0001	2.1	0.002	25.2	0.113	0.002	16.6
W3	2008-04-22 0:00			0.0004	0.097	0.015	0.00004		65.9		0.00018	0.0006	0.002	0.04	0.00001	2.12	0.002	23.5	0.11	0.00218	16
W3	2008-05-01 0:00		0.08	0.0005	0.046	0.006	0.00004		21.7		0.00022	0.0007	0.007	0.12	0.00002	1.52	0.001	7.07	0.0248	0.00066	4.61
W3	2008-05-04 0:00		0.03	0.0002	0.074	0.012	0.00004		43.9		0.0002	0.0018	0.006	0.1	0.00001	1.86	0.002	18.8	0.0508	0.00154	12.5
W3	2008-05-05 0:00																				
W3	2008-05-08 0:00		0.03	0.0003	0.079	0.012	0.00006		49.9		0.00017	0.002	0.006	0.1	0.00001	1.68	0.001	16.2	0.0892	0.0015	11.1
W3	2008-05-11 0:00			0.001	0.079	0.014	0.00004		59.8		0.00026	0.0029	0.006	0.11	0.00001	1.98	0.002	21	0.123	0.00183	13.5
W3	2008-05-13 0:00			0.0012	0.089	0.013	0.00004		58.8		0.00019	0.0006	0.004	0.07	0.00001	1.28	0.002	20.8	0.0979	0.00205	14.5
W3	2008-05-15 0:00			0.0002	0.091	0.013	0.00004		66.7		0.00028	0.0013	0.004	0.09	0.00001	1.98	0.002	21.9	0.106	0.00223	15.4
W3	2008-05-18 0:00			0.0003	0.082	0.014	0.00004		61.4		0.00018	0.0026	0.005	0.06	0.00001	1.9	0.002	20.6	0.0926	0.00217	14.7
W3	2008-05-20 0:00			0.0008	0.084	0.013	0.00004		63.8		0.00024	0.0015	0.005	0.07	0.00001	2.19	0.002	21	0.0998	0.00241	15.1
W3	2008-05-27 0:00			0.0007	0.084	0.023	0.00004		63.1		0.00015	0.0011	0.004	0.04	0.00001	2.02	0.002	21.8	0.0885	0.00208	15.4
W3	2008-05-29 0:00			0.0005	0.087	0.024	0.00004		66.4		0.00022	0.0008	0.003	0.04	0.00001	2.03	0.002	22.8	0.0886	0.00207	16.2
W3	2008-06-03 0:00																				
W3	2008-06-05 0:00	0.00001	0.01	0.0002	0.087	0.016	0.00004				0.00018	0.0039	0.003	0.05	0.01		0.002		0.103	0.00227	
W3	2008-06-11 0:00	0.00001	0.01	0.0003	0.085	0.016	0.00004				0.00018	0.001	0.003	0.05	0.01		0.002		0.104	0.00238	
W3	2008-06-17 0:00	0.00001	0.01	0.0005	0.081	0.018	0.00004				0.00017	0.002	0.003	0.04			0.002		0.0844	0.00237	
W3	2008-06-25 0:00	0.00001	0.01	0.0002	0.082	0.016	0.00004		68		0.00015	0.0039	0.004	0.04	0.00001	1.94	0.002	23.7	0.083	0.00233	16.7
W3	2008-07-03 0:00	0.00001	0.009	0.0004	0.091	0.019	0.0001	0.0005	68.9	0.00001	0.0001	0.0005	0.003	0.05	0.0001	2	0.002	24.6	0.084	0.003	17.4
W3	2008-07-08 0:00	0.00001	0.01	0.0006	0.09	0.014	0.00004		72		0.00025	0.0018	0.004	0.07	0.00001	2.09	0.002	25	0.0893	0.00229	16.2
W3	2008-07-15 0:00	0.00001	0.005	0.0004	0.089	0.019	0.0001	0.0005	67.1	0.00002	0.0003	0.0005	0.004	0.08	0.0001	2	0.002	24.2	0.082	0.002	17.7
W3	2008-07-22 0:00	0.00001	0.007	0.0004	0.09	0.016	0.0001	0.0005	65.7	0.00001	0.0002	0.0005	0.005	0.05	0.0001	1.8	0.002	23.1	0.067	0.002	16.4
W3	2008-07-30 0:00	0.00001	0.01	0.0004	0.09	0.016	0.00004		67.8		0.00031	0.0008	0.004	0.09	0.00001	2.04	0.002	23.9	0.111	0.00245	16.8
W3	2008-08-06 0:00	0.00002	0.005	0.0004	0.094	0.015	0.0001	0.0005	67.6	0.00001	0.0002	0.0006	0.003	0.1	0.0001	1.9	0.002	24.2	0.106	0.002	16.9
W3	2008-08-12 0:00	0.00001	0.01	0.0004	0.087	0.017	0.00004		69.8		0.00031	0.002	0.003	0.08	0.00001	2.06	0.002	25	0.103	0.00258	17.3
W3	2008-08-21 0:00	0.00001	0.01	0.0003	0.084	0.013	0.00004		65.6		0.00028	0.0011	0.004	0.08	0.00001	1.96	0.002	22.9	0.0899	0.00231	15.8
W3	2008-08-25 0:00																				
W3	2008-08-26 0:00																				
W3	2008-08-27 0:00	0.00001	0.01	0.0006	0.082	0.024	0.00004		56.1	0.00002	0.00028	0.0024	0.028	0.19	0.00001	6.28	0.003	15.1	0.21	0.00727	17
W3	2008-08-28 0:00	0.00001	0.045	0.0007	0.078	0.023	0.00004		53.1	0.00003	0.00128	0.0013	0.029	0.44	0.00001	7.65	0.003	13.4	0.406	0.00625	18.3
W3	2008-08-29 0:00																				
W3	2008-08-30 0:00																				
W3	2008-09-01 0:00	0.00001	0.025	0.0009	0.076	0.021	0.00004		46.9	0.00001	0.00073	0.0009	0.014	0.62	0.00001	7.07	0.002	13	0.538	0.00647	16.6
W3	2008-09-03 0:00																				
W3	2008-09-04 0:00																				
W3	2008-09-05 0:00																				
W3	2008-09-06 0:00																				
W3	2008-09-07 0:00																				
W3	2008-09-10 0:00	0.00001	0.04	0.0009	0.083	0.021	0.00004		46.5	0.00002	0.00068	0.0006	0.022	0.58	0.00001	8.04	0.002	13	0.63	0.00477	16.9
W3	2008-09-17 0:00	0.00001	0.058	0.0008	0.074	0.025	0.00004		47.6	0.00002	0.00089	0.0022	0.023	0.44	0.00001	8.06	0.002	13.4	0.668	0.00422	16.2
W3	2008-09-22 0:00	0.00001	0.049	0.0008	0.089	0.023	0.00004		49.8	0.00008	0.00069	0.0007	0.029	0.64	0.00001	7.14	0.002	14.7	0.77	0.00531	15.5
W3	2008-09-24 0:00																				
W3	2008-09-30 0:00	0.00001	0.017	0.0006	0.087	0.02	0.0001	0.0005	57	0.00003	0.0004	0.0008	0.022	0.17	0.0001	4.3	0.002	18.7	0.489	0.006	17.8
W3	2008-10-08 0:00	0.00001	0.007	0.0005	0.083	0.018	0.00004		53.9	0.00003	0.00025	0.0022	0.008	0.142	0.00001	2.1	0.002	20.3	0.24	0.00268	13.9
W3	2008-10-17 0:00	0.00001	0.011	0.0006	0.075	0.013	0.00004		61.9	0.00003	0.00044	0.0006	0.006	0.171	0.00001	2.3	0.002	22.6	0.243	0.00236	15.1
W3	2008-10-24 0:00	0.00001	0.005	0.0004	0.086	0.018	0.00004		69.5	0.00001	0.00022	0.0008	0.006	0.085	0.00001	2.4	0.002	24.8	0.209	0.00302	17.5
W3	2008-10-28 0:00	0.00001	0.005	0.0003	0.079	0.016	0.00004		74	0.00001	0.00019	0.0007	0.004	0.167	0.00001	2.6	0.002	28.9	0.201	0.00232	19.1
W3	2008-11-04 0:00	0.00001	0.007	0.0004	0.088	0.022	0.0001	0.0005	64	0.00001	0.0002	0.0005	0.005	0.13	0.0001	3.2	0.003	23.2	0.188	0.003	16.8
W3	2008-11-12 0:00	0.00001	0.016	0.0014	0.088	0.023	0.0001	0.0005	63.4	0.00002	0.0002	0.0005	0.009	0.13	0.0001	3	0.004	24.7	0.18	0.003	18
W3	2008-11-18 0:00	0.00001	0.01	0.0004	0.094	0.018	0.0001	0.0005	65.4	0.00001	0.0002	0.0005	0.007	0.15	0.0001	2.2	0.003	26.1	0.226	0.002	18.7
W3	2008-11-24 0:00																				
W3	2008-11-26 0:00	0.00001	0.005	0.0004	0.09	0.017	0.00004	0.0001	64.7	0.00001	0.00018	0.0011	0.003	0.146	0.00001	1.9	0.002	24.3	0.213	0.00234	15.9
W3	2008-12-05 0:00	0.00001	0.005	0.0003	0.099	0.016	0.00004	0.0001	69.7	0.00001	0.00026	0.0016	0.003	0.175	0.00001	2	0.002	27.1	0.229	0.00244	16.3
W3	2008-12-10 0:00	0.00001	0.005	0.0003	0.091	0.017	0.00004	0.0001	69.1	0.00001	0.00017	0.0007	0.003	0.192	0.00001	1.9	0.002	26.2	0.245	0.00236	17
W3	2008-12-18 0:00	0.00001	0.009	0.0002	0.092	0.021	0.0001	0.0005	67.9	0.00001	0.0002	0.0005	0.005	0.12	0.00001	2.3	0.003	28.8	0.165	0.003	19.7
W3	2008-12-24 0:00	0.00001	0.006	0.0002	0.051	0.011	0.0001	0.0005	36.2	0.00001	0.0002	0.0005	0.004	0.02	0.0001	1.5	0.002	17.4	0.114	0.001	12
W3	2009-01-02 0:00	0.00001	0.006	0.0003	0.091	0.018	0.0001	0.0005	63.8	0.00001	0.0003	0.0005	0.004	0.11	0.0001	2.2	0.003	28.6	0.134	0.002	18.3
W3	2009-01-09 0:00	0.00001	0.008	0.0004	0.093	0.019	0.0001	0.0005	66.2	0.00001	0.0003	0.0005	0.006	0.08	0.0001	3	0.003	27.3	0.11	0.003	19.6
W3	2009-01-15 0:00	0.00001	0.01	0.0004	0.097	0.02	0.0001	0.0005	67.1	0.00002	0.0004	0.0005	0.01	0.05	0.0001	3.6	0.002	23.5	0.139	0.005	19.3
W3	2009-01-20 0:00	0.00001	0.005	0.0002	0.094	0.017	0.00004	0.0001	77.6	0.00001	0.00011	0.0008	0.004	0.08	0.00001	2.9	0.003	33.2	0.114	0.00233	20.2
W3	2009-01-28 0:00	0.00001	0.005	0.0002	0.094	0.017	0.00004	0.0001	77.7	0.00002	0.00022	0.0009	0.008	0.09	0.00001	4.5	0.027	33.2	0.109	0.00229	20.9
W3	2009-02-02 0:00	0.00001	0.005	0.0002	0.089	0.015	0.00004	0.0001	72.3	0.00001	0.0002	0.0006	0.003	0.1	0.00001	2.6	0.003	30.7	0.0997	0.00199	19.1
W3	2009-02-12 0:00																				
W3	2009-02-15 0:00	0.00001	0.005	0.0003	0.092	0.014	0.00004	0.0001	70.7	0.00001	0.00013	0.0005	0.003	0.08	0.00001	3.8	0.002	20.5	0.1	0.00198	19.7

Station	Date / Time	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W3	2007-05-19 0:00	0.0005	0.0001	0.0002	9.7	0.0003	5.69	0.001	0.315	0.0015	0.00005	0.0018	0.0017	0.003	
W3	2007-05-25 0:00	0.0005	0.0002	0.0002	9.3	0.0002	5.22	0.001	0.324	0.0015	0.00005	0.0014	0.0021	0.002	
W3	2007-05-30 0:00	0.0005	0.0001	0.0002	9.1	0.0002	5.11	0.001	0.314	0.0018	0.00005	0.0014	0.0018	0.003	
W3	2007-06-05 0:00														
W3	2007-06-13 0:00	0.0005	0.0001	0.0002	9.5	0.0002	5.38	0.001	0.333	0.0018	0.00005	0.0016	0.0018	0.002	
W3	2007-06-20 0:00	0.0009	0.0001	0.0002	9.7	0.0002	5.27	0.001	0.368	0.0014	0.00005	0.0018	0.0024	0.004	
W3	2007-06-27 0:00														
W3	2007-06-28 0:00	0.0005	0.0001	0.0002	9.6	0.0002	5.37	0.001	0.367	0.0011	0.00005	0.0017	0.003	0.002	
W3	2007-07-04 0:00														
W3	2007-07-05 0:00	0.0014	0.0001	0.0002	9.3	0.0002	5.34	0.001	0.361	0.0014	0.00005	0.002	0.0015	0.003	
W3	2007-07-11 0:00	0.0005	0.0001	0.0002	9.7	0.0002	5.47	0.001	0.37	0.0012	0.00005	0.002	0.0014	0.002	
W3	2007-07-18 0:00	0.0005	0.0001	0.0002	10.2	0.0002	5.6	0.001	0.391	0.0011	0.00005	0.0021	0.001	0.002	
W3	2007-07-25 0:00	0.0005	0.0001	0.0002	10.3	0.0002	5.78	0.001	0.408	0.0015	0.00005	0.002	0.0014	0.002	
W3	2007-07-26 0:00	0.0005	0.0001	0.0002	10.6	0.0005	5.88	0.001	0.411	0.0012	0.00005	0.002	0.0022	0.003	
W3	2007-08-01 0:00	0.0034	0.0001	0.0002	10.3	0.0004	6.2	0.001	0.391	0.0012	0.00005	0.002	0.0016	0.007	
W3	2007-08-09 0:00	0.0005	0.0001	0.0002	11	0.0002	6.04	0.001	0.408	0.001	0.00005	0.0019	0.0014	0.008	
W3	2007-08-15 0:00	0.0005	0.0001	0.0002	11.1	0.0003	5.98	0.001	0.383	0.0011	0.00005	0.002	0.0018	0.008	
W3	2007-08-24 0:00														
W3	2007-08-29 0:00	0.0005	0.0001	0.0011	11.8	0.0002	5.95	0.001	0.416	0.0011	0.00005	0.0022	0.0011	0.002	
W3	2007-09-06 0:00	0.0008	0.0001	0.0002	12.2	0.0005	6.02	0.001	0.44	0.0014	0.00005	0.0022	0.0018	0.006	
W3	2007-09-11 0:00	0.0015	0.0001	0.001	12.2	0.0005	5.86	0.001	0.426	0.001	0.00005	0.0024	0.0009	0.003	
W3	2007-09-17 0:00	0.0009	0.0001	0.0002	12.2	0.0002	5.76	0.001	0.464	0.0012	0.00005	0.0023	0.001	0.008	
W3	2007-09-25 0:00	0.0005	0.0001	0.0002	12.7	0.0002	6.02	0.001	0.458	0.0009	0.00005	0.0021	0.0012	0.007	
W3	2007-10-03 0:00	0.0011	0.0001	0.0002	12.3	0.0002	5.96	0.001	0.423	0.0005	0.00005	0.002	0.0007	0.007	
W3	2007-10-10 0:00	0.0007	0.0001	0.0002	13.3	0.0004	6.01	0.001	0.452	0.0017	0.00005	0.0022	0.001	0.009	
W3	2007-10-17 0:00	0.0005	0.0001	0.001	13.6	0.0002	5.98	0.001	0.485	0.0007	0.00005	0.0022	0.0008	0.002	
W3	2007-10-22 0:00	0.0005	0.0001	0.0011	13.9	0.0002	6.06	0.001	0.484	0.001	0.00005	0.0022	0.0017	0.003	
W3	2007-10-30 0:00	0.0005	0.0001	0.0015	13.5	0.0004	5.86	0.001	0.481	0.0011	0.00005	0.0024	0.0006	0.002	
W3	2007-11-08 0:00	0.0005	0.0001	0.001	13.8	0.0003	5.81	0.001	0.545	0.0022	0.00005	0.0024	0.0007	0.002	
W3	2007-11-13 0:00	0.0007	0.0001	0.0008	14.4	0.0002	6.06	0.001	0.505	0.0005	0.00005	0.0026	0.001	0.002	
W3	2007-11-20 0:00	0.0005	0.0001	0.0011	14.4	0.0003	5.65	0.001	0.505	0.0012	0.00005	0.0033	0.002	0.004	
W3	2007-11-27 0:00	0.001	0.0001	0.0009	14.5	0.0003	5.87	0.001	0.497	0.0005	0.00005	0.003	0.0008	0.002	
W3	2007-12-06 0:00	0.0005	0.0001	0.0002	15.4	0.0003	6.17	0.001	0.564	0.0008	0.00005	0.0032	0.0005	0.004	
W3	2007-12-11 0:00	0.0005	0.0001	0.0008	15.5	0.0002	6.04	0.001	0.531	0.0013	0.00005	0.0031	0.0013	0.002	
W3	2007-12-18 0:00	0.0005	0.0001	0.0009	14.6	0.0002	5.92	0.001	0.531	0.0013	0.00005	0.0032	0.001	0.003	
W3	2007-12-26 0:00	0.0009	0.0001	0.0002	15.7	0.0002	6.04	0.001	0.585	0.0007	0.00005	0.0028	0.0072	0.002	
W3	2008-01-03 0:00	0.0005	0.0001	0.0012	15	0.0002	5.87	0.001	0.532	0.0007	0.00005	0.0035	0.0008	0.002	
W3	2008-01-09 0:00	0.0008	0.0001	0.0008	15	0.0002	5.9	0.001	0.591	0.0011	0.00005	0.0038	0.0015	0.003	
W3	2008-01-15 0:00	0.001	0.0001	0.0009	14.8	0.0002	5.83	0.001	0.583	0.0011	0.00005	0.0041	0.0009	0.003	
W3	2008-01-22 0:00	0.0005	0.0001	0.0007	15.4	0.0003	5.87	0.001	0.616	0.0014	0.00005	0.004	0.0023	0.002	
W3	2008-01-30 0:00	0.0005	0.0001	0.0005	15.3	0.0002	5.95	0.001	0.646	0.0022	0.00005	0.0042	0.0015	0.002	
W3	2008-02-07 0:00	0.0005	0.0001	0.0009	16.9	0.0004	6.24	0.001	0.713	0.0013	0.00005	0.0046	0.0016	0.005	
W3	2008-02-13 0:00	0.0005	0.0001	0.0006	16.9	0.0004	6.23	0.001	0.651	0.0009	0.00005	0.0048	0.0019	0.004	
W3	2008-02-20 0:00	0.0005	0.0001	0.0006	16.3	0.0003	6.03	0.001	0.653	0.001	0.00005	0.0048	0.0032	0.006	
W3	2008-02-27 0:00	0.001	0.0001	0.0006	15.8	0.0002	5.93	0.001	0.639	0.0008	0.00005	0.005	0.001	0.002	
W3	2008-03-03 0:00	0.0018	0.0001	0.0006	16	0.0004	5.88	0.001	0.689	0.0012	0.00005	0.0054	0.0007	0.003	
W3	2008-03-14 0:00	0.001	0.0001	0.0014	17.1	0.0003	5.99	0.001	0.66	0.0012	0.00005	0.0052	0.0008	0.003	
W3	2008-03-19 0:00	0.001	0.0002	0.0007		0.0006		0.004	0.65	0.0005	0.00001	0.0047	0.0008	0.003	0.0001
W3	2008-03-26 0:00	0.0011	0.0001	0.0007	17.3	0.0006	6.06	0.001	0.674	0.0013	0.00005	0.0052	0.0026	0.006	
W3	2008-04-03 0:00	0.0012	0.0001	0.0008	16.4	0.0005	5.76	0.001	0.671	0.0017	0.00005	0.0051	0.0011	0.003	
W3	2008-04-10 0:00	0.0005	0.0004	0.0008	16.3	0.0003	5.74	0.001	0.644	0.0011	0.00005	0.0052	0.0006	0.006	
W3	2008-04-17 0:00	0.0005	0.0001	0.001	16.8	0.0002	5.84	0.001	0.665	0.0007	0.00005	0.0053	0.0007	0.005	
W3	2008-04-22 0:00	0.001	0.0001	0.0006		0.0006	3.18	0.004	0.625	0.0051	0.00001	0.0052	0.00063	0.001	0.0001
W3	2008-05-01 0:00	0.003	0.0001	0.0011		0.0006	1.74	0.004	0.171	0.0021	0.00001	0.0011	0.0005	0.006	0.0005
W3	2008-05-04 0:00	0.002	0.0001	0.0013		0.0006	2.83	0.004	0.473	0.0013	0.00001	0.0025	0.00098	0.004	0.0003
W3	2008-05-05 0:00														
W3	2008-05-08 0:00	0.003	0.0001	0.0013		0.0006	2.73	0.004	0.429	0.001	0.00001	0.0037	0.00106	0.005	0.0004
W3	2008-05-11 0:00	0.002	0.0001	0.0008		0.0006	3.29	0.004	0.522	0.0009	0.00001	0.0043	0.0014	0.003	0.0003
W3	2008-05-13 0:00	0.002	0.0001	0.0007		0.0006	2.89	0.004	0.557	0.0008	0.00001	0.005	0.0005	0.002	0.0003
W3	2008-05-15 0:00	0.002	0.0001	0.0013		0.0006	3.06	0.004	0.61	0.0006	0.00001	0.0053	0.00059	0.002	0.0002
W3	2008-05-18 0:00	0.002	0.0001	0.0006		0.0006	2.92	0.004	0.548	0.0008	0.00001	0.0047	0.001	0.002	0.0002
W3	2008-05-20 0:00	0.002	0.0002	0.0012		0.0006	2.46	0.004	0.585	0.0003	0.00001	0.005	0.00063	0.004	0.0002
W3	2008-05-27 0:00	0.001	0.0001	0.0013		0.0006	2.6	0.004	0.564	0.0016	0.00001	0.0051	0.00053	0.002	0.0003
W3	2008-05-29 0:00	0.001	0.0001	0.0012		0.0006	2.68	0.004	0.592	0.0005	0.00001	0.0054	0.00049	0.003	0.0003
W3	2008-06-03 0:00														
W3	2008-06-05 0:00	0.001	0.0001	0.0008		0.0006		0.0001	0.621	0.0003	0.00001	0.0051	0.00117	0.002	0.0002
W3	2008-06-11 0:00	0.001	0.0001	0.0008		0.0006		0.0001	0.628	0.0005	0.00001	0.0049	0.00046	0.002	0.0003
W3	2008-06-17 0:00	0.001	0.0001	0.001		0.0008		0.0001	0.596	0.0003	0.00001	0.0047	0.00091	0.002	0.0002
W3	2008-06-25 0:00	0.001	0.0001	0.0006		0.0006	4.85	0.0001	0.6	0.0007	0.00001	0.0045	0.0013	0.003	0.0003
W3	2008-07-03 0:00	0.0005	0.0001	0.001	13	0.0002	5.71	0.001	0.654	0.0007	0.00005	0.0048	0.0006	0.006	
W3	2008-07-08 0:00	0.001	0.0004	0.0011		0.0006	5.02	0.0001	0.631	0.0007	0.00001	0.0045	0.00088	0.003	0.0003
W3	2008-07-15 0:00	0.0005	0.0002	0.001	12.1	0.0002	5.76	0.001	0.596	0.0018	0.00005	0.0048	0.0006	0.004	
W3	2008-07-22 0:00	0.0007	0.0001	0.0014	11.2	0.0002	5.73	0.001	0.598	0.0006	0.00005	0.0043	0.0006	0.003	
W3	2008-07-30 0:00	0.001	0.0001	0.0007		0.0006	5.7	0.0001	0.639	0.0007	0.00001	0.0041	0.00066	0.006	0.0002
W3	2008-08-06 0:00	0.0005	0.0001	0.0008	11.1	0.0002	5.87	0.001	0.597	0.0005	0.00005	0.0045	0.0007	0.004	
W3	2008-08-12 0:00	0.001	0.0001	0.0009		0.0006	6.43	0.0001	0.621	0.0008	0.00001	0.0044	0.00094	0.003	0.0002
W3	2008-08-21 0:00	0.001	0.0001	0.0009		0.0006	5.95	0.0001	0.597	0.0007	0.00001	0.0038	0.00068	0.002	0.0002
W3	2008-08-25 0:00														
W3	2008-08-26 0:00														
W3	2008-08-27 0:00	0.003	0.0001	0.0002		0.0008	5.5	0.0001	0.41	0.0012	0.00001	0.0016	0.00202	0.002	0.0004
W3	2008-08-28 0:00	0.003	0.0002	0.0034		0.0012	5.01	0.0001	0.452	0.004	0.00001	0.0014	0.00228	0.004	0.0004
W3	2008-08-29 0:00														
W3	2008-08-30 0:00														
W3	2008-09-01 0:00	0.001	0.0001	0.0014		0.0006	4.93	0.0001	0.448	0.0021	0.00001	0.0012	0.00206	0.003	0.0004
W3	2008-09-03 0:00														
W3	2008-09-04 0:00														
W3	2008-09-05 0:00														
W3	2008-09-06 0:00														
W3	2008-09-07 0:00														
W3	2008-09-10 0:00	0.003	0.0002	0.0008		0.0012	4.75	0.0001	0.439	0.0037	0.00001	0.0011	0.0026	0.004	0.0004
W3	2008-09-17 0:00	0.002	0.0001	0.0008		0.0037	5.14	0.0001	0.43	0.0036	0.00001	0.0012	0.00301	0.006	0.0005
W3	2008-09-22 0:00	0.006	0.0004	0.0004		0.0008	5.1	0.0001	0.481	0.0037	0.00001	0.0013	0.00328	0.024	0.0005
W3	2008-09-24 0:00				16.1										
W3	2008-09-30 0:00	0.0018	0.0001	0.001	13.2	0.0013	5.66	0.001	0.591	0.0018	0.00005	0.0027	0.0016	0.005	
W3	2008-10-08 0:00	0.004	0.0002	0.0003		0.0006	5.43	0.0018	0.55	0.001	0.00005	0.0027	0.00115	0.004	0.0002
W3	2008-10-17 0:00	0.002	0.001	0.0011		0.0006	5.76	0.0014	0.543	0.0012	0.00021	0.0028	0.00048	0.012	0.0002
W3	2008-10-24 0:00	0.002	0.0001	0.0008		0.0006	6.29	0.0001	0.585	0.001	0.00001	0.003	0.00071	0.012	0.0002
W3	2008-10-28 0:00	0.002	0.0001	0.0008		0.0006	6.74	0.0002	0.592	0.0007	0.00001	0.003	0.00067	0.002	0.0001
W3	2008-11-04 0:00	0.0015	0.0001	0.001	14.3	0.0002	6.02	0.001	0.611	0.0007	0.00005	0.0036	0.0006	0.005	
W3	2008-11-12 0:00	0.0009	0.0004	0.0011	15.5	0.0002	6.02	0.001	0.611	0.0018	0.00005	0.0037	0.0008	0.007	
W3	2008-11-18 0:00	0.0006	0.0001	0.0008	16.5	0.0002	6.27	0.001	0.644	0.0013	0.00005	0.0037	0.0008	0.003	
W3	2008-11-24 0:00														
W3	2008-11-26 0:00	0.001	0.0001	0.0008	15.5	0.001	5.13	0.0001	0.623	0.0005	0.00001	0.003	0.00077	0.002	0.0001
W3	2008-12-05 0:00	0.001	0.0001	0.0006	17.5	0.0011	5.98	0.0001	0.657	0.0006	0.00001	0.0032	0.00081	0.002	0.0001
W3	2008-12-10 0:00	0.001	0.0001	0.0011	17.4	0.001	5.8	0.0001	0.628	0.0008	0.00001	0.0029	0.00064	0.004	0.0001
W3	2008-12-18 0:00	0.0005	0.0014	0.001	19.5	0.0002	6.64	0.001	0.725	0.0011	0.00005	0.0038	0.0007	0.003	
W3	2008-12-24 0:00	0.0007	0.0001	0.0016	11.9	0.0002	3.09	0.001	0.421	0.0008	0.00005	0.0022	0.0006	0.004	
W3	2009-01-02 0:00	0.0011	0.0001	0.0011	19.8	0.0002	6.75	0.001	0.76	0.0013	0.00005	0.0036	0.0007	0.004	
W3	2009-01-09 0:00	0.0014	0.0001	0.0019	23.7	0.0008	6.91	0.001	0.733	0.0014	0.00005	0.0036	0.0005	0.005	
W3	2009-01-15 0:00	0.0019	0.0001	0.0014	25.5	0.001	6.56	0.001	0.641	0.002	0.00005	0.0039	0.0005	0.006	
W3	2009-01-20 0:00	0.001	0.0001	0.0014	22.5	0.0006	6.91	0.0001	0.834	0.0011	0.00001	0.0032	0.00051	0.006	0.0002
W3	2009-01-28 0:00	0.001	0.0002	0.0015	23	0.0006	6.84	0.0001	0.815	0.001	0.00001	0.0033	0.00051	0.022	0.0001
W3	2009-02-02 0:00	0.001	0.0002	0.0009	20.1	0.0006	6.35	0.0001	0.762	0.0008	0.00001	0.0029	0.00034	0.005	0.0001
W3	2009-02-12 0:00														
W3	2009-02-15 0:00	0.001	0.0001	0.0012	25.1	0.0006	5.54	0.0001	0.741	0.0006	0.00001	0.0031	0.00038	0.005	0.0001

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N-NO_2$	$N-NO_3$	$N-NH_3$	SO_4-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W3	2009-02-18 0:00				6.59			1.4							
W3	2009-02-19 0:00	275	633			414	8						76.8	2.7	
W3	2009-03-06 0:00	212	561		7.63	380	11	1.2					84.2	3.9	
W3	2009-03-14 0:00	220	572		7.13	398	4	1.2					82.9	3.9	
W3	2009-03-20 0:00	224	591			388	2	0.1	113				83.6	4.89	
W3	2009-04-06 0:00				7.8										
W3	2009-04-21 0:00	192	483		8.2	314	2	4					58.9	2.8	
W3	2009-04-30 0:00	63	188		7.63	170	58	0.1	301				24	1.5	
W3	2009-05-02 0:00	98	271			200	21						34.4	2.13	
W3	2009-05-04 0:00	94	242			180	32			0.005	0.3			2.3	
W3	2009-05-06 0:00	163	448			310	74			0.079	0.19			3.5	
W3	2009-05-09 0:00	192	442		7.41	298	14	1.3		0.005	0.48			2.2	
W3	2009-05-18 0:00	171	438		7.25	308	5	8.6					53.3	3.63	
W3	2009-05-27 0:00	180	463		7.75	308	13						54.4	2.93	
W3	2009-06-03 0:00	182	466		7.97	302	4	4.9					53.2	3.4	
W3	2009-06-07 0:00	152	434			302	2						58.7	3.1	
W3	2009-06-11 0:00	171	454		7.88	310	7	6					55.5	3.5	
W3	2009-06-18 0:00	176	440		8	286	8	3.2					42.2	2.84	
W3	2009-06-26 20:00		475			270	4			0.005	0.69	0.011			
W3	2009-06-27 0:00														
W3	2009-06-28 0:00				7.87			4.41	97.7						
W3	2009-06-29 0:00	180	478		7.84	290	4	9.46	100	0.008	0.79	0.013	50	3	0.44
W3	2009-06-30 0:00				8.17			13.29	105						
W3	2009-06-30 9:00														
W3	2009-07-01 0:00		423		8.17	270	18	12.35	103.1						
W3	2009-07-02 0:00		426		8.14	260	4	14.5	103.7						
W3	2009-07-03 0:00		427		8.11	290	5	13.53	103.3						
W3	2009-07-04 9:00				8.13			12.87	103.5						
W3	2009-07-05 16:00	150	430		8.22	270	4	12.95	107.7	0.059	3.3	0.062	55	3.6	0.44
W3	2009-07-06 0:00				7.98			14.3	103.9						
W3	2009-07-07 0:00				8.24			12.8	105.6						
W3	2009-07-08 0:00				8.13			13.96	106.4						
W3	2009-07-09 0:00				8.48		6	8.95	129.8						
W3	2009-07-10 0:00				8.22		4	14.13	111.8						
W3	2009-07-11 0:00				8.17		7	14.56	108.7						
W3	2009-07-12 9:00	160	444		8.39	330	4	11.07	110.5	0.079	3.1	0.101	52	3.4	0.47
W3	2009-07-13 0:00				8.03			12.97	111.8						
W3	2009-07-14 0:00				8.26			12.05	115.7						
W3	2009-07-15 0:00		426		8.26	270	6	9.95	117						
W3	2009-07-16 0:00	150	428		8.49	260	13	9.22	112.8	0.086	3.2	0.12	53	3.6	0.49
W3	2009-07-17 0:00	160	426		8.26	260	4	10.88	118.4	0.084	2.6	0.112	53	3.6	0.5
W3	2009-07-18 0:00	160	403		8.29	250	8	12.58	108	0.024	1.91	0.005	47	3.1	0.46
W3	2009-07-19 0:00				8.38			6.25	114						
W3	2009-07-20 0:00				8.29			6.8	121.5						
W3	2009-07-21 0:00				8.5			12.85	116	0.11	5.3	0.62			
W3	2009-07-22 11:00		336		8.96	200	20	12.33	114.3						
W3	2009-07-22 13:00		335			200	23								
W3	2009-07-23 0:00				8.58			12.69	116.7						
W3	2009-07-24 0:00				8.4			12.93	123.6						
W3	2009-07-24 14:00		381			240	19								
W3	2009-07-25 10:00	120	387		8.47	250	15	12.22	120.5	0.107	4.5	0.471	50	8.1	0.39
W3	2009-07-26 0:00		388		8.28	240	16	12.97	120.5						
W3	2009-07-27 0:00		331		8.21	190	31	12.79	150.3						
W3	2009-07-28 0:00	86	330		7.83	222	50	11.4	141.5				45	5.78	
W3	2009-07-29 0:00		460		7.93	290	7	8.49	78.1						
W3	2009-07-30 0:00		364		7.8	230	22	8.83							
W3	2009-07-31 0:00		454			260	4								
W3	2009-08-01 0:00	150	434		7.98	270	4	15.02		0.103	2.2	0.187	47	7	0.44
W3	2009-08-02 0:00		426		8.1	240	4	12.72							
W3	2009-08-03 0:00		435		7.98	240	4	12.06							
W3	2009-08-04 0:00		426		8.06	260	4	12.35							
W3	2009-08-05 0:00		432		8.16	240	4	11.59							
W3	2009-08-08 0:00		473			290	4			0.006	0.69	0.015			
W3	2009-08-09 0:00				7.88			5.65	89.3						
W3	2009-08-10 0:00				7.96			4.6							
W3	2009-08-11 0:00	197	475			326	2						49.8	5.48	
W3	2009-08-12 0:00	190	472			300	4			0.005	0.74	0.013	45	6.5	0.42
W3	2009-08-14 0:00		407		8	270	6	12.55	115.8						
W3	2009-08-15 0:00	100	408		7.87	230	4	12.61	99	0.154	5.1	0.309	48	17	0.29
W3	2009-08-16 0:00		408		7.83	250	4	12.51	100.5						
W3	2009-08-17 0:00		408		7.93	250	4	12.3	107.3						
W3	2009-08-18 0:00		422		7.85	260	4	10.66	89.1						
W3	2009-08-19 0:00	100	406		7.96	260	5	12.34		0.194	5.5	0.235	42	17	0.25
W3	2009-08-20 0:00	100	409		8.09	260	4	11.69		0.176	5.2	0.27	43	17	0.26
W3	2009-08-21 0:00	100	407		8.03	260	5	11.79		0.185	5.4	0.246	44	17	0.26
W3	2009-08-22 0:00	100	411		7.98	250	7	11.9		0.191	5.6	0.264	45	17	0.26
W3	2009-08-23 0:00	100	414		7.98	250	7	11.74		0.005	0.19	0.273	45	19	0.26
W3	2009-08-24 0:00	100	417		7.96	240	6	11.68	90.4	0.219	5.4	0.257	45	20	0.25
W3	2009-08-25 0:00		416		7.88	280	6	11.35	76.7						
W3	2009-08-26 0:00		417		7.96	270	5	11.8	110.9						
W3	2009-08-27 0:00		420		7.92	270	4	11.4	101.1						
W3	2009-08-28 0:00		427		7.86	280	6	11.45	99.3						
W3	2009-08-29 0:00		429		7.86	290	5	11.31	98.5						
W3	2009-08-30 0:00	88	431		7.89	280	6	11.4	98.7	0.29	6.7	0.266	51	30	0.21
W3	2009-08-31 0:00		436		7.86	280	5	11.11	99.7						
W3	2009-09-01 0:00		437		7.85	280	4	11.51	100.7						
W3	2009-09-02 0:00		439		7.89	280	4	11.17	100.6						
W3	2009-09-03 0:00		444		7.88	280	4	10.86	100.9						
W3	2009-09-04 0:00		441		8.06	270	4	10.62	101						
W3	2009-09-05 0:00		442		7.96	280	4	10.9	102.4						
W3	2009-09-06 0:00	86	442		7.97	290	4	10.73	102.1	0.321	6.2	0.265	53	31	0.23
W3	2009-09-07 0:00		440		7.99	280	4	10.84	101.4						
W3	2009-09-08 0:00		448		8.09	290	4	10.85	102.4						
W3	2009-09-09 0:00		444		8.15	270	4	10.35	104.4						
W3	2009-09-10 0:00		446		8.1	280	4	9.97	103.4						
W3	2009-09-11 0:00		448		8.14	270	4	9.95	102.9						
W3	2009-09-12 0:00		446		8.33	280	4	9.89	106.3						
W3	2009-09-13 0:00	87	432		8.16	300	5	9.54	103.7	0.347	7	0.216			
W3	2009-09-14 0:00		455		8.2	290	4	9.63	106						
W3	2009-09-15 0:00		450		8.03	250	4	9.42	105.9						
W3	2009-09-16 0:00		451		8.24	290	4	9.42	102.3						
W3	2009-09-17 0:00		457		8.05	270	4	9.31	103						
W3	2009-09-18 0:00		461		8.27	300	4	9.13	102.6						
W3	2009-09-19 0:00		461		8.16	260	4	9.13	103.7						
W3	2009-09-20 0:00		462		8.28	260	4	8.84	105.4	0.253	6.9	0.118			
W3	2009-09-21 0:00		460		8.25	280	4	8.97	103.9						
W3	2009-09-22 0:00		461		8.46	270	5	8.75	105.8						
W3	2009-09-23 0:00		462		8.18	250	5	8.62	108.8						
W3	2009-09-24 0:00		457		8.07	270	4	8.21	106						
W3	2009-09-25 0:00		463		8.09	270	4	8.73	105.5						
W3	2009-09-26 0:00		467		8.17	290	4	8.08	108.8	0.162	8.1	0.105			
W3	2009-09-27 0:00		469		8.02	320	4	7.66	109.6						
W3	2009-09-28 0:00		470		8.06	270	4	7.14	108.5						
W3	2009-09-29 0:00		461		8.18	280	4	6.63	84.3						
W3	2009-09-30 0:00		479		8.04	300	5	6.3	42.5						

Station	Date / Time	Dissolved Elements																			
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W3	2009-02-19 0:00	0.00001	0.005	0.0004	0.093	0.017	0.00004	0.0001	69.2	0.00001	0.00019	0.0006	0.003	0.08	0.00001	2.4	0.003	30.7	0.127	0.0023	20.3
W3	2009-03-06 0:00	0.00001	0.005	0.0004	0.088	0.017	0.00004	0.0001	62.9	0.00002	0.00015	0.0007	0.008	0.04	0.00001	3.4	0.002	22.9	0.0537	0.00402	19.6
W3	2009-03-14 0:00	0.00001	0.006	0.0003	0.096	0.019	0.00004	0.0001	63.5	0.00001	0.00018	0.0005	0.008	0.04	0.00001	3.1	0.002	22.8	0.036	0.00459	19
W3	2009-03-20 0:00	0.00001	0.006	0.0004	0.091	0.023	0.00004	0.0001	69	0.00004	0.00023	0.0006	0.01	0.03	0.00001	3.6	0.002	25.1	0.0482	0.00489	20.8
W3	2009-04-21 0:00	0.00001	0.02	0.0003	0.071	0.009	0.00005	0.0001	61.6	0.00013	0.00016	0.0004	0.014	0.02	0.00001	2.9	0.004	22.3	0.0257	0.00204	14.4
W3	2009-04-30 0:00	0.00001	0.077	0.0004	0.038	0.012	0.00004	0.0001	24.6	0.00036	0.00018	0.001	0.012	0.3	0.00001	2.7	0.001	8.1	0.145	0.00156	7
W3	2009-05-02 0:00	0.00001	0.066	0.0004	0.047	0.013	0.00004	0.0001	38.2	0.00008	0.00035	0.0018	0.01	0.1	0.00001	3	0.001	12.6	0.0998	0.00217	10.4
W3	2009-05-09 0:00	0.00001	0.019	0.0003	0.062	0.019	0.0001	0.0005	47	0.00001	0.0002	0.0008	0.008	0.09	0.0001	2.6	0.003	19.7	0.079	0.004	14.6
W3	2009-05-18 0:00	0.00001	0.014	0.0004	0.07	0.018	0.00004	0.0001	59.7	0.00002	0.00017	0.0017	0.008	0.04	0.00001	3	0.002	18.3	0.049	0.00455	15.9
W3	2009-05-27 0:00	0.00001	0.069	0.0003	0.113	0.01	0.00004	0.0001	59		0.00022	0.0004	0.016	0.07	0.00001	3.2	0.002	18	0.128	0.00491	17.1
W3	2009-06-03 0:00	0.00001	0.086	0.0003	0.073	0.02	0.00004	0.0001	56.4	0.00574	0.00023	0.0006	0.044	0.22	0.00001	2.9	0.002	17.6	0.0953	0.00502	15.6
W3	2009-06-07 0:00	0.00001	0.022	0.0006	0.078	0.026	0.00004	0.0001	54.3	0.00007	0.00022	0.0004	0.067	0.16	0.00001	5.9	0.003	16.3	0.193	0.00958	17.7
W3	2009-06-11 0:00	0.00001	0.028	0.0003	0.064	0.025	0.00004	0.0001	54.8	0.00007	0.0002	0.0007	0.022	0.08		4.4	0.002	16.8	0.12	0.00562	16.7
W3	2009-06-18 0:00	0.00001	0.01	0.0004	0.072	0.018	0.00004	0.0001	52.5	0.00001	0.00017	0.0004	0.01	0.06	0.00001	2.8	0.002	16.4	0.0575	0.00477	14.8
W3	2009-06-26 20:00	0.00002	0.003	0.0003	0.072	0.05	0.0001	0.001	59.3	0.00001	0.0005	0.001	0.0067	0.025	0.00002	3.03	0.005	18.7	0.047	0.006	16.6
W3	2009-06-29 0:00	0.00002	0.004	0.0003	0.075	0.05	0.0001	0.001	59.5	0.00001	0.0005	0.001	0.0095	0.024	0.00002	3.32	0.005	18.9	0.037	0.006	16.6
W3	2009-07-05 16:00	0.00002	0.031	0.0004	0.077	0.05	0.0001	0.001	54	0.00004	0.0005	0.001	0.0622	0.132	0.00002	5.8	0.005	14.2	0.141	0.011	16.1
W3	2009-07-12 9:00	0.00002	0.034	0.0005	0.081	0.05	0.0001	0.001	52.6	0.00006	0.0005	0.001	0.0586	0.142	0.00002	5.38	0.005	14.9	0.254	0.011	15.6
W3	2009-07-16 0:00	0.00002	0.03	0.0004	0.077	0.05	0.0001	0.001	50	0.00006	0.0005	0.001	0.0613	0.116	0.00002	5.63	0.005	14	0.264	0.011	15.4
W3	2009-07-17 0:00	0.00002	0.03	0.0005	0.08	0.05	0.0001	0.001	49.9	0.00005	0.0005	0.001	0.0615	0.118	0.00002	5.6	0.005	14.1	0.327	0.011	15.7
W3	2009-07-18 0:00	0.00002	0.021	0.0005	0.079	0.05	0.0001	0.001	47.9	0.00001	0.0005	0.001	0.0222	0.076	0.00002	4.06	0.005	14.1	0.004	0.008	13.7
W3	2009-07-21 0:00	0.00002	0.042	0.0008	0.108	0.05	0.0001	0.001	38.7	0.00002	0.0005	0.001	0.0205	0.101	0.00006	3.03	0.005	9.93	0.08	0.014	10.6
W3	2009-07-25 10:00	0.00002	0.03	0.0007	0.108	0.05	0.0001	0.001	43.2	0.00004	0.0005	0.001	0.0237	0.069	0.00002	4.37	0.005	11.3	0.252	0.015	12.8
W3	2009-08-01 0:00	0.00002	0.076	0.0005	0.099	0.05	0.0001	0.001	58.4	0.00004	0.0005	0.001	0.0277	0.086	0.00003	5.69	0.005	15.2	0.422	0.013	17
W3	2009-08-11 0:00	0.00001	0.013	0.0004	0.075	0.015	0.00004	0.001	54	0.00002	0.00014	0.0011	0.003	0.05		2.5	0.002	17.8	0.136	0.0044	15.4
W3	2009-08-12 0:00	0.00002	0.012	0.0004	0.078	0.05	0.0001	0.001	59	0.00001	0.0005	0.001	0.0051	0.037	0.00002	2.83	0.005	18.3	0.141	0.005	15.8
W3	2009-08-15 0:00	0.00002	0.06	0.0005	0.11	0.05	0.0001	0.001	47	0.00001	0.0005	0.001	0.0062	0.014	0.00002	3.92	0.005	12.6	0.199	0.015	15.5
W3	2009-08-19 0:00	0.00002	0.078	0.0005	0.117	0.05	0.0001	0.001	47.6	0.00002	0.0005	0.001	0.0057	0.017	0.00002	3.78	0.005	12.4	0.184	0.015	15.3
W3	2009-08-22 0:00	0.00002	0.062	0.0005	0.122	0.05	0.0001	0.001	47.6	0.00002	0.0005	0.001	0.0057	0.021	0.00002	3.66	0.005	12.1	0.211	0.015	14.6
W3	2009-08-30 0:00	0.00002	0.109	0.0003	0.131	0.05	0.0001	0.001	49.1	0.00001	0.0005	0.001	0.0073	0.007	0.00002	3.46	0.005	13.2	0.252	0.013	18.8
W3	2009-09-06 0:00	0.00002	0.074	0.0004	0.131	0.05	0.0001	0.001	47.3	0.00001	0.0005	0.001	0.0019	0.007	0.00002	3.23	0.005	12.2	0.25	0.014	17.4
W3	2009-09-13 0:00	0.00002	0.072	0.0003	0.129	0.05	0.0001	0.001	53.3	0.00001	0.0005	0.001	0.0012	0.007	0.00003	3.4	0.005	13	0.275	0.015	18.3
W3	2009-09-20 0:00	0.00002	0.082	0.0004	0.133	0.05	0.0001	0.001	52.3	0.00012	0.0005	0.001	0.0035	0.011	0.00004	3.38	0.005	13	0.292	0.016	18.4
W3	2009-09-26 0:00	0.00002	0.054	0.0003	0.134	0.05	0.0001	0.001	52.3	0.00002	0.0005	0.001	0.0014	0.006	0.00004	3.33	0.005	13.3	0.284	0.017	17.3

Station	Date / Time	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W3	2009-02-19 0:00	0.001	0.0002	0.0007	22.3	0.0006	6.49	0.0001	0.785	0.0009	0.00001	0.0031	0.0005	0.008	0.0001
W3	2009-03-06 0:00	0.002	0.0002	0.0007	23.6	0.0006	5.68	0.0001	0.61	0.0008	0.00001	0.0029	0.00041	0.013	0.0002
W3	2009-03-14 0:00	0.002	0.0002	0.001	24.1	0.0007	5.55	0.0001	0.642	0.0009	0.00001	0.0035	0.00038	0.007	0.0004
W3	2009-03-20 0:00	0.002	0.0003	0.003	27.3	0.0006	5.84	0.0001	0.668	0.0007	0.00001	0.0038	0.00046	0.014	0.0002
W3	2009-04-21 0:00	0.001	0.0002	0.0008	19.9	0.0006	5.16	0.0001	0.482	0.0025	0.00004	0.0023	0.00046	0.005	0.0002
W3	2009-04-30 0:00	0.002	0.0001	0.001	8.5	0.0006	2.71	0.0001	0.179	0.0034	0.00001	0.0007	0.00067	0.005	0.0005
W3	2009-05-02 0:00	0.002	0.0002	0.0009	12.3	0.0006	3.71	0.0001	0.274	0.0032	0.00001	0.0015	0.00054	0.008	0.0003
W3	2009-05-09 0:00	0.0012	0.0001	0.0007	16.3	0.0004	4.93	0.001	0.53	0.0014	0.00005	0.0026	0.0008	0.004	
W3	2009-05-18 0:00	0.002	0.0001	0.0007	16.8	0.0006	4.97	0.0001	0.484	0.0014	0.00001	0.0025	0.00054	0.004	0.0002
W3	2009-05-27 0:00	0.002	0.0004	0.0008	17.2	0.0006	4.65	0.0001	0.451	0.0017	0.00001	0.0024	0.00069	0.016	0.0001
W3	2009-06-03 0:00	0.002	0.0005	0.0008	16.4	0.0006	4.6	0.0001	0.503	0.0039	0.00001	0.0025	0.00084	0.009	0.0003
W3	2009-06-07 0:00	0.002	0.0003	0.001	19.6	0.0017	4.57	0.0001	0.602	0.0028	0.00001	0.0013	0.00066	0.005	0.0002
W3	2009-06-11 0:00	0.002	0.0002	0.0011	17.2	0.0009	4.5	0.0002	0.559	0.0023	0.00001	0.0021	0.00054	0.012	0.0003
W3	2009-06-18 0:00	0.002	0.0001	0.0002	14.1	0.0006	4.58	0.0001	0.474	0.001	0.00001	0.0018	0.00052	0.002	0.0002
W3	2009-06-26 20:00	0.001	0.0002	0.0005	19	0.0005	6.18	0.005	0.489	0.005	0.00005	0.0025	0.005	0.005	0.0005
W3	2009-06-29 0:00	0.001	0.0002	0.0005	19	0.0006	6.13	0.005	0.52	0.005	0.00005	0.0024	0.005	0.005	0.0005
W3	2009-07-05 16:00	0.001	0.0002	0.0005	16	0.002	4.48	0.005	0.556	0.005	0.00005	0.0013	0.005	0.005	0.0005
W3	2009-07-12 9:00	0.001	0.0002	0.0005	20	0.0018	5.04	0.005	0.58	0.005	0.00005	0.0013	0.005	0.005	0.0005
W3	2009-07-16 0:00	0.002	0.0002	0.0005	19	0.0019	4.96	0.005	0.557	0.005	0.00005	0.0013	0.005	0.005	0.0005
W3	2009-07-17 0:00	0.002	0.0002	0.0005	18	0.0019	4.95	0.005	0.564	0.005	0.00005	0.0014	0.005	0.005	0.0005
W3	2009-07-18 0:00	0.001	0.0002	0.0005	17	0.0013	5.35	0.005	0.482	0.005	0.00005	0.0014	0.005	0.005	0.0005
W3	2009-07-21 0:00	0.001	0.0005	0.0007	15	0.002	3.34	0.005	0.568	0.008	0.00005	0.0013	0.005	0.005	0.0006
W3	2009-07-25 10:00	0.001	0.0002	0.0006	17	0.0021	4.03	0.005	0.598	0.005	0.00005	0.0011	0.005	0.005	0.0005
W3	2009-08-01 0:00	0.001	0.0002	0.0005	19	0.002	4.72	0.005	0.601	0.005	0.00005	0.0012	0.005	0.005	0.0005
W3	2009-08-11 0:00	0.002	0.0004	0.0002	16.6	0.0006	5.56	0.0001	0.47	0.0009	0.00001	0.0019	0.0005	0.001	0.0001
W3	2009-08-12 0:00	0.002	0.0002	0.0005	19	0.0003	6.23	0.005	0.511	0.005	0.00005	0.0023	0.005	0.005	0.0005
W3	2009-08-15 0:00	0.001	0.0002	0.0006	18	0.0019	3.39	0.005	0.617	0.005	0.00005	0.0007	0.005	0.005	0.0005
W3	2009-08-19 0:00	0.001	0.0002	0.0007	20	0.0019	3.74	0.005	0.623	0.005	0.00005	0.0006	0.005	0.005	0.0005
W3	2009-08-22 0:00	0.001	0.0002	0.0007	19	0.0019	3.65	0.005	0.64	0.005	0.00005	0.0006	0.005	0.005	0.0005
W3	2009-08-30 0:00	0.001	0.0002	0.0007	22	0.0018	3.53	0.005	0.669	0.005	0.00005	0.0004	0.005	0.005	0.0005
W3	2009-09-06 0:00	0.001	0.0002	0.0008	20	0.0018	3.37	0.005	0.669	0.005	0.00005	0.0003	0.005	0.005	0.0005
W3	2009-09-13 0:00	0.001	0.0002	0.0008	21	0.002	3.51	0.005	0.686	0.005	0.00005	0.0003	0.005	0.005	0.0005
W3	2009-09-20 0:00	0.001	0.0002	0.0008	25	0.0022	3.16	0.005	0.747	0.005	0.00005	0.0004	0.005	0.006	0.0005
W3	2009-09-26 0:00	0.001	0.0002	0.0007	24	0.002	3.55	0.005	0.757	0.005	0.00005	0.0004	0.005	0.005	0.0005

Attachment 3: Sitewide Database

		General Parameters								Anions & Nitrogen Species						Dissolved Elements																																	
Station	Date / Time	Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N\text{-}NO_2$	$N\text{-}NO_3$	$N\text{-}NH_3$	SO_4-D	Chlord	Fluord	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W3	2009-10-01 0:00		486		7.96	330	7	5.19																																									
W3	2009-10-02 0:00		483		7.88	320	4	5.05	102.8																																								
W3	2009-10-03 0:00		480		7.78	270	4	5.69	114																																								
W3	2009-10-04 0:00		480		7.9	300	4	5.23	110	0.1	8.2	0.123				0.00002	0.063	0.0004	0.131	0.05	0.0001	0.001	52.8	0.00003	0.0005	0.001	0.0013	0.006	0.0001	3.32	0.005	13.5	0.276	0.018	17	0.001	0.0002	0.0008	25	0.0021	3.16	0.005	0.797	0.005	0.00005	0.0005	0.005	0.005	0.0005
W3	2009-10-05 0:00		484		7.8	300	4	4.9	111.5																																								
W3	2009-10-06 0:00		482		7.93	320	4	5.22	117.6																																								
W3	2009-10-07 0:00		471		7.79	310	4	4.66	116																																								
W3	2009-10-08 0:00	95	491		7.97	310	4	4.25	105.2		18.7		252	6.1		0.00001	0.02	0.0011	0.12	0.091	0.00004	0.001	63.5	0.00021	0.00029	0.0004	0.014	0.01	0.00001	50	0.016	17	0.13	0.103	94.4	0.002	0.0001	0.0006	84	0.0348	2.28	0.0001	2.08	0.0004	0.00001	0.0004	0.0004	0.001	0.0001
W3	2009-10-09 0:00		493		7.85	310	4	4.36	110.1																																								
W3	2009-10-10 0:00		495		7.81	330	4	3.88	92.6																																								
W3	2009-10-11 0:00		489		7.99	310	4	3.68	96.3	0.099	8.6	0.174				0.00002	0.062	0.0003	0.128	0.05	0.0001	0.001	57	0.00002	0.0005	0.001	0.0014	0.01	0.0002	3.48	0.005	14.4	0.301	0.018	18.3	0.001	0.0002	0.0007	27	0.0021	3.57	0.005	0.804	0.005	0.00005	0.0004	0.005	0.005	0.0005
W3	2009-10-12 0:00		495		8.11	300	4	3.64																																									
W3	2009-10-13 0:00		496		8.03	280	4	3.25	116.5																																								
W3	2009-10-14 0:00		499		8.07	270	4	2.67	128.9																																								
W3	2009-10-15 0:00		503		8.13	270	4	2.69	131.9																																								
W3	2009-10-16 0:00		504		7.8	250	4	2.97	139																																								
W3	2009-10-17 0:00		507		7.97	270	4	2.57	143.6																																								
W3	2009-10-18 0:00		509		8.05	260	4	2.92	148																																								
W3	2009-10-19 0:00		509		8.04	270	4	2.79	138.1																																								
W3	2009-10-20 0:00	110	512		8.01	270	4	2.31	141.1	0.092	8.8	0.224			0.33	0.00002	0.032	0.0003	0.13	0.05	0.0001	0.001	61.4	0.00002	0.0005	0.001	0.0026	0.008	0.00008	3.65	0.005	15.2	0.296	0.017	18.6	0.001	0.0002	0.0006	26	0.0023	3.41	0.005	0.893	0.005	0.00005	0.0007	0.005	0.005	0.0005
W3	2009-10-21 0:00		500		7.92	280	4	2.57	131.9																																								
W3	2009-10-22 0:00		502		7.98	280	4	2.59	109.1																																								
W3	2009-10-23 0:00		505		7.99	290	4	2.81	96.7																																								
W3	2009-10-24 0:00		481		8.05	270	4	2.11	97																																								
W3	2009-10-25 0:00	110	508		8.12	260	4	2.7	105.7	0.08	8.5	0.206				0.00002	0.029	0.0003	0.13	0.05	0.0001	0.001	62.6	0.00004	0.0005	0.001	0.0023	0.018	0.00002	3.51	0.005	14.9	0.309	0.017	18	0.001	0.0002	0.0007	25	0.0021	3.77	0.005	0.839	0.005	0.00005	0.0007	0.005	0.005	0.0005
W3	2009-10-26 0:00		509		7.82	290	4	2.68	91.9																																								
W3	2009-10-27 0:00	120	512		7.7	310	4	2.26	89.2	0.08	8.5	0.211				0.00002	0.021	0.0003	0.128	0.05	0.0001	0.001	60.9	0.00003	0.0005	0.001	0.0027	0.02	0.00009	3.53	0.005	14.5	0.298	0.016	17.6	0.001	0.0002	0.0006	25	0.0021	3.85	0.005	0.824	0.005	0.00005	0.0007	0.005	0.005	0.0005
W3	2009-10-28 0:00		503		7.9	300	4	2.32	90.2																																								
W3	2009-10-29 0:00		507		8.09	310	4	2	93.8																																								
W3	2009-10-30 0:00		507		8.01	290	5	2.1	91.5																																								
W3	2009-11-05 0:00	172	463		7.53	340	2	2.1			1.85		55.7	14.9		0.00001	0.017	0.0003	0.091	0.022	0.00004	0.001	56.3	0.00002	0.00026	0.0004	0.002	0.07	0.00001	2.1	0.002	20.2	0.328	0.0037	15.5	0.002	0.0001	0.0008	18.6	0.0006	4.98	0.0001	0.607	0.01	0.00001	0.0019	0.0004	0.002	0.0002
W3	2009-11-09 0:00	175	512		7.56	132	2	1.1			1.57		59.6	14.3		0.00001	0.005	0.0003	0.091	0.018	0.00004	0.001	61.6	0.00001	0.00027	0.0004	0.002	0.09	0.00001	2	0.002	21.7	0.323	0.0034	19.6	0.003	0.0001	0.0009	19.9	0.0006	5.73	0.0001	0.599	0.01	0.00001	0.0017	0.0004	0.003	0.0001
W3	2009-11-16 0:00	186	512		8.34	358	3	0.04	67.5		1.38		50.7	16.6		0.00001	0.015	0.0004	0.091	0.014	0.00004	0.001	57.4	0.00004	0.00034	0.001	0.004	0.09	0.00001	2	0.002	21	0.33	0.0033	16	0.002	0.0001	0.0016	16.9	0.0006	5.03	0.0001	0.598	0.01	0.00001	0.0019	0.0006	0.004	0.0001
W3	2009-11-25 0:00	184	487		7.39	340	4	1.1			1.15		56	16.1		0.00001	0.007	0.0004	0.091	0.02	0.00004	0.001	59.7	0.00011	0.00032	0.0005	0.003	0.09	0.00001	2	0.002	22	0.33	0.003	16.9	0.002	0.0004	0.0011	18.6	0.0006	5.22	0.0001	0.594	0.01	0.00001	0.0019	0.0006	0.004	0.0002
W3	2009-12-02 0:00	182	504		7.71	336	2	1.1			1.12		56.5	13		0.00001	0.007	0.0002	0.089	0.014	0.00004	0.001	59.6	0.00001	0.00036	0.0004	0.003	0.13	0.00001	2	0.002	22.2	0.363	0.0029	15.3	0.001	0.0001	0.002	18.8	0.0006	5.18	0.0001	0.598	0.01	0.00001	0.002	0.0005	0.004	0.0002
W3	2009-12-04 12:50	205	526			291				0.005	1.13		58.9	11		0.00001	0.004	0.0005	0.094	0.016	0.0001	0.0005	61.6	0.00001	0.0003	0.0005	0.002	0.14		2	0.002	22.2	0.391	0.003	16.7	0.0008	0.0001	0.0002	19.9	0.0002	5.55	0.001	0.598	0.0009	0.00005	0.0023	0.0011	0.003	
W3	2009-12-09 0:00	199	539		7.67	356	5	1.1			1.33		60.7	12.5		0.00001	0.007	0.0004	0.091	0.025	0.00004	0.001	63.4	0.00001	0.00034	0.0004	0.003	0.12	0.00001	2.2	0.002	24.5	0.355	0.003	17.9	0.002	0.0003	0.0011	20.2	0.0006	5.64	0.0001	0.631	0.01	0.00001	0.002	0.0004	0.003	0.0001
W3	2009-12-15 0:00	194	535		7.41	298	3	1.1			1.07		59	12.7		0.00001	0.014	0.0003	0.097	0.015	0.00004	0.001	47.4	0.0125	0.0003	0.0004	0.004	0.13	0.00001	2.2	0.002	17.8	0.386	0.0026	13	0.002	0.0005	0.0014	19.6	0.0006	4.92	0.0001	0.592	0.01	0.00001	0.0018	0.0004	0.009	0.0002
W3	2010-01-01 0:00	203	590		7.94	346	7	0.47			1.47		95.2	16.4		0.00001	0.005	0.0002	0.101	0.017	0.00004	0.001	72	0.00001	0.00016	0.0006	0.004	0.03	0.00001	4.3	0.002	23.2	0.0261	0.0026	22.4	0.002	0.0003	0.0007	31.7	0.0006	5.25	0.0001	0.62	0.01	0.00001	0.0021	0.0005	0.01	0.0001
W3	2010-01-05 0:00	172	634		7.99	404	5				6.83		90.7	19.6		0.00001	0.014	0.0004	0.104	0.026	0.00004	0.001	70.9		0.00023	0.0004	0.005	0.02	0.00001	4.2	0.002	23.1	0.37	0.0056	20.4	0.002	0.0002	0.0021	30.2	0.0011	4.95	0.0001	0.728	0.01	0.00001	0.0025	0.0004	0.008	0.0001
W3	2010-01-11 0:00	210	607		7.25	396	8	1			1.54		82.4	17.5		0.00001	0.297	0.0005	0.536	0.011	0.00004	0.001	130	0.565	0.00043	0.001	0.02	0.16	0.00001	2.8	0.002	27.4	0.0294	0.0024	22.1	0.004	0.0603	0.0026	27.4	0.0006	5.63	0.0001	0.711	0.01	0.00001	0.0018	0.001	0.091	0.0002
W3	2010-01-19 0:00	596	1480		7.05	1110	7	1			3.73		220	4.89		0.00001	0.005	0.0012	0.307	0.045	0.00004	0.001	197	0.0006	0.00094	0.0016	0.01	0.13	0.00001	7.6	0.006	73.6	1.29	0.0094	56.1	0.006	0.0007	0.0015	73.2	0.0006	15.7	0.0001	1.99	0.01	0.00001	0.0056	0.0012	0.01	0.0004
W3	2010-01-27 0:00	248	695		7.05	456	22	1			0.72		88.6	25.2		0.00001	0.005	0.0011	0.12	0.014	0.00004	0.001	79.2	0.00021	0.00072	0.0008	0.007	0.31	0.00001	2.9	0.002	32.7	1.7	0.0032	23	0.002	0.0003	0.0012	29.5	0.0006	6.36	0.0001	0.772	0.01	0.00001	0.0022	0.0007	0.006	0.0002
W3	2010-02-01 0:00	259	705		6.82	468	6	1			0.43		80.5	18.4		0.00001	0.008	0.0011	0.131	0.015	0.00004	0.001	83.5	0.00003	0.00093	0.0007	0.003	0.75	0.00001	2.4	0.002	31.3	1.97	0.0034	20.3	0.003	0.0002	0.0011	26.8	0.0006	6.61	0.0001	0.828	0.01	0.00001	0.0019	0.0007	0.004	0.0004
W3	2010-02-09 0:00	207	547		7.35	328	5	1.2			1.14		64.3	10.8		0.00001	0.005	0.0002	0.089	0.016	0.00004	0.001	59.8	0.00002	0.00047	0.0004	0.002	0.11	0.00001	2.2	0.002	25.2	0.213	0.0022	17	0.002	0.0002	0.0033	21.4	0.0006	5.1	0.0001	0.688	0.01	0.00001	0.0022	0.0004	0.003	0.0002
W3	2010-02-16 0:00	203	564		6.98	366	5	1.3			1.08		62	10		0.00001	0.005	0.0002	0.089	0.009	0.00004	0.001	57.6	0.00001	0.00026	0.0004	0.003	0.126	0.00001	2	0.003	24.9	0.216	0.0021	16.1	0.002	0.0004	0.0012	20.6	0.0006	4.99	0.0001	0.696	0.01	0.00001	0.0023	0.0003	0.004	0.0002
W3	2010-02-24 0:00	202	564		6.9	350	5	1.2					61.8	10.4		0.00001	0.005	0.0003	0.086	0.016	0.00004	0.001	57.8	0.00001	0.00023	0.0004	0.002	0.1	0.00001	2.1	0.003	24.3	0.176	0.0022	16	0.001	0.0002	0.0012	20.6	0.0006	4.91	0.0001	0.666	0.01	0.00001	0.0023	0.0003	0.004	0.0002
W3	2010-03-02 0:00	207	566		6.94	376	5	1.2			1.55		68	11.5		0.00001	0.005	0.0002	0.091	0.016	0.00004	0.001	60.4	0.00001	0.00024	0.0004	0.003	0.1	0.00001	2.1	0.003	24.4	0.221	0.0026	16.4	0.001	0.0003	0.0009	22.6	0.0006	4.98	0.0001	0.693	0.01	0.00001	0.0026	0.0004	0.003	0.0001
W3	2010-03-10 0:00	205	551		7.08	354	5	1.2			1.38		72.8	10.9		0.00001	0.025	0.0003	0.092	0.016	0.00004	0.001	64.5		0.00024	0.0004	0.004	0.12	0.00001	2.2	0.002	26	0.193	0.0024	18.2	0.001	0.0018	0.001	24.3	0.0006	5.45	0.0001	0.674	0.01	0.00002	0.0022	0.0003	0.007	0.0001
W3	2010-03-15 0:00	211	574		7.02	390	3	1.2			1.41		65	11.2		0.00001	0.005	0.0002	0.086	0.017	0.00004	0.001	62.6	0.00004	0.00035	0.0004	0.002	0.08	0.00001	2.3	0.002	25.5	0.152	0.0022	18	0.001	0.0001	0.0027	21.7	0.0006	5.04	0.0001	0.672	0.01	0.00001	0.0026	0.0003	0.004	0.0001
W3	2010-03-24 0:00	220	566		7.3	368	3	1.2			1.38		68.2	10.9		0.00001	0.016	0.0004	0.092	0.02	0.00004	0.001	62.5	0.00002	0.00071	0.0004	0.002	0.09	0.00001	2.2	0.003	26.1	0.172	0.0024	17.6	0.001	0.0001	0.0035	22.7	0.0006	5.09	0.0001	0.713	0.01	0.00001	0.003	0.0003	0.002	0.0002
W3	2010-03-31 0:00	192	531		6.62	368	3	1.2			1.34		75.8	9.68		0.00001	0.005	0.0003	0.07	0.019	0.00004	0.001	52.6	0.00001	0.00014	0.0006	0.002	0.03	0.00001	2.8	0.002	21.7	0.141	0.0022	13.4	0.001	0.0001	0.0002	25.3	0.0006	4.8	0.0001	0.562	0.01	0.00001	0.0021	0.0004	0.001	0.0001
W3	2010-04-05 0:00	201	573		7.02	360	3	1.2			1.41		68.5	10.2		0.00001	0.005	0.0002	0.086	0.017	0.00004	0.001	63.1	0.00002	0.00047	0.0006	0.003	0.07	0.00001	2.2	0.003	25.3	0.134	0.0024	17.2	0.001	0.0001	0.0027	22.8	0.0006	5.07	0.0001	0.704	0.01	0.00001	0.0026	0.0005	0.002	0.0001
W3	2010-04-13 0:00	220	543		6.72	360	5				1.44		70.3	11		0.00001	0.008	0.0002	0.09	0.016	0.00004	0.001	59.8	0.00001	0.00026	0.0004	0.005	0.07	0.00001	2	0.002	23.8	0.113	0.0025	14.9	0.001	0.0001	0.0018	23.4	0.0006	4.68	0.0001	0.668	0.01	0.00001	0.0027	0.0003	0.004	0.0001
W3	2010-04-19 0:00	177	447		6.57	296	5	1.1			1.11		56.6	8.66		0.00001	0.005	0.0002	0.071	0.012	0.00004	0.001	53.5	0.00001	0.00018	0.0004	0.005	0.05	0.00001	2.2	0.002	19.6	0.127	0.0022	13.3	0.001	0.0002	0.0011	18.8	0.0006	4.27	0.0001	0.515	0.01	0.00001	0.0022	0.0004	0.003	0.0001
W3	2010-04-20 0:00	193	482		6.94	328	5	1.2			1.14		60.8	9.21		0.00001	0.005	0.0002	0.076	0.013	0.00004	0.001	56	0.00002	0.00018	0.0004	0.005	0.07	0.00001	2.2	0.002	21.5	0.142	0.0024	14.2	0.001	0.0002	0.0009	20.3	0.0006	4.59	0.0001	0.566	0.01	0.00001	0.0024	0.0004	0.004	0.0001
W3	2010-04-21 0:00	109	291		7	292	8	1			0.59		33.1	4.96		0.00001	0.148	0.0005	0.058	0.012	0.00004	0.001	38	0.00004	0.00035	0.0005	0.025	0.29	0.00002	2.5	0.001	13.7	0.0978	0.0014	8.4	0.003	0.0005	0.0015	11	0.0006	4.09	0.0001	0.318	0.014	0.00001	0.0009	0.0008	0.009	0.0005
W3	2010-04-22 0:00	115	308		6.92	272	5	1.1			0.62		31.4	5.04		0.00001	0.054	0.0006	0.059	0.009	0.00004	0.001	38.6	0.00001	0.00006	0.0004	0.012	0.14	0.00002	2	0.001	14.4	0.0055	0.0014	8.6	0.003	0.0001	0.0002	10.5	0.0006	4.11	0.0001	0.342	0.01	0.00001	0.0011	0.0005	0.002	0.0007
W3	2010-04-23 0:00	109	280		7.29	260	5	0	108.7				30.6	4.77		0.00001	0.082	0.0005	0.058	0.01	0.00004	0.001	36.8	0.00001	0.00013	0.0006	0.012	0.15	0.00001	1.9	0.001	13.5	0.0289	0.0014	8.6	0.003	0.0001	0.0004	10.2	0.0006	4.11	0.0001	0.319	0.01	0.00001	0.0011	0.0006	0.001	0.0007
W3	2010-04-24 0:00	106	274		7.71	264	5	1.86					29	4.61		0.00001	0.08	0.0004	0.056	0.01	0.00004	0.001	35.8	0.00001	0.00012	0.0006	0.012	0.15	0.00001	1.8	0.001	13.1	0.0108	0.0014	8.3	0.003	0.0001	0.0004	9.7	0.0006	4.06	0.0001	0.307	0.01	0.00001	0.0011	0.0005	0.001	0.001
W3	2010-04-25 0:00	108	282		7.52	272	2	0	99.3		0.61		28	4.56		0.00001	0.089	0.0004	0.058	0.01	0.00004	0.001	35.6	0.00001	0.00014	0.0006	0.011	0.15	0.00002	1.8	0.001	13	0.0412	0.0014	8.3	0.003	0.0001	0.0002	9.4	0.0006	4.02	0.0001	0.323	0.01	0.00001	0.0011	0.0006	0.001	0.0007
W3	2010-04-26 0:00	100	268		7.41	260	4	0	92.9	0.006	0.56	0.012	27	5.5	0.22	0.00002	0.092	0.0004	0.056	0.05	0.0001	0.001	35.8	0.00002	0.0005	0.001	0.0128	0.184	0.00002	1.74	0.005	11.7	0.009	0.001	7.56	0.003	0.0002	0.0005	10	0.0002	5.12	0.005	0.285	0.005	0.00005	0.001	0.005	0.005	0.0007
W3	2010-04-27 0:00	86	225		7.49	120	4	0	96.1	0.012	0.44	0.022	2.9	5	0.2	0.00002	0.097	0.0005	0.051	0.05	0.0001	0.001	31.1	0.00002	0.0005	0.001	0.0113	0.164	0.00002	1.59	0.005	9.87	0.029	0.001	6.2	0.003	0.0002	0.0005	8	0.0002	4.28	0.005	0.234	0.005	0.00005	0.0008	0.005	0.005	0.0007
W3	2010-04-28 0:00	89	228		7.58	230	4		22.4		0.5	0.08	5.9	4.7	0.19	0.00002	0.098	0.0004	0.053	0.05	0.0001	0.001	33	0.00002	0.0005	0.001	0.011	0.157	0.00002	1.64	0.005	10.4	0.022	0.001	6.58	0.002	0.0002	0.0005	9	0.0002	4.44	0.005	0.251	0.005	0.00005	0.0009	0.005	0.005	0.0006
W3	2010-04-29 0:00	110	286		7.64	230	4	0.06	6.9	0.01	0.58	0.03	38	5.5	0.23	0.00002	0.071	0.0004	0.057	0.05	0.0001	0.001	38.6	0.00002	0.0005	0.001	0.0094	0.15	0.00002	1.62	0.005	12.4	0.051	0.002	8.19	0.002	0.0002	0.0005	11	0.0002	4.43	0.005	0.318	0.005	0.00005	0.0012	0.005	0.005	0.0006
W3	2010-04-30 0:00	120	308		7.65	260	4	0	94.6		0.7	0.005	39	5.7	0.23	0.00002	0.068	0.0004	0.06	0.05	0.0001	0.001	38.1	0.00002	0.0005	0.001	0.0086	0.132	0.00002	1.53	0.005	12.7	0.039	0.002	8.6	0.002	0.0002	0.0005	11	0.0002	4.22	0.005	0.33	0.005	0.00005	0.0013	0.005	0.005	0.0006
W3	2010-05-01 0:00	140	360		7.07	300	4	0	91.9	0.006	0.88	0.042	53	7.1	0.26	0.00002	0.053	0.0004	0.065	0.05	0.0001	0.001	44.4	0.00002	0.0005	0.001	0.0074	0.12	0.00002	1.66	0.005	15.1	0.036	0.002	10.3	0.002	0.0002	0.0005	15	0.0002	4.68	0.005	0.397	0.005	0.00005	0.0016	0.005	0.005	0.0005
W3	2010-05-02 0:00	150	412		7.65	260	4	0.02	82.8	0.005	1.01	0.022	63	8.3	0.29	0.00002	0.038	0.0003	0.07	0.05	0.0001	0.001	52.8	0.00001	0.0005	0.001	0.0064	0.108	0.00002	1.83	0.005	17.7	0.072	0.002	12	0.002	0.0002	0.0005	19	0.0002	5.3	0.005	0.454	0.005	0.00005	0.002	0.005	0.005	0.0005
W3	2010-05-03 0:00	160	419		7.71	300	4	0.03	10.5	0.005	1.03	0.022	61	8.3	0.31	0.00002	0.028	0.0004	0.071	0.05	0.0001	0.001	50.3	0.00002	0.0005	0.001	0.0058	0.101	0.00002	1.78	0.005	17.3	0.077	0.002	12	0.002	0.0002	0.0005	17	0.0002	4.93	0.005	0.454	0.005	0.00005	0.0019	0.005	0.005	0.0005
W3	2010-05-04 0:00	170	445		7.63	330	4	0.02	99.6	0.005	1.14	0.023	65	8.5	0.33	0.00002	0.026	0.0003	0.073	0.05	0.0001	0.001	53.9	0.00002	0.0005	0.001	0.0051	0.091	0.00002	1.83	0.005	18.9	0.074	0.002	13.2	0.001	0.0002	0.0005	19	0.0002	5.11	0.005	0.489	0.005	0.00005	0.0022	0.005	0.005	0.0005
W3	2010-05-05 0:00	170	456		7.69	290	4	0.04	84.7	0.006	1.05	0.01	66	8.6	0.32	0.00002	0.019	0.0003	0.071	0.05	0.0001	0.001	55.3	0.00001	0.0005	0.001	0.0047	0.08	0.00002	1.86	0.005	19.1	0.053	0.002	13	0.001	0.0002	0.0005	20	0.0002	5.01	0.005	0.499	0.005	0.00005	0.0023	0.005	0.005	0.0005
W3	2010-05-06 0:00	180	470		7.72	310	4	0.04	14.7	0.006	1.1	0.04	70	9	0.3	0.00002	0.016	0.0003	0.072	0.05	0.0001	0.001	59.2	0.00001	0.0005	0.001	0.0042	0.076	0.00002	1.98	0.005	20.2	0.051	0.003	13.6	0.001	0.0002	0.0005	22	0.0002	5.41	0.005	0.523	0.005	0.00005	0.0025	0.005	0.005	0.0005
W3	2010-05-07 0:00	180	475		7.77	310	4	0.04	67	0.007	1.11	0.01	73	9.9	0.33	0.00002	0.015	0.0003	0.074	0.05	0.0001	0.001	58.4	0.00001	0.0005	0.001	0.0038	0.068	0.00002	1.95	0.005	20.4	0.062	0.003	13.9	0.001	0.0002	0.0005	22	0.0002	5.39	0.005	0.528	0.005	0.00005	0.0025	0.005	0.005	0.0005
W3	2010-05-08 0:00	190	498		7.7	300	4	0.04	113.8	0.006	1.18	0.013	69	9.2	0.35	0.00002	0.014	0.0003	0.08	0.05	0.0001	0.001	61.4	0.00001	0.0005	0.001	0.0035	0.067	0.00002	2.08	0.005	21.6	0.066	0.003	15.2	0.001	0.0002	0.0005	24	0.0002	5.2	0.005	0.545	0.005	0.00005	0.0027	0.005	0.005	0.0005
W3	2010-05-09 0:00	200	524		7.78	340	4	0.12	121.3	0.005	1.45	0.008	72	9.8	0.37	0.00002	0.011	0.0003	0.08	0.05	0.0001	0.001	61.4	0.00001	0.0005	0.001	0.0031	0.06	0.00002	1.99	0.005	21.2	0.066	0.003	15.3	0.001	0.0002	0.0005	22	0.0002	5.24	0.005	0.558	0.005	0.00005	0.0029	0.005	0.005	0.0005
W3	2010-05-10 0:00	200	520		7.8	340	4	0.11	118.7	0.005	1.46	0.017	70	10	0.37	0.00002	0.009	0.0003	0.082	0.05	0.0001	0.001	63.1	0.00002	0.0005	0.001	0.003	0.059	0.00002	2.05	0.005	22.7	0.07	0.003	16.1	0.001	0.0002	0.0005	25	0.0002	5.11	0.005	0.567	0.005	0.00005	0.003	0.005	0.005	0.0005
W3	2010-05-11 0:00	200	522			330	4			0.005	1.35	0.043	74	10	0.24	0.00002	0.008	0.0003	0.084	0.05	0.0001	0.001	69.5	0.00001	0.0005	0.001	0.0027	0.056	0.00007	2.2	0.005	23	0.057	0.003	16.6	0.001	0.0002	0.0005	24	0.0002	6.3	0.005	0.607	0.005	0.00005	0.0031	0.005	0.005	0.0005
W3	2010-05-12 0:00	180	461			290	4			0.005	1.09	0.05	62	8.8	0.22	0.00002	0.008	0.0003	0.076	0.05	0.0001	0.001	59.7	0.00001	0.0005	0.001	0.003	0.045	0.00002	1.98	0.005	19.3	0.079	0.003	13.8	0.001	0.0002	0.0005	21	0.0002	5.26	0.005	0.511	0.005	0.00005	0.0025	0.005	0.005	0.0005
W3	2010-05-13 0:00	200	526			310	4	1.5	7.26	0.005	0.91	0.013	78	10	0.34	0.00002	0.007	0.0003	0.086	0.05	0.0001	0.001	71.5	0.00001	0.0005	0.001	0.0025	0.048	0.00002	2.27	0.005	23.5	0.066	0.003	17	0.001	0.0002	0.0005	26	0.0002	6.15	0.005	0.616	0.005	0.00005	0.0031	0.005	0.005	0.0005
W3	2010-05-14 0:00	170	453		7.79	280	4	1.9		0.005	1.06	0.059	62	8.9	0.33	0.00002	0.007	0.0002	0.072	0.05	0.0001	0.001	56.6	0.00001	0.0005	0.001	0.0031	0.047	0.00002	1.92	0.005	18.3	0.083	0.003	13.2	0.001	0.0002	0.0005	21	0.0002	5.02	0.005	0.496	0.005	0.00005	0.0025	0.005	0.005	0.0005
W3	2010-05-15 0:00	200	531		7.8	340	4	1.5		0.005	1.29	0.067	73	9.8	0.35	0.00002	0.013	0.0003	0.085	0.05	0.0001	0.001	68.8	0.00002	0.0005	0.001	0.0028	0.069	0.0002	2.23	0.005	22.3	0.11	0.003	16.1	0.002	0.0002	0.0005	25	0.0002	6.1	0.005	0.587	0.005	0.00005	0.0028	0.005	0.005	0.0005
W3	2010-05-16 0:00	140	436		7.78	270	4	1.8		0.005	1	0.06	57	8	0.3	0.00002	0.007	0.0003	0.07	0.05	0.0001	0.001	55.8	0.00001	0.0005	0.001	0.0026	0.034	0.0002	1.9	0.005	17.8	0.097	0.003	12.8	0.001	0.0002	0.0005	20	0.0001	5.01	0.005	0.474	0.005	0.00005	0.0023	0.005	0.005	0.0005
W3	2010-05-17 0:00	190	519		7.77	340	4	1.5		0.005	1.28	0.011	84	10	0.35	0.00002	0.01	0.0003	0.085	0.05	0.0001	0.001	69.7	0.00001	0.0005	0.001	0.0023	0.037	0.0002	2.3	0.005	22.8	0.107	0.003	16.6	0.001	0.0002	0.0005	26	0.0002	5.84	0.005	0.581	0.005	0.00005	0.0029	0.005	0.005	0.0005
W3	2010-05-18 0:00	190	493		7.82	330	44	1.7		0.005	1.21	0.05	67	9.3	0.35	0.00002	0.007	0.0002	0.078	0.05	0.0001	0.001	62.6	0.00001	0.0005	0.001	0.0026	0.032	0.00002	2.05	0.005	22.1	0.034	0.003	16.4	0.001	0.0002	0.0005	23	0.0003	5.36	0.005	0.495	0.005	0.00005	0.0026	0.005	0.005	0.0005
W3	2010-05-19 0:00	200	520		7.66	330	1	1.4		0.005	1.33	0.05	74	10	0.37	0.00002	0.004	0.0002	0.082	0.05	0.0001	0.001	68.4	0.00002	0.0005	0.001	0.0026	0.033	0.00002	2.17	0.005	23.5	0.054	0.003	18.2	0.001	0.0002	0.0005	26	0.0002	5.69	0.005	0.509	0.005	0.00005	0.0027	0.005	0.005	0.0005
W3	2010-05-20 0:00	200	526		7.6	340	1	1.4		0.005	1.31	0.04	87	10	0.39	0.00002	0.004	0.0003	0.086	0.05	0.0001	0.001	67.7	0.00001	0.0005	0.001	0.0023	0.036	0.00002	2.17	0.005	25.2	0.056	0.003	19	0.001	0.0002	0.0005	27	0.0003	5.83	0.005	0.508	0.005	0.00005	0.0028	0.005	0.005	0.0005
W3	2010-05-21 0:00	190	484		7.83	330	1	2.6		0.005	1.18	0.009	63	9.3	0.39		0.01	0.0004	0.081	0.1	0.0002	0.001	61		0.0005		0.002	0.027	0.0002	2	0.01	20	0.077	0.003	15	0.001	0.0002	0.0005	60	0.0008	5.28	0.005	0.508	0.01	0.00005	0.0025	0.005		0.002
W3	2010-05-22 0:00	200	505		7.62	340	4	2		0.005	1.24	0.02	68	11	0.41		0.01	0.0004	0.082	0.1	0.0002	0.001	64		0.0005		0.002	0.022	0.0002	2	0.01	21	0.041	0.003	16	0.001	0.0002	0.0005	60	0.0008	5.41	0.005	0.53	0.01	0.00005	0.0027	0.005		0.002
W3	2010-05-23 0:00	200	526		7.69	350	2	1.4		0.005	1.31	0.015	67	11	0.41		0.01	0.0004	0.085	0.1	0.0002	0.001	64		0.0005		0.002	0.025	0.0002	2	0.01	21	0.073	0.003	16	0.001	0.0002	0.0005	60	0.0008	5.65	0.005	0.558	0.01	0.00005	0.0028	0.005		0.002
W3	2010-05-24 0:00	210	534		7.64	340	1	1.4		0.005	1.3	0.19	69	9.4	0.42		0.01	0.0004	0.082	0.1	0.0002	0.001	69		0.0005		0.002	0.025	0.0002	2	0.01	22	0.085	0.003	16	0.001	0.0002	0.0005	60	0.0008	5.42	0.005	0.588	0.01	0.00005	0.003	0.005		0.002
W3	2010-05-25 0:00	210	532		7.3	310	1	1.9		0.005	1.23	0.19	69	9.9	0.39		0.01		0.093	0.1	0.0005	0.001	71		0.0005		0.002	0.025	0.00002	2	0.01	27	0.061	0.004	20		0.0002	0.0005	60		5.88	0.005	0.661	0.01	0.00005	0.0027	0.005		0.002
W3	2010-05-26 0:00	200	509		7.84	310	30	1.8		0.005	1.19	0.042	65	9.2	0.39		0.01		0.089	0.1	0.0005	0.001	65		0.0005		0.002	0.038	0.00002	2	0.01	25	0.202	0.004	19		0.0002	0.0005	60		5.32	0.005	0.609	0.01	0.00005	0.0024	0.005		0.002
W3	2010-05-27 0:00	210	544		7.58	320	2	1.4		0.006	1.28	0.021	67	10	0.4		0.01		0.09	0.1	0.0005	0.001	68		0.0005		0.002	0.042	0.00002	2	0.01	27	0.143	0.004	21		0.0002	0.0005	60		5.84	0.005	0.606	0.01	0.00005	0.0027	0.005		0.002
W3	2010-05-28 0:00	200	507		7.56	370	2	2		0.005	0.95	0.014	68	10	0.44		0.01	0.0004	0.086	0.1	0.0002	0.001	64		0.0005		0.002	0.026	0.00002	2	0.01	21	0.096	0.003	16	0.001	0.0002	0.0005	60	0.0008	5.61	0.005	0.592	0.01	0.00005	0.003	0.005		0.002
W3	2010-05-29 0:00	210	534		7.69	380	2	1.3		0.005	1.25	0.11	77	11	0.4		0.01	0.0004	0.09	0.1	0.0002	0.001	69		0.0005		0.002	0.044	0.00002	2	0.01	22	0.15	0.004	16	0.001	0.0002	0.0005	60	0.0008	5.75	0.005	0.634	0.01	0.00005	0.0031	0.005		0.002
W3	2010-05-30 0:00	170	436		7.78	310	4	3.3		0.005	0.87	0.015	55	7.2	0.37		0.01	0.0004	0.075	0.1	0.0002	0.001	56		0.0005		0.002	0.035	0.00002	2	0.01	18	0.113	0.003	13	0.001	0.0002	0.0005	60	0.0008	4.76	0.005	0.506	0.01	0.00005	0.0024	0.005		0.002
W3	2010-05-31 0:00	200	530		7.73	370	3	2.2		0.007	1.14	0.05	69	9.7	0.39		0.01	0.0004	0.086	0.1	0.0002	0.001	59		0.0005		0.002	0.031	0.00002	2	0.01	22	0.17	0.003	16	0.001	0.0002	0.0005	60	0.0008		0.005	0.561	0.01	0.00005	0.0027	0.005		0.002
W3	2010-06-01 0:00	210	540		7.5	320	4	1.4		0.006	1.24	0.037	68	9.9	0.37		0.01	0.0004	0.085	0.1	0.0002	0.001	71		0.0005		0.002	0.021	0.0002	2	0.01	24	0.063	0.004	17	0.001	0.0002	0.0005	60	0.0008	5.69	0.005	0.605	0.01	0.00005	0.003	0.005		0.002
W3	2010-06-02 0:00	210	540		7.5	330	3	1.7		0.005	1.2	0.056	68	10	0.4		0.01	0.0004	0.087	0.1	0.0002	0.001	66		0.0005		0.002	0.025	0.0002	2	0.01	22	0.045	0.004	16	0.001	0.0002	0.0005	60	0.0008	5.28	0.005	0.599	0.01	0.00005	0.003	0.005		0.002
W3	2010-06-03 0:00	210	533		7.73	380	1	1.6		0.005	1.2	0.04	70	10	0.37		0.01	0.0004	0.087	0.1	0.0002	0.001	67		0.0005		0.001	0.02	0.0002	2	0.01	21	0.039	0.004	15	0.001	0.0002	0.0005	60	0.0008	5.32	0.005	0.609	0.01	0.00005	0.0031	0.005		0.002
W3	2010-06-04 0:00	190	493		7.5	290	3	3.3		0.005	1.02	0.058	60	9	0.35		0.01	0.0004	0.079	0.1	0.0002	0.001	59		0.0005		0.002	0.023	0.0002	2	0.01	19	0.1	0.003	14	0.001	0.0002	0.0005	60	0.0008	4.66	0.005	0.526	0.01	0.00005	0.0026	0.005		0.002
W3	2010-06-05 0:00	210	529		7.19	350	4	2.6		0.005	1.16	0.08	71	9.4	0.38		0.01	0.0004	0.089	0.1	0.0002	0.001	74		0.0005		0.002	0.044		2	0.01	25	0.203	0.004	18	0.001	0.0002	0.0005	60	0.0008	5.84	0.005	0.627	0.01	0.00005	0.0031	0.005		0.002
W3	2010-06-06 0:00	210	519		7.76	320	4	2.3		0.005	1.12	0.05	64	9	0.38		0.01	0.0004	0.091	0.1	0.0002	0.001	68		0.0005		0.001	0.038		2	0.01	23	0.195	0.004	16	0.001	0.0002	0.0005	60	0.0008	5.94	0.005	0.627	0.01	0.00005	0.0031	0.005		0.002
W3	2010-06-07 0:00	200	492			330	6			0.005	1.1	0.03	64	9	0.39		0.01	0.0004	0.079	0.1	0.0002	0.001	59		0.0005		0.002	0.095	0.0002	2	0.01	22	0.009	0.003	17	0.001	0.0002	0.0005	60	0.0008	5.64	0.005	0.556	0.01	0.00005	0.0027	0.005		0.002
W3	2010-06-10 0:00	190	503		7.72	310	2	4.7		0.006	1.01	0.02	65	12	0.38		0.01	0.0004	0.079	0.1	0.0002	0.001	58		0.0005		0.002	0.02	0.0002	2	0.01	21	0.012	0.003	17	0.001	0.0002	0.0005	60	0.0008	5.43	0.005	0.547	0.01	0.00005	0.0026	0.005		0.002
W3	2010-06-11 0:00	190	501		7.56	320	5	4.4		0.009	1.02	0.038	63	9.3	0.36		0.01	0.0004	0.082	0.1	0.0002	0.001	58		0.0005		0.002	0.02	0.0002	2	0.01	21	0.001	0.004	17	0.001	0.0002	0.0005	60	0.0008	5.37	0.005	0.542	0.01	0.00005	0.0028	0.005		0.002
W3	2010-06-12 0:00	210	503		7.54	340	3	4.7		0.007	1	0.013	69	9.1	0.37		0.01	0.0004	0.081	0.1	0.0002	0.001	60		0.0005		0.001	0.02	0.0002	2	0.01	22	0.001	0.004	18	0.001	0.0002	0.0005	60	0.0008	5.57	0.005	0.569	0.01	0.00005	0.0029	0.005		0.002
W3	2010-06-13 0:00	210	549		7.55	350	3	2.3		0.007	1.06	0.043	69	10	0.38		0.01	0.0004	0.088	0.1	0.0002	0.001	63		0.0005		0.002	0.02	0.0002	2	0.01	23	0.069	0.004	18	0.001	0.0002	0.0005	60	0.0008	5.88	0.005	0.599	0.01	0.00005	0.0029	0.005		0.002
W3	2010-06-14 0:00	210	513			330	2	4.3		0.005	1.03	0.032	64	9.3	0.39		0.01	0.0004	0.085	0.1	0.0002	0.001	60		0.0005		0.002	0.023	0.0002	2	0.01	22	0.153	0.004	18	0.001	0.0002	0.0005	60	0.0008	5.63	0.005	0.567	0.01	0.00005	0.0028	0.005		0.002
W3	2010-06-15 0:00	210	503		7.03	340	2	4.6		0.005	1.06	0.03	65	8.9	0.38		0.01	0.0004	0.085	0.1	0.0002	0.001	60		0.0005		0.002	0.036	0.0002	2	0.01	22	0.158	0.004	18	0.001	0.0002	0.0005	60	0.0008	5.58	0.005	0.572	0.01	0.00005	0.0029	0.005		0.002
W3	2010-06-16 0:00	210	532		7.32	310	20	4.4		0.006	1.15	0.043	69	9.7	0.38		0.01	0.0004	0.086	0.1	0.0002	0.001	62		0.0005		0.002	0.02	0.0002	2	0.01	21	0.054	0.004	17	0.001	0.0002	0.0005	60	0.0008	5.21	0.005	0.605	0.01	0.00005	0.003	0.005		0.002
W3	2010-06-17 0:00	180	518		6.92	310	4	3.2		0.005	4.2	0.036	67	10	0.43		0.01	0.0004	0.083	0.1	0.0002	0.001	57		0.0005		0.003	0.02	0.0002	3	0.01	20	0.001	0.005	18	0.001	0.0002	0.0005	60	0.0008	5.11	0.005	0.577	0.01	0.00005	0.0027	0.005		0.002
W3	2010-06-18 0:00	180	523		7.1	340	2	3.7		0.005	4.1		69	10	0.41		0.01	0.0004	0.083	0.1	0.0002	0.001	61		0.0005		0.003	0.02	0.0002	3	0.01	20	0.001	0.005	17	0.001	0.0002	0.0005	60	0.0009	5.67	0.005	0.57	0.01	0.00005	0.0026	0.005		0.002
W3	2010-06-19 0:00	180	522		7.21	330	1	3.6		0.005	4.5	0.05	71	11	0.42		0.01	0.0004	0.083	0.1	0.0002	0.001	55		0.0005		0.003	0.02	0.0002	3	0.01	17	0.005	0.005	16	0.001	0.0002	0.0005	60	0.0008	4.89	0.005	0.534	0.01	0.00005	0.0026	0.005		0.002
W3	2010-06-20 0:00	190	523		6.91	350	2	4.2		0.005	4.4		64	10	0.42		0.01	0.0004	0.084	0.1	0.0002	0.001	61		0.0005		0.003	0.02	0.0002	3	0.01	19	0.055	0.005	17	0.001	0.0002	0.0005	60	0.0008	5.49	0.005	0.579	0.01	0.00005	0.0027	0.005		0.002

Attachment 3: Sitewide Database

General Parameters; Anions & Nitrogen Species; Dissolved Elements (Ag-D)

Station	Date / Time	Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N\text{-}NO_2$	$N\text{-}NO_3$	$N\text{-}NH_3$	SO_4-D	Chlord	Fluord	Ag-D
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W3	2010-06-21 0:00	180	520		6.55	330	2	4.5		0.005	4.2		67	9.7	0.41	
W3	2010-06-22 0:00	190	532		7.81	330	2	2.86	97.9	0.005	4.2	0.018	67	9.8	0.41	
W3	2010-06-23 0:00	190	528		7.81	340	1	2.81	99.9	0.005	4.2		67	9.8	0.42	
W3	2010-06-24 0:00	180	525		7.81	320	1	3.85	101.5	0.005	4.2	0.011	70	9.7	0.44	
W3	2010-06-25 0:00	190	519		7.88	290	1	2.99	99	0.005	4.5	0.005	68	9.5	0.45	
W3	2010-06-26 0:00	210	531		7.72	300	2	2.87	90.7	0.005	2.06	0.016	65	9.5	0.41	
W3	2010-06-27 0:00	210	540		7.69	340	1	2.24	86.8	0.005	1.68	0.038	65	9	0.38	
W3	2010-06-28 0:00	210	524		7.7	320	1	2.37	93.1	0.005	1.54	0.031	71	9.2	0.37	
W3	2010-06-29 0:00	210	537		7.72	350	1	3.83	91.9	0.005	1.48	0.031	68	9	0.38	
W3	2010-06-30 0:00	210	527		7.7	340	1	2.8	85.4	0.005	1.4	0.015	66	8.6	0.38	
W3	2010-07-01 0:00	180	510		7.86	340	1	3.97	100.4	0.005	4.3	0.05	64	8.9	0.4	
W3	2010-07-02 0:00	180	511		7.85	330	1	4.4	100.3	0.005	4.3	0.05	63	8.7	0.4	
W3	2010-07-03 0:00	180	515		7.87	340	2	3.8	97.9	0.005	4.6	0.05	64	8.8	0.4	
W3	2010-07-04 0:00	180	525		7.91	340	1	5.61	100.3	0.005	4.8	0.05	70	9	0.41	
W3	2010-07-05 0:00	180	532		7.93	340	1	3.81	99.3	0.005	4.8	0.05	69	9.1	0.41	
W3	2010-07-06 0:00	180	529		7.91	360	1	3.78	98.5	0.005	4.6	0.011	64	8.9	0.41	
W3	2010-07-07 0:00	190	532		7.94	360	1	5.9	99.4	0.005	4.7	0.011	63	9	0.42	
W3	2010-07-08 0:00	180	523		8.02	350	1	5.99	100.6	0.005	4.7	0.014	66	9.1	0.42	
W3	2010-07-09 0:00	170	533		7.97	300	1	4.33	97.4	0.005	4.8	0.03	67	8.6	0.42	
W3	2010-07-10 0:00	180	530		7.97	300	1	4.96	96.2	0.005	4.8	0.03	66	8.6	0.43	
W3	2010-07-11 0:00	180	530		8.02	300	2	4.33	96.6	0.006	4.7	0.041	65	8.7	0.42	
W3	2010-07-12 0:00	190	535		8.01	290	1	5.94	98.5	0.005	4.7	0.022	64	8.5	0.46	
W3	2010-07-13 0:00	190	534		7.92	320	1	4.09	91.1	0.005	4.8	0.026	64	8.5	0.41	
W3	2010-07-14 0:00	190	521		8.05	390	1	4.25	91.9	0.008	4.6	0.041	63	8.9	0.44	
W3	2010-07-15 0:00	120	547		7.98	350	3	13.49	101.6	0.137	9.4	0.33	75	23	0.37	
W3	2010-07-16 0:00	130	518		8.02	330	2	13.67	103.8	0.145	9.2	0.26	71	24	0.36	
W3	2010-07-17 0:00	130	535		7.88	310	4	12.5	98	0.135	8.6	0.099	68	24	0.36	
W3	2010-07-18 0:00	130	540		8.01	360	1	13.39	104.3	0.15	9.2		70	25	0.36	
W3	2010-07-19 0:00	130	541		8.07	340	1	13.81	97.2	0.16	9.1		71	25	0.35	
W3	2010-07-20 0:00	120	542		8.02	340	1	14.19	96.2	0.148	8.9	0.1	71	26	0.37	
W3	2010-07-21 0:00	120	545		7.78	340	1	13.82	85	0.144	9.1	0.096	72	26	0.4	
W3	2010-07-22 0:00	120	534		7.89	330	1	13.45	69.8	0.126	8.8	0.096	69	24	0.38	
W3	2010-07-23 0:00	130	499		7.79	340	1	12.09	53.6	0.111	7.9	0.1	66	22	0.39	
W3	2010-07-24 0:00	130	527		7.84	310	1	11.94	106.3	0.119	8.5	0.067	70	23	0.39	
W3	2010-07-25 0:00	130	527		7.79	360	1	11.97	86.6	0.129	8.8	0.074	72	24	0.48	
W3	2010-07-26 0:00	130	533		7.91	360	1	12.22	79.1	0.129	9.1	0.15	72	24	0.39	
W3	2010-07-27 0:00	120	538		7.88	330	1	14.12	48.8	0.15	9.4	0.043	70	26	0.35	
W3	2010-07-28 0:00	130	546		7.74	320	1	12.11	74.1	0.114	9	0.1	69	26	0.37	
W3	2010-07-29 0:00	130	544		7.82	330	1	13.72	77.4	0.124	10.4	0.005	71	27	0.36	
W3	2010-07-30 0:00	130	542		7.8	330	1	12.73	74.4	0.117	10.5	0.048	73	26	0.36	
W3	2010-07-31 0:00	130	550		7.81	340	1	13.1	74.9	0.127	10.1	0.043	69	27	0.36	
W3	2010-08-01 0:00	130	550		7.84	330	1	11.8	75.8	0.102	9.6	0.052	70	25	0.39	
W3	2010-08-02 0:00	130	553		7.83	340	1	12.6	76.7	0.11	10	0.066	70	25	0.39	
W3	2010-08-03 0:00				7.84	330	1	12.46	77.1			0.045				
W3	2010-08-04 0:00	130	551		7.85	350	1	14.27	77.6	0.005	0.07	0.005	5.9	0.6	0.29	
W3	2010-08-05 0:00	130	549		7.87	360	1	13.78	77.5	0.091	10.4	0.033	74	25	0.38	
W3	2010-08-06 0:00	130	553		7.85	340	1	13.33	76.7	0.091	10.2	0.05	76	25	0.36	
W3	2010-08-07 0:00	130	553		7.96	360	1	12.3	76.9	0.096	10.4	0.033	75	24	0.36	
W3	2010-08-08 0:00	130	557		7.89	370	1	12.42	76.8	0.105	10.6	0.07	73	26	0.38	
W3	2010-08-09 0:00	130	566		7.87	320	1	13.3	83.1	0.086	10.5	0.053	80	27	0.38	
W3	2010-08-10 0:00	130	585		7.9	370	1	12.35	41.4	0.018	10.2	0.07	78	29	0.37	
W3	2010-08-11 0:00	130	570		7.94	320	1	13.39	76.8	0.019	1.05	0.092	77	30	0.37	
W3	2010-08-12 0:00	130	577		7.97	360	3	12.23	78.3	0.026	11.1	0.13	78	26	0.39	
W3	2010-08-13 0:00	130	570		7.84	330	1	13.07	84.1	0.089	11.1	0.14	84	24	0.4	
W3	2010-08-14 0:00	130	580		7.86	340	1	13.32	82.9	0.116	11.4	0.12	83	26	0.39	
W3	2010-08-15 0:00	130	581		7.84	360	1	13.97	87	0.134	11.7	0.079	87	26	0.4	
W3	2010-08-16 0:00	130	590		7.93	330	1	13.99	84.4	0.163	11.8	0.059	86	26	0.38	
W3	2010-08-17 0:00	130	584		7.87	340	1	14.73	82.6	0.171	12.3	0.084	86	24	0.42	
W3	2010-08-18 0:00	120	579		7.95	360	3	12.69	82.8	0.111	11.8	0.15	84	24	0.42	
W3	2010-08-19 0:00	120	574		7.87	380	3	11.68	83.3	0.118	11.7	0.14	84	24	0.44	
W3	2010-08-20 0:00	120	575		7.59	350	2	11.17	89.5	0.118	11.6	0.2	81	25	0.39	
W3	2010-08-21 0:00	120	573		7.88	350	1	11.23	85.3	0.123	11.1	0.096	81	27	0.4	
W3	2010-08-22 0:00	120			8.04	380	2	11.34	85.6	0.113	11.2	0.076	93	28	0.4	
W3	2010-08-23 0:00	130	565		7.99	370	1	12.2	86.6	0.063	10.3	0.035	84	30	0.39	
W3	2010-08-24 0:00	120	578		7.95	360	1	11.21	85.4	0.158	12.5	0.083	89	26	0.39	
W3	2010-08-25 0:00	120	587		7.9	370	1	11.2	84.1	0.133	12.5	0.14	120	27	0.34	
W3	2010-08-26 0:00	110	583		8.05	350	1	10.83	84.6	0.122	12.1	0.21	96	29	0.31	
W3	2010-08-27 0:00	120	586		8.09	360	1	11.47	81.4	0.12	11.8	0.16	95	29	0.32	
W3	2010-08-28 0:00	120	589		8.09	350	1	10.75	79.9	0.137	12.4	0.2	95	29	0.32	
W3	2010-08-29 0:00	120	591		8	390	1	11.15	76.4	0.129	12.4	0.14	94	29	0.33	
W3	2010-08-30 0:00	120	579		8	370	1	10.92	71.5	0.119	11.8	0.2	94	29	0.37	
W3	2010-08-31 0:00	120	594		8	370	1	11.36	66.1	0.116	11.7	0.068	90	29	0.36	
W3	2010-09-01 0:00	120	600		7.98	380	5	11.69	62.4	0.129	13	0.12	85	29	0.42	
W3	2010-09-02 0:00	140	579		7.77	360	1	10.04	68.6	0.07	10.3	0.08	80	23	0.44	
W3	2010-09-03 0:00	120	599		7.91	370	1	11.13	77.8	0.128	12.9	0.1	89	28	0.43	
W3	2010-09-05 0:00	120	585		7.91	370	1	10.33	76.8	0.13	13	0.083	88	26	0.42	
W3	2010-09-07 0:00	150	564		7.83	440	1	8.88	76.8	0.025	8.6	0.075	73	16	0.44	
W3	2010-09-08 0:00	120	598		8.14	510	1	11.07	79.9	0.123	12.7	0.19	88	26	0.4	
W3	2010-09-09 0:00	120	609		7.98	500	1	10.75	81.3	0.116	13.1	0.14	86	25	0.4	
W3	2010-09-11 0:00	110	616		7.89	510	1	9.93	84.2	0.136	14.1	0.19	88	26	0.39	
W3	2010-09-12 0:00	120	605		7.94	440	1	10.6	82.5	0.129	13.5	0.2	91	27	0.37	
W3	2010-09-13 0:00	120	609		7.93	390	1	11.02	82.8	0.142	14	0.084	95	27	0.39	
W3	2010-09-15 0:00	120	611		7.82	380	1	9.29	86.8	0.137	13.6	0.11	86	27	0.18	
W3	2010-09-17 0:00	130	592		7.91	410	1	9.14	93.1	0.117	13.8	0.13	83	18	0.52	
W3	2010-09-19 0:00	130	599		7.99	390	1	8.42	107.1	0.115	14	0.12	86	19	0.51	
W3	2010-09-21 0:00	130	595		7.98	400	1	7.64	49.3	0.119	13.9	0.12	92	19	0.48	
W3	2010-09-23 0:00	130	599		7.97	400	1	6.71	91.3	0.124	14.1	0.17	87	20	0.49	
W3	2010-09-25 0:00	130	617		7.94	390	1	6.25	93.5	0.134	14.8	0.19	100	21	0.47	0.00002
W3	2010-09-27 0:00	130	625		7.91	400	1	5.63	95.1	0.117	14.7	0.2	100	23	0.45	0.00002
W3	2010-09-29 0:00	130	618		7.96	400	3	5.59	98.6	0.12	15.1	0.2	87	20	0.47	0.00002
W3	2010-10-01 0:00	130	625			400	5			0.11	14.9	0.25	90	22	0.46	0.00002
W3	2010-10-03 0:00	140	613			390	3			0.1	13.2	0.14	86	22	0.43	0.00002
W3	2010-10-05 0:00	140	598		7.95	380	1	4.74	98.6	0.076	12.7	0.024	89	22	0.42	0.00002
W3	2010-10-07 0:00	150	592		8.08	390	2	4.81	102.1	0.074	12.4	0.038	83	22	0.44	0.00002
W3	2010-10-09 0:00	140	602		8.03	390	1	3.82	98.1	0.088	13.4	0.08	86	22	0.44	0.00002
W3	2010-10-11 0:00	140	601		7.9	410	4	3.68	105.3	0.079	13.1	0.16	82	21	0.48	0.00002
W3	2010-10-12 0:00	160	604		8.05	400	2	3.75	104.7	0.056	10.9	0.13	83	20	0.48	0.00002
W3	2010-10-13 0:00	150	615		8.08	400	1	4.1	108	0.087	13.9	0.089	99	21	0.47	0.00002
W3	2010-10-14 0:00															
W3	2010-10-15 0:00	140	635		8.01	380	1	3.53	107.4	0.093	14.1	0.2	97	24	0.44	0.00002
W3	2010-10-16 0:00															
W3	2010-10-17 0:00	140	663			430	1			0.112	14.8	0.37	110	26	0.49	0.00002
W3	2010-10-18 0:00															
W3	2010-10-19 0:00	140	640			420	1			0.094	13.8	0.2	91	25	0.45	0.00002
W3	2010-10-20 0:00	150	695			460	1			0.107	14	0.22	120	24	0.44	
W3	2010-10-21 0:00	150	694		8.02	460	1	3.23	115.9	0.1	14.1	0.24	110	24	0.44	0.00002
W3	2010-10-22 0:00	150	698			460	1			0.109	15.2	0.27	110	24	0.42	0.00002
W3	2010-10-23 0:00	140	690			450	1			0.111	15.1	0.27	110	24	0.43	0.00002
W3	2010-10-25 0:00	150	669			430	4					0.27	110	23	0.38	0.00002
W3	2010-10-26 0:00	150	670			430	1			0.108	14.2	0.25	110	22	0.46	0.00002
W3	2010-10-27 0:00	150	652		8.08	430	1	3.31	94.6	0.112	14.2	0.25	110	22	0.45	0.00002
W3	2010-10-29 0:00	160	642		8.12	400	1	2.94	79.7	0.112	13.7	0.16	94	20	0.38	0.00002
W3	2010-10-31 0:00	160	636		8.18	380	1	2.17	62.6	0.097	13.4	0.15	90	17	0.42	0.00002
W3	2010-11-02 0:00	180	592		7.8	360	1	2.2	71.8	0.013	8.6	0.087	81	9.3	0.42	0.00002
W3	2010-11-04 0:00	180	583			370	1	3		0.007	8.1	0.024	80	8	0.41	0.00002

Dissolved Elements (continued)

Date / Time	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
2010-06-21 0:00	0.01	0.0004	0.082	0.1	0.0002	0.001	61		0.0005		0.003	0.02	0.0002	3	0.01	19	0.006	0.005	17
2010-06-22 0:00	0.01	0.0004	0.084	0.1	0.0002	0.001	63		0.0005		0.003	0.02	0.0002	3	0.01	20	0.021	0.005	18
2010-06-23 0:00	0.01	0.0004	0.084	0.1	0.0002	0.001	60		0.0005		0.003	0.02	0.0002	3	0.01	19	0.024	0.005	17
2010-06-24 0:00	0.01	0.0004	0.083	0.1	0.0002	0.001	63		0.0005		0.003	0.02	0.0002	3	0.01	19	0.043	0.005	18
2010-06-25 0:00	0.01	0.0004	0.088	0.1	0.0002	0.001	60		0.0005		0.003	0.02	0.0002	3	0.01	20	0.044	0.005	18
2010-06-26 0:00	0.01	0.0004	0.089	0.1	0.0002	0.001	67		0.0005		0.002	0.02	0.0002	3	0.01	22	0.117	0.004	17
2010-06-27 0:00	0.01	0.0004	0.085	0.1	0.0002	0.001	61		0.0005		0.002	0.037	0.0002	2	0.01	21	0.073	0.004	16
2010-06-28 0:00	0.01	0.0004	0.084	0.1	0.0002	0.001	60		0.0005		0.002	0.02	0.0002	2	0.01	22	0.056	0.003	16
2010-06-29 0:00	0.01	0.0004	0.085	0.1	0.0002	0.001	61		0.0005		0.002	0.021	0.0002	2	0.01	22	0.058	0.004	16
2010-06-30 0:00	0.01	0.0004	0.086	0.1	0.0002	0.001	61		0.0005		0.002	0.02	0.0002	2	0.01	21	0.019	0.004	16
2010-07-01 0:00	0.013	0.0004	0.084	0.1	0.0002	0.001	59		0.0005		0.004	0.029	0.0002	3	0.01	18	0.029	0.005	17
2010-07-02 0:00	0.013	0.0004	0.083	0.1	0.0002	0.001	60		0.0005		0.004	0.033	0.0002	3	0.01	19	0.038	0.005	18
2010-07-03 0:00	0.012	0.0004	0.083	0.1	0.0002	0.001	60		0.0005		0.004	0.027	0.0002	3	0.01	19	0.043	0.005	18
2010-07-04 0:00	0.01	0.0004	0.083	0.1	0.0002	0.001	60		0.0005		0.004	0.028	0.0002	3	0.01	19	0.044	0.005	18
2010-07-05 0:00	0.01	0.0004	0.078	0.1	0.0002	0.001	54		0.0005		0.004	0.039	0.0002	3	0.01	17	0.034	0.004	15
2010-07-06 0:00	0.01	0.0004	0.085	0.1	0.0002	0.001	52		0.0005		0.004	0.02	0.0002	3	0.01	20	0.039	0.005	18
2010-07-07 0:00	0.01	0.0004	0.087	0.1	0.0002	0.001	61		0.0005		0.004	0.022	0.0002	3	0.01	20	0.041	0.005	19
2010-07-08 0:00	0.01	0.0004	0.087	0.1	0.0002	0.001	62		0.0005		0.004	0.021	0.0002	3	0.01	19	0.041	0.005	19
2010-07-09 0:00	0.01	0.0004	0.086	0.1	0.0002	0.001	58		0.0005		0.004	0.02	0.0002	3	0.01	18	0.041	0.005	18
2010-07-10 0:00	0.01	0.0004	0.087	0.1	0.0002	0.001	58		0.0005		0.004	0.02	0.0002	3	0.01	18	0.04	0.005	17
2010-07-11 0:00	0.01	0.0004	0.079	0.1	0.0002	0.001	60		0.0005		0.003	0.028	0.0002	3	0.01	19	0.04	0.005	18
2010-07-12 0:00	0.01	0.0004	0.081	0.1	0.0002	0.001	60		0.0005		0.004	0.02	0.0002	3	0.01	19	0.022	0.005	18
2010-07-13 0:00	0.01	0.0004	0.081	0.1	0.0002	0.001	61		0.0005		0.004	0.02	0.0002	3	0.01	18	0.023	0.005	17
2010-07-14 0:00	0.01	0.0004	0.081	0.1	0.0002	0.001	60		0.0005		0.004	0.02	0.0002	3	0.01	19	0.013	0.005	18
2010-07-15 0:00	0.065	0.0005	0.089	0.1	0.0002	0.001	65		0.0005		0.003	0.02	0.0002	5	0.01	16	0.014	0.014	24
2010-07-16 0:00	0.093	0.0005	0.085	0.1	0.0002	0.001	56		0.0005		0.003	0.02	0.0002	5	0.01	16	0.015	0.014	24
2010-07-17 0:00	0.081	0.0005	0.086	0.1	0.0002	0.001	56		0.0005		0.003	0.02	0.0002	5	0.01	16	0.023	0.013	24
2010-07-18 0:00	0.097	0.0004	0.086	0.1	0.0002	0.001	54		0.0005		0.003	0.02	0.0002	5	0.01	16	0.015	0.013	26
2010-07-19 0:00	0.102	0.0004	0.085	0.1	0.0002	0.001	53		0.0005		0.004	0.02	0.0002	5	0.01	15	0.014	0.013	25
2010-07-20 0:00	0.1	0.0005	0.092	0.1	0.0002	0.001	56		0.0005		0.003	0.02	0.0002	5	0.01	15	0.014	0.014	24
2010-07-21 0:00	0.108	0.0005	0.094	0.1	0.0002	0.001	58		0.0005		0.003	0.02	0.0002	5	0.01	15	0.014	0.014	24
2010-07-22 0:00	0.108	0.0005	0.093	0.1	0.0002	0.001	57		0.0005		0.004	0.02	0.0002	5	0.01	15	0.015	0.014	23
2010-07-23 0:00																			
2010-07-24 0:00	0.077	0.0004	0.092	0.1	0.0002	0.001	55		0.0005		0.002	0.02	0.0002	5	0.01	16	0.019	0.013	26
2010-07-25 0:00	0.073	0.0004	0.094	0.1	0.0002	0.001	55		0.0005		0.002	0.02	0.0002	5	0.01	16	0.024	0.013	24
2010-07-26 0:00	0.077	0.0004	0.093	0.1	0.0002	0.001	54		0.0005		0.002	0.02	0.0003	5	0.01	16	0.015	0.013	27
2010-07-27 0:00	0.094	0.0004	0.097	0.1	0.0002	0.001	55		0.0005		0.002	0.02	0.0002	5	0.01	16	0.018	0.014	28
2010-07-28 0:00	0.089	0.0004	0.091	0.1	0.0002	0.001	54		0.0005		0.002	0.02	0.0002	5	0.01	16	0.033	0.013	26
2010-07-29 0:00	0.093	0.0004	0.099	0.1	0.0002	0.001	58		0.0005		0.002	0.02	0.0002	5	0.01	16	0.019	0.015	29
2010-07-30 0:00	0.099	0.0004	0.099	0.1	0.0002	0.001	57		0.0005		0.002	0.02	0.0002	5	0.01	16	0.02	0.014	28
2010-07-31 0:00	0.093	0.0004	0.098	0.1	0.0002	0.001	57		0.0005		0.002	0.02	0.0002	5	0.01	17	0.021	0.014	28
2010-08-01 0:00	0.101	0.0004	0.098	0.1	0.0002	0.001	58		0.0005		0.003	0.02	0.0002	5	0.01	17	0.008	0.014	28
2010-08-02 0:00	0.082	0.0004	0.098	0.1	0.0002	0.001	58		0.0005		0.002	0.02	0.0002	5	0.01	17	0.019	0.014	28
2010-08-03 0:00	0.063	0.0004	0.091	0.1	0.0002	0.001	57		0.0005		0.002	0.02	0.0002	5	0.01	16	0.019	0.014	24
2010-08-04 0:00	0.079	0.0004	0.095	0.1	0.0002	0.001	59		0.0005		0.004	0.02	0.0002	5	0.01	17	0.022	0.014	25
2010-08-05 0:00	0.076	0.0004	0.094	0.1	0.0002	0.001	59		0.0005		0.004	0.02	0.0002	5	0.01	17	0.021	0.014	25
2010-08-06 0:00	0.073	0.0004	0.096	0.1	0.0002	0.001	55		0.0005		0.004	0.02	0.0002	5	0.01	16	0.021	0.014	25
2010-08-07 0:00	0.076	0.0005	0.097	0.1	0.0002	0.001	71		0.0005		0.004	0.02	0.0002	5	0.01	17	0.022	0.014	25
2010-08-08 0:00	0.073	0.0004	0.093	0.1	0.0002	0.001	55		0.0005		0.004	0.02	0.0002	5	0.01	17	0.022	0.014	26
2010-08-09 0:00	0.086	0.0004	0.099	0.1	0.0002	0.001	60		0.0005		0.003	0.02	0.0002	5	0.01	17	0.023	0.014	28
2010-08-10 0:00	0.057	0.0004	0.101	0.1	0.0002	0.001	60		0.0005		0.003	0.02	0.0002	6	0.01	17	0.029	0.014	29
2010-08-11 0:00	0.072	0.0004	0.1	0.1	0.0002	0.001	60		0.0005		0.003	0.02	0.0002	6	0.01	17	0.035	0.014	29
2010-08-12 0:00	0.072	0.0005	0.097	0.1	0.0002	0.001	60		0.0005		0.004	0.02	0.0002	5	0.01	17	0.039	0.015	26
2010-08-13 0:00	0.074	0.0004	0.102	0.1	0.0002	0.001	60		0.0005		0.002	0.02	0.0002	5	0.01	17	0.011	0.015	27
2010-08-14 0:00	0.072	0.0005	0.108	0.1	0.0002	0.001	60		0.0005		0.004	0.02	0.0002	5	0.01	18	0.039	0.016	29
2010-08-15 0:00	0.071	0.0005	0.101	0.1	0.0002	0.001	61	0.0001	0.0005		0.004	0.02	0.0002	5	0.01	17	0.041	0.016	26
2010-08-16 0:00	0.077	0.0005	0.107	0.1	0.0002	0.001	60		0.0005		0.004	0.02	0.0002	5	0.01	17	0.039	0.016	28
2010-08-17 0:00	0.079	0.0005	0.106	0.1	0.0002	0.001	60		0.0005		0.002	0.02	0.0002	5	0.01	17	0.037	0.017	28
2010-08-18 0:00	0.064	0.0005	0.097	0.1	0.0002	0.001	65		0.0005		0.005	0.02	0.0002	5	0.01	16	0.045	0.016	25
2010-08-19 0:00	0.061	0.0005	0.096	0.1	0.0002	0.001	57		0.0005		0.004	0.02	0.0002	5	0.01	16	0.048	0.017	25
2010-08-20 0:00	0.062	0.0005	0.094	0.1	0.0002	0.001	57		0.0005		0.004	0.02	0.0002	4	0.01	15	0.041	0.015	24
2010-08-21 0:00	0.062	0.0005	0.105	0.1	0.0002	0.001	60		0.0005		0.004	0.02	0.0002	5	0.01	17	0.041	0.016	28
2010-08-22 0:00	0.062	0.0004	0.099	0.1	0.0002	0.001	62		0.0005		0.004	0.02	0.0002	5	0.01	17	0.039	0.016	26
2010-08-23 0:00	0.087	0.0004	0.093	0.1	0.0002	0.001	56		0.0005		0.004	0.02	0.00002	5	0.01	16	0.026	0.014	26
2010-08-24 0:00	0.094	0.0005	0.102	0.1	0.0002	0.001	60		0.0005		0.005	0.02	0.00002	5	0.01	17	0.041	0.017	28
2010-08-25 0:00	0.075	0.0005	0.092	0.1	0.0002	0.001	57		0.0005		0.004	0.02	0.0002	5	0.01	15	0.046	0.015	24
2010-08-26 0:00	0.078	0.0005	0.1	0.1	0.0002	0.001	58		0.0005		0.004	0.02	0.0002	5	0.01	17	0.05	0.017	27
2010-08-27 0:00	0.097	0.0004	0.104	0.1	0.0002	0.001	61		0.0005		0.004	0.02	0.0002	5	0.01	17	0.041	0.017	29
2010-08-28 0:00	0.091	0.0005	0.104	0.1	0.0002	0.001	61		0.0005		0.004	0.02	0.0002	5	0.01	17	0.043	0.017	29
2010-08-29 0:00	0.108	0.0006	0.097	0.1	0.0002	0.001	60		0.0005		0.003	0.02	0.0002	5	0.01	16	0.04	0.016	26
2010-08-30 0:00	0.121	0.0005	0.104	0.1	0.0002	0.001	62		0.0005		0.003	0.02	0.0002	5	0.01	17	0.036	0.017	29
2010-08-31 0:00	0.112	0.0005	0.097	0.1	0.0002	0.001	62		0.0005		0.003	0.02	0.0002	5	0.01	17	0.035	0.016	29
2010-09-01 0:00	0.097	0.0005	0.1	0.1	0.0002	0.001	61		0.0005		0.004	0.02	0.0002	5	0.01	17	0.039	0.016	27
2010-09-02 0:00	0.075	0.0004	0.096	0.1	0.0002	0.001	61		0.0005		0.003	0.02	0.0002	5	0.01	18	0.064	0.012	24
2010-09-03 0:00	0.088	0.0005	0.101	0.1	0.0002	0.001	61		0.0005		0.004	0.02	0.0002	5	0.01	17	0.044	0.016	27
2010-09-05 0:00	0.073	0.0006	0.1	0.1	0.0002	0.001	60		0.0005		0.004	0.02	0.0002	5	0.01	16	0.043	0.016	26
2010-09-07 0:00	0.094	0.0004	0.098	0.1	0.0002	0.001	61		0.0005		0.003	0.023	0.0002	4	0.01	19	0.072	0.01	23
2010-09-08 0:00	0.093	0.0006	0.108	0.1	0.0002	0.001	58		0.0005		0.004	0.02	0.0002	5	0.01	18	0.055	0.018	29
2010-09-09 0:00	0.086	0.0006	0.102	0.1	0.0002	0.001	63		0.0005		0.004	0.02	0.0002	5	0.01	18	0.056	0.017	28
2010-09-11 0:00	0.071	0.0005	0.106	0.1	0.0002	0.001	63		0.0005		0.004	0.02	0.0002	5	0.01	18	0.072	0.019	28
2010-09-12 0:00	0.072	0.0005	0.104	0.1	0.0002	0.001	65		0.0005		0.003	0.02	0.0002	5	0.01	18	0.068	0.018	28
2010-09-13 0:00	0.079	0.0005	0.112	0.1	0.0002	0.001	63		0.0005		0.004	0.02	0.0002	5	0.01	17	0.077	0.019	30
2010-09-15 0:00	0.067	0.0005	0.112	0.1	0.0002	0.001	63		0.0005		0.003	0.02	0.0002	6	0.01	18	0.075	0.018	31
2010-09-17 0:00	0.083	0.0005	0.106	0.1	0.0002	0.001	66		0.0005		0.004	0.02	0.0002	5	0.01	18	0.073	0.018	26
2010-09-19 0:00	0.074	0.0005	0.106	0.1	0.0002	0.001	65		0.0005		0.004	0.02	0.0002	5	0.01	18	0.071	0.018	27
2010-09-21 0:00	0.073	0.0004	0.105	0.1	0.0002	0.001	74		0.0005		0.004	0.02	0.0002	5	0.01	18	0.073	0.018	28
2010-09-23 0:00	0.078	0.0004	0.106	0.1	0.0002	0.001	62		0.0005		0.005	0.02	0.0002	6	0.01	18	0.077	0.018	29
2010-09-25 0:00	0.073	0.0004	0.106	0.055	0.0001	0.001	63.9	0.00001	0.0005	0.001	0.0051	0.006	0.00006	5.79	0.005	18.9	0.086	0.019	31
2010-09-27 0:00	0.069	0.0005	0.105	0.05	0.0001	0.001	62.3	0.00002	0.0005	0.001	0.0046	0.005	0.00002	5.58	0.005	18.8	0.088	0.019	28.5
2010-09-29 0:00	0.071	0.0004	0.103	0.05	0.0001	0.001	62.6	0.00001	0.0005	0.001	0.0046	0.007	0.00002	5.36	0.005	17.2	0.094	0.018	28.4
2010-10-01 0:00	0.061	0.0004	0.092	0.05	0.0001	0.001	64.2	0.00001	0.0005	0.001	0.0046	0.005	0.00004	5.6	0.005	17.6	0.093	0.016	29.2
2010-10-03 0:00	0.042	0.0004	0.099	0.05	0.0001	0.001	63.7	0.00001	0.0005	0.001	0.0034	0.016	0.00002	5.15	0.005	18.1	0.09	0.015	27.3
2010-10-05 0:00	0.074	0.0004	0.099	0.05	0.0001	0.001	63.4	0.00002	0.0005	0.001	0.0041	0.008	0.00002	6.19	0.005	17.7	0.078	0.014	24.3
2010-10-07 0:00	0.063	0.0004	0.097	0.05	0.0001	0.001	63.9	0.00002	0.0005	0.001	0.004	0.007	0.00002	5.94	0.005	17.5	0.069	0.013	23.6
2010-10-09 0:00	0.059	0.0004	0.098	0.05	0.0001	0.001	81.6	0.00003	0.0005	0.001	0.0043	0.008	0.00002	5.74	0.005	17.4	0.081	0.015	24.1
2010-10-11 0:00	0.049	0.0004	0.101	0.05	0.0001	0.001	65.4	0.00002	0.0005	0.001	0.0037	0.049	0.00002	5.04	0.005	18.4	0.217	0.013	22.9
2010-10-12 0:00	0.036	0.0004	0.096	0.05	0.0001	0.001	65.2	0.00001	0.0005	0.001	0.003	0.011	0.00002	5.04	0.005	18.2	0.081	0.01	21.2
2010-10-13 0:00	0.068	0.0004	0.105	0.05	0.0001	0.001	73.9	0.00001	0.0005	0.001	0.0047	0.009	0.00004	5.84	0.005	20	0.09	0.017	27.8
2010-10-14 0:00																			
2010-10-15 0:00	0.057	0.0004	0.097	0.05	0.0001	0.001	74.1	0.00001	0.0005	0.001	0.0044	0.01	0.00004	5.92	0.005	20.4	0.095	0.017	29.6
2010-10-16 0:00																			
2010-10-17 0:00	0.05	0.0004	0.102	0.054	0.0001	0.001	70.4	0.00001	0.0005	0.001	0.0047	0.011	0.00002	5.69	0.005	19.7	0.092	0.016	29.1
2010-10-18 0:00																			
2010-10-19 0:00	0.048	0.0003	0.098	0.05	0.0001	0.001	67.9	0.00001	0.0005	0.001	0.0039	0.008	0.00002	5.7	0.005	19.1	0.089	0.015	27.4
2010-10-20 0:00																			
2010-10-21 0:00	0.064	0.0004	0.104	0.05	0.0001	0.001	73.4	0.00001	0.0005	0.001	0.0028	0.005	0.00002	5.53	0.005	21.1	0.095	0.016	28.1
2010-10-22 0:00	0.059	0.0004	0.103	0.05	0.0001	0.001	73.6	0.00001	0.0005	0.001	0.0026	0.005	0.00002	5.31	0.005	20.6	0.093	0.016	27.9
2010-10-23 0:00	0.057	0.0004	0.102	0.05	0.0001	0.001	74.2	0.00001	0.0005	0.001	0.0026	0.005	0.00002	5.34	0.005	20.5	0.094	0.016	27.9
2010-10-25 0:00	0.069	0.0004	0.1	0.05	0.0001	0.001	71900	0.00001	0.0005	0.001	0.0031	0.005	0.00002	5.49	0.005	21000	0.091	0.016	26.8
2010-10-26 0:00	0.081	0.0004	0.101	0.05	0.0001	0.001	71.9	0.00001	0.0005	0.001	0.0027	0.007	0.00002	5.39	0.005	20.8	0.088	0.015	27.6
2010-10-27 0:00	0.08	0.0004	0.098	0.05	0.0001	0.001	70.1	0.00001	0.0005	0.001	0.0029	0.005	0.00002	5.39	0.005	20.4	0.093	0.015	27.9
2010-10-29 0:00	0.066	0.0004	0.1	0.05	0.0001	0.001	69.6	0.00002	0.0005	0.001	0.0041	0.011	0.00002	5.99	0.005	21.1	0.101	0.015	30.5
2010-10-31 0:00	0.063	0.0003	0.099	0.05	0.0001	0.001	70.6	0.00004	0.0005	0.001	0.0049	0.014	0.00002	5.65	0.005	20.8	0.099	0.014	29.1
2010-11-02 0:00	0.02	0.0003	0.093	0.05	0.0001	0.001	70	0.00002	0.0005	0.001	0.0025	0.027	0.00002	4.02	0.005	22.7	0.116	0.007	24.4
2010-11-04 0:00	0.014	0.0003	0.097	0.05	0.0001	0.001	66.9	0.00002	0.0005	0.001	0.0027	0.023	0.00002	3.77	0.005	21.8	0.107	0.007	22.3

Dissolved Elements (continued)

Date / Time	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
2010-06-21 0:00	0.001	0.0002	0.0005	60	0.0008	5.52	0.005	0.574	0.01	0.00005	0.0026	0.005		0.002
2010-06-22 0:00	0.001	0.0002	0.0005	60	0.0008	5.49	0.005	0.566	0.01	0.00005	0.0026	0.005		0.002
2010-06-23 0:00	0.001	0.0002	0.0005	60	0.0008	5.28	0.005	0.563	0.01	0.00005	0.0026	0.005		0.002
2010-06-24 0:00	0.001	0.0002	0.0005	60	0.0008	5.5	0.005	0.567	0.01	0.00005	0.0026	0.005		0.002
2010-06-25 0:00	0.001	0.0002	0.0005	60	0.0008	5.69	0.005	0.601	0.01	0.00005	0.0026	0.005		0.002
2010-06-26 0:00	0.001	0.0002	0.0005	60	0.0013	5.98	0.005	0.614	0.01	0.00005	0.0027	0.005		0.002
2010-06-27 0:00	0.001	0.0002	0.0005	60	0.0008	6.34	0.005	0.596	0.01	0.00005	0.0025	0.005		0.002
2010-06-28 0:00	0.001	0.0002	0.0005	60	0.0008	6.35	0.005	0.594	0.01	0.00005	0.0025	0.005		0.002
2010-06-29 0:00	0.001	0.0002	0.0005	60	0.0008	6.36	0.005	0.602	0.01	0.00005	0.0025	0.005		0.002
2010-06-30 0:00	0.001	0.0002	0.0005	60	0.0008	6.44	0.005	0.596	0.01	0.00005	0.0024	0.005		0.002
2010-07-01 0:00	0.001	0.0002	0.0005	60	0.0009	5.62	0.005	0.549	0.01	0.00005	0.0024	0.005		0.002
2010-07-02 0:00	0.001	0.0002	0.0005	60	0.0009	5.74	0.005	0.542	0.01	0.00005	0.0024	0.005		0.002
2010-07-03 0:00	0.001	0.0002	0.0005	60	0.001	5.66	0.005	0.548	0.01	0.00005	0.0023	0.005		0.002
2010-07-04 0:00	0.001	0.0002	0.0005	60	0.001	5.7	0.005	0.548	0.01	0.00005	0.0024	0.005		0.002
2010-07-05 0:00	0.001	0.0002	0.0005	60	0.0008	5.97	0.005	0.486	0.01	0.00005	0.0019	0.005		0.002
2010-07-06 0:00	0.001	0.0002	0.0005	60	0.0009	4.85	0.005	0.573	0.01	0.00005	0.0025	0.005		0.002
2010-07-07 0:00	0.001	0.0002	0.0005	60	0.0011	5.62	0.005	0.574	0.01	0.00005	0.0025	0.005		0.002
2010-07-08 0:00	0.001	0.0002	0.0005	60	0.0011	5.56	0.005	0.572	0.01	0.00005	0.0025	0.005		0.002
2010-07-09 0:00	0.001	0.0002	0.0005	60	0.001	5.17	0.005	0.604	0.01	0.00005	0.0027	0.005		0.002
2010-07-10 0:00	0.001	0.0002	0.0005	60	0.0009	5.1	0.005	0.605	0.01	0.00005	0.0028	0.005		0.002
2010-07-11 0:00	0.002	0.0002	0.0005	60	0.001	5.29	0.005	0.543	0.01	0.00005	0.0024	0.005		0.002
2010-07-12 0:00	0.001	0.0002	0.0005	60	0.001	5.3	0.005	0.564	0.01	0.00005	0.0025	0.005		0.002
2010-07-13 0:00	0.001	0.0002	0.0005	60	0.001	5.39	0.005	0.559	0.01	0.00005	0.0024	0.005		0.002
2010-07-14 0:00	0.001	0.0002	0.0005	60	0.001	5.32	0.005	0.553	0.01	0.00005	0.0024	0.005		0.002
2010-07-15 0:00	0.001	0.0002	0.0005	60	0.0032	4.88	0.005	1.03	0.01	0.00005	0.0011	0.005		0.002
2010-07-16 0:00	0.001	0.0002	0.0005	60	0.0025	4.25	0.005	0.997	0.01	0.00005	0.001	0.005		0.002
2010-07-17 0:00	0.001	0.0002	0.0005	60	0.0025	4.31	0.005	0.994	0.01	0.00005	0.0011	0.005		0.002
2010-07-18 0:00	0.001	0.0002	0.0005	60	0.0025	4.45	0.005	0.994	0.01	0.00005	0.0009	0.005		0.002
2010-07-19 0:00	0.001	0.0002	0.0005	60	0.0024	4.36	0.005	0.964	0.01	0.00005	0.0009	0.005		0.002
2010-07-20 0:00	0.001	0.0002	0.0005	60	0.0025	4.19	0.005	0.998	0.01	0.00005	0.0009	0.005		0.002
2010-07-21 0:00	0.001	0.0002	0.0005	60	0.0026	4.36	0.005	0.991	0.01	0.00005	0.001	0.005		0.002
2010-07-22 0:00	0.001	0.0002	0.0005	60	0.0025	4.33	0.005	0.937	0.01	0.00005	0.0009	0.005		0.002
2010-07-23 0:00														
2010-07-24 0:00	0.001	0.0002	0.0005	60	0.0025	4.66	0.005	0.857	0.01	0.00005	0.0008	0.005		0.002
2010-07-25 0:00	0.001	0.0002	0.0005	60	0.0026	4.33	0.005	0.85	0.01	0.00005	0.0009	0.005		0.002
2010-07-26 0:00	0.001	0.0002	0.0005	60	0.0026	4.47	0.005	0.859	0.01	0.00005	0.0009	0.005		0.002
2010-07-27 0:00	0.001	0.0002	0.0005	60	0.0028	4.63	0.005	0.911	0.01	0.00005	0.0007	0.005		0.002
2010-07-28 0:00	0.001	0.0002	0.0005	60	0.0026	4.46	0.005	0.869	0.01	0.00005	0.0007	0.005		0.002
2010-07-29 0:00	0.001	0.0002	0.0005	60	0.003	4.79	0.005	0.938	0.01	0.00005	0.0007	0.005		0.002
2010-07-30 0:00	0.001	0.0002	0.0005	60	0.003	4.75	0.005	0.942	0.01	0.00005	0.0007	0.005		0.002
2010-07-31 0:00	0.001	0.0002	0.0005	60	0.003	4.69	0.005	0.947	0.01	0.00005	0.0007	0.005		0.002
2010-08-01 0:00	0.001	0.0002	0.0005	60	0.0028	4.84	0.005	0.907	0.01	0.00005	0.0009	0.005		0.002
2010-08-02 0:00	0.001	0.0002	0.0005	60	0.003	4.82	0.005	0.919	0.01	0.00005	0.0008	0.005		0.002
2010-08-03 0:00	0.001	0.0002	0.0005	60	0.003	4.39	0.005	0.897	0.01	0.00005	0.0007	0.005		0.002
2010-08-04 0:00	0.001	0.0002	0.0005	60	0.0031	4.49	0.005	0.934	0.01	0.00005	0.0008	0.005		0.002
2010-08-05 0:00	0.001	0.0002	0.0005	60	0.0031	4.58	0.005	0.936	0.01	0.00005	0.0008	0.005		0.002
2010-08-06 0:00	0.001	0.0002	0.0005	60	0.0032	4.24	0.005	0.96	0.01	0.00005	0.0008	0.005		0.002
2010-08-07 0:00	0.001	0.0002	0.0005	60	0.0041	5.54	0.005	0.965	0.01	0.00005	0.0009	0.005		0.002
2010-08-08 0:00	0.001	0.0002	0.0005	60	0.0032	4.26	0.005	0.944	0.01	0.00005	0.0008	0.005		0.002
2010-08-09 0:00	0.001	0.0002	0.0005	60	0.0034	4.73	0.005	1.01	0.01	0.00005	0.0009	0.005		0.002
2010-08-10 0:00	0.001	0.0002	0.0005	60	0.0031	4.77	0.005	0.956	0.01	0.00005	0.0009	0.005	0.143	0.002
2010-08-11 0:00	0.001	0.0002	0.0005	60	0.0031	4.72	0.005	0.976	0.01	0.00005	0.0009	0.005	0.084	0.002
2010-08-12 0:00	0.001	0.0002	0.0005	60	0.0036	4.36	0.005	1.02	0.01	0.00005	0.001	0.005	0.061	0.002
2010-08-13 0:00	0.001	0.0002	0.0005	60	0.0033	4.82	0.005	0.972	0.01	0.00005	0.0012	0.005	0.022	0.002
2010-08-14 0:00	0.001	0.0002	0.0005	60	0.0038	4.75	0.005	1.1	0.01	0.00005	0.0009	0.005	0.027	0.002
2010-08-15 0:00	0.001	0.0002	0.0005	60	0.0041	4.36	0.005	1.14	0.01	0.00005	0.0009	0.005	0.015	0.002
2010-08-16 0:00	0.001	0.0002	0.0005	60	0.0042	4.47	0.005	1.21	0.01	0.00005	0.001	0.005	0.013	0.002
2010-08-17 0:00	0.001	0.0002	0.0005	60	0.0044	4.39	0.005	1.23	0.01	0.00005	0.001	0.005		0.002
2010-08-18 0:00	0.001	0.0002	0.0005	60	0.0051	4.57	0.005	1.22	0.01	0.00005	0.0009	0.005		0.002
2010-08-19 0:00	0.001	0.0002	0.0005	60	0.0046	4.06	0.005	1.24	0.01	0.00005	0.0009	0.005		0.002
2010-08-20 0:00	0.001	0.0002	0.0005	60	0.0043	4.08	0.005	1.2	0.01	0.00005	0.0009	0.005		0.002
2010-08-21 0:00	0.001	0.0002	0.0005	60	0.004	4.67	0.005	1.16	0.01	0.00005	0.0009	0.005		0.002
2010-08-22 0:00	0.001	0.0002	0.0005	60	0.0043	4.53	0.005	1.17	0.01	0.00005	0.0009	0.005		0.002
2010-08-23 0:00	0.001	0.0002	0.0005	60	0.0033	4.49	0.005	0.925	0.01	0.00005	0.0008	0.005		0.002
2010-08-24 0:00	0.001	0.0002	0.0005	60	0.0044	4.62	0.005	1.25	0.01	0.00005	0.0009	0.005		0.002
2010-08-25 0:00	0.001	0.0002	0.0005	60	0.0049	4.31	0.005	1.18	0.01	0.00005	0.0007	0.005		0.002
2010-08-26 0:00	0.001	0.0002	0.0005	60	0.0045	4.27	0.005	1.27	0.01	0.00005	0.0008	0.005	0.017	0.002
2010-08-27 0:00	0.001	0.0002	0.0005	60	0.0042	4.25	0.005	1.26	0.01	0.00005	0.0009	0.005		0.002
2010-08-28 0:00	0.001	0.0002	0.0005	60	0.0044	4.22	0.005	1.3	0.01	0.00005	0.0009	0.005		0.002
2010-08-29 0:00	0.001	0.0002	0.0005	60	0.0047	4.37	0.005	1.18	0.01	0.00005	0.0008	0.005		0.002
2010-08-30 0:00	0.001	0.0002	0.0005	60	0.0045	4.27	0.005	1.27	0.01	0.00005	0.0009	0.005		0.002
2010-08-31 0:00	0.001	0.0002	0.0005	60	0.0042	4.33	0.005	1.15	0.01	0.00005	0.0008	0.005		0.002
2010-09-01 0:00	0.001	0.0002	0.0005	60	0.0046	4.37	0.005	1.23	0.01	0.00005	0.0008	0.005		0.002
2010-09-02 0:00	0.001	0.0002	0.0009	60	0.0034	4.65	0.005	1.07	0.01	0.00005	0.0012	0.005		0.002
2010-09-03 0:00	0.001	0.0002	0.001	60	0.0045	4.32	0.005	1.24	0.01	0.00005	0.0008	0.005		0.002
2010-09-05 0:00	0.001	0.0002	0.001	60	0.0046	4.38	0.005	1.23	0.01	0.00005	0.0008	0.005		0.002
2010-09-07 0:00	0.001	0.0002	0.0005	60	0.0026	5.15	0.005	0.912	0.01	0.00005	0.0016	0.005		0.002
2010-09-08 0:00	0.001	0.0002	0.0005	60	0.0053	3.97	0.005	1.34	0.01	0.00005	0.0009	0.005		0.002
2010-09-09 0:00	0.001	0.0002	0.0005	60	0.0047	4.64	0.005	1.34	0.01	0.00005	0.0009	0.005		0.002
2010-09-11 0:00	0.001	0.0002	0.0005	60	0.0051	4.56	0.005	1.48	0.01	0.00005	0.0008	0.005		0.002
2010-09-12 0:00	0.001	0.0002	0.0005	60	0.005	4.7	0.005	1.42	0.01	0.00005	0.0008	0.005		0.002
2010-09-13 0:00	0.001	0.0002	0.0005	60	0.0051	4.44	0.005	1.46	0.01	0.00005	0.0008	0.005		0.002
2010-09-15 0:00	0.001	0.0002	0.0005	60	0.0048	4.45	0.005	1.36	0.01	0.00005	0.0008	0.005		0.002
2010-09-17 0:00	0.001	0.0002	0.0005	60	0.0049	4.56	0.005	1.37	0.01	0.00005	0.0018	0.005		0.002
2010-09-19 0:00	0.001	0.0002	0.0005	60	0.0049	4.46	0.005	1.43	0.01	0.00005	0.0017	0.005		0.002
2010-09-21 0:00	0.005	0.0002	0.0005	60	0.0056	5.27	0.005	1.35	0.01	0.00005	0.0016	0.005		0.002
2010-09-23 0:00	0.001	0.0002	0.0005	60	0.0048	4.43	0.005	1.38	0.01	0.00005	0.0017	0.005		0.002
2010-09-25 0:00	0.001	0.0002	0.0005	38	0.005	4.44	0.005	1.47	0.005	0.00005	0.0016	0.005	0.005	0.0005
2010-09-27 0:00	0.001	0.0002	0.0005	36	0.0046	4.14	0.005	1.51	0.005	0.00005	0.0015	0.005	0.005	0.0005
2010-09-29 0:00	0.001	0.0002	0.0005	36	0.0049	4.39	0.005	1.49	0.005	0.00005	0.0014	0.005	0.005	0.0005
2010-10-01 0:00	0.001	0.0002	0.0005	36	0.0049	4.37	0.005	1.33	0.005	0.00005	0.0012	0.005	0.005	0.0005
2010-10-03 0:00	0.001	0.0002	0.0005	35	0.0041	4.6	0.005	1.27	0.005	0.00005	0.0013	0.005	0.005	0.0005
2010-10-05 0:00	0.001	0.0002	0.0005	31	0.0039	4.7	0.005	1.12	0.005	0.00005	0.0013	0.005	0.005	0.0005
2010-10-07 0:00	0.001	0.0002	0.0005	31	0.0037	4.74	0.005	1.06	0.005	0.00005	0.0014	0.005	0.005	0.0005
2010-10-09 0:00	0.001	0.0002	0.0005	32	0.0051	5.88	0.005	1.2	0.005	0.00005	0.0014	0.005	0.005	0.0005
2010-10-11 0:00	0.001	0.0002	0.0005	30	0.0035	4.67	0.005	1.16	0.005	0.00005	0.0018	0.005	0.005	0.0005
2010-10-12 0:00	0.001	0.0002	0.0005	28	0.0028	5	0.005	1.01	0.005	0.00005	0.0021	0.005	0.005	0.0005
2010-10-13 0:00	0.001	0.0002	0.0005	36	0.0045	5.02	0.005	1.4	0.005	0.00005	0.0019	0.005	0.005	0.0005
2010-10-14 0:00														
2010-10-15 0:00	0.001	0.0002	0.0005	39	0.0045	5.18	0.005	1.42	0.005	0.00005	0.0016	0.005	0.005	0.0005
2010-10-16 0:00														
2010-10-17 0:00	0.001	0.0002	0.0005	38	0.0045	4.4	0.005	1.6	0.005	0.00005	0.0015	0.005	0.006	0.0005
2010-10-18 0:00														
2010-10-19 0:00	0.001	0.0002	0.0005	34	0.0041	4.57	0.005	1.34	0.005	0.00005	0.0013	0.005	0.005	0.0005
2010-10-20 0:00														
2010-10-21 0:00	0.001	0.0002	0.0005	42	0.0041	4.43	0.005	1.64	0.005	0.00005	0.0016	0.005	0.005	0.0005
2010-10-22 0:00	0.001	0.0002	0.0005	43	0.0041	4.46	0.005	1.62	0.005	0.00005	0.0015	0.005	0.005	0.0005
2010-10-23 0:00	0.001	0.0002	0.0005	42	0.0041	4.48	0.005	1.61	0.005	0.00005	0.0016	0.005	0.005	0.0005
2010-10-25 0:00	0.001	0.0002	0.0005	39	0.0041	4.49	0.005	1.48	0.005	0.00005	0.0015	0.005	0.005	0.0005
2010-10-26 0:00	0.001	0.0002	0.0005	40	0.0041	4.65	0.005	1.54	0.005	0.00005	0.0016	0.005	0.005	0.0005
2010-10-27 0:00	0.001	0.0002	0.0005	39	0.004	4.49	0.005	1.47	0.005	0.00005	0.0016	0.005	0.005	0.0005
2010-10-29 0:00	0.001	0.0002	0.0005	37	0.004	5.04	0.005	1.31	0.005	0.00005	0.0017	0.005	0.005	0.0005
2010-10-31 0:00	0.001	0.0002	0.0005	36	0.0039	5.32	0.005	1.23	0.005	0.00005	0.0019	0.005	0.005	0.0005
2010-11-02 0:00	0.001	0.0002	0.0005	31	0.002	6.04	0.005	0.807	0.005	0.00005	0.0024	0.005	0.005	0.0005
2010-11-04 0:00	0.002	0.0002	0.0005	29	0.0019	5.62	0.005	0.779	0.005	0.00005	0.0026	0.005	0.005	0.0005

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N-NO_2$	$N-NO_3$	$N-NH_3$	SO_4-D	Chlord	Fluord
		mg/L	μS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W3	2010-11-07 0:00	180	590		7.8	380	1	3.94		0.005	8	0.017	80	7.5	0.45
W3	2010-11-11 1:45	190	585		7.6	370	1	0.96		0.006	8.2	0.074	77	8.7	0.38
W3	2010-11-16 14:00	190	589		7.8	380	1	0.19	104.1	0.007	8.2	0.069	86	7.8	0.42
W3	2010-11-19 0:00														
W3	2010-11-21 0:00	190	582			340	1			0.007	8.1	0.077	85	8	0.44
W3	2010-11-24 0:00	190	585			330	1			0.008	8.2	0.034	90	7.3	0.45
W3	2010-11-26 0:00	190	590		7.63	370	2	1.17	98.5	0.008	8.1	0.079	84	7	0.44
W3	2010-11-27 0:00	190	593		7.49	380	4	0.22	101.8	0.009	8	0.069	84	7.2	0.46
W3	2010-11-28 0:00	180	623		7.58	370	2	-0.17	102.3	0.009	8	0.061	71	5.9	0.5
W3	2010-11-29 0:00	190	592		7.69	350	1	0.32	102.5	0.009	8.1	0.076	86	7.2	0.46
W3	2010-11-30 0:00	190	594		7.62	310	13	0.33	102.2	0.008	7.8	0.081	85	7.1	0.47
W3	2010-12-01 0:00	190	591		7.32	370	2	-0.19	112.5	0.007	8.1	0.058	92	8.2	0.43
W3	2010-12-02 0:00	190	591		7.58	370	1	-0.21	111	0.006	8.3	0.062	91	8	0.46
W3	2010-12-03 0:00	190	610		7.39	360	1	-0.22	111.6	0.006	11	0.072	86	8	0.47
W3	2010-12-04 0:00	190	605		7.7	360	1	-0.12	113.4	0.005	8.2	0.085	88	7.3	0.45
W3	2010-12-05 0:00	190	604		7.64	360	1	0.56	105.5	0.005	8.2	0.081	89	7.3	0.46
W3	2010-12-06 0:00	190	602		7.62	390	1	1.01	120.6	0.005	8.2	0.049	88	7.4	0.45
W3	2010-12-07 0:00	190	599		7.56	370	21	0.39	81.1	0.008	8.1	0.066	89	7.2	0.47
W3	2010-12-08 0:00	190	605		7.5	400	1	0.9	82.1	0.006	8	0.016	90	7.7	0.42
W3	2010-12-10 0:00	190	608		7.6	400	1	0.12	91.1	0.007	8	0.025	87	9	0.45
W3	2010-12-11 0:00	190	602			390	1			0.006	8	0.051	86	7.2	0.43
W3	2010-12-13 0:00	190	609			400	1			0.007	8.1	0.005	89	7.2	0.45
W3	2010-12-14 0:00	190	608			380	1			0.008	7.9	0.015	90	7.7	0.43
W3	2010-12-19 0:00	190	615			370	2			0.009	8	0.009	90	7.6	0.43
W3	2010-12-23 0:00	190	618			400	1			0.008	8.1	0.05	92	7.3	0.45
W3	2010-12-24 0:00	190	621		7.37	400	2	0.16	93.7	0.009	8.7	0.05	85	7.2	0.46
W3	2010-12-28 0:00	200	623		7.22	410	1	0.4	91.3	0.01	8.9	0.005	86	7.1	0.48
W3	2010-12-30 0:00	200	623		7.82	400	1	0.17		0.009	8.9	0.005	85	6.9	0.48
W3	2011-01-01 0:00	190	626		7.6	400	1	0.55	81.6	0.009	8.7	0.005	87	7	0.49
W3	2011-01-03 0:00	190	631		7.66	390	1	0.7	83.9	0.005	8.5	0.05	88	7.6	0.44
W3	2011-01-05 0:00	200	630		7.71	390	1	0.83	87.2	0.005	8.4	0.05	89	7.2	0.47
W3	2011-01-08 0:00	210	588		7.64	350	1	-0.27	89.6	0.005	4.1	0.009	77	6.1	0.4
W3	2011-01-10 0:00				7.31			0.13	88.7						
W3	2011-01-12 0:00														
W3	2011-01-13 0:00	220	585			360	2			0.005	3.6	0.005	78	3.8	0.46
W3	2011-01-14 0:00				7.2			-0.27	66.5						
W3	2011-01-17 0:00	210	584		7.38	350	6	-0.31	57.3	0.006	3.4	0.006	76	5.5	0.42
W3	2011-01-18 0:00				7.21			-0.28	64.2						
W3	2011-01-22 0:00	210	592			350	3			0.005	3.2	0.11	78	4.8	0.41
W3	2011-01-23 0:00				6.67			-0.28	86.7						
W3	2011-01-28 0:00	220	573		7.47	330	1	-0.3	77	0.005	3.2	0.019	72	5.3	0.43
W3	2011-01-30 0:00	220	580		7.42	330	1	-0.32	80.3	0.005	3.2	0.014	72	4.7	0.43
W3	2011-02-01 0:00	220	582		7.44	310	2	-0.3	78.2	0.005	2.92	0.022		5.8	0.47
W3	2011-02-03 0:00	220	583		7.48	350	2	-0.25	81.4	0.005	2.97	0.005	79	4.8	0.47
W3	2011-02-04 0:00				7.52			-0.26							
W3	2011-02-05 0:00	210	649		7.63	400	5	-0.32	81.5	0.011	8.4	0.015		7.1	0.49
W3	2011-02-06 0:00	220	597		7.31	370	75	-0.3	87.4	0.005	3.7	0.017	85	8.9	0.45
W3	2011-02-07 0:00				7.16			-0.32	82.7						
W3	2011-02-08 0:00	220	602		6.6	370	1	-0.32	72.4	0.005	3.6	0.019	82	6.2	0.45
W3	2011-02-09 0:00	220	602			370	1			0.005	3.6	0.019	82	6.2	0.45
W3	2011-02-10 0:00														
W3	2011-02-11 0:00	210	586			320	2			0.005	3.5	0.034	74	5.5	0.46
W3	2011-02-12 0:00														
W3	2011-02-13 0:00	210	591			330	2			0.005	3.6	0.043	75	6.6	0.46
W3	2011-02-14 0:00														
W3	2011-02-15 0:00	220	599			350	2			0.005	3.6	0.029	77	5.7	0.47
W3	2011-02-26 0:00	220	601			370	1			0.005	3.6	0.03	85	5.2	0.46
W3	2011-03-02 0:00	230	610			370	3			0.006	3.6	0.037	82	5	0.47
W3	2011-03-03 0:00	230	613			370	3			0.006	3.6	0.026	79	5.7	0.48
W3	2011-03-05 0:00	230	600			390	2			0.006	3.5	0.044	83	8.2	0.5
W3	2011-03-08 0:00	230	611			380	2			0.005	3.5	0.02	81	6.1	0.49
W3	2011-03-22 0:00	250	585			350	110			0.07	1.39	0.18	81	7.5	0.49
W3	2011-03-27 0:00	230	572			370	4			0.007	3.8	0.005	83	5.9	0.48
W3	2011-03-29 0:00	210	584			330	10			0.008	4.3	0.005	75	6.1	0.49
W3	2011-03-31 0:00	210	588			350	6			0.006	3.7	0.007	79	5.6	0.51
W3	2011-04-02 0:00	220	599			350	2			0.007	4.1	0.009	78	5.7	0.48
W3	2011-04-09 0:00	210	593			360	3			0.009	4	0.005	79	5.8	0.47
W3	2011-04-15 0:00	210	560			350	21			0.011	3.5	0.013	77	4.4	0.49
W3	2011-04-21 0:00	220	581			310	2			0.007	3.9	0.007	84	5.9	0.51
W3	2011-04-27 0:00	110	313			240	3			0.013	1.42	0.016	39	4.6	0.28
W3	2011-05-05 0:00	95	270			270	93			0.01	1.39	0.012	38	3.1	0.23
W3	2011-05-14 0:00	150				290	10			0.005	2.4	0.011	62	4.2	0.37
W3	2011-05-24 0:00	190	521			320	2			0.005	2.78	0.015	77	4.7	0.44
W3	2011-05-29 0:00	200	548			340	5			0.005	3.1	0.016	73	4.9	0.49
W3	2011-06-04 0:00	210	574			330	1			0.005	3	0.016	74		0.48
W3	2011-06-16 0:00	220	583			360	1			0.005	2.52	0.007			
W3	2011-06-27 0:00	210	543			320	3			0.005	1.68	0.019	70		
W3	2011-07-01 0:00	160	392			170	2			0.005	1.25	0.007	53		
W3	2011-07-12 0:00	210	533			350	1			0.005	1.67	0.008	61		
W3	2011-07-16 0:00	150	379			250	1			0.005	0.96	0.005	41	3.1	0.33
W3	2011-07-23 0:00	210	543			340	1			0.005	1.45	0.014	66		
W3	2011-07-31 0:00	220	539			310	1			0.005	1.39	0.014	62		
W3	2011-08-02 0:00	190	456			300	3			0.005	0.9			3.9	0.41
W3	2011-08-07 0:00	150	371			230	1			0.005	0.73	0.019	34		
W3	2011-08-16 0:00	210	525			370	1			0.109	0.36	0.016			
W3	2011-08-28 0:00	220	526			310	1			0.005	1.11	0.009	54		
W3	2011-08-30 0:00	220	532			330	1			0.005	0.91	0.007			
W3	2011-09-07 0:00	220	538		7.76	340	1	3.9	84.5	0.005	1.08	0.008		4.3	
W3	2011-09-12 0:00	220	538		7.66	350	1	1.1	112.1	0.005	1.1	0.017		4.7	
W3	2011-09-19 0:00	220	530		7.75	340	4	2.2	87	0.005	1.09	0.009	57	4.6	
W3	2011-09-24 0:00	220	524		7.71	330	4	1.9	82	0.005	1.04	0.015	54	4.3	
W3	2011-10-06 0:00	220	522		7.6	280	4	0.1	70.5	0.005	1.17	0.015	59	4.4	
W3	2011-10-17 0:00	200	498		7.68	270	4	1.3	78.6	0.005	1.89	0.01	52	5	
W3	2011-10-24 0:00	220	531		7.46	300	1	0.1	70.9	0.005	1.09	0.019	55	4.4	
W3	2011-10-30 0:00	220	530		7.5	320	4	0.2	76.8	0.005	1.04	0.009		3.7	
W3	2011-11-13 0:00	201	498		7.53	294	1	0.7	91.2	0.005	2.23	0.0089		5	
W3	2011-11-22 0:00	227	545			316	1			0.005	1.19	0.0106		4.3	
W3	2011-11-28 0:00	223	531			316	1			0.005	1.2	0.0167	57.4	4.4	0.54
W3	2011-12-05 0:00	221	537			298	4			0.005	0.932	0.0178	58.3	4	
W3	2011-12-13 0:00	221	532			316	1			0.005	1.12	0.0102		4.1	
W3	2011-12-18 0:00	222	531			310	1			0.005	1.17	0.316	54.1	3.9	0.53
W3	2011-12-27 0:00	224	537			296	1			0.005	1.15	0.0231		3.9	
W3	2012-01-02 14:01	225	535		7.45	298	4	0	69.1	0.005	0.02	0.021		0.5	
W3	2012-01-09 0:00	223	537		7.28	300	1	0	113.9	0.005	1.26	0.0154		3.8	
W3	2012-01-15 14:30	223	540		7.48	314	2.7	0	104.3	0.005	1.32	0.0132		4.1	
W3	2012-01-22 13:14	226	548			326	6	0	10.7	0.005	1.37	0.005	58.7	3.8	0.55
W3	2012-01-31 0:00	228	550			310	4	0	73.9	0.005	1.25	0.0074	62.2	4.3	0.55
W3	2012-02-07 13:30	230	548			306	4	0	83.2	0.005	1.13	0.005	60.7	4.1	0.55
W3	2012-02-14 8:00	229	534		7.43	304	4	0.1	80.3	0.005	1.27	0.0065		4	
W3	2012-02-20 12:08	226	538		7.46	304	4	0	84.8	0.005	1.23	0.0204	60.4	3.8	0.58
W3	2012-02-25 0:00	218	538		7.51	320	4	0	70.4	0.005	1.32	0.0089	54.8	5.4	0.55
W3	2012-03-05 12:10	219	548		7.39	320	3.9	0	77.7	0.005	1.28	0.0102	62.3	3.9	0.56
W3	2012-03-12 14:00	229	546		7.42	288	5.1	0.1	77.7	0.005	1.3	0.0142	57.3	4	0.49
W3	2012-03-19 10:30	228	554		7.57	324	4.2	0.1	80.6	0.005	1.19	0.005	64.8	4.2	0.56
W3	2012-03-24 0:00	230	546			314	2.7			0.005	1.14	0.0063	61	3.9	0.55

Station	Date / Time	Dissolved Elements																																	
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W3	2010-11-07 0:00	0.00002	0.01	0.0003	0.096	0.05	0.0001	0.001	68.3	0.00001	0.0005	0.001	0.003	0.022	0.00002	3.97	0.005	23.8	0.114	0.006	24.1	0.001	0.0002	0.0005	31	0.0019	5.73	0.005	0.749	0.005	0.00005	0.0027	0.005	0.005	0.0005
W3	2010-11-11 1:45	0.00002	0.01	0.0003	0.1	0.05	0.0001	0.001	67.6	0.00001	0.0005	0.001	0.0028	0.017	0.00002	3.79	0.005	22.2	0.106	0.006	22.7	0.001	0.0002	0.0005	31	0.0019	5.94	0.005	0.723	0.005	0.00005	0.0026	0.005	0.005	0.0005
W3	2010-11-16 14:00	0.00002	0.01	0.0003	0.098	0.05	0.0001	0.001	67.8	0.00001	0.0005	0.001	0.0026	0.012	0.00002	3.66	0.005	22.1	0.101	0.006	22.3	0.001	0.0002	0.0005	31	0.0018	5.92	0.005	0.694	0.005	0.00005	0.0026	0.005	0.005	0.0005
W3	2010-11-19 0:00																																		
W3	2010-11-21 0:00																																		
W3	2010-11-24 0:00	0.00002	0.006	0.0004	0.092	0.05	0.0001	0.001	64.4	0.00002	0.0005	0.001	0.0026	0.008	0.00002	3.26	0.005	20.9	0.088	0.005	18.5	0.001	0.0002	0.0005	26	0.0018	5.15	0.005	0.68	0.005	0.00005	0.0026	0.005	0.005	0.0005
W3	2010-11-26 0:00	0.00002	0.009	0.0003	0.095	0.05	0.0001	0.001	67.6	0.00001	0.0005	0.001	0.0027	0.009	0.00002	3.31	0.005	21.9	0.076	0.006	19.8	0.001	0.0002	0.0005	29	0.0018	5.38	0.005	0.701	0.005	0.00005	0.0028	0.005	0.005	0.0005
W3	2010-11-27 0:00	0.00002	0.007	0.0003	0.094	0.05	0.0001	0.001	68.8	0.00001	0.0005	0.001	0.0029	0.012	0.00002	3.43	0.005	22.9	0.092	0.006	20.5	0.001	0.0002	0.0005	29	0.0019	5.5	0.005	0.69	0.005	0.00005	0.0029	0.005	0.005	0.0005
W3	2010-11-28 0:00	0.00002	0.006	0.0003	0.096	0.05	0.0001	0.001	71	0.00001	0.0005	0.001	0.0029	0.01	0.00002	3.5	0.005	23.7	0.099	0.006	21.2	0.001	0.0002	0.0005	30	0.0019	5.58	0.005	0.695	0.005	0.00005	0.0029	0.005	0.005	0.0005
W3	2010-11-29 0:00	0.00002	0.006	0.0003	0.095	0.05	0.0001	0.001	70.1	0.00001	0.0005	0.001	0.0028	0.011	0.00002	3.43	0.005	23.1	0.097	0.006	20.9	0.001	0.0002	0.0005	30	0.0019	5.61	0.005	0.694	0.005	0.00005	0.003	0.005	0.005	0.0005
W3	2010-11-30 0:00	0.00002	0.007	0.0003	0.093	0.05	0.0001	0.001	69.2	0.00001	0.0005	0.001	0.003	0.011	0.00002	3.7	0.005	24.6	0.097	0.006	22.4	0.001	0.0002	0.0005	32	0.0019	5.55	0.005	0.687	0.005	0.00005	0.0029	0.005	0.005	0.0005
W3	2010-12-01 0:00	0.00002	0.006	0.0003	0.092	0.05	0.0001	0.001	68.6	0.00002	0.0005	0.001	0.0029	0.012	0.00002	3.55	0.005	23.7	0.095	0.005	21.2	0.001	0.0002	0.0005	31	0.0018	5.46	0.005	0.687	0.005	0.00005	0.0028	0.005	0.005	0.0005
W3	2010-12-02 0:00	0.00002	0.018	0.0004	0.097	0.05	0.0001	0.001	74.2	0.00009	0.0005	0.001	0.0036	0.041	0.00002	3.6	0.005	24.3	0.11	0.006	21.7	0.001	0.0002	0.0005	31	0.0019	5.81	0.005	0.723	0.005	0.00005	0.0031	0.005	0.005	0.0005
W3	2010-12-03 0:00	0.00002	0.023	0.0003	0.096	0.05	0.0001	0.001	72.1	0.0001	0.0005	0.001	0.0042	0.046	0.00002	3.73	0.005	24.4	0.111	0.006	21.8	0.001	0.0002	0.0005	32	0.0019	5.79	0.005	0.715	0.005	0.00005	0.003	0.005	0.005	0.0005
W3	2010-12-04 0:00	0.00002	0.016	0.0003	0.096	0.05	0.0001	0.001	75.5	0.0001	0.0005	0.001	0.0044	0.037	0.00002	3.76	0.005	24.8	0.108	0.006	22.4	0.001	0.0002	0.0005	32	0.002	6.03	0.005	0.714	0.005	0.00005	0.0031	0.005	0.005	0.0005
W3	2010-12-05 0:00	0.00002	0.016	0.0003	0.096	0.05	0.0001	0.001	74.8	0.00029	0.0005	0.001	0.0058	0.042	0.00002	3.82	0.005	24.5	0.101	0.006	22	0.001	0.0002	0.0005	32	0.0019	5.93	0.005	0.707	0.005	0.00005	0.003	0.005	0.005	0.0005
W3	2010-12-06 0:00	0.00002	0.021	0.0003	0.097	0.05	0.0001	0.001	76.1	0.0005	0.0005	0.001	0.0076	0.036	0.00002	3.95	0.005	23.9	0.099	0.005	21.3	0.001	0.0002	0.0005	31	0.0019	6.04	0.005	0.722	0.005	0.00005	0.0031	0.005	0.008	0.0005
W3	2010-12-07 0:00	0.00002	0.038	0.0003	0.099	0.05	0.0001	0.001	73.7	0.00003	0.0005	0.001	0.0042	0.077	0.00002	3.63	0.005	24	0.106	0.005	21.1	0.001	0.0002	0.0005	31	0.0018	5.87	0.005	0.72	0.005	0.00005	0.0031	0.005	0.005	0.0005
W3	2010-12-08 0:00	0.00002	0.011	0.0003	0.095	0.05	0.0001	0.001	68.9	0.00001	0.0005	0.001	0.0044	0.015	0.00002	3.53	0.005	23.7	0.084	0.005	21.7	0.001	0.0002	0.0005	32	0.0019	5.5	0.005	0.686	0.005	0.00005	0.0029	0.005	0.005	0.0005
W3	2010-12-10 0:00	0.00002	0.011	0.0003	0.095	0.05	0.0001	0.001	68.6	0.00001	0.0005	0.001	0.0029	0.021	0.00002	3.49	0.005	23.6	0.104	0.005	20.9	0.001	0.0002	0.0005	32	0.002	5.37	0.005	0.688	0.005	0.00005	0.003	0.005	0.005	0.0005
W3	2010-12-11 0:00	0.00002	0.009	0.0004	0.116	0.05	0.0001	0.001	80.8	0.00002	0.0005	0.001	0.0038	0.02	0.00002	4.26	0.005	28.3	0.119	0.007	25	0.001	0.0002	0.0005	36	0.0022	6.25	0.005	0.799	0.005	0.00005	0.0035	0.005	0.005	0.0005
W3	2010-12-13 0:00	0.00002	0.009	0.0004	0.1	0.05	0.0001	0.001	68	0.00001	0.0005	0.001	0.0033	0.021	0.00002	3.64	0.005	23.9	0.101	0.005	21.2	0.001	0.0002	0.0005	30	0.002	5.32	0.005	0.675	0.005	0.00005	0.003	0.005	0.005	0.0005
W3	2010-12-14 0:00	0.00002	0.015	0.0003	0.1	0.05	0.0001	0.001	79.6	0.00001	0.0005	0.001	0.0042	0.032	0.00002	3.88	0.005	26.4	0.112	0.006	24.2	0.001	0.0002	0.0005	36	0.0021	6.39	0.005	0.754	0.005	0.00005	0.0032	0.005	0.005	0.0005
W3	2010-12-19 0:00																																		
W3	2010-12-23 0:00	0.00002	0.006	0.0004	0.102	0.05	0.0001	0.001	76.3	0.00001	0.0005	0.001	0.0033	0.01	0.00002	3.92	0.005	27.2	0.097	0.006	24.3	0.001	0.0002	0.0005	36	0.002	5.98	0.005	0.737	0.005	0.00005	0.0034	0.005	0.005	0.0005
W3	2010-12-24 0:00	0.00002	0.013	0.0003	0.095	0.05	0.0001	0.001	68.1	0.00003	0.0005	0.001	0.0046	0.03	0.00002	3.55	0.005	24.6	0.108	0.005	22.2	0.001	0.0002	0.0005	32	0.0019	5.36	0.005	0.692	0.005	0.00005	0.003	0.005	0.005	0.0005
W3	2010-12-28 0:00	0.00002	0.02	0.0003	0.097	0.05	0.0001	0.001	67.9	0.00001	0.0005	0.001	0.0042	0.034	0.00002	3.53	0.005	24.1	0.103	0.005	21.8	0.001	0.0002	0.0005	32	0.0019	5.34	0.005	0.707	0.005	0.00005	0.0031	0.005	0.005	0.0005
W3	2010-12-30 0:00	0.00002	0.019	0.0003	0.096	0.05	0.0001	0.001	69.4	0.00001	0.0005	0.001	0.0031	0.019	0.00002	3.48	0.005	24.6	0.099	0.005	22.4	0.001	0.0002	0.0005	32	0.002	5.33	0.005	0.723	0.005	0.00005	0.0031	0.005	0.005	0.0005
W3	2011-01-01 0:00	0.00002	0.009	0.0003	0.099	0.05	0.0001	0.001	69	0.00001	0.0005	0.001	0.0033	0.016	0.00002	3.48	0.005	24.5	0.095	0.005	22.1	0.001	0.0002	0.0005	33	0.002	5.42	0.005	0.706	0.005	0.00005	0.003	0.005	0.005	0.0005
W3	2011-01-03 0:00	0.00002	0.006	0.0003	0.105	0.05	0.0001	0.001	71.1	0.00001	0.0005	0.001	0.0028	0.017	0.00002	3.42	0.005	22.9	0.087	0.006	20.5	0.001	0.0002	0.0005	31	0.002	5.6	0.005	0.745	0.005	0.00005	0.0031	0.005	0.005	0.0005
W3	2011-01-05 0:00	0.00002	0.016	0.0003	0.104	0.05	0.0001	0.001	70.7	0.00003	0.0005	0.001	0.0036	0.038	0.00002	3.52	0.005	23.6	0.086	0.006	21.1	0.001	0.0002	0.0005	32	0.002	5.6	0.005	0.738	0.005	0.00005	0.0031	0.005	0.005	0.0005
W3	2011-01-08 0:00	0.00002	0.012	0.0003	0.095	0.05	0.0001	0.001	65.1	0.00001	0.0005	0.001	0.0021	0.044	0.00002	2.57	0.005	23.9	0.128	0.004	19.4	0.001	0.0002	0.0005	27	0.001	5.63	0.005	0.683	0.005	0.00005	0.0028	0.005	0.005	0.0005
W3	2011-01-10 0:00																																		
W3	2011-01-12 0:00																																		
W3	2011-01-13 0:00	0.00002	0.005	0.0002	0.095	0.05	0.0001	0.001	60.8	0.00002	0.0005	0.001	0.0016	0.016	0.00002	2.35	0.005	24.3	0.139	0.004	21.1	0.001	0.0002	0.0005	27	0.0007	5.36	0.005	0.664	0.005	0.00005	0.0029	0.005	0.005	0.0005
W3	2011-01-14 0:00																																		
W3	2011-01-17 0:00	0.00002	0.037	0.0002	0.099	0.05	0.0001	0.001	72.4	0.00005	0.0005	0.001	0.0031	0.076	0.00002	2.61	0.005	29.4	0.171	0.004	22.8	0.001	0.0002	0.0005	31	0.0007	6.28	0.005	0.647	0.005	0.00005	0.0029	0.005	0.005	0.0005
W3	2011-01-18 0:00																																		
W3	2011-01-22 0:00	0.00002	0.003	0.0002	0.098	0.05	0.0001	0.001	65.9	0.00002	0.0005	0.001	0.0017	0.01	0.00002	2.46	0.005	27	0.141	0.004	22.2	0.001	0.0002	0.0005	29	0.0007	6.03	0.005	0.668	0.005	0.00005	0.0031	0.005	0.005	0.0005
W3	2011-01-23 0:00																																		
W3	2011-01-28 0:00	0.00002	0.005	0.0002	0.094	0.05	0.0001	0.001	63.9	0.00002	0.0005	0.001	0.0014	0.018	0.00002	2.26	0.005	26.4	0.125	0.003	20.5	0.001	0.0002	0.0005	29	0.0007	5.9	0.005	0.612	0.005	0.00005	0.0027	0.005	0.005	0.0005
W3	2011-01-30 0:00	0.00002	0.011	0.0002	0.1	0.05	0.0001	0.001	66.9	0.00002	0.0005	0.001	0.0015	0.021	0.00002	2.27	0.005	26.7	0.139	0.004	20.3	0.001	0.0002	0.0005	29	0.0007	6.17	0.005	0.653	0.005	0.00005	0.003	0.005	0.005	0.0005
W3	2011-02-01 0:00	0.00002	0.004	0.0002	0.095	0.05	0.0001	0.001	61.8	0.00003	0.0005	0.001	0.0018	0.015	0.00002	2.18	0.005	25.5	0.138	0.003	19.3	0.001	0.0002	0.0005	26	0.0007	5.34	0.005	0.635	0.005	0.00005	0.0029	0.005	0.005	0.0005
W3	2011-02-03 0:00	0.00002	0.006	0.0002	0.093	0.05	0.0001	0.001	62.4	0.00001	0.0005	0.001	0.0017	0.016	0.00002	2.23	0.005	25.5	0.113	0.004	19.7	0.001	0.0002	0.0005	27	0.0007	5.42	0.005	0.615	0.005	0.00005	0.0029	0.005	0.005	0.0005
W3	2011-02-04 0:00																																		
W3	2011-02-05 0:00	0.00002	0.058	0.0003	0.097	0.05	0.0001	0.001	69.8	0.00005	0.0005	0.001	0.0049	0.035	0.00002	3.45	0.005	25	0.093	0.005	22.2	0.001	0.0002	0.0005	33	0.0017	5.33	0.005	0.724	0.005	0.00005	0.0031	0.005	0.013	0.0005
W3	2011-02-06 0:00	0.00002	0.017	0.0002	0.096	0.05	0.0001	0.001	62.2	0.00002	0.0005	0.001	0.0029	0.039	0.00002	2.27	0.005	23.8	0.108	0.004	20.5	0.001	0.0002	0.0005	25	0.0008	5.3	0.005	0.708	0.005	0.00005	0.0032	0.005	0.005	0.0005
W3	2011-02-07 0:00																																		
W3	2011-02-08 0:00	0.00002	0.007	0.0002	0.094	0.05	0.0001	0.001	60.7	0.00001	0.0005	0.001	0.0019	0.022	0.00002	2.17	0.005	23.7	0.109	0.004	20	0.001	0.0002	0.0005	25	0.0008	5.16	0.005	0.68	0.005	0.00005	0.003	0.005	0.005	0.0005
W3	2011-02-09 0:00	0.00002	0.007	0.0002	0.094	0.05	0.0001	0.001	60.7	0.00001	0.0005	0.001	0.0019	0.022	0.00002	2.17	0.005	23.7	0.109	0.004	20	0.001	0.0002	0.0005	25	0.0008	5.16	0.005	0.68	0.005	0.00005	0.003	0.005	0.005	0.0005
W3	2011-02-10 0:00																																		
W3	2011-02-11 0:00	0.00002	0.006	0.0002	0.09	0.05	0.0001	0.001	63.4	0.00008	0.0005	0.001	0.0026	0.03	0.00002	2.25	0.005	25.5	0.138	0.004	19.4	0.001	0.0002	0.0005	26	0.0008	5.32	0.005	0.645	0.005	0.00005	0.0032	0.005	0.005	0.0005
W3	2011-02-12 0:00																																		
W3	2011-02-13 0:00	0.00002	0.008	0.0002	0.09	0.05	0.0001	0.001	61.9	0.00002	0.0005	0.001	0.0025	0.036	0.00002	2.19	0.005	26.5	0.13	0.004	19.7	0.001	0.0002	0.0005	25	0.0008	5.32	0.005	0.65	0.005	0.00005	0.0032	0.005	0.005	0.0005
W3	2011-02-14 0:00																																		
W3	2011-02-15 0:00	0.00003	0.008	0.0002	0.095	0.05	0.0001	0.001	62.4	0.00009	0.0005	0.001	0.0043	0.026	0.00002	2.4	0.005	26.8	0.135	0.004	19.8	0.001	0.0002	0.0005	27	0.0008	5.31	0.005	0.664	0.005	0.00005	0.0033	0.005	0.005	0.0005
W3	2011-02-26 0:00	0.00002	0.003	0.0002	0.1	0.05	0.0001	0.001	68.6	0.00002	0.0005	0.001	0.0017	0.005	0.00002	2.36	0.005	27.3	0.097	0.003	20.2	0.001	0.0002	0.0005	29	0.0007	5.99	0.005	0.694	0.005	0.00005	0.0031	0.005	0.005	0.0005
W3	2011-03-02 0:00	0.00002	0.003	0.0002	0.102	0.05	0.0001	0.001	67.6	0.00002	0.0005	0.001	0.0027	0.005	0.00002	2.53	0.005	27.9	0.089	0.004	20.7	0.001	0.0002	0.0005	29	0.0007	5.87	0.005	0.693	0.005	0.00005	0.0033	0.005	0.005	0.0005
W3	2011-03-03 0:00	0.00002	0.003	0.0002	0.1	0.05	0.0001	0.001	69.2	0.00003	0.0005	0.001	0.0027	0.005	0.00002	2.41	0.005	27.9	0.107	0.003	20.9	0.001	0.0002	0.0005	29	0.0007	6.09	0.005	0.7	0.005	0.00005	0.0031	0.005	0.011	0.0005
W3	2011-03-05 0:00	0.00002	0.024	0.0002	0.102	0.05	0.0001	0.001	70.5	0.00007	0.0005	0.001	0.0064	0.045	0.00002	3.21	0.005	30.9	0.132	0.004	22.4	0.001	0.0002	0.0005	34	0.0007	6.03	0.005	0.731	0.005	0.00005	0.0035	0.005	0.01	0.0005
W3	2011-03-08 0:00	0.00002	0.004	0.0002	0.085	0.05	0.0001	0.001	71	0.00002	0.0005	0.001	0.0029	0.011	0.00002	2.67	0.005	31	0.12	0.003	23.4	0.001	0.0002	0.0005	33	0.0008	6.51	0.005	0.661	0.005	0.00005	0.0034	0.005	0.005	0.0005
W3	2011-03-22 0:00	0.00002	0.009	0.0003	0.112	0.05	0.0001	0.001	69.7	0.00008	0.0006	0.001	0.0037	0.045	0.00002	2.47	0.005	30.2	1.42	0.003	21.4	0.002	0.0002	0.0005	30	0.0003	6.22	0.005	0.715	0.005	0.00005	0.0024	0.005	0.005	0.0005
W3	2011-03-27 0:00	0.00002	0.016	0.0002	0.099	0.05	0.0001	0.001	69.1	0.0001	0.0005	0.001	0.0027	0.03	0.00002	2.4	0.005	28.1	0.075	0.003	20.9	0.001	0.0002	0.0005	30	0.0007	5.92	0.005	0.691	0.005	0.00005	0.0032	0.005	0.005	0.0005
W3	2011-03-29 0:00	0.00002	0.018	0.0002	0.096	0.05	0.0001	0.001	60.8	0.00003	0.0005	0.001	0.0043	0.033	0.00002	2.56	0.005	25.7	0.071	0.004	19.8	0.001	0.0002	0.0005	27	0.0007	5.47	0.005	0.645	0.005	0.00005	0.003	0.005	0.034	0.0005
W3	2011-03-31 0:00	0.00002	0.009	0.0002	0.099	0.05	0.0001	0.001	63.1	0.00002	0.0005	0.001	0.003	0.013	0.00002	2.33	0.005	24.8	0.06	0.004	18.2	0.001	0.0002	0.0005	26	0.0007	5.53	0.005	0.681	0.005	0.00005	0.0032	0.005	0.008	0.0005
W3	2011-04-02 0:00	0.00002	0.005	0.0002	0.092	0.05	0.0001	0.001	65.3	0.00001	0.0005	0.001	0.0021	0.011	0.00002	2.24	0.005	25.7	0.061	0.004	20.5	0.001	0.0002	0.0005	29	0.0007	6.1	0.005	0.633	0.005	0.00005	0.0032	0.005	0.005	0.0005
W3	2011-04-09 0:00	0.00002	0.005	0.0002	0.094	0.05	0.0001	0.001	64	0.00001	0.0005	0.001	0.0024	0.011	0.00002	2.29	0.005	25.2	0.072	0.004	17.8	0.001	0.0002	0.0005	29	0.0007	5.93	0.005	0.658	0.005	0.00005	0.0031	0.005	0.005	0.0005
W3	2011-04-15 0:00	0.00002	0.005	0.0002	0.091	0.05	0.0001	0.001	60.2	0.00008	0.0005	0.001	0.0035	0.013	0.00002	2.34	0.005	25.8	0.093	0.003	18.4	0.001	0.0002	0.0005	27	0.0006	5.3	0.005	0.656	0.005	0.00005	0.0031	0.005	0.023	0.0005
W3	2011-04-21 0:00	0.00002	0.004	0.0002	0.099	0.05	0.0001	0.001	65.1	0.00003	0.0005	0.001	0.0021	0.012	0.00002	2.36	0.005	26.6	0.12	0.004	19.2	0.001	0.0002	0.0005	28	0.0007	5.74	0.005	0.713	0.005	0.00005	0.0034	0.005	0.005	0.0005
W3	2011-04-27 0:00	0.00002	0.066	0.0004	0.06	0.05	0.0001	0.001	34.8	0.00002	0.0005	0.001	0.0125	0.096	0.00002	2.89	0.005	13.6	0.064	0.002	9.25	0.002	0.0002	0.0005	13	0.0004	4.71	0.005	0.331	0.005	0.00005	0.0013	0.005	0.005	0.0005
W3	2011-05-05 0:00	0.00002	0.085	0.0004	0.049	0.05	0.0001	0.001	27.4	0.00003	0.0005	0.001	0.0127	0.203	0.00002	1.84	0.005	11.4	0.062	0.001	7.72	0.002	0.0002	0.0005	11	0.0003	3.67	0.005	0.26	0.005	0.00005	0.0011	0.005	0.006	0.0006
W3	2011-05-14 0:00	0.00002	0.043	0.0003	0.069	0.05	0.0001	0.001	46.3	0.0001	0.0005	0.001	0.0069	0.068	0.00002	1.95	0.005	18.7	0.088	0.003	13.8	0.002	0.0002	0.0005	19	0.0005	5.09	0.005	0.438	0.005	0.00005	0.0022	0.005	0.005	0.0005
W3	2011-05-24 0:00	0.00002	0.013	0.0003	0.077	0.05	0.0001	0.001	53.7	0.00003	0.0005	0.001	0.003	0.033	0.00002	2.17	0.005	23.1	0.069	0.003	16.4	0.001	0.0002	0.0005	26	0.0005	5.01	0.005	0.565	0.005	0.00005	0.0027	0.005	0.005	0.0005
W3	2011-05-29 0:00	0.00002	0.011	0.0003	0.088	0.05	0.0001	0.001	58.6	0.00002	0.0005	0.001	0.0026	0.022	0.00002	2.37	0.005	24.8	0.075	0.004	18.6	0.001	0.0002	0.0005	27	0.0005	5.16	0.005	0.632	0.005	0.00005	0.0032	0.005	0.005	0.0005
W3	2011-06-04 0:00	0.00002	0.008	0.0003	0.09	0.05	0.0001	0.001	62.2	0.00001	0.0005	0.001	0.0022	0.024	0.00002	2.36	0.005	26.8	0.072	0.004	20	0.001	0.0002	0.0005	28	0.0005	5.58	0.005	0.671	0.005	0.00005	0.0032	0.005	0.005	0.0005
W3	2011-06-16 0:00	0.00002	0.008	0.0002	0.084	0.05	0.0001	0.001	69.6	0.00001	0.0005	0.001	0.0022	0.017	0.00002	2.43	0.005	27.1	0.074	0.004	20.7	0.001	0.0002	0.0005	30	0.0005	6.59	0.005	0.639	0.005	0.00005	0.0035	0.005	0.005	0.0005
W3	2011-06-27 0:00	0.00002	0.019	0.0003	0.09	0.05	0.0001	0.001	62.6	0.00002	0.0005	0.001	0.0043	0.038	0.00002	2.25	0.005	25.1	0.084	0.004	19.1	0.001	0.0002	0.0005	24	0.0005	5.63	0.005	0.667	0.005	0.00005	0.0032	0.005	0.005	0.0005
W3	2011-07-01 0:00	0.00002	0.03	0.0004	0.071	0.05	0.0001	0.001	46.8	0.00002	0.0005	0.001	0.0051	0.063	0.00002	1.51	0.005	17.5	0.055	0.002	12.9	0.002	0.0002	0.0005	17	0.0004	5.61	0.005	0.453	0.005	0.00005	0.0016	0.005	0.005	0.0005
W3	2011-07-12 0:00	0.00002	0.017	0.0003	0.09	0.05	0.0001	0.001	63.5	0.00002	0.0005	0.001	0.0038	0.038	0.00002	2.38	0.005	26.4	0.079	0.003	19.9	0.002	0.0002	0.0005	26	0.0005	5.99	0.005	0.608	0.005	0.00005	0.0027	0.005	0.007	0.0005
W3	2011-07-16 0:00	0.00002	0.032	0.0004	0.067	0.05	0.0001	0.001	44.7	0.00001	0.0005	0.001	0.0057	0.069	0.00002	1.51	0.005	17.3	0.051	0.003	12.4	0.002	0.0002	0.0005	14	0.0004	5.56	0.005	0.426	0.005	0.00005	0.0018	0.005	0.005	0.0005
W3	2011-07-23 0:00	0.00002	0.02	0.0003	0.085	0.05	0.0001	0.001	61.4	0.00001	0.0005	0.001	0.0069	0.045	0.00002	2.2	0.005	24.9	0.086	0.004	18.9	0.001	0.0002	0.0005	22	0.0005	5.35	0.005	0.674	0.005	0.00005	0.0032	0.005	0.005	0.0005
W3	2011-07-31 0:00	0.00002	0.012	0.0003	0.092	0.05	0.0001	0.001	63.7	0.00002	0.0005	0.001	0.003	0.027	0.00002	2.35	0.005	26.1	0.079	0.004	19.5	0.001	0.0002	0.0005	24	0.0005	5.85	0.005	0.657	0.005	0.00005	0.0033	0.005	0.005	0.0005
W3	2011-08-02 0:00	0.00002	0.029	0.0003	0.08	0.05	0.0001	0.001	50.1	0.00002	0.0005	0.001	0.0064	0.054	0.00002	1.91	0.005	20.4	0.065	0.003	15.3	0.002	0.0002	0.0005	17	0.0004	5.01	0.005	0.538	0.005	0.00005	0.0024	0.005	0.005	0.0005
W3	2011-08-07 0:00	0.00002	0.054	0.0004	0.073	0.05	0.0001	0.001	46.9	0.00002	0.0005	0.001	0.0066	0.092	0.00002	1.58	0.005	18.6	0.052	0.003	13.5	0.003	0.0002	0.0005	15	0.0004	5.84	0.005	0.456	0.005	0.00005	0.0019	0.005	0.008	0.0005
W3	2011-08-16 0:00	0.00002	0.012	0.0003	0.086	0.05	0.0001	0.001	59.9	0.00001	0.0005	0.001	0.0027	0.026	0.00002	2.12	0.005	23	0.07	0.003	17.5	0.001	0.0002	0.0005	22	0.0004	5.67	0.005	0.593	0.005	0.00005	0.0027	0.005	0.005	0.0005
W3	2011-08-28 0:00	0.00002	0.007	0.0002	0.087	0.05	0.0001	0.001	64	0.00001	0.0005	0.001	0.0026	0.027	0.00002	2.33	0.005	26.2	0.07	0.004	19.2	0.001	0.0002	0.0005	23	0.0004	6.08	0.005	0.631	0.005	0.00005	0.0027	0.005	0.005	0.0005
W3	2011-08-30 0:00	0.00002	0.01	0.0002	0.085	0.05	0.0001	0.001	61.5	0.00001	0.0005	0.001	0.0023	0.025	0.00002	2.25	0.005	25.4	0.068	0.004	19.2	0.001	0.0002	0.0005	21	0.0004	5.61	0.005	0.627	0.005	0.00005	0.0029	0.005	0.005	0.0005
W3	2011-09-07 0:00	0.00002	0.009	0.0003	0.091	0.05	0.0001	0.001	60.2	0.00001	0.0005	0.001	0.0025	0.031	0.00002	2.27	0.005	24.6	0.069	0.004	19	0.001	0.0002	0.0005	22	0.0005	5.58	0.005	0.642	0.005	0.00005	0.0031	0.005	0.005	0.0005
W3	2011-09-12 0:00	0.00002	0.007	0.0002	0.093	0.05	0.0001	0.001	77.4	0.00001	0.0005	0.001	0.0023	0.03	0.00002	2.48	0.005	27.4	0.071	0.004	20.7	0.001	0.0002	0.0005	24	0.0005	7.32	0.005	0.688	0.005	0.00005	0.0031	0.005	0.005	0.0005
W3	2011-09-19 0:00	0.00002	0.013	0.0002	0.087	0.05	0.0001	0.001	58.9	0.00002	0.0005	0.001	0.0033	0.039	0.00002	2.2	0.005	24.3	0.066	0.004	18.5	0.001	0.0002	0.0005	20	0.0005	5.45	0.005	0.607	0.005	0.00005	0.003	0.005	0.005	0.0005
W3	2011-09-24 0:00	0.00002	0.012	0.0002	0.083	0.05	0.0001	0.001	62	0.00001	0.0005	0.001	0.0022	0.019	0.00002	2.4	0.005	23.8	0.06	0.004	17.9	0.001	0.0002	0.0005	21	0.0004	5.95	0.005	0.617	0.005	0.00005	0.0029	0.005	0.005	0.0005
W3	2011-10-06 0:00	0.00002	0.009	0.0003	0.086	0.05	0.0001	0.001	63	0.00004	0.0005	0.001	0.0023	0.032	0.00002	2.37	0.005	26.1	0.069	0.004	20.3	0.002	0.0005	0.0005	22	0.0005	6.09	0.005	0.638	0.005	0.00005	0.0031	0.005	0.012	0.0005
W3	2011-10-17 0:00	0.00002	0.007	0.0003	0.081	0.05	0.0001	0.001	56.6	0.00002	0.0005	0.001	0.0045	0.015	0.00002	2.98	0.005	20.6	0.026	0.007	19.2	0.001	0.0002	0.0005	19	0.0006	6.02	0.005	0.613	0.005	0.00005	0.0027	0.005	0.005	0.0005
W3	2011-10-24 0:00	0.00002	0.006	0.0002	0.083	0.05	0.0001	0.001	58.3	0.00001	0.0005	0.001	0.0021	0.015	0.00002	2.37	0.005	25	0.048	0.004	19.6	0.001	0.0002	0.0005	21	0.0005	5.79	0.005	0.603	0.005	0.00005	0.0028	0.005	0.005	0.0005
W3	2011-10-30 0:00	0.00002	0.004	0.0002	0.082	0.05	0.0001	0.001	55.9	0.00001	0.0005	0.001	0.0019	0.013	0.00002	2.32	0.005	24.8	0.055	0.004	19.6	0.001	0.0002	0.0005	20	0.0005	6.32	0.005	0.63	0.005	0.00005	0.003	0.005	0.005	0.0005
W3	2011-11-13 0:00	0.00002	0.0103	0.0003	0.0805	0.05	0.0001	0.001	49.8	0.00001	0.0005	0.001	0.00396	0.0097	0.00002	3.08	0.005	20.2	0.0242	0.0053	18.1	0.0011	0.0002	0.0005	18.6	0.00081	4.42	0.005	0.562	0.005	0.00005	0.00271	0.005	0.005	0.0005
W3	2011-11-22 0:00	0.00002	0.0068	0.00021	0.0873	0.05	0.0001	0.001	60.9	0.00001	0.0005	0.001	0.00189	0.0208	0.00002	2.11	0.005	25.7	0.0569	0.0041	20.1	0.001	0.0002	0.0005	20.6	0.00048	7.08	0.005	0.634	0.005	0.00005	0.0028	0.005	0.005	0.0005
W3	2011-11-28 0:00	0.00002	0.0072	0.00025	0.0839	0.05	0.0001	0.001	60.8	0.000011	0.0005	0.001	0.00234	0.0159	0.00002	2.46	0.005	26.8	0.0611	0.0043	20.8	0.001	0.0002	0.0005	20.9	0.00052	6.01	0.005	0.642	0.005	0.00005	0.00323	0.005	0.005	0.0005
W3	2011-12-05 0:00	0.00002	0.0048	0.00021	0.0855	0.05	0.0001	0.001	56.6	0.00001	0.0005	0.001	0.00182	0.01	0.00002	2.17	0.005	24.2	0.0486	0.0045	18.7	0.001	0.0002	0.0005	19	0.00054	5.93	0.005	0.608	0.005	0.00005	0.0032	0.005	0.005	0.0005
W3	2011-12-13 0:00	0.00002	0.0047	0.00022	0.0822	0.05	0.0001	0.001	56.7	0.00001	0.0005	0.001	0.00177	0.0114	0.00001	2.21	0.005	25.2	0.0475	0.0042	19.2	0.001	0.0002	0.0005	20.7	0.00052	5.71	0.005	0.61	0.005	0.00005	0.00303	0.005	0.005	0.0005
W3	2011-12-18 0:00	0.00002	0.0031	0.00022	0.0822	0.05	0.0001	0.001	59.3	0.00001	0.0005	0.001	0.00167	0.0102	0.00001	2.23	0.005	25.8	0.0433	0.0041	19.6	0.001	0.0002	0.0005	20.5	0.00048	5.87	0.005	0.59	0.005	0.00005	0.00288	0.005	0.005	0.0005
W3	2011-12-27 0:00	0.00002	0.0032	0.00026	0.0872	0.05	0.0001	0.001	61.3	0.00001	0.0005	0.001	0.00171	0.0111	0.00001	2.24	0.005	26	0.0473	0.0043	20.2	0.001	0.0002	0.0005	20.8	0.00054	6.46	0.005	0.643	0.005	0.00005	0.00331	0.005	0.005	0.0005
W3	2012-01-02 14:01	0.00002	0.0034	0.00022	0.0835	0.05	0.0001	0.001	54.3	0.00001	0.0005	0.001	0.00164	0.0067	0.00001	2.18	0.005	25.1	0.0405	0.0043	19.3	0.001	0.0002	0.0005	21.6	0.00055	6	0.005	0.627	0.005	0.00005	0.00314	0.005	0.005	0.0005
W3	2012-01-09 0:00	0.00002	0.015	0.0002	0.0838	0.05	0.0001	0.001	60.6	0.00001	0.0005	0.001	0.00198	0.0223	0.00001	2.25	0.005	26.1	0.0448	0.0043	19.6	0.001	0.0002	0.0005	21.3	0.0006	6.01	0.005	0.611	0.005	0.00005	0.00341	0.005	0.005	0.0005
W3	2012-01-15 14:30	0.00002	0.0049	0.00021	0.0864	0.05	0.0001	0.001	55.7	0.00001	0.0005	0.001	0.00169	0.0082	0.00001	2.15	0.005	25.9	0.0373	0.0043	19.7	0.001	0.0002	0.0005	19.8	0.00065	5.58	0.005	0.655	0.005	0.00005	0.00337	0.005	0.005	0.0005
W3	2012-01-22 13:14	0.00002	0.0056	0.00026	0.0868	0.05	0.0001	0.001	60.2	0.00001	0.0005	0.001	0.0022	0.0092	0.00001	2.54	0.005	27.1	0.0428	0.0044	20.4	0.001	0.0002	0.0005	23.8	0.0006	6.32	0.005	0.655	0.005	0.00005	0.00306	0.005	0.005	0.0005
W3	2012-01-31 0:00	0.00002	0.0038	0.00022	0.0828	0.05	0.0001	0.001	57.9	0.000011	0.0005	0.001	0.00211	0.0052	0.00001	2.3	0.005	26.4	0.0548	0.0043	19.8	0.001	0.0002	0.0005	20.8	0.00058	5.97	0.005	0.635	0.005	0.00005	0.00306	0.005	0.005	0.0005
W3	2012-02-07 13:30	0.00002	0.0051	0.00021	0.0831	0.05	0.0001	0.001	55.8	0.00001	0.0005	0.001	0.00159	0.0103	0.00001	2.19	0.005	25.9	0.0403	0.0043	19.3	0.001	0.0002	0.0005	20.6	0.00055	5.74	0.005	0.636	0.005	0.00005	0.00317	0.005	0.005	0.0005
W3	2012-02-14 8:00	0.00002	0.0034	0.00023	0.0843	0.05	0.0001	0.001	56.9	0.00001	0.0005	0.001	0.00149	0.0118	0.00001	2.19	0.005	25.5	0.0446	0.0044	18.7	0.001	0.0002	0.0005	21.9	0.00055	6.03	0.005	0.618	0.005	0.00005	0.00303	0.005	0.0054	0.0005
W3	2012-02-20 12:08	0.00002	0.0039	0.00028	0.0809	0.05	0.0001	0.001	53.8	0.00001	0.0005	0.001	0.00163	0.0063	0.00001	2.07	0.005	24.9	0.0344	0.0043	18.5	0.001	0.0002	0.0005	19.9	0.00056	5.64	0.005	0.61	0.005	0.00005	0.00308	0.005	0.005	0.0005
W3	2012-02-25 0:00	0.00002	0.0159	0.00024	0.0802	0.05	0.0001	0.001	56.9	0.000061	0.0005	0.001	0.0122	0.029	0.00001	2.27	0.005	26.1	0.0381	0.0044	19.4	0.001	0.0002	0.0005	21.2	0.0006	5.94	0.005	0.611	0.005	0.00005	0.00307	0.005	0.0058	0.0005
W3	2012-03-05 12:10	0.00002	0.003	0.00023	0.0851	0.05	0.0001	0.001	56.1	0.00001	0.0005	0.001	0.00142	0.0091	0.00001	2.25	0.005	26	0.0432	0.0044	19	0.001	0.0002	0.0005	21.7	0.00059	5.54	0.005	0.629	0.005	0.00005	0.00324	0.005	0.005	0.0005
W3	2012-03-12 14:00	0.00002	0.0036	0.00019	0.0888	0.05	0.0001	0.001	59.6	0.00001	0.0005	0.001	0.00142	0.0093	0.00001	2.31	0.005	27	0.0447	0.0047	19.5	0.001	0.0002	0.0005	21.4	0.00059	6.19	0.005	0.678	0.005	0.00005	0.00325	0.005	0.005	0.0005
W3	2012-03-19 10:30	0.00002	0.0032	0.00023	0.0866	0.05	0.0001	0.001	54.1	0.00001	0.0005	0.001	0.00167	0.0094	0.00001	2.19	0.005	26.2	0.049	0.0045	19.1	0.001	0.0002	0.0005	21.4	0.00056	6.02	0.005	0.621	0.005	0.00005	0.00309	0.005	0.005	0.0005
W3	2012-03-24 0:00	0.00002	0.003	0.00027	0.087	0.05	0.0001	0.001	63.5	0.00001	0.0005	0.001	0.00171	0.0102	0.00001	2.28	0.005	27.6	0.044	0.0043	19.9	0.001	0.0002	0.0005	20.8	0.00064	6.63	0.005	0.649	0.005	0.00005	0.00315	0.005	0.005	0.0005

Attachment 3: Sitewide Database

Station	Date / Time	Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N-NO_2$	$N-NO_3$	$N-NH_3$	SO_4-D	Chlord	Fluord
		General Parameters								Anions & Nitrogen Species					
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W3	2012-03-27 0:00	227	544			312	2.3			0.005	1.91	0.01	62.5	3.7	0.55
W3	2012-03-28 15:30	227	547			332	2.3				1.29	0.0176	56.5	3.4	0.57
W3	2012-04-02 15:30	227	542		7.29	322	9.6	0.2	15.38	0.005	1.2	0.0061	59.4	3.4	0.57
W3	2012-04-09 17:00	198	470		7.58	292	13	0.2	83.4	0.007	1.13	0.0112	47.2	3.3	0.51
W3	2012-04-13 18:25	178	449		7.64	266	80.4	0	77	0.005	1.55	0.16	48.1	3.7	0.42
W3	2012-04-14 10:35	207	512		6.77	292	19	0	86.4	0.005	1.93	0.015	50.5	4.5	0.51
W3	2012-04-15 9:15	204	509		7.61	290	18.9	0.1	79.5	0.005	1.89	0.0057	48.9	4.2	0.48
W3	2012-04-16 17:15	177	463		7.78	276	985	0	81.9	0.0075	3.43	0.014	46.1	4.9	0.41
W3	2012-04-17 17:53				7.87			1.2	87.5						
W3	2012-04-18 10:15				7.93			1.8	95.5						
W3	2012-04-19 13:40							2.3	91.9						
W3	2012-04-20 15:56				7.79			2.2	89.6						
W3	2012-04-21 16:19				7.88			2.2	94.9						
W3	2012-04-22 14:50	176	478		7.78	316	6.8	2.3	97.7	0.0073	4.17	0.014	52.2	5.1	0.33
W3	2012-04-23 14:32				7.74			2.4	104.6						
W3	2012-04-24 8:06	182	479		7.75	308	4.7	1.7	103.2	0.0067	4.12	0.0093	47.1	5.3	0.35
W3	2012-04-25 11:10				7.68			2.2	94.6						
W3	2012-04-26 0:00	174	475	192.8	7.76	312	4.1	2	92.5	0.0073	3.97	0.013	48.2	4.8	0.35
W3	2012-04-27 13:20			139.8	7.99			2.2	91.1						
W3	2012-04-28 8:30			118.3	7.73			1.9	92						
W3	2012-04-29 8:45			130.6	7.3			1.8	96.8						
W3	2012-04-30 10:35			100.6	7.65			2.2	87.6						
W3	2012-05-01 14:10			68.5	7.82			2.8	87.5						
W3	2012-05-02 15:00			82.2	7.84			2.4	88.2						
W3	2012-05-03 10:15			82.8	7.75			2.3	87.9						
W3	2012-05-07 0:00	185	452	73.5	7.86	278	6.2	3.4	69.1	0.005	1.26	0.0097	45.5	4	0.4
W3	2012-05-10 16:50			71	7.93			3.4	97.8						
W3	2012-05-16 15:30	180	422	39.4	7.99	282	4.4	2.3	110.8	0.005	0.876	0.0068	45.1	3.2	0.42
W3	2012-05-24 0:00	202	473	8.2	7.9	284	1	4.6	109.2	0.005	0.799	0.021	47.8	3.3	0.5
W3	2012-06-02 0:00	219	516	27.4	7.86	300	1	3.3	89.6	0.005	0.722	0.079	50.7	3	0.51
W3	2012-06-08 0:00	214	501	-3.6	7.83	298	1	5.5	88.9	0.005	0.619	0.073	52.1	3.5	0.53
W3	2012-06-17 12:00	198	469	54.3	7.71	324	1	3.2	88.6	0.005	0.603	0.1	46.1	2.9	0.47
W3	2012-06-19 10:10	213	488	32.2	7.72	284	1	3.2	87	0.005	0.633	0.094	47.3	3.1	0.48
W3	2012-06-22 17:17	215	504		7.82	314	1	5.9	86.5	0.005	0.678	0.016	52	3.3	0.53
W3	2012-06-28 10:50	223	522	25.6	7.71	294	1	2.9	84.2	0.005	0.663	0.039	50.9	3.3	0.53
W3	2012-07-05 8:15	216	488	49.1	7.54	302	1	1.9	87.1	0.005	0.552	0.013	44.1	2.8	0.49
W3	2012-07-09 11:34	231	525	32.9	7.28	302	1	2.9	94.6	0.005	0.558	0.013	52.2	3.7	0.53
W3	2012-07-18 7:25	226	522	51.4	7.47	300	1.8	2.6	73.7	0.005	0.411	0.083	46.8	3	0.52
W3	2012-07-24 10:50	220	511	48.5	7.78	314	1	3.4	86	0.005	0.512	0.056	45.3	2.9	0.54
W3	2012-07-30 8:10	226	511	42.1	7.85	304	1	2.4	88.6	0.005	0.537	0.024	50.2	3.2	0.58
W3	2012-08-07 15:00	227	510	-25.7	7.89	306	1	5	89.5	0.0052	0.521	0.011	45.7	3.3	0.6
W3	2012-08-16 9:30	224	505	111.2	7.6	314	1	2.6	77.1	0.005	0.508	0.013	45.9	3	0.54
W3	2012-08-23 8:30	224	513	18.7	7.61	326	1	2.8	74.7		0.51	0.012	46.1	3.3	0.55
W3	2012-08-30 17:18	221	502	-25.2	7.99	290	1	4	90	0.005	0.491	0.0072	45.6	2.8	0.57
W3	2012-09-03 8:05	222	501	16.4	7.7	296	1	1.5	91.5	0.005	0.483	0.0069	46.2	2.7	0.56
W3	2012-09-05 7:15	226	502	14.3	6.45	314	1	2.3	81.2	0.005	0.519	0.017	48	3.2	0.55
W3	2012-09-09 16:15	186	426	72.7	7.6	250	2.1	2.5	86	0.005	0.338	0.073	32.1	2.7	0.45
W3	2012-09-17 9:53	215	493	65.4	7.71	302	1	1.3	8.7	0.005	0.488	0.082	42	2.9	0.51
W3	2012-09-19 7:40	216	488	78.2	7.6	296	1	1.2	76.8	0.005	0.507	0.11	45.5	3.2	0.49
W3	2012-09-24 9:05	217	500	58.2	7.83	284	1	1.7	91	0.005	0.541	0.017	43.1	2.9	0.52
W3	2012-10-03 13:00	223	501	49.2	8.89	308	1	0.4	85.4	0.005	0.445	0.0225	46.7	3.1	0.53
W3	2012-10-12 7:40	211	472	54.7	8.18	306	1	0.1	84.6	0.005	0.502	0.015	42	2.9	0.5
W3	2012-10-16 8:30	214	490	44.2	7.8	302	1	0.7	97	0.005	0.53	0.012	45.6	3	0.47
W3	2012-10-19 7:30	219	489	39	8.02	328	1	0.1	79.8	0.0153	0.863	0.015	46.2	3.1	0.54
W3	2012-10-25 9:25	228	524		7.9	322	3.4	0.3		0.005	0.624	0.0087	47.5	3.2	0.52
W3	2012-11-02 16:00	221	517			316	1			0.005	1.06	0.0091	47.4	3.1	0.52
W3	2012-11-09 11:00	221	513	57.6	7.4	302	1	0		0.005	0.862	0.022	48.5	3.1	0.57
W3	2012-11-18 9:00	227	518	112.5	7.29	288	1	0.3		0.005	0.654	0.0068	50	3.7	0.52
W3	2012-11-24 15:00	227	524	103.1	7.42	292	1	-0.1	34.6	0.005	0.681	0.013	48.7	3.2	0.53
W3	2012-12-04 10:00	238	549	56	7.53	328	1	0	55.6	0.005	0.664	0.019	55.8	3.4	0.56
W3	2012-12-08 8:45			152.7	6.74			-0.1	26						
W3	2012-12-11 10:50	231	529	94.8	7.41	300	1	0	64.4	0.005	0.647	0.01	49	2.9	0.56
W3	2012-12-18 10:27	225	525	53.8	7.46	308	1	0	65.2	0.005	0.647	0.0085	52.4	3	0.5
W3	2012-12-27 15:30	226	524	62.1	7.34	274	1	-0.1	55.9	0.005	0.671	0.016	50.9	3.1	0.53
W3	2013-01-04 0:00	222	518	74.5	7.49	304	1	0	59.9	0.005	0.554	0.062	54.5	2.9	0.55
W3	2013-01-09 0:00	223	524	95	7.43	318	4	0	71.1	0.005	0.599	0.053	50.4	3.1	0.55
W3	2013-01-17 0:00	225	525	158.9	7.4	308	1	0.1	103.4	0.005	0.717	0.025	51.8	2.7	0.55
W3	2013-01-22 0:00	229	527	49.1	7.6	290	1	0	74.6	0.005	0.699	0.017	50.2	2.7	0.55
W3	2013-01-28 0:00	229	531	90.8	7.43	322	1	0	73.5	0.005	0.706	0.045	55.1	3.1	0.57
W3	2013-02-07 0:00	227	526			306	1			0.005	0.717	0.029	50.7	2.9	0.56
W3	2013-02-12 0:00	225	529			266	1			0.005	0.73	0.026	54.6	3	0.55
W3	2013-02-19 0:00	229	530			318	1			0.005	0.703	0.13	48.9	3.1	0.54
W3	2013-02-26 0:00	228	533			302	1			0.005	0.747	0.021	52.4	2.8	0.55
W3	2013-03-04 0:00	229	526	-382.3	7.6	308	1	0.1	68	0.005	0.737	0.093	48.9	2.5	0.56
W3	2013-03-11 0:00	227	521	-387.1	7.54	282	1	0.1	77.7	0.005	0.723	0.11	58	3.3	0.55
W3	2013-03-18 0:00	228	533	-391.8	7.57	310	1	0	67.2	0.005	0.67	0.035	55.5	2.8	0.51
W3	2013-03-31 0:00	224	522	-409	7.61	314	2.3	0.1	62.2		0.79	0.026	53.5	3	0.57
W3	2013-04-01 11:00	223	519		7.51	296	1.2	0.1	73.4	0.005	0.73	0.081	51.7	3.2	0.56
W3	2013-04-06 9:10	229	524			282	1				0.2	0.056	52.1	2.8	0.59
W3	2013-04-12 7:30	227	521	-399.4	7.59	274	1	0.1	81.2	0.005	0.704	0.098	42.1	2.5	0.57
W3	2013-04-15 17:15	221	528		7.8	314	1	1.2		0.005	0.704	0.094	52.9	3	0.57
W3	2013-04-21 14:00			-401.1	8.39			0	101.4						
W3	2013-04-22 8:05			-420.1	8.17			0.2							
W3	2013-04-23 8:05			-95.5	9.06			1.2	105.6						
W3	2013-04-24 0:00														
W3	2013-04-25 8:30														
W3	2013-04-26 9:15			-103.3	7.76			1.1	111.7						
W3	2013-04-27 8:15			-101.5	9			0.3	100.7						
W3	2013-04-28 9:30			-96.8	8.52			0.9	102.9						
W3	2013-04-29 8:05			-51.6	8.2			0.9	104.3						
W3	2013-04-30 20:30	182	450	2.9	8.61	292	5.3	1.2	122.3	0.0074	2.61	0.02	41.9	5.7	0.31
W3	2013-05-01 15:30			-89.6	7.99			1.2	86.3						
W3	2013-05-02 8:00	177	446	-96.5	8	240	4	1.1		0.0078	2.58	0.019			
W3	2013-05-03 0:00														
W3	2013-05-04 9:35			-17.7	7.86			1.4	101						
W3	2013-05-05 9:50			-20	7.85			1.3	104.3						
W3	2013-05-06 7:30			17.6	8.17			1.1	104.1						
W3	2013-05-07 9:40			39	8.04			1.2	91						
W3	2013-05-08 7:50			2.4	7.91			1.1	91.1						
W3	2013-05-09 8:45	152	402	53.5	7.93	250	8.3	1.2	91.5	0.0167	10.8	0.032	38.2	9.7	0.27
W3	2013-05-10 8:45			9	7.97			1.2	92.3						
W3	2013-05-11 9:00			3.5	8			1.2	91.9						
W3	2013-05-12 9:15			-0.3	7.5			1.2	91.7						
W3	2013-05-13 8:40			67	7.35			0.9	87.5						
W3	2013-05-14 10:50	54.9	143	133.2		138	21.2	1.6	82.5	0.0195	0.785	0.083			
W3	2013-05-15 11:10			95.2	8			1.5	82.9						
W3	2013-05-16 9:00			54.7	7.75			0.1	89.9						
W3	2013-05-17 7:25			14.9	8.2			0.8	86.7						
W3	2013-05-18 8:30			51.8	7.99			1.9	88.7						
W3	2013-05-19 10:40			45.7	8.3			1.3	88.6						
W3	2013-05-20 7:45			29.2	7.46			1.7	90.1						
W3	2013-05-21 8:40	45.9	128	38.7	7.27	124	30	2.1	90.3	0.0223	0.808	0.034	0.5	4.3	0.12
W3	2013-05-22 0:00	49.5	136		8.1	126	19.6	3.5		0.029	0.691	0.034	0.5	4.7	0.12
W3	2013-05-23 0:00	47.8	138	11.8	8.29	126	20.2	3.3	93.6	0.0336	0.805	0.041	0.5	4.7	0.13
W3	2013-05-28 7:50	67	214	44.6	7.74	160	8.6	6.4	92.2	0.0487	2.08	0.07	22.8	5.9	0.22

Station	Date / Time	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		Dissolved Elements																																	
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W3	2012-03-27 0:00	0.00002	0.0116	0.00024	0.0868	0.05	0.0001	0.001	59	0.000065	0.0005	0.001	0.00299	0.0091	0.00001	2.23	0.005	26.3	0.0411	0.0042	19.1	0.001	0.0002	0.0005	20.6	0.00061	5.99	0.005	0.621	0.005	0.00005	0.0033	0.005	0.005	0.0005
W3	2012-03-28 15:30	0.00002	0.003	0.00019	0.0872	0.05	0.0001	0.001	56.4	0.00001	0.0005	0.001	0.0014	0.0061	0.00001	2.16	0.005	26.5	0.0436	0.0043	18.7	0.001	0.0002	0.0005	21	0.0006	6.27	0.005	0.636	0.005	0.00005	0.00302	0.005	0.005	0.0005
W3	2012-04-02 15:30	0.00002	0.003	0.00025	0.0844	0.05	0.0001	0.001	52.6	0.00001	0.0005	0.001	0.00172	0.0092	0.00001	2.02	0.005	25.1	0.0441	0.0045	17.8	0.001	0.0002	0.0005	20.8	0.00061	5.46	0.005	0.633	0.005	0.00005	0.00304	0.005	0.005	0.0005
W3	2012-04-09 17:00	0.00002	0.0036	0.00025	0.0793	0.05	0.0001	0.001	49.2	0.00001	0.0005	0.001	0.00316	0.0152	0.00001	2.24	0.005	22.5	0.0457	0.004	16.3	0.001	0.0002	0.0005	16.9	0.00047	5.45	0.005	0.565	0.005	0.00005	0.00253	0.005	0.005	0.0005
W3	2012-04-13 18:25	0.00002	0.0062	0.00033	0.0767	0.05	0.0001	0.001	46.9	0.00001	0.0005	0.001	0.00593	0.0203	0.00001	3.21	0.005	20	0.0266	0.0045	15.3	0.001	0.0002	0.0005	15.2	0.00061	4.93	0.005	0.554	0.005	0.00005	0.00247	0.005	0.005	0.0005
W3	2012-04-14 10:35	0.00002	0.0037	0.00031	0.0848	0.05	0.0001	0.001	56.2	0.00001	0.0005	0.001	0.00365	0.0163	0.00001	2.92	0.005	22.7	0.0494	0.0053	18.2	0.001	0.0002	0.0005	19.3	0.00071	5.6	0.005	0.616	0.005	0.00005	0.00294	0.005	0.005	0.0005
W3	2012-04-15 9:15	0.00002	0.0056	0.00033	0.0828	0.05	0.0001	0.001	53.9	0.00001	0.0005	0.001	0.00397	0.028	0.00001	2.9	0.005	22.2	0.0706	0.0056	18	0.001	0.0002	0.0005	18.5	0.00075	5.4	0.005	0.615	0.005	0.00005	0.00299	0.005	0.005	0.0005
W3	2012-04-16 17:15	0.00002	0.0061	0.00036	0.08	0.05	0.0001	0.001	51.1	0.00001	0.0005	0.001	0.0108	0.0246	0.00001	3.78	0.005	19.1	0.0054	0.0053	16.1	0.001	0.0002	0.0005	17.4	0.00118	4.95	0.005	0.551	0.005	0.00005	0.00222	0.005	0.005	0.0005
W3	2012-04-17 17:53																																		
W3	2012-04-18 10:15																																		
W3	2012-04-19 13:40																																		
W3	2012-04-20 15:56																																		
W3	2012-04-21 16:19																																		
W3	2012-04-22 14:50	0.00002	0.0129	0.0004	0.0809	0.05	0.0001	0.001	57.9	0.000015	0.0005	0.001	0.0209	0.0478	0.00001	3.5	0.005	18.8	0.0286	0.0053	16.8	0.0011	0.0002	0.0005	18.8	0.00166	5.61	0.005	0.612	0.005	0.00005	0.00177	0.005	0.005	0.0005
W3	2012-04-23 14:32																																		
W3	2012-04-24 8:06	0.00002	0.0138	0.00038	0.0781	0.05	0.0001	0.001	57.8	0.000021	0.0005	0.001	0.021	0.0487	0.00001	3.42	0.005	18.4	0.0279	0.0051	16.4	0.0011	0.0002	0.0005	18.3	0.00162	5.53	0.005	0.587	0.005	0.00005	0.00174	0.005	0.005	0.0005
W3	2012-04-25 11:10																																		
W3	2012-04-26 0:00	0.00002	0.0243	0.0004	0.0836	0.05	0.0001	0.001	56	0.000021	0.0005	0.001	0.0235	0.0593	0.00001	3.43	0.005	18.7	0.0321	0.0051	16.7	0.0011	0.0002	0.0005	17.1	0.00159	5.31	0.005	0.626	0.005	0.00005	0.00186	0.005	0.005	0.0005
W3	2012-04-27 13:20																																		
W3	2012-04-28 8:30																																		
W3	2012-04-29 8:45																																		
W3	2012-04-30 10:35																																		
W3	2012-05-01 14:10																																		
W3	2012-05-02 15:00																																		
W3	2012-05-03 10:15																																		
W3	2012-05-07 0:00	0.00002	0.0161	0.00033	0.0772	0.05	0.0001	0.001	49.8	0.000015	0.0005	0.001	0.00756	0.0457	0.00001	2.63	0.005	19.3	0.0481	0.0045	15.7	0.0011	0.0002	0.0005	16	0.00063	5.6	0.005	0.561	0.005	0.00005	0.00242	0.005	0.005	0.0005
W3	2012-05-10 16:50																																		
W3	2012-05-16 15:30	0.00002	0.0228	0.00031	0.0717	0.05	0.0001	0.001	45.4	0.000013	0.0005	0.001	0.00768	0.0625	0.00001	1.97	0.005	20	0.0373	0.0036	14.9	0.0014	0.0002	0.0005	15.9	0.00055	5.48	0.005	0.51	0.005	0.00005	0.00226	0.005	0.005	0.0005
W3	2012-05-24 0:00	0.00002	0.0114	0.00028	0.0785	0.05	0.0001	0.001	50.5	0.000017	0.0005	0.001	0.00418	0.0341	0.00001	2.11	0.005	22.6	0.0463	0.0042	16.7	0.001	0.0002	0.0005	17.1	0.00049	5.32	0.005	0.58	0.005	0.00005	0.00266	0.005	0.005	0.0005
W3	2012-06-02 0:00	0.00002	0.0071	0.00028	0.0828	0.05	0.0001	0.001	54.7	0.00001	0.0005	0.001	0.00274	0.0199	0.00001	2.23	0.005	26	0.0544	0.0047	18.9	0.0011	0.0002	0.0005	18.2	0.0004	5.17	0.005	0.625	0.005	0.00005	0.00291	0.005	0.005	0.0005
W3	2012-06-08 0:00	0.00002	0.0061	0.00024	0.0789	0.05	0.0001	0.001	53.4	0.00001	0.0005	0.001	0.00294	0.0158	0.00001	2.14	0.005	24.1	0.0568	0.0042	18	0.001	0.0002	0.0005	19.7	0.00051	5.53	0.005	0.589	0.005	0.00005	0.00297	0.005	0.005	0.0005
W3	2012-06-17 12:00	0.00002	0.0114	0.00032	0.0786	0.05	0.0001	0.001	51.5	0.000013	0.0005	0.001	0.0038	0.0368	0.00001	2.01	0.005	23	0.0567	0.004	16.8	0.0013	0.0002	0.0005	16.8	0.00041	5.66	0.005	0.587	0.005	0.00005	0.00253	0.005	0.005	0.0005
W3	2012-06-19 10:10	0.00002	0.0078	0.00026	0.0804	0.05	0.0001	0.001	53.8	0.00001	0.0005	0.001	0.00311	0.0257	0.00001	2.1	0.005	23.9	0.0607	0.0041	17.3	0.0011	0.0002	0.0005	17.1	0.00049	5.71	0.005	0.603	0.005	0.00005	0.0026	0.005	0.005	0.0005
W3	2012-06-22 17:17	0.00002	0.0057	0.00026	0.0851	0.05	0.0001	0.001	53.1	0.00001	0.0005	0.001	0.00276	0.0178	0.00001	2.11	0.005	24.6	0.061	0.0044	17.7	0.001	0.0002	0.0005	16.9	0.00047	5.35	0.005	0.613	0.005	0.00005	0.003	0.005	0.005	0.0005
W3	2012-06-28 10:50	0.00002	0.0046	0.00024	0.0838	0.05	0.0001	0.001	56.1	0.00001	0.0005	0.001	0.00227	0.0173	0.00001	2.16	0.005	25.9	0.0689	0.0046	19.1	0.001	0.0002	0.0005	18.2	0.00051	5.75	0.005	0.642	0.005	0.00005	0.00294	0.005	0.005	0.0005
W3	2012-07-05 8:15	0.00002	0.0063	0.00025	0.0885	0.05	0.0001	0.001	53	0.00001	0.0005	0.001	0.00232	0.0218	0.00001	1.97	0.005	21.8	0.0573	0.0039	15.5	0.0011	0.0002	0.0005	18.1	0.00044	5.93	0.005	0.578	0.005	0.00005	0.0025	0.005	0.005	0.0005
W3	2012-07-09 11:34	0.00002	0.004	0.00027	0.0808	0.05	0.0001	0.001	53.8	0.00001	0.0005	0.001	0.0021	0.0138	0.00001	2.06	0.005	24.7	0.0423	0.0046	18.3	0.001	0.0002	0.0005	19.4	0.00053	6.11	0.005	0.622	0.005	0.00005	0.00276	0.005	0.005	0.0005
W3	2012-07-18 7:25	0.00002	0.0057	0.00025	0.0835	0.05	0.0001	0.001	55.9	0.00001	0.0005	0.001	0.00219	0.0162	0.00001	2.1	0.005	25.3	0.0607	0.0046	18.8	0.001	0.0002	0.0005	17.6	0.00039	5.97	0.005	0.627	0.005	0.00005	0.00277	0.005	0.005	0.0005
W3	2012-07-24 10:50	0.00002	0.0066	0.00026	0.084	0.05	0.0001	0.001	54.4	0.00001	0.0005	0.001	0.00217	0.0143	0.00001	2.15	0.005	25.3	0.0581	0.0047	18.7	0.001	0.0002	0.0005	17.4	0.00042	5.89	0.005	0.637	0.005	0.00005	0.00283	0.005	0.005	0.0005
W3	2012-07-30 8:10	0.00002	0.0039	0.00024	0.0841	0.05	0.0001	0.001	53	0.00001	0.0005	0.001	0.00212	0.0159	0.00001	2.08	0.005	25.5	0.0629	0.0046	18.8	0.001	0.0002	0.0005	17	0.00047	5.8	0.005	0.614	0.005	0.00005	0.0029	0.005	0.005	0.0005
W3	2012-08-07 15:00	0.00002	0.0107	0.00022	0.0829	0.05	0.0001	0.001	54.9	0.00001	0.0005	0.001	0.00195	0.0172	0.00001	2.11	0.005	24.2	0.0535	0.0045	18.2	0.001	0.0002	0.0005	17.7	0.00044	6.05	0.005	0.619	0.005	0.00005	0.00268	0.005	0.005	0.0005
W3	2012-08-16 9:30	0.00002	0.0037	0.00025	0.0824	0.05	0.0001	0.001	54.8	0.00001	0.0005	0.001	0.00196	0.0166	0.00001	2.06	0.005	24.6	0.0594	0.0046	18.2	0.001	0.0002	0.0005	17.9	0.00044	5.95	0.005	0.633	0.005	0.00005	0.00268	0.005	0.005	0.0005
W3	2012-08-23 8:30	0.00002	0.0088	0.00023	0.0837	0.05	0.0001	0.001	52.4	0.00001	0.0005	0.001	0.00198	0.0168	0.00001	2.2	0.005	25.3	0.0498	0.0047	18.5	0.001	0.0002	0.0005	18.2	0.00048	5.92	0.005	0.619	0.005	0.00005	0.00266	0.005	0.005	0.0005
W3	2012-08-30 17:18	0.00002	0.0046	0.00026	0.0831	0.05	0.0001	0.001	54.1	0.00001	0.0005	0.001	0.00235	0.0194	0.00001	2.27	0.005	25.1	0.0535	0.0048	18.8	0.001	0.0002	0.0005	17.1	0.00044	5.83	0.005	0.631	0.005	0.00005	0.0028	0.005	0.005	0.0005
W3	2012-09-03 8:05	0.00002	0.0035	0.00024	0.0814	0.05	0.0001	0.001	53	0.00001	0.0005	0.001	0.00206	0.0184	0.00001	2.23	0.005	25.3	0.0533	0.0047	18.8	0.001	0.0002	0.0005	17.1	0.00048	5.8	0.005	0.611	0.005	0.00005	0.00268	0.005	0.005	0.0005
W3	2012-09-05 7:15	0.00002	0.0042	0.00026	0.0793	0.05	0.0001	0.001	51.1	0.00001	0.0005	0.001	0.00236	0.0217	0.00001	2.09	0.005	23.7	0.0509	0.0047	18	0.001	0.0002	0.0005	16.9	0.00041	5.76	0.005	0.599	0.005	0.00005	0.00252	0.005	0.005	0.0005
W3	2012-09-09 16:15	0.00002	0.0156	0.00026	0.0706	0.05	0.0001	0.001	44.5	0.00001	0.0005	0.001	0.00437	0.048	0.00001	1.97	0.005	19.5	0.0495	0.0038	14.7	0.0014	0.0002	0.0005	12.1	0.00034	5.22	0.005	0.51	0.005	0.00005	0.00201	0.005	0.005	0.0005
W3	2012-09-17 9:53	0.00002	0.0092	0.00041	0.0846	0.05	0.0001	0.001	53.4	0.00001	0.0005	0.001	0.00284	0.0202	0.00001	2.13	0.005	24.1	0.0486	0.0045	18	0.0012	0.0002	0.0005	15.9	0.00042	6.07	0.005	0.598	0.005	0.00005	0.00241	0.005	0.0184	0.0005
W3	2012-09-19 7:40	0.00002	0.0047	0.00028	0.0801	0.05	0.0001	0.001	53.8	0.00001	0.0005	0.001	0.00251	0.0228	0.00001	2.2	0.005	23.6	0.0481	0.0045	17.7	0.0011	0.0002	0.0005	14.8	0.00043	5.72	0.005	0.6	0.005	0.00005	0.00253	0.005	0.005	0.0005
W3	2012-09-24 9:05	0.00002	0.0035	0.00022	0.0823	0.05	0.0001	0.001	54.1	0.00001	0.0005	0.001	0.00222	0.0215	0.00001	2.17	0.005	23.3	0.0462	0.0045	17.2	0.0011	0.0002	0.0005	15.9	0.00035	6.18	0.005	0.604	0.005	0.00005	0.00246	0.005	0.005	0.0005
W3	2012-10-03 13:00	0.00002	0.005	0.00021	0.0803	0.05	0.0001	0.001	51.7	0.00001	0.0005	0.001	0.00233	0.0213	0.00001	2	0.005	24.8	0.0452	0.0049	18.3	0.0011	0.0002	0.0005	16.1	0.00037	6.05	0.005	0.613	0.005	0.00005	0.00254	0.005	0.005	0.0005
W3	2012-10-12 7:40														0.00001																				
W3	2012-10-16 8:30	0.00002	0.0041	0.00024	0.0797	0.05	0.0001	0.001	51.4	0.00001	0.0005	0.001	0.00242	0.0211	0.00001	2.04	0.005	23.2	0.0426	0.0045	17.3	0.0011	0.0002	0.0005	15.4	0.00041	5.86	0.005	0.587	0.005	0.00005	0.00263	0.005	0.005	0.0005
W3	2012-10-19 7:30	0.00002	0.0048	0.00026	0.0807	0.05	0.0001	0.001	52.6	0.00001	0.0005	0.001	0.00205	0.0311	0.00001	2.31	0.005	25.4	0.0604	0.0048	18.4	0.0011	0.0002	0.0005	17.4	0.00044	6.09	0.005	0.619	0.005	0.00005	0.00304	0.005	0.005	0.0005
W3	2012-10-25 9:25	0.00002	0.004	0.00022	0.0869	0.05	0.0001	0.001	54.3	0.00001	0.0005	0.001	0.00197	0.0233	0.00001	2.15	0.005	24.9	0.0514	0.0046	18	0.0011	0.0002	0.0005	17.2	0.00051	6.11	0.005	0.634	0.005	0.00005	0.00292	0.005	0.005	0.0005
W3	2012-11-02 16:00	0.00002	0.0034	0.00024	0.0837	0.05	0.0001	0.001	53.3	0.00001	0.0005	0.001	0.00189	0.0215	0.00001	2.2	0.005	25	0.0584	0.0042	18.2	0.0011	0.0002	0.0005	16.1	0.00047	6.23	0.005	0.619	0.005	0.00005	0.00288	0.005	0.005	0.0005
W3	2012-11-09 11:00	0.000005	0.0053	0.000276	0.0831	0.05	0.00001	0.000005	53.8	0.000005	0.000059	0.0001	0.00175	0.0167	0.00001	2.26	0.00299	26	0.0454	0.00417	18.9	0.00082	0.000009	0.000058	18.4	0.000496	5.96	0.0002	0.611	0.0005	0.000002	0.0029	0.0002	0.00067	0.0001
W3	2012-11-18 9:00	0.00002	0.0032	0.00024	0.0863	0.05	0.0001	0.001	56.8	0.00001	0.0005	0.001	0.00172	0.0144	0.00001	2.4	0.005	25.4	0.04	0.0046	18.6	0.001	0.0002	0.0005	19.5	0.00039	6.67	0.005	0.619	0.005	0.00005	0.0027	0.005	0.005	0.0005
W3	2012-11-24 15:00	0.00002	0.0048	0.00023	0.0827	0.05	0.0001	0.001	52.4	0.00001	0.0005	0.001	0.00226	0.0193	0.00001	2.07	0.005	25.1	0.0399	0.0046	17.7	0.001	0.0002	0.0005	17.3	0.00046	5.97	0.005	0.629	0.005	0.00005	0.00294	0.005	0.005	0.0005
W3	2012-12-04 10:00	0.00002	0.0063	0.00024	0.0855	0.05	0.0001	0.001	55.4	0.00001	0.0005	0.001	0.00253	0.0324	0.00001	2.34	0.005	26.6	0.0763	0.0046	19.2	0.001	0.0002	0.0005	18.6	0.00042	6.2	0.005	0.675	0.005	0.00005	0.00306	0.005	0.005	0.0005
W3	2012-12-08 8:45																																		
W3	2012-12-11 10:50	0.00002	0.003	0.00021	0.0858	0.05	0.0001	0.001	54.8	0.00001	0.0005	0.001	0.00175	0.0129	0.00001	2.2	0.005	28.7	0.0711	0.0046	19.9	0.001	0.0002	0.0005	18	0.00048	7	0.005	0.644	0.005	0.00005	0.00295	0.005	0.005	0.0005
W3	2012-12-18 10:27	0.00002	0.0047	0.00025	0.0834	0.05	0.0001	0.001	53.4	0.00001	0.0005	0.001	0.00215	0.0195	0.00001	2.16	0.005	25.7	0.0639	0.0043	18.2	0.001	0.0002	0.0005	18.1	0.00044	5.95	0.005	0.628	0.005	0.00005	0.00274	0.005	0.005	0.0005
W3	2012-12-27 15:30	0.00002	0.003	0.0002	0.0849	0.05	0.0001	0.001	51.8	0.00001	0.0005	0.001	0.00155	0.0242	0.00001	2.19	0.005	26	0.0783	0.0044	18.7	0.001	0.0002	0.0005	19.3	0.00048	6.63	0.005	0.649	0.005	0.00005	0.00284	0.005	0.005	0.0005
W3	2013-01-04 0:00	0.00002	0.003	0.00022	0.0829	0.05	0.0001	0.001	53.5	0.00001	0.0005	0.001	0.00155	0.0182	0.00001	2.08	0.005	25.9	0.0597	0.0041	17.8	0.001	0.0002	0.0005	17.4	0.00042	6.02	0.005	0.639	0.005	0.00005	0.00274	0.005	0.005	0.0005
W3	2013-01-09 0:00	0.00002	0.003	0.0002	0.0809	0.05	0.0001	0.001	54.2	0.00001	0.0005	0.001	0.00159	0.0204	0.00001	2.13	0.005	26.6	0.0704	0.0044	18.1	0.001	0.0002	0.0005	18.2	0.00042	6.18	0.005	0.642	0.005	0.00005	0.00281	0.005	0.005	0.0005
W3	2013-01-17 0:00	0.00002	0.0061	0.0003	0.0817	0.05	0.0001	0.001	55.3	0.00001	0.0005	0.001	0.00187	0.0236	0.00001	2.13	0.005	27.5	0.0693	0.0044	18.4	0.001	0.0002	0.0005	19.3	0.0004	6.35	0.005	0.655	0.005	0.00005	0.00289	0.005	0.005	0.0005
W3	2013-01-22 0:00	0.00002	0.0036	0.00025	0.0801	0.05	0.0001	0.001	53.6	0.00001	0.0005	0.001	0.00147	0.0141	0.00001	2.56	0.005	26.6	0.047	0.0043	17.7	0.001	0.0002	0.0005	18.5	0.00037	5.95	0.005	0.643	0.005	0.00005	0.00332	0.005	0.005	0.0005
W3	2013-01-28 0:00	0.00002	0.0033	0.00021	0.083	0.05	0.0001	0.001	54.4	0.00001	0.0005	0.001	0.00162	0.0115	0.00001	2.19	0.005	26.5	0.0446	0.0047	18.4	0.001	0.0002	0.0005	18.4	0.00044	6.1	0.005	0.672	0.005	0.00005	0.00297	0.005	0.005	0.0005
W3	2013-02-07 0:00	0.00002	0.003	0.00021	0.0856	0.05	0.0001	0.001	55.7	0.00001	0.0005	0.001	0.00223	0.0091	0.00001	2.21	0.005	25.8	0.065	0.0045	17.6	0.001	0.0002	0.0005	18.8	0.00047	6.48	0.005	0.677	0.005	0.00005	0.00285	0.005	0.005	0.0005
W3	2013-02-12 0:00	0.00002	0.0032	0.00024	0.0825	0.05	0.0001	0.001	53.9	0.00001	0.0005	0.001	0.00184	0.0099	0.00001	2.07	0.005	25.1	0.0478	0.0047	17.3	0.001	0.0002	0.0005	17.3	0.00053	5.42	0.005	0.669	0.005	0.00005	0.00289	0.005	0.005	0.0005
W3	2013-02-19 0:00	0.00002	0.003	0.00024	0.0831	0.05	0.0001	0.001	53.1	0.00001	0.0005	0.001	0.00167	0.0082	0.00001	2.21	0.005	27.4	0.048	0.0047	19.1	0.001	0.0002	0.0005	18.2	0.00046	5.83	0.005	0.654	0.005	0.00005	0.00299	0.005	0.005	0.0005
W3	2013-02-26 0:00	0.00002	0.003	0.00023	0.082	0.05	0.0001	0.001	55.3	0.00001	0.0005	0.001	0.00157	0.0094	0.00001	2.12	0.005	26.1	0.0466	0.0047	17.9	0.001	0.0002	0.0005	17.4	0.00056	5.86	0.005	0.696	0.005	0.00005	0.00308	0.005	0.005	0.0005
W3	2013-03-04 0:00	0.00002	0.003	0.00028	0.0862	0.05	0.0001	0.001	55.1	0.00001	0.0005	0.001	0.00151	0.0136	0.00001	2.19	0.005	27	0.0479	0.0048	18.7	0.001	0.0002	0.0005	18.1	0.0005	6.33	0.005	0.687	0.005	0.00005	0.00298	0.005	0.005	0.0005
W3	2013-03-11 0:00	0.00002	0.003	0.00024	0.085	0.05	0.0001	0.001	50	0.00001	0.0005	0.001	0.00163	0.012	0.00001	2.14	0.005	26.4	0.0463	0.0048	18.2	0.001	0.0002	0.0005	17.2	0.00046	5.68	0.005	0.675	0.005	0.00005	0.00307	0.005	0.005	0.0005
W3	2013-03-18 0:00	0.00002	0.003	0.00025	0.0809	0.05	0.0001	0.001	55.1	0.00001	0.0005	0.001	0.00155	0.0059	0.00001	2.31	0.005	25.6	0.0496	0.0047	17.8	0.001	0.0002	0.0005	18.5	0.00047	6.33	0.005	0.648	0.005	0.00005	0.00336	0.005	0.005	0.0005
W3	2013-03-31 0:00	0.00002	0.003	0.00021	0.0842	0.05	0.0001	0.001	53.8	0.00001	0.0005	0.001	0.0017	0.0067	0.00001	2.2	0.005	26	0.0684	0.0045	17.8	0.001	0.0002	0.0005	18	0.00049	6.25	0.005	0.673	0.005	0.00005	0.0028	0.005	0.005	0.0005
W3	2013-04-01 11:00	0.00002	0.007	0.00025	0.0842	0.05	0.0001	0.001	54	0.00001	0.0005	0.001	0.00188	0.009	0.00001	2.22	0.005	26	0.0601	0.0047	17.8	0.001	0.0002	0.0005	18.2	0.00051	6.3	0.005	0.678	0.005	0.00005	0.00291	0.005	0.005	0.0005
W3	2013-04-06 9:10	0.00002	0.0046	0.0003	0.0821	0.05	0.0001	0.001	54.4	0.00001	0.0005	0.001	0.00189	0.0125	0.00001	2.08	0.005	26.4	0.0492	0.0048	18.1	0.001	0.0002	0.0005	17.5	0.00045	6.11	0.005	0.678	0.005	0.00005	0.00313	0.005	0.005	0.0005
W3	2013-04-12 7:30	0.00002	0.0033	0.00027	0.082	0.05	0.0001	0.001	53.2	0.000017	0.0005	0.001	0.0017	0.0077	0.00001	2.14	0.005	26.1	0.0539	0.0047	17.7	0.001	0.0002	0.0005	17.8	0.00049	6.02	0.005	0.66	0.005	0.00005	0.00299	0.005	0.005	0.0005
W3	2013-04-15 17:15	0.00002	0.003	0.00024	0.0824	0.05	0.0001	0.001	52.1	0.00001	0.0005	0.001	0.00195	0.0069	0.00001	2.18	0.005	26.2	0.0444	0.0049	18.2	0.001	0.0002	0.0005	17.8	0.00048	6.14	0.005	0.66	0.005	0.00005	0.00279	0.005	0.005	0.0005
W3	2013-04-21 14:00																																		
W3	2013-04-22 8:05																																		
W3	2013-04-23 8:05																																		
W3	2013-04-24 0:00																																		
W3	2013-04-25 8:30																																		
W3	2013-04-26 9:15																																		
W3	2013-04-27 8:15																																		
W3	2013-04-28 9:30																																		
W3	2013-04-29 8:05																																		
W3	2013-04-30 20:30	0.00002	0.005	0.00031	0.0739	0.05	0.0001	0.001	53.8	0.00001	0.0005	0.001	0.0137	0.0226	0.00001	2.87	0.005	17.7	0.0081	0.004	15.5	0.001	0.0002	0.0005	14.5	0.00075	4.15	0.005	0.568	0.005	0.00005	0.00173	0.005	0.005	0.0005
W3	2013-05-01 15:30																																		
W3	2013-05-02 8:00																																		
W3	2013-05-03 0:00																																		
W3	2013-05-04 9:35																																		
W3	2013-05-05 9:50																																		
W3	2013-05-06 7:30																																		
W3	2013-05-07 9:40																																		
W3	2013-05-08 7:50																																		
W3	2013-05-09 8:45	0.00002	0.0153	0.00031	0.0694	0.05	0.0001	0.001	47.8	0.00001	0.0005	0.001	0.0186	0.0855	0.00001	2.97	0.005	15.5	0.0439	0.0033	13.3	0.001	0.0002	0.0005	12	0.00063	4.03	0.005	0.496	0.005	0.00005	0.00139	0.005	0.005	0.0005
W3	2013-05-10 8:45																																		
W3	2013-05-11 9:00																																		
W3	2013-05-12 9:15																																		
W3	2013-05-13 8:40																																		
W3	2013-05-14 10:50																																		
W3	2013-05-15 11:10																																		
W3	2013-05-16 9:00																																		
W3	2013-05-17 7:25																																		
W3	2013-05-18 8:30																																		
W3	2013-05-19 10:40																																		
W3	2013-05-20 7:45																																		
W3	2013-05-21 8:40		0.057	0.0004	0.0321	0.2	0.0004	0.004	15.4		0.002		0.0315	0.189	0.00001	1.55	0.02	4.38	0.0194	0.004	5.32			0.002	1940	0.0004	2.25	0.02	0.165	0.02	0.0002	0.0004	0.02		0.002
W3	2013-05-22 0:00	0.00002	0.0583	0.00028	0.0362	0.05	0.0001	0.001	16	0.000013	0.0005	0.001	0.0313	0.157	0.00001	1.81	0.005	4.97	0.0197	0.0015	5.5	0.001	0.0002	0.0005	3.1	0.00024	2.33	0.005	0.172	0.005	0.00005	0.00029	0.005	0.005	0.0005
W3	2013-05-23 0:00	0.00002	0.0504	0.00027	0.0367	0.05	0.0001	0.001	16.4	0.00001	0.0005	0.001	0.0289	0.146	0.00001	2.36	0.0051	4.92	0.0203	0.0015	5.79	0.0011	0.0002	0.0005	4.2	0.00024	2.36	0.005	0.218	0.005	0.00005	0.00027	0.005	0.005	0.0005
W3	2013-05-28 7:50	0.00002	0.0345	0.00025	0.0456	0.05	0.0001	0.001	21.5	0.000011	0.0005	0.001	0.0231	0.11	0.00001	3.5	0.005	6.79	0.031	0.0043	8.9	0.001	0.0002	0.0005	7.5	0.0004	2.15	0.005	0.598	0.005	0.00005	0.00041	0.005	0.005	0.0005

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species						Dissolved Elements																																	
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	N-NO$_2$	N-NO$_3$	N-NH$_3$	SO$_4$-D	Chlord	Fluord	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W3	2013-06-06 0:00	193	443	58.4	7.31	272	36.6	5.1	80.2	0.005	0.611	0.02	43.5	3.3	0.47	0.00002	0.0097	0.0003	0.0766	0.05	0.0001	0.001	47.4	0.00001	0.0005	0.001	0.00451	0.0342	0.00001	2.3	0.005	21.4	0.0374	0.0046	15.8	0.0011	0.0002	0.0005	13.9	0.00043	5.39	0.005	0.612	0.005	0.00005	0.00225	0.005	0.005	0.0005
W3	2013-06-14 0:00	204	467	31.4		286	14.5	5.2	72.8	0.005	0.509	0.019	45.3	3.6	0.5	0.00002	0.0082	0.00026	0.0779	0.05	0.0001	0.001	49.6	0.00001	0.0005	0.001	0.00365	0.022	0.00001	2.11	0.005	21.8	0.0367	0.0045	15.9	0.0011	0.0002	0.0005	13.6	0.0004	5.72	0.005	0.608	0.005	0.00005	0.00245	0.005	0.005	0.0005
W3	2013-06-17 0:00	209	472		8.2	320	1	7.6		0.005	0.51	0.03	45.7	3.4	0.46	0.00002	0.0065	0.00026	0.0796	0.05	0.0001	0.001	49.4	0.00001	0.0005	0.001	0.00301	0.0429	0.00001	2.15	0.005	22.7	0.0562	0.0047	16.4	0.001	0.0002	0.0005	16	0.00036	5.89	0.005	0.614	0.005	0.00005	0.00247	0.005	0.005	0.0005
W3	2013-06-19 7:30	211	484		8	304	1.1	2.5		0.005	0.534	0.0076		3.4	0.53	0.00002	0.0055	0.00025	0.0788	0.05	0.0001	0.001	50.8	0.00001	0.0005	0.001	0.00275	0.0148	0.00001	2.11	0.005	23.1	0.0319	0.0047	16.9	0.001	0.0002	0.0005	17.8	0.00039	5.95	0.005	0.624	0.005	0.00005	0.00259	0.005	0.005	0.0005
W3	2013-06-24 0:00	228	490		8.3	340	4.8	7.5		0.005	0.513	0.013	44.1	3.5	0.51	0.00002	0.0039	0.00023	0.0792	0.05	0.0001	0.001	49.6	0.00001	0.0005	0.001	0.00237	0.0117	0.00001	2.16	0.005	23.4	0.0358	0.0052	16.5	0.001	0.0002	0.0005	16.5	0.0004	5.66	0.005	0.627	0.005	0.00005	0.00265	0.005	0.005	0.0005
W3	2013-07-01 0:00	216	496	53.4	7.77	276	1	4.4	72.2	0.005	0.428	0.026	45.7	3.6	0.51	0.00002	0.0049	0.00027	0.0789	0.05	0.0001	0.001	51	0.00001	0.0005	0.001	0.00248	0.0136	0.00001	2.09	0.005	23.2	0.0415	0.0051	16.8	0.001	0.0002	0.0005	16.8	0.00035	5.89	0.005	0.621	0.005	0.00005	0.00259	0.005	0.005	0.0005
W3	2013-07-10 14:15	209	479		8	300	1	4.7		0.005	0.371	0.022	46	3.6	0.52	0.00002	0.0047	0.00025	0.0745	0.05	0.0001	0.001	47.6	0.00001	0.0005	0.001	0.00244	0.0197	0.00001	1.85	0.005	21.7	0.0482	0.0049	15.3	0.001	0.0002	0.0005	15.7	0.00034	5.93	0.005	0.576	0.005	0.00005	0.00229	0.005	0.005	0.0005
W3	2013-07-11 0:00	210	471	128	7.84	304	1	4.5	87.2	0.005	0.386	0.046	46.8	3.5	0.52	0.00002	0.0054	0.00025	0.0752	0.05	0.0001	0.001	47.9	0.00001	0.0005	0.001	0.00254	0.0222	0.00001	1.9	0.005	21.9	0.0515	0.0049	15.8	0.001	0.0002	0.0005	16.1	0.00038	5.97	0.005	0.609	0.005	0.00005	0.00235	0.005	0.005	0.0005
W3	2013-07-19 0:00	221	496	102.3	7.83	290	1	3.7	83.6	0.005	0.38	0.019	46.2	3.9	0.54	0.00002	0.0043	0.00022	0.0824	0.05	0.0001	0.001	51.1	0.00001	0.0005	0.001	0.00225	0.0149	0.00001	2.14	0.005	22.8	0.0358	0.0049	16.5	0.001	0.0002	0.0005	16.5	0.00042	5.85	0.005	0.633	0.005	0.00005	0.00254	0.005	0.005	0.0005
W3	2013-07-23 0:00	184	410		8.4	242	1	2.8			0.26	0.013	33.3	2.9	0.45	0.00002	0.0133	0.00031	0.0698	0.05	0.0001	0.001	43.3	0.00001	0.0005	0.001	0.00479	0.0461	0.00001	1.66	0.005	19.7	0.0331	0.0038	13.5	0.0016	0.0002	0.0005	12	0.00035	5.75	0.005	0.489	0.005	0.00005	0.00187	0.005	0.005	0.0005
W3	2013-07-30 14:30	209	474	119.4	7.86	288	1	5.6	98.3	0.005	0.334	0.085	41.5	2.9	0.54	0.00002	0.0108	0.00027	0.0831	0.05	0.0001	0.001	52.2	0.00001	0.0005	0.001	0.00349	0.029	0.00001	2.13	0.005	24	0.0457	0.0049	15.8	0.0011	0.0002	0.0005	14.6	0.00039	6.2	0.005	0.624	0.005	0.00005	0.0028	0.005	0.005	0.0005
W3	2013-08-08 8:50	217	494	114.5	7.74	320	1	3.2	84.1		0.34	0.012	47	3.6	0.55	0.00002	0.0055	0.00026	0.0789	0.05	0.0001	0.001	52.3	0.00001	0.0005	0.001	0.0022	0.018	0.00001	2.12	0.005	24.7	0.0468	0.0049	17	0.001	0.0002	0.0005	15.4	0.00036	6.3	0.005	0.641	0.005	0.00005	0.00249	0.005	0.005	0.0005
W3	2013-08-14 16:10	224	490		8.2	344	1	5.4		0.005	0.336	0.54	42.2	3.3	0.54		0.0082	0.00029	0.0804	0.1	0.0002	0.002	53.2		0.001		0.00372	0.022	0.00001	2.37	0.01	24.9	0.056	0.0053	17.5			0.001	1760	0.00039	5.8	0.01	0.642	0.01	0.0001	0.00259	0.01		0.001
W3	2013-08-19 14:50	221	499	47.4	7.81	270	1	4.5	89.6	0.005	0.332	0.021	45.6	3.7	0.53	0.00002	0.0107	0.00032	0.0821	0.05	0.0001	0.001	54.7	0.00001	0.0005	0.001	0.00228	0.0177	0.00001	2.15	0.005	24.7	0.0535	0.005	17.1	0.0011	0.0002	0.0005	15.9	0.00049	6.02	0.005	0.639	0.005	0.00005	0.00247	0.005	0.005	0.0005
W3	2013-08-21 8:40	221	497	16.4	7.75	282	1	3.9	88.8	0.005	0.293	0.019	47.2	3.5	0.53	0.00002	0.0033	0.00025	0.0807	0.05	0.0001	0.001	52.9	0.00001	0.0005	0.001	0.00194	0.0172	0.00001	2.18	0.005	24.7	0.0428	0.0053	17.2	0.001	0.0002	0.0005	15.7	0.0004	6.32	0.005	0.651	0.005	0.00005	0.00253	0.005	0.005	0.0005
W3	2013-08-26 9:00	211	495	138.9	7.23	308	1	2.6	91.6	0.005	0.318	0.013	43	4	0.51	0.00002	0.0036	0.00023	0.0833	0.05	0.0001	0.001	51.4	0.00001	0.0005	0.001	0.0022	0.0195	0.00001	2.23	0.005	24.8	0.0415	0.0053	17.2	0.0015	0.0002	0.0005	15.4	0.00034	6.4	0.005	0.647	0.005	0.00005	0.00249	0.005	0.005	0.0005
W3	2013-09-02 12:55	213	489	58.1	7.57	314	1	3	92.5	0.005	0.287	0.033	41.8	3.9	0.54	0.00002	0.0043	0.00027	0.0785	0.05	0.0001	0.001	48.1	0.00001	0.0005	0.001	0.00243	0.0185	0.00001	2.11	0.005	23.9	0.041	0.0048	17.1	0.001	0.0002	0.0005	14.8	0.00038	5.83	0.005	0.606	0.005	0.00005	0.00237	0.005	0.005	0.0005
W3	2013-09-12 12:15	214	491	86.4	7.81	272	1	3	83.4	0.005	0.295	0.0067	45	4.6	0.53	0.00002	0.0038	0.00027	0.0823	0.05	0.0001	0.001	55.2	0.00001	0.0005	0.001	0.00236	0.0183	0.00001	2.35	0.005	25	0.0377	0.0051	18.3	0.001	0.0002	0.0005	16.2	0.00036	6.47	0.005	0.636	0.005	0.00005	0.00243	0.005	0.005	0.0005
W3	2013-09-17 11:00	216	486	77.8	6.99	266	1	1.9	87.1	0.005	0.264	0.018	44.5	4.4	0.57	0.00002	0.0034	0.00026	0.0779	0.05	0.0001	0.001	51.3	0.00001	0.0005	0.001	0.00239	0.023	0.00001	2.16	0.005	23.7	0.0391	0.0049	16.5	0.0011	0.0002	0.0005	15.5	0.00034	6.05	0.005	0.602	0.005	0.00005	0.00227	0.005	0.005	0.0005
W3	2013-09-28 11:50	195	443	49.8	7.53	300	1	1.5	91.6	0.005	0.246	0.042	43.1	4.4	0.47	0.00002	0.0068	0.00026	0.0764	0.05	0.0001	0.001	49	0.00001	0.0005	0.001	0.00308	0.0269	0.00001	1.92	0.005	22.2	0.0357	0.0042	15.7	0.0014	0.0002	0.0005	13.3	0.00035	6.07	0.005	0.569	0.005	0.00005	0.00209	0.005	0.005	0.0005
W3	2013-10-03 15:00	209	478	100.6	7.46	350	1	1.5		0.005	0.273	0.019	43.5	4.9	0.52	0.00002	0.0045	0.00027	0.0785	0.05	0.0001	0.001	47.4	0.00001	0.0005	0.001	0.00254	0.0212	0.00001	2.15	0.005	24	0.0423	0.0049	17.3	0.0012	0.0002	0.0005	14.8	0.00034	5.75	0.005	0.621	0.005	0.00005	0.00236	0.005	0.005	0.0005
W3	2013-10-08 17:15	215	488	66.1	7.8	288	1	1.1	93.4	0.005	0.304	0.02	42.9	4.2	0.52	0.00002	0.0044	0.00025	0.0772	0.05	0.0001	0.001	52.1	0.00001	0.0005	0.001	0.00243	0.0224	0.00001	2.21	0.005	24.7	0.0436	0.0044	17	0.0011	0.0002	0.0005	15.2	0.0004	5.77	0.005	0.616	0.005	0.00005	0.00222	0.005	0.005	0.0005
W3	2013-10-16 8:30	218	487	49.1	7.63	318	1	0.2	74.5	0.005	0.31	0.011	44.3	4.7	0.54	0.00002	0.0056	0.00025	0.0769	0.05	0.0001	0.001	49.9	0.00001	0.0005	0.001	0.00235	0.023	0.00001	2.09	0.005	23.7	0.0456	0.0048	16	0.001	0.0002	0.0005	14.5	0.00035	5.71	0.005	0.623	0.005	0.00005	0.00235	0.005	0.005	0.0005
W3	2013-10-21 7:00	210	496	14.2	7.57	296	1	0	71.9	0.005	0.313	0.022	44.2	4.8	0.55	0.00002	0.0037	0.00026	0.0789	0.05	0.0001	0.001	52.7	0.00001	0.0005	0.001	0.0021	0.0202	0.00001	2.14	0.005	24.3	0.0563	0.005	17.2	0.001	0.0002	0.0005	15.4	0.00034	6.12	0.005	0.62	0.005	0.00005	0.00239	0.005	0.005	0.0005
W3	2013-10-28 14:40	211	496	88.9	7.5	286	1	0.4	86.7	0.005	0.314	0.014	46.7	4.9	0.55	0.00002	0.0063	0.00047	0.0766	0.05	0.0001	0.001	53.6	0.00001	0.0005	0.001	0.00215	0.0196	0.00001	2.15	0.005	25.7	0.035	0.0048	17.6	0.0011	0.0002	0.0005	14.8	0.00041	6.61	0.005	0.637	0.005	0.00005	0.00246	0.005	0.005	0.0005
W3	2013-11-05 7:00	222	507	58.3	7.47	286	1	0	79.6	0.005	0.333	0.011	43.9	5	0.55	0.00002	0.0032	0.00024	0.0784	0.05	0.0001	0.001	52.6	0.00001	0.0005	0.001	0.00215	0.0169	0.00001	2.09	0.005	23.4	0.0389	0.0047	16.1	0.001	0.0002	0.0005	14.9	0.00034	6.05	0.005	0.631	0.005	0.00005	0.00241	0.005	0.005	0.0005
W3	2013-11-14 9:30	223	514	203.1	6.7	288	1	0	66	0.005	0.32	0.011	47	4.8	0.57	0.00002	0.0032	0.00026	0.0836	0.05	0.0001	0.001	52.3	0.00001	0.0005	0.001	0.00188	0.016	0.00001	2.09	0.005	24.9	0.0397	0.0047	17.1	0.001	0.0002	0.0005	16.3	0.00036	6.03	0.005	0.671	0.005	0.00005	0.00258	0.005	0.005	0.0005
W3	2013-11-18 10:30	226	520	-207.4	7.41	284	1	0	72.2	0.005	0.336	0.012	49.2	5	0.55	0.00002	0.003	0.00023	0.085	0.05	0.0001	0.001	61	0.00001	0.0005	0.001	0.0018	0.0226	0.00001	2.41	0.005	28	0.0484	0.0048	20.1	0.001	0.0002	0.0005	17.4	0.0004	6.56	0.005	0.694	0.005	0.00005	0.00256	0.005	0.005	0.0005
W3	2013-11-30 16:50		521	-56.4	7.39	302	1	0	65.9	0.005	0.298	0.012	50.1	5.1	0.51	0.00002	0.003	0.00024	0.0852	0.05	0.0001	0.001	56.9	0.00001	0.0005	0.001	0.00177	0.0311	0.00001	2.41	0.005	27.8	0.0681	0.0044	19.4	0.001	0.0002	0.0005	18.4	0.00037	6.36	0.005	0.66	0.005	0.00005	0.00268	0.005	0.005	0.0005
W3	2013-12-05 16:30	230	523	215.3	7.27	302	1	0	83	0.005	0.312	0.021	46.8	5.3	0.52	0.00002	0.003	0.00023	0.0829	0.05	0.0001	0.001	54	0.00001	0.0005	0.001	0.00155	0.0315	0.00001	2.19	0.005	24.6	0.0675	0.0047	17.7	0.001	0.0002	0.0005	16.4	0.00043	6.34	0.005	0.655	0.005	0.00005	0.00249	0.005	0.005	0.0005
W3	2013-12-09 14:00	227	523	-19	7.96	282	1	0.1	70.8	0.005	0.304	0.016	49.4	5.3	0.55	0.00002	0.003	0.00023	0.085	0.05	0.0001	0.001	52.4	0.00001	0.0005	0.001	0.00173	0.0237	0.00001	2.14	0.005	25.1	0.0595	0.0045	17.6	0.001	0.0002	0.0005	16.1	0.00043	5.94	0.005	0.666	0.005	0.00005	0.00251	0.005	0.005	0.0005
W3	2013-12-16 16:00	222	519	70.1	6.56	294	1	0	83.8	0.005	0.314	0.011	48.5	5.1	0.55	0.00002	0.003	0.00023	0.0831	0.05	0.0001	0.001	54.2	0.00001	0.0005	0.001	0.00285	0.016	0.00001	2.15	0.005	26.1	0.0432	0.0048	17.9	0.001	0.0002	0.0005	16.7	0.00039	6.5	0.005	0.659	0.005	0.00005	0.00259	0.005	0.005	0.0005
W3	2013-12-23 11:00	227	515	147.4	7.61	312	1	0	90.1	0.005	0.321	0.02	48.3	5.7	0.58	0.00002	0.0063	0.00024	0.0877	0.05	0.0001	0.001	55.2	0.00001	0.0005	0.001	0.00178	0.0124	0.00001	2.39	0.005	27.5	0.0406	0.0052	18.7	0.001	0.0002	0.0005	17.8	0.00039	6.26	0.005	0.701	0.005	0.00005	0.00267	0.005	0.005	0.0005
W3	2014-01-02 14:00	218	518	189.4	7.66	306	1	0	72.3	0.005	0.324	0.016	53.6	5.5	0.53	0.00002	0.0053	0.00023	0.0815	0.05	0.0001	0.001	52.7	0.00001	0.0005	0.001	0.00229	0.0168	0.00001	2.02	0.005	24.8	0.0465	0.0048	17.3	0.001	0.0002	0.0005	15.2	0.00041	6.1	0.005	0.618	0.005	0.00005	0.00272	0.005	0.005	0.0005
W3	2014-01-07 9:40	217	515	99.1	7.69	292	1	0.1	83	0.005	0.324	0.014	49.5	5.7	0.59	0.00002	0.003	0.00022	0.0813	0.05	0.0001	0.001	52.9	0.00001	0.0005	0.001	0.00169	0.0096	0.00001	2.24	0.005	26.5	0.0353	0.0048	18.2	0.001	0.0002	0.0005	16.6	0.00043	6.14	0.005	0.669	0.005	0.00005	0.00277	0.005	0.005	0.0005
W3	2014-01-16 14:40	225	518	105.8	7.58	294	1	0	82.2	0.005	0.315	0.011	49.6	5.6	0.59	0.00002	0.003	0.00024	0.0826	0.05	0.0001	0.001	51.1	0.00001	0.0005	0.001	0.00152	0.008	0.00001	1.96	0.005	23.9	0.0305	0.0047	16.1	0.001	0.0002	0.0005	15.8	0.00039	5.92	0.005	0.638	0.005	0.00005	0.00277	0.005	0.005	0.0005
W3	2014-01-22 10:50	221	519	91.9	7.65	308	3.9	0.1	83.7	0.005	0.324	0.01	49.4	5.4	0.59	0.00002	0.003	0.00025	0.0829	0.05	0.0001	0.001	53.2	0.00001	0.0005	0.001	0.00158	0.0073	0.00001	1.98	0.005	26.3	0.0291	0.0049	17.9	0.001	0.0002	0.0005	17	0.00042	6.1	0.005	0.688	0.005	0.00005	0.0024	0.005	0.005	0.0005
W3	2014-01-27 13:45	182	442	104.5	7.63	248	1	0.1	86.3	0.005	0.281	0.014	37	10	0.36	0.00002	0.0035	0.00039	0.0645	0.05	0.0001	0.001	54.2	0.000036	0.0005	0.001	0.00593	0.0062	0.00001	3.23	0.005	16.7	0.0448	0.005	13.9	0.001	0.0002	0.0005	10.9	0.00034	5.1	0.005	0.536	0.005	0.00005	0.00176	0.005	0.005	0.0005
W3	2014-02-03 11:00	226	513	209.2	7.86	274	1	0	89.1	0.005	0.313	0.013	50.7	5.6	0.63	0.00002	0.0031	0.00025	0.0807	0.05	0.0001	0.001	53.4	0.00001	0.0005	0.001	0.00181	0.0134	0.00001	2.17	0.005	26.4	0.031	0.0049	17.6	0.001	0.0002	0.0005	17.2	0.00042	5.96	0.005	0.667	0.005	0.00005	0.00273	0.005	0.005	0.0005
W3	2014-02-13 15:30	226	533	115.1	7.56	296	1	0	77.9	0.005	0.326	0.017	49.9	5.2	0.58	0.00002	0.003	0.00025	0.0796	0.05	0.0001	0.001	48.3	0.00001	0.0005	0.001	0.00171	0.0138		2.07	0.005	26.9	0.0346	0.0051	18.4	0.001	0.0002	0.0005	15.6	0.00053	4.89	0.005	0.687	0.005	0.00005	0.00274	0.005	0.005	0.0005
W3	2014-02-18 11:00	227	526	78.9	7.71	282	1	0	69.1	0.005	0.303	0.024	50.4	5.7	0.58	0.00002	0.003	0.00022	0.0804	0.05	0.0001	0.001	49.2	0.00001	0.0005	0.001	0.00168	0.015	0.00001	2.08	0.005	26.9	0.0346	0.005	18.4	0.001	0.0002	0.0005	16.2	0.00036	5.78	0.005	0.642	0.005	0.00005	0.00291	0.005	0.005	0.0005
W3	2014-02-20 10:10	221	523	159.5	7.78	300	1	0	55.8	0.005	0.312	0.013	51.4	6.6	0.59	0.00002	0.003	0.00022	0.0794	0.05	0.0001	0.001	53.2	0.00001	0.0005	0.001	0.00166	0.0152	0.00001	2.21	0.005	27.5	0.034	0.0052	18.8	0.001	0.0002	0.0005	17.3	0.00039	5.91	0.005	0.684	0.005	0.00005	0.00291	0.005	0.005	0.0005
W3	2014-02-21 11:30			162.2	7.76			0	77.3																																								
W3	2014-02-22 8:00			307.9	8.32			0	24.3																																								
W3	2014-02-23 8:45			137.4	7.83			0	84.1																																								
W3	2014-02-24 9:30			157.6	7.83			0	75.3																																								
W3	2014-02-25 8:45			194.6	7.89			0	76.6																																								
W3	2014-02-25 14:00	204	484	127.8	7.93	244	1	0	77.4	0.005	0.261	0.03	39.5	8.1	0.46	0.00002	0.0031	0.00032	0.0751	0.05	0.0001	0.001	53.7	0.00001	0.0005	0.001	0.00395	0.0187	0.00001	2.73	0.005	21.5	0.0354	0.0053	15.4	0.001	0.0002	0.0005	13	0.00037	5.58	0.005	0.628	0.005	0.00005	0.00235	0.005	0.005	0.0005
W3	2014-02-26 8:45																																																
W3	2014-02-27 8:30			116.6	7.93			0.1	72.3																																								
W3	2014-02-28 9:30			157.8	8.12			0.2	84.4																																								
W3	2014-03-01 9:15			47.2	7.96			0.1	76.1																																								
W3	2014-03-02 9:25			59.2	7.99			0.1	81.2																																								
W3	2014-03-03 9:50			117.1	7.98			0.1	83.9																																								
W3	2014-03-04 9:35			124.3	7.99			0.1	82.4																																								
W3	2014-03-05 7:50			204.1	8.06			0	77.8																																								
W3	2014-03-06 8:25			63.7	8.17			0.1	85.3																																								
W3	2014-03-07 9:40			103.8	8.11			0	82.1																																								
W3	2014-03-08 9:35	209	482	134	8.02	282	1.8	0	72.7	0.005	0.255	0.015	40.6	8	0.43	0.00002	0.0033	0.00031	0.076	0.05	0.0001	0.001	52.4	0.00001	0.0005	0.001	0.00339	0.0177	0.00001	2.61	0.005	21	0.0492	0.0054	15.3	0.001	0.0002	0.0005	14.5	0.00037	5.53	0.005	0.621	0.005	0.00005	0.00236	0.005	0.005	0.0005
W3	2014-03-09 9:15			95	8.2			0.2	77.7																																								
W3	2014-03-10 7:30	208	479	143.6	8	274	1.4	0.1	78.7	0.005	0.255	0.02	41.1	8.2	0.43	0.00002	0.0035	0.0003	0.0747	0.05	0.0001	0.001	58.4	0.00001	0.0005	0.001	0.00344	0.0163	0.00001	2.32	0.005	21.1	0.0603	0.0053	15	0.001	0.0002	0.0005	12.7	0.00038	5.54	0.005	0.626	0.005	0.00005	0.00231	0.005	0.005	0.0005
W3	2014-03-11 9:10			78.8	8.2			0.2	87.2																																								
W3	2014-03-12 7:30			45.9	8.15			0.4	83.9																																								
W3	2014-03-13 9:10			247.3	7.32			0.4	80.1																																								
W3	2014-03-14 8:20			157.6	7.68			0.5	77																																								
W3	2014-03-15 8:50			109.3	7.82			0.5	80.8																																								
W3	2014-03-16 9:30			91.6	7.72			0.4	80.2																																								
W3	2014-03-17 9:30	203	477	80.4	7.77	282	11.1	0.6	80	0.005	0.241	0.067	40.7	8.2	0.47	0.00002	0.003	0.00029	0.0763	0.05	0.0001	0.001	53.4	0.00001	0.0005	0.001	0.00318	0.0155	0.00001	2.59	0.005	21.6	0.0434	0.0054	15.4	0.001	0.0002	0.0005	13.8	0.00036	5.72	0.005	0.625	0.005	0.00005	0.00248	0.005	0.005	0.0005
W3	2014-03-18 14:40			69.2	7.85			0.6	99.2																																								
W3	2014-03-19 10:20			62.2	7.77			0.7	121																																								
W3	2014-03-20 17:15			73.1	7.7			0.8	118.7																																								
W3	2014-03-21 9:40			106.8	7.69			0.6	96.7																																								
W3	2014-03-22 9:15			77.1	7.76			0.7	131.1																																								
W3	2014-03-23 9:30			66.3	7.8			0.6	113.2																																								
W3	2014-03-24 9:50			75.1	7.85			0.5	96.9																																								
W3	2014-03-25 8:40			71.4	7.9			0.5	124.1																																								
W3	2014-03-26 8:15				8			1.9																																									
W3	2014-03-27 8:15	201	480	72.1	7.74	286	4.3	0.5	105.1	0.005	0.226	0.022	40.4	7.9	0.47	0.00002	0.0034	0.00034	0.0797	0.05	0.0001	0.001	53.2	0.00001	0.0005	0.001	0.00345	0.0173	0.00001	2.64	0.005	22.1	0.036	0.0056	15.2	0.001	0.0002	0.0005	13.9	0.00031	5.82	0.005	0.642	0.005	0.00005	0.00257	0.005	0.005	0.0005
W3	2014-03-28 9:00			80.1	7.83			0.5	100.9																																								
W3	2014-03-29 7:45			86.8	7.8			0.5	96.9																																								
W3	2014-03-30 9:15			62.3	7.77			0.6	99.5																																								
W3	2014-03-31 7:30			69.9	7.79			0.7	89.7																																								
W3	2014-04-01 8:00			150.1	7.53			0.8	102.6																																								
W3	2014-04-02 8:30			90.9	7.72			0.6	95.6																																								
W3	2014-04-02 13:30	210	488	81.6	7.71	292	5.8	0.6	103.2	0.005	0.212	0.019	40.2	8.3	0.46	0.00002	0.0032	0.00034	0.075	0.05	0.0001	0.001	52.7	0.00001	0.0005	0.001	0.00337	0.0175	0.00001	2.56	0.005	21.4	0.0373	0.0053	15.3	0.001	0.0002	0.0005	14.6	0.00034	5.6	0.005	0.617	0.005	0.00005	0.00233	0.005	0.005	0.0005
W3	2014-04-03 7:30			90.5	7.75			0.7	104																																								
W3	2014-04-04 8:05			116.6	7.8			1.4	121.3																																								
W3	2014-04-05 8:25			137.2	7.91			1.5	83.2																																								
W3	2014-04-06 8:15			86.1	7.86			0.4	87.6																																								
W3	2014-04-07 6:45	172	437	118.2	7.91	268	14.2	1.8	92.9	0.0097	0.601	0.066	34	10	0.31	0.00002	0.0034	0.00041	0.0708	0.05	0.0001	0.001	55	0.00001	0.0005	0.001	0.0104	0.0287	0.000014	3.08	0.005	17.3	0.0082	0.0045	13.9	0.0011	0.0002	0.0005	11.9	0.00047	4.81	0.005	0.564	0.005	0.00005	0.00143	0.005	0.005	0.0005
W3	2014-04-08 7:20			104.3	7.82			1.9	91.6																																								
W3	2014-04-09 7:45			116.1	7.85			1.8	92.3																																								
W3	2014-04-10 8:50			220.5	7.9			1.7	92.7																																								
W3	2014-04-11 8:30			104	7.97			1.6	94.8																																								
W3	2014-04-12 13:05			103	8.02			2	93.6																																								
W3	2014-04-13 8:30			80.6	7.92			1.8	94.1																																								
W3	2014-04-14 8:40			91.8	7.95			1.1	87.4																																								
W3	2014-04-15 8:30			78.1	7.96			0.8	86.8																																								
W3	2014-04-16 8:30			109.6	7.97			1.9	92.2																																								
W3	2014-04-17 8:45	185	463			272	13			0.0124	0.95	0.13	37.1	11	0.31	0.00002	0.0056	0.00038	0.076	0.05	0.0001	0.001	54.5	0.000013	0.0005	0.001	0.0183	0.049	0.00001	3.37	0.005	17.5	0.0929	0.0044	14.2	0.001	0.0002	0.0005	13.1	0.00052	5.12	0.005	0.644	0.005	0.00005	0.00136	0.005	0.005	0.0005
W3	2014-04-18 9:15			101.9	8.01			2	91.4																																								
W3	2014-04-19 8:30			90.9	7.93			0.9	87																																								
W3	2014-04-20 8:40			105.7	7.98			1.7	93.5																																								
W3	2014-04-21 13:30	176	439	242.6	8.13	264	13	2	97	0.0117	0.977	0.11	34.7	11	0.32	0.00002	0.0055	0.00035	0.0724	0.05	0.0001	0.001	51.3	0.000015	0.0005	0.001	0.0216	0.0443	0.00001	3.34	0.005	16.5	0.107	0.0046	13.9	0.001	0.0002	0.0005	12	0.0006	4.85	0.005	0.631	0.005	0.00005	0.00128	0.005	0.005	0.0005
W3	2014-04-22 8:00			125.9	8.1			1.7	92.3																																								
W3	2014-04-23 9:40			133.4	7.82			0.8	86.6																																								
W3	2014-04-24 10:00			172	7.96			1.7	91.9																																								
W3	2014-04-25 9:30			114.2	7.95			1.9	94.5																																								
W3	2014-04-26 8:45			151.4	7.95			1.8	92.8																																								
W3	2014-04-27 8:45			127.1	7.86			1.8	87.8																																								
W3	2014-04-28 8:30	116	322			214	12.9			0.0138	1.66	0.13	30.6	6.9	0.29	0.00002	0.016	0.00033	0.0554	0.05	0.0001	0.001	34.5	0.000011	0.0005	0.001	0.0227	0.0714	0.00001	3.83	0.005	10.9	0.0587	0.0052	12.7	0.001	0.0002	0.0005	11	0.00077	3.47	0.005	0.65	0.005	0.00005	0.00077	0.005	0.005	0.0005
W3	2014-04-29 8:15			101.4	8.25			2	115.7																																								
W3	2014-04-30 8:00			207.7	8.22			2.3	93.9																																								
W3	2014-05-01 8:10			139.4	8.44			2.5	95.5																																								
W3	2014-05-02 8:15			224.5	8.21			2.6	95.6																																								

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species						Dissolved Elements																																	
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	N-NO_2	N-NO_3	N-NH_3	SO_4-D	Chlord	Fluord	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	μS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W3	2014-05-03 8:00			98.6	8.27			3	94.7																																								
W3	2014-05-04 8:00			116.5	8			2.9	94.5																																								
W3	2014-05-05 6:45	136	334	75.9	8.16	218	6.5	2.4	88.7	0.0062	0.743	0.041	28.9	5	0.3	0.00002	0.0209	0.00031	0.06	0.05	0.0001	0.001	36.7	0.000012	0.0005	0.001	0.014	0.0765	0.00001	2.68	0.005	13.6	0.0296	0.0041	10.9	0.0012	0.0002	0.0005	9.9	0.00044	4.27	0.005	0.554	0.005	0.00005	0.00132	0.005	0.005	0.0005
W3	2014-05-06 7:25			131.1	7.97			2.6	98.1																																								
W3	2014-05-07 7:50			81.2	8.19			4.1	90.8																																								
W3	2014-05-08 8:20			61.2	8.08			4.8	95																																								
W3	2014-05-09 9:00			79.5	8.16			5.6	95.8																																								
W3	2014-05-10 10:15			159.2	8.21			5.6	105.4																																								
W3	2014-05-11 8:35			80.9	8.15		5.9	5.7	96.3	0.034	1.8	0.088																																					
W3	2014-05-12 8:45			100.9	8.25			2.8	105.1																																								
W3	2014-05-13 9:40			82.1	8.02			4.3	95.4																																								
W3	2014-05-14 9:35	99.2	290	118.5	8.16	208	15.6	6.2	94.1	0.0314	1.75	0.15	32.9	4.9	0.26	0.00002	0.0294	0.00038	0.0518	0.05	0.0001	0.001	33.5	0.000018	0.0005	0.001	0.0254	0.152	0.00001	3.24	0.005	9.67	0.108	0.0037	9.57	0.001	0.0002	0.0005	11.7	0.00067	3.41	0.005	0.566	0.005	0.00005	0.00066	0.005	0.005	0.0005
W3	2014-05-15 8:45			103.9	8.16			6.5	95.3																																								
W3	2014-05-16 9:40				7.2			7.3																																									
W3	2014-05-17 8:30	113	317	121.8	7.22	230	9.3	6.2	91.6	0.0304	1.85	0.051																																					
W3	2014-05-18 9:05			103.7	7.34			6.4	94.1																																								
W3	2014-05-19 9:45			92.3	7.34			6.6	88.5																																								
W3	2014-05-20 8:30			121.1	7.26			5.1	95.9																																								
W3	2014-05-21 7:35			116.3	7.23			5.6	92.5																																								
W3	2014-05-22 7:30	95.4	309	96	7.4	224	14	5.6	92.3	0.0351	3.22	0.17	40.7	5.3	0.27	0.00002	0.0329	0.00056	0.0677	0.05	0.0001	0.001	36.5	0.000017	0.0005	0.001	0.0262	0.257	0.00001	3.86	0.005	10.7	0.208	0.0057	11	0.0012	0.00021	0.0005	12.8	0.00089	3.56	0.005	0.751	0.005	0.00005	0.00077	0.005	0.005	0.0005
W3	2014-05-23 7:45			84	7.5			6.4	89.8																																								
W3	2014-05-24 7:45			128.2	7.52			5.7	91.8																																								
W3	2014-05-25 8:15			120.7	7.4			6.5	92																																								
W3	2014-05-26 8:15	113	361	131.5	7.5	224	14.6	6.9	93.4	0.0287	2.69	0.18	44	5.3	0.61	0.00002	0.0219	0.00055	0.0728	0.05	0.0001	0.001	41.3	0.000019	0.0005	0.001	0.0232	0.265	0.00001	4.1	0.005	12.6	0.273	0.0053	11.6	0.0011	0.0002	0.0005	15.7	0.0009	3.76	0.005	0.843	0.005	0.00005	0.00083	0.005	0.005	0.0005
W3	2014-05-27 8:15			93.7	7.26			2.8	94.1																																								
W3	2014-05-28 14:45			122	8.2			4.6	87.3																	0.001																							
W3	2014-05-29 8:15			101.2	8.15			2.1	87.2																																								
W3	2014-05-30 8:00			114.2	8.21			2.2	84.1																																								
W3	2014-05-31 8:45			117.6	8.17			2.8	87.5																																								
W3	2014-06-04 13:25	213	491	75.4	7.27	300	1	3.8	81	0.005	0.272	0.025	44.3	5.1	0.55	0.00002	0.0235	0.00027	0.0744	0.05	0.0001	0.001	50.3	0.000011	0.0005	0.001	0.00474	0.0414	0.00001	2.2	0.005	24.1	0.034	0.005	16.5	0.001	0.0002	0.0005	14.5	0.00036	5.74	0.005	0.683	0.005	0.00005	0.00256	0.005	0.005	0.00082
W3	2014-06-05 9:45																																																
W3	2014-06-06 9:30			103.1	7.98			2.2	92.5																																								
W3	2014-06-08 10:20																									0.001																							
W3	2014-06-11 10:45			138.8	8.22			2.8	85.5																	0.001																							
W3	2014-06-11 23:45	219	502	138.8	8.22	288	1	2.8	85.5	0.005	0.253	0.022	44.2	5.1	0.57	0.00002	0.0042	0.00026	0.0746	0.05	0.0001	0.001	50.1	0.00001	0.0005	0.001	0.00337	0.0178	0.00001	2.28	0.005	25.3	0.0312	0.005	17.5	0.001	0.0002	0.0005	15.4	0.00043	5.6	0.005	0.708	0.005	0.00005	0.0024	0.005	0.005	0.0005
W3	2014-06-17 9:45	220	504	66.7	7.91	302	1	2.8	86.3	0.005	0.243	0.1	42.8	5.2	0.57	0.00002	0.0052	0.00025	0.0744	0.05	0.0001	0.001	49.2	0.00001	0.0005	0.001	0.00308	0.0113	0.00001	2.16	0.005	25.6	0.0328	0.0051	17.7	0.001	0.0002	0.0005	15.4	0.00037	5.5	0.005	0.666	0.005	0.00005	0.00268	0.005	0.005	0.0005
W3	2014-06-24 6:45	224	504	75.1	8.25	298	1	3	88.3	0.005	0.205	0.019	45	5	0.55	0.00002	0.0042	0.00029	0.0782	0.05	0.0001	0.001	53	0.00001	0.0005	0.001	0.00251	0.0115	0.00001	2.21	0.005	25.5	0.0362	0.0049	16.8	0.001	0.0002	0.0005	15.3	0.00037	5.54	0.005	0.699	0.005	0.00005	0.00264	0.005	0.005	0.0005
W3	2014-06-30 8:45	218	512	81.7	8.21	298	1	3.1	78.4	0.005	0.202	0.021	42.8	5.2	0.58	0.00002	0.0036	0.00022	0.0758	0.05	0.0001	0.001	51	0.00001	0.0005	0.001	0.00273	0.0127	0.00001	2.25	0.005	26.2	0.0384	0.0051	17.6	0.001	0.0002	0.0005	15.4	0.00034	5.22	0.005	0.704	0.005	0.00005	0.00258	0.005	0.005	0.0005
W3	2014-07-09 11:20	221	507	72.2	8.3	278	1	3.6	89.1	0.005	0.201	0.021	47.6	5	0.58	0.00002	0.0041	0.00026	0.0818	0.05	0.0001	0.001	51.5	0.00001	0.0005	0.001	0.00262	0.0155	0.00001	2.3	0.005	26.3	0.0412	0.005	16.9	0.001	0.0002	0.0005	16.1	0.00038	5.38	0.005	0.692	0.005	0.00005	0.00251	0.005	0.005	0.0005
W3	2014-07-10 13:25			8.23	8.23			6.3	88.7																																								
W3	2014-07-15 14:50	228	515	102.5	7.97	296	1	4.2	83.4	0.005	0.203	0.034	46.2	4.6	0.56	0.00002	0.0101	0.00024	0.0776	0.05	0.0001	0.001	53.9	0.00001	0.0005	0.001	0.00248	0.0209	0.00001	2.15	0.005	27	0.0399	0.0052	17.7	0.001	0.0002	0.0005	16.2	0.0004	6.32	0.005	0.671	0.005	0.00005	0.00267	0.005	0.005	0.0005
W3	2014-07-21 11:05	226	509	196.7	7.52	300	1	3.4	88.8	0.005	0.18	0.015	42.9	5	0.56	0.00002	0.0073	0.00033	0.0802	0.05	0.0001	0.001	52.5	0.00001	0.0005	0.001	0.00312	0.0136	0.00001	2.2	0.005	25.3	0.0449	0.0047	16.7	0.001	0.0002	0.0005	12.1	0.00035	5.93	0.005	0.679	0.005	0.00005	0.00253	0.005	0.005	0.0005
W3	2014-07-23 8:05			103.9	7.73			2.2	86.1																																								
W3	2014-07-31 9:50	226	516	57.3	7.91	294	1	2.1	88.6	0.005	0.2	0.0087	45.7	4.8	0.57	0.00002	0.0076	0.0003	0.0777	0.05	0.0001	0.001	51.8	0.00001	0.0005	0.001	0.00305	0.0189	0.00001	2.2	0.005	26.5	0.0569	0.0051	17.4	0.0011	0.0002	0.0005	17.9	0.00043	5.73	0.005	0.686	0.005	0.00005	0.00253	0.005	0.005	0.0005
W3	2014-08-04 7:30	229	520	73.2	7.92	276	1	2.4	85.1	0.005	0.208	0.0099	46.8	4.5	0.56	0.00002	0.0086	0.00032	0.0842	0.05	0.0001	0.001	50.6	0.00001	0.0005	0.001	0.0028	0.0248	0.00001	2.31	0.005	28	0.0482	0.0055	18.2	0.0011	0.0002	0.0005	19.7	0.00039	5.87	0.005	0.758	0.005	0.00005	0.00262	0.005	0.005	0.0005
W3	2014-08-14 9:20	229	526	74.8	7.92	306	1.1	1.6	85	0.005	0.196	0.018	49.4	4.9	0.55	0.00002	0.0045	0.00026	0.079	0.05	0.0001	0.001	54.7	0.00001	0.0005	0.001	0.00245	0.0141	0.00001	2.02	0.005	26.1	0.0392	0.0055	17	0.001	0.0002	0.0005	15.7	0.0004	6.01	0.005	0.742	0.005	0.00005	0.00248	0.005	0.005	0.0005
W3	2014-08-18 9:00	230	522	112.2	7.77	302	1	2.1	87.5	0.005	0.178	0.014	49.6	4.6	0.52	0.000037	0.0075	0.00027	0.0826	0.05	0.0001	0.001	49.9	0.00001	0.0005	0.001	0.00245	0.0221	0.00001	2.25	0.005	26.6	0.0342	0.005	17.1	0.001	0.0002	0.0005	17.2	0.00039	5.02	0.005	0.707	0.005	0.00005	0.00263	0.005	0.005	0.0005
W3	2014-08-19 9:20			96.5	7.93			2.4	86																	0.001																							
W3	2014-08-26 11:10	221	525	139.2	7.93	300	1	2.3	91	0.005	0.186	0.053	52.5	4.7	0.56	0.00002	0.0041	0.00027	0.0804	0.05	0.0001	0.001	52.6	0.00001	0.0005	0.001	0.00228	0.018	0.00001	2.16	0.005	26.9	0.0378	0.0052	17.5	0.001	0.0002	0.0005	17.6	0.00035	5.34	0.005	0.724	0.005	0.00005	0.00267	0.005	0.005	0.0005
W3	2014-09-04 10:45	228	526	152.4	7.78	306	283	0.2	100.4	0.005	0.194	0.014	52.4	4.4	0.54	0.00002	0.003	0.00025	0.0829	0.05	0.0001	0.001	54.7	0.00001	0.0005	0.001	0.00223	0.0176	0.00001	2.18	0.005	26.9	0.0409	0.005	17.4	0.001	0.0002	0.0005	18.3	0.00037	5.88	0.005	0.713	0.005	0.00005	0.0026	0.005	0.005	0.0005
W3	2014-09-05 10:45																																																
W3	2014-09-12 9:20	230	534	136.1	7.87	352	1.5	0.7	78.9	0.005	0.209	0.025	54.4	4.8	0.54	0.00002	0.0032	0.00023	0.0832	0.05	0.0001	0.001	57.3	0.00001	0.0005	0.001	0.00243	0.0178	0.00001	2.19	0.005	26.4	0.0424	0.005	17	0.001	0.0002	0.0005	18.1	0.00041	6.22	0.005	0.703	0.005	0.00005	0.0026	0.005	0.005	0.0005
W3	2014-09-15 9:45	229	540	120.6	7.82	344	1	0.7	76.2	0.005	0.201	0.02	56	4.8	0.57	0.000024	0.0059	0.00024	0.0793	0.05	0.0001	0.001	54.9	0.00001	0.0005	0.001	0.00239	0.0166	0.00001	2.41	0.005	27.2	0.0412	0.0051	18.7	0.001	0.0002	0.0005	17.1	0.00031	6.16	0.005	0.727	0.005	0.00005	0.00237	0.005	0.005	0.0005
W3	2014-09-22 10:55	216	522	126.8	7.68	312	4.1	1.1	80.8	0.005	0.163	0.019	57	4.7	0.58	0.00002	0.003	0.00024	0.0848	0.05	0.0001	0.001	53.1	0.00001	0.0005	0.001	0.00222	0.0127	0.00001	2.28	0.005	25.5	0.065	0.0049	16.9	0.001	0.0002	0.0005	18.9	0.0003	5.31	0.005	0.699	0.005	0.00005	0.00254	0.005	0.005	0.0005
W3	2014-10-05 12:10	226	533	15.2	7.89	302	13.4	0	80.3	0.005	0.245	0.016	60	4.8	0.54	0.00002	0.0043	0.00025	0.0773	0.05	0.0001	0.001	56.9	0.00001	0.0005	0.001	0.00226	0.0113	0.00001	2.24	0.005	27.1	0.0367	0.0047	17.7	0.0011	0.0002	0.0005	21	0.00033	6.19	0.005	0.689	0.005	0.00005	0.00252	0.005	0.005	0.0005
W3	2014-10-08 14:10	215	520	222.4	7.72	324	1	-1.1	82.7	0.005	0.255	0.025	60.4	4.9	0.52	0.00002	0.003	0.00023	0.0779	0.05	0.0001	0.001	53.2	0.00001	0.0005	0.001	0.00215	0.0099	0.00001	2.04	0.005	25.6	0.0391	0.0047	16.3	0.001	0.0002	0.0005	20.8	0.00033	5.44	0.005	0.683	0.005	0.00005	0.00243	0.005	0.005	0.0005
W3	2014-10-13 13:15	217	534	115.1	7.86	314	1	-0.2	80.8	0.005	0.255	0.011	63.5	5.4	0.52	0.00002	0.0031	0.00024	0.0801	0.05	0.0001	0.001	58.2	0.00001	0.0005	0.001	0.00213	0.0097	0.00001	2.45	0.005	26.6	0.0383	0.0046	17.8	0.0012	0.0002	0.0005	20.7	0.0003	6.38	0.005	0.703	0.005	0.00005	0.00272	0.005	0.005	0.0005
W3	2014-10-20 10:40	228	531	231.3	7.69	322	1	-0.6	80.3	0.005	0.279	0.022	81.8	4.7	0.54	0.00002	0.0131	0.00027	0.081	0.05	0.0001	0.001	59.8	0.00001	0.0005	0.001	0.00226	0.0298	0.00001	2.35	0.005	27.8	0.0442	0.0049	18.3	0.001	0.0002	0.0005	22.4	0.00035	6.39	0.005	0.736	0.005	0.00005	0.00253	0.005	0.005	0.0005
W3	2014-10-27 10:20	215	539	111.1	7.87	316	1	-1.5	84.7	0.005	0.279	0.019	64.4	5.9	0.56	0.00002	0.0053	0.00025	0.0814	0.05	0.0001	0.001	61.5	0.00001	0.0005	0.001	0.00237	0.0154	0.00001	2.33	0.005	28.4	0.0394	0.0049	17.8	0.001	0.0002	0.0005	23.4	0.00033	6.13	0.005	0.755	0.005	0.00005	0.00257	0.005	0.005	0.0005
W3	2014-10-27 10:20	220	539	111.1	7.87	304	1	-1.5	84.7	0.005	0.283	0.043	65.2	4.9	0.56	0.00002	0.003	0.00023	0.0809	0.05	0.0001	0.001	56.6	0.00001	0.0005	0.001	0.0021	0.0103	0.00001	2.16	0.005	27.8	0.0415	0.0048	17.9	0.001	0.0002	0.0005	20.2	0.00038	5.9	0.005	0.707	0.005	0.00005	0.00259	0.005	0.005	0.0005
W3	2014-11-05 14:30	223	547	173.4	7.44	324	1	-1.5	85	0.005	0.316	0.018	55.8	5.7	0.55	0.00002	0.0037	0.00023	0.0816	0.05	0.0001	0.001	56.5	0.00001	0.0005	0.001	0.00172	0.0117	0.00001	2.22	0.005	28.2	0.0446	0.0047	18.3	0.001	0.0002	0.0005	23.5	0.00032	5.85	0.005	0.71	0.005	0.00005	0.00265	0.005	0.005	0.0005
W3	2014-11-10 9:40	222	551	121.3	7.61	312	1	-1.5	88.7	0.005	0.332	0.0099	67.6	6.7	0.58	0.00002	0.0045	0.00023	0.0834	0.05	0.0001	0.001	61.2	0.00001	0.0005	0.001	0.00186	0.0112	0.00001	2.27	0.005	28	0.0456	0.0051	17.9	0.001	0.0002	0.0005	22.1	0.00034	6.25	0.005	0.736	0.005	0.00005	0.0027	0.005	0.005	0.0005
W3	2014-11-17 13:40	204	545	197.9	7.33	338	2.3	-1.8	73.8	0.005	1.24	0.014	73.8	6.1	0.47	0.00002	0.0052	0.00027	0.0838	0.05	0.0001	0.001	62.4	0.000011	0.0005	0.001	0.00347	0.0133	0.00001	3.17	0.005	23.1	0.0509	0.0053	17.9	0.0011	0.0002	0.0005	25.9	0.00043	5.44	0.005	0.742	0.005	0.00005	0.00232	0.005	0.005	0.0005
W3	2014-11-24 14:05	197	532	225.9	7.8	334	1.2	0.6	91.6	0.005	1.16	0.031	77.4	6.4	0.14	0.00002	0.0082	0.00025	0.0813	0.05	0.0001	0.001	58.4	0.00001	0.0005	0.001	0.00334	0.0173	0.00001	3.16	0.005	23.5	0.0267	0.0054	17.4	0.001	0.0002	0.0005	27.2	0.00043	5.45	0.005	0.7	0.005	0.00005	0.0022	0.005	0.005	0.0005
W3	2014-12-02 9:10			188	7.81			1.4	82.9																																								
W3	2014-12-03 8:10	189	527	177.2	8.14	302	1.5	0.6	98.5	0.005	1.29	0.019	77.3	5.9	0.44	0.00002	0.006	0.00026	0.0795	0.05	0.0001	0.001	58.2	0.00001	0.0005	0.001	0.00322	0.0145	0.00001	3.1	0.005	21.8	0.0318	0.005	17	0.001	0.0002	0.0005	26.5	0.00037	4.82	0.005	0.709	0.005	0.00005	0.00214	0.005	0.005	0.0005
W3	2014-12-04 7:30			150.1	7.39			-1.2	89.7																																								
W3	2014-12-05 8:00			127.1	7.66			-1.3	84.4																																								
W3	2014-12-06 8:45			194.1	7.76			-1.2	88.4																																								
W3	2014-12-07 8:05			-26.2	7.71			-1.2	91.4																																								
W3	2014-12-08 8:15			166.1	7.72			-0.8	91.5																																								
W3	2014-12-09 7:00	152	496	42.6	7.98	308	6.4	1.1	96.8	0.0207	2.89	0.09	89.2	7.5	0.44	0.00002	0.0055	0.00043	0.0752	0.056	0.0001	0.001	56.7	0.00001	0.0005	0.001	0.00689	0.0116	0.00001	6.45	0.005	17.9	0.0217	0.0083	18.7	0.001	0.0002	0.0005	32.7	0.00095	2.13	0.005	1.28	0.005	0.00005	0.00152	0.005	0.005	0.0005
W3	2014-12-10 7:25			72.2	7.79			1.3	91.7																																								
W3	2014-12-11 8:15			126.5	7.66			1.3	97.3																																								
W3	2014-12-12 8:20			248.3	7.93			1.3	96.7																																								
W3	2014-12-13 8:40			131.2	7.83			1.2	97.7																																								
W3	2014-12-14 8:00			211.7	7.85			1.2	113																																								
W3	2014-12-15 8:50	143	500	211	7.82	312	1.5	1.3	87.2	0.0209	2.99	0.074	88.9	7.5	0.43	0.00002	0.003	0.00037	0.0703	0.05	0.0001	0.001	55.7	0.00001	0.0005	0.001	0.0072	0.0103	0.00001	6.71	0.005	17.1	0.0098	0.009	17.8	0.001	0.0002	0.0005	30.4	0.00093	1.79	0.005	1.32	0.005	0.00005	0.00148	0.005	0.005	0.0005
W3	2014-12-16 9:30	142	501	131.4	7.83	308	1.7	1.2	83	0.019	3.16	0.068	92.7	7.4	0.43	0.00002	0.003	0.00037	0.0725	0.05	0.0001	0.001	57.7	0.00001	0.0005	0.001	0.00699	0.0214	0.00001	6.97	0.005	18.1	0.0117	0.0087	19.5	0.001	0.0002	0.0005	33.1	0.00089	2.05	0.005	1.32	0.005	0.00005	0.00148	0.005	0.008	0.0005
W3	2014-12-19 9:00	197	531	168.8	7.98	316	1.3	-1.7	91.6	0.005	1.19	0.013	74.9	6.6	0.47	0.00002	0.0041	0.00027	0.08	0.05	0.0001	0.001	61.3	0.00001	0.0005	0.001	0.00324	0.0104	0.00001	3.41	0.005	22.9	0.0305	0.0052	17.7	0.001	0.0002	0.0005	28.1	0.00037	5.38	0.005	0.864	0.005	0.00005	0.00224	0.005	0.005	0.0005
W3	2014-12-20 8:50																																																
W3	2014-12-20 8:50	184	527	220.4	7.78	318	2.3	-1.9	100.6	0.005	1.21	0.016	78.1	6.1	0.47	0.00002	0.003	0.00027	0.0795	0.05	0.0001	0.001	62.5	0.00001	0.0005	0.001	0.00322	0.01	0.00001	3.4	0.005	23.8	0.0295	0.0051	17.9	0.001	0.0002	0.0005	28.8	0.00039	5.44	0.005	0.829	0.005	0.00005	0.00225	0.005	0.005	0.0005
W3	2014-12-21 9:25			112.9	7.99			-1.6	94.3																																								
W3	2014-12-22 14:05	212	539	143.5	7.86	302	1.1	-1.9	79.7	0.005	0.647	0.017	71.8	5.3	0.49	0.00002	0.003	0.00025	0.093	0.05	0.0001	0.001	61.5	0.00001	0.0005	0.001	0.00227	0.0078	0.00001	2.9	0.005	26.2	0.0328	0.0054	17.9	0.001	0.0002	0.0005	25.1	0.00039	6.4	0.005	0.882	0.005	0.00005	0.00282	0.005	0.005	0.0005
W3	2015-01-02 11:05	222	560	77.9	7.68	312	3.6	-2	76.9	0.005	0.407	0.029	76.4	4.8	0.54	0.00002	0.0078	0.00025	0.0849	0.05	0.0001	0.001	56.7	0.00001	0.0005	0.001	0.00224	0.0226	0.00001	2.15	0.005	25.7	0.0555	0.0051	16.8	0.001	0.0002	0.0005	22.8	0.00038	6.51	0.005	0.752	0.005	0.00005	0.00275	0.005	0.005	0.0005
W3	2015-01-06 9:10	228	580	86.7	7.82	334		-2.1	49.1	0.005	0.524	0.034	73.1	5.3	0.56	0.00002	0.003	0.00023	0.0858	0.05	0.0001	0.001	62.9	0.00001	0.0005	0.001	0.002	0.0087	0.00001	2.67	0.005	28.8	0.0404	0.0051	18.7	0.001	0.0002	0.0005	27.6	0.00042	6.8	0.005	0.768	0.005	0.00005	0.0028	0.005	0.005	0.0005
W3	2015-01-13 8:30	210	552	59.8	7.46	330	1.5	-2.2	80.3	0.005	0.499	0.02	73	5	0.55	0.00002	0.0032	0.00026	0.0928	0.05	0.0001	0.001	54.9	0.00001	0.0005	0.001	0.00191	0.01	0.00001	2.38	0.005	27.3	0.0338	0.0054	18.1	0.001	0.0002	0.0005	23.4	0.00035	5.92	0.005	0.83	0.005	0.00005	0.00305	0.005	0.005	0.0005
W3	2015-01-21 13:15	220	551	102.1	8.01	320	1.7	-0.1	95.8	0.005	0.499	0.017	65.6	5	0.54	0.00002	0.003	0.00023	0.0847	0.05	0.0001	0.001	57	0.00001	0.0005	0.001	0.00162	0.0075	0.00001	2.32	0.005	28.9	0.0313	0.005	18.5	0.001	0.0002	0.0005	25.9	0.00039	6.07	0.005	0.75	0.005	0.00005	0.00251	0.005	0.005	0.0005
W3	2015-01-29 8:35	213	551	119.9	8.2	320	1.2	-1.2	77.2	0.005	0.506	0.016	71.7	5.3	0.59	0.00002	0.0063	0.00022	0.0856	0.05	0.0001	0.001	54.1	0.00001	0.0005	0.001	0.00179	0.0088	0.00001	2.34	0.005	28.3	0.0395	0.005	17.9	0.001	0.0002	0.0005	23	0.00035	5.83	0.005	0.735	0.005	0.00005	0.00262	0.005	0.005	0.0005
W3	2015-02-03 10:30	223	565	123.2	7.31	352	2.9	-2.4	69.1	0.005	0.528	0.046	70.1	5.2	0.53	0.00002	0.003	0.00022	0.0856	0.05	0.0001	0.001	58.1	0.00001	0.0005	0.001	0.0019	0.0128	0.00001	2.28	0.005	27.1	0.0546	0.0049	18.8	0.001	0.0002	0.0005	24.9	0.00042	6.13	0.005	0.762	0.005	0.00005	0.00275	0.005	0.005	0.0005
W3	2015-02-11 14:10	220	564	127.4	7.72	336	1	2.6	41.1	0.005	0.201	0.043	69.4	5.2	0.5	0.00002	0.003	0.00024	0.0958	0.05	0.0001	0.001	58.5	0.000012	0.0005	0.001	0.00324	0.0286	0.00001	2.37	0.005	27.4	0.292	0.0041	18	0.001	0.0002	0.0005	24.7	0.00021	6.22	0.005	0.716	0.005	0.00005	0.00255	0.005	0.005	0.0005
W3	2015-02-18 14:00	215	567	102.5	7.85	340	1	3.1	24.7	0.005	0.135	0.061	72.7	5.8	0.5	0.00002	0.003	0.00023	0.095	0.05	0.0001	0.001	58.9	0.000012	0.0005	0.001	0.00177	0.036	0.00001	2.22	0.005	27.5	0.351	0.0037	16.7	0.0013	0.0002	0.0005	24.5	0.00016	6.05	0.005	0.715	0.005	0.00005	0.00241	0.005	0.005	0.0005
W3	2015-02-26 8:25	218	551	124.6	7.85	304	1	0.4	37.6	0.0052	0.084	0.068	68.7	5.5	0.43	0.00002	0.0038	0.00024	0.104	0.05	0.0001	0.001	55.2	0.000013	0.0005	0.001	0.00204	0.0389	0.00001	2.2	0.005	26.8	0.398	0.0036	17.4	0.0022	0.0002	0.0005	21.5	0.0001	5.73	0.005	0.754	0.005	0.00005	0.00225	0.005	0.005	0.0005
W3	2015-03-03 10:00	216	546	109.6	7.59	286	1	0	20	0.005	0.096	0.066	67.4	5.5	0.46	0.00002	0.0173	0.00022	0.0961	0.05	0.0001	0.001	56.3	0.000016	0.0005	0.001	0.00582	0.0662	0.00001	2.02	0.005	27.3	0.392	0.0033	17.1	0.0012	0.0002	0.0005	22.8	0.0001	6.01	0.005	0.664	0.005	0.00005	0.00198	0.005	0.0056	0.0005
W3	2015-03-09 7:00	222	564	177.6	7.68	326	1	0	70.6	0.005	0.542	0.011	73.7	5.1	0.55	0.00002	0.0032	0.0002	0.0806	0.05	0.0001	0.001	56.6	0.00001	0.0005	0.001	0.002	0.0074	0.00001	2.29	0.005	27.9	0.0156	0.0047	17.9	0.001	0.0002	0.0005	24.1	0.00041	6.05	0.005	0.735	0.005	0.00005	0.00271	0.005	0.005	0.0005
W3	2015-03-16 6:30	216	548	123.9	7.14	352	1	0.3	31.5	0.005	0.115	0.058	66.9	5.2	0.53	0.00002	0.003	0.00021	0.0971	0.05	0.0001	0.001	59	0.000011	0.0005	0.001	0.00168	0.0439	0.00001	2.08	0.005	25.2	0.414	0.0032	16.4	0.0011	0.0002	0.0005	22.7	0.0001	6.24	0.005	0.678	0.005	0.00005	0.0019	0.005	0.006	0.0005
W3	2015-03-25 14:30	201	526	63.1	7.4	304	1	1	26.2	0.005	0.143	0.081	64.4	5.7	0.46	0.00002	0.003	0.0002	0.0968	0.05	0.0001	0.001	56.5	0.00001	0.0005	0.001	0.00148	0.0429	0.00001	1.94	0.005	25.6	0.391	0.0035	16	0.0014	0.0002	0.0005	23	0.0001	6.05	0.005	0.678	0.005	0.00005	0.00198	0.005	0.005	0.0005
W3	2015-03-30 10:30	209	527	162.7	7.4	302	1	0.3	25.9	0.005	0.145	0.056	63.6	5.4	0.43	0.00002	0.0049	0.00022	0.0929	0.05	0.0001	0.001	56.7	0.000013	0.0005	0.001	0.00213	0.0412	0.00001	1.93	0.005	24.7	0.378	0.0034	15.6	0.0015	0.0002	0.0005	22.1	0.00011	5.93	0.005	0.638	0.005	0.00005	0.00184	0.005	0.005	0.0005
W3	2015-04-04 7:15			75.7	7.6			0	69.7																																								
W3	2015-04-05 7:20			110	7.93			1.8	119.8																																								
W3	2015-04-06 7:15	151	497	122	7.84	292	2.8	2.4	93.6	0.0157	2.76	0.076	79.7	7.6	0.39	0.00002	0.0041	0.00034	0.0708	0.056	0.0001	0.001	53.5	0.00001	0.0005	0.001	0.00687	0.0105	0.00001	5.96	0.005	16.3	0.0585	0.0079	18	0.001	0.0002	0.0005	25.2	0.00087	2.32	0.005	1.23	0.005	0.00005	0.00149	0.005	0.005	0.0005
W3	2015-04-07 7:00			169.8	7.89			2.5	89.7																																								
W3	2015-04-08 7:00			152.5	7.89			2.7	88.2																																								
W3	2015-04-09 7:40			161.5	7.88			2.6	88.6																																								
W3	2015-04-10 7:45			167.4	7.79			2.5	94.2																																								
W3	2015-04-11 7:40			114.6	7.91			0.6	81.3																																								
W3	2015-04-12 7:45																																																
W3	2015-04-13 7:50																																																
W3	2015-04-14 7:45			172.6	7.79			2.5	90.8																																								
W3	2015-04-14 16:00	154	501	205.3	7.83	272	4.3	2.8	81.7	0.0133	2.93	0.064	82.9	9.1	0.38	0.00002	0.003	0.00034	0.0688	0.051	0.0001	0.001	52.8	0.00001	0.0005	0.001	0.00728	0.0097	0.00001	5.91	0.005	16.8	0.0109	0.0076	18.9	0.001	0.0002	0.0005	25.7	0.00108	2.47	0.005	1.22	0.005	0.00005	0.00134	0.005	0.005	0.0005
W3	2015-04-15 7:45			225.8	7.82			2.7	89.9																																								
W3	2015-04-16 7:10			171.8	7.72			2.5	97.3																																								
W3	2015-04-17 7:20			165.1	7.96			2.6	119.3																																								
W3	2015-04-18 7:35			141.7	7.88			1.9	91.4																																								
W3	2015-04-19 7:35			170.7	7.84			2.6	108.1																																								

Attachment 3: Sitewide Database

		General Parameters								Anions & Nitrogen Species						Dissolved Elements																																	
Station	Date / Time	Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N\text{-}NO_2$	$N\text{-}NO_3$	$N\text{-}NH_3$	SO_4-D	Chlord	Fluord	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W3	2015-04-20 8:10			184.3	7.95			2.4	88.2																																								
W3	2015-04-21 7:30	114	391	203.8	7.86	192	9.4	2.6	97.3	0.0474	2.55	0.059	58.1	8	0.27	0.00002	0.0053	0.00026	0.055	0.054	0.0001	0.001	36.5	0.00001	0.0005	0.001	0.0103	0.017	0.00001	5.09	0.005	12.4	0.0223	0.0066	19.7	0.001	0.0002	0.0005	20.1	0.00074	2.16	0.005	0.833	0.005	0.00005	0.001	0.005	0.005	0.0005
W3	2015-04-22 6:55			165.1	7.84			2.5	101.6																																								
W3	2015-04-23 7:15			185.7	7.81			2.6	99.8																																								
W3	2015-04-24 7:30			179.9	7.85			2.7	97.6																																								
W3	2015-04-25 7:30			113.8	7.91			2.5	94.1																																								
W3	2015-04-26 7:25			145.2	7.91			2.7	91.2																																								
W3	2015-04-27 7:40	106	355	132.4	7.91	240	4.2	2.7	93.3	0.0345	2.59	0.066	49.6	6.9	0.28	0.00002	0.0082	0.00027	0.052	0.05	0.0001	0.001	36	0.00001	0.0005	0.001	0.0151	0.0434	0.00001	4.21	0.005	11.8	0.0347	0.0051	15.5	0.001	0.0002	0.0005	18.9	0.00065	2.62	0.005	0.747	0.005	0.00005	0.00091	0.005	0.005	0.0005
W3	2015-04-28 7:20			142.8	7.87			2.8	82.6																																								
W3	2015-04-29 7:20			153.8	7.95			2.7	94.2																																								
W3	2015-04-30 7:15			177.4	7.9			2.7	93.1																																								
W3	2015-05-01 7:20			183.2	7.89			3	93.3																																								
W3	2015-05-02 7:20				7.87			3.3	94																																								
W3	2015-05-03 7:40			-66.5	6.94			3.1	97.6																																								
W3	2015-05-04 7:40			103.4	7.85			3.7	97.6																																								
W3	2015-05-05 7:20			73.4	7.63			4	94.7																																								
W3	2015-05-06 6:15			100.3	7.65			1.5	90.7																																								
W3	2015-05-07 7:25			90.1	7.67			2.2	90.7																																								
W3	2015-05-08 7:50			149.7	7.67			2.5	92.7																																								
W3	2015-05-09 7:45			111.4	7.44			2.6	96.3																																								
W3	2015-05-10 7:55	184	558	53.6	7.54	334	1	2.6	101.3	0.0086	2.79	0.1	82.3	11	0.41	0.00002	0.0109	0.00032	0.0772	0.05	0.0001	0.001	62.7	0.00001	0.0005	0.001	0.00865	0.0345	0.00001	5.05	0.005	20.6	0.0241	0.0057	19.1	0.001	0.0002	0.0005	26.2	0.00106	4.27	0.005	1.09	0.005	0.00005	0.00181	0.005	0.005	0.0005
W3	2015-05-11 7:40			92.6	7.45			8.5	99.7																																								
W3	2015-05-12 7:40			91.7	7.97			8.6	91.8																																								
W3	2015-05-13 7:50			81.4	7.64			9.3	91.9																																								
W3	2015-05-14 7:15	98.6	303	96.9	7.76	200	10.9	9.9	85.2	0.0408	1.49	0.049	36.2	5.9	0.23	0.00002	0.0116	0.00032	0.0484	0.05	0.0001	0.001	35.3	0.00001	0.0005	0.001	0.0177	0.14	0.00001	3.37	0.005	10.5	0.0523	0.0036	13.5	0.001	0.0002	0.0005	11	0.00066	2.75	0.005	0.549	0.005	0.00005	0.00075	0.005	0.005	0.0005
W3	2015-05-15 6:50			123.4	7.61			10	85.1																																								
W3	2015-05-15 6:50	99.8	307	125.4	7.61	188	12.3	10	85.1	0.0427	1.49	0.026	35.4	6	0.23	0.00002	0.0103	0.00032	0.0469	0.05	0.0001	0.001	32.8	0.00001	0.0005	0.001	0.0169	0.131	0.00001	3.09	0.005	10.7	0.0582	0.0035	13.9	0.001	0.0002	0.0005	11	0.00063	2.49	0.005	0.521	0.005	0.00005	0.00072	0.005	0.005	0.0005
W3	2015-05-16 7:30			187.6	7.7			10.6	90.7																																								
W3	2015-05-17 7:25			141.5	7.72			9	90.6																																								
W3	2015-05-18 7:25			85.4	7.92			10.1	91.7																																								
W3	2015-05-19 8:20			99	7.98			10.9	87.7																																								
W3	2015-05-20 7:15	123	349	76.1	7.81	240	5.4	11.1	78.3	0.042	1.62	0.059	38.7	6.5	0.27	0.00002	0.0086	0.00038	0.0512	0.05	0.0001	0.001	38.5	0.000012	0.0005	0.001	0.0152	0.173	0.00001	3.39	0.005	11.6	0.112	0.0037	13.9	0.001	0.0002	0.0005	11.4	0.00057	2.16	0.005	0.587	0.005	0.00005	0.00079	0.005	0.005	0.0005
W3	2015-05-21 7:25			80.2	7.64			11.5	84.6																																								
W3	2015-05-22 7:00			145.4	7.67			3.1	89.6																																								
W3	2015-05-23 7:10			105.2	7.73			3.5	96.3																																								
W3	2015-05-24 7:10			141.3	7.61			3.5	95.5																																								
W3	2015-05-25 7:10			100.1	7.69			3.5	93.2																																								
W3	2015-05-26 7:00			132.7	7.75			3.7	94.2																																								
W3	2015-05-27 7:15			139.8	7.64			4	91.3																																								
W3	2015-05-28 7:05			125.8	7.66			3.9	94.62																																								
W3	2015-05-29 7:15	177	524	114	7.65	314	1.4	4.1	91.3	0.021	2.19	0.088	68.8	9.4	0.38	0.00002	0.0203	0.00031	0.0733	0.05	0.0001	0.001	50.4	0.00001	0.0005	0.001	0.00982	0.0681	0.00001	4.39	0.005	18.7	0.0913	0.0056	17.3	0.001	0.0002	0.0005	23.1	0.00088	3	0.005	0.96	0.005	0.00005	0.00161	0.005	0.005	0.0005
W3	2015-05-30 7:15			148.5	7.66			3.1	88.1																																								
W3	2015-05-31 14:10	174	509	165.3	7.78	300	2	4.5	88.2	0.0219	2.14	0.068	74.8	10	0.36	0.00002	0.0073	0.00034	0.0719	0.05	0.0001	0.001	55.9	0.000012	0.0005	0.001	0.00989	0.0772	0.00001	4.52	0.005	18.5	0.107	0.0057	17.9	0.001	0.0002	0.0005	24.2	0.00087	3.7	0.005	0.991	0.005	0.00005	0.00162	0.005	0.005	0.0005
W3	2015-06-04 9:00	211	530	81.2	7.79	318	1	2.4	92.6	0.005	0.385	0.012	61.6	5.4	0.51	0.00002	0.0039	0.00023	0.0778	0.05	0.0001	0.001	56	0.00001	0.0005	0.001	0.00295	0.0114	0.00001	2.6	0.005	25.3	0.0595	0.0048	16.7	0.001	0.0002	0.0005	22.4	0.00035	6.32	0.005	0.832	0.005	0.00005	0.00249	0.005	0.005	0.0005
W3	2015-06-09 15:30	209	530	155.6	7.77	300	1	4.9	86.6	0.005	0.355	0.024	66.6	5.7	0.54	0.00002	0.0036	0.00025	0.0752	0.05	0.0001	0.001	57	0.00001	0.0005	0.001	0.00283	0.0117	0.00001	2.39	0.005	29.1	0.0556	0.0048	18.2	0.001	0.0002	0.0005	21.1	0.00036	5.9	0.005	0.768	0.005	0.00005	0.00247	0.005	0.005	0.0005
W3	2015-06-15 13:40	217	533	128.7	7.84	318	12.6	5.4	86.1	0.005	0.365	0.025	65.6	5.3	0.54	0.00002	0.0046	0.00024	0.075	0.05	0.0001	0.001	54.4	0.00001	0.0005	0.001	0.00253	0.0114	0.00001	2.35	0.005	26.9	0.0551	0.0047	18	0.001	0.0002	0.0005	22	0.00035	5.97	0.005	0.753	0.005	0.00005	0.00253	0.005	0.005	0.0005
W3	2015-06-22 11:45	223	544	160.7	7.9	312	1	5.6	96.8	0.005	0.31	0.022	63	5.6	0.56	0.00002	0.0041	0.00026	0.0792	0.05	0.0001	0.001	57.4	0.00001	0.0005	0.001	0.00228	0.017	0.00001	2.45	0.005	26	0.0555	0.005	17.2	0.001	0.0002	0.0005	24.7	0.00034	6.72	0.005	0.792	0.005	0.00005	0.00235	0.005	0.005	0.0005
W3	2015-06-29 16:25	222	535	141.3	7.97	310	1	6.6	85.1	0.005	0.252	0.021	64.4	5.2	0.52	0.00002	0.0063	0.00025	0.0818	0.05	0.0001	0.001	59.5	0.00001	0.0005	0.001	0.00261	0.0155	0.00001	2.35	0.005	25.3	0.057	0.0049	16.9	0.001	0.0002	0.0005	21.5	0.00042	6.38	0.005	0.808	0.005	0.00005	0.00251	0.005	0.005	0.0005
W3	2015-07-07 13:15	215	537			323	8.3			0.005	0.275	0.03	62.9	5.4	0.54	0.00002	0.004	0.00025	0.0787	0.05	0.0001	0.001	55.4	0.00001	0.0005	0.001	0.00265	0.0155	0.00001	2.38	0.005	28.4	0.0533	0.0052	19.2	0.001	0.0002	0.0005	20.7	0.00032	6.02	0.005	0.772	0.005	0.00005	0.00255	0.005	0.005	0.0005
W3	2015-07-14 9:00	217	527	98.5	7.76	284	1	1.9	94.9	0.005	0.274	0.023	61.2	5	0.53	0.00002	0.0083	0.00027	0.0754	0.05	0.0001	0.001	57.7	0.00001	0.0005	0.001	0.00234	0.0192	0.00001	2.25	0.005	30.1	0.051	0.0044	19.3	0.001	0.0002	0.0005	25	0.00026	6.54	0.005	0.733	0.005	0.00005	0.0028	0.005	0.005	0.0005
W3	2015-07-20 8:30	228	542	167.3	7.94	304	1	3.1	80.5	0.005	0.279	0.03	60	5.2	0.55	0.00002	0.0097	0.00026	0.0795	0.05	0.0001	0.001	58.2	0.00001	0.0005	0.001	0.00256	0.0194	0.00001	2.43	0.005	30.6	0.0513	0.0053	19.5	0.001	0.0002	0.0005	22.1	0.00037	6.91	0.005	0.803	0.005	0.00005	0.0031	0.005	0.005	0.0005
W3	2015-07-29 13:35	222	545	122.4	7.92	318	1	4.2	93.1	0.005	0.21	0.62	72.9	5.3	0.48	0.00002	0.0124	0.00026	0.0741	0.05	0.0001	0.001	55.9	0.000029	0.0005	0.001	0.0021	0.0219	0.00001	2.07	0.005	28.1	0.041	0.0055	18	0.001	0.0002	0.0005	18.1	0.00028	6.23	0.005	0.735	0.005	0.00005	0.00251	0.005	0.005	0.0005
W3	2015-08-05 10:35	224	527	62.8	7.95	324	1	1.1	106.9	0.005	0.231	0.018	59.5	5	0.56	0.00002	0.003	0.00024	0.076	0.05	0.0001	0.001	54.8	0.00001	0.0005	0.001	0.0021	0.0172	0.00001	2.11	0.005	26.4	0.0378	0.0049	17.6	0.001	0.0002	0.0005	20.9	0.00032	6.6	0.005	0.714	0.005	0.00005	0.0025	0.005	0.005	0.0005
W3	2015-08-14 10:10	226	537	91.4	7.8	324	1	2.9	85.7	0.005	0.207	0.027	54.1	5.1	0.54	0.00002	0.0088	0.00033	0.0805	0.05	0.0001	0.001	56.2	0.00001	0.0005	0.001	0.00261	0.019	0.00001	2.18	0.005	26.4	0.0406	0.0049	18.1	0.001	0.0002	0.0005	22.5	0.0003	6.56	0.005	0.675	0.005	0.00005	0.0024	0.005	0.005	0.0005
W3	2015-08-18 8:55	225	530			292	1			0.005	0.217	0.027	55.4	5	0.56	0.00002	0.0088	0.0003	0.0768	0.05	0.0001	0.001	55.7	0.00001	0.0005	0.001	0.00224	0.0356	0.00001	2.21	0.005	29.7	0.04	0.0054	18.6	0.001	0.0002	0.0005	18	0.00027	6.25	0.005	0.741	0.005	0.00005	0.00261	0.005	0.005	0.0005
W3	2015-08-24 10:25	230	537	121.6	7.83	320	1	3.2	79.5	0.005	0.2	0.033	56.6	6	0.56	0.00002	0.0035	0.00032	0.0805	0.05	0.0001	0.001	62.2	0.00001	0.0005	0.001	0.00239	0.0202	0.00001	2.64	0.005	30.7	0.0433	0.0049	20.4	0.001	0.0002	0.0005	20.9	0.0003	5.9	0.005	0.757	0.005	0.00005	0.00276	0.005	0.005	0.0005
W3	2015-08-31 7:50			146.9	7.77			1.7	84.2																																								
W3	2015-08-31 7:50	211	499	146.9	7.77	306	4.6	1.7	84.2	0.005	0.189	0.03	49.4	4.8	0.54	0.00002	0.01	0.00033	0.0756	0.05	0.0001	0.001	58.5	0.00001	0.0005	0.001	0.00432	0.0282	0.00001	2.58	0.005	29.9	0.0469	0.0042	19.9	0.001	0.0002	0.0005	19.4	0.00027	6.84	0.005	0.691	0.005	0.00005	0.00232	0.005	0.005	0.0005
W3	2015-09-08 9:45	220	525	53	7.8	312	16.6	1.3	80.5	0.005	0.184	0.014	51	4.6	0.57	0.00002	0.0067	0.00031	0.07	0.05	0.0001	0.001	52	0.00001	0.0005	0.001	0.00238	0.024	0.00001	2.19	0.005	27.5	0.0386	0.0045	17.9	0.001	0.0002	0.0005	18.3	0.00027	6.02	0.005	0.672	0.005	0.00005	0.00245	0.005	0.005	0.0005
W3	2015-09-15 11:20	220	524	84.1	7.83	316	1	2.5	81.4	0.005	0.165	0.22	49.9	4.8	0.56	0.00002	0.0079	0.00025	0.0723	0.05	0.0001	0.001	50.5	0.00001	0.0005	0.001	0.00361	0.027	0.00001	2.46	0.005	29.6	0.0432	0.0049	19.9	0.001	0.0002	0.0005	20.8	0.00022	5.89	0.005	0.758	0.005	0.00005	0.00236	0.005	0.005	0.0005
W3	2015-09-23 15:00	217	516	64.8	7.79	298	1	2	83.9	0.005	0.184	0.024	55.5	4.4	0.54	0.00002	0.0185	0.00023	0.0789	0.05	0.0001	0.001	57.2	0.00001	0.0005	0.001	0.00293	0.0257	0.00001	2.26	0.005	29.2	0.0442	0.0048	19.9	0.001	0.0002	0.0005	16.5	0.00025	6.98	0.005	0.736	0.005	0.00005	0.00258	0.005	0.005	0.0005
W3	2015-09-30 16:35	224	525	53.1	7.88	288	1	2.5	84.6	0.005	0.183	0.018	50.1	4.4	0.56	0.00002	0.0058	0.00022	0.0715	0.05	0.0001	0.001	61.2	0.00001	0.0005	0.001	0.0025	0.0221	0.00001	2.22	0.005	27.8	0.042	0.0048	18.3	0.001	0.0002	0.0005	23.5	0.00027	7.16	0.005	0.67	0.005	0.00005	0.00232	0.005	0.005	0.0005
W3	2015-10-05 8:15			57.9	7.8			0.1	87.5																																								
W3	2015-10-05 8:15	225	527	57.9	7.8	342	1	0.1	87.5	0.005	0.207	0.019	57.5	5.4	0.56	0.00002	0.0089	0.00031	0.0741	0.05	0.0001	0.001	54	0.00001	0.0005	0.001	0.00224	0.0214	0.00001	1.96	0.005	27.8	0.0378	0.005	17.9	0.001	0.0002	0.0005	15.2	0.00037	6.6	0.005	0.687	0.005	0.00005	0.00264	0.005	0.005	0.0005
W3	2015-10-13 11:00	222	515		7.81	300	1	0.5	66.4	0.005	0.187	0.028	49.5	4.6	0.54	0.00002	0.0069	0.00034	0.0692	0.05	0.0001	0.001	50.1	0.00001	0.0005	0.001	0.00243	0.0317	0.00001	1.98	0.005	25.5	0.0668	0.0046	17.4	0.001	0.0002	0.0005	14.6	0.00029	5.46	0.005	0.675	0.005	0.00005	0.00246	0.005	0.005	0.0005
W3	2015-10-22 10:50	224	523	103.9	7.85	292	1	1.1	78	0.005	0.213	0.023	48	4.8	0.55	0.00002	0.0046	0.00024	0.0738	0.058	0.0001	0.001	57	0.00001	0.0005	0.001	0.00255	0.0216	0.00001	2.2	0.005	28.7	0.0409	0.0048	19	0.001	0.0002	0.0005	15.8	0.00034	6.6	0.005	0.728	0.005	0.00005	0.00235	0.005	0.005	0.0005
W3	2015-10-28 13:30	222	525	31.3	7.78	308	1	0	70.8	0.005	0.209	0.026	49.2	4.7	0.58	0.00002	0.0119	0.00024	0.0721	0.05	0.0001	0.001	55.4	0.00001	0.0005	0.001	0.00233	0.0175	0.00001	2.13	0.005	26.4	0.0532	0.0049	18.7	0.001	0.0002	0.0005	16.2	0.00032	6.79	0.005	0.683	0.005	0.00005	0.00262	0.005	0.005	0.0005
W3	2015-11-02 10:50	229	537	19.1	7.57	314	1	0	81.8	0.005	0.24	0.02	52.5	4.7	0.54	0.00002	0.0058	0.0003	0.0747	0.05	0.0001	0.001	57.5	0.00001	0.0005	0.001	0.00198	0.0163	0.00001	2.2	0.005	28.9	0.0396	0.0052	18.8	0.001	0.0002	0.0005	21	0.00035	7.13	0.005	0.705	0.005	0.00005	0.00251	0.005	0.005	0.0005
W3	2015-11-09 13:30	229	530	10.9	7.86	290	1	0	76.4	0.005	0.232	0.019	53.7	4.9	0.57	0.00002	0.0067	0.00026	0.0741	0.05	0.0001	0.001	57.7	0.00001	0.0005	0.001	0.00246	0.0183	0.00001	2.35	0.005	31.4	0.0442	0.0052	19.4	0.001	0.0002	0.0005	20.4	0.00026	7.24	0.005	0.704	0.005	0.00005	0.00252	0.005	0.005	0.0005
W3	2015-11-16 11:15	223	535	59	7.63	334	1	0	75.9	0.005	0.236	0.016	57.1	4.6	0.56	0.00002	0.0068	0.00023	0.0778	0.05	0.0001	0.001	58.4	0.00001	0.0005	0.001	0.00224	0.0177	0.00001	2.46	0.005	30.2	0.0479	0.0045	20	0.001	0.0002	0.0005	15.5	0.0003	6.48	0.005	0.734	0.005	0.00005	0.00291	0.005	0.005	0.0005
W3	2015-11-23 14:05	213	531	84	7.56	318	1	0	79.1	0.005	0.235	0.015	49.2	4.4	0.54	0.00002	0.0061	0.00027	0.076	0.05	0.0001	0.001	56.8	0.00001	0.0005	0.001	0.00267	0.024	0.00001	2.13	0.005	29.7	0.0618	0.0048	19.8	0.001	0.0002	0.0005	16.2	0.00033	6.93	0.005	0.708	0.005	0.00005	0.00265	0.005	0.005	0.0005
W3	2015-12-06 15:35	216	534	27.9	7.78	284	1	0.1	89.9	0.005	0.248	0.017	52.7	5.1	0.55	0.00002	0.057	0.00029	0.0748	0.05	0.0001	0.001	49	0.00001	0.0005	0.001	0.00394	0.0182	0.00001	2.21	0.005	27.8	0.0364	0.0047	19.1	0.001	0.0002	0.0005	14.8	0.00028	5.14	0.005	0.723	0.005	0.00005	0.00262	0.005	0.005	0.0005
W3	2015-12-08 11:15	236	528	22.5	8.22	286	1	0.7	83.2	0.005	0.238	0.012	50	4.7	0.52	0.00002	0.0161	0.00021	0.0756	0.05	0.0001	0.001	53.5	0.00001	0.0005	0.001	0.00504	0.0196	0.00001	2.15	0.005	28.4	0.0336	0.005	18.7	0.001	0.0002	0.0005	16.5	0.00048	6.23	0.005	0.697	0.005	0.00005	0.00283	0.005	0.005	0.0005
W3	2015-12-19 10:15	238	535		7.6	292	5.6	0	73.3	0.005	0.246	0.013	49	4.9	0.56	0.00002	0.0057	0.00028	0.0726	0.05	0.0001	0.001	54.4	0.00001	0.0005	0.001	0.00461	0.0147	0.00001	2.14	0.005	28.2	0.0351	0.0046	19.4	0.001	0.00032	0.0005	16	0.00036	6.44	0.005	0.671	0.005	0.00005	0.00258	0.005	0.005	0.0005
W3	2015-12-26 15:35	243	554	30.6	7.48	354	6.1	0	66.2	0.005	0.238	0.021	58	5.9	0.52	0.00002	0.0303	0.00022	0.0784	0.05	0.0001	0.001	55.9	0.00001	0.0005	0.001	0.00236	0.0152	0.00001	2.37	0.005	29	0.0643	0.0048	19.9	0.001	0.0002	0.0005	19.2	0.00049	7.12	0.005	0.756	0.005	0.00005	0.00259	0.005	0.005	0.0005
W3	2016-01-01 15:20	240	544	34.7	7.71	298	1	0.1	83.6	0.005	0.224	0.03	54.6	5.8	0.56		0.0104	0.00033	0.0756	0.05	0.0001	0.001	60	0.00001	0.0005		0.0022	0.0328	0.00001	2.34	0.005	30	0.104	0.0045	19.8	0.001		0.0005	16.1	0.00034	7.02	0.005	0.746	0.005	0.00005	0.00242	0.005		0.0005
W3	2016-01-08 8:45	249	552	7.9	7.45	318	1	0.2	77.2	0.005	0.215	0.028	58.9	6.1	0.57		0.0097	0.00029	0.0814	0.05	0.0001	0.001	56	0.00001	0.0005		0.00198	0.0714	0.00001	2.27	0.005	26.6	0.143	0.0039	18	0.0013		0.0005	17.7	0.00025	6.69	0.005	0.683	0.005	0.00005	0.00235	0.005		0.0005
W3	2016-01-14 15:05	240	540	-5.7	7.79	306	3.1	0.3	81.7	0.005	0.229	0.017	52.7	5.3	0.56	0.00002	0.0104	0.00033	0.0748	0.05	0.0001	0.001	53.3	0.00001	0.0005		0.00161	0.0739	0.00001	2.15	0.005	28.3	0.0866	0.0041	19	0.001		0.0005	17.5	0.00036	6.53	0.005	0.652	0.005	0.00005	0.00266	0.005		0.0005
W3	2016-01-19 15:35	240	540	4.6	7.48	302	1.1	0.2	34.7	0.005	0.241	0.032	51.7	5.3	0.57		0.009	0.00034	0.0777	0.05	0.0001	0.001	56.1	0.000012	0.0005		0.00184	0.0335	0.00001	2.38	0.005	27.6	0.0543	0.0048	18.2	0.001		0.0005	19.4	0.00032	7.11	0.005	0.709	0.005	0.00005	0.00257	0.005		0.0005
W3	2016-01-25 15:55	237	541	21.1	7.77	280	1.1	0.4	79.8	0.005	0.237	0.022	50.5	5.4	0.56		0.0093	0.00028	0.0782	0.05	0.0001	0.001	55.9	0.000016	0.0005		0.00165	0.0394	0.00001	2.22	0.005	27.7	0.0551	0.0048	17.9	0.0016		0.0005	16.4	0.0003	6.9	0.005	0.735	0.005	0.00005	0.00247	0.005		0.0005
W3	2016-02-01 10:40	236	534	3.4	7.64	292	1.1	0.2	60.4	0.005	0.254	0.02	50.8	5.6	0.56		0.0102	0.00027	0.0754	0.05	0.0001	0.001	55.6	0.00001	0.0005		0.00189	0.0466	0.00001	2.08	0.005	28.7	0.0748	0.0046	18.5	0.001		0.0005	14.5	0.00034	6.49	0.005	0.739	0.005	0.00005	0.00263	0.005		0.0005
W3	2016-02-14 17:20	236	535	31	7.6	282	4.1	0.4	64.3	0.005	0.24	0.019	49.8	5.3	0.55		0.0061	0.00034	0.0747	0.05	0.0001	0.001	53.1	0.00001	0.0005		0.00197	0.0366	0.00001	2.15	0.005	27.8	0.057	0.0045	17.9	0.001		0.0005	16.1	0.00029	6.61	0.005	0.678	0.005	0.00005	0.00269	0.005		0.0005
W3	2016-02-20 15:30	237	531	49.2	7.7	310	17.7	0	68.7	0.005	0.234	0.023	48.6	5.3	0.54		0.0071	0.00035	0.0789	0.05	0.0001	0.001	57	0.00001	0.0005		0.00172	0.0416	0.00001	2.42	0.005	30	0.0918	0.004	19.1	0.001		0.0005	22.8	0.00028	6.95	0.005	0.706	0.005	0.00005	0.00237	0.005		0.0005
W3	2016-02-28 15:50	237	536	5.6	7.35	300	4.7	0.2	72.3	0.005	0.225	0.017	52.2	5.4	0.55		0.0235	0.00029	0.081	0.05	0.0001	0.001	54.5	0.000013	0.0005		0.0019	0.0418	0.00001	2.15	0.005	29.7	0.082	0.0048	19	0.001		0.0005	14.3	0.00037	6.21	0.005	0.713	0.005	0.00005	0.00251	0.005		0.0005
W3	2016-03-01 15:10	237	538	35.7	7.51	296	2.6	0.1	72.2	0.005	0.23	0.046	47.6	5.8	0.56		0.0065	0.00036	0.0796	0.05	0.0001	0.001	55.5	0.00001	0.0005		0.00167	0.0349	0.00001	2.22	0.005	29.1	0.0654	0.0067	18.5	0.001		0.0005	17.4	0.00033	6.5	0.005	0.703	0.005	0.00005	0.00271	0.005		0.0005
W3	2016-03-08 10:25	237	538	49.6	7.26	290	5.1	0.1	71.4	0.005	0.218	0.028	48.1	5.7	0.51		0.031	0.00038	0.075	0.05	0.0001	0.001	53.9	0.00001	0.0005		0.00194	0.0459	0.00001	2.17	0.005	28.3	0.0794	0.0043	18.2	0.001		0.0005	16	0.00029	6.48	0.005	0.693	0.005	0.00005	0.00228	0.005		0.0005
W3	2016-03-19 7:20	233	530	56.2	7.46	310	2.8	0.3	80.2	0.005	0.231	0.023	48.7	5.5	0.54		0.0488	0.00046	0.0771	0.05	0.0001	0.001	54.3	0.00001	0.0005		0.00184	0.0393	0.00001	2.33	0.005	29.6	0.0689	0.0043	19.3	0.001		0.0005	17.3	0.00036	6.5	0.005	0.733	0.005	0.00005	0.00279	0.005		0.0005
W3	2016-03-24 7:15	234	531	38.8	7.38	298	2.5	0.3	72.4	0.005	0.201	0.034	52.2	5.9	0.59		0.0397	0.00031	0.0797	0.05	0.0001	0.001	62.3	0.00001	0.0005		0.00232	0.0606	0.00001	2.44	0.005	29.3	0.0788	0.0047	18.9	0.0011		0.0005	18.3	0.00036	6.8	0.005	0.732	0.005	0.00005	0.00265	0.005		0.0005
W3	2016-03-30 15:10	213	488	35.3	7.49	278	30	0.2	76.5	0.001	0.212	0.0235	47.2	5.21		0.00001	0.0029	0.00031	0.074	0.02	0.00002	0.00005	52.2	0.0000063	0.0001	0.0001	0.00486	0.032	0.000005	2.48	0.0028	26.1	0.0989	0.00416	16.3	0.00079	0.00005	0.0001	15.1	0.000299	5.66	0.0001	0.637	0.0003	0.00001	0.00248	0.0005	0.001	0.0003
W3	2016-04-04 14:30	230	545	54.4		305	6.7	0.3	73.5	0.001	0.217	0.0096	51.9	5.59		0.00001	0.0034	0.00027	0.0761	0.019	0.00002	0.00005	58.3	0.000005	0.0001	0.0001	0.00212	0.029	0.000005	2.3	0.0032	29.8	0.0913	0.0047	18.1	0.00093	0.00005	0.0001	17.2	0.00035	6.18	0.0001	0.701	0.0003	0.00001	0.0029	0.0005	0.001	0.0003
W3	2016-04-09 17:15			135.2	7.6			0	67.5																																								
W3	2016-04-10 15:30			135.3	7.32			0.4	68.2																																								
W3	2016-04-11 7:50			127.3	7.37			1.1	72.4																																								
W3	2016-04-12 8:35	175	455	108.8	7.5	257	7.3	1.3	92.6	0.0109	0.583	0.168	47.4	8.61		0.00001	0.0395	0.00038	0.0736	0.025	0.00002	0.00005	56.7	0.0000186	0.00015	0.0002	0.0154	0.083	0.000008	2.97	0.0016	19.2	0.242	0.00314	14.1	0.00146	0.00005	0.00011	15.9	0.000385	4.08	0.0001	0.594	0.00121	0.00001	0.00158	0.0005	0.0027	0.0003
W3	2016-04-13 8:05			143.2	7.32			1.2	96.2																																								
W3	2016-04-14 8:30			116.6	7.29			1.4	88.1																																								
W3	2016-04-15 8:10			96.1	7.39			1.5	87.9																																								
W3	2016-04-16 8:20			91.4	7.61			1.5	90																																								
W3	2016-04-17 8:00			100.8	7.54			1.5	94.4																																								
W3	2016-04-18 8:20			117.8	7.44			0.5	87.4																																								
W3	2016-04-19 8:30	192	489	75.5	7.65	276	3	1.6	92.2	0.0072	0.75	0.123	51.2	9.42		0.00001	0.0083	0.00025	0.0693	0.032	0.00002	0.00005	58.6	0.0000063	0.0001	0.0001	0.00904	0.036	0.000005	2.91	0.0015	19.9	0.0545	0.00325	15.4	0.00058	0.00005	0.0001	17.2	0.000382	3.72	0.0001	0.608	0.0003	0.00001	0.0016	0.0005	0.0013	0.0003
W3	2016-04-20 7:20			77.3	7.4			1.6	92.1																																								
W3	2016-04-21 8:00			101.6	7.59			0.9	99.5																																								
W3	2016-04-22 8:10			106.9	7.59			1.9	90.6																																								
W3	2016-04-23 8:00			74.6	7.85			1.7	88.8																																								
W3	2016-04-24 7:50			56.5	7.71			1.9	89.7																																								
W3	2016-04-25 7:50			98.1	7.6			1.8	93.9																																								
W3	2016-04-26 7:30	187	474	73.2	7.63	270	3	1.7	100.7	0.0055	0.772	0.0961	48.9	9.11		0.00001	0.0063	0.00025	0.0652	0.032	0.00002	0.00005	58	0.000005	0.0001	0.0001	0.00909	0.023	0.000005	3.03	0.0018	19	0.0175	0.00326	15.9	0.00087	0.00005	0.0001	16.2	0.000393	3.56	0.0001	0.608	0.0003	0.00001	0.00157	0.0005	0.001	0.0003
W3	2016-04-27 8:55			120.3	7.72			1.8	89.2																																								
W3	2016-04-28 7:45			126.7	7.82			1.7	98.7																																								
W3	2016-04-29 8:00			90.6	7.61			0.9	91.2																																								
W3	2016-04-30 7:55			95.2	7.73			1	89.8																																								
W3	2016-05-01 8:00																																																
W3	2016-05-02 8:30	193	478	80.4	7.73	268	5.3	1.9	86.6	0.004	0.71	0.0415	47.2	8.32		0.00001	0.0119	0.00024	0.0646	0.035	0.00002	0.00005	55.5	0.000005	0.0001	0.0001	0.00816	0.034	0.000005	2.87	0.0021	20.1	0.0168	0.0039	15.2	0.00093	0.00005	0.0001	15.7	0.000353	3.92	0.0001	0.647	0.00088	0.00001	0.00178	0.0005	0.0017	0.0003
W3	2016-05-03 7:30																																																

Attachment 3: Sitewide Database

Station	Date / Time	Alk-T (mg/L)	Cond-L (µS/cm)	ORP (mV)	pH-F	TDS (mg/L)	TSS (mg/L)	Temp-F (°C)	O-DO-% (%)	$N\text{-}NO_2$ (mg/L)	$N\text{-}NO_3$ (mg/L)	$N\text{-}NH_3$ (mg/L)	$SO_4\text{-}D$ (mg/L)	Chlord (mg/L)	Fluord (mg/L)
		General Parameters								Anions & Nitrogen Species					
W3	2016-05-04 7:20			85.9	7.83			1.5	92.6						
W3	2016-05-05 7:50			134.7	7.77			1.5	89.5						
W3	2016-05-06 8:10			113.8	7.71			0.9	81.5						
W3	2016-05-07 8:35			110.3	7.65			1.4	77.1						
W3	2016-05-08 8:20			134.2	7.83			0.8	89.5						
W3	2016-05-09 8:15			132.7	7.75			1	91.5						
W3	2016-05-10 8:30			131.2	7.69			1.3	88.4						
W3	2016-05-11 8:25				8.3			2.3							
W3	2016-05-12 8:30	204	482			271	3	1.1	92	0.001	0.168	0.0064	42.6	4.98	
W3	2016-05-13 8:05			80.8	7.78			1	88.1						
W3	2016-05-14 7:30			96.6	7.79			1.2	85.2						
W3	2016-05-15 8:25			100.3	7.71			1.5	83.9						
W3	2016-05-16 7:45			146.7	8.01			4.5	0.7						
W3	2016-05-17 8:00	144	370	193.6	7.51	218	4	4.1	91.6	0.0045	1.7	0.0095	38.8	5.39	
W3	2016-05-18 7:20			176.6	7.7			4.2	93.2						
W3	2016-05-19 7:40			65.6	7.99			1.5	90.2						
W3	2016-05-19 11:35	184	409	110.5	7.8	241	3	2.8	90.4	0.001	0.19	0.0096	37.9	4.59	
W3	2016-05-20 7:50			73.3	7.71			1.3	86.5						
W3	2016-05-21 7:55			105.1	7.7			1.4	86.2						
W3	2016-05-22 7:50			117.2	7.72			4.5	84.2						
W3	2016-05-23 7:50			128.6	7.89			1.9	87.4						
W3	2016-05-24 8:05	148	383	124	7.76	223	3	5.4	85.8	0.0103	1.75	0.0134	38.9	5.49	
W3	2016-05-25 10:15	151	392	117.3	7.76	225	3	5.4	86.9	0.0086	1.78	0.0141	39.4	5.57	
W3	2016-05-26 7:50			140.1	7.68			5.6	86.5						
W3	2016-05-27 7:50			130.4	7.66			5.2	86.4						
W3	2016-05-28 7:50			92	7.76			5	87.6						
W3	2016-05-29 7:50			109.7	7.8			4.3	82.4						
W3	2016-05-30 7:15			106.2	7.7			4.7	85.6						
W3	2016-05-31 8:15	167	403	132.7	7.87	242	3	4.2	85.6	0.0044	1.5	0.012	42.1	5.75	
W3	2016-06-01 7:35				9			5.7							
W3	2016-06-02 7:35			150.9	7.87			3.9	76.5						
W3	2016-06-03 8:20			150.9	7.86			4.7	89.6						
W3	2016-06-04 8:00			119.6	7.82			4.9	81.8						
W3	2016-06-05 8:15			114.6	7.83			4.7	93.6						
W3	2016-06-06 8:10			89.8	7.73			4.7	81.5						
W3	2016-06-07 7:50	149	380	128.7	7.86	228	3	5.2	85.7	0.0093	1.69	0.0154	41.1	5.67	
W3	2016-06-08 7:55			217.6	7.66			5.4	83.9						
W3	2016-06-09 7:42			135.1	7.73			5.4	83.9						
W3	2016-06-10 7:47			116.7	7.75			5.2	89.1						
W3	2016-06-11 9:16			76.8	7.76			5.5	86						
W3	2016-06-12 7:40			109.9	7.83			3.1	86.6						
W3	2016-06-13 8:30			109.8	7.83			2.6	84.5						
W3	2016-06-14 8:15	164	415	116.6	7.84	238	3	5.6	90.9	0.0062	1.42	0.0114	41.9	5.48	
W3	2016-06-15 7:50			139.9	7.78			5.7	94.1						
W3	2016-06-16 8:00			107.5	7.8			6.7	87.1						
W3	2016-06-17 7:50			114.6	7.8			5.6	85.7						
W3	2016-06-18 7:50			107.4	7.71			5	87.9						
W3	2016-06-19 8:00			74.6	7.74			4.9	86.8						
W3	2016-06-20 7:50			89.2	7.79			3.4	86.7						
W3	2016-06-21 7:50	189	444	89	7.74	261	3	6	86.5	0.0019	1.05	0.0072	43.6	5.26	
W3	2016-06-22 8:30			86.1	7.82			3.6	86.7						
W3	2016-06-23 9:05			157.3	7.81			5.8	86.2						
W3	2016-06-23 9:05	180	439	157.3	7.81	254	3	5.8	86.2	0.0038	1.25	0.005	43.2	5.21	
W3	2016-06-24 7:50			68.4	7.82			3.6	93.6						
W3	2016-06-25 7:50			97.1	7.8			8.4	86.1						
W3	2016-06-26 7:55			89.2	7.81			5.5	93						
W3	2016-06-27 8:05			81.7	7.82			5.2	88						
W3	2016-06-28 8:05	220	485	65.3	7.84	287	3	3.7	89	0.0012	0.286	0.005	47.6	5.29	
W3	2016-06-29 7:25			72.3	7.84			3.3	89.8						
W3	2016-07-05 16:15	232	511	121.3	7.65	296	3	10.9	95.6	0.001	0.185	0.005	49.2	5.03	
W3	2016-07-08 8:05			92	7.94			6.8	85.7						
W3	2016-07-09 7:55			132.5	7.77			7	85.4						
W3	2016-07-10 8:20			123.5	7.79			6.5	110.6						
W3	2016-07-11 8:00			109.3	7.83			6.2	87.1						
W3	2016-07-12 7:55			100.5	7.87			4.3	82.7						
W3	2016-07-12 7:55	214	496	100.5	7.87	283	3	4.3	82.7	0.001	0.291	0.005	46.6	5.17	
W3	2016-07-13 8:30			113.9	7.81			7	86.1						
W3	2016-07-14 8:10			141.5	7.77			8.6	85.6						
W3	2016-07-15 8:45			97	7.8			4.8	87.2						
W3	2016-07-16 7:50			91.8	7.81			4.7	86.2						
W3	2016-07-17 7:50			112.3	7.79			7.1	94						
W3	2016-07-18 8:35			101.8	7.85			5.3	90.5						
W3	2016-07-19 9:10			61.5	7.84			6.4	86.1						
W3	2016-07-19 9:10	190	454	61.5	7.84	261	3	6.4	86.1	0.001	0.948	0.005	44.8	5.12	
W3	2016-07-20 8:00			102.8	7.82			5.9	96.2						
W3	2016-07-21 7:55			77.5	7.66			5.6	89.2						
W3	2016-07-22 7:50			108.5	7.66			6	107.6						
W3	2016-07-23 7:50			98.6	7.51			7.6	87.5						
W3	2016-07-24 8:00			112.5	7.61			8.6	80.9						
W3	2016-07-25 8:00			126.9	7.65			8.8	79.8						
W3	2016-07-26 15:05	164	408	114.9	7.66	240	4.7	8.3	89.2	0.0429	1.29	0.0622	42.7	5.18	
W3	2016-07-27 7:50			82.7	7.72			9.4	101.6						
W3	2016-07-28 8:20			102.7	7.59			9.6	82.8						
W3	2016-07-29 7:27			95.8	7.68			8.3	83.1						
W3	2016-07-30 7:51			127.8	7.55			9.2	89.4						
W3	2016-07-31 8:10			97.4	7.61			8.3	86.2						
W3	2016-08-01 7:42			78.5	7.68			6.9	86.7						
W3	2016-08-02 7:40	169	426	101.9	7.62	247	3	7.8	84.4	0.0042	1.57	0.0088	45.4	5.15	
W3	2016-08-03 8:05			98.7	7.6			8.2	84.4						
W3	2016-08-04 8:10			96.4	7.64			8.1	88.5						
W3	2016-08-05 8:10			119.4	7.85			8.7	81.1						
W3	2016-08-06 8:05			132.3	7.85			7.2	90						
W3	2016-08-07 8:00			111.5	7.89			9.7	81.8						
W3	2016-08-08 8:05			103.9	7.55			10.2	82.4						
W3	2016-08-09 7:45	180	444	182.8	7.6	263	3	8.7	80.5	0.001	1.97	0.0103	47.9	5.06	
W3	2016-08-10 7:59			235	7.37			11.1	85.2						
W3	2016-08-11 7:30				8.3			10.7							
W3	2016-08-12 7:15				8.3			9.8							
W3	2016-08-13 7:25			113.8	7.72			9.6	79.6						
W3	2016-08-14 7:55				8.2			9.5							
W3	2016-08-15 8:15	185	451	93.9	7.78	272	3	7.8	79.3	0.001	2.03	0.0072	51	5.26	
W3	2016-08-16 8:00			107.3	7.78			7.5	81.3						
W3	2016-08-17 8:25			110.9	7.79			7.9	94.7						
W3	2016-08-17 8:25	183	449	110.9	7.79	271	3	7.9	94.7	0.001	2.03	0.0066	51.3	5.26	
W3	2016-08-18 8:15			103.1	7.92			7.7	82.9						
W3	2016-08-19 7:20			117.7	7.8			8.7	82						
W3	2016-08-20 7:30			110	7.84			9.9	81.5						
W3	2016-08-21 7:35			108.9	7.78			9.1	81.3						
W3	2016-08-22 7:30			109.4	7.82			8.1	81.6						
W3	2016-08-23 9:10	178	449	110.4	7.81	267	3	9	82.6	0.001	2.51	0.006	53.1	5.31	
W3	2016-08-24 7:35			111.6	7.81			7.7	89.5						
W3	2016-08-25 8:20			137	7.34			8.8	90.1						
W3	2016-08-26 8:30			137.5	7.34			10.1	83.4						
W3	2016-08-27 8:15			121.9	7.23			10.9	101.5						
W3	2016-08-28 7:27			142.1	7.17			11.2	87.8						

Dissolved Elements (all mg/L)

Station	Date / Time	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
W3	2016-05-12 8:30	0.00001	0.0166	0.00032	0.0659	0.02	0.00002	0.00005	56.6	0.000005	0.0001	0.00021	0.00682	0.043	0.000005	2.26	0.0025	25.3	0.0244	0.00357	15.8	0.00129	0.00005	0.0001	15.3	0.000325	6.05	0.0001	0.597	0.00059	0.00001	0.00212	0.0005	0.0039	0.0003
W3	2016-05-17 8:00	0.00001	0.0191	0.00031	0.0574	0.029	0.00002	0.00005	47.7	0.0000056	0.0001	0.00021	0.0132	0.056	0.000005	2.49	0.0013	16.4	0.0179	0.00321	12.7	0.00121	0.00005	0.0001	13	0.000694	4.16	0.0001	0.503	0.00048	0.00001	0.00126	0.0005	0.0078	0.0003
W3	2016-05-19 11:35	0.00001	0.0204	0.00034	0.0606	0.021	0.00002	0.00005	49.7	0.000005	0.0001	0.00028	0.0091	0.051	0.0000064	2.04	0.0022	21.2	0.0299	0.00335	14.1	0.00169	0.00005	0.0001	12.6	0.000295	5.69	0.0001	0.535	0.00052	0.00001	0.00185	0.0005	0.0012	0.00038
W3	2016-05-24 8:05	0.00001	0.0095	0.00025	0.0579	0.031	0.00002	0.00005	48.9	0.000005	0.0001	0.00013	0.0131	0.041	0.000005	2.71	0.0016	16.7	0.0181	0.00326	14	0.00092	0.00005	0.0001	14.6	0.000688	3.82	0.0001	0.512	0.0003	0.00001	0.00121	0.0005	0.0033	0.0003
W3	2016-05-25 10:15	0.00001	0.009	0.00031	0.0596	0.029	0.00002	0.00005	48.3	0.000005	0.0001	0.0001	0.0131	0.04	0.000005	2.68	0.0016	16.5	0.0158	0.00326	14.1	0.00101	0.00005	0.0001	14.7	0.000725	3.81	0.0001	0.502	0.0003	0.00001	0.00117	0.0005	0.0011	0.0003
W3	2016-05-31 8:15	0.00001	0.0068	0.00024	0.0602	0.033	0.00002	0.00005	51.7	0.000005	0.0001	0.0001	0.0108	0.034	0.000005	2.57	0.0021	18.1	0.0189	0.00359	15	0.001	0.00005	0.0001	14.2	0.000661	4.21	0.0001	0.561	0.0003	0.00001	0.00153	0.0005	0.0015	0.0003
W3	2016-06-07 7:50	0.00001	0.0069	0.00027	0.0583	0.032	0.00002	0.00005	50.6	0.000005	0.0001	0.00012	0.0115	0.044	0.000005	2.86	0.0015	16.7	0.0175	0.00347	14	0.00109	0.00005	0.0001	13.8	0.000672	3.99	0.0001	0.529	0.0003	0.00001	0.00131	0.0005	0.0012	0.0003
W3	2016-06-14 8:15	0.00001	0.0053	0.00024	0.0617	0.031	0.00002	0.00005	50.3	0.000005	0.0001	0.0001	0.00924	0.03	0.000005	2.68	0.0018	18.9	0.0122	0.00371	14.1	0.00091	0.00005	0.0001	15.1	0.000677	4.39	0.0001	0.548	0.0003	0.00001	0.00149	0.0005	0.001	0.0003
W3	2016-06-21 7:50	0.00001	0.007	0.00028	0.0696	0.033	0.00002	0.00005	54.2	0.000005	0.0001	0.00012	0.00684	0.026	0.000005	2.58	0.0019	20.9	0.017	0.00414	16.9	0.00117	0.00005	0.0001	14.7	0.000537	4.86	0.0001	0.594	0.0003	0.00001	0.00181	0.0005	0.001	0.0003
W3	2016-06-23 9:05	0.00001	0.0045	0.00027	0.0663	0.03	0.00002	0.00005	53.4	0.000005	0.0001	0.0001	0.00687	0.021	0.000005	2.72	0.0022	20.3	0.0139	0.00416	15.2	0.00102	0.00005	0.0001	15.2	0.000607	4.61	0.0001	0.574	0.0003	0.00001	0.00169	0.0005	0.001	0.0003
W3	2016-06-28 8:05	0.00001	0.0031	0.00023	0.0715	0.024	0.00002	0.00005	58	0.000005	0.0001	0.0001	0.00343	0.01	0.000005	2.34	0.0028	24.6	0.0214	0.00435	16.1	0.00086	0.00005	0.0001	16.2	0.000342	5.72	0.0001	0.628	0.0003	0.00001	0.00235	0.0005	0.001	0.0003
W3	2016-07-05 16:15	0.00001	0.0022	0.00026	0.0727	0.025	0.00002	0.00005	55.7	0.000005	0.0001	0.0001	0.00275	0.01	0.000005	2.37	0.0031	25.6	0.0256	0.00495	18.1	0.00087	0.00005	0.0001	16.7	0.000408	5.69	0.0001	0.716	0.0003	0.00001	0.00257	0.0005	0.001	0.0003
W3	2016-07-12 7:55	0.00001	0.0027	0.00026	0.07	0.025	0.00002	0.00005	57.4	0.000005	0.0001	0.0001	0.00355	0.01	0.000005	2.35	0.0026	24.1	0.0221	0.00476	17.5	0.00095	0.00005	0.0001	16.3	0.000298	5.62	0.0001	0.674	0.0003	0.00001	0.00212	0.0005	0.001	0.0003
W3	2016-07-19 9:10	0.00001	0.003	0.00028	0.0654	0.029	0.00002	0.00005	54.1	0.000005	0.0001	0.0001	0.0056	0.014	0.000005	2.51	0.0023	21.5	0.0137	0.00441	15.1	0.00097	0.00005	0.0001	15.4	0.000513	5.06	0.0001	0.601	0.0003	0.00001	0.0017	0.0005	0.001	0.0003
W3	2016-07-26 15:05	0.00001	0.054	0.00038	0.0701	0.032	0.00002	0.00005	51.4	0.0000055	0.0001	0.00017	0.0139	0.095	0.000005	2.62	0.0015	17.9	0.0362	0.00349	15.5	0.00132	0.000082	0.0001	14	0.000681	4.44	0.0001	0.543	0.00207	0.00001	0.00133	0.0005	0.0052	0.0003
W3	2016-08-02 7:40	0.00001	0.005	0.00028	0.0665	0.03	0.00002	0.00005	51.9	0.000005	0.0001	0.0001	0.00886	0.018	0.000005	2.69	0.002	18.6	0.0122	0.00406	14.6	0.00096	0.00005	0.0001	15.4	0.000669	4.51	0.0001	0.575	0.0003	0.00001	0.00142	0.0005	0.0012	0.0003
W3	2016-08-09 7:45	0.00001	0.0049	0.00035	0.0769	0.035	0.00002	0.00005	54.7	0.0000066	0.0001	0.00011	0.00893	0.018	0.000005	2.98	0.0019	19.1	0.0136	0.00434	16.6	0.00095	0.00005	0.0001	16.8	0.00076	4.52	0.0001	0.605	0.0003	0.00001	0.00149	0.0005	0.0014	0.0003
W3	2016-08-15 8:15	0.00001	0.0049	0.00034	0.0779	0.039	0.00002	0.00005	55.9	0.000005	0.0001	0.00012	0.00889	0.017	0.000005	2.86	0.0023	19.6	0.0193	0.00427	17.2	0.00098	0.00005	0.0001	16.9	0.000657	4.74	0.0001	0.617	0.0003	0.00001	0.00154	0.0005	0.0015	0.0003
W3	2016-08-17 8:25	0.00001	0.0042	0.0003	0.0637	0.033	0.00002	0.00005	57.3	0.000005	0.0001	0.00011	0.00735	0.017	0.000005	2.89	0.0021	20.5	0.017	0.00414	14.6	0.00089	0.00005	0.0001	17.4	0.000713	4.94	0.0001	0.595	0.0003	0.00001	0.00153	0.0005	0.0032	0.0003
W3	2016-08-23 9:10	0.00001	0.005	0.00031	0.0597	0.037	0.00002	0.00005	55.3	0.000005	0.0001	0.0001	0.00752	0.018	0.000005	2.9	0.0021	18.6	0.0128	0.00433	13.7	0.00077	0.00005	0.0001	17.7	0.000856	4.53	0.0001	0.616	0.0003	0.00001	0.00136	0.0005	0.001	0.0003

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species						Dissolved Elements																																	
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N\text{-}NO_2$	$N\text{-}NO_3$	$N\text{-}NH_3$	SO_4-D	Chlord	Fluord	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W3	2016-08-29 8:25			162	7.27			9.7	88.4																																								
W3	2016-08-30 8:15	173	453	134.2	7.31	282	3	10	82.8	0.0066	3.73	0.0055	58.3	5.45		0.00001	0.0088	0.0003	0.0692	0.038	0.00002	0.00005	60.7	0.000005	0.0001	0.0001	0.0112	0.024	0.000005	3.14	0.0018	17.8	0.0113	0.00462	15.9	0.00084	0.00005	0.0001	18.8	0.00112	4.03	0.0001	0.652	0.00053	0.00001	0.00134	0.0005	0.0013	0.0003
W3	2016-08-31 8:00			159.8	7.16			10.1	98.9																																								
W3	2016-09-01 8:15			143.7	7.48			10.1	91.4																																								
W3	2016-09-02 8:20			136.3	7.45			10.2	88.7																																								
W3	2016-09-03 7:50			88.7	7.52			10.8	80.1																																								
W3	2016-09-04 8:05			132.1	7.3			11.2	87.3																																								
W3	2016-09-05 7:55			134.9	7.15			11.8	85.3																																								
W3	2016-09-06 11:40			150	7.43			12.7	85.9																																								
W3	2016-09-06 11:40	97.9	277	150	7.43	166	3	12.7	85.9	0.0122	2.83	0.0114	35.6	3.25		0.00001	0.0051	0.00021	0.0434	0.031	0.00002	0.00005	34.1	0.000005	0.0001	0.0001	0.00731	0.021	0.000005	1.92	0.001	10	0.00702	0.00259	9.37	0.0005	0.00005	0.0001	11.9	0.00074	2.29	0.0001	0.377	0.0003	0.00001	0.000648	0.0005	0.001	0.0003
W3	2016-09-07 7:16			105.2	7.11			11.9	87.3																																								
W3	2016-09-08 7:14			111.4	7.77			10	115.4																																								
W3	2016-09-09 7:47			154	7.9			11.3	97.3																																								
W3	2016-09-10 7:56			122.9	7.82			10.9	84.1																																								
W3	2016-09-11 8:14			135.8	7.69			10.5	85.5																																								
W3	2016-09-12 8:08			110.3	7.93			11.1	88																																								
W3	2016-09-13 7:18	114	294	95.7	7.82	180	3	11.1	85.9	0.0122	2.88	0.0163	36.7	3.23		0.00001	0.0035	0.00023	0.0455	0.032	0.00002	0.00005	35.7	0.000005	0.0001	0.0001	0.00753	0.013	0.000005	1.92	0.001	10.3	0.0105	0.00271	10.7	0.00055	0.00005	0.0001	12	0.000844	2.46	0.0001	0.394	0.0003	0.00001	0.000706	0.0005	0.001	0.0003
W3	2016-09-14 8:03			117.1	7.77			10.1	88.9																																								
W3	2016-09-15 7:40			255.5	6.82			9.9	88.3																																								
W3	2016-09-16 7:35			109.2	7.13			10.7	96.7																																								
W3	2016-09-17 7:35			99.7	7.77			10.1	84.9																																								
W3	2016-09-18 7:35			165.7	7.01			10.5	89.6																																								
W3	2016-09-19 7:45			115.9	7.67			10	84																																								
W3	2016-09-20 7:45	91.2	264	102.8	7.81	154	3	9.2	88.2	0.0106	2.61	0.0109	32.8	2.97		0.00001	0.0023	0.00019	0.0387	0.027	0.00002	0.00005	30.9	0.000005	0.0001	0.0001	0.00648	0.011	0.000005	1.79	0.001	9.65	0.00766	0.00232	9.92	0.0005	0.00005	0.0001	9.99	0.000599	2.12	0.0001	0.346	0.0003	0.00001	0.000704	0.0005	0.001	0.0003
W3	2016-09-21 7:15			102.5	7.86			9.2	90.2																																								
W3	2016-09-22 8:00			96.7	7.9			9.4	84.4																																								
W3	2016-09-23 8:10			137.8	8.12			8.3	78.2																																								
W3	2016-09-24 8:20			121.1	7.54			8	88																																								
W3	2016-09-25 8:00			169.8	7.26			7.8	90.3																																								
W3	2016-09-26 8:05			133.4	7.09			7.7	89.5																																								
W3	2016-09-27 8:10	98.8	250	145.9	7.53	158	3	7.7	91.1	0.0047	2.51	0.0053	31.9	2.87		0.00001	0.0023	0.00017	0.0377	0.028	0.00002	0.00005	29.2	0.000005	0.0001	0.0001	0.00571	0.011	0.000005	1.72	0.001	9.86	0.00839	0.00208	12.2	0.0005	0.00005	0.0001	11.1	0.000653	2.27	0.0001	0.33	0.0003	0.00001	0.00066	0.0005	0.001	0.0003
W3	2016-09-28 8:00			120.5	7.38			7.1	92.2																																								
W3	2016-09-29 8:05			141.9	7.69			6.9	97.3																																								
W3	2016-09-30 8:00			138.7	7.71			6.1	89.5																																								
W3	2016-10-01 8:15			150.3	7.47			5.9	92.1																																								
W3	2016-10-02 8:15			118.1	7.32			3.5	87.3																																								
W3	2016-10-03 8:05			136.5	7.32			5.3	91.1																																								
W3	2016-10-03 10:20	93	228	159.1	7.69	142	3	6.5	90.3	0.0038	2.04	0.0094	26.9	2.45		0.00001	0.0024	0.00015	0.0335	0.028	0.00002	0.00005	26.1	0.000005	0.0001	0.0001	0.00436	0.011	0.000005	1.59	0.001	8.81	0.0128	0.0019	11.4	0.0005	0.00005	0.0001	9.32	0.000469	2.2	0.0001	0.287	0.0003	0.00001	0.000576	0.0005	0.0012	0.0003
W3	2016-10-04 8:05	143	353	87.2	7.68	218	3	3.5	98.2	0.0021	2.77	0.0117	43.6	3.91		0.00001	0.0049	0.0002	0.0506	0.028	0.00002	0.00005	40.7	0.000005	0.0001	0.00011	0.00646	0.017	0.000005	2.25	0.0013	15.1	0.0159	0.003	14.1	0.00065	0.00005	0.0001	14.8	0.0008	3.45	0.0001	0.461	0.00038	0.00001	0.00131	0.0005	0.001	0.0003
W3	2016-10-05 6:58			114.6	7.9			3.5	93.2																																								
W3	2016-10-06 7:35			116.5	7.46			3.7	83.7																																								
W3	2016-10-07 7:35			94.5	7.7			3.4	93.7																																								
W3	2016-10-08 7:40			107.4	7.59			2.9	93.2																																								
W3	2016-10-09 7:50			103.8	7.71			2.6	94.3																																								
W3	2016-10-10 7:40			93.2	7.71			1.8	88.8																																								
W3	2016-10-11 7:45	184	457	101.7	7.67	282	3	1.8	88.3	0.0011	3.89	0.0091	60.4	5.39		0.00001	0.0026	0.00027	0.0623	0.03	0.00002	0.00005	54.9	0.000005	0.0001	0.0001	0.00826	0.018	0.000005	2.64	0.0016	16.8	0.0177	0.00395	13.6	0.0009	0.00005	0.0001	20	0.00106	4.19	0.0001	0.632	0.0003	0.00001	0.0017	0.0005	0.001	0.0003
W3	2016-10-12 9:25			146.7	7.83			2.5	88.3																																								
W3	2016-10-13 8:15			97.7	7.84			2.6	94.5																																								
W3	2016-10-14 7:40			101.5	7.64			2.9	107.2																																								
W3	2016-10-15 7:40			92.9	7.56			3.1	91.6																																								
W3	2016-10-16 7:50			100.7	7.59			2.7	83.1																																								
W3	2016-10-17 7:45			95.7	7.71			2.8	127.7																																								
W3	2016-10-18 8:50	180	472	119.5	7.79	297	3	3.3	88.9	0.0131	4.61	0.0292	65.7	6.02		0.00001	0.0017	0.0003	0.0768	0.03	0.00002	0.00005	59.8	0.000005	0.0001	0.0001	0.0118	0.036	0.000005	3.15	0.001	19.3	0.0245	0.0037	15.1	0.0007	0.00005	0.0001	21.5	0.00119	4.08	0.0001	0.66	0.0003	0.00001	0.00152	0.0005	0.001	0.0003
W3	2016-10-19 7:00			99.3	7.64			3.1	91.1																																								
W3	2016-10-20 8:20			85.2	8.03			3.4	94.5																																								
W3	2016-10-21 8:00			99.6	7.64			3.2	86																																								
W3	2016-10-22 8:15			96.3	7.77			3.1	89.8																																								
W3	2016-10-23 15:50			108.5	7.65			2.6	87.8																																								
W3	2016-10-23 15:50	180	466	100.3	7.72	297	3	2.7	90.9	0.0158	4.49	0.0299	65.8	6.1		0.00001	0.002	0.00033	0.0742	0.032	0.00002	0.00005	60.5	0.0000058	0.0001	0.0001	0.0117	0.038	0.000005	3.17	0.0013	19.3	0.033	0.00375	14.1	0.00076	0.00005	0.0001	21.3	0.00133	4.12	0.0001	0.669	0.0003	0.00001	0.00147	0.0005	0.0011	0.0003
W3	2016-10-24 8:00			106.6	7.72			2.5	89.7																																								
W3	2016-10-25 8:20	184	494	98.5	7.83	303	3	1.9	86.3	0.0155	4.43	0.0318	65.2	6.15		0.00001	0.0027	0.00031	0.0755	0.031	0.00002	0.00005	62	0.000005	0.0001	0.00011	0.0119	0.051	0.000005	3.39	0.0016	20	0.036	0.00401	15.6	0.00082	0.00005	0.0001	22.7	0.00133	4.32	0.0001	0.68	0.0003	0.00001	0.0015	0.0005	0.001	0.0003
W3	2016-11-01 15:10	229	490	113.6	7.86	293	3	0.5	95.8	0.001	0.453	0.0099	56.1	4.72		0.00001	0.0028	0.00025	0.068	0.023	0.00002	0.00005	49	0.000005	0.0001	0.0001	0.00281	0.012	0.000005	2.14	0.003	24.9	0.0413	0.00471	16.4	0.0008	0.00005	0.0001	18.1	0.000346	5.83	0.0001	0.662	0.0003	0.00001	0.00247	0.0005	0.001	0.0003
W3	2016-11-08 8:35	227	499	89.9	7.6	299	3	0	82.9	0.001	0.389	0.0109	54.8	4.49		0.00001	0.0027	0.00023	0.0698	0.024	0.00002	0.00005	53.4	0.000005	0.0001	0.0001	0.00276	0.011	0.000005	2.29	0.003	27.5	0.0414	0.00476	18.5	0.00091	0.00005	0.0001	18.7	0.000381	6.09	0.0001	0.698	0.0003	0.00001	0.00242	0.0005	0.001	0.0003
W3	2016-11-15 9:45	236	516	74.7	7.88	301	3.7	0	71.8	0.001	0.379	0.0096	56.4	4.76		0.00001	0.0013	0.00022	0.0722	0.023	0.00002	0.00005	52	0.000005	0.0001	0.0001	0.00243	0.011	0.000005	2.23	0.0035	25	0.0406	0.00473	17.3	0.00085	0.00005	0.0001	18.8	0.000431	6.18	0.0001	0.696	0.0003	0.00001	0.00271	0.0005	0.001	0.0003
W3	2016-11-22 13:35	233	525	113.3	7.52	307	3.5	0	60.4	0.001	0.361	0.0107	56.8	4.67		0.00001	0.0018	0.00024	0.0769	0.024	0.00002	0.00005	56.6	0.0000073	0.0001	0.0001	0.00241	0.014	0.000005	2.27	0.0035	27.3	0.0594	0.00471	17.9	0.00094	0.00005	0.0001	19.6	0.000357	6.2	0.0001	0.731	0.0003	0.00001	0.00242	0.0005	0.001	0.0003
W3	2016-11-29 10:55	237	531	115.6	7.56	315	3	0.1	78.1	0.001	0.324	0.0139	56.7	4.81		0.00001	0.0018	0.00024	0.0751	0.024	0.00002	0.00005	56.4	0.0000075	0.0001	0.0001	0.00262	0.034	0.000005	2.5	0.0028	30.6	0.103	0.00455	20	0.00087	0.00005	0.0001	21.3	0.000382	6.68	0.0001	0.717	0.0003	0.00001	0.00248	0.0005	0.001	0.0003
W3	2016-12-06 11:05	238	534	34.8	7.72	308	3	0.1	86.2	0.001	0.363	0.0089	56.3	4.58		0.00001	0.0021	0.00021	0.0718	0.024	0.00002	0.00005	53.9	0.000005	0.0001	0.0001	0.00443	0.013	0.000005	2.23	0.0032	28.3	0.0436	0.00488	18.8	0.00081	0.00005	0.0001	18.8	0.000313	6.05	0.00016	0.736	0.0003	0.00001	0.00269	0.0005	0.0011	0.0003
W3	2016-12-13 15:50	237	534	62.9	7.57	309	3	0	63.1	0.001	0.359	0.0145	56.6	4.69		0.00001	0.0013	0.00024	0.0755	0.024	0.00002	0.00005	55	0.0000066	0.0001	0.0001	0.00196	0.022	0.000005	2.25	0.0036	28.1	0.0731	0.00458	18.3	0.00076	0.00005	0.0001	20.8	0.000338	6.54	0.0001	0.717	0.0003	0.00001	0.00261	0.0005	0.001	0.0003
W3	2016-12-20 9:10			34.6	7.42			0.1	67.2																																								
W3	2016-12-20 9:10	245	543	34.6	7.42	314	6.5	0.1	67.2	0.001	0.308	0.0232	55.9	4.72		0.00001	0.0021	0.00026	0.081	0.023	0.00002	0.00005	57.8	0.0000077	0.00014	0.0001	0.0024	0.073	0.000005	2.26	0.0028	26.8	0.202	0.00439	18.1	0.00097	0.00005	0.0001	19.9	0.000389	6.24	0.0001	0.712	0.0003	0.00001	0.00241	0.0005	0.0013	0.0003
W3	2016-12-27 11:00	233	532	160.8	7.45	312	3	0	77.2	0.001	0.353	0.0095	56.6	4.67		0.00001	0.0019	0.00025	0.0815	0.023	0.00002	0.00005	56.4	0.000005	0.0001	0.0001	0.00202	0.019	0.000005	2.46	0.0031	29.8	0.0641	0.00446	20.3	0.00089	0.00005	0.0001	19.2	0.000324	6.05	0.0001	0.716	0.0003	0.00001	0.00233	0.0005	0.001	0.0003
W3	2017-01-03 10:00	242	539	139.9	7.43	310	3	0	80.1	0.001	0.364	0.0095	57.5	4.7		0.00001	0.0016	0.00025	0.0758	0.025	0.00002	0.00005	52.6	0.0000059	0.0001	0.0001	0.00194	0.019	0.000005	2.32	0.0027	28.1	0.0635	0.00451	17.2	0.0008	0.00005	0.0001	18.9	0.000418	6.05	0.0001	0.667	0.0003	0.00001	0.00254	0.0005	0.001	0.0003
W3	2017-01-10 10:15	236	540	113.1	7.47	308	3	0	72.6	0.001	0.358	0.0113	57	4.68		0.00001	0.0022	0.00022	0.076	0.023	0.00002	0.00005	54.1	0.000005	0.0001	0.0001	0.00262	0.024	0.000005	2.14	0.0035	28.8	0.0653	0.00484	18	0.00082	0.00005	0.0001	19.7	0.000338	6.29	0.0001	0.734	0.0003	0.00001	0.00284	0.0005	0.001	0.0003
W3	2017-01-17 10:55	237	542	64.1	7.42	313	3	0	67.2	0.001	0.323	0.0203	56.5	4.75		0.00001	0.0016	0.00026	0.0823	0.021	0.00002	0.00005	57.3	0.0000076	0.00011	0.0001	0.00251	0.046	0.000005	2.28	0.0032	29.3	0.15	0.00441	18.9	0.00092	0.00005	0.0001	18.7	0.000329	6.02	0.0001	0.734	0.0003	0.00001	0.00249	0.0005	0.001	0.0003
W3	2017-01-24 11:05	232	524	120.8	7.62	308	17.7	0	58.3	0.001	0.311	0.0219	56.7	4.72		0.00001	0.0024	0.00026	0.0792	0.024	0.00002	0.00005	56	0.00001	0.00014	0.0001	0.00388	0.058	0.000005	2.14	0.0029	28.3	0.2	0.00434	18.7	0.00103	0.00005	0.0001	19.3	0.000273	6.21	0.0002	0.728	0.0003	0.00001	0.00258	0.0005	0.001	0.0003
W3	2017-01-31 10:00	240	529	85.6	7.57	311	3	0	67.8	0.001	0.327	0.0102	57.1	4.64		0.00001	0.0013	0.00032	0.0771	0.023	0.00002	0.00005	56.2	0.0000052	0.0001	0.0001	0.00167	0.026	0.000005	2.31	0.0036	26.7	0.0798	0.00451	18.6	0.00059	0.00005	0.0001	20.3	0.000341	6.33	0.0001	0.737	0.0003	0.00001	0.00272	0.0005	0.001	0.0003
W3	2017-02-07 10:00	245	548	130.4	7.46	339	9.3	0	56.8	0.001	0.345	0.0161	57.8	4.82	0.551	0.00001	0.0018	0.00023	0.0782	0.024	0.00002	0.00005	56.5	0.0000063	0.0001	0.0001	0.00186	0.03	0.000005	2.25	0.0033	29.4	0.0906	0.00454	18.8	0.00087	0.00005	0.0001	19.2	0.000318	6.13	0.0001	0.778	0.0003	0.00001	0.00269	0.0005	0.001	0.0003
W3	2017-02-14 13:30	247	537	130	7.84	340	3	0.1	55.2	0.0019	0.274	0.005	58.6	5.04		0.00001	0.0027	0.00025	0.0811	0.022	0.00002	0.00005	56.6	0.0000132	0.0001	0.0001	0.00893	0.048	0.000005	2.64	0.0032	27.8	0.158	0.0041	18.4	0.00106	0.00005	0.0001	20.6	0.000319	6.57	0.0001	0.725	0.0003	0.00001	0.00253	0.0005	0.003	0.0003
W3	2017-02-21 14:00	243	544	108.5	7.43	322	3	0.1	57.2	0.001	0.256	0.0189	57.7	4.84		0.00001	0.0011	0.00022	0.0793	0.021	0.00002	0.00005	56.7	0.00001	0.0001	0.0001	0.00253	0.037	0.000005	2.42	0.0032	28.8	0.134	0.00381	19	0.00079	0.00005	0.0001	21	0.000268	6.68	0.0001	0.716	0.0003	0.00001	0.00246	0.0005	0.001	0.0003
W3	2017-02-28 9:40	237	541	53.1	7.7	335	3	0.1	69.8	0.001	0.295	0.0213	58.2	4.84	0.54	0.00001	0.0019	0.00024	0.0743	0.021	0.00002	0.00005	55.1	0.0000098	0.0001	0.0001	0.00175	0.03	0.000005	2.18	0.0029	29.3	0.138	0.00456	18.5	0.00079	0.00005	0.0001	19.7	0.000313	6.17	0.0001	0.803	0.0003	0.00001	0.00267	0.0005	0.001	0.0003
W3	2017-03-07 13:55	242	537	93.3	7.5	323	3	0	53.2	0.001	0.321	0.0167	58.1	4.78		0.00001	0.002	0.00027	0.082	0.023	0.00002	0.00005	57.7	0.00001	0.0001	0.0001	0.00182	0.026	0.000005	2.46	0.0036	31.8	0.146	0.00438	19.5	0.00083	0.00005	0.0001	19.8	0.000332	6.39	0.0001	0.774	0.0003	0.00001	0.00271	0.0005	0.001	0.0003
W3	2017-03-14 14:35	245	581	83.1	7.76	349	3	0.6	59.1	0.0023	0.15	0.0491	61.1	5.55		0.00001	0.0039	0.00031	0.0876	0.022	0.00002	0.00005	60.2	0.0000267	0.00019	0.0001	0.00392	0.056	0.000005	2.67	0.003	31.8	0.39	0.00364	20.7	0.00132	0.00005	0.0001	21.9	0.000167	6.91	0.0001	0.748	0.0003	0.00001	0.0023	0.0005	0.0054	0.0003
W3	2017-03-21 11:00	229	554	63.9	7.63	316	3	4.4	45.4	0.001	0.106	0.0551	53.9	5.01		0.00001	0.0029	0.00024	0.072	0.02	0.00002	0.00005	54.6	0.0000207	0.00018	0.00012	0.00274	0.062	0.000005	2	0.0023	26.4	0.422	0.00371	16.7	0.00126	0.00005	0.0001	19	0.000108	6.27	0.00012	0.729	0.0003	0.00001	0.00203	0.0005	0.001	0.0003
W3	2017-03-28 10:05	227	540	88.7	7.42	342	3	0	58.7	0.001	0.131	0.0508	54.7	5.17		0.00001	0.0029	0.00024	0.0727	0.019	0.00002	0.00005	52.6	0.0000209	0.00018	0.0001	0.00184	0.061	0.000005	2.11	0.0025	26	0.4	0.00338	17.9	0.00122	0.00005	0.0001	18.6	0.00005	6.26	0.0001	0.688	0.0003	0.00001	0.002	0.0005	0.001	0.0003
W3	2017-04-04 9:45	230	526	78.8	7.17	314	3	0.5	55.2	0.0016	0.125	0.0579	56.3	5.23		0.00001	0.0027	0.00024	0.0762	0.018	0.00002	0.00005	52.3	0.0000211	0.00018	0.0001	0.00233	0.058	0.000005	2.15	0.0023	28.1	0.423	0.0034	18.1	0.00125	0.00005	0.0001	19.6	0.000095	6.29	0.0001	0.688	0.0003	0.00001	0.00201	0.0005	0.0014	0.0003
W3	2017-04-06 10:25	224	524	149.4	7.91	317	3	4.2	66.1	0.0022	0.125	0.0546	58	5.44		0.00001	0.0027	0.00025	0.0718	0.018	0.00002	0.00005	57.9	0.0000197	0.00017	0.0001	0.00359	0.045	0.000005	2.04	0.0027	27.2	0.403	0.00355	17	0.00118	0.00005	0.0001	18.9	0.000114	6.29	0.00015	0.691	0.0003	0.00001	0.00195	0.0005	0.001	0.0003
W3	2017-04-11 8:45	240	537	96.4	7.63	343	3	0.1	72	0.0019	0.256	0.0178	60.5	5.32		0.00001	0.0078	0.00023	0.0711	0.024	0.00002	0.00005	56.3	0.0000085	0.0001	0.0001	0.0045	0.024	0.000005	2.42	0.0031	30.2	0.122	0.00434	16.8	0.0008	0.00005	0.0001	19.3	0.000322	6.13	0.0001	0.755	0.0003	0.00001	0.00279	0.0005	0.0016	0.0003
W3	2017-04-18 8:10	253	539	90.4	7.2	358	3	0.1	79.9	0.0011	0.285	0.0155	59	5.08		0.00001	0.0031	0.00023	0.0736	0.023	0.00002	0.00005	59.3	0.0000086	0.0001	0.0001	0.0029	0.022	0.000005	2.34	0.0036	32.2	0.118	0.00458	18.8	0.00077	0.00005	0.0001	21.6	0.000315	6.61	0.0001	0.789	0.0003	0.00001	0.00318	0.0005	0.001	0.0003
W3	2017-04-25 16:00	236	519	37.9	7.39	292	3	0.1	74.5	0.0013	0.214	0.0118	53.4	4.66		0.00001	0.0027	0.00021	0.0649	0.019	0.00002	0.00005	51.7	0.0000072	0.0001	0.0001	0.00319	0.013	0.000005	1.98	0.0033	24.8	0.0879	0.00416	15.5	0.00066	0.00005	0.0001	18.2	0.000266	5.58	0.0001	0.69	0.0003	0.00001	0.00263	0.0005	0.001	0.0003
W3	2017-05-02 8:00	138	375	110.1	7.07	225	10.1	0.1	99.4	0.0511	1.58	0.143	43.7	4.86		0.00001	0.0081	0.00031	0.0613	0.034	0.00002	0.00005	40.4	0.0000174	0.0001	0.0001	0.0139	0.045	0.000005	2.62	0.0014	15.3	0.346	0.00529	13	0.00085	0.000052	0.0001	14.9	0.000561	3.57	0.0001	0.475	0.00033	0.00001	0.00141	0.0005	0.0012	0.0003
W3	2017-05-03 7:30			147.7	7.58			1.2	79.7																																								
W3	2017-05-04 8:10			137.4	7.34			1.5	84																																								
W3	2017-05-05 8:10			166.2	7.2			1.8	82.1																																								
W3	2017-05-06 8:15			153.7	7.45			2.2	105.5																																								
W3	2017-05-07 8:00			110.6	7.59			3	82.2																																								
W3	2017-05-08 8:05			99.2	7.73			3.6	82.4																																								
W3	2017-05-09 7:30	145	390	109.3	7.37	221	3	4	77.5	0.0184	1.58	0.0121	46.8	5.03		0.00001	0.0075	0.00031	0.0574	0.035	0.00002	0.00005	42	0.000005	0.0001	0.0001	0.0112	0.047	0.000005	2.54	0.0013	16.5	0.0295	0.00347	13.7	0.00074	0.00005	0.0001	17	0.000481	3.99	0.0001	0.512	0.0003	0.00001	0.00132	0.0005	0.001	0.0003
W3	2017-05-10 8:05			145.1	6.92			4.4	81.8																																								
W3	2017-05-11 8:00			88.2	7.5			4.7	81.4																																								
W3	2017-05-12 8:00			77.3	7.49			5.3	79.9																																								
W3	2017-05-13 8:00			99	7.61			5.9	81.6																																								
W3	2017-05-14 7:55			90	7.6			5.8	77.3																																								
W3	2017-05-15 7:50			115.3	7.5			6.3	81.4																																								
W3	2017-05-16 10:00			150.9	7.25			6.6	82.1																																								
W3	2017-05-16 10:00	143	367	150.9	7.25	219	3	6.6	82.1	0.0137	1.56	0.0069	46.3	4.88		0.00001	0.008	0.0003	0.062		0.00002	0.00005	44.5	0.0000051	0.0001	0.00011	0.0124	0.039	0.000005	2.53	0.001	14.4	0.0165	0.00331	14.1	0.00081	0.00005	0.0001	14.1	0.000472	3.47	0.0001	0.481	0.0003	0.00001	0.00124	0.0005	0.0019	0.0003
W3	2017-05-17 8:00			106.5	7.52			6.8	79.4																																								
W3	2017-05-18 7:44			151.1	6.8			6.9	80.6																																								
W3	2017-05-19 7:50			98.3	7.74			7.4	79.4																																								
W3	2017-05-20 7:45			106.2	7.66			7	76.9																																								
W3	2017-05-21 8:05			92.3	7.77			6.4	78.1																																								
W3	2017-05-22 7:50			113.1	7.74			6.7	75.1																																								
W3	2017-05-23 7:25	146	380	158.9	7.43	225	9.4	6.3	79.1	0.01	1.42	0.0218	47.3	4.98		0.00001	0.005	0.00031	0.0621	0.036	0.00002	0.00005	45.6	0.000005	0.0001	0.00025	0.013	0.048	0.000005	2.64	0.0013	16.1	0.204	0.00353	14.9	0.00094	0.00005	0.0001	16.2	0.000493	3.69	0.0001	0.517	0.0003	0.00001	0.00128	0.0005	0.001	0.0003
W3	2017-05-24 7:50			163.5	7.19			7.5	80.9																																								
W3	2017-05-25 7:55			184.3	6.97			8.3	101.3																																								
W3	2017-05-26 8:05			82.5	7.93			6.1	80.6																																								

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	N-NO$_2$	N-NO$_3$	N-NH$_3$	SO$_4$-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W3	2017-05-27 8:00			108.8	7.56			6.7	82						
W3	2017-05-28 8:05			179.8	7.05			7.6	82.8						
W3	2017-05-29 7:55			104.7	7.74			8.7	102.9						
W3	2017-05-30 8:30	164	408	84.5	7.85	231	3.4	7.9	71.4	0.0048	0.912	0.0133	46.5	4.63	
W3	2017-05-31 8:25			122	7.91			9.1	80.2						
W3	2017-06-01 7:55			127.3	7.82			10.2	80.8						
W3	2017-06-02 8:15			133.6	7.79			3.7	83.3						
W3	2017-06-03 8:10			166.3	7.17			3.6	80.2						
W3	2017-06-04 7:55			168.9	7.17			9.3	86.6						
W3	2017-06-05 7:45			182.1	7.23			11.2	91						
W3	2017-06-06 8:00	130	338	109.2	7.92	199	5.7	11.8	83.5	0.0147	1.55	0.012	43.5	4.48	
W3	2017-06-07 8:05			134.1	7.29			11.3	77.2						
W3	2017-06-08 8:00			166.5	7.26			12.1	80.7						
W3	2017-06-09 8:05			155.6	7.2			5.2	80.1						
W3	2017-06-10 7:45			77.9	7.75			4.7	77.5						
W3	2017-06-11 8:00			132.6	7.43			7.9	77.8						
W3	2017-06-12 8:05			167.9	7.05			3.3	82.1						
W3	2017-06-13 8:00	129	346	140.1	7.56	207	3	12	86.6	0.0133	1.91	0.0167	46.7	4.25	
W3	2017-06-14 7:40			182.3	7.21			11.9	78.3						
W3	2017-06-15 8:00			106.7	7.65			11	81.5						
W3	2017-06-16 7:05			117.2	7.62			10.8	86						
W3	2017-06-17 7:45			100.7	7.77			10.3	79.2						
W3	2017-06-18 8:05			106.5	7.78			11.4	79.9						
W3	2017-06-19 8:00			115.9	7.66			10.6	81						
W3	2017-06-20 7:45	151	391	113.6	7.6	230	3	10.2	81.2	0.0075	1.57	0.0127	48.1	4.21	
W3	2017-06-21 8:10			121.2	7.68			11.5	82						
W3	2017-06-22 7:30			127.7	7.6			9.1	84.5						
W3	2017-06-23 7:20			121.7	7.09			8.6	80.9						
W3	2017-06-24 7:05			124.9	7.5			10.8	110.8						
W3	2017-06-25 7:25			115.9	7.7			9.9	60.3						
W3	2017-06-26 7:55			112.7	7.72			9.5	81						
W3	2017-06-27 10:00	214	490	116.6	7.82	286	3.4	5.2	80.8	0.001	0.232	0.0078	54.2	4.7	
W3	2017-06-28 7:10			145.7	7.76			3.4	92.9						
W3	2017-06-29 7:30			117	7.78			3.3	98						
W3	2017-06-30 8:00			120.6	7.82			3.6	85.2						
W3	2017-07-01 7:50			112.2	7.78			3.4	85.4						
W3	2017-07-02 8:20			114.6	7.87			3.3	109.7						
W3	2017-07-03 9:15			105.3	7.88			3.7	95.2						
W3	2017-07-04 9:30	231	520	104.9	7.89	301	3	3.7	99.6	0.001	0.197	0.0087	54.9	4.6	
W3	2017-07-05 8:30														
W3	2017-07-06 8:35			115	7.85			3.3	96.2						
W3	2017-07-07 8:30			156.8	7.06			3.4	90.7						
W3	2017-07-08 9:35			73.6	7.83			3.9	82.4						
W3	2017-07-10 0:00	232	521			299	3			0.0012	0.172	0.0097	53	4.47	
W3	2017-07-11 13:40	236	543	156.9	8.43	304	3	11.8	100	0.001	0.175	0.0066	53.5	4.52	
W3	2017-07-12 7:05			188.7	7.16			10.7	83.9						
W3	2017-07-13 7:50			162.7	7.04			12.3	80.9						
W3	2017-07-14 8:15														
W3	2017-07-18 10:40														
W3	2017-07-18 10:45	240	533	159.8	7.45	309	5.4	4.4	88.2	0.001	0.19	0.0073	54.9	4.72	
W3	2017-07-25 9:00	230	536	100.9	7.44	306	3	3.8	91	0.001	0.179	0.0053	54.8	4.61	
W3	2017-07-27 7:50			161.8	7.19			9.6	80.2						
W3	2017-07-28 7:10														
W3	2017-07-29 7:55			149.9	7.53			11.7	81.4						
W3	2017-07-30 8:20			251.5	6.46			11.6	93.6						
W3	2017-07-31 8:10			129.4	7.46			11.3	88.2						
W3	2017-08-01 7:40	185	451	101.4	7.63	271	3	11.3	79	0.0021	1.32	0.0069	55.6	5.06	
W3	2017-08-02 8:25			112	7.7			11.4	90.8						
W3	2017-08-03 7:45			123.8	7.67			7.8	85.3						
W3	2017-08-04 8:05			160.7	7.43			7.5	83.2						
W3	2017-08-05 8:00			96.9	7.75			7.2	92.5						
W3	2017-08-06 8:20			135	7.66			4.6	82.6						
W3	2017-08-07 8:30			133.7	7.71			3.9	83.1						
W3	2017-08-08 8:20	225	507	158.7	7.6	300	3	4.3	96.2	0.001	0.196	0.0075	56.2	4.57	
W3	2017-08-15 8:15	246	528	118.6	7.75	308	3	3.2	81.7	0.001	0.188	0.0056	56.1	4.48	
W3	2017-08-22 9:00	238	532	183.8	7.66	305	3	3.2	85.2	0.001	0.181	0.0054	53.9	4.24	
W3	2017-08-23 14:15	247	531			314	8			0.001	0.17	0.0108	55.3	4.44	
W3	2017-08-29 12:10	236	516	124.3	7.86	307	3	3.6	88.7	0.001	0.173	0.0062	54.2	4.27	
W3	2017-09-05 7:40	247	549	119	7.27	316	3	2.7	81	0.001	0.326	0.005	55.3	4.46	
W3	2017-09-12 8:40	236	518	168.5	7.07	307	3	1.8	90.8	0.001	0.167	0.0051	54.9	4.43	
W3	2017-09-19 14:45	243	510	129.8	7.2	310	3	3.9	94.9	0.001	0.153	0.0057	55.2	4.42	
W3	2017-09-26 8:25			98.5	7.5			1.1	78.8						
W3	2017-09-26 8:25	242	527	98.5	7.5	314	3	1.1	78.8	0.001	0.177	0.0058	55.3	4.43	
W3	2017-10-03 8:55	242	541	80.1	7.41	311	3	0.8	91.3	0.001	0.18	0.0053	54.3	4.36	
W3	2017-10-10 8:50			100.2	7.42			0.3	96.7						
W3	2017-10-10 8:50	244	533	100.2	7.42	317	3	0.3	96.7	0.001	0.189	0.005	55.8	4.45	
W3	2017-10-17 9:35	241	524	101.7	7.47	309	3	0.4	84.3	0.001	0.196	0.0054	55.6	4.42	
W3	2017-10-22 8:05			91.7	7.41			0.2	84.2						
W3	2017-10-22 8:05	246	536	91.7	7.41	314	3	0.2	84.2	0.001	0.205	0.005	57	4.54	0.543
W3	2017-10-24 8:50			125.2	8.06			0	77.8						
W3	2017-10-24 8:50	243	522	125.2	8.06	327	3	0	77.8	0.001	0.208	0.0053	57.6	4.56	0.544
W3	2017-10-31 9:50	237	525	123.1	7.65	306	3	0.5	87.4	0.001	0.203	0.008	56	4.45	
W3	2017-11-07 14:05	256	558	139.6	7.66	907	3	0	46.3	0.001	0.212	0.0093	57.4	4.43	
W3	2017-11-14 9:00	252	539	150.6	7.41	328	3	0.1	81.6	0.001	0.199	0.0099	57.9	4.54	
W3	2017-11-21 9:30	247	534	120.8	7.93	320	4.7	0	64.5	0.001	0.194	0.0201	57.4	4.51	
W3	2017-11-28 9:30	246	534	97	7.44	326	3	0.1	54	0.001	0.168	0.0276	57.3	4.58	
W3	2017-12-05 14:25	242	533	103.9	7.69	317	3.3	0.1	52.5	0.0011	0.178	0.0243	56.6	4.39	
W3	2017-12-12 10:15	246	514	120.2	8.1	318	5.6	0.3	72.7	0.001	0.2	0.0117	56.5	4.35	
W3	2017-12-19 9:30	240	560	103.2	7.32	320	3	0.2	70.1	0.001	0.211	0.0114	57.8	4.41	
W3	2017-12-26 9:50	251	558	144.2	8.11	331	3.2	0	77.3	0.001	0.204	0.0106	57	4.41	
W3	2018-01-01 8:00														
W3	2018-01-02 10:25	255	556	221	7.12	334	3	0.1	89	0.001	0.224	0.009	59.8	4.47	
W3	2018-01-09 10:15	249	548	44.2	7.67	328	3	0	94.6	0.001	0.2	0.0095	58.2	4.51	
W3	2018-01-16 10:00	254	560	34.4	7.92	330	4.4	1.4	81.4	0.001	0.187	0.0276	59.5	4.74	
W3	2018-01-23 9:15	246	562	49.7	7.98	341	4	0.3	85.9	0.0024	0.291	0.0167	58.7	8.76	
W3	2018-01-30 11:00	245	563	56.4	7.78	320	3	0.7	55.3	0.001	0.192	0.0144	59.5	4.56	
W3	2018-02-06 11:20	243	568	39.6	7.51	321	4.3	0.8	36.2	0.001	0.235	0.0225	60.1	4.04	
W3	2018-02-13 8:20	268	617	202.7	7.6	353	3	1.2	70.3	0.001	0.121	0.005	67.5	4.64	
W3	2018-02-20 15:10			189.1	7.89			0.6	68.6						
W3	2018-02-20 15:10	259	560	189.1	7.89	348	3	0.6	68.6	0.001	0.112	0.0138	61.8	4.7	
W3	2018-02-27 8:45	253	566	154.7	7.85	331	3	1.5	46.2	0.0012	0.123	0.0122	63.4	4.96	
W3	2018-03-06 14:45	254	580	118.3	7.76	326	3	0.4	70.9	0.0016	0.0943	0.0102	62.1	4.98	
W3	2018-03-13 8:40	257	574	210	7.55	326	3	0.7	63.2	0.001	0.129	0.0089	58.9	4.83	
W3	2018-03-20 14:40	237	535	152.9	7.45	319	3	0.3	49.3	0.001	0.136	0.0114	58.9	5.03	
W3	2018-03-27 16:55	235	533	156.7	7.87	326	5.6	2.2	62.3	0.001	0.142	0.0082	58.7	5.16	
W3	2018-04-03 9:35	234	521	73.1	7.89	312	3	0.4	64.7	0.001	0.154	0.0078	59.2	5.25	
W3	2018-04-10 8:05	226	528	232.6	7.49	299	3	0.6	100.9	0.001	0.205	0.0091	53.2	4.65	
W3	2018-04-17 7:40	249	533	201.1	7.48	334	3	2.3	65	0.001	0.159	0.005	58	5.38	
W3	2018-04-24 9:20	247	541	170.6	7.81	313	3	0.3	104	0.001	0.14	0.0099	56.5	5.12	
W3	2018-05-01 8:35	146	332	251.9	7.77	191	3	0.3	95.3	0.001	0.0649	0.0148	30.2	2.81	
W3	2018-05-08 8:30	149	361	195.6	7.23	278	3	0	98.2	0.001	0.0785	0.0162	34.5	3.11	0.355
W3	2018-05-15 9:55	221	502	139.9	7.79	293	8.9	0.4	78.3	0.0022	0.155	0.0126	53.2	4.76	0.499
W3	2018-05-22 8:50	228	513	169.7	7.84	304	3	0.2	76.5	0.001	0.129	0.01	55.4	5.2	
W3	2018-05-29 9:00	235	513	211.1	7.81	309	3	0.4	90.4	0.001	0.135	0.0078	56.7	5.25	
W3	2018-06-05 10:05	209	485	129.3	7.74	277	3	2.7	67.3	0.001	0.117	0.0105	49.2	4.47	

Station	Date / Time	Dissolved Elements																			
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W3	2017-05-27 8:00																				
W3	2017-05-28 8:05																				
W3	2017-05-29 7:55																				
W3	2017-05-30 8:30	0.00001	0.0062	0.00032	0.0601	0.03	0.00002	0.00005	44.1	0.0000056	0.0001	0.00013	0.0129	0.039	0.000005	2.35	0.002	16.9	0.0487	0.00368	13.8
W3	2017-05-31 8:25																				
W3	2017-06-01 7:55																				
W3	2017-06-02 8:15																				
W3	2017-06-03 8:10																				
W3	2017-06-04 7:55																				
W3	2017-06-05 7:45																				
W3	2017-06-06 8:00	0.00001	0.0068	0.0003	0.0549	0.027	0.00002	0.00005	39.6	0.0000054	0.0001	0.00016	0.0215	0.041	0.000005	2.23	0.0011	12.8	0.0143	0.00265	11.6
W3	2017-06-07 8:05																				
W3	2017-06-08 8:00																				
W3	2017-06-09 8:05																				
W3	2017-06-10 7:45																				
W3	2017-06-11 8:00																				
W3	2017-06-12 8:05																				
W3	2017-06-13 8:00	0.00001	0.0098	0.00035	0.0618	0.023	0.00002	0.00005	43	0.0000052	0.0001	0.00019	0.022	0.055	0.000005	2.39	0.001	13.6	0.00897	0.00257	11.5
W3	2017-06-14 7:40																				
W3	2017-06-15 8:00																				
W3	2017-06-16 7:05																				
W3	2017-06-17 7:45																				
W3	2017-06-18 8:05																				
W3	2017-06-19 8:00																				
W3	2017-06-20 7:45	0.00001	0.0062	0.00033	0.0651	0.026	0.00002	0.00005	48.1	0.000005	0.0001	0.00017	0.0157	0.037	0.000005	2.34	0.0014	16.2	0.0112	0.00298	13.4
W3	2017-06-21 8:10																				
W3	2017-06-22 7:30																				
W3	2017-06-23 7:20																				
W3	2017-06-24 7:05																				
W3	2017-06-25 7:25																				
W3	2017-06-26 7:55																				
W3	2017-06-27 10:00	0.00001	0.0045	0.00025	0.0642	0.022	0.00002	0.00005	54.8	0.000005	0.0001	0.0001	0.00501	0.013	0.000005	2.27	0.0024	23.5	0.0346	0.00401	16.9
W3	2017-06-28 7:10																				
W3	2017-06-29 7:30																				
W3	2017-06-30 8:00																				
W3	2017-07-01 7:50																				
W3	2017-07-02 8:20																				
W3	2017-07-03 9:15																				
W3	2017-07-04 9:30	0.00001	0.0022	0.00024	0.0663	0.024	0.00002	0.00005	54.7	0.000005	0.0001	0.0001	0.0034	0.011	0.000005	2.26	0.0025	27.4	0.0372	0.00448	18
W3	2017-07-05 8:30																				
W3	2017-07-06 8:35																				
W3	2017-07-07 8:30																				
W3	2017-07-08 9:35																				
W3	2017-07-10 0:00	0.00001	0.0021	0.00024	0.0677	0.021	0.00002	0.00005	53.6	0.000005	0.0001	0.0001	0.00349	0.011	0.000005	2.21	0.0027	27.7	0.0383	0.00441	18
W3	2017-07-11 13:40	0.00001	0.0027	0.00025	0.0687	0.022	0.00002	0.00005	54.9	0.000005	0.0001	0.0001	0.00341	0.013	0.000005	2.2	0.0027	28	0.0376	0.00469	18.3
W3	2017-07-12 7:05																				
W3	2017-07-13 7:50																				
W3	2017-07-14 8:15																				
W3	2017-07-18 10:40																				
W3	2017-07-18 10:45	0.00001	0.0238	0.00023	0.0691	0.023	0.00002	0.00005	56.6	0.000005	0.0001	0.0001	0.00356	0.042	0.000005	2.22	0.0027	28	0.0797	0.00426	17.7
W3	2017-07-25 9:00	0.00001	0.0018	0.00024	0.0689	0.026	0.00002	0.00005	58.8	0.0000082	0.0001	0.0001	0.0029	0.01	0.000005	2.39	0.003	27.1	0.0366	0.0043	18.8
W3	2017-07-27 7:50																				
W3	2017-07-28 7:10																				
W3	2017-07-29 7:55																				
W3	2017-07-30 8:20																				
W3	2017-07-31 8:10																				
W3	2017-08-01 7:40	0.00001	0.0026	0.00035	0.0733	0.026	0.00002	0.00005	54.3	0.000005	0.0001	0.00014	0.0128	0.031	0.000005	2.65	0.0019	21.2	0.02	0.00387	15.3
W3	2017-08-02 8:25																				
W3	2017-08-03 7:45																				
W3	2017-08-04 8:05																				
W3	2017-08-05 8:00																				
W3	2017-08-06 8:20																				
W3	2017-08-07 8:30																				
W3	2017-08-08 8:20	0.00001	0.0027	0.00025	0.0677	0.024	0.00002	0.00005	56.4	0.000005	0.0001	0.0001	0.00342	0.017	0.000005	2.25	0.0033	26.4	0.0414	0.00436	18.2
W3	2017-08-15 8:15	0.00001	0.0019	0.00023	0.0655	0.023	0.00002	0.00005	53.1	0.000005	0.0001	0.0001	0.00277	0.015	0.000005	2.19	0.0031	25.7	0.0424	0.00423	17.7
W3	2017-08-22 9:00	0.00001	0.0022	0.00023	0.068	0.023	0.00002	0.00005	55.7	0.000005	0.0001	0.0001	0.00266	0.017	0.000005	2.25	0.0036	27.4	0.0435	0.00426	17.6
W3	2017-08-23 14:15	0.00001	0.0032	0.00027	0.076	0.025	0.00002	0.00005	56.7	0.000005	0.0001	0.0001	0.00284	0.019	0.000005	2.43	0.0033	27.5	0.113	0.0047	18.4
W3	2017-08-29 12:10	0.00001	0.0024	0.00024	0.0694	0.025	0.00002	0.00005	57.6	0.000005	0.0001	0.0001	0.00267	0.016	0.000005	2.19	0.0034	28.2	0.0459	0.0049	17.8
W3	2017-09-05 7:40	0.00001	0.0024	0.00025	0.0715	0.025	0.00002	0.00005	56.4	0.000005	0.0001	0.0001	0.00276	0.019	0.000005	2.54	0.0032	29.1	0.0476	0.00449	18.6
W3	2017-09-12 8:40	0.00001	0.0112	0.00023	0.0693	0.025	0.00002	0.00005	56.4	0.0000056	0.0001	0.00015	0.0048	0.037	0.000005	2.4	0.0032	27.7	0.0478	0.00464	18.8
W3	2017-09-19 14:45	0.00001	0.003	0.00024	0.0683	0.025	0.00002	0.00005	56.6	0.000005	0.0001	0.0001	0.00337	0.024	0.000005	2.27	0.0034	26.9	0.0433	0.00449	18.3
W3	2017-09-26 8:25																				
W3	2017-09-26 8:25	0.00001	0.003	0.00023	0.0723	0.025	0.00002	0.00005	58.7	0.000005	0.0001	0.0001	0.003	0.021	0.000005	2.5	0.0036	28.4	0.0493	0.0045	19.3
W3	2017-10-03 8:55	0.00001	0.0025	0.00023	0.0693	0.028	0.00002	0.00005	55.5	0.000005	0.0001	0.0001	0.00278	0.021	0.000005	2.31	0.0029	29.8	0.0472	0.00456	18.8
W3	2017-10-10 8:50																				
W3	2017-10-10 8:50	0.00001	0.0019	0.00023	0.0683	0.024	0.00002	0.00005	57.9	0.0000054	0.0001	0.0001	0.00228	0.02	0.000005	2.36	0.0034	29.6	0.0471	0.00442	19.2
W3	2017-10-17 9:35	0.00001	0.0014	0.00023	0.0628	0.027	0.00002	0.00005	54.3	0.000005	0.0001	0.0001	0.00214	0.019	0.000005	2.33	0.0037	27.8	0.0481	0.00456	18.9
W3	2017-10-22 8:05																				
W3	2017-10-22 8:05	0.00001	0.0015	0.00012	0.0685	0.025	0.00002	0.00005	53.7	0.000005	0.0001	0.0001	0.0021	0.018	0.000005	2.29	0.003	29.2	0.0461	0.00491	18.6
W3	2017-10-24 8:50																				
W3	2017-10-24 8:50	0.00001	0.0024	0.00024	0.0641	0.025	0.00002	0.00005	62	0.000005	0.0001	0.0001	0.00236	0.019	0.000005	2.32	0.0036	32.5	0.0651	0.00434	20.6
W3	2017-10-31 9:50	0.00001	0.0019	0.00024	0.0618	0.023	0.00002	0.00005	55.3	0.000005	0.0001	0.0001	0.00186	0.016	0.000005	2.12	0.0029	28.1	0.0432	0.00468	17
W3	2017-11-07 14:05	0.00001	0.0016	0.00021	0.0693	0.025	0.00002	0.00005	54.3	0.000005	0.0001	0.0001	0.00213	0.015	0.000005	2.32	0.0035	30	0.049	0.00431	19.8
W3	2017-11-14 9:00	0.00001	0.0015	0.00021	0.0711	0.023	0.00002	0.00005	61.6	0.000005	0.0001	0.0001	0.00218	0.027	0.000005	2.3	0.0028	30.5	0.0739	0.0046	19
W3	2017-11-21 9:30	0.00001	0.0013	0.00024	0.0734	0.023	0.00002	0.00005	59.4	0.0000075	0.0001	0.0001	0.00202	0.037	0.000005	2.28	0.003	28.4	0.123	0.00459	17.6
W3	2017-11-28 9:30	0.00001	0.0017	0.00026	0.0756	0.024	0.00002	0.00005	62.4	0.0000105	0.00013	0.0001	0.00249	0.065	0.000005	2.01	0.0034	32.1	0.23	0.00431	18.2
W3	2017-12-05 14:25	0.00001	0.0018	0.00029	0.0727	0.027	0.00002	0.00005	57.6	0.0000113	0.00013	0.0001	0.00205	0.064	0.000005	2.18	0.0037	29.7	0.229	0.00392	19.6
W3	2017-12-12 10:15	0.00001	0.002	0.00027	0.0838	0.023	0.00002	0.00005	58.9	0.0000069	0.0001	0.0001	0.00226	0.031	0.000005	2.43	0.0031	28.8	0.137	0.00421	18.6
W3	2017-12-19 9:30	0.00001	0.0023	0.00023	0.0731	0.023	0.00002	0.00005	60.8	0.000005	0.0001	0.00016	0.00226	0.024	0.000005	2.31	0.0033	31.4	0.0848	0.00428	18.3
W3	2017-12-26 9:50	0.00001	0.0015	0.00023	0.0775	0.025	0.00002	0.00005	62.5	0.000005	0.0001	0.0001	0.00201	0.016	0.000005	2.4	0.0036	32.8	0.0825	0.00414	20.8
W3	2018-01-01 8:00																				
W3	2018-01-02 10:25	0.00001	0.001	0.0002	0.0659	0.028	0.00002	0.00005	61	0.0000065	0.0001	0.0001	0.0016	0.01	0.000005	2.52	0.0046	31.6	0.00292	0.00486	20.4
W3	2018-01-09 10:15	0.00001	0.0012	0.00032	0.0722	0.025	0.00002	0.00005	62.5	0.0000071	0.0001	0.0001	0.00185	0.015	0.000005	2.3	0.004	31	0.052	0.00435	19.6
W3	2018-01-16 10:00	0.00001	0.0015	0.00023	0.0723	0.023	0.00002	0.00005	60.2	0.0000094	0.0001	0.0001	0.00212	0.014	0.000005	2.46	0.0033	31.3	0.0968	0.00479	19.2
W3	2018-01-23 9:15	0.00001	0.0011	0.00021	0.0726	0.025	0.00002	0.00005	57.9	0.0000081	0.0001	0.00016	0.0017	0.032	0.000005	2.43	0.0032	30.8	0.122	0.00422	19.5
W3	2018-01-30 11:00	0.00001	0.0018	0.00023	0.0673	0.023	0.00002	0.00005	61	0.0000104	0.0001	0.0001	0.00152	0.026	0.000005	2.07	0.0033	27.4	0.114	0.00484	17.3
W3	2018-02-06 11:20	0.00001	0.0014	0.00022	0.0799	0.024	0.00002	0.00005	59.2	0.0000096	0.0001	0.0001	0.0018	0.032	0.000005	2.24	0.0039	28.2	0.165	0.00398	20.1
W3	2018-02-13 8:20	0.00001	0.0024	0.00023	0.0723	0.022	0.00002	0.00005	61.1	0.000012	0.0001	0.0001	0.00554	0.01	0.000005	3.02	0.004	32.4	0.112	0.00342	22.8
W3	2018-02-20 15:10																				
W3	2018-02-20 15:10	0.00001	0.0012	0.00022	0.0703	0.023	0.00002	0.00005	68	0.0000087	0.0001	0.0001	0.00399	0.013	0.000005	2.48	0.0038	34.3	0.112	0.00365	20.6
W3	2018-02-27 8:45	0.00001	0.0016	0.00021	0.0725	0.022	0.00002	0.00005	57.6	0.0000128	0.0001	0.0001	0.00482	0.013	0.000005	2.53	0.0038	31.9	0.0772	0.00301	18
W3	2018-03-06 14:45	0.00001	0.0014	0.00021	0.0701	0.024	0.00002	0.00005	55.4	0.0000102	0.0001	0.0001	0.00444	0.018	0.000005	2.5	0.004	28.1	0.0704	0.00305	19.1
W3	2018-03-13 8:40	0.00001	0.0025	0.00027	0.0762	0.03	0.00002	0.00005	55.1	0.0000169	0.0001	0.0001	0.00401	0.023	0.000005	2.61	0.0034	30.8	0.0971	0.00298	18.6
W3	2018-03-20 14:40	0.00001	0.0016	0.0002	0.0706	0.025	0.00002	0.00005	60.2	0.0000093	0.0001	0.0001	0.00358	0.027	0.000005	2.47	0.0027	30.2	0.085	0.00411	19.5
W3	2018-03-27 16:55	0.00001	0.0015	0.0002	0.0796	0.023	0.00002	0.00005	63.5	0.0000229	0.0001	0.0001	0.00291	0.025	0.000005	2.64	0.0032	33.5	0.0815	0.00449	20.4
W3	2018-04-03 9:35	0.00001	0.0016	0.0002	0.0762	0.023	0.00002	0.00005	54.1	0.0000085	0.0001	0.0001	0.00244	0.03	0.000005	2.5	0.0034	30.8	0.076	0.00459	18.5
W3	2018-04-10 8:05	0.00001	0.0021	0.00019	0.0655	0.022	0.00002	0.00005	56.3	0.0000087	0.0001	0.0001	0.003	0.027	0.000005	2.37	0.0025	27.8	0.0739	0.00432	17.7
W3	2018-04-17 7:40	0.00001	0.0021	0.00024	0.0779	0.023	0.00002	0.00005	68.4	0.0000072	0.0001	0.0001	0.00272	0.033	0.000005	2.56	0.004	29.6	0.0878	0.00485	19.6
W3	2018-04-24 9:20	0.00001	0.0022	0.00022	0.0713	0.022	0.00002	0.00005	55	0.0000056	0.0001	0.0001	0.00349	0.035	0.000005	2.61	0.0028	28	0.0788	0.00429	16.7
W3	2018-05-01 8:35	0.00001	0.0657	0.00042	0.054	0.014	0.00002	0.00005	38.8	0.0000141	0.00011	0.00042	0.0291	0.135	0.0000084	2.39	0.002	18.3	0.0684	0.00264	10.9
W3	2018-05-08 8:30	0.00001	0.0538	0.00035	0.0606	0.015		0.00005	43.4	0.0000128	0.00011	0.00033	0.0241	0.122	0.0000068	2.27	0.0019	20.3	0.0754	0.0028	11.8
W3	2018-05-15 9:55	0.00001	0.0213	0.00032	0.0673	0.019	0.00002	0.00005	55.2	0.0000095	0.0001	0.00011	0.0104	0.069	0.000005	2.23	0.0029	27.7	0.106	0.00429	15.7
W3	2018-05-22 8:50	0.00001	0.0067	0.0003	0.071	0.021	0.00002	0.00005	57.3	0.0000069	0.0001	0.0001	0.00473	0.039	0.000005	2.39	0.0032	27.7	0.117	0.00474	18.1
W3	2018-05-29 9:00	0.00001	0.0037	0.00027	0.0698	0.023	0.00002	0.00005	56.4	0.0000052	0.0001	0.0001	0.00445	0.037	0.000005	2.48	0.0031	28	0.136	0.00499	18.1
W3	2018-06-05 10:05	0.00001	0.0115	0.00035	0.0701	0.02	0.00002	0.00005	52.1	0.0000086	0.0001	0.00014	0.0102	0.055	0.000005	2.23	0.0029	26	0.108	0.00444	16.9

Station	Date / Time	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W3	2017-05-27 8:00														
W3	2017-05-28 8:05														
W3	2017-05-29 7:55														
W3	2017-05-30 8:30	0.00094	0.00005	0.0001	15.7	0.00036	3.71	0.0001	0.525	0.0003	0.00001	0.00137	0.0005	0.001	0.0003
W3	2017-05-31 8:25														
W3	2017-06-01 7:55														
W3	2017-06-02 8:15														
W3	2017-06-03 8:10														
W3	2017-06-04 7:55														
W3	2017-06-05 7:45														
W3	2017-06-06 8:00	0.00103	0.00005	0.0001	13.3	0.000465	2.54	0.0001	0.414	0.0006	0.00001	0.000867	0.0005	0.001	0.0003
W3	2017-06-07 8:05														
W3	2017-06-08 8:00														
W3	2017-06-09 8:05														
W3	2017-06-10 7:45														
W3	2017-06-11 8:00														
W3	2017-06-12 8:05														
W3	2017-06-13 8:00	0.00119	0.00005	0.0001	14.8	0.000679	2.82	0.0001	0.421	0.00057	0.00001	0.000832	0.0005	0.001	0.0003
W3	2017-06-14 7:40														
W3	2017-06-15 8:00														
W3	2017-06-16 7:05														
W3	2017-06-17 7:45														
W3	2017-06-18 8:05														
W3	2017-06-19 8:00														
W3	2017-06-20 7:45	0.00126	0.00005	0.0001	14.9	0.000572	3.87	0.0001	0.501	0.00035	0.00001	0.00108	0.0005	0.001	0.0003
W3	2017-06-21 8:10														
W3	2017-06-22 7:30														
W3	2017-06-23 7:20														
W3	2017-06-24 7:05														
W3	2017-06-25 7:25														
W3	2017-06-26 7:55														
W3	2017-06-27 10:00	0.00099	0.00005	0.0001	18.7	0.00036	5.6	0.0001	0.628	0.00044	0.00001	0.0023	0.0005	0.001	0.0003
W3	2017-06-28 7:10														
W3	2017-06-29 7:30														
W3	2017-06-30 8:00														
W3	2017-07-01 7:50														
W3	2017-07-02 8:20														
W3	2017-07-03 9:15														
W3	2017-07-04 9:30	0.00088	0.00005	0.0001	18.6	0.00035	5.93	0.0001	0.716	0.0003	0.00001	0.00275	0.0005	0.001	0.0003
W3	2017-07-05 8:30														
W3	2017-07-06 8:35														
W3	2017-07-07 8:30														
W3	2017-07-08 9:35														
W3	2017-07-10 0:00	0.00087	0.00005	0.0001	17.8	0.000321	5.65	0.0001	0.686	0.0003	0.00001	0.00261	0.0005	0.0011	0.0003
W3	2017-07-11 13:40	0.00097	0.000135	0.0001	17.7	0.000314	5.81	0.0001	0.723	0.0003	0.00001	0.00271	0.0005	0.001	0.0003
W3	2017-07-12 7:05														
W3	2017-07-13 7:50														
W3	2017-07-14 8:15														
W3	2017-07-18 10:40														
W3	2017-07-18 10:45	0.0009	0.00005	0.0001	18.3	0.000274	5.67	0.0001	0.694	0.0012	0.00001	0.00242	0.0005	0.0038	0.0003
W3	2017-07-25 9:00	0.00125	0.00005	0.0001	18	0.000265	6.04	0.0001	0.742	0.0003	0.00001	0.00226	0.0005	0.001	0.0003
W3	2017-07-27 7:50														
W3	2017-07-28 7:10														
W3	2017-07-29 7:55														
W3	2017-07-30 8:20														
W3	2017-07-31 8:10														
W3	2017-08-01 7:40	0.00107	0.00005	0.0001	19.1	0.000481	4.37	0.0001	0.593	0.0003	0.00001	0.00153	0.0005	0.001	0.0003
W3	2017-08-02 8:25														
W3	2017-08-03 7:45														
W3	2017-08-04 8:05														
W3	2017-08-05 8:00														
W3	2017-08-06 8:20														
W3	2017-08-07 8:30														
W3	2017-08-08 8:20	0.00096	0.00005	0.0001	18.1	0.000351	5.83	0.0001	0.697	0.0003	0.00001	0.0025	0.0005	0.001	0.0003
W3	2017-08-15 8:15	0.001	0.00005	0.0001	17.5	0.000321	5.93	0.0001	0.709	0.0003	0.00001	0.00271	0.0005	0.001	0.0003
W3	2017-08-22 9:00	0.00086	0.00005	0.0001	18.3	0.000341	5.95	0.0001	0.707	0.0003	0.00001	0.00255	0.0005	0.001	0.0003
W3	2017-08-23 14:15	0.00095	0.00005	0.0001	18.5	0.000335	6.05	0.0001	0.74	0.0003	0.00001	0.00254	0.0005	0.001	0.0003
W3	2017-08-29 12:10	0.00089	0.00005	0.0001	18.8	0.000348	6.1	0.0001	0.771	0.0003	0.00001	0.00271	0.0005	0.001	0.0003
W3	2017-09-05 7:40	0.00092	0.00005	0.0001	19	0.000312	6.28	0.0001	0.765	0.0003	0.00001	0.00255	0.0005	0.001	0.0003
W3	2017-09-12 8:40	0.00097	0.00005	0.0001	19.5	0.00032	6.14	0.0001	0.743	0.0006	0.00001	0.00256	0.0005	0.001	0.0003
W3	2017-09-19 14:45	0.00075	0.00005	0.0001	19.1	0.000383	6.16	0.0001	0.75	0.0003	0.00001	0.00261	0.0005	0.001	0.0003
W3	2017-09-26 8:25														
W3	2017-09-26 8:25	0.00094	0.00005	0.0001	19.6	0.000282	6.55	0.0001	0.751	0.0003	0.00001	0.00252	0.0005	0.001	0.0003
W3	2017-10-03 8:55	0.00095	0.00005	0.0001	19.1	0.000334	6.56	0.0001	0.736	0.0003	0.00001	0.00292	0.0005	0.0013	0.0003
W3	2017-10-10 8:50														
W3	2017-10-10 8:50	0.00092	0.00005	0.0001	20.6	0.000352	6.56	0.0001	0.762	0.0003	0.00001	0.00255	0.0005	0.001	0.0003
W3	2017-10-17 9:35	0.00087	0.00005	0.0001	18.6	0.000293	6.13	0.0001	0.782	0.0003	0.00001	0.00269	0.0005	0.001	0.0003
W3	2017-10-22 8:05														
W3	2017-10-22 8:05	0.00084	0.00005	0.0001	19.8	0.000284	6.41	0.0001	0.818	0.0003	0.00001	0.00253	0.0005	0.0015	0.0003
W3	2017-10-24 8:50														
W3	2017-10-24 8:50	0.00095	0.00005	0.0001	18.5	0.000338	6.18	0.0001	0.746	0.0003	0.00001	0.00242	0.0005	0.001	0.0003
W3	2017-10-31 9:50	0.00083	0.00005	0.0001	17.4	0.000299	5.89	0.0001	0.767	0.0003	0.00001	0.00262	0.0005	0.001	0.0003
W3	2017-11-07 14:05	0.00082	0.00005	0.0001	19.4	0.000357	6.2	0.0001	0.806	0.0003	0.00001	0.0025	0.0005	0.001	0.0003
W3	2017-11-14 9:00	0.00087	0.00005	0.0001	18.5	0.000307	6.29	0.0001	0.807	0.0003	0.00001	0.00265	0.0005	0.0011	0.0003
W3	2017-11-21 9:30	0.00085	0.00005	0.0001	18.2	0.000327	6.4	0.0001	0.782	0.0003	0.00001	0.00271	0.0005	0.001	0.0003
W3	2017-11-28 9:30	0.00098	0.00005	0.0001	19.9	0.000306	6.57	0.0001	0.756	0.0003	0.00001	0.00245	0.0005	0.0032	0.0003
W3	2017-12-05 14:25	0.00088	0.00005	0.0001	20.5	0.00039	6.38	0.0001	0.748	0.0003	0.00001	0.00257	0.0005	0.002	0.0003
W3	2017-12-12 10:15	0.00079	0.00005	0.0001	19.9	0.000329	6.38	0.0001	0.763	0.0003	0.00001	0.00274	0.0005	0.0023	0.0003
W3	2017-12-19 9:30	0.00075	0.00005	0.0001	19.5	0.000281	6.21	0.0001	0.863	0.0003	0.00001	0.00262	0.0005	0.001	0.0003
W3	2017-12-26 9:50	0.00091	0.00005	0.0001	20.9	0.000343	6.84	0.0001	0.871	0.0003	0.00001	0.00278	0.0005	0.0015	0.0003
W3	2018-01-01 8:00														
W3	2018-01-02 10:25	0.00062	0.00005	0.0001	20	0.000403	6.51	0.0001	0.914	0.0003	0.00001	0.00295	0.0005	0.001	0.0003
W3	2018-01-09 10:15	0.00077	0.00005	0.0001	19.8	0.000314	6.35	0.0001	0.865	0.0003	0.00001	0.00274	0.0005	0.0013	0.0003
W3	2018-01-16 10:00	0.00084	0.00005	0.0001	20.3	0.000383	6.46	0.0001	0.857	0.0003	0.00001	0.00271	0.0005	0.0011	0.0003
W3	2018-01-23 9:15	0.00082	0.00005	0.0001	19.6	0.000324	6.2	0.0001	0.829	0.0003	0.00001	0.00275	0.0005	0.0014	0.0003
W3	2018-01-30 11:00	0.00074	0.00005	0.0001	19.9	0.000371	5.85	0.0001	0.865	0.0003	0.00001	0.00288	0.0005	0.001	0.0003
W3	2018-02-06 11:20	0.00056	0.00005	0.0001	19.4	0.000367	6.47	0.0001	0.829	0.0003	0.00001	0.00279	0.0005	0.001	0.0003
W3	2018-02-13 8:20	0.00062	0.00005	0.0001	24	0.000413	7.2	0.0001	0.854	0.0003	0.00001	0.0026	0.0005	0.0151	0.0003
W3	2018-02-20 15:10														
W3	2018-02-20 15:10	0.00068	0.00005	0.0001	22.3	0.000351	6.57	0.0001	0.964	0.0003	0.00001	0.00256	0.0005	0.0021	0.0003
W3	2018-02-27 8:45	0.00054	0.00005	0.0001	20.4	0.000346	6.42	0.0001	0.802	0.0003	0.00001	0.00219	0.0005	0.008	0.0003
W3	2018-03-06 14:45	0.00053	0.00005	0.0001	21.2	0.0003	6.36	0.0001	0.796	0.0003	0.00001	0.00213	0.0005	0.0073	0.0003
W3	2018-03-13 8:40	0.0006	0.00005	0.0001	20.3	0.000357	6.61	0.0001	0.78	0.0003	0.00001	0.00242	0.0005	0.0212	0.0003
W3	2018-03-20 14:40	0.00063	0.00005	0.0001	19.5	0.000304	6.27	0.0001	0.838	0.0003	0.00001	0.0025	0.0005	0.0048	0.0003
W3	2018-03-27 16:55	0.00077	0.00005	0.0001	19.4	0.000211	6.22	0.0001	0.89	0.0003	0.00001	0.00304	0.0005	0.0066	0.0003
W3	2018-04-03 9:35	0.00064	0.00005	0.0001	18.4	0.000248	5.91	0.0001	0.881	0.0003	0.00001	0.00313	0.0005	0.0039	0.0003
W3	2018-04-10 8:05	0.00065	0.00005	0.0001	18.3	0.000261	5.57	0.0001	0.756	0.0003	0.00001	0.00283	0.0005	0.0043	0.0003
W3	2018-04-17 7:40	0.00072	0.00005	0.0001	18.6	0.000262	6.29	0.0001	0.853	0.0003	0.00001	0.00346	0.0005	0.0015	0.0003
W3	2018-04-24 9:20	0.00066	0.00005	0.0001	17.4	0.000254	5.62	0.0001	0.754	0.0003	0.00001	0.00294	0.0005	0.001	0.0003
W3	2018-05-01 8:35	0.00199	0.00005	0.0001	10	0.000258	4.98	0.0001	0.469	0.0018	0.00001	0.00132	0.00059	0.0023	0.00062
W3	2018-05-08 8:30	0.00194	0.00005	0.0001	10.9	0.000216	5.01	0.0001	0.525	0.0012	0.00001	0.00165	0.0005	0.0034	0.00048
W3	2018-05-15 9:55	0.0014	0.00008	0.0001	15.9	0.000305	5.44	0.0001	0.703	0.00079	0.00001	0.00262	0.0005	0.0029	0.0003
W3	2018-05-22 8:50	0.00092	0.00005	0.0001	17.7	0.000272	5.63	0.0001	0.768	0.0003	0.00001	0.00285	0.0005	0.001	0.0003
W3	2018-05-29 9:00	0.00096	0.00005	0.0001	20.4	0.000236	5.96	0.0001	0.757	0.0003	0.00001	0.00316	0.0005	0.001	0.0003
W3	2018-06-05 10:05	0.00134	0.00005	0.0001	14.2	0.000272	5.32	0.0001	0.699	0.00048	0.00001	0.00274	0.0006	0.0012	0.0003

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species						Dissolved Elements																																	
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N-NO_2$	$N-NO_3$	$N-NH_3$	SO_4-D	Chlord	Fluord	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W3	2018-06-12 8:35			148.2	7.78			7.1	94.4																																								
W3	2018-06-12 8:35	179	450	148.2	7.78	269	4.6	7.1	94.4	0.0016	1.02	0.0077	58.1	5.21		0.00001	0.0064	0.0004	0.0691	0.019	0.00002	0.00005	54.7	0.000005	0.0001	0.00011	0.0132	0.033	0.0000168	2.63	0.002	22.1	0.028	0.00446	14.4	0.00135	0.00005	0.0001	19.4	0.000653	4.47	0.0001	0.589	0.0003	0.00001	0.00199	0.0005	0.0015	0.0003
W3	2018-06-19 8:50	193	462	168.4	7.76	285	3	9.7	87.9	0.001	0.976	0.0075	59.7	5.29		0.00001	0.0105	0.00035	0.0734	0.018	0.00002	0.00005	59.1	0.000005	0.0001	0.00012	0.016	0.032	0.000005	2.87	0.002	22.9	0.0135	0.00407	15.2	0.00117	0.00005	0.0001	18.3	0.000558	4.3	0.0001	0.645	0.00051	0.00001	0.00199	0.0005	0.0011	0.0003
W3	2018-06-26 7:50	167	464	183.8	7.76	265	3	13.7	78.1	0.0037	1.53	0.0058	62.6	5.25		0.00001	0.0059	0.00039	0.0709	0.015	0.00002	0.00005	54.5	0.000005	0.0001	0.00016	0.0199	0.039	0.000005	2.81	0.0026	19.8	0.0149	0.00376	12.5	0.00102	0.00005	0.0001	19.9	0.000834	3.77	0.0001	0.597	0.0003	0.00001	0.00153	0.0005	0.0095	0.0003
W3	2018-07-03 8:30	183	465	145.2	7.73	276	4.1	10.4	84.8	0.0022	1.08	0.0083	60.1	4.94		0.00001	0.0045	0.00033	0.073	0.017	0.00002	0.00005	58.3	0.0000237	0.0001	0.00011	0.015	0.032	0.000005	2.67	0.0019	21	0.0123	0.00379	13.8	0.00122	0.00005	0.0001	20.2	0.000478	4.5	0.0001	0.631	0.0003	0.00001	0.0018	0.0005	0.001	0.0003
W3	2018-07-10 8:20	240	546	123.1	7.78	322	3	3.4	82.4	0.001	0.136	0.005	59	4.94		0.00001	0.0086	0.00026	0.0692	0.022	0.00002	0.00005	63.1	0.0000076	0.0001	0.00012	0.00491	0.027	0.000005	2.3	0.0026	29.1	0.0332	0.0046	18.7	0.00088	0.00005	0.0001	20.7	0.000297	5.98	0.0001	0.778	0.00048	0.00001	0.00292	0.0005	0.001	0.0003
W3	2018-07-17 8:30			157.4	7.73			6.4	101.8																																								
W3	2018-07-17 8:30	207	493	157.4	7.73	288	3	6.4	101.8	0.001	0.721	0.0052	59.9	5.04		0.00001	0.006	0.00029	0.0662	0.021	0.00002	0.00005	55.1	0.000005	0.0001	0.00027	0.00909	0.021	0.000005	2.37	0.0025	22.9	0.0165	0.00437	15.3	0.00245	0.00005	0.0001	20.7	0.000459	5.19	0.0001	0.656	0.0004	0.00001	0.00219	0.0005	0.001	0.0003
W3	2018-07-24 12:05	294	580	108.7	7.82	347	3.1	4.4	86.7	0.001	0.112	0.005	58.5	4.8	0.505	0.00001	0.0019	0.00024	0.0655	0.023	0.00002	0.00005	57.7	0.000005	0.0001	0.0001	0.0031	0.01	0.000005	2.28	0.0032	28.4	0.0296	0.0048	18.1	0.00084	0.00005	0.0001	18.9	0.000332	5.51	0.0001	0.764	0.0003	0.00001	0.003	0.0005	0.001	0.0003
W3	2018-07-31 9:20	257	553	78.8	7.8	322	3	3.4	98.7	0.001	0.11	0.0055	58	4.72		0.00001	0.0021	0.00023	0.0641	0.022	0.00002	0.00005	54.6	0.000005	0.0001	0.0001	0.00308	0.011	0.000005	2.3	0.0029	28.5	0.0303	0.00495	19.6	0.0009	0.00005	0.0001	17.4	0.000314	5.2	0.0001	0.769	0.0003	0.00001	0.0031	0.0005	0.0014	0.0003
W3	2018-08-07 10:00			88.3	7.74			3.6	92.6																																								
W3	2018-08-07 10:00	242	525	88.3	7.74	318	3	3.6	92.6	0.001	0.0958	0.0059	56.7	4.82		0.00001	0.004	0.00024	0.0681	0.023	0.00002	0.00005	60.6	0.000005	0.0001	0.0001	0.00332	0.016	0.000005	2.43	0.0031	29.2	0.0337	0.00496	18.7	0.001	0.00005	0.0001	18.3	0.000298	5.76	0.0001	0.809	0.0003	0.00001	0.00291	0.0005	0.001	0.0003
W3	2018-08-14 9:00	248	565	98.4	7.8	325	3	3.4	86.1	0.001	0.112	0.005	57.8	4.82		0.00001	0.0024	0.00026	0.0705	0.022	0.00002	0.00005	62.3	0.000005	0.0001	0.0001	0.00383	0.015	0.000005	2.47	0.0029	29.2	0.0326	0.00469	19.2	0.00101	0.00005	0.0001	20.3	0.000313	6.31	0.0001	0.786	0.0003	0.00001	0.00279	0.0005	0.001	0.0003
W3	2018-08-21 9:30	177	556	161	7.73	281	3	3	88.7	0.001	0.114	0.005	57.2	4.6		0.00001	0.0021	0.00025	0.0692	0.026	0.00002	0.00005	58.4	0.0000056	0.0001	0.0001	0.00307	0.016	0.000005	2.43	0.0032	31.3	0.0372	0.00494	19.8	0.00092	0.00005	0.0001	20.2	0.000328	6.08	0.0001	0.805	0.0003	0.00001	0.00278	0.0005	0.001	0.0003
W3	2018-08-28 12:45			185.6	7.69			10	89.4																																								
W3	2018-08-28 12:45	162	456	185.6	7.69	258	3	10	89.4	0.001	1	0.005	65.1	5.15		0.00001	0.0032	0.00036	0.0649	0.014	0.00002	0.00005	51.3	0.000005	0.0001	0.00012	0.0119	0.018	0.000005	2.36	0.0015	19.5	0.0129	0.00361	12.8	0.00083	0.00005	0.0001	22	0.000626	4.25	0.0001	0.537	0.0003	0.00001	0.00149	0.0005	0.0014	0.0003
W3	2018-09-04 8:50	235	533	90.2	7.79	308	3	2.4	87.8	0.001	0.126	0.005	56.6	4.56		0.00001	0.0087	0.00023	0.062	0.021	0.00002	0.00005	56.9	0.0000051	0.0001	0.0001	0.0036	0.027	0.000005	2.33	0.003	27.6	0.0359	0.0044	18	0.00096	0.00005	0.0001	18.5	0.000319	5.96	0.0001	0.668	0.00109	0.00001	0.00277	0.0005	0.001	0.0003
W3	2018-09-11 13:00	251	534	104.9	7.66	321	3	2.7	92.9	0.001	0.112	0.005	57.9	4.49		0.00001	0.0018	0.00023	0.0682	0.024	0.00002	0.00005	59.5	0.000005	0.0001	0.00012	0.00275	0.018	0.000005	2.36	0.0033	27.7	0.0363	0.00505	18	0.00094	0.00005	0.0001	17.5	0.000266	5.74	0.0001	0.811	0.0003	0.00001	0.00286	0.0005	0.001	0.0003
W3	2018-09-18 8:50	253	555	155.6	7.87	321	3	0.9	86.7	0.001	0.122	0.005	57.7	4.48		0.00001	0.0041	0.00023	0.0609	0.023	0.00002	0.00005	57.3	0.000005	0.0001	0.00011	0.00309	0.02	0.000005	2.16	0.003	28.7	0.0398	0.00474	18.3	0.00095	0.00005	0.0001	19.5	0.000328	6.15	0.0001	0.747	0.0003	0.00001	0.0026	0.0005	0.0028	0.0003
W3	2018-09-25 9:30	234	541	127.1	7.99	311	7.6	0.9	90.8	0.001	0.131	0.0341	58.2	4.44		0.00001	0.0018	0.00022	0.0651	0.026	0.00002	0.00005	57.5	0.000005	0.0001	0.0001	0.00274	0.02	0.000005	2.36	0.0033	28.9	0.0413	0.00475	17.9	0.00098	0.00005	0.0001	19	0.000283	6.05	0.0001	0.753	0.0003	0.00001	0.00268	0.0005	0.001	0.0003
W3	2018-10-02 8:35	258	578	93.1	7.51	331	4.7	-0.1	75.5	0.001	0.146	0.0063	58.3	4.5		0.00001	0.0015	0.00025	0.0664	0.023	0.00002	0.00005	59.3	0.000005	0.0001	0.0001	0.00249	0.019	0.000005	2.32	0.0033	31.3	0.0418	0.00473	20.1	0.00094	0.00005	0.0001	21.9	0.000315	6.87	0.0001	0.755	0.0003	0.00001	0.00259	0.0005	0.0022	0.0003
W3	2018-10-09 9:20	253	564	150.3	7.36	328	4.8	0	45.8	0.001	0.153	0.016	59.5	4.58		0.00001	0.0024	0.00022	0.0734	0.023	0.00002	0.00005	56	0.000005	0.0001	0.0001	0.0029	0.025	0.000005	2.52	0.0031	32.5	0.0528	0.00502	20.3	0.00097	0.00005	0.0001	20.3	0.000293	6.58	0.0001	0.838	0.0003	0.00001	0.00269	0.0005	0.001	0.0003
W3	2018-10-16 9:35	236	529	105.4	7.61	317	3	0.5	103.1	0.001	0.142	0.0052	57.4	4.37		0.00001	0.0186	0.00025	0.0679	0.024	0.00002	0.00005	59.9	0.0000055	0.0001	0.00013	0.00562	0.047	0.000005	2.29	0.0031	30.7	0.0378	0.00519	19.6	0.00091	0.00005	0.0001	19.4	0.000333	6.15	0.0001	0.799	0.00238	0.00001	0.00268	0.0005	0.0019	0.0003
W3	2018-10-23 9:15	229	550	108.6	7.6	305	3	0.8	86.2	0.001	0.143	0.0095	57.4	4.39		0.00001	0.0067	0.00024	0.0643	0.023	0.00002	0.00005	55.9	0.0000161	0.0001	0.0001	0.00338	0.026	0.000005	2.39	0.0033	29.1	0.038	0.00513	18	0.00089	0.00005	0.0001	20.2	0.000222	6.03	0.0001	0.775	0.0009	0.00001	0.00275	0.0005	0.0041	0.0003
W3	2018-10-30 8:40	239	550	190.9	7.56	313	3	0.1	86.2	0.001	0.158	0.0123	56.6	4.28		0.00001	0.003	0.00023	0.0646	0.025	0.00002	0.00005	57.7	0.0000169	0.0001	0.0001	0.00351	0.023	0.000005	2.3	0.0033	29.2	0.0329	0.00511	18.6	0.00091	0.00005	0.0001	20.6	0.000363	6.39	0.0001	0.788	0.0003	0.00001	0.00295	0.0005	0.0045	0.0003
W3	2018-11-06 9:55	265	573	266.4	7.84	342	7	-0.1	40.1	0.001	0.176	0.0061	63.6	4.41		0.00001	0.0032	0.00021	0.0679	0.026	0.00002	0.00005	59.5	0.0000139	0.0001	0.0001	0.00245	0.015	0.000005	2.45	0.0038	31.9	0.0241	0.00453	20.6	0.00078	0.00005	0.0001	20.5	0.000316	6.23	0.0001	0.801	0.0003	0.00001	0.00287	0.0005	0.0026	0.0003
W3	2018-11-13 10:10	250	551	145.4	7.24	330	3	-0.1	63.2	0.001	0.163	0.0128	60.4	4.5		0.00001	0.0029	0.00022	0.0633	0.027	0.00002	0.00005	59.2	0.0000125	0.0001	0.0001	0.00263	0.027	0.000005	2.34	0.0031	32.8	0.0519	0.00469	19.6	0.00092	0.00005	0.0001	20.2	0.000348	6.26	0.0001	0.818	0.0003	0.00001	0.00264	0.0005	0.0035	0.0003
W3	2018-11-20 8:05	250	538	158	7.31	325	3	0.2	73.1	0.001	0.161	0.0085	59.9	4.38		0.00001	0.002	0.00022	0.0673	0.024	0.00002	0.00005	58.5	0.000005	0.0001	0.0001	0.00236	0.018	0.000005	2.19	0.0034	30.7	0.0561	0.00477	18.8	0.00109	0.00005	0.0001	20.4	0.000323	6.24	0.0001	0.786	0.0003	0.00001	0.00277	0.0005	0.002	0.0003
W3	2018-11-27 7:30	248	539	175.4	7.32	331	3	0.3	76.4	0.001	0.174	0.0145	61.2	4.56		0.00001	0.002	0.00022	0.0748	0.026	0.00002	0.00005	62.9	0.0000056	0.0001	0.0001	0.00232	0.014	0.000005	2.27	0.0034	32.6	0.0458	0.00487	17.7	0.00082	0.00005	0.0001	20.2	0.000312	6.36	0.0001	0.867	0.0003	0.00001	0.00263	0.0005	0.001	0.0003
W3	2018-12-04 8:50	252	553	198.2	6.48	337	3	0.3	84.6	0.001	0.175	0.0097	58.3	4.37	0.554	0.00001	0.0022	0.00024	0.0722	0.024	0.00002	0.00005	64.1	0.0000201	0.0001	0.0001	0.00218	0.021	0.000005	2.7	0.0035	33.3	0.144	0.00517	21.6	0.00085	0.00005	0.0001	21.2	0.000536	6.54	0.0001	0.898	0.0003	0.00001	0.0029	0.0005		0.0003
W3	2018-12-11 11:15	241	584			326	3			0.001	0.17	0.0091	57.7	4.3		0.00001	0.0013	0.00022	0.0702	0.026	0.00002	0.00005	63.8	0.000005	0.0001	0.0001	0.00207	0.018	0.000005	2.23	0.0035	33.3	0.0479	0.00493	19.1	0.0008	0.00005	0.0001	20.5	0.000322	6.33	0.0001	0.816	0.0003	0.00001	0.00286	0.0005	0.001	0.0003
W3	2018-12-18 8:20	245	572	138.2	7.27	323	3.2	0	77.5	0.001	0.173	0.0103	59.2	4.37		0.00001	0.003	0.00022	0.0681	0.024	0.00002	0.00005	59.1	0.0000082	0.0001	0.0001	0.00199	0.018	0.000005	2.39	0.0035	31.5	0.0512	0.00516	18.7	0.00079	0.00005	0.0001	20.8	0.000313	6.54	0.0001	0.846	0.0003	0.00001	0.0031	0.0005	0.0013	0.0003
W3	2018-12-25 9:10	254	546	167	6.68	327	3	-0.1	69.6	0.001	0.165	0.0179	59.3	4.4		0.00001	0.003	0.00022	0.0637	0.024	0.00002	0.00005	57.6	0.0000079	0.0001	0.0001	0.00174	0.024	0.000005	2.34	0.0034	31.1	0.0668	0.00518	19.3	0.00087	0.00005	0.0001	20.4	0.000291	5.88	0.0001	0.849	0.0003	0.00001	0.00288	0.0005	0.001	0.0003
W3	2019-01-01 8:00	254	551	206.1		331	3.5	2.1	106	0.001	0.168	0.0155	60.3	4.43		0.00001	0.0014	0.0002	0.0731	0.024	0.00002	0.00005	60.5	0.0000065	0.0001	0.0001	0.00175	0.03	0.000005	2.42	0.0036	30.3	0.0668	0.00579	19.3	0.00083	0.00005	0.0001	20	0.000326	6.67	0.0001	0.859	0.0003	0.00001	0.00325	0.0005	0.001	0.0003
W3	2019-01-08 10:30	254	568	164		325	19.4	0.2	76.6		0.157	0.0219	58.9	4.33		0.00001	0.0025	0.0002	0.0647	0.021	0.00002	0.00005	58.1	0.0000071	0.0001	0.0001	0.00188	0.032	0.000005	2.19	0.0037	29.9	0.0897	0.00497	17.8	0.00089	0.00005	0.0001	19.8	0.000306	6.02	0.0001	0.829	0.0003	0.00001	0.00251	0.0005	0.0017	0.0003
W3	2019-01-15 9:35	253	578	90	7.51	329	3	0.2	71	0.001	0.165	0.0206	61.5	4.45		0.00001	0.0015	0.00023	0.0638	0.026	0.00002	0.00005	57.8	0.0000077	0.0001	0.0001	0.00175	0.032	0.000005	2.36	0.0034	31.4	0.0888	0.0049	19.1	0.00067	0.00005	0.0001	19.6	0.000339	6.21	0.0001	0.822	0.0003	0.00001	0.00293	0.0005	0.0022	0.0003
W3	2019-01-22 7:35	255	555	86.3	7.25	329	3	0.2	70.7	0.0011	0.158	0.013	62.2	4.74		0.00001	0.0017	0.00029	0.0786	0.025	0.00002	0.00005	56.5	0.0000084	0.0001	0.0001	0.00235	0.019	0.000005	2.24	0.0036	31.1	0.0553	0.00527	18.5	0.00077	0.00005	0.0001	22	0.000369	6.58	0.0001	0.831	0.0003	0.00001	0.00348	0.00055	0.0014	0.0003
W3	2019-01-29 7:30	263	576	168	6.74	341	3	2.1	61.6	0.001	0.16	0.013	59.6	4.5		0.00001	0.0058	0.00027	0.0792	0.026	0.00002	0.00005	61.9	0.000013	0.0001	0.0001	0.00348	0.037	0.000005	2.56	0.0037	32.7	0.122	0.00532	21.1	0.00099	0.00005	0.0001	21	0.000376	6.45	0.0001	0.839	0.00035	0.00001	0.00297	0.0005	0.004	0.0003
W3	2019-02-05 10:40	254	578	107.2	7.6	332	17.7	0.8	25.2	0.0018	0.12	0.131	60.9	4.28		0.00001	0.0028	0.00059	0.121	0.022	0.00002	0.00005	62.2	0.0000233	0.00041	0.00017	0.00662	0.2	0.000005	2.37	0.0026	28	1	0.00448	19.6	0.00129	0.00005	0.0001	21	0.00023	6.23	0.0001	0.645	0.0003	0.00001	0.00247	0.0005	0.034	0.0003
W3	2019-02-12 13:30	278	616			365	3			0.0065	0.146	0.0792	65.5	5.5		0.00001	0.0036	0.00166	0.104		0.00002	0.00005	65.9	0.0000304	0.00034	0.00037	0.0212	0.146	0.000005	3.28	0.0034	33.6	0.783	0.00551	22.9	0.00131	0.000064	0.00015	22.9	0.000304	6.38	0.0001	0.793	0.00032	0.00001	0.00289	0.0005		0.0003
W3	2019-02-19 15:10	273	595	93.4	7.35	356	18.2	0.3	38.2	0.001	0.025	0.0217	67.9	4.25		0.00001	0.0017	0.00045	0.0842	0.025	0.00002	0.00005	61.7	0.0000122	0.00011	0.0001	0.00433	0.072	0.000005	2.93	0.0041	34.5	0.123	0.00392	20.4	0.00061	0.00005	0.0001	23	0.000423	7.28	0.0001	0.908	0.0003	0.00001	0.00291	0.00063	0.0134	0.0003
W3	2019-02-26 8:05	252	589	141.3	7.43	333	3	2.4	33.1	0.001	0.076	0.0224	61.2	4.07		0.00001	0.0014	0.00026	0.0724	0.024	0.00002	0.00005	57.4	0.0000228	0.0001	0.0001	0.00284	0.03	0.000005	2.74	0.0043	35	0.0982	0.00375	20.8	0.00051	0.00005	0.0001	22.7	0.000329	6.91	0.0001	0.868	0.0003	0.00001	0.00243	0.0005	0.0034	0.0003
W3	2019-03-05 7:40	250	577	121.9	7.59	327	3	2.6	13.1	0.0012	0.0489	0.0477	60.2	4.53		0.00001	0.0016	0.00025	0.0717	0.022	0.00002	0.00005	59.8	0.0000228	0.0001	0.0001	0.00345	0.048	0.000005	2.34	0.0034	30.9	0.216	0.00355	18.4	0.00076	0.00005	0.0001	19.5	0.000188	6.17	0.0001	0.836	0.0003	0.00001	0.00237	0.0005	0.0123	0.0003
W3	2019-03-12 10:40	309	656	112	7.76	398	32.2	0.4	49.5	0.0082	0.0984	0.0449	70.2	5		0.00001	0.0071	0.00038	0.0945	0.028	0.00002	0.00005	68.5	0.0000257	0.00015	0.0001	0.00889	0.057	0.000005	3.41	0.0049	40.3	0.276	0.0046	24.7	0.00075	0.00005	0.0001	26.1	0.000379	7.89	0.0001	0.937	0.00052	0.00001	0.00324	0.0005	0.0184	0.0003
W3	2019-03-19 9:15	245	569	90	7.41	316	3	2.5	12.1	0.001	0.0318	0.0746	58.1	4.84		0.00001	0.0012	0.00035	0.0715	0.02	0.00002	0.00005	57.1	0.0000203	0.00016	0.0001	0.00163	0.116	0.000005	2.05	0.003	28.4	0.479	0.0037	17.9	0.00099	0.00005	0.0001	20.1	0.000074	6.03	0.0001	0.749	0.0003	0.00001	0.002	0.0005	0.001	0.0003
W3	2019-03-25 9:55	284	637	91.1	7.22	381	9.7	1.9	64.7	0.001	0.0956	0.0738	78.6	5.31		0.00001	0.0028	0.00047	0.0903	0.025	0.00002	0.00005	60.3	0.0000243	0.00027	0.0001	0.00912	0.093	0.000005	3.3	0.0044	37.8	0.516	0.00451	24.3	0.00089	0.00005	0.00013	28.4	0.000386	6.96	0.0001	0.812	0.0003	0.00001	0.00341	0.0005	0.0039	0.0003
W3	2019-03-26 7:40	245	560	52.5	7.14	325	3	1.9	9.3	0.001	0.0367	0.0618	61.8	4.94		0.00001	0.0015	0.00033	0.0745	0.021	0.00002	0.00005	58	0.0000214	0.00014	0.0001	0.00205	0.099	0.000005	2.28	0.0034	30.8	0.393	0.0038	19.2	0.00097	0.00005	0.0001	22.7	0.000165	6.42	0.0001	0.742	0.0003	0.00001	0.00251	0.0005	0.001	0.0003
W3	2019-04-02 7:45	257	581	94.2	7.7	344	3	3.3	52.1	0.001	0.0979	0.0216	62.8	4.53		0.00001	0.0019	0.00025	0.0698	0.028	0.00002	0.00005	59.6	0.0000134	0.0001	0.0001	0.00209	0.048	0.000005	2.59	0.0042	36.9	0.213	0.00501	22.6	0.00064	0.00005	0.0001	25.3	0.000364	7.19	0.0001	0.978	0.0003	0.00001	0.00276	0.0005	0.001	0.0003
W3	2019-04-09 8:30	258	580	162.9	7.69	333	3	2.1	56.2	0.001	0.11	0.02	63.2	4.4		0.00001	0.0048	0.00022	0.0648	0.025	0.00002	0.00005	55.3	0.0000232	0.0001	0.0001	0.00361	0.029	0.000005	2.51	0.004	32.3	0.168	0.00491	19.9	0.00062	0.00005	0.0001	21	0.000356	6.08	0.0001	0.908	0.0003	0.00001	0.00327	0.0005	0.0049	0.0003
W3	2019-04-16 11:25	269	584	112.4	7.56	353	3	0.2	82.4	0.001	0.106	0.018	60.9	4.49		0.00001	0.0012	0.00024	0.0632	0.025	0.00002	0.00005	63.4	0.0000291	0.0001	0.0001	0.0024	0.039	0.000005	2.64	0.0039	36.8	0.233	0.00518	21.8	0.00076	0.00005	0.0001	20.9	0.000348	6.35	0.0001	0.916	0.0003	0.00001	0.00288	0.0005	0.002	0.0003
W3	2019-04-23 7:35	268	567	113.9	7.44	331	4.3	0.1	78.8	0.001	0.0793	0.0159	58.9	4.33		0.00001	0.0013	0.00022	0.0686	0.023	0.00002	0.00005	56.4	0.0000061	0.0001	0.0001	0.00264	0.034	0.000005	2.55	0.0034	28.5	0.232	0.0049	18.2	0.00067	0.00005	0.0001	19.4	0.000306	5.89	0.0001	0.797	0.0003	0.00001	0.00282	0.0005	0.001	0.0003
W3	2019-04-30 9:40	213	463	216	7.46	246	3	0.3	81.3	0.001	0.005	0.0125	41.7	3.05		0.00001	0.0066	0.00016	0.0523	0.013	0.00002	0.00005	43.2	0.000016	0.0001	0.0001	0.0147	0.019	0.000005	2.07	0.0021	18.2	0.0885	0.00185	9.71	0.0005	0.00005	0.0001	9.73	0.000164	6.61	0.0001	0.615	0.00045	0.00001	0.00124	0.0005	0.0092	0.0003
W3	2019-05-07 8:40	246	548	265.3	7.76	309	3	0.2	80.3	0.001	0.0523	0.005	52.4	3.95		0.00001	0.0015	0.00028	0.0604	0.023	0.00002	0.00005	55.9	0.0000091	0.0001	0.0001	0.00401	0.018	0.000005	2.35	0.0035	29.5	0.223	0.00498	17.4	0.00071	0.00005	0.0001	19.8	0.000351	6.67	0.0001	0.785	0.0003	0.00001	0.00273	0.0005	0.0025	0.0003
W3	2019-05-14 9:25	256	558	166	7.5	360	3	0.4	72	0.001	0.0652	0.0111	56.7	4.89		0.00001	0.0017	0.00029	0.0737	0.022	0.00002	0.00005	58.3	0.0000104	0.00013	0.00011	0.00307	0.027	0.000005	2.53	0.0033	30.8	0.376	0.00591	17.8	0.00102	0.00005	0.0001	19.3	0.000296	6.28	0.0001	0.861	0.0003	0.00001	0.00292	0.0005	0.001	0.0003
W3	2019-05-21 9:05	251	515	228.4	7.71	318	3	0	90.3	0.0018	0.0819	0.0055	53.2	4.35		0.00001	0.002	0.00023	0.0626	0.022	0.00002	0.00005	59.5	0.0000087	0.0001	0.0001	0.00299	0.01	0.000005	2.32	0.0032	29.8	0.105	0.00497	17.6	0.00087	0.00005	0.0001	18.2	0.000276	5.88	0.0001	0.824	0.0003	0.00001	0.00287	0.0005	0.001	0.0003
W3	2019-05-28 9:35	225	519	221.2	7.57	314	3	0.2	81.3	0.001	0.0625	0.0097	48.8	4.39		0.00001	0.0027	0.00023	0.0625	0.019	0.00002	0.00005	52.5	0.0000061	0.0001	0.0001	0.00388	0.026	0.0000063	2.31	0.0029	27.9	0.14	0.00539	16.1	0.00106	0.00005	0.0001	16.9	0.000314	5.67	0.0001	0.778	0.0003	0.00001	0.00277	0.0005	0.001	0.0003
W3	2019-06-04 8:05	200	443	175.1	7.52	259	3	0	77	0.001	0.0741	0.0121	43	3.81		0.00001	0.0221	0.00041	0.0576	0.019	0.00002	0.00005	51	0.000011	0.0001	0.00164	0.0138	0.075	0.000005	1.93	0.0025	24.1	0.0599	0.00402	14.4	0.00246	0.00005	0.0001	15.2	0.000297	5.93	0.0001	0.634	0.0007	0.00001	0.00229	0.00054	0.0023	0.00044
W3	2019-06-11 7:40	267	557	74.3	7.66	337	3.2	0.3	74.4	0.0019	0.114	0.0119	58	4.95		0.00001	0.0062	0.0003	0.0659	0.021	0.00002	0.00005	58.3	0.0000061	0.0001	0.00011	0.00271	0.029	0.000005	2.34	0.0031	29.3	0.146	0.00553	18.5	0.00113	0.00005	0.0001	20.1	0.00033	6.15	0.0001	0.822	0.0006	0.00001	0.00308	0.00052	0.001	0.0003
W3	2019-06-18 9:50	248	519	120	7.71	318	3	1.7	83.1	0.001	0.1	0.0066	55.5	4.82		0.00001	0.0026	0.00029	0.0638	0.025	0.00002	0.00005	59.7	0.0000052	0.0001	0.00011	0.00274	0.013	0.000005	2.19	0.0032	28.5	0.0478	0.00543	18.3	0.00097	0.00005	0.0001	20.4	0.000242	6.31	0.0001	0.806	0.0003	0.00001	0.00306	0.0005	0.001	0.0003
W3	2019-06-25 7:35	252	553	165.2	7.69	325	3	2.3	90	0.001	0.107	0.0068	56.7	4.88		0.00001	0.0013	0.0003	0.066	0.024	0.00002	0.00005	58.8	0.000005	0.0001	0.0001	0.00274	0.011	0.000005	2.4	0.003	31	0.0328	0.0053	19.2	0.00097	0.00005	0.0001	20.8	0.00038	6.5	0.0001	0.796	0.0003	0.00001	0.00313	0.0005	0.0011	0.0003
W3	2019-07-02 9:25	254	552	87.5	8	331	3	3.6	80.8	0.001	0.105	0.0072	60.7	5.22		0.00001	0.0022	0.00027	0.0693	0.023	0.00002	0.00005	59.7	0.000005	0.0001	0.00011	0.00286	0.01	0.0000051	2.41	0.0031	30.3	0.0247	0.00525	19.7	0.00082	0.00005	0.0001	20.1	0.000308	6.2	0.0001	0.757	0.0003	0.00001	0.00327	0.0005	0.001	0.0003
W3	2019-07-09 8:40	264	548	126.1	7.86	334	3	2.6	79.5	0.001	0.105	0.005	56.9	4.9		0.00001	0.0014	0.00026	0.0637	0.021	0.00002	0.00005	61.4	0.000005	0.0001	0.0001	0.00228	0.01	0.000005	2.42	0.0031	30.9	0.0301	0.00539	19	0.00091	0.00005	0.0001	20.1	0.000329	6.38	0.0001	0.817	0.0003	0.00001	0.00342	0.0005	0.001	0.0003
W3	2019-07-12 13:11	250	563	41.4	7.66	330	3	4.1	79.4	0.001	0.0944	0.005	58.8	5.1		0.00001	0.0015	0.00026	0.0673	0.024	0.00002	0.00005	60.9	0.000005	0.0001	0.0001	0.00247	0.01	0.000005	2.38	0.0031	32.7	0.0259	0.00525	19.5	0.00099	0.00005	0.0001	20.3	0.000303	6.69	0.0001	0.802	0.0003	0.00001	0.00306	0.0005	0.001	0.0003
W3	2019-07-16 9:00	255	555	138.3	8.19	326	3	23	83.1	0.001	0.0876	0.011	57.4	4.96		0.00001	0.0014	0.00025	0.0647	0.021	0.00002	0.00005	57.7	0.000005	0.0001	0.0001	0.00261	0.01	0.000005	2.37	0.0029	31.2	0.0836	0.00514	19	0.00101	0.00005	0.0001	21.1	0.000358	6.58	0.0001	0.793	0.0003	0.00001	0.00303	0.0005	0.001	0.0003
W3	2019-07-23 6:50	259	574	108.8	7.66	330	3	2.9	82.5	0.001	0.0972	0.005	57.7	4.99		0.00001	0.0023	0.00024	0.063	0.023	0.00002	0.00005	60.2	0.000005	0.0001	0.0001	0.00239	0.01	0.000005	2.35	0.0031	30	0.024	0.00523	18.8	0.00087	0.00005	0.0001	20.6	0.000312	6.6	0.0001	0.776	0.0003	0.00001	0.00301	0.0005	0.001	0.0003
W3	2019-07-30 10:25	259	576	137.1	7.18	333	3	3.6	104.6	0.001	0.0898	0.0062	58.4	5.16		0.00001	0.0014	0.00027	0.0696	0.024	0.00002	0.00005	60.8	0.00001	0.0001	0.0001	0.00254	0.01	0.000005	2.29	0.0033	31.2	0.0279	0.00557	19.2	0.00096	0.00005	0.0001	21.2	0.000335	6.47	0.0001	0.812	0.0003	0.00001	0.00316	0.0005	0.001	0.0003
W3	2019-08-06 7:50	270		92.2	7.58	346	3	3	99.3	0.001	0.0921	0.0056	56.4	5.01		0.00001	0.001	0.00026	0.065	0.024	0.00002	0.00005	66.4	0.000005	0.0001	0.0001	0.00273	0.01	0.000005	2.3	0.0033	33.7	0.0285	0.00541	20.3	0.00077	0.00005	0.0001	20.1	0.000291	6.61	0.0001	0.787	0.0003	0.00001	0.00269	0.0005	0.001	0.0003
W3	2019-08-13 11:00	269	566	170.9	7.5	335	3	2.6	85.1	0.001	0.086	0.0075	57.6	5.12	0.572	0.00001	0.0071	0.00023	0.0674	0.023	0.00002	0.00005	58.7	0.0000092	0.0001	0.0001	0.00407	0.019	0.000005	2.25	0.0031	28.7	0.0288	0.00592	18.6	0.00093	0.00005	0.0001	19.5	0.000325	6.15	0.0001	0.821	0.0003	0.00001	0.00299	0.0005	0.0015	0.0003
W3	2019-08-20 8:45	265	578	161	7.6	340	3	1.2	78.8	0.001	0.0897	0.0067	57.6	5.19		0.00001	0.0018	0.00024	0.0669	0.024	0.00002	0.00005	62.7	0.000005	0.0001	0.0001	0.0021	0.01	0.000005	2.38	0.0032	33.4	0.0291	0.0057	19.7	0.00092	0.00005	0.0001	19.8	0.000286	6.53	0.0001	0.842	0.0003	0.00001	0.00302	0.0005	0.001	0.0003
W3	2019-08-27 7:50	257	568	136.4	7.67	330	3	1	88	0.001	0.0827	0.0056	56	4.97		0.00001	0.0021	0.00022	0.0646	0.025	0.00002	0.00005	61.9	0.000005	0.0001	0.0001	0.0022	0.01	0.000005	2.38	0.0033	31.2	0.0288	0.00538	18.8	0.00091	0.00005	0.0001	21.1	0.000357	6.34	0.0001	0.85	0.0003	0.00001	0.00314	0.0005	0.001	0.0003
W3	2019-09-03 7:30	261	571	153.4	7.77	337	3	1.9	77.1	0.001	0.0757	0.008	56.1	4.99		0.00001	0.0018	0.00022	0.0679	0.023	0.00002	0.00005	64.8	0.000005	0.0001	0.0001	0.00222	0.01	0.000005	2.56	0.0031	31.6	0.032	0.00537	20.5	0.00097	0.00005	0.0001	19.7	0.000299	6.28	0.0001	0.862	0.0003	0.00001	0.00306	0.0005	0.001	0.0003
W3	2019-09-10 8:00	264	604	218.6	7.8	336	3	0.9	82.7	0.0011	0.0732	0.005	55.4	4.96		0.00001	0.0016	0.00021	0.0651	0.024	0.00002	0.00005	63	0.000005	0.0001	0.0001	0.00228	0.01	0.000005	2.56	0.0032	31.7	0.0315	0.00521	19.3	0.00097	0.00005	0.0001	19.6	0.000313	6.23	0.0001	0.846	0.0003	0.00001	0.00329	0.0005	0.001	0.0003
W3	2019-09-17 8:50	271	571	181.3	7.8	342	3	3.6	73.8	0.001	0.0423	0.0057	56.3	5.2		0.00001	0.0015	0.00024	0.0667	0.024	0.00002	0.00005	65.5	0.00001	0.0001	0.0001	0.00246	0.011	0.000005	2.55	0.0034	30.6	0.0361	0.00519	18.9	0.00091	0.00005	0.0001	19.7	0.000304	6.25	0.0001	0.789	0.0003	0.00001	0.003	0.0005	0.001	0.0003
W3	2019-09-24 10:05	275	575	97	7.88	346	3	0.6	85.3	0.001	0.0788	0.0061	56.7	5.19		0.00001	0.0016	0.00024	0.0659	0.024	0.00002	0.00005	64.2	0.000005	0.0001	0.00015	0.00242	0.016	0.000005	2.52	0.0031	31.8	0.0383	0.00541	19.9	0.00117	0.00005	0.0001	19.8	0.000327	6.52	0.0001	0.789	0.0003	0.00001	0.003	0.0005	0.001	0.0003
W3	2019-10-01 8:40	278	560	79.9	7.76	345	3	1.5	83.7	0.001	0.0816	0.0059	55.7	5.11		0.00001	0.0033	0.00024	0.0677	0.023	0.00002	0.00005	62.6	0.000005	0.0001	0.0001	0.00252	0.014	0.000005	2.47	0.0032	32.1	0.0363	0.00544	19.9	0.00097	0.00005	0.0001	19.4	0.00029	6.04	0.0001	0.824	0.0003	0.00001	0.00306	0.0005	0.001	0.0003
W3	2019-10-08 8:10	274	570	153.9	7.33	338	10.4	0.1	83.3	0.0013	0.0838	0.0053	56.8	5.1		0.00001	0.0012	0.00023	0.061	0.022	0.00002	0.00005	60.9	0.000005	0.0001	0.0001	0.00215	0.01	0.000005	2.29	0.0031	28.4	0.0341	0.00532	19.5	0.00095	0.00005	0.0001	19.3	0.000251	6.14	0.0001	0.82	0.0003	0.00001	0.00307	0.0005	0.001	0.0003
W3	2019-10-15 7:45	272	560	173.6	7.69	347	3	0	75	0.001	0.102	0.0066	56.5	5.32		0.00001	0.0023	0.00022	0.0655	0.024	0.00002	0.00005	67.7	0.0000759	0.0001	0.0001	0.00273	0.013	0.000005	2.47	0.0035	32.4	0.0368	0.00546	19.4	0.00083	0.00005	0.0001	18.6	0.000279	6.31	0.00012	0.874	0.0003	0.00001	0.00333	0.0005	0.0018	0.0003
W3	2019-10-22 9:10	271	580	180.7	7.73	336	3.5	0	89.3	0.001	0.106	0.0142	55.6	5.12		0.00001	0.0017	0.00024	0.064	0.026	0.00002	0.00005	62.5	0.000005	0.0001	0.0001	0.00203	0.01	0.000005	2.37	0.0033	28.6	0.0347	0.00531	19.1	0.00087	0.00005	0.0001	22.3	0.000397	7.09	0.0001	0.797	0.0003	0.00001	0.00295	0.0005	0.003	0.0003
W3	2019-10-29 7:40																																																
W3	2019-10-29 7:40	271	573	220.9	7.77	344	3	0	89.3	0.001	0.112	0.0126	55.6	5.14		0.00001	0.0021	0.00022	0.065	0.025	0.00002	0.00005	66.8	0.0000051	0.0001	0.0001	0.00201	0.01	0.000005	2.48	0.0033	32.5	0.0331	0.00507	18.8	0.0009	0.00005	0.0001	18	0.000298	6.37	0.0001	0.822	0.0003	0.00001	0.00316	0.0005	0.0036	0.0003
W3	2019-11-05 7:55	278	520	159.5	7.76	349	3	0	79.3	0.001	0.101	0.0111	57	5.19		0.00001	0.0015	0.00024	0.0645	0.025	0.00002	0.00005	61.8	0.0000238	0.0001	0.00012	0.00226	0.01	0.000005	2.48	0.0034	33.9	0.0359	0.00512	20.7	0.00095	0.00005	0.0001	18.7	0.00031	6.6	0.0001	0.837	0.0003	0.00001	0.00295	0.0005	0.0022	0.0003
W3	2019-11-12 6:50	278	608	193.3	7.24	355	3.6	2.7	50.2	0.001	0.112	0.0107	57.1	5.27		0.00001	0.0023	0.00025	0.0709	0.024	0.00002	0.00005	66.9	0.0000507	0.0001	0.0001	0.00318	0.012	0.000005	2.73	0.0034	34.3	0.0496	0.00537	21.4	0.00101	0.00005	0.0001	19.8	0.000273	7.11	0.0001	0.911	0.0003	0.00001	0.00298	0.0005	0.0028	0.0003
W3	2019-11-19 7:55	266	567	201.8	7.46	335	6.1	0	79.3	0.001	0.112	0.0115	55.9	5.28		0.00001	0.0017	0.00022	0.063	0.024	0.00002	0.00005	61.4	0.0000055	0.0001	0.0002	0.00198	0.011	0.000005	2.36	0.0033	31.1	0.0531	0.00509	19.1	0.00097	0.00005	0.0001	20.1	0.00028	6.72	0.0001	0.795	0.0003	0.00001	0.0028	0.0005	0.001	0.0003
W3	2019-11-26 7:50	270	582	185.7	7.41	334	3	0.1	82.6	0.001	0.118	0.0148	54.4	5.17		0.00001	0.0019	0.00022	0.0656	0.025	0.00002	0.00005	62.1	0.0000055	0.0001	0.0001	0.00211	0.01	0.000005	2.27	0.0032	29.6	0.0345	0.00536	18.5	0.00092	0.00005	0.0001	21	0.000365	6.86	0.0001	0.809	0.0003	0.00001	0.00312	0.0005	0.001	0.0003
W3	2019-12-03 7:00	276	549	174.3	7.39		3	0.2	82.3	0.001	0.119	0.0107	56.1	5.19		0.00001	0.0018	0.00024	0.0638	0.024	0.00002	0.00005	62.7	0.0000112	0.0001		0.00248	0.01	0.000005	2.48	0.0032	30.7	0.036	0.00508	19.8	0.00095	0.00005	0.0001	19.8	0.000338	6.49	0.0001	0.845	0.0003	0.00001	0.00288	0.0005	0.0012	0.0002
W3	2019-12-10 6:15	275	578	164.3	7.29	342	3	0	79.1	0.001	0.125	0.0145	55.9	5.39		0.00001	0.0012	0.00025	0.0647	0.026	0.00002	0.00005	59.9	0.0000066	0.0001	0.0001	0.002	0.01	0.000005	2.45	0.0036	32.8	0.0322	0.00504	20.2	0.00099	0.00005	0.0001	20	0.000306	7.19	0.0001	0.802	0.0003	0.00001	0.00312	0.0005	0.001	0.0003
W3	2019-12-17 7:30	272	586	166.7	7.5	341	3	0	83.2	0.001	0.132	0.0187	57	5.38		0.00001	0.002	0.00028	0.0682	0.024	0.00002	0.00005	61	0.0000235	0.0001	0.0001	0.00304	0.01	0.000005	2.65	0.0033	31.7	0.0411	0.00524	19.6	0.00121	0.00005	0.0001	18.2	0.000444	7.1	0.0001	0.823	0.0003	0.00001	0.00299	0.0005	0.0042	0.0003
W3	2019-12-24 7:45	265	577	158.9	7.76	350	3	0	80.2	0.001	0.131	0.0071	56.7	5.41	0.552	0.00001	0.0018	0.00024	0.0712	0.025	0.00002	0.00005	72.1	0.000005	0.0001	0.0001	0.00243	0.01	0.000005	2.57	0.0037	32.6	0.0105	0.00537	20.1	0.00107	0.00005	0.0001	18.6	0.000266	6.38	0.0001	0.907	0.0003	0.00001	0.00318	0.0005	0.0034	0.0003
W3	2019-12-31 7:10	268	548	161.3	7.47		3	0	79.3	0.001	0.132	0.0154	55.3	5.48		0.00001	0.0024	0.00023	0.0637	0.025	0.00002	0.00005	59.2	0.000005	0.0001		0.00202	0.011	0.000005	2.38	0.0032	30.5	0.024	0.00484	18.4	0.00106	0.00005	0.0001	19.6	0.000377	6.67	0.0001	0.802	0.0003	0.00001	0.00285	0.0005	0.0011	0.0002
W3	2020-01-07 8:15	272	579	152.9	7.72	338	3	0.2	87.3	0.001	0.133	0.0104	56.2	5.49		0.00001	0.0018	0.00022	0.0649	0.024	0.00002	0.00005	62.1	0.000005	0.0001	0.0001	0.00191	0.01	0.000005	2.38	0.0034	29.1	0.0306	0.00523	18.3	0.00106	0.00005	0.0001	19.3	0.000287	6.54	0.0001	0.849	0.0003	0.00001	0.00293	0.0005	0.0038	0.0003
W3	2020-01-14 6:45	306	603	182.2	7.5	392	3	1.9	40.7	0.001	0.126	0.0344	59.9	5.48		0.00001	0.0012	0.00023	0.0673	0.026	0.00002	0.00005	60.1	0.0000159	0.0001	0.0001	0.0036	0.016	0.000005	2.63	0.0034	34	0.0594	0.00485	20.7	0.00107	0.00005	0.0001	20.5	0.000382	7.07	0.0001	0.842	0.0003	0.00001	0.00296	0.0005	0.0035	0.0002
W3	2020-01-21 7:00	273	591	171.5	7.36	375	3	0.8	47.6	0.001	0.109	0.0107	59.2	5.33		0.00001	0.0011	0.0002	0.0655	0.027	0.00002	0.00005	65.7	0.0000076	0.0001	0.0001	0.00272	0.01	0.000005	2.47	0.0038	32.8	0.0595	0.00496	20.4	0.00062	0.00005	0.0001	20.3	0.000372	6.66	0.0001	0.95	0.0003	0.00001	0.00313	0.0005	0.0011	0.0002
W3	2020-01-28 7:35	271	593	187.8	7.43	363	3	0	73.6	0.001	0.117	0.0121	57	5.36		0.00001	0.0014	0.0003	0.0613	0.026	0.00002	0.00005	57.2	0.0000108	0.0001	0.0001	0.00212	0.01	0.000005	2.63	0.0041	33	0.0464	0.00466	19.9	0.00082	0.00005	0.0001	21.2	0.00034	7.29	0.0001	0.856	0.0003	0.00001	0.00302	0.0005	0.0012	0.0002
W3	2020-02-04 6:30	315	580	140.5	7.37	395	3	0	80.6	0.001	0.131	0.0774	57.7	5.24		0.00001	0.001	0.00022	0.0586	0.026	0.00002	0.00005	62.5	0.000005	0.0001	0.0001	0.00172	0.01	0.000005	2.48	0.0036	34.1	0.0506	0.00509	20.1	0.00069	0.00005	0.0001	20.7	0.000303	6.64	0.0001	0.933	0.0003	0.00001	0.00314	0.0005	0.001	0.0002
W3	2020-02-11 9:00			143.6	7.32			0	76.4																																								
W3	2020-02-11 9:00	258	582	143.6	7.32	357	3	0	76.4	0.005	0.122	0.0111	55.9	5.24		0.00001	0.0013	0.00023	0.061	0.026	0.00002	0.00005	60.3	0.0000081	0.0001	0.0001	0.00256	0.01	0.000005	2.65	0.0039	34.3	0.0543	0.00502	19.6	0.00066	0.00005	0.0001	19.2	0.00036	6.46	0.0001	0.92	0.0003	0.00001	0.00306	0.0005	0.0027	0.0002
W3	2020-02-18 7:45			171.3	7.44			0	82.8																																								
W3	2020-02-18 7:45	256	591	171.3	7.44	365	3	0	82.8	0.005	0.122	0.0109	56.6	5.34	0.55	0.00001	0.0106	0.00024	0.0575	0.025	0.00002	0.00005	68.8	0.0000128	0.0001	0.00013	0.00303	0.023	0.000005	2.37	0.0039	34	0.0676	0.00495	20.3	0.00076	0.00005	0.0001	19.3	0.000276	6.38	0.0001	0.946	0.00055	0.00001	0.00331	0.0005	0.0012	0.0002
W3	2020-02-25 7:35	274	574	207.6	7.49	376	3	0	97.9	0.001	0.125	0.0108	56.9	5.29		0.00001	0.0012	0.00019	0.0604	0.023	0.00002	0.00005	69.3		0.0001	0.0001	0.00228	0.01	0.000005	2.3	0.0037	35.1	0.0576	0.00555	19.4	0.00089	0.00005	0.0001	19.1	0.000338	6.41	0.0001	1.03	0.0003	0.00001	0.00313	0.0005	0.004	0.0002
W3	2020-03-03 6:20	260	605	152.2	7.39		3	0	97.6	0.001	0.123	0.0148	54.8	5.28		0.00001	0.0019	0.0002	0.0593	0.022	0.00002	0.00005	54.1	0.000005	0.0001	0.0001	0.00206	0.01	0.000005	2.33	0.0031	29.5	0.0569	0.00444	17.9	0.00088	0.00005	0.0001	18.7	0.000269	6.31	0.0001	0.769	0.0003	0.00001	0.00272	0.0005	0.001	0.0002
W3	2020-03-10 7:00	272	582	71.9	7.24	357	3	0	71.5	0.001	0.121	0.018	55.8	5.35	0.54	0.00001	0.0017	0.00025	0.0632	0.024	0.00002	0.00005	57.6	0.0000065	0.0001	0.0001	0.00181	0.013	0.000005	2.36	0.0034	31.2	0.097	0.00508	17.3	0.00089	0.00005	0.0001	19	0.000352	6.48	0.0001	0.827	0.0003	0.00001	0.00291	0.0005	0.001	0.0002
W3	2020-03-17 6:25	267	591	94.1	7.5	351	3.8	0.1	71.1	0.001	0.126	0.0285	55.6	5.29		0.00001	0.0011	0.0002	0.0617	0.022	0.00002	0.00005	54	0.00001	0.0001	0.0001	0.00183	0.015	0.000005	2.44	0.0034	30.3	0.107	0.00559	19	0.00091	0.00005	0.0001	20.3	0.000266	6.8	0.0001	0.855	0.0003	0.00001	0.00313	0.0005	0.001	0.0002
W3	2020-03-24 7:15	271	588	81	7.39	356	3	0.1	73.8	0.001	0.126	0.0288	57	5.41		0.00001	0.0018	0.0002	0.0624	0.023	0.00002	0.00005	57.4	0.00001	0.0001	0.0001	0.00198	0.018	0.000005	2.33	0.0033	31	0.114	0.0049	18.5	0.00093	0.00005	0.0001	18.2	0.000304	6.08	0.0001	0.834	0.0003	0.00001	0.00294	0.0005	0.001	0.0002
W3	2020-03-31 8:20	283	600	115.9	7.4	371	6.7	0.1	74.5	0.001	0.127	0.0201	55.7	5.21	0.541	0.00001	0.0035	0.0002	0.0632	0.023	0.00002	0.00005	62.7	0.00001	0.0001	0.0001	0.0018	0.016	0.000005	2.33	0.0033	32.4	0.0911	0.00531	19.3	0.00088	0.00005	0.0001	20.7	0.000257	6.44	0.0001	0.894	0.0003	0.00001	0.00301	0.0005	0.001	0.0002
W3	2020-04-07 6:20	276	573	73.6	7.49	375	6.6	0.1	74.6	0.001	0.122	0.0196	55.4	5.45		0.00001	0.0022	0.00025	0.0656	0.024	0.00002	0.00005	67.5	0.0000069	0.0001	0.0001	0.0021	0.018	0.000005	2.58	0.0035	34.3	0.0946	0.00541	20.2	0.00106	0.00005	0.0001	19.6	0.000314	6.65	0.0001	0.852	0.0003	0.00001	0.00311	0.0005	0.001	0.0002
W3	2020-04-14 6:45	272	564	87.3	7.59	356	6	0.1	71.9	0.001	0.123	0.0186	55.4	5.57		0.00001	0.0013	0.00024	0.063	0.023	0.00002	0.00005	59	0.00001	0.0001	0.0001	0.00205	0.021	0.000005	2.29	0.0031	29.1	0.0806	0.0048	17.8	0.00095	0.00005	0.0001	20	0.000302	6.42	0.0001	0.813	0.0003	0.00001	0.00279	0.0005	0.001	0.0002
W3	2020-04-21 7:05	117	280	171	7.43	244	22.6	0.1	79.1	0.001	0.0405	0.0256	24.9	3.24		0.00001	0.0996	0.0006	0.0499	0.012	0.000023	0.00005	42.1	0.0000266	0.00014	0.0005	0.0463	0.177	0.000009	2.79	0.0017	18.3	0.07	0.00229	10.6	0.00306	0.00005	0.0001	8.06	0.000274	4.66	0.0001	0.42	0.00286	0.00001	0.00102	0.00071	0.0017	0.00077
W3	2020-04-28 6:00	166	392	162.7	7.45	265	5	0.2	76.8	0.0012	0.0478	0.0128	32.9	3.34		0.00001	0.0732	0.00044	0.0531	0.017	0.00002	0.00005	40.3	0.0000153	0.00011	0.00047	0.0258	0.172	0.0000096	1.95	0.002	20.2	0.0754	0.0032	11.4	0.00254	0.00005	0.0001	12.1	0.000284	5.76	0.0001	0.505	0.00182	0.00001	0.00177	0.00056	0.0012	0.00081
W3	2020-05-05 6:30	100	216	195.2	7.07	187	3	0.1	82.4	0.001	0.0375	0.0122	18.2	1.88		0.00001	0.113	0.00047	0.0415	0.01	0.000021	0.00005	27.8	0.0000213	0.00011	0.00057	0.0301	0.186	0.0000118	1.33	0.0015	12.1	0.0489	0.00177	6.88	0.00281	0.00005	0.0001	6.51	0.000301	4.31	0.0001	0.284	0.00214	0.00001	0.000838	0.00054	0.0014	0.00082
W3	2020-05-12 6:45	211	439	111.1	7.74	301	3	0.2	77.4	0.0012	0.0617	0.0121	40.2	3.99		0.00001	0.0315	0.00034	0.0554	0.016	0.00002	0.00005	51	0.0000154	0.0001	0.00029	0.0137	0.086	0.000005	2.06	0.0026	22.7	0.086	0.0042	14.2	0.00189	0.00005	0.0001	13.6	0.000284	5.56	0.0001	0.658	0.00078	0.00001	0.00226	0.0005	0.0014	0.00052
W3	2020-05-19 5:40			181	7.82			0.2	82.1																																								
W3	2020-05-19 17:40	263	524	181	7.82	360	4.2	0.2	82.1	0.001	0.107	0.0126	50.9	5.28		0.00001	0.0079	0.0003	0.0628	0.02	0.00002	0.00005	61.8	0.000005	0.0001	0.00012	0.00576	0.039	0.000005	2.58	0.003	33	0.0813	0.00531	19.8	0.00153	0.00005	0.0001	17.9	0.000268	6.48	0.0001	0.802	0.0003	0.00001	0.0028	0.0005	0.001	0.0002
W3	2020-05-26 6:30	263	550	76.6	7.84	355	4.4	0.5	85.4	0.001	0.114	0.0108	53.5	5.51		0.00001	0.0045	0.0003	0.061	0.022	0.00002	0.00005	60.6	0.00001	0.0001	0.00013	0.00372	0.024	0.000005	2.58	0.0033	31.4	0.0672	0.00554	19	0.0013	0.00005	0.0001	20	0.000397	6.18	0.0001	0.841	0.0003	0.00001	0.00334	0.0005	0.001	0.0002
W3	2020-06-02 7:20	253	559	76	7.72	348	3	0.5	85.6	0.0014	0.116	0.0078	52.6	5.51		0.00001	0.0045	0.00033	0.0594	0.022	0.00002	0.00005	61.8	0.000021	0.0001	0.00014	0.00397	0.023	0.000005	2.43	0.0033	30.2	0.0568	0.00515	17.8	0.00193	0.00005	0.0001	18.3	0.000427	6.35	0.0001	0.771	0.0003	0.00001	0.00291	0.0005	0.0019	0.0002
W3	2020-06-09 5:40	244	558	145.3	7.93	341	3	4.3	65.2	0.001	0.088	0.0077	52.4	5.36		0.00001	0.0079	0.0003	0.059	0.02	0.00002	0.00005	61.4		0.0001	0.00012	0.00458	0.026	0.000005	2.29	0.0028	29.1	0.0502	0.00532	18	0.00124	0.00005	0.0001	17.6	0.000355	6.16	0.0001	0.8	0.0009	0.00001	0.00282	0.0005	0.001	0.0002

Attachment 3: Sitewide Database

Station	Date / Time	Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	N-NO2	N-NO3	N-NH3	SO4-D	Chlord	Fluord
		General Parameters								Anions & Nitrogen Species					
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W3	2020-06-16 6:00	259	565	149.1	7.87	351	3	2.3	81.2	0.001	0.0806	0.0077	54.8	5.6	
W3	2020-06-23 6:30	250	574	180.9	7.96	343	3	1.9	73	0.001	0.0832	0.0096	53.7	5.45	
W3	2020-06-30 6:50	255	565	169.7	7.78	353	3	1.8	81	0.001	0.0729	0.0095	52.8	5.02	
W3	2020-07-07 6:45	255	573	169.4	7.89	348	3	2.4	85.4	0.001	0.0712	0.0071	54	5.31	
W3	2020-07-08 11:30	249	570	192.6	7.76	346	13.8	3.2	86.4	0.001	0.061	0.0073	50.8	5.23	
W3	2020-07-14 6:50	244	559	129.7	7.71	338	3	2.3	83.7	0.001	0.0839	0.0103	48.9	4.99	
W3	2020-07-15 7:00	244	557	145.2	7.6	339	3	2.5	84.7	0.001	0.0673	0.0079	49.4	4.96	
W3	2020-07-21 5:30	244	544	245.8		341	3	2.7	83	0.001	0.0714	0.0098	51.9	4.98	
W3	2020-07-22 11:30	246	548	199.3	7.69	334	3	3.2	84.6	0.001	0.0717	0.0099	50.9	4.91	
W3	2020-07-28 6:35	228	514	160.2	7.66	312	3	2.7	82.3	0.001	0.0643	0.0077	46.2	4.48	
W3	2020-08-04 6:10			155.6	6.74			2.5	84.7						
W3	2020-08-04 6:10	246	547	155.6		335	3	2.5	84.7	0.001	0.0771	0.0115	53.2	4.97	
W3	2020-08-11 6:45			151.2	7.74			2.3	88.3						
W3	2020-08-11 6:45	241	564	151.2	7.74	336	3	2.3	88.3	0.001	0.0743	0.0102	52.8	4.9	
W3	2020-08-18 7:15	255	555	156	7.79	349	3	1.7	85.7	0.001	0.0672	0.0079	51.3	4.81	
W3	2020-08-25 7:25	222	491	141	7.64	312	9.2	2.9	81.4	0.001	0.046	0.0104	44	4.13	
W3	2020-09-01 6:55	238	546	148.7	7.79	354	3	2.2	83	0.001	0.0601	0.0076	48.5	4.56	
W3	2020-09-08 6:05	235	530	180.7	7.58	336	3	2.1	77	0.0013	0.0464	0.0102	51.6	4.72	
W3	2020-09-15 7:10	231	516	137.6	8	323	3	1	91.8	0.001	0.0611	0.0079	51.1	4.61	
W3	2020-09-22 7:10	239	498	96.4	7.88	337	3	0.6	83	0.001	0.0623	0.0084	53	4.7	
W3	2020-09-29 7:00	239	530	150.2	7.77	335	3	0.7	88.3	0.001	0.0714	0.0185	53.6	4.72	
W3	2020-10-06 6:05			204.3	7.81			1.7	82.9						
W3	2020-10-06 6:05	224	510	204.3	7.81	328	3	1.7	82.9	0.001	0.062	0.0098	50.9	4.66	
W3	2020-10-08 15:20			191.6	7.82			0.9	83.5						
W3	2020-10-09 6:05			193.3	7.13			2.9	83.5						
W3	2020-10-10 7:10			200.2	6.71			2.7	79.3						
W3	2020-10-11 5:50			214.2	7.42			3.4	81.5						
W3	2020-10-12 5:50			163.1	7.8			3.2	85.6						
W3	2020-10-13 6:10			193.3	7.63			3.2	84.3						
W3	2020-10-13 6:10	193	501	193.3	7.63	338	3	3.2	84.3	0.002	0.846	0.0091	79.8	5.82	
W3	2020-10-14 6:20			176.1	7.54			3	87.7						
W3	2020-10-15 6:20			200.9	7.53			1.2	101						
W3	2020-10-20 7:05	241	552	156.3	7.61	363	3	0	49.5	0.0015	0.108	0.0103	65.3	5.47	
W3	2020-10-27 10:05	239	548	156.2	7.64	350	3	0	61.4	0.001	0.116	0.0103	59.6	5.11	
W3	2020-11-03 9:05	240	562	191	7.1	348	3	0	78.1	0.001	0.123	0.0096	62.9	5.3	
W3	2020-11-10 10:35	239	540	191.1	6.67	333	3	0.2	83	0.001	0.121	0.0098	60.3	5.05	
W3	2020-11-17 10:15	242	560	161.4	7.2	347	3	0	78.3	0.001	0.131	0.0094	62.8	5.08	
W3	2020-11-24 10:15	242	559	174.5	7.45	362	3	0	75.2	0.001	0.134	0.0082	62.2	5.01	
W3	2020-12-01 10:15	243	534	155.4	7.29	360	3	0.1	84.8	0.001	0.139	0.0063	64.1	5.26	
W3	2020-12-08 12:30	243	526	160.7	7.51	350	3	0.1	83.3	0.001	0.139	0.0091	63.5	5.13	
W3	2020-12-15 10:00	237	553	93.3	7.79	351	3	0.1	78.7	0.001	0.158	0.009	65.3	5.2	
W3	2020-12-22 6:50	244	559	113.4	7.55	353	3	0	75.2	0.001	0.157	0.0089	64.8	5.22	
W3	2020-12-29 15:45	238	563	153.1	7.53	352	3	0	71.2	0.0075	0.147	0.0115	63.3	5.24	
W3	2021-01-05 13:55	252	567			366	3			0.001	0.153	0.0127	64.6	5.18	
W3	2021-01-12 8:45	242	557			355	3			0.001	0.156	0.0133	65.9	5.29	
W3	2021-01-19 9:30	240	574			352	3			0.001	0.162	0.0123	65.8	5.3	
W3	2021-01-26 9:15	268	574			373	3			0.001	0.163	0.0124	68	5.39	
W3	2021-02-02 10:10	260	576	103	7.68	369	3	0	71.1	0.001	0.153	0.0115	67.7	5.28	
W3	2021-02-09 11:00	252	597	66.1	7.38	375	3	0	47.5	0.001	0.145	0.0149	69.2	5.28	
W3	2021-02-16 9:30	261	594	193.4	7.23	398	3.4	0	66.3	0.001	0.149	0.0098	70.6	5.23	
W3	2021-03-09 10:00	245	576	154.2	7.42	321	1	0	76.9	0.001	0.162	0.0109	68.3	5.16	
W3	2021-03-16 14:45	244	575	152.4	7.27	336	1.6	0	71.2	0.001	0.176	0.0178	65.3	5.01	
W3	2021-03-17 7:40	244	575	128.1	7.68	334	1	0	68.6	0.001	0.163	0.0158	67.5	5.22	
W3	2021-03-23 8:00	248	581	118.9	7.71	356	1	0.9	80.4	0.001	0.167	0.0191	69.7	5.28	
W3	2021-03-30 7:05	240	568	163.4	7.29	350	1	0.8	78.7	0.001	0.162	0.0154	68.6	5.26	
W3	2021-03-31 6:35	236	569	158	7.29	346	1	1.1	65.2	0.001	0.16	0.0156	68	5.21	
W3	2021-04-06 13:50														
W3	2021-04-06 13:50	242	563			355	1.6			0.001	0.164	0.019	68.9	5.28	
W3	2021-04-13 8:40	250	586			371	1			0.001	0.167	0.0274	70.2	5.32	
W3	2021-04-20 7:35	217	532			328	3			0.001	0.153	0.0243	66	5.25	
W3	2021-04-27 7:25	177	443			298	18.4			0.001	0.12	0.018	53.8	4.42	
W3	2021-05-04 10:20			216.7	6.98			1.6	80.9						
W3	2021-05-04 10:20	71.6	201	216.7	6.98	180	5.9	1.6	80.9	0.001	0.0388	0.0136	18.8	1.61	
W3	2021-05-11 7:50			179.6	7.17			0.1	85.2						
W3	2021-05-11 7:50	114	297	179.6	7.17		18	0.1	85.2	0.001	0.061	0.0147	30.5	2.56	
W3	2021-05-15 8:40			273.7	6.56			1.5	89.1						
W3	2021-05-18 7:30			179.5	7.28			0.6	81.6						
W3	2021-05-18 7:30	139	335	179.5	7.28		2.6	0.6	81.6	0.001	0.0762	0.0082	37.6	2.97	0.351
W3	2021-05-25 6:30			173.3	7.17			0.4	83.3						
W3	2021-05-25 6:30	105	252	173.3	7.17	200	17.8	0.4	83.3	0.001	0.051	0.0181	26.3	2.08	
W3	2021-05-26 11:10														
W3	2021-05-26 14:23	77.2	189	201.1	6.96	129	12.4	6.4	93.8	0.0185	0.939	0.0178	12.7	1.38	
W3	2021-05-31 10:45			180.9	7.24			7.1	85						
W3	2021-05-31 10:45	91.4	226	180.9	7.24	139	6	7.1	85	0.0503	1.18	0.0289	13.6	1.6	
W3	2021-06-01 6:20														
W3	2021-06-01 6:20	97.6	230	192.8	7.24	146	1	6.4	82.4	0.0577	1.23	0.0292	14.7	1.77	
W3	2021-06-08 9:40	224	477	170.6	7.46	320	1	7.8	105.2	0.001	0.114	0.0082	54.4	4.67	
W3	2021-06-15 16:10	217	532	131.3	7.58	334	1.1	4.9	87.4	0.001	0.136	0.0075	62.1	5.42	
W3	2021-06-23 9:45	223	527	88.7	7.91	334	1	2.6	93.2	0.001	0.183	0.009	58.6	5.35	
W3	2021-06-28 13:35	221	530	142.1	7.58	323	1	4.3	82	0.001	0.213	0.0112	58.5	5.43	0.483
W3	2021-07-06 9:25	224	532	90.6	7.81	334	1	2.9	86.6	0.001	0.276	0.0137	58.6	5.6	
W3	2021-07-13 9:55	210	529	134	7.32	312	1	2.4	83.7	0.001	0.294	0.0088	56.1	5.56	
W3	2021-07-20 12:05	243	510	111.4	7.85	329	3.2	3.8	92.2	0.001	0.268	0.009	53.4	5.3	
W3	2021-07-26 12:00	223	511	112.4	7.38	320	1	3.8	89.2	0.001	0.237	0.0095	51.4	5.27	
W3	2021-08-02 10:30	223	537	126.2	7.39	319	1	3.1	89.4	0.001	0.24	0.0067	54	5.45	
W3	2021-08-04 7:35	224	544	62.7	7.6	314	1	2.7	81	0.001	0.234	0.0071	52.2	5.41	
W3	2021-08-09 15:50	222	507	204.7	7.02	312	1.1	4.2	85.2	0.001	0.191	0.0074	49.9	5.25	
W3	2021-08-16 14:20	226	520	109.2	7.55	316	1	4.1	86.3	0.001	0.193	0.0078	50.4	5.2	
W3	2021-08-17 8:15	228	523	74.2	7.47	323	1	2.6	116.4	0.001	0.201	0.0074	50.3	5.19	
W3	2021-08-24 11:30	226	502	87.1	7.91	322	1	2.8	82.7	0.001	0.189	0.0078	50.7	5.24	
W3	2021-08-31 10:00	227	515	16.9	8.28	324	1	2.1	108	0.001	0.174	0.0066	49.7	5.16	
W3	2021-09-07 16:25	227	506	68.3	7.93	326	1	3.4	85.3	0.001	0.137	0.0053	50.9	5.19	
W3	2021-09-14 10:45	232	512	90.6	7.86	318	10.6	2.1	90.4	0.001	0.123	0.005	48.8	5.01	
W3	2021-09-21 13:45			101.1	7.82			4.2	83.9						
W3	2021-09-21 13:45	172	402	101.1	7.82	243	1.6	4.2	83.9	0.001	0.0925	0.005	38	4.25	
W3	2021-09-23 15:35	91.4	205	123.1	7.8	122	1	5.06	133.5	0.001	0.102	0.0164	14.8	2.83	
W3	2021-09-28 10:30			82.2	7.84			1.3	91.6						
W3	2021-09-28 10:30	221	522	82.2	7.84	305	5.3	1.3	91.6	0.001	0.142	0.0058	46.9	4.84	
W3	2021-10-05 16:40			36.3	7.85			1.6	85.6						
W3	2021-10-05 16:40	221	516	36.3	7.85	308	3.6	1.6	85.6	0.001	0.149	0.0084	49.9	5.03	
W3	2021-10-12 17:35	222	513	84.5	7.78	309	1	1.1	96.2	0.001	0.146	0.0057	48.5	4.89	
W3	2021-10-19 16:15	225	506	67	7.81	316	1	0.1	89.7	0.001	0.152	0.0053	49.4	4.86	
W3	2021-10-26 9:30	223	502	81.3	7.8	318	1	0.3	89.8	0.001	0.164	0.0095	52.1	5.06	
W3	2021-11-02 10:00	234	532	81.2	7.76	320	1.1	0	93.3	0.001	0.157	0.0087	49.8	4.84	
W3	2021-11-09 14:45	236	523	76.9	7.68	334	1	0	84.9	0.001	0.165	0.0093	51	4.86	
W3	2021-11-16 13:50	235	525	78.6	7.25	326	1	0	57.1	0.001	0.187	0.0079	52.9	4.91	
W3	2021-11-23 14:00	241	532	117.9	7.3	330	1.1	0	84.1	0.001	0.159	0.0104	52.8	4.94	
W3	2021-11-30 14:15	240	530	36.3	7.88	326	1.3	0	132.6	0.001	0.164	0.0073	52.5	4.82	
W3	2021-12-07 7:40	209	498	72.1	7.26	303	1.2	0		0.001	0.139	0.0078	49.7	4.97	
W3	2021-12-14 14:30	235	524	78.1	7.39	326	1	0	103.9	0.001	0.174	0.008	53.9	4.87	
W3	2021-12-23 14:30	236	533	74.6	7.4	321	2.8	0	103.6	0.001	0.166	0.0112	52.6	4.7	
W3	2021-12-28 10:50	257	541	21.7	7.86	336	2.5	0	114.8	0.001	0.169	0.0091	53.6	4.78	
W3	2022-01-03 15:55	234	538			325	1			0.001	0.161	0.0099	51.7	4.58	
W3	2022-01-10 13:40	207	482			301	5.6			0.001	0.142	0.0126	49.5	4.9	
W3	2022-01-17 10:10	205	472			302	2.9			0.001	0.146	0.0104	51	4.95	

Station	Date / Time	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
		Dissolved Elements																			
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W3	2020-06-16 6:00	0.00001	0.0054	0.00029	0.0568	0.023	0.00002	0.00005	63.8	0.000005	0.0001	0.00017	0.00325	0.022	0.000005	2.1	0.003	28.1	0.0432	0.00562	16.7
W3	2020-06-23 6:30	0.00001	0.0057	0.00026	0.0582	0.022	0.00002	0.00005	59.4	0.000005	0.0001	0.00016	0.00369	0.023	0.000005	2.23	0.0031	28.8	0.0443	0.00512	17.5
W3	2020-06-30 6:50	0.00001	0.0021	0.00025	0.0585	0.021	0.00002	0.00005	65.2	0.000005	0.0001	0.0001	0.00272	0.015	0.000005	2.3	0.003	31	0.0466	0.00513	18.1
W3	2020-07-07 6:45	0.00001	0.0028	0.00024	0.0617	0.022	0.00002	0.00005	60.4	0.0000108	0.0001	0.00014	0.00287	0.016	0.000005	2.35	0.0029	29.4	0.0452	0.00512	18.5
W3	2020-07-08 11:30	0.00001	0.0076	0.00025	0.0591	0.022	0.00002	0.00005	64	0.0000084	0.0001	0.00016	0.00446	0.025	0.000005	2.36	0.003	30.6	0.0464	0.00524	18
W3	2020-07-14 6:50	0.00001	0.0106	0.00024	0.0585	0.022	0.00002	0.00005	62.1	0.0000168	0.0001	0.00027	0.00478	0.041	0.000005	2.2	0.0028	28.7	0.05	0.00525	17.4
W3	2020-07-15 7:00	0.00001	0.0039	0.00025	0.0578	0.023	0.00002	0.00005	64.4	0.000005	0.0001	0.0001	0.00336	0.018	0.000005	2.24	0.0031	29.1	0.0491	0.00535	17.3
W3	2020-07-21 5:30	0.00001	0.0044	0.00027	0.0606	0.02	0.00002	0.00005	64.3	0.000005	0.0001	0.00016	0.00343	0.022	0.000005	2.33	0.003	27.9	0.0475	0.005	17.6
W3	2020-07-22 11:30	0.00001	0.002	0.00027	0.058	0.022	0.00002	0.00005	56.2	0.000005	0.0001	0.00012	0.00336	0.02	0.000005	2.25	0.003	28.7	0.0505	0.00482	17.6
W3	2020-07-28 6:35	0.00001	0.0046	0.00028	0.057	0.02	0.00002	0.00005	52.8	0.000005	0.0001	0.00013	0.00477	0.03	0.000005	2.15	0.0027	25.7	0.0456	0.00453	16.2
W3	2020-08-04 6:10																				
W3	2020-08-04 6:10	0.00001	0.0034	0.00025	0.058	0.026	0.00002	0.00005	57.7	0.00001	0.0001	0.0002	0.0035	0.022	0.000005	2.24	0.003	26.3	0.05	0.00506	16.8
W3	2020-08-11 6:45																				
W3	2020-08-11 6:45	0.00001	0.01	0.00025	0.0591	0.021	0.00002	0.00005	58	0.0000087	0.0001	0.00015	0.00394	0.035	0.000005	2.29	0.0029	29.2	0.066	0.00497	16.8
W3	2020-08-18 7:15	0.00001	0.0035	0.00027	0.0578	0.022	0.00002	0.00005	64.5	0.000005	0.0001	0.00018	0.00334	0.022	0.000005	2.27	0.003	27.8	0.0522	0.00525	17.3
W3	2020-08-25 7:25	0.00001	0.0056	0.00025	0.0555	0.021	0.00002	0.00005	58.2	0.000005	0.0001	0.00018	0.00429	0.032	0.000005	2.15	0.0024	27.1	0.046	0.0046	15.7
W3	2020-09-01 6:55	0.00001	0.0047	0.00021	0.0612	0.022	0.00002	0.00005	70.4	0.000005	0.0001	0.00017	0.00363	0.02	0.000005	2.43	0.0029	35.8	0.0507	0.00544	22.4
W3	2020-09-08 6:05	0.00001	0.0059	0.00023	0.0601	0.021	0.00002	0.00005	62.2	0.0000293	0.0001	0.00018	0.00412	0.029	0.000005	2.42	0.0027	28.2	0.0496	0.005	18.1
W3	2020-09-15 7:10	0.00001	0.005	0.00024	0.0544	0.024	0.00002	0.00005	56.2	0.00001	0.0001	0.00017	0.00377	0.025	0.000005	2.15	0.0026	26.3	0.0489	0.00482	15.9
W3	2020-09-22 7:10	0.00001	0.0039	0.00026	0.057	0.02	0.00002	0.00005	61	0.00001	0.0001	0.00018	0.00338	0.022	0.000005	2.2	0.0028	29	0.0562	0.00474	17.8
W3	2020-09-29 7:00	0.00001	0.0036	0.00025	0.0529	0.02	0.00002	0.00005	57.6	0.000005	0.0001	0.00031	0.00334	0.021	0.000005	2.25	0.0026	29.8	0.0552	0.00474	17.5
W3	2020-10-06 6:05																				
W3	2020-10-06 6:05	0.00001	0.0049	0.0003	0.0607	0.02	0.00002	0.00005	61.5	0.0000054	0.0001	0.0002	0.00457	0.025	0.000005	2.51	0.0028	27.7	0.0537	0.00502	17.5
W3	2020-10-08 15:20																				
W3	2020-10-09 6:05																				
W3	2020-10-10 7:10																				
W3	2020-10-11 5:50																				
W3	2020-10-12 5:50																				
W3	2020-10-13 6:10																				
W3	2020-10-13 6:10	0.00001	0.0037	0.00033	0.0589	0.014	0.00002	0.00005	68.2	0.000005	0.0001	0.0002	0.0134	0.025	0.000005	2.36	0.0019	21.4	0.0129	0.00425	13.2
W3	2020-10-14 6:20																				
W3	2020-10-15 6:20																				
W3	2020-10-20 7:05	0.00001	0.003	0.00027	0.0613	0.022	0.00002	0.00005	65.4	0.000005	0.0001	0.00015	0.00427	0.018	0.000005	2.46	0.0029	29.8	0.0566	0.00489	18.9
W3	2020-10-27 10:05	0.00001	0.0026	0.00027	0.06	0.021	0.00002	0.00005	64.5	0.0000053	0.0001	0.00014	0.00342	0.02	0.000005	2.29	0.0028	30	0.0641	0.00453	18
W3	2020-11-03 9:05	0.00001	0.0025	0.00023	0.0604	0.021	0.00002	0.00005	60.1	0.00001	0.0001	0.0001	0.00301	0.018	0.000005	2.45	0.0028	30.9	0.0524	0.00496	17.8
W3	2020-11-10 10:35	0.00001	0.0022	0.00026	0.0575	0.022	0.00002	0.00005	55.9	0.000005	0.0001	0.0001	0.00259	0.015	0.000005	2.16	0.0029	25.6	0.0496	0.00481	15.8
W3	2020-11-17 10:15	0.00001	0.002	0.00026	0.0579	0.023	0.00002	0.00005	57.1	0.000005	0.0001	0.00013	0.00263	0.014	0.000005	2.4	0.003	29.9	0.0514	0.00498	18.4
W3	2020-11-24 10:15	0.00001	0.0023	0.00025	0.0597	0.026	0.00002	0.00005	66.4	0.00001	0.0001	0.0001	0.00259	0.015	0.000005	2.41	0.0032	32.1	0.0516	0.0047	18.9
W3	2020-12-01 10:15	0.00001	0.0027	0.00022	0.0622	0.025	0.00002	0.00005	68.2	0.000005	0.0001	0.00012	0.00244	0.015	0.000005	2.35	0.0035	29.8	0.0461	0.00521	18.2
W3	2020-12-08 12:30	0.00001	0.0022	0.00024	0.0606	0.022	0.00002	0.00005	58.7	0.0000076	0.0001	0.00033	0.00254	0.014	0.000005	2.52	0.003	29.9	0.0462	0.00494	18.3
W3	2020-12-15 10:00	0.00001	0.0024	0.00022	0.0566	0.023	0.00002	0.00005	62.6	0.000005	0.0001	0.00012	0.0025	0.013	0.000005	2.2	0.0031	29.7	0.0514	0.00475	17.7
W3	2020-12-22 6:50	0.00001	0.0019	0.00022	0.0602	0.023	0.00002	0.00005	59.5	0.000005	0.0001	0.00014	0.00231	0.015	0.000005	2.38	0.0031	30	0.0529	0.00492	18.1
W3	2020-12-29 15:45	0.00001	0.0017	0.00021	0.0611	0.024	0.00002	0.00005	66.6	0.000005	0.0001	0.0001	0.0021	0.01	0.000005	2.31	0.0031	29.2	0.0492	0.0048	17.8
W3	2021-01-05 13:55	0.00001	0.002	0.00023	0.0637	0.023	0.00002	0.00005	65.8	0.0000177	0.0001	0.0001	0.00227	0.019	0.000005	2.48	0.0031	33	0.0696	0.00492	18.7
W3	2021-01-12 8:45	0.00001	0.0018	0.00022	0.0559	0.021	0.00002	0.00005	62.3	0.00001	0.0001	0.00012	0.0022	0.019	0.000005	2.36	0.003	30.5	0.0828	0.00476	17.9
W3	2021-01-19 9:30	0.00001	0.0017	0.00024	0.0648	0.022	0.00002	0.00005	61.4	0.0000068	0.0001	0.0001	0.00223	0.021	0.000005	2.47	0.0032	29.9	0.0801	0.0049	18.2
W3	2021-01-26 9:15	0.00001	0.0014	0.00022	0.0596	0.024	0.00002	0.00005	65.8	0.000005	0.0001	0.0001	0.00193	0.024	0.000005	2.13	0.0034	28.2	0.0808	0.00478	17.4
W3	2021-02-02 10:10	0.00001	0.0017	0.00024	0.0647	0.023	0.00002	0.00005	62	0.000005	0.0001	0.00011	0.0022	0.013	0.000005	2.47	0.0032	31.6	0.0768	0.00517	18.8
W3	2021-02-09 11:00	0.00001	0.0016	0.00025	0.0599	0.024	0.00002	0.00005	72.4	0.0000062	0.0001	0.0001	0.00242	0.018	0.000005	2.43	0.0038	30.6	0.0869	0.00522	17.8
W3	2021-02-16 9:30	0.00001	0.0018	0.00022	0.0683	0.024	0.00002	0.00005	77.9	0.00001	0.0001	0.0001	0.00274	0.01	0.000005	2.32	0.0039	37.6	0.0554	0.00525	21.8
W3	2021-03-09 10:00	0.00001	0.0035	0.00023	0.0584	0.024	0.00002	0.00005	59.5	0.00001	0.0001	0.0001	0.00224	0.018	0.000005	2.43	0.0037	31.7	0.0613	0.00472	19.2
W3	2021-03-16 14:45	0.00001	0.0014	0.0002	0.0587	0.026	0.00002	0.00005	57.2	0.0000666	0.0001	0.00012	0.00178	0.023	0.000005	2.28	0.0036	31.3	0.0848	0.00525	17.7
W3	2021-03-17 7:40	0.00001	0.0014	0.00022	0.0592	0.024	0.00002	0.00005	57.9	0.0000051	0.0001	0.0001	0.00179	0.024	0.000005	2.29	0.0036	30.3	0.0921	0.00517	17.5
W3	2021-03-23 8:00	0.00001	0.0016	0.00022	0.0602	0.023	0.00002	0.00005	56.5	0.0000064	0.0001	0.0001	0.00176	0.025	0.000005	2.36	0.0036	31.3	0.0964	0.00515	17.8
W3	2021-03-30 7:05	0.00001	0.0016	0.00025	0.0581	0.023	0.00002	0.00005	54.2	0.0000052	0.0001	0.0001	0.00166	0.04	0.000005	2.37	0.0034	32.6	0.111	0.00485	18.5
W3	2021-03-31 6:35	0.00001	0.002	0.00023	0.0576	0.022	0.00002	0.00005	54.7	0.000005	0.0001	0.0001	0.00176	0.039	0.000005	2.34	0.0034	31.4	0.117	0.00475	18
W3	2021-04-06 13:50																				
W3	2021-04-06 13:50	0.00001	0.0023	0.00022	0.0565	0.023	0.00002	0.00005	59.9	0.00001	0.0001	0.0001	0.00164	0.048	0.000005	2.27	0.0034	30.6	0.143	0.00508	17.8
W3	2021-04-13 8:40	0.00001	0.0021	0.00026	0.0657	0.024	0.00002	0.00005	63.2	0.00001	0.0001	0.0001	0.00248	0.051	0.000005	2.54	0.0036	34.8	0.158	0.00512	20
W3	2021-04-20 7:35	0.00001	0.0049	0.00032	0.0666	0.022	0.00002	0.00005	55.4	0.0000051	0.0001		0.00401	0.071	0.000005	2.56	0.0028	27.9	0.14	0.00475	16.1
W3	2021-04-27 7:25	0.00001	0.044	0.00038	0.062	0.019	0.00002	0.00005	49.8	0.0000164	0.0001		0.0301	0.126	0.000005	3.25	0.0022	22.4	0.0975	0.00376	13
W3	2021-05-04 10:20																				
W3	2021-05-04 10:20	0.00001	0.126	0.0004	0.0388	0.01	0.000021	0.00005	24.2	0.0000277	0.00011		0.0498	0.178	0.0000068	2.43	0.0012	10.8	0.0456	0.00148	5.47
W3	2021-05-11 7:50																				
W3	2021-05-11 7:50	0.00001	0.0798	0.00038	0.044	0.012	0.00002	0.00005	32.4	0.0000169	0.00011		0.0309	0.166	0.000005	1.84	0.0016	14.4	0.0721	0.00238	8.18
W3	2021-05-15 8:40																				
W3	2021-05-18 7:30																				
W3	2021-05-18 7:30	0.00001	0.069	0.0004	0.0441	0.013	0.000021	0.00005	37.6	0.0000088	0.00011	0.00052	0.0255	0.179	0.0000068	1.78	0.0017	16.8	0.0476	0.00299	9.76
W3	2021-05-25 6:30																				
W3	2021-05-25 6:30	0.00001	0.0913	0.00052	0.0402	0.011	0.000024	0.00005	32.6	0.00001	0.00011	0.00056	0.0267	0.183	0.0000053	1.32	0.0012	13.3	0.0334	0.00225	8.08
W3	2021-05-26 11:10																				
W3	2021-05-26 14:23	0.00001	0.0299	0.00035	0.0238	0.033	0.00002	0.00005	17.1	0.00001	0.0001		0.0136	0.07	0.000005	1.24	0.001	7.48	0.0392	0.00294	15.5
W3	2021-05-31 10:45																				
W3	2021-05-31 10:45	0.00001	0.0187	0.00023	0.0213	0.049	0.00002	0.00005	16.5	0.000005	0.0001		0.00661	0.037	0.000005	1.28	0.001	7.2	0.00849	0.00194	24.2
W3	2021-06-01 6:20																				
W3	2021-06-01 6:20	0.00001	0.0124	0.00019	0.0212	0.055	0.00002	0.00005	17.2	0.000005	0.0001		0.00575	0.035	0.000005	1.29	0.001	7.5	0.00863	0.00198	24.5
W3	2021-06-08 9:40	0.00001	0.0136	0.00033	0.0537	0.022	0.00002	0.00005	52.3	0.0000053	0.0001	0.0005	0.00706	0.058	0.000005	2.18	0.0023	23.3	0.0567	0.00405	14.7
W3	2021-06-15 16:10	0.00001	0.0069	0.00029	0.0617	0.021	0.00002	0.00005	61.8	0.000005	0.0001	0.0005	0.00468	0.039	0.000005	2.57	0.0026	27.2	0.0547	0.00501	17.6
W3	2021-06-23 9:45	0.00001	0.004	0.0003	0.0656	0.021	0.00002	0.00005	59.6	0.00001	0.0001	0.0005	0.00378	0.033	0.000005	2.45	0.0025	29.1	0.0601	0.00451	17.6
W3	2021-06-28 13:35	0.00001	0.0065	0.0003	0.0578	0.021	0.00002	0.00005	57.4	0.0000064	0.0001	0.0005	0.00433	0.064	0.000005	2.3	0.0025	24.8	0.0592	0.00472	15.9
W3	2021-07-06 9:25	0.00001	0.0063	0.00025	0.0523	0.022	0.00002	0.00005	65	0.00001	0.0001	0.0005	0.00326	0.033	0.000005	2.27	0.0026	25.2	0.0558	0.00441	16.1
W3	2021-07-13 9:55	0.00001	0.003	0.00024	0.0545	0.02	0.00002	0.00005	56.2	0.000005	0.0001	0.0005	0.00307	0.029	0.000005	2.25	0.0024	25.4	0.0588	0.00455	15.4
W3	2021-07-20 12:05	0.00001	0.0028	0.00025	0.0565	0.02	0.00002	0.00005	55.2	0.000005	0.0001	0.0005	0.00291	0.026	0.000005	2.27	0.0024	25.4	0.0595	0.00489	15.4
W3	2021-07-26 12:00	0.00001	0.0032	0.00028	0.0564	0.021	0.00002	0.00005	57.4	0.0000056	0.0001	0.0005	0.00379	0.03	0.000005	2.46	0.0026	26.1	0.0629	0.00475	16.5
W3	2021-08-02 10:30	0.00001	0.0036	0.00024	0.054	0.02	0.00002	0.00005	54.9	0.000005	0.0001	0.0005	0.00312	0.027	0.000005	2.4	0.0026	25	0.0648	0.00474	16.4
W3	2021-08-04 7:35	0.00001	0.0034	0.00023	0.0527	0.02	0.00002	0.00005	53.2	0.0000054	0.0001	0.0005	0.0028	0.026	0.000005	2.2	0.0021	23.6	0.0644	0.00478	16.7
W3	2021-08-09 15:50	0.00001	0.0034	0.00027	0.0527	0.021	0.00002	0.00005	54.9	0.000005	0.0001	0.0005	0.00369	0.032	0.000005	2.22	0.0024	25.4	0.061	0.00484	15.1
W3	2021-08-16 14:20	0.00001	0.004	0.00022	0.0501	0.02	0.00002	0.00005	56.4	0.000005	0.0001	0.0005	0.00318	0.03	0.000005	2.18	0.0024	25.8	0.0757	0.00464	15.6
W3	2021-08-17 8:15	0.00001	0.0043	0.00026	0.0567	0.02	0.00002	0.00005	58.8	0.0000058	0.0001	0.0005	0.0033	0.036	0.000005	2.39	0.0025	27.7	0.0707	0.00461	16.7
W3	2021-08-24 11:30	0.00001	0.0034	0.00025	0.0568	0.02	0.00002	0.00005	58.6	0.000005	0.0001	0.0005	0.00282	0.029	0.000005	2.43	0.0026	26.7	0.0704	0.00515	16.5
W3	2021-08-31 10:00	0.00001	0.0029	0.00029	0.0531	0.022	0.00002	0.00005	58.7	0.000005	0.0001	0.0005	0.00274	0.03	0.000005	2.43	0.0026	26.9	0.0686	0.0049	17.4
W3	2021-09-07 16:25	0.00001	0.0027	0.00026	0.0538	0.023	0.00002	0.00005	61.9	0.000005	0.0001	0.0005	0.00267	0.022	0.000005	2.4	0.0026	27.1	0.0607	0.005	16.6
W3	2021-09-14 10:45	0.00001	0.0048	0.00026	0.0543	0.021	0.00002	0.00005	56.2	0.000005	0.0001	0.0005	0.00289	0.031	0.000005	2.39	0.0026	24.9	0.0585	0.00498	15.6
W3	2021-09-21 13:45																				
W3	2021-09-21 13:45	0.00001	0.0044	0.00023	0.0449	0.019	0.00002	0.00005	40.2	0.000005	0.0001	0.0005	0.0031	0.021	0.000005	1.98	0.0019	18.8	0.0367	0.00402	14.9
W3	2021-09-23 15:35	0.00001	0.0075	0.00014	0.021	0.015	0.00002	0.00005	18.7	0.000005	0.0001	0.0005	0.00297	0.012	0.000005	1.07	0.001	7.98	0.0126	0.00222	11.5
W3	2021-09-28 10:30																				
W3	2021-09-28 10:30	0.00001	0.003	0.00023	0.0502	0.019	0.00002	0.00005	52.2	0.0000094	0.0001	0.0005	0.0028	0.022	0.000005	2.26	0.0027	24.5	0.0553	0.00448	16.4
W3	2021-10-05 16:40																				
W3	2021-10-05 16:40	0.00001	0.0046	0.00027	0.0503	0.017	0.00002	0.00005	51.6	0.000005	0.0001	0.0005	0.00291	0.024	0.000005	2.18	0.0025	25.8	0.0508	0.00452	16.5
W3	2021-10-12 17:35	0.00001	0.0027	0.00023	0.0496	0.018	0.00002	0.00005	52.7	0.000005	0.0001	0.0005	0.00255	0.024	0.000005	2.22	0.0026	26.1	0.0522	0.00465	16
W3	2021-10-19 16:15	0.00001	0.0038	0.00024	0.055	0.018	0.00002	0.00005	54.3	0.00001	0.0001	0.0005	0.0028	0.031	0.000005	2.47	0.0026	27	0.0593	0.00449	17.7
W3	2021-10-26 9:30	0.00001	0.0023	0.00022	0.053	0.019	0.00002	0.00005	57.1	0.000042	0.0001	0.0005	0.00248	0.023	0.000005	2.21	0.0027	26	0.0511	0.00472	16
W3	2021-11-02 10:00	0.00001	0.002	0.00023	0.0543	0.019	0.00002	0.00005	56.6	0.000005	0.0001	0.0005	0.00241	0.022	0.000005	2.38	0.003	25.5	0.0565	0.00469	15.9
W3	2021-11-09 14:45	0.00001	0.0046	0.00026	0.0573	0.019	0.00002	0.00005	59.7	0.00001	0.0001	0.0005	0.00268	0.029	0.000005	2.66	0.0026	29.7	0.0591	0.00482	18.3
W3	2021-11-16 13:50	0.00001	0.0124	0.00022	0.0545	0.018	0.00002	0.00005	55	0.000007	0.0001	0.0005	0.00275	0.032	0.000005	2.34	0.0027	27.7	0.0433	0.00471	16.7
W3	2021-11-23 14:00	0.00001	0.002	0.00024	0.0536	0.02	0.00002	0.00005	54.4	0.000005	0.0001	0.0005	0.00246	0.021	0.000005	2.51	0.0027	26.6	0.0663	0.00456	17.2
W3	2021-11-30 14:15	0.00001	0.0019	0.00022	0.0542	0.023	0.00002	0.00005	57.7	0.000005	0.0001	0.0005	0.00241	0.019	0.000005	2.29	0.0029	25.2	0.043	0.00467	16
W3	2021-12-07 7:40	0.00001	0.0042	0.00025	0.05	0.018	0.00002	0.00005	55.7	0.0000051	0.0001	0.0005	0.00402	0.015	0.000005	2.62	0.0022	23.8	0.0296	0.00483	14.6
W3	2021-12-14 14:30	0.00001	0.0028	0.00025	0.0507	0.022	0.00002	0.00005	55.2	0.000005	0.0001	0.0005	0.00247	0.023	0.000005	2.41	0.003	26.2	0.0462	0.00518	17.3
W3	2021-12-23 14:30	0.00001	0.003	0.0002	0.0532	0.022	0.00002	0.00005	52.7	0.000005	0.0001	0.0005	0.00221	0.026	0.000005	2.19	0.0031	25.8	0.0595	0.00509	16
W3	2021-12-28 10:50	0.00001	0.004	0.00021	0.0508	0.021	0.00002	0.00005	52.6	0.0000085	0.0001	0.0005	0.00247	0.018	0.000005	2.2	0.0032	25.9	0.0413	0.00511	16.3
W3	2022-01-03 15:55	0.00001	0.0018	0.00026	0.0492	0.025	0.00002	0.00005	58	0.000005	0.0001	0.0005	0.00202	0.016	0.000005	2.21	0.0028	26.3	0.0422	0.00486	16.1
W3	2022-01-10 13:40	0.00001	0.002	0.00026	0.0451	0.019	0.00002	0.00005	57.7	0.00001	0.0001	0.0005	0.0038	0.02	0.000005	2.34	0.0021	21.2	0.0389	0.00525	13.2
W3	2022-01-17 10:10	0.00001	0.0025	0.00028	0.0491	0.018	0.00002	0.00005	57	0.0000062	0.0001	0.0005	0.004	0.016	0.000005	2.48	0.0023	22.1	0.0315	0.00528	14.7

Station	Date / Time	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W3	2020-06-16 6:00	0.00105	0.00005	0.0001	18.3	0.000308	6.21	0.0001	0.827	0.00047	0.00001	0.00286	0.0005	0.001	0.0002
W3	2020-06-23 6:30	0.00102	0.00005	0.0001	17.7	0.000293	6.22	0.0001	0.77	0.00045	0.00001	0.00277	0.0005	0.0012	0.0002
W3	2020-06-30 6:50	0.00106	0.00005	0.0001	17.6	0.000312	6.12	0.0001	0.798	0.0003	0.00001	0.003	0.0005	0.001	0.0002
W3	2020-07-07 6:45	0.00108	0.00005	0.0001	18.1	0.000325	6.42	0.0001	0.761	0.0003	0.00001	0.00282	0.0005	0.001	0.0002
W3	2020-07-08 11:30	0.00112	0.00005	0.0001	19	0.000295	6.15	0.0001	0.764	0.00037	0.00001	0.00277	0.0005	0.0011	0.0002
W3	2020-07-14 6:50	0.0012	0.00005	0.0001	18.2	0.000285	6.17	0.0001	0.758	0.00051	0.00001	0.00266	0.0005	0.0031	0.0002
W3	2020-07-15 7:00	0.00115	0.00005	0.0001	18.7	0.000267	6.16	0.0001	0.749	0.0003	0.00001	0.00274	0.0005	0.0011	0.0002
W3	2020-07-21 5:30	0.00106	0.00005	0.0001	17.6	0.000246	6.12	0.0001	0.802	0.0003	0.00001	0.00265	0.0005	0.001	0.0002
W3	2020-07-22 11:30	0.00117	0.00005	0.0001	18.4	0.000238	6.5	0.0001	0.714	0.0003	0.00001	0.00267	0.0005	0.001	0.0002
W3	2020-07-28 6:35	0.0014	0.00005	0.0001	16.4	0.000263	6.42	0.0001	0.662	0.0003	0.00001	0.00238	0.0005	0.001	0.0002
W3	2020-08-04 6:10														
W3	2020-08-04 6:10	0.001	0.00005	0.0001	16.6	0.000298	6.34	0.0001	0.767	0.0003	0.00001	0.0025	0.0005	0.0024	0.0002
W3	2020-08-11 6:45														
W3	2020-08-11 6:45	0.00126	0.00005	0.0001	18.1	0.000255	6.62	0.0001	0.725	0.00045	0.00001	0.00258	0.0005	0.0013	0.0002
W3	2020-08-18 7:15	0.00122	0.00005	0.0001	17.5	0.000208	6.41	0.0001	0.749	0.0003	0.00001	0.00227	0.0005	0.001	0.0002
W3	2020-08-25 7:25	0.0013	0.00005	0.0001	16.1	0.000202	5.85	0.0001	0.668	0.00034	0.00001	0.00218	0.0005	0.001	0.0002
W3	2020-09-01 6:55	0.00142	0.00005	0.0001	16.9	0.00028	6.45	0.0001	0.879	0.0003	0.00001	0.00212	0.0005	0.001	0.0002
W3	2020-09-08 6:05	0.00137	0.00005	0.0001	19.7	0.000244	6.63	0.0001	0.717	0.0003	0.00001	0.00219	0.0005	0.001	0.0002
W3	2020-09-15 7:10	0.00139	0.00005	0.0001	17.3	0.000254	6.15	0.0001	0.707	0.0003	0.00001	0.00215	0.0005	0.001	0.0002
W3	2020-09-22 7:10	0.0014	0.00005	0.0001	17.4	0.000243	6.09	0.0001	0.77	0.0003	0.00001	0.00219	0.0005	0.001	0.0002
W3	2020-09-29 7:00	0.00142	0.00005	0.0001	19.3	0.000279	6.31	0.0001	0.691	0.0003	0.00001	0.00219	0.0005	0.001	0.0002
W3	2020-10-06 6:05														
W3	2020-10-06 6:05	0.00163	0.00005	0.0001	17.3	0.000198	6.24	0.0001	0.748	0.0003	0.00001	0.002	0.0005	0.001	0.0002
W3	2020-10-08 15:20														
W3	2020-10-09 6:05														
W3	2020-10-10 7:10														
W3	2020-10-11 5:50														
W3	2020-10-12 5:50														
W3	2020-10-13 6:10														
W3	2020-10-13 6:10	0.00131	0.00005	0.0001	25.3	0.00059	4.69	0.0001	0.695	0.00032	0.00001	0.0015	0.0005	0.001	0.0002
W3	2020-10-14 6:20														
W3	2020-10-15 6:20														
W3	2020-10-20 7:05	0.00147	0.00005	0.0001	21.3	0.000279	6.89	0.0001	0.859	0.0003	0.00001	0.00241	0.0005	0.001	0.0002
W3	2020-10-27 10:05	0.00077	0.00005	0.0001	21.8	0.000293	6.47	0.0001	0.771	0.0003	0.00001	0.00225	0.0005	0.001	0.0002
W3	2020-11-03 9:05	0.00086	0.00005	0.0001	19.9	0.000297	6.43	0.0001	0.837	0.0003	0.00001	0.00261	0.0005	0.001	0.0002
W3	2020-11-10 10:35	0.00104	0.00005	0.0001	20.8	0.000304	6.24	0.0001	0.746	0.0003	0.00001	0.00243	0.0005	0.001	0.0002
W3	2020-11-17 10:15	0.00117	0.00005	0.0001	21.5	0.000321	6.51	0.0001	0.772	0.0003	0.00001	0.00244	0.0005	0.001	0.0002
W3	2020-11-24 10:15	0.00134	0.00005	0.0001	23	0.000267	6.88	0.0001	0.792	0.0003	0.00001	0.00252	0.0005	0.001	0.0002
W3	2020-12-01 10:15	0.00114	0.00005	0.0001	23	0.000274	6.71	0.0001	0.831	0.0003	0.00001	0.00255	0.0005	0.001	0.0002
W3	2020-12-08 12:30	0.0011	0.00005	0.0001	22.5	0.000259	6.68	0.0001	0.784	0.0003	0.00001	0.00243	0.0005	0.0017	0.0002
W3	2020-12-15 10:00	0.00107	0.00005	0.0001	23.1	0.000261	6.64	0.0001	0.793	0.0003	0.00001	0.00243	0.0005	0.001	0.0002
W3	2020-12-22 6:50	0.00114	0.00005	0.0001	23.8	0.00028	7.03	0.0001	0.833	0.0003	0.00001	0.00263	0.0005	0.0478	0.0002
W3	2020-12-29 15:45	0.00106	0.00005	0.0001	22.5	0.000309	6.47	0.0001	0.845	0.0003	0.00001	0.00253	0.0005	0.0016	0.0002
W3	2021-01-05 13:55	0.00105	0.00005	0.0001	22.9	0.000318	6.32	0.0001	0.831	0.0003	0.00001	0.00273	0.0005	0.003	0.0002
W3	2021-01-12 8:45	0.00108	0.00005	0.0001	22.1	0.000355	6.5	0.0001	0.782	0.0003	0.00001	0.00264	0.0005	0.001	0.0002
W3	2021-01-19 9:30	0.00111	0.00005	0.0001	21.5	0.00028	6.2	0.0001	0.849	0.0003	0.00001	0.00259	0.0005	0.001	0.0002
W3	2021-01-26 9:15	0.00102	0.00005	0.0001	22.4	0.000291	6.72	0.0001	0.82	0.0003	0.00001	0.0026	0.0005	0.001	0.0002
W3	2021-02-02 10:10	0.00118	0.00005	0.0001	22.4	0.000411	6.53	0.0001	0.884	0.0003	0.00001	0.00271	0.0005	0.001	0.0002
W3	2021-02-09 11:00	0.00107	0.00005	0.0001	25.8	0.000312	6.89	0.0001	0.951	0.0003	0.00001	0.00285	0.0005	0.001	0.0002
W3	2021-02-16 9:30	0.00097	0.00005	0.0001	23.9	0.000528	6.87	0.0001	1.07	0.0003	0.00001	0.00304	0.0005	0.001	0.0002
W3	2021-03-09 10:00	0.00086	0.00005	0.0001	24.9	0.000318	6.62	0.0001	0.861	0.0003	0.00001	0.0027	0.0005	0.0015	0.0002
W3	2021-03-16 14:45	0.00101	0.00005	0.0001	22.8	0.000325	6.43	0.0001	0.898	0.0003	0.00001	0.00266	0.0005	0.0039	0.0002
W3	2021-03-17 7:40	0.00091	0.00005	0.0001	22.9	0.000279	6.47	0.0001	0.89	0.0003	0.00001	0.00264	0.0005	0.001	0.0002
W3	2021-03-23 8:00	0.00103	0.00005	0.0001	23.4	0.00029	6.44	0.0001	0.871	0.0003	0.00001	0.00262	0.0005	0.001	0.0002
W3	2021-03-30 7:05	0.001	0.00005	0.0001	24.5	0.000277	6.65	0.0001	0.833	0.0003	0.00001	0.00252	0.0005	0.001	0.0002
W3	2021-03-31 6:35	0.001	0.00005	0.0001	23.5	0.000286	6.53	0.0001	0.827	0.0003	0.00001	0.00251	0.0005	0.001	0.0002
W3	2021-04-06 13:50														
W3	2021-04-06 13:50	0.00094	0.00005	0.0001	22.8	0.000295	6.76	0.0001	0.855	0.0003	0.00001	0.00252	0.0005	0.001	0.0002
W3	2021-04-13 8:40	0.00096	0.00005	0.0001	25.7	0.00028	6.71	0.0001	0.921	0.0003	0.00001	0.00254	0.0005	0.001	0.0002
W3	2021-04-20 7:35	0.00106	0.00005	0.0001	21.1	0.000265	6.29	0.0001	0.751	0.00053	0.00001	0.00229	0.0005	0.001	0.0002
W3	2021-04-27 7:25	0.00189	0.00005	0.0001	17.5	0.000291	6.22	0.0001	0.609	0.00156	0.00001	0.00185	0.00057	0.0016	0.00035
W3	2021-05-04 10:20														
W3	2021-05-04 10:20	0.00244	0.00005	0.0001	6.85	0.000235	3.82	0.0001	0.254	0.00233	0.00001	0.00058	0.00056	0.0022	0.00057
W3	2021-05-11 7:50														
W3	2021-05-11 7:50	0.00231	0.00005	0.0001	10.8	0.000255	4.35	0.0001	0.358	0.00147	0.00001	0.00109	0.0005	0.0017	0.00058
W3	2021-05-15 8:40														
W3	2021-05-18 7:30														
W3	2021-05-18 7:30	0.00244	0.00005	0.0001	12.8	0.000312	5.16	0.0001	0.447	0.00224	0.00001	0.00134	0.0005	0.001	0.00082
W3	2021-05-25 6:30														
W3	2021-05-25 6:30	0.00283	0.00005	0.0001	9.09	0.000272	4.82	0.0001	0.326	0.00186	0.00001	0.000887	0.00058	0.001	0.00092
W3	2021-05-26 11:10														
W3	2021-05-26 14:23	0.00152	0.00005	0.0001	4.9	0.000226	2.41	0.0001	0.206	0.00079	0.00001	0.000416	0.0005	0.001	0.00037
W3	2021-05-31 10:45														
W3	2021-05-31 10:45	0.00088	0.00005	0.0001	4.67	0.000111	1.99	0.0001	0.188	0.00038	0.00001	0.000404	0.0005	0.001	0.0002
W3	2021-06-01 6:20														
W3	2021-06-01 6:20	0.0008	0.00005	0.0001	5.08	0.000135	2.07	0.0001	0.199	0.00046	0.00001	0.000425	0.0005	0.001	0.0002
W3	2021-06-08 9:40	0.00141	0.00005	0.0001	19.2	0.000325	6.17	0.0001	0.611	0.00043	0.00001	0.00205	0.0005	0.001	0.00031
W3	2021-06-15 16:10	0.00138	0.00005	0.0001	20.6	0.000286	6.35	0.0001	0.793	0.0003	0.00001	0.00235	0.0005	0.001	0.0002
W3	2021-06-23 9:45	0.00134	0.00005	0.0001	20.7	0.000277	6.47	0.0001	0.724	0.0003	0.00001	0.00226	0.0005	0.001	0.0002
W3	2021-06-28 13:35	0.00123	0.00005	0.0001	19.1	0.000217	6.23	0.0001	0.684	0.0018	0.00001	0.00213	0.0005	0.0011	0.0002
W3	2021-07-06 9:25	0.00122	0.00005	0.0001	19	0.000238	6.14	0.0001	0.683	0.00042	0.00001	0.00212	0.0005	0.001	0.0002
W3	2021-07-13 9:55	0.00126	0.00005	0.0001	19.2	0.000247	6	0.0001	0.678	0.0003	0.00001	0.0021	0.0005	0.001	0.0002
W3	2021-07-20 12:05	0.0012	0.00005	0.0001	18.9	0.000231	6.15	0.0001	0.694	0.0003	0.00001	0.00208	0.0005	0.001	0.0002
W3	2021-07-26 12:00	0.00129	0.00005	0.0001	17	0.00024	6.22	0.0001	0.697	0.0003	0.00001	0.00201	0.0005	0.003	0.0002
W3	2021-08-02 10:30	0.00126	0.00005	0.0001	17.6	0.000266	6.39	0.0001	0.687	0.0003	0.00001	0.00211	0.0005	0.0012	0.0002
W3	2021-08-04 7:35	0.00124	0.00005	0.0001	16.5	0.000196	6.54	0.0001	0.704	0.0003	0.00001	0.00195	0.0005	0.001	0.0002
W3	2021-08-09 15:50	0.00134	0.00005	0.0001	16.6	0.000213	6.08	0.0001	0.662	0.0003	0.00001	0.002	0.0005	0.001	0.0002
W3	2021-08-16 14:20	0.00127	0.00005	0.0001	16	0.000257	5.73	0.0001	0.7	0.0003	0.00001	0.00196	0.0005	0.001	0.0002
W3	2021-08-17 8:15	0.00138	0.00005	0.0001	16.1	0.00018	5.84	0.0001	0.704	0.00038	0.00001	0.00206	0.0005	0.001	0.0002
W3	2021-08-24 11:30	0.00128	0.00005	0.0001	16.6	0.000215	6.48	0.0001	0.742	0.0003	0.00001	0.00207	0.0005	0.001	0.0002
W3	2021-08-31 10:00	0.0013	0.00005	0.0001	18.8	0.000327	6.76	0.0001	0.725	0.0003	0.00001	0.00202	0.0005	0.001	0.0002
W3	2021-09-07 16:25	0.00125	0.00005	0.0001	17.6	0.000253	6.34	0.0001	0.703	0.0003	0.00001	0.00215	0.0005	0.001	0.0002
W3	2021-09-14 10:45	0.00123	0.00005	0.0001	16.7	0.000278	6.26	0.0001	0.687	0.0003	0.00001	0.00205	0.0005	0.001	0.0002
W3	2021-09-21 13:45														
W3	2021-09-21 13:45	0.00098	0.00005	0.0001	13.7	0.000212	5.09	0.0001	0.523	0.0003	0.00001	0.00145	0.0005	0.001	0.0002
W3	2021-09-23 15:35	0.0007	0.00005	0.0001	4.81	0.000081	2.26	0.0001	0.218	0.0003	0.00001	0.000428	0.0005	0.001	0.0002
W3	2021-09-28 10:30														
W3	2021-09-28 10:30	0.00128	0.00005	0.0001	15.5	0.000253	6.26	0.0001	0.681	0.0003	0.00001	0.00212	0.0005	0.001	0.0002
W3	2021-10-05 16:40														
W3	2021-10-05 16:40	0.0011	0.00005	0.0001	16.2	0.000249	5.88	0.0001	0.641	0.0003	0.00001	0.00209	0.0005	0.001	0.0002
W3	2021-10-12 17:35	0.00106	0.00005	0.0001	16.6	0.000289	6.21	0.0001	0.669	0.0003	0.00001	0.00213	0.0005	0.001	0.0002
W3	2021-10-19 16:15	0.00122	0.00005	0.0001	17.1	0.00021	6.35	0.0001	0.664	0.00031	0.00001	0.00249	0.0005	0.001	0.0002
W3	2021-10-26 9:30	0.0011	0.00005	0.0001	16.6	0.000235	6.57	0.0001	0.694	0.0003	0.00001	0.00219	0.0005	0.0045	0.0002
W3	2021-11-02 10:00	0.00084	0.00005	0.0001	16.4	0.000273	6.12	0.0001	0.701	0.0003	0.00001	0.00221	0.0005	0.001	0.0002
W3	2021-11-09 14:45	0.00116	0.00005	0.0001	17.1	0.000311	6.56	0.0001	0.768	0.00033	0.00001	0.00231	0.0005	0.0013	0.0002
W3	2021-11-16 13:50	0.00112	0.00005	0.0001	17	0.000277	6.19	0.0001	0.766	0.00094	0.00001	0.00222	0.0005	0.0015	0.0002
W3	2021-11-23 14:00	0.00111	0.00005	0.0001	18.2	0.000271	6.5	0.0001	0.755	0.0003	0.00001	0.00223	0.0005	0.001	0.0002
W3	2021-11-30 14:15	0.00104	0.00005	0.0001	16.5	0.00026	6.02	0.0001	0.76	0.0003	0.00001	0.00235	0.0005	0.0015	0.0002
W3	2021-12-07 7:40	0.00126	0.00005	0.0001	16.1	0.000242	5.97	0.0001	0.641	0.0003	0.00001	0.00183	0.0005	0.001	0.0002
W3	2021-12-14 14:30	0.00102	0.00005	0.0001	18.5	0.000244	6.77	0.0001	0.74	0.0003	0.00001	0.00251	0.0005	0.001	0.0002
W3	2021-12-23 14:30	0.00106	0.00005	0.0001	16.8	0.00028	6.56	0.0001	0.747	0.0003	0.00001	0.00243	0.0005	0.001	0.0002
W3	2021-12-28 10:50	0.00107	0.00005	0.0001	17.5	0.000284	6.86	0.0001	0.753	0.0003	0.00001	0.00249	0.0005	0.001	0.0002
W3	2022-01-03 15:55	0.00093	0.000076	0.0001	17.3	0.000376	6.48	0.0001	0.733	0.0003	0.00001	0.00219	0.0005	0.001	0.0002
W3	2022-01-10 13:40	0.00116	0.00005	0.0001	16.3	0.000241	6.17	0.0001	0.642	0.0003	0.00001	0.00178	0.0005	0.001	0.0002
W3	2022-01-17 10:10	0.00118	0.00005	0.0001	18.1	0.000425	6.2	0.0001	0.643	0.0003	0.00001	0.0018	0.0005	0.001	0.0002

Attachment 3: Sitewide Database

General Parameters; Anions & Nitrogen Species

Station	Date / Time	Alk-T (mg/L)	Cond-L (µS/cm)	ORP (mV)	pH-F	TDS (mg/L)	TSS (mg/L)	Temp-F (°C)	O-DO-% (%)	$N-NO_2$ (mg/L)	$N-NO_3$ (mg/L)	$N-NH_3$ (mg/L)	SO_4-D (mg/L)	Chlord (mg/L)	Fluord (mg/L)
W3	2022-01-24 14:30	206	492			303	2			0.001	0.141	0.012	50.9	4.92	
W45	2012-08-02 7:00	204	958	22.4	7.5	636	7.2	6.7	45.3	1	28.3	6.8	178	1.9	2.2
W45	2012-09-14 7:00	154	948	99.4	7.72	640	4.6	4.5	60.8	0.621	53.7	3.7	146	1.4	0.22
W45	2012-10-17 16:15	212	1000	-66.5	7.83	690	2	1.3	55.3	0.701	26.4	6.2	194	1.9	2.1
W45	2012-12-21 12:30	303	1640			1130	291			2.27	55.9	9.6	358	3.5	1.8
W45	2013-01-22 11:30	276	1340	70.7	7.47	988	1.1	0	17.4	2.53	15.7	2.49	419	1.9	1.8
W45	2013-02-13 0:00	240	1350			1010	21			1.37	15.2	4.9	417	2.7	2
W45	2013-03-14 10:35	288	1800	-424.3	7.77	1220	14.2	1.4	44.2	2.07	77.2	37	384	4.4	1.9
W45	2013-04-18 9:45	197	1130	-414.4	8.22	810	17.4	1.7		0.965	7.01	2.8	381	2.6	2.1
W45	2013-09-18 13:15	216	1300	258.9	7.53	926	8.8	9	89.2	1.73	17.7	2.7	419	2.4	1.8
W45	2013-09-28 14:20	217	1310	242.9	7.65	1020	4.7	7.3	89.9	1.8	17.7	2.7	466	2.8	1.8
W45	2013-10-17 17:15	200	1380	229.2	6.78	1080	3.5	4.1	95.2	1.49	16.7	3.9	484	0.96	1.7
W45	2013-12-10 10:00	273	2070	-22.3	7.75	1470	73.1	2.7	99.4	2.3	67.3	30	633	6.3	1.6
W45	2014-01-09 14:45	282	1810	8.5	7.91	1330	13.4	4.5	78.8	1.68	17.3	13	692	4.1	1.7
W45	2014-02-15 14:45	242	1510	77.7	7.74	1170	6.3	1.4	93.1	0.209	2.57	1.3	592	2.3	1.9
W45	2014-03-25 14:40	215	1500	127.9	7.87	1170	22.6	1.6	137.6	0.711	8.25	4.7	593	3	1.9
W45	2014-04-04 10:40	195	1420	153.2	7.86	1080	36.8	2.7	95.5	0.797	6.21	2.7	576	3.3	1.8
W45	2014-05-18 12:50	167	1220	150.7	7.3	908	32.8	7	87.7	0.562	5.97	2.5	438	4.2	1.9
W45	2014-06-19 15:30	184	1240	192	7.72	974	38.7	9.3		0.407	8.62	4.3	437	5.3	1.9
W45	2014-07-03 13:55	186	1210	198.9	8.14	938	18.8	10.4	103.7	0.332	7.45	3.2	431	5.6	2
W45	2014-08-21 10:00	189	1170	190.3	7.95	856	3.7	8	68.2	0.358	3.86	1.7	376	8.5	2.2
W45	2014-09-01 11:25	189	1240	193.6	7.83	970	37.8	6.8	88.3	0.313	5.17	2.5	424	7.5	2
W45	2014-10-13 16:40	206	1380	176.3	7.46	1090	103	2.9	79.1	0.246	5.91	1.5	496	17	1.8
W45	2014-11-11 9:30	206	1190	210.5	7.8	846	1	-0.3	95	0.268	4.23	0.92	405	11	2.1
W45	2015-01-17 11:50	280	1520	267.8	8.04	1150	3.3	-1.9	72.3	0.0776	1.65	0.51	587	3.7	1.8
W45	2015-02-14 13:50	241	1510	173.6	7.71	1130	17.7	2.2	78.1	0.219	11.1	7.1	542	5.1	1.8
W45	2015-03-08 15:55	176	1120	191.1	7.7	770	18.3	1.8	76.5	0.456	5.32	2	371	15	2
W45	2015-08-04 11:25	235	613	85.9	8.27	464	1.6	16.6	56.1	0.0223	3.14	0.072	78.2	2.8	0.19
W45	2015-09-10 9:40	150	1430	85.8	7.92	920	22.9	7.9	9.5	0.88	22.9	4.4	364	31	1.7
W45	2015-10-05 16:00	137	1430	124.9	8.07	930	30	7.5	41.3	0.476	28.8	3.1	364	29	1.6
W45	2015-11-17 10:30	131	1460	4	8.39	986	49.7	3.4	36.2	0.636	33.9	4	384	29	1.4
W45	2015-12-28 7:15	136	1390	-82.7	7.99	940	44.3	4.3	31.2	1.59	31.7	2.5	405	42	1.4
W45	2016-01-04 10:45	134	1380	-43.8	7.63	928	41	4.7	47.6	1.75	29.8	2.4	347	44	1.4
W45	2016-04-19 15:40	150	1390	-50.8	7.72	930	9.3	7	38.9	2.1	28.5	2.41	370	37.8	
W45	2016-05-12 15:30	148	1380	106.4	7.7	945	8	11.6	35.4	1.95	29.1	2.26	376	38.7	
W45	2016-05-19 16:30	145	1330	13.4	7.99	925	9.3	12.8	48.1	1.87	29.1	2.32	368	37.9	
W45	2016-06-23 16:45	134	1510	17	7.65	1090	6.7	17.4	24.7	1.64	32.9	3.55	467	40.6	
W45	2016-08-22 14:35	129	1740	45.1	8.16	1240	6	17.6	26.4	2.52	32.2	4.13	594	2.5	
W45	2016-09-12 17:17			4.4	7.91			14.4	27.3						
W45	2016-09-12 17:17	138	1670	4.4	7.91	1210	20.1	14.4	27.3	5.83	26.7	4.11	561	41.2	
W45	2016-10-15 11:00	146	1590	28.1	8.05	1210	18.8	4.7	43.2	7.6	23.1	3.85	572	38.3	
W45	2016-11-22 14:20	131	2240	140.8	7.56	1870	9.4	2.5	28.4	5.9	29.3	5.06	1030	39	
W45	2016-12-01 14:30			-48.3	8.15			3.1	62.3						
W45	2016-12-01 14:30	127	2430	-48.3	8.15	2090	31.2	3.1	62.3	5.53	32	5.75	1200	42	
W45	2017-01-02 11:15	130	2840	11.1	8.06	2600	17.8	2.1	50.1	2.95	35.5	7.76	1540	41	
W45	2017-02-01 16:15	137	2850	7.1	8.29	2560	12.3	4.5	24.2	0.446	34.6	8.12	1540	39	
W45	2017-03-07 14:40	129	2910	77.9	7.73	2340	20.7	1.7	35.5	0.433	33.4	9.02	1570	36	
W45	2017-05-15 16:20	121	3020	68.5	7.09	2570	17.3	12	37.7	1.58	24.8	5.34	1490	33.4	
W45	2017-06-12 16:10	118	3060	199.9	7.2	2960	22.7	16.4	38.5	3.16	22.8	3.85	1870	37	
W45	2017-07-03 9:35	130	3220	69	7.29	3000	19.3	15.9	46.8	11.4	9.6	3.33	1930	37	
W45	2017-08-08 11:30	114	3350	152.6	7.71	3140	44.7	22.2	54.3	7.35	13.9	4.55	2040	34.4	
W45	2017-09-03 12:00	121	3170	57.5	7.62	2560	139	12	45.8	4.37	17.7	5.52	1560	30.1	
W45	2017-11-27 14:15	126	3110	136.8	7.53	2980	87.9	3.9	114.9	4.6	21.3	5.17	1870	42	
W45	2017-12-18 15:15	134	3260	-15.4	7.59	2960	86.9	2.8	10.4	5.79	17.6	4.69	1870	41	
W45	2018-01-15 10:05	114	3160	-190.9	8.11	2780	283	2.8	32.6	4.83	14.4	3.96	1770	38	
W45	2018-02-26 15:40	160	3080	40.2	8.05	2800	173	1.2	72.7	4.76	19.5	6.64	1760	37	
W45	2018-03-13 13:50	159	3060	54.8	7.8	2690	69.1	3.8	53.2	5.95	17.8	5.83	1670	40	
W45	2018-04-23 11:20	151	2970	108.1	7.95	2600	23.3	4.5	4	5.76	15.1	5.46	1650	39	
W45	2018-05-07 16:05	115	3190	174.6	6.87	2680	38.5	9.5	93.9	4.56	19.2	6.05	1740	34	
W45	2018-06-04 13:35	111	3370	60.5	7.64	2910	92.9	15.1	56	3.31	24.6	9.63	1830	27.6	
W45	2018-07-23 14:45	147	3420	144.8	7.86	2910	15.3	19.9	60.7	3.51	18.7	9.2	1860	28.9	1.63
W45	2018-08-06 15:55	119	2960	196.3	7.6	2730	32.2	15.2	32.5	3.45	12.4	6.62	1750	28.5	
W45	2018-09-14 11:30	115	3130	158.2	8	2740	25.8	9	67.4	2.18	11.4	6.19	1790	29.6	
W45	2019-04-22 10:00	57.9	1780	164.9	7.59	1320	71.1	2.9	81.1	0.043	0.921	3.61	873	13.5	
W45	2019-05-07 14:55	76.5	1980	153.9	7.81	1630	9.5	12.7	90.7	0.03	0.76	4.24	1090	17.3	
W45	2019-06-06 14:20	96.5	2390	174.8	7.72	2160	111	17.8	67.1	0.023	0.5	4.07	1440	25	
W45	2019-07-04 11:20	104	2780	-42	7.92	2510	35.4	18.5	20.5	0.02	0.39	3.19	1680	27	
W45	2019-10-21 15:00	120	2830	180	8.07	2510	59.5	3.3	63.7	0.287	11.2	1.83	1620	28.4	
W45	2020-03-09 11:00	125	3390	-31.9	7.67	3180	66300	0	71.5	1.85	43.4	20	1780	54.7	2.43
W45	2020-04-13 11:00	135	3260	-34	7.93	2920	2E+05	3.9	45.2	1.5	24.4	13.4	1810	51.9	
W46	2012-08-09 17:20	155	317	-8.4	7.85	210	30.5	6	96.9	0.005	0.196	0.024	13.1	1.5	0.34
W46	2012-08-25 8:45	155	318	33.6	7.81	206	69.5	4.6	90.4	0.005	0.192	0.014	13.3	1.7	0.33
W46	2012-09-14 8:15	126	257	22.3	7.81	172	23.7	1	95.3	0.005	0.129	0.0099	9.31	1.2	0.12
W46	2012-10-13 14:53	140	285	15.3	8	202	6.9	0	91	0.005	0.184	0.027	13.3	1.4	0.28
W46	2013-04-19 15:05	250	526	-382.4	8.32	338	1	0.3		0.005	0.099	0.16	35.6	2.1	0.8
W46	2013-05-14 15:30	33.1	74.3	116	7.7	88	57.8	0.2	86.7	0.005	0.059	0.062	0.5	2	0.094
W46	2013-06-22 10:00	137	290	81	7.68	184	76.3	3	87.2	0.005	0.254	0.041	16.7	1.7	0.31
W46	2013-07-12 16:20	140	292	96.2	7.9	202	40.3	4.8	90.8	0.005	0.212	0.037	15.4	1.5	0.31
W46	2013-08-22 15:50	150	317	7.2	7.74	202	18	4.7	94.2	0.005	0.179	0.027	14.6	1.6	0.32
W46	2013-09-06 11:20	148	310	19.8	7.45	196	11.7	2.8	96.4	0.005	0.147	0.021	11.8	1.5	0.31
W46	2013-10-07 14:45	142	296	33.8	7.46	222	7.9	0.9	99.6	0.005	0.139	0.034	28.9	1.2	0.3
W46	2013-11-16 10:00	180	391	21.2	7.41	220	1	-0.1	81.9	0.005	0.309	0.035	27.9	2.5	0.41
W46	2013-12-07 11:00	203	455	30.3	8.01	226	1	0	43.3	0.005	0.334	0.018	33.5	3.1	0.38
W46	2014-01-06 12:00	185	423	192.3	7.54	264	1	0	68.1	0.005	0.285	0.025	32.7	3	0.38
W46	2014-02-21 9:50	277	589	197.6	7.67	364	1	0.1	89.2	0.005	0.182	0.033	41.2	4.5	0.52
W46	2014-04-23 15:05	62.8	150	144.7	7.73	136	78.1	0	89.9	0.0054	0.184	0.022	0.5	3.3	0.15
W46	2014-05-29 15:00	104	226	118.3	8.1	154	49.2	1.4	85	0.005	0.177	0.03	14.4	1.3	0.26
W46	2014-06-21 10:55	136	300	68.1	8.09	152	31.8	2.3	88.3	0.005	0.18	0.027	17.6	1.8	0.35
W46	2014-07-22 14:35	133	277	63.3	7.34	171	42.1	4.6	91.6	0.005	0.096	0.024	13.1	1.3	0.33
W46	2014-08-20 16:20	162	340	30.3	7.83	194	5.6	4.7	91.6	0.005	0.11	0.023	17.8	2.3	0.098
W46	2014-09-02 15:50	113	215	29.9	7.83	132	3.8	1.6	93.2	0.005	0.02	0.026	0.62	0.8	0.23
W46	2014-10-16 15:30	150	329	48	7.8	182	2.8	-1.3	87.2	0.005	0.152	0.022	18.8	2	0.33
W46	2014-11-30 14:35	197	497		7.68	290	1	-1.9	48	0.006	0.559	0.022	63.1	5.3	0.43
W46	2014-12-09 11:25	151	470	84.5	7.65	298	4.2	-1.9	88.9	0.0242	2.46	0.047	80.5	6.7	0.42
W46	2015-01-15 13:30	211	512	90.5	7.67	300	1.4	-2.2	80.3	0.005	0.455	0.03	57.5	4.5	0.48
W46	2015-02-22 15:00	250	607	162.9	7.9	346	1.6	0.4	99.6	0.0061	0.349	0.013	70.6	6.2	0.53
W46	2015-03-07 11:00	243	591	198.3	7.81	364	1	0	72.8	0.005	0.246	0.036	65	5.6	0.55
W46	2015-04-11 14:40	171	423	136.8	7.84	272	14.6	-0.1	84.1	0.0084	0.698	0.04	48.8	4.1	0.45
W46	2015-05-31 10:25	145	387	139.5	7.65	206	41.9	2.8	87.5	0.0068	1.08	0.048	41	5.8	0.34
W46	2015-06-10 15:45	136	314	51.1	7.8	190	34.6	2.3	95.7	0.005	0.219	0.025	22.9	2.5	0.37
W46	2015-07-12 16:00	151	335	39.9	7.61	186	7	4.3	74.6	0.005	0.162	0.025	22.1	1.9	0.38
W46	2015-08-21 10:30	152	326	41.4	7.95	204	5.2	2.5	89	0.005	0.113	0.04	17.1	1.6	0.38
W46	2015-09-22 15:35	146	330	20.8	7.68	220	2.5	1.9	83.6	0.005	0.088	0.04	18.1	1.8	0.37
W46	2015-10-15 15:35	166	371	7.8	7.52	240	8.9	-0.1	79.3	0.005	0.165	0.028	25.7	2.8	0.4
W46	2015-11-24 14:50	199	473	82.7	7.47	290	1	0	46	0.0053	0.189	0.021	36.1	3.3	0.43
W46	2016-04-28 16:05	104	242	51.7	7.63	133	72.7	0	102.1	0.0021	0.206	0.0221	17.1	2.75	
W46	2016-05-24 14:55	121	266	34.2	7.7	152	175	1.6	89.1	0.0035	0.513	0.0352	18.2	2.18	
W46	2016-06-18 16:00	152	335	4.3	7.77	191	46	5.8	92.9	0.001	0.428	0.0177	24.6	2.65	
W46	2016-07-06 16:15	163	343	-11.3	7.82	192	24	4.5	86.3	0.001	0.106	0.0062	21.8	2.02	
W46	2016-08-16 14:35	171	357	-27.4	7.65	207	3.3	5.9	87.5	0.001	0.519	0.0119	25.2	2.47	
W46	2016-09-06 14:40	123	289	58.3	7.75	170	24.7	9.1	86.3	0.0042	1.58	0.0078	27.5	2.53	
W46	2016-10-12 15:05	172	420	26.7	7.73	258	8.3	0.6	88.1	0.004	3.28	0.0163	51.6	4.65	
W46	2016-11-03 14:30	189	392	1.5	7.67	226	4.8	-0.1	85.8	0.0016	0.333	0.0194	32.1	2.91	
W46	2016-12-27 15:00	254	563	118.9	7.38	328	3	-0.1	21.6	0.0015	0.0349	0.0106	52	5.5	
W46	2017-05-24 15:55	106	237	48.2	7.09	131	693	1.6	85.4	0.0023	0.245	0.069	17.4	1.81	

Dissolved Elements (all mg/L)

Station	Date / Time	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
W3	2022-01-24 14:30	0.00001	0.0023	0.00026	0.0496	0.019	0.00002	0.00005	57.4	0.0000115	0.0001	0.0005	0.0044	0.017	0.000005	2.52	0.0023	22.8	0.0268	0.00522	13.8
W45	2012-08-02 7:00	0.000033	0.01	0.00228	0.0911	0.456	0.0001	0.001	70.8	0.000011	0.0005	0.001	0.0787	0.0383	0.00001	5.27	0.0087	46.3	0.0137	0.0132	38.9
W45	2012-09-14 7:00	0.00002	0.0353	0.00122	0.0671	0.109	0.0001	0.001	73.5	0.000019	0.0005	0.001	0.0551	0.0898	0.00001	5.52	0.0104	53.6	0.0358	0.0214	19.4
W45	2012-10-17 16:15	0.00002	0.009	0.00123	0.0546	0.279	0.0001	0.001	102	0.00001	0.0005	0.001	0.049	0.0238	0.00001	6.39	0.0084	39.8	0.0511	0.0467	41.2
W45	2012-12-21 12:30	0.000027	0.0042	0.00175	0.0745	0.832	0.0001	0.001	167	0.00001	0.00067	0.001	0.137	0.139	0.00001	7.11	0.0149	64.8	0.101	0.0388	71.6
W45	2013-01-22 11:30	0.00002	0.0075	0.00137	0.0563	0.411	0.0001	0.001	158	0.000016	0.0005	0.001	0.0232	0.0673	0.00001	5.13	0.0103	54.1	0.075	0.0275	50.4
W45	2013-02-13 0:00	0.00002	0.0036	0.00154	0.0556	0.483	0.0001	0.001	159	0.000028	0.0005	0.001	0.0374	0.0392	0.00001	5.62	0.0082	41.7	0.0598	0.0419	64.8
W45	2013-03-14 10:35	0.000021	0.0034	0.00134	0.0755	0.902	0.0001	0.001	168	0.000023	0.0005	0.001	0.174	0.179	0.00001	11	0.0124	35	0.0966	0.0211	91.6
W45	2013-04-18 9:45	0.00002	0.0032	0.00234	0.0664	0.189	0.0001	0.001	101	0.000182	0.0005	0.001	0.0159	0.005	0.00001	5.61	0.0058	27.2	0.105	0.0253	61.5
W45	2013-09-18 13:15	0.00002	0.0549	0.00157	0.0904	0.247	0.0001	0.001	154	0.000147	0.00057	0.001	0.0518	0.0176	0.00001	6.56	0.0076	44.5	0.193	0.0268	59.2
W45	2013-09-28 14:20	0.000067	0.0047	0.00128	0.0842	0.253	0.0001	0.001	161	0.000163	0.00056	0.001	0.0544	0.007	0.00001	6.17	0.0081	46	0.184	0.0253	57.4
W45	2013-10-17 17:15	0.000026	0.0037	0.00133	0.0715	0.314	0.0001	0.001	178	0.00017	0.00053	0.001	0.0738	0.0237	0.00001	6.84	0.0088	48.8	0.185	0.0241	59.7
W45	2013-12-10 10:00	0.000031	0.0032	0.00135	0.0776	1.07	0.0001	0.001	259	0.000262	0.00095	0.001	0.223	0.254	0.00001	14.1	0.0151	49.8	0.259	0.0199	83.1
W45	2014-01-09 14:45	0.000099	0.0037	0.00197	0.0567	0.896	0.0001	0.001	263	0.000184	0.00061	0.001	0.0627	0.134	0.00001	8.9	0.0121	43.4	0.206	0.0175	72.3
W45	2014-02-15 14:45	0.00002	0.0039	0.00087	0.0294	0.203	0.0001	0.001	218	0.000083	0.0005	0.001	0.0239	0.0387	0.00001	5.01	0.007	42.3	0.0995	0.0199	53.8
W45	2014-03-25 14:40	0.000022	0.337	0.00172	0.0372	0.237	0.0001	0.001	233	0.00011	0.00096	0.001	0.0786	0.726	0.00001	5.61	0.0098	43	0.14	0.0224	53.5
W45	2014-04-04 10:40	0.00002	0.0082	0.00119	0.0323	0.222	0.0001	0.001	208	0.000093	0.00103	0.001	0.0395	0.0201	0.00001	5.19	0.0079	41.4	0.142	0.022	51
W45	2014-05-18 12:50	0.00002	0.0082	0.00165	0.029	0.175	0.0001	0.001	178	0.000099	0.0007	0.001	0.0121	0.0114	0.00001	4.72	0.0058	33.2	0.126	0.0325	39.2
W45	2014-06-19 15:30	0.00002	0.008	0.00151	0.0339	0.188	0.0001	0.001	171	0.000109	0.00076	0.001	0.0138	0.0072	0.00001	5.67	0.006	32.9	0.106	0.0353	42.7
W45	2014-07-03 13:55	0.00002	0.0103	0.00147	0.0275	0.18	0.0001	0.001	164	0.000154	0.00084	0.001	0.0479	0.005	0.00001	5.18	0.0061	34.5	0.0905	0.0345	41.5
W45	2014-08-21 10:00	0.00002	0.007	0.00086	0.0271	0.107	0.0001	0.001	164	0.000244	0.0005	0.001	0.212	0.016	0.00001	4.67	0.0057	26.9	0.138	0.0329	28.3
W45	2014-09-01 11:25	0.00002	0.0064	0.00123	0.0279	0.183	0.0001	0.001	178	0.000265	0.0005	0.001	0.114	0.0092	0.00001	5.17	0.0074	31.3	0.114	0.0363	40
W45	2014-10-13 16:40	0.00002	0.0229	0.00098	0.0252	0.234	0.0001	0.001	214	0.00031	0.0005	0.001	0.0715	0.0124	0.00001	5.02	0.0088	33.4	0.145	0.0231	57.7
W45	2014-11-11 9:30	0.00002	0.0074	0.00101	0.0245	0.152	0.0001	0.001	175	0.000358	0.00051	0.001	0.276	0.0105	0.00001	4.39	0.0068	33.7	0.1	0.0321	43.2
W45	2015-01-17 11:50	0.00002	0.0034	0.00094	0.0298	0.248	0.0001	0.001	208	0.000318	0.0005	0.001	0.268	0.0109	0.00001	4.56	0.0091	41.7	0.142	0.0176	62.7
W45	2015-02-14 13:50	0.00002	0.0058	0.00103	0.0385	0.353	0.0001	0.001	235	0.000379	0.0006	0.001	0.127	0.0054	0.00001	6.06	0.0079	38.7	0.184	0.0264	59
W45	2015-03-08 15:55	0.00002	0.0047	0.00094	0.0227	0.162	0.0001	0.001	166	0.000517	0.0005	0.001	0.112	0.005	0.00001	4.57	0.0054	30.1	0.0919	0.04	32.9
W45	2015-08-04 11:25	0.00002	0.0144	0.00051	0.103	0.05	0.0001	0.001	84.6	0.00001	0.0005	0.001	0.0158	0.26	0.00001	2.28	0.005	23.5	0.0911	0.0033	13.4
W45	2015-09-10 9:40	0.00002	0.0303	0.00044	0.0886	0.263	0.0001	0.001	60.5	0.000048	0.0005	0.001	0.00894	0.048	0.00001	49.9	0.0138	24.7	0.225	0.115	160
W45	2015-10-05 16:00	0.00002	0.0242	0.00038	0.098	0.244	0.0001	0.001	64	0.000064	0.0005	0.001	0.00486	0.0178	0.00001	55.5	0.0143	23.6	0.201	0.111	165
W45	2015-11-17 10:30	0.00002	0.025	0.00036	0.0943	0.223	0.0001	0.001	81	0.00001	0.0005	0.001	0.00109	0.0525	0.00001	51.7	0.0157	21.6	0.167	0.117	164
W45	2015-12-28 7:15	0.00002	0.0382	0.00045	0.108	0.191	0.0001	0.001	103	0.00002	0.0005	0.001	0.00117	0.124	0.00001	36.5	0.0151	19.4	0.145	0.0974	143
W45	2016-01-04 10:45	0.00002	0.0178	0.00037	0.107	0.185	0.0001	0.001	114	0.000028	0.0005	0.001	0.00095	0.188	0.00001	34.6	0.0151	17.5	0.147	0.0948	132
W45	2016-04-19 15:40	0.00001	0.0134	0.00036	0.107	0.163	0.00002	0.00005	108	0.000005	0.0001	0.0001	0.00025	0.013	0.000005	41.4	0.0123	20.6	0.0874	0.0945	127
W45	2016-05-12 15:30	0.00001	0.0136	0.00038	0.116	0.174	0.00002	0.00005	115	0.00001	0.0001	0.0001	0.00133	0.01	0.000005	40.6	0.0132	19.4	0.0943	0.0912	129
W45	2016-05-19 16:30	0.00001	0.0136	0.00041	0.118	0.153	0.00002	0.00005	111	0.0000116	0.0001	0.0001	0.00218	0.042	0.000005	41.3	0.0136	19.3	0.101	0.0877	123
W45	2016-06-23 16:45	0.00001	0.0143	0.00053	0.119	0.194	0.00002	0.00005	135	0.000006	0.0001	0.0001	0.00291	0.02	0.000005	58.1	0.0145	21.5	0.165	0.1	132
W45	2016-08-22 14:35	0.00001	0.0219	0.00043	0.108	0.218	0.00002	0.00005	170	0.0000183	0.0001	0.0001	0.00295	0.01	0.000005	59.4	0.0139	23.1	0.119	0.0984	164
W45	2016-09-12 17:17																				
W45	2016-09-12 17:17	0.00001	0.0131	0.0005	0.146	0.19	0.00002	0.00005	157	0.0000215	0.0001	0.0001	0.0122	0.02	0.000005	55	0.0121	22.8	0.138	0.0939	147
W45	2016-10-15 11:00	0.00001	0.0096	0.00045	0.112	0.173	0.00002	0.00005	164	0.0000108	0.00012	0.0001	0.0163	0.028	0.000005	52.1	0.0114	24.7	0.143	0.0895	142
W45	2016-11-22 14:20	0.00002	0.0142	0.00039	0.104	0.196	0.00004	0.0001	332	0.00002	0.00154	0.0002	0.00204	0.02	0.000005	59.1	0.0129	29.9	0.614	0.0956	148
W45	2016-12-01 14:30																				
W45	2016-12-01 14:30	0.00002	0.0116	0.00032	0.123	0.192	0.00004	0.0001	367	0.000075	0.0016	0.0002	0.00192	0.02	0.000005	58.9	0.0121	30.5	0.653	0.0911	147
W45	2017-01-02 11:15	0.00002	0.0108	0.00043	0.161	0.226	0.00004	0.0001	492	0.000031	0.00193	0.0002	0.001	0.026	0.000005	72.3	0.0135	36.7	0.714	0.0851	156
W45	2017-02-01 16:15	0.00002	0.0114	0.00042	0.179	0.247	0.00004	0.0001	477	0.000028	0.00029	0.0002	0.00206	0.038	0.000025	71.9	0.0116	41.9	0.474	0.086	144
W45	2017-03-07 14:40	0.00002	0.0095	0.00047	0.166	0.267	0.00004	0.0001	528	0.00005	0.00136	0.0002	0.0032	0.022	0.000005	55.7	0.0181	44.2	1.19	0.0891	161
W45	2017-05-15 16:20	0.00002	0.0145	0.00056	0.143	0.274	0.00004	0.0001	529	0.00018	0.00337	0.0002	0.0208	0.038	0.000005	70.3	0.0274	60.9	2.28	0.0905	191
W45	2017-06-12 16:10	0.00002	0.0117	0.00036	0.163	0.279	0.00004	0.0001	563	0.00015	0.00218	0.0002	0.00253	0.02	0.000005	70.7	0.0293	62.2	2.22	0.0909	168
W45	2017-07-03 9:35	0.00002	0.0148	0.00041	0.155	0.266	0.00004	0.0001	518	0.00015	0.00288	0.0002	0.00997	0.036	0.000005	82.3	0.0272	84.8	2.7	0.109	187
W45	2017-08-08 11:30	0.00002	0.0147	0.00034	0.13	0.35	0.00004	0.0001	540	0.000111	0.00158	0.0002	0.00499	0.056	0.000005	88.6	0.0356	86	1.84	0.11	191
W45	2017-09-03 12:00	0.00002	0.0114	0.00039	0.139	0.332	0.00004	0.0001	421	0.00015	0.00272	0.0002	0.0128	0.172	0.000005	89	0.035	89.1	2.25	0.106	199
W45	2017-11-27 14:15	0.00002	0.0083	0.00037	0.135	0.344	0.00004	0.0001	519	0.0001	0.00266	0.0002	0.00353	0.02	0.000005	69.3	0.0231	93.4	1.89	0.121	191
W45	2017-12-18 15:15	0.00002	0.0123	0.00045	0.129	0.324	0.00004	0.0001	524	0.000042	0.00365	0.0002	0.00287	0.062	0.000005	70.7	0.0237	83.9	1.88	0.118	192
W45	2018-01-15 10:05	0.00002	0.0092	0.00038	0.116	0.31	0.00004	0.0001	467	0.0002	0.00394	0.0002	0.00594	0.02	0.000005	76	0.0269	84.8	2.11	0.134	188
W45	2018-02-26 15:40	0.00002	0.0094	0.00043	0.119	0.39	0.00004	0.0001	465	0.000079	0.00221	0.0002	0.012	0.02	0.000005	63.6	0.0291	91.1	2.41	0.106	172
W45	2018-03-13 13:50	0.00002	0.0104	0.00052	0.139	0.354	0.00004	0.0001	435	0.00004	0.00097	0.0002	0.00855	0.02	0.000005	71.3	0.0355	98.3	1.17	0.106	175
W45	2018-04-23 11:20	0.00002	0.0089	0.0004	0.0968	0.262	0.00004	0.0001	422	0.000075	0.00239	0.0002	0.0137	0.02	0.000005	62.3	0.0274	83.4	1.3	0.0993	158
W45	2018-05-07 16:05	0.00002	0.0112	0.00034	0.123	0.288	0.00004	0.0001	442	0.000055	0.00259	0.0002	0.00544	0.085	0.000005	59.3	0.0274	74.2	1.65	0.0986	154
W45	2018-06-04 13:35	0.00002	0.0174	0.00038	0.127	0.389	0.00004	0.0001	537	0.00001	0.00032	0.0002	0.00558	0.02	0.000005	84	0.0247	91.3	0.845	0.0961	146
W45	2018-07-23 14:45	0.00002	0.0156	0.00035	0.0852	0.461	0.00004	0.0001	519	0.00005	0.00047	0.0002	0.00752	0.02	0.000005	68.8	0.0247	84	0.539	0.092	158
W45	2018-08-06 15:55	0.00002	0.0098	0.00037	0.083	0.413	0.00004	0.0001	501	0.00006	0.00043	0.0002	0.00489	0.02	0.000005	66.6	0.0259	86.9	0.539	0.0961	150
W45	2018-09-14 11:30	0.00002	0.0155	0.00035	0.0846	0.36	0.00002	0.0001	473	0.000065	0.00051	0.0002	0.00263	0.02	0.000005	69.2	0.0207	89.5	0.599	0.0859	155
W45	2019-04-22 10:00	0.00001	0.0032	0.0001	0.0344	0.161	0.00002	0.00005	250	0.0000477	0.00015	0.0001	0.0018	0.01	0.000005	30.1	0.0075	35.2	0.31	0.0162	73.5
W45	2019-05-07 14:55	0.00002	0.0051	0.0002	0.0346	0.211	0.00004	0.0001	289	0.000048	0.00022	0.0002	0.00206	0.02	0.000005	37.2	0.0098	45.6	0.371	0.0181	95.3
W45	2019-06-06 14:20	0.00001	0.0091	0.00015	0.0337	0.316	0.00002	0.00005	379	0.0000512	0.00028	0.0001	0.0037	0.01	0.000005	52	0.0145	64.6	0.465	0.0254	130
W45	2019-07-04 11:20	0.00002	0.0124	0.0002	0.0344	0.348	0.00004	0.0001	441	0.00003	0.00031	0.0002	0.00603	0.02	0.000005	63.3	0.0173	73.9	0.374	0.0314	157
W45	2019-10-21 15:00	0.00002	0.0109	0.00038	0.102	0.179	0.00004	0.0001	498	0.00005	0.00029	0.0002	0.00109	0.02	0.000005	57.7	0.0182	72.2	0.417	0.0645	110
W45	2020-03-09 11:00	0.00002	0.014	0.00043	0.128	0.517	0.00004	0.0001	486	0.000025	0.0002	0.00028	0.001	0.02	0.000005	62.6	0.0165	65.8	0.367	0.0751	189
W45	2020-04-13 11:00	0.00002	0.0254	0.00047	0.0899	0.444	0.00004	0.0001	528	0.00003	0.0002	0.0002	0.00331	0.155	0.000005	57.6	0.0089	67	0.442	0.0768	186
W46	2012-08-09 17:20	0.00002	0.0149	0.00078	0.0707	0.05	0.0001	0.001	38.5	0.00001	0.0005	0.001	0.00119	0.59	0.00001	1	0.005	13.2	0.057	0.0018	8.41
W46	2012-08-25 8:45	0.00002	0.0097	0.00072	0.0717	0.05	0.0001	0.001	42.1	0.00001	0.0005	0.001	0.00124	0.646	0.00001	1.15	0.005	13.5	0.0653	0.0019	8.47
W46	2012-09-14 8:15	0.00002	0.018	0.00066	0.0608	0.05	0.0001	0.001	32.8	0.00001	0.0005	0.001	0.00141	0.562	0.00001	0.789	0.005	11.7	0.0743	0.0013	7.3
W46	2012-10-13 14:53														0.00001						
W46	2013-04-19 15:05	0.00002	0.003	0.00042	0.101	0.05	0.0001	0.001	65.1	0.000011	0.0005	0.001	0.00336	0.0183	0.00001	3.3	0.005	25.9	0.0553	0.002	15.3
W46	2013-05-14 15:30	0.00002	0.0449	0.00034	0.0252	0.05	0.0001	0.001	10.8	0.00001	0.0005	0.001	0.00675	0.277	0.00001	1.28	0.005	3.28	0.0767	0.001	1.94
W46	2013-06-22 10:00	0.00002	0.0072	0.00044	0.0673	0.05	0.0001	0.001	35.4	0.00001	0.0005	0.001	0.00152	0.202	0.00001	1.28	0.005	12.6	0.0522	0.0018	8.29
W46	2013-07-12 16:20	0.00002	0.0096	0.00052	0.0669	0.05	0.0001	0.001	33.1	0.00001	0.0005	0.001	0.00152	0.288	0.00001	0.994	0.005	12.6	0.0465	0.0019	8.33
W46	2013-08-22 15:50	0.00002	0.0087	0.00052	0.067	0.05	0.0001	0.001	38	0.00001	0.0005	0.001	0.00137	0.177	0.00001	1.07	0.005	14	0.0533	0.0017	9
W46	2013-09-06 11:20	0.00002	0.012	0.00067	0.0696	0.05	0.0001	0.001	36.7	0.00001	0.0005	0.001	0.00149	0.451	0.00001	1.01	0.005	13.1	0.0781	0.0016	8.27
W46	2013-10-07 14:45	0.00002	0.0116	0.00062	0.0648	0.05	0.0001	0.001	40.5	0.00001	0.0005	0.001	0.0049	0.641	0.00001	0.993	0.005	13.9	0.0847	0.0018	8.76
W46	2013-11-16 10:00	0.00002	0.0046	0.00046	0.0835	0.05	0.0001	0.001	45.5	0.00001	0.0005	0.001	0.00134	0.183	0.00001	1.49	0.005	17.9	0.11	0.0022	11.7
W46	2013-12-07 11:00	0.00002	0.0037	0.00037	0.0937	0.05	0.0001	0.001	51.9	0.00001	0.0005	0.001	0.00161	0.0801	0.00001	1.8	0.005	19.4	0.112	0.0018	12.5
W46	2014-01-06 12:00	0.00002	0.0041	0.00052	0.0808	0.05	0.0001	0.001	51.1	0.00001	0.0005	0.001	0.00161	0.349	0.00001	1.4	0.005	18.2	0.101	0.0013	12.5
W46	2014-02-21 9:50	0.00002	0.0066	0.00075	0.117	0.05	0.0001	0.001	71.2	0.000018	0.0005	0.001	0.00531	0.0515	0.00001	3.05	0.005	30.5	0.0898	0.0019	19.7
W46	2014-04-23 15:05	0.00002	0.0448	0.0003	0.0381	0.05	0.0001	0.001	18.6	0.000012	0.0005	0.001	0.0108	0.161	0.00001	1.69	0.005	6.34	0.0541	0.0013	4.43
W46	2014-05-29 15:00	0.00002	0.0145	0.00049	0.0532	0.05	0.0001	0.001	26.1	0.00001	0.0005	0.001	0.00263	0.267	0.00001	1.17	0.005	9.66	0.0513	0.0015	6.41
W46	2014-06-21 10:55	0.00002	0.0088	0.00039	0.0683	0.05	0.0001	0.001	35.2	0.00001	0.0005	0.001	0.00181	0.0798	0.00001	1.33	0.005	13.4	0.0404	0.0019	9
W46	2014-07-22 14:35	0.00002	0.0126	0.00053	0.0639	0.05	0.0001	0.001	35.1	0.00001	0.0005	0.001	0.00204	0.117	0.00001	1.1	0.005	12.7	0.0268	0.0016	8.39
W46	2014-08-20 16:20	0.00002	0.0057	0.00048	0.0733	0.05	0.0001	0.001	41.4	0.00001	0.0005	0.001	0.00142	0.109	0.00001	1.43	0.005	14.8	0.0472	0.0019	9.33
W46	2014-09-02 15:50	0.000035	0.003	0.0005	0.0515	0.05	0.0001	0.001	29	0.00001	0.0005	0.001	0.00089	0.127	0.00001	0.532	0.005	7.85	0.038	0.001	4.52
W46	2014-10-16 15:30	0.00002	0.0054	0.00039	0.0632	0.05	0.0001	0.001	36.9	0.00001	0.0005	0.001	0.00137	0.115	0.00001	1.22	0.005	15.4	0.0467	0.0017	10.3
W46	2014-11-30 14:35	0.00002	0.0047	0.00032	0.103	0.05	0.0001	0.001	60.2	0.00001	0.0005	0.001	0.00195	0.0573	0.00001	2.14	0.005	22.5	0.154	0.0028	15.7
W46	2014-12-09 11:25	0.00002	0.0043	0.00041	0.0874	0.05	0.0001	0.001	53.9	0.00001	0.0005	0.001	0.00463	0.033	0.00001	4.65	0.005	18.7	0.113	0.007	17.8
W46	2015-01-15 13:30	0.00002	0.003	0.00032	0.0868	0.05	0.0001	0.001	54.9	0.00001	0.0005	0.001	0.00172	0.0461	0.00001	2.31	0.005	23.9	0.0675	0.0026	15.7
W46	2015-02-22 15:00	0.00002	0.0039	0.0004	0.106	0.05	0.0001	0.001	63.1	0.000019	0.0005	0.001	0.00301	0.0368	0.00001	2.99	0.005	28.7	0.0743	0.0031	20.1
W46	2015-03-07 11:00	0.00002	0.003	0.00032	0.0955	0.05	0.0001	0.001	65	0.00001	0.0005	0.001	0.00199	0.036	0.00001	2.73	0.005	27.7	0.0044	0.0025	18.9
W46	2015-04-11 14:40	0.00002	0.009	0.00047	0.0864	0.05	0.0001	0.001	45.1	0.00001	0.0005	0.001	0.00342	0.0539	0.00001	3.63	0.005	18.6	0.101	0.0036	14.6
W46	2015-05-31 10:25	0.00002	0.0105	0.00038	0.0706	0.05	0.0001	0.001	44.4	0.00001	0.0005	0.001	0.00393	0.0833	0.00001	2.65	0.005	14.9	0.0384	0.0035	12.3
W46	2015-06-10 15:45	0.00002	0.0093	0.00041	0.0669	0.05	0.0001	0.001	36.4	0.00001	0.0005	0.001	0.00186	0.0908	0.00001	1.47	0.005	15	0.0743	0.002	9.49
W46	2015-07-12 16:00	0.00002	0.0071	0.00037	0.0706	0.05	0.0001	0.001	37.3	0.00001	0.0005	0.001	0.00159	0.0652	0.00001	1.28	0.005	14.1	0.0334	0.002	9.35
W46	2015-08-21 10:30	0.00002	0.0104	0.00046	0.0617	0.05	0.0001	0.001	38	0.00001	0.0005	0.001	0.00169	0.108	0.00001	1.12	0.005	14.3	0.0348	0.0018	9.82
W46	2015-09-22 15:35	0.00002	0.0199	0.0004	0.0641	0.05	0.0001	0.001	39	0.00001	0.0005	0.001	0.00138	0.153	0.00001	1.24	0.005	15	0.0433	0.0017	10.2
W46	2015-10-15 15:35	0.00002	0.0123	0.00046	0.0673	0.05	0.0001	0.001	41.4	0.00001	0.0005	0.001	0.00164	0.142	0.00001	1.31	0.005	16.3	0.0509	0.0019	10.4
W46	2015-11-24 14:50	0.00002	0.0076	0.00041	0.1	0.05	0.0001	0.001	59.6	0.000011	0.0005	0.001	0.0033	0.083	0.00001	2.1	0.005	24.2	0.0946	0.0019	16
W46	2016-04-28 16:05	0.00001	0.0161	0.00044	0.0507	0.011	0.00002	0.00005	29.9	0.000005	0.0002	0.00024	0.00482	0.195	0.0000064	1.45	0.001	10.4	0.0815	0.00137	7.48
W46	2016-05-24 14:55	0.00001	0.0176	0.00054	0.0603	0.011	0.00002	0.00005	34	0.000005	0.0002	0.00021	0.00389	0.219	0.000005	1.4	0.0011	12.3	0.111	0.00197	8.83
W46	2016-06-18 16:00	0.00001	0.0099	0.00042	0.0736	0.014	0.00002	0.00005	42.6	0.000005	0.00011	0.00019	0.00272	0.082	0.000005	1.75	0.0016	15.4	0.0385	0.00238	10.7
W46	2016-07-06 16:15	0.00001	0.0092	0.0004	0.0742	0.01	0.00002	0.00005	42.9	0.000005	0.0001	0.00046	0.00188	0.076	0.000005	1.46	0.0016	15.2	0.0319	0.0021	10.6
W46	2016-08-16 14:35	0.00001	0.0058	0.00034	0.0555	0.014	0.00002	0.00005	48	0.000005	0.0001	0.00015	0.00198	0.135	0.000005	1.7	0.0015	16.8	0.0287	0.00224	8.24
W46	2016-09-06 14:40	0.00001	0.0063	0.00039	0.0639	0.02	0.00002	0.00005	35.9	0.000005	0.0001	0.00013	0.00394	0.064	0.000005	1.72	0.001	11.9	0.0205	0.00238	9.67
W46	2016-10-12 15:05	0.00001	0.0032	0.00035	0.0742	0.021	0.00002	0.00005	52	0.000005	0.0001	0.00011	0.00534	0.063	0.000005	2.31	0.0013	16.7	0.0344	0.00284	12.8
W46	2016-11-03 14:30	0.00001	0.0035	0.0004	0.0724	0.012	0.00002	0.00005	45.4	0.000005	0.0001	0.00013	0.00176	0.141	0.000005	1.76	0.001	16.7	0.0857	0.00204	11.9
W46	2016-12-27 15:00	0.00001	0.0042	0.00046	0.122	0.013	0.00002	0.00005	67.5	0.0000163	0.00014	0.00018	0.00322	0.069	0.000005	3.21	0.0021	26.8	0.0746	0.00164	19.9
W46	2017-05-24 15:55	0.00001	0.0136	0.00058	0.0542	0.01	0.00002	0.00005	27.4	0.0000079	0.00029	0.00019	0.00483	0.313	0.000005	1.49	0.0012	10.5	0.271	0.00169	7.49

Dissolved Elements, continued (all mg/L)

Station	Date / Time	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
W3	2022-01-24 14:30	0.00108	0.00005	0.0001	16.5	0.000244	5.93	0.0001	0.637	0.0003	0.00001	0.00193	0.0005	0.001	0.0002
W45	2012-08-02 7:00	0.001	0.0002	0.0005	68.9	0.00324	6.2	0.005	5.27	0.005	0.00005	0.0081	0.005	0.005	0.0005
W45	2012-09-14 7:00	0.001	0.00038	0.0005	47.6	0.0298	3.88	0.005	5.2	0.005	0.00005	0.00849	0.005	0.005	0.0005
W45	2012-10-17 16:15	0.001	0.0002	0.0005	74.5	0.00581	4.77	0.005	9.42	0.005	0.00005	0.0162	0.005	0.0052	0.0005
W45	2012-12-21 12:30	0.002	0.0002	0.00113	143	0.00363	6.62	0.005	15.5	0.005	0.000061	0.0165	0.005	0.005	0.0005
W45	2013-01-22 11:30	0.001	0.0002	0.0005	142	0.0011	6.22	0.005	14.9	0.005	0.00005	0.0164	0.005	0.005	0.0005
W45	2013-02-13 0:00	0.001	0.0002	0.0005	146	0.00123	6.06	0.005	19	0.005	0.00005	0.0193	0.005	0.005	0.0005
W45	2013-03-14 10:35	0.001	0.0002	0.0005	136	0.00236	6.58	0.005	33.6	0.005	0.00005	0.0104	0.005	0.0066	0.0005
W45	2013-04-18 9:45	0.001	0.0002	0.0005	110	0.00148	5.06	0.005	12.6	0.005	0.00005	0.00698	0.005	0.005	0.0005
W45	2013-09-18 13:15	0.001	0.0002	0.00055	152	0.00536	5.46	0.005	14.3	0.005	0.00005	0.0134	0.005	0.0122	0.0005
W45	2013-09-28 14:20	0.001	0.0002	0.0005	160	0.00509	5.65	0.005	13.3	0.005	0.00005	0.0135	0.005	0.0109	0.0005
W45	2013-10-17 17:15	0.001	0.0002	0.0005	176	0.00453	5.62	0.005	17	0.005	0.00005	0.0141	0.005	0.0186	0.0005
W45	2013-12-10 10:00	0.0013	0.0002	0.0005	222	0.0043	6.63	0.005	28	0.005	0.00005	0.0149	0.005	0.012	0.0005
W45	2014-01-09 14:45	0.001	0.0002	0.0005	242	0.00199	7.99	0.005	20.2	0.005	0.00005	0.0136	0.005	0.0099	0.0005
W45	2014-02-15 14:45	0.001	0.0002	0.0005	221	0.00116	6.7	0.005	12.5	0.005	0.00005	0.0147	0.005	0.011	0.0005
W45	2014-03-25 14:40	0.0021	0.00066	0.0005	227	0.00099	8.14	0.005	12.4	0.0139	0.00005	0.013	0.005	0.0201	0.0005
W45	2014-04-04 10:40	0.0032	0.0002	0.0005	208	0.00154	6.71	0.005	10.8	0.005	0.00005	0.0114	0.005	0.0258	0.0005
W45	2014-05-18 12:50	0.0026	0.0002	0.0005	170	0.00089	6.03	0.005	7.51	0.005	0.00005	0.0142	0.005	0.0125	0.0005
W45	2014-06-19 15:30	0.0028	0.0002	0.0005	162	0.00105	5.4	0.005	8.38	0.005	0.00005	0.0185	0.005	0.0107	0.0005
W45	2014-07-03 13:55	0.0033	0.0002	0.0005	156	0.00104	5.75	0.005	7.52	0.005	0.00005	0.0191	0.005	0.0141	0.0005
W45	2014-08-21 10:00	0.001	0.0002	0.0005	128	0.00329	6.04	0.005	7.13	0.005	0.00005	0.0104	0.005	0.0062	0.0005
W45	2014-09-01 11:25	0.0012	0.0002	0.0005	162	0.00176	5.63	0.005	8.62	0.005	0.00005	0.0171	0.005	0.0299	0.0005
W45	2014-10-13 16:40	0.001	0.0002	0.0005	190	0.0026	7.09	0.005	11.2	0.005	0.00005	0.0145	0.005	0.0211	0.0005
W45	2014-11-11 9:30	0.0013	0.0002	0.0005	147	0.00218	5.84	0.005	7.93	0.005	0.00005	0.0171	0.005	0.0421	0.0005
W45	2015-01-17 11:50	0.001	0.0002	0.0005	196	0.00093	6.77	0.005	11.9	0.005	0.00005	0.0116	0.005	0.0052	0.0005
W45	2015-02-14 13:50	0.0017	0.0002	0.0005	190	0.00104	7.25	0.005	11.8	0.005	0.00005	0.0177	0.005	0.0387	0.0005
W45	2015-03-08 15:55	0.001	0.0002	0.0005	142	0.00153	5.19	0.005	7.41	0.005	0.00005	0.0238	0.005	0.0673	0.0005
W45	2015-08-04 11:25	0.0012	0.0002	0.0005	23.9	0.00048	3.91	0.005	0.656	0.005	0.00005	0.00195	0.005	0.005	0.0005
W45	2015-09-10 9:40	0.001	0.0002	0.0005	138	0.0239	2.93	0.005	4.31	0.005	0.00005	0.00206	0.005	0.005	0.0005
W45	2015-10-05 16:00	0.001	0.0002	0.0005	142	0.0232	3.01	0.005	3.75	0.005	0.00005	0.00168	0.005	0.005	0.0005
W45	2015-11-17 10:30	0.0018	0.0002	0.0005	144	0.0236	2.73	0.005	3.52	0.005	0.00005	0.00252	0.005	0.005	0.0005
W45	2015-12-28 7:15	0.0016	0.0002	0.0005	142	0.0198	2.28	0.005	3.59	0.005	0.00005	0.0014	0.005	0.005	0.0005
W45	2016-01-04 10:45	0.0016	0.0002	0.0005	150	0.0187	2.52	0.005	3.38	0.005	0.00005	0.00144	0.005	0.005	0.0005
W45	2016-04-19 15:40	0.00181	0.00005	0.00029	141	0.0181	2.12	0.0001	4.71	0.0003	0.00001	0.00121	0.0005	0.001	0.0003
W45	2016-05-12 15:30	0.00259	0.00005	0.00027	131	0.0179	2.18	0.0001	4.84	0.0003	0.00001	0.00145	0.0005	0.001	0.0003
W45	2016-05-19 16:30	0.00269	0.00005	0.00025	128	0.0173	2.22	0.0001	4.47	0.0003	0.00001	0.0015	0.0005	0.001	0.0003
W45	2016-06-23 16:45	0.00307	0.00005	0.00024	160	0.0189	2.41	0.0001	4.94	0.0003	0.00001	0.000964	0.0005	0.001	0.0003
W45	2016-08-22 14:35	0.00231	0.00005	0.00018	253	0.0195	2.36	0.0001	4.74	0.0003	0.00001	0.00129	0.0005	0.001	0.0003
W45	2016-09-12 17:17														
W45	2016-09-12 17:17	0.00324	0.00005	0.00018	197	0.0191	2.5	0.0001	4.74	0.0003	0.00001	0.00126	0.0005	0.0023	0.0003
W45	2016-10-15 11:00	0.00472	0.00005	0.00021	227	0.0191	2.49	0.0001	4.08	0.0003	0.00001	0.00148	0.0005	0.0024	0.0003
W45	2016-11-22 14:20	0.004	0.0001	0.00024	380	0.0194	2.22	0.0002	5.29	0.0006	0.00002	0.00221	0.001	0.002	0.0006
W45	2016-12-01 14:30														
W45	2016-12-01 14:30	0.0036	0.0001	0.0002	410	0.0173	2.37	0.0002	5.44	0.0006	0.00002	0.0026	0.001	0.002	0.0006
W45	2017-01-02 11:15	0.0048	0.0001	0.00028	562	0.0179	2.16	0.0002	6.39	0.0006	0.00002	0.00323	0.001	0.002	0.0006
W45	2017-02-01 16:15	0.0061	0.0001	0.00043	577	0.0147	2.16	0.0002	7.68	0.0006	0.00002	0.00353	0.001	0.002	0.0006
W45	2017-03-07 14:40	0.0044	0.0001	0.00039	572	0.0166	2.41	0.0002	11	0.0006	0.00002	0.00495	0.001	0.002	0.0006
W45	2017-05-15 16:20	0.0064	0.0001	0.00027	600	0.0148	3.26	0.0002	9.93	0.0009	0.00002	0.00734	0.001	0.002	0.0003
W45	2017-06-12 16:10	0.0064	0.0001	0.00028	686	0.0162	3.39	0.0002	8.86	0.0006	0.00002	0.00707	0.001	0.0024	0.0003
W45	2017-07-03 9:35	0.0082	0.00014	0.00025	667	0.0181	3.78	0.0002	8.3	0.0006	0.00002	0.00804	0.001	0.0024	0.0003
W45	2017-08-08 11:30	0.0064	0.0001	0.00029	752	0.0179	4.12	0.0002	6.96	0.0006	0.00002	0.00774	0.001	0.002	0.0003
W45	2017-09-03 12:00	0.0059	0.0001	0.00029	597	0.0147	3.61	0.0002	6.47	0.0006	0.00002	0.00761	0.001	0.002	0.0003
W45	2017-11-27 14:15	0.0056	0.0001	0.0004	721	0.0157	3.21	0.0002	7.01	0.0006	0.00002	0.00752	0.001	0.003	0.0003
W45	2017-12-18 15:15	0.0047	0.0001	0.00037	638	0.014	2.95	0.0002	7.46	0.0006	0.00002	0.00883	0.001	0.0023	0.0003
W45	2018-01-15 10:05	0.0095	0.00012	0.00049	623	0.013	3.2	0.0002	7.19	0.0006	0.00002	0.00938	0.001	0.0851	0.0003
W45	2018-02-26 15:40	0.0043	0.0001	0.00041	638	0.00848	3.58	0.0002	7.06	0.0006	0.00002	0.00947	0.001	0.0044	0.0005
W45	2018-03-13 13:50	0.0086	0.0001	0.00043	611	0.0088	3.32	0.0002	7.36	0.0006	0.00002	0.00943	0.001	0.0048	0.0003
W45	2018-04-23 11:20	0.0052	0.0001	0.00052	558	0.00757	2.82	0.0002	7.05	0.0006	0.00002	0.00868	0.001	0.002	0.0003
W45	2018-05-07 16:05	0.0045	0.0001	0.00057	590	0.00766	2.66	0.0002	5.75	0.0006	0.00002	0.00754	0.001	0.0044	0.0003
W45	2018-06-04 13:35	0.0088	0.0001	0.00064	705	0.00844	2.61	0.0002	6.8	0.0006	0.00002	0.00487	0.001	0.0033	0.0003
W45	2018-07-23 14:45	0.0082	0.0001	0.00051	674	0.00733	3.84	0.0002	7.06	0.0006	0.00002	0.00525	0.001	0.002	0.0003
W45	2018-08-06 15:55	0.0079	0.0001	0.00046	683	0.00771	4.01	0.0002	7.33	0.0006	0.00002	0.00512	0.001	0.002	0.0003
W45	2018-09-14 11:30	0.006	0.0001	0.00043	648	0.00742	3.67	0.0002	7.17	0.0006	0.00002	0.00444	0.001	0.002	0.0003
W45	2019-04-22 10:00	0.00183	0.00005	0.0001	322	0.00131	1.56	0.0001	3.74	0.0003	0.00001	0.00042	0.0005	0.0012	0.0003
W45	2019-05-07 14:55	0.0025	0.0001	0.0002	382	0.00095	2.02	0.0002	4.43	0.0006	0.00002	0.000449	0.001	0.0029	0.0003
W45	2019-06-06 14:20	0.0027	0.00005	0.00012	550	0.00101	3.66	0.0001	5.93	0.0003	0.00001	0.000525	0.0005	0.001	0.0003
W45	2019-07-04 11:20	0.0028	0.0001	0.0002	628	0.00106	4.1	0.0002	7.1	0.0006	0.00002	0.000672	0.001	0.002	0.0004
W45	2019-10-21 15:00	0.0073	0.0001	0.00036	608	0.00659	2.48	0.0002	6.41	0.0006	0.00002	0.0038	0.001	0.002	0.0004
W45	2020-03-09 11:00	0.00393	0.0001	0.00088	611	0.00378	2.02	0.0002	6.32	0.0006	0.00002	0.00557	0.001	0.002	0.0004
W45	2020-04-13 11:00	0.00662	0.0001	0.00081	664	0.00355	2.21	0.0002	6.42	0.00097	0.00002	0.00453	0.001	0.002	0.0004
W46	2012-08-09 17:20	0.0013	0.0002	0.0005	5	0.00018	7.14	0.005	0.372	0.005	0.00005	0.00111	0.005	0.005	0.0005
W46	2012-08-25 8:45	0.0013	0.0002	0.0005	5.6	0.00017	6.75	0.005	0.385	0.005	0.00005	0.00124	0.005	0.005	0.0005
W46	2012-09-14 8:15	0.0015	0.0002	0.0005	3.7	0.00018	6.62	0.005	0.287	0.005	0.00005	0.00074	0.005	0.015	0.0005
W46	2012-10-13 14:53														
W46	2013-04-19 15:05	0.001	0.0002	0.0005	13.1	0.00066	11.2	0.005	0.717	0.005	0.00005	0.00212	0.005	0.005	0.0005
W46	2013-05-14 15:30	0.0011	0.0002	0.0005	3	0.0001	2.5	0.005	0.0782	0.005	0.00005	0.00011	0.005	0.005	0.0005
W46	2013-06-22 10:00	0.0012	0.0002	0.0005	5.5	0.00014	6.07	0.005	0.337	0.005	0.00005	0.00126	0.005	0.005	0.0005
W46	2013-07-12 16:20	0.0013	0.0002	0.0005	5.9	0.0002	6.39	0.005	0.352	0.005	0.00005	0.00115	0.005	0.005	0.0005
W46	2013-08-22 15:50	0.0011	0.0002	0.0005	5.3	0.00014	6.5	0.005	0.377	0.005	0.00005	0.00124	0.005	0.005	0.0005
W46	2013-09-06 11:20	0.0014	0.0002	0.0005	4.6	0.00015	6.63	0.005	0.371	0.005	0.00005	0.00109	0.005	0.005	0.0005
W46	2013-10-07 14:45	0.0021	0.0002	0.0005	5.7	0.00014	6.88	0.005	0.351	0.005	0.00005	0.00097	0.005	0.005	0.0005
W46	2013-11-16 10:00	0.001	0.0002	0.0005	10.9	0.0002	6.67	0.005	0.498	0.005	0.00005	0.00181	0.005	0.005	0.0005
W46	2013-12-07 11:00	0.001	0.0002	0.0005	10.3	0.00025	7.42	0.005	0.547	0.005	0.00005	0.00169	0.005	0.005	0.0005
W46	2014-01-06 12:00	0.001	0.0002	0.0005	10	0.00015	7.66	0.005	0.389	0.005	0.00005	0.00126	0.005	0.005	0.0005
W46	2014-02-21 9:50	0.0016	0.0002	0.0005	15	0.00028	11.3	0.005	0.71	0.005	0.00005	0.00217	0.005	0.005	0.0005
W46	2014-04-23 15:05	0.001	0.0002	0.0005	3	0.00016	3.04	0.005	0.188	0.005	0.00005	0.00046	0.005	0.005	0.0005
W46	2014-05-29 15:00	0.0013	0.0002	0.0005	4.4	0.00012	4.77	0.005	0.294	0.005	0.00005	0.00086	0.005	0.005	0.0005
W46	2014-06-21 10:55	0.001	0.0002	0.0005	6.4	0.00018	5.5	0.005	0.379	0.005	0.00005	0.00126	0.005	0.005	0.0005
W46	2014-07-22 14:35	0.0011	0.0002	0.0005	4.1	0.00016	6.28	0.005	0.333	0.005	0.00005	0.00095	0.005	0.005	0.0005
W46	2014-08-20 16:20	0.001	0.0002	0.0005	7.1	0.00017	7.38	0.005	0.435	0.005	0.00005	0.00132	0.005	0.005	0.0005
W46	2014-09-02 15:50	0.0016	0.0002	0.0005	3	0.0001	7.4	0.005	0.139	0.005	0.00005	0.00018	0.005	0.005	0.0005
W46	2014-10-16 15:30	0.0011	0.0002	0.0005	7.5	0.00015	5.44	0.005	0.393	0.005	0.00005	0.00129	0.005	0.005	0.0005
W46	2014-11-30 14:35	0.001	0.0002	0.0005	20.2	0.00026	6.7	0.005	0.655	0.005	0.00005	0.00188	0.005	0.005	0.0005
W46	2014-12-09 11:25	0.001	0.0002	0.0005	28.5	0.00068	2.88	0.005	0.782	0.005	0.00005	0.00159	0.005	0.005	0.0005
W46	2015-01-15 13:30	0.001	0.0002	0.0005	18	0.00031	6.08	0.005	0.731	0.005	0.00005	0.00246	0.005	0.005	0.0005
W46	2015-02-22 15:00	0.001	0.00022	0.0005	22.7	0.00031	7.02	0.005	0.847	0.005	0.00005	0.00339	0.005	0.005	0.0005
W46	2015-03-07 11:00	0.001	0.0002	0.0005	21.9	0.00026	7.51	0.005	0.713	0.005	0.00005	0.0027	0.005	0.005	0.0005
W46	2015-04-11 14:40	0.001	0.0002	0.0005	15	0.00039	6.02	0.005	0.714	0.005	0.00005	0.00194	0.005	0.005	0.0005
W46	2015-05-31 10:25	0.001	0.0002	0.0005	15	0.00043	4.66	0.005	0.625	0.005	0.00005	0.00149	0.005	0.005	0.0005
W46	2015-06-10 15:45	0.001	0.0002	0.0005	7.5	0.00015	5.25	0.005	0.42	0.005	0.00005	0.00148	0.005	0.005	0.0005
W46	2015-07-12 16:00	0.001	0.0002	0.0005	7.7	0.00015	5.74	0.005	0.435	0.005	0.00005	0.00145	0.005	0.005	0.0005
W46	2015-08-21 10:30	0.001	0.0002	0.0005	5.9	0.0001	6.13	0.005	0.419	0.005	0.00005	0.00125	0.005	0.005	0.0005
W46	2015-09-22 15:35	0.0011	0.0002	0.0005	5.9	0.0001	6.17	0.005	0.426	0.005	0.00005	0.0013	0.005	0.005	0.0005
W46	2015-10-15 15:35	0.001	0.0002	0.0005	6	0.00014	6.35	0.005	0.452	0.005	0.00005	0.00164	0.005	0.005	0.0005
W46	2015-11-24 14:50	0.001	0.0002	0.0005	13.7	0.00016	8.17	0.005	0.678	0.005	0.00005	0.00196	0.005	0.0071	0.0005
W46	2016-04-28 16:05	0.00122	0.00005	0.0001	5.62	0.000176	4.4	0.0001	0.278	0.00065	0.00001	0.000793	0.0009	0.0026	0.0003
W46	2016-05-24 14:55	0.00126	0.00005	0.0001	6.99	0.000289	4.75	0.0001	0.33	0.0007	0.00001	0.001	0.00113	0.001	0.0003
W46	2016-06-18 16:00	0.00091	0.00005	0.0001	9.02	0.000261	5.46	0.0001	0.453	0.00041	0.00001	0.0015	0.00101	0.0017	0.0003
W46	2016-07-06 16:15	0.0011	0.000064	0.0001	7.64	0.000178	5.71	0.0001	0.474	0.00034	0.00001	0.00162	0.00075	0.0017	0.0003
W46	2016-08-16 14:35	0.0008	0.00005	0.0001	8.74	0.000231	6.25	0.0001	0.477	0.0003	0.00001	0.00135	0.00054	0.001	0.0003
W46	2016-09-06 14:40	0.00081	0.00005	0.0001	9.24	0.000436	4.18	0.0001	0.383	0.0003	0.00001	0.000581	0.0007	0.0018	0.0003
W46	2016-10-12 15:05	0.00068	0.00005	0.0001	16.6	0.000887	4.35	0.0001	0.566	0.0003	0.00001	0.00152	0.0005	0.001	0.0003
W46	2016-11-03 14:30	0.00079	0.00005	0.0001	10.5	0.000232	5.64	0.0001	0.534	0.0003	0.00001	0.00171	0.0005	0.001	0.0003
W46	2016-12-27 15:00	0.0013	0.00005	0.0001	17.9	0.000154	8.21	0.0001	0.683	0.00032	0.00001	0.00163	0.0005	0.0025	0.0003
W46	2017-05-24 15:55	0.0011	0.00005	0.00011	6.14	0.0002	4.16	0.0001	0.284	0.00084	0.00001	0.000895	0.00137	0.001	0.0003

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N-NO_2$	$N-NO_3$	$N-NH_3$	SO_4-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W46	2017-06-03 15:30	112	243	68.4	7.26	133	691	1.1	87.4	0.0019	0.204	0.0653	16.8	1.71	
W46	2017-07-04 15:40	158	322	47.1	7.8	182	32.5	4.8	99.6	0.001	0.159	0.0245	22.4	1.83	
W46	2017-08-03 16:10	163	347	82.2	7.61	199	18.8	6.2	95.7	0.0014	0.203	0.0163	25.8	2.23	
W46	2017-09-08 15:44	167	324	121.6	7.16	190	15.2	3.6	101.5	0.001	0.0503	0.0103	19	1.58	
W46	2017-10-07 15:30	171	337	45.2	7.55	197	4.5	1.5	104.3	0.001	0.113	0.0108	22.5	1.86	
W46	2017-11-15 13:40	238	468	217.3	7.6	292	3	0	29	0.001	0.0791	0.0081	40.2	3.58	
W46	2017-12-04 14:20	297	624	270.1	7.51	375	3	0	47.6	0.0021	0.013	0.0144	57.8	5.78	
W46	2018-05-21 15:10	110	229	121.2	7.89	129	3	0.2	90	0.001	0.025	0.0072	14.4	1.3	
W46	2018-06-20 15:35	158	379			209	177			0.0063	0.338	0.0385	34.4	3.05	
W46	2018-07-23 10:30	219	412	55.2	7.8	241	3.1	3.6	94.1	0.001	0.129	0.0154	30.3	2.46	0.443
W46	2018-08-14 16:40	165	343	63	7.87	188	24.1	4.9	94.8	0.001	0.0845	0.01	20.1	1.53	
W46	2018-09-03 15:45	159	332	36.9	7.78	184	3.5	3.3	91	0.001	0.0843	0.0097	21.9	1.78	
W46	2018-10-08 14:40	157	415	41.5	7.46	216	3	-0.1	70.3	0.0011	0.157	0.0196	34.3	2.91	
W46	2018-11-04 13:40	207	428	104.9	7.19	249	3.8	0	87.2	0.001	0.146	0.0319	33	2.89	
W46	2019-04-25 14:05	193	400			235	3			0.001	0.0212	0.005	31.5	2.53	
W46	2019-05-13 15:35	112	238	179.6	7.32	149	4.2	0	93	0.001	0.005	0.0056	14.1	1.39	
W46	2019-06-15 10:05	161	325	31.1	7.39	191	3	0.7	93.8	0.001	0.0898	0.0062	24.8	2.12	
W46	2019-07-06 8:10	192	412	-6.4	7.78	237	3	2	95.1	0.001	0.158	0.0171	34.3	2.95	
W46	2019-08-04 14:50	191	402	168.2	7.79	227	3	4.7	96.2	0.001	0.104	0.013	31	2.53	
W46	2019-09-20 15:00	195	383	86	7.84	223	3	1.9	91.8	0.001	0.0311	0.0057	27.2	2.34	
W46	2019-10-07 14:50	205	407	115.5	7.82	239	3		102.8	0.0015	0.0956	0.0073	33	2.8	
W46	2019-11-04 10:45	234	418	92.8	7.41	276	3	0	51.5	0.0028	0.102	0.0157	39	3.44	
W46	2020-05-30 10:10	166	316	66.9	7.61	210	85.3	0.1	88.1	0.001	0.005	0.0231	21.8	2.03	
W46	2020-06-13 6:00	152	332	29.9	7.73	206	36.1	0.2	91.1	0.001	0.0286	0.0185	23.2	2.17	
W46	2020-08-20 16:25	141	284	90.6	7.45	189	19.9	3.7	91.6	0.001	0.0348	0.0143	13.7	1.12	
W46	2020-09-11 15:10	130	272	83.2	7.7	178	12.4	2.3	98.8	0.001	0.0281	0.0136	13.9	1.28	
W46	2020-10-12 10:55	152	351	173.6	7.86	225	3	0.7	92.3	0.001	0.253	0.0118	35.1	2.68	
W46	2021-04-25 17:05	74.6	173			130	1			0.001	0.005	0.009	10.8	1.26	
W46	2021-05-18 15:30	62.3	140	194.9	7.31	110	8.3	0.1	93.4	0.001	0.005	0.0118	7.09	0.78	
W46	2021-06-10 9:00	145	310	47.2	7.85	198	9	2	86.5	0.001	0.102	0.0103	21.2	1.86	
W46	2021-07-25 9:45	163	345	36	7.76	216	9.2	3.8	84.3	0.001	0.0886	0.008	21.1	1.88	
W46	2021-08-07 10:20	171	361	60.2	7.62	223	8.2	4.9	86.3	0.001	0.0894	0.0084	24	2.21	
W46	2021-09-10 16:05	164	342	46.8	7.93	215	2.6	3.6	106.6	0.001	0.0443	0.0083	21.6	1.93	
W46	2021-10-13 15:15	161	337	71.6	7.73	210	1.2	0	81.5	0.001	0.102	0.0089	21.2	1.89	
W5	1994-05-15 0:00		158			101	51			0.001	0.022	0.005		0.9	0.1
W5	1994-06-07 0:00		144			88	52			0.004	0.023	0.005		0.5	0.1
W5	1994-07-08 0:00		141			91	14			0.003	0.006	0.005		0.5	0.09
W5	1994-08-10 0:00		134			82	9			0.002	0.005	0.005		0.5	0.16
W5	1994-09-26 0:00		136			79	5			0.002	0.006	0.005		0.5	0.11
W5	2005-05-27 0:00	49.1	147			90	79.5			0.001	0.0346	0.02	7.62	0.5	
W5	2005-06-30 0:00	59.7	134			77	21.5			0.001	0.0074	0.02	8.9	0.5	
W5	2005-07-29 0:00		133			80	6.2			0.001	0.0057	0.02		0.5	
W5	2005-08-30 0:00	69.1	142			90	7			0.001	0.0165	0.02	9.14	0.5	
W5	2005-09-28 0:00	73.1	154			93	10			0.001	0.0252	0.02	9.88	0.5	
W5	2005-10-15 0:00		153			91	3.5			0.001	0.0353	0.02		0.5	
W5	2009-07-03 16:00	126	277			146	46			0.01	0.04	0.014	15.7	1.1	0.23
W5	2011-05-23 0:00	74	169			120	47			0.009	0.09	0.013	7.8	1.2	0.16
W5	2011-05-30 0:00	61	140			92	90			0.005	0.04	0.011	9.4	0.7	0.1
W5	2011-06-07 0:00	60	136			98	89			0.006	0.06	0.005	8.5		0.1
W5	2011-06-16 0:00	72	159			92	21			0.005	0.03				
W5	2011-06-27 0:00	66	144			88	72			0.005	0.03	0.025	10		
W5	2011-07-03 0:00	69	152			92	25			0.005	0.03	0.009	9.7		
W5	2011-07-11 0:00	69	154			82	16			0.006	0.03	0.007	10		
W5	2011-07-19 0:00	59	131			96	96			0.005	0.05	0.014	8.4		
W5	2011-07-26 0:00	72	160			92	22			0.005	0.02	0.035	15		
W5	2011-08-02 0:00	71	149			120	340			0.006	0.09			2.2	0.16
W5	2011-08-11 0:00	72	159			110	42			0.005	0.4				
W5	2011-08-19 0:00	69	155			78	57			0.005	0.04	0.382			
W5	2011-08-29 0:00	75	165			110	13			0.005	0.02	0.005			
W5	2011-09-08 0:00	75	170		8.04	100	7	8.9	78.1	0.005	0.03	0.006		0.8	
W5	2011-09-13 0:00	89	194		7.91	130	14	8	87.2	0.005	0.06	0.017	9.7	1.3	
W5	2011-09-19 0:00	89	188		7.93	130	22	6.1	92.4	0.005	0.03	0.005	10	1.4	
W5	2011-09-27 0:00	88	195		7.95	130	9	4.7	84.1	0.005	0.04	0.02	9.3	1.2	
W5	2011-10-05 0:00	85	194		7.91	100	27	4.6	82.8	0.005	0.05	0.008	11	1.1	
W5	2011-10-11 0:00	94	203		7.95	110	15	4	81.5	0.005	0.06	0.005		0.8	
W5	2011-10-19 0:00	110	240		7.78	120	8	1.9	91.1	0.005	0.11	0.013	13	1.2	
W5	2011-10-26 0:00	88	224		7.9	120	6	2	81.4	0.005	0.1	0.01		1.1	
W5	2012-05-07 0:00	69	162	51.1	7.67	118	308	3.2	77.2	0.0324	0.133	0.011	5.6	1.7	0.15
W5	2012-05-15 16:55	84.5	188	47.5	8.02	140	174	5.1	120.1	0.0095	0.097	0.036	10.5	1.3	0.17
W5	2012-05-25 13:45	63.4	141	56.7	7.69	106	318	6.2	94.3	0.0259	0.054	0.05	6.81	1.6	0.13
W5	2012-06-02 0:00	72.6	165	41.6	7.81	100	52.6	7.8	94.6	0.0094	0.047	0.056	9.64	0.81	0.11
W5	2012-06-09 0:00	64.6	139	20.9	7.72	90	97.8	8.5	98.8	0.005	0.054	0.08	8.7	1	0.1
W5	2012-06-15 10:00	61.5	137	27.4	7.91	108	171	7.6	94.8	0.005	0.045	0.084	8.05	0.88	0.1
W5	2012-06-22 15:46	67.3	150		8.03	96	64	11.1	87.3	0.005	0.042	0.013	9.65	0.64	0.11
W5	2012-06-29 9:15	65.8	150		7.88	94	15	12.5	84.4	0.005	0.021	0.11	8.67	0.76	0.091
W5	2012-07-06 17:45	63.5	146	12.1	7.71	86	28.1	12.2	90.5	0.005	0.028	0.0078	8.08	0.76	0.1
W5	2012-07-13 16:35	61.3	143	22.9	7.85	94	72.6	11.8	99.6	0.005	0.02	0.013	8.68	0.75	0.1
W5	2012-07-19 9:00	66.1	147		7.87	78	20.8	12	78.8	0.005	0.02	0.035	9.46	0.77	0.1
W5	2012-07-29 16:30	67.8	150	18.8	8	94	13.6	16	90.5	0.005	0.02	0.026	8.93	0.79	0.12
W5	2012-08-02 15:40	67.6	150	-14.3	7.87	80	13.9	14.8	91.6	0.005	0.02	0.0077	8.49	0.5	0.11
W5	2012-08-07 9:50	68.8	155	10.8	7.9	90	11	13.4	91.7	0.05	0.2	0.055	0.5	0.5	0.12
W5	2012-08-17 10:00	70.1	154	29.6	7.44	88	54.6	13.6	88	0.005	0.023	0.0052	9.13	0.54	0.12
W5	2012-08-24 14:00	68	151	18	7.62	82	70.3	13.9	88.9	0.005	0.02	0.0065	8.5	0.5	0.13
W5	2012-08-30 9:30	71.5	161	34.9	7.91	100	20.4	9.8	91.2	0.005	0.034	0.0074	8.63	0.57	0.13
W5	2012-09-03 17:00	73.5	162	-0.8	8.16	110	45.5	11	93.6	0.005	0.048	0.005	9.48	0.5	0.13
W5	2012-09-11 15:05	81.9	177	82.6	8.37	114	76.5	6.9	85.4	0.005	0.038	0.0089	14.4	0.82	0.15
W5	2012-09-18 8:40	85.7	188	104.6	7.89	132	15.3	6.5	93.9	0.005	0.044	0.063	9.25	0.66	0.14
W5	2012-09-24 17:41	75.2	167	38.1	7.92	98	8.4	9.4	95.3	0.005	0.027	0.052	9.34	0.5	0.12
W5	2012-10-04 15:00	86.9	190	62.2	7.48	128	18.8	4.9	109.9	0.005	0.055	0.093	10.8	0.87	0.15
W5	2012-10-12 14:25	76.4	165	88.8	7.85	118	6.6	4.1	98.1	0.005	0.036	0.0097	10.5	0.81	0.13
W5	2012-10-20 15:15	77.3	167	65.2	8.3	102	19	1.7	113	0.005	0.052	0.013	11.2	0.5	0.11
W5	2012-11-11 9:00	103	236	126.44	7.56	140	1	-0.1		0.005	0.06	0.014	17	1	0.12
W5	2012-11-24 14:00	77.5	174	87.4	8.05	112	8.7	-0.1	39.7	0.005	0.108	0.01	11.2	0.5	0.11
W5	2012-12-12 12:20	72.4	167	104.8	7.75	108	1	0	63.3	0.005	0.07	0.0092	11.7	0.5	0.1
W5	2013-05-19 14:50	60.6	138	91.5	7.68	102	141	1.2	87.3	0.005	0.151	0.034	1.6	2	0.11
W5	2013-05-24 15:45	64.5	151	-39.2	8.9	124	106	5.9	92.6	0.0109	0.212	0.035	9.35	1.6	0.12
W5	2013-05-31 15:00	56.3	127	59.9	7.95	108	175	8.3	89.4	0.0119	0.115	0.014	8.86	1.4	0.1
W5	2013-06-08 15:30	69.4	154	37.7	7.65	102	61.3	8.3	84.6	0.005	0.046	0.018	9.88	0.6	0.1
W5	2013-06-16 11:55	68.8	153		8.5	102	32.9	9.5		0.005	0.046	0.017	9.41	0.93	0.11
W5	2013-06-18 10:00	68.5	153		8.7	102	33.8	9.6		0.005	0.043	0.0066	9.64	0.5	0.092
W5	2013-06-25 10:20	69.2	151	68.5	8.01	100	23.2	13	97.3	0.005	0.022	0.011	9.11	0.56	0.1
W5	2013-07-02 10:50	65.8	146	69.4	7.99	66	19.3	15.2	83.6	0.005	0.02	0.018	9.32	0.95	0.1
W5	2013-07-11 13:05	62.1	137	109.9	8.04	92	13.4	14.1	80.6	0.005	0.021	0.036	9.42	0.67	0.11
W5	2013-07-19 9:10	61.8	141	57.4	8.08	82	10.4	14.5	89.4	0.005	0.02	0.012	9.4	0.59	0.11
W5	2013-07-23 10:35	61.4	139	82.6	7.97	74	55.6	12.3	88.5	0.05	0.2	0.009	8.91	1.1	0.11
W5	2013-07-31 9:25	65	145	108.1	7.96	84	14.7	15.5	88.1	0.005	0.02	0.09	10.8	0.85	0.12
W5	2013-08-09 10:45	64.9	143	76.3	8.03	104	21.2	15.9	87.5	0.05	0.2	0.0074	9.6	0.58	0.13
W5	2013-08-16 11:45	61.7	145		8.4	82	6.7	17.4		0.005	0.02	0.013	9.45	0.55	0.13
W5	2013-08-22 11:35	65.2	146	110.5	8.03	86	17.4	14.4	91	0.005	0.02	0.014	9.77	0.5	0.12
W5	2013-08-27 10:45	68.2	153	153.4	7.83	130	15.1	12	90.8	0.005	0.023	0.011	9.23	0.69	0.12
W5	2013-09-03 16:15	68.9	155	88.7	7.98	110	26.1	12.6	92.3	0.005	0.02	0.03	10	0.5	0.12
W5	2013-09-09 13:15	65.3	150	117.2	7.91	90	8.5	12.1	84	0.005	0.02	0.017	11.8	1.2	0.13
W5	2013-09-18 10:40	97.5	162	135.1	7.81	86	190	8.7	88.1	0.005	0.02	0.014	10	0.9	0.13
W5	2013-09-24 9:50	73.2	159	150.3	7.82	72	14.2	7.1	89.6	0.005	0.03	0.022	10.8	0.5	0.13
W5	2013-10-03 10:30	71.8	161	110.1	7.84	144	9.8	6	90.9	0.005	0.033	0.015	10.9	0.67	0.12

Station	Date / Time	Dissolved Elements																	
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W46	2017-06-03 15:30	0.00001	0.0131	0.00055	0.0535	0.01	0.00002	0.00005	26.9	0.0000053	0.00019	0.00022	0.00408	0.34	0.000005	1.23	0.001	10.3	0.0847
W46	2017-07-04 15:40	0.00001	0.0073	0.00047	0.0655	0.01	0.00002	0.00005	36.7	0.000005	0.00013	0.00018	0.00178	0.087	0.000005	1.33	0.001	14.8	0.0603
W46	2017-08-03 16:10	0.00001	0.012	0.0005	0.0764	0.011	0.00002	0.00005	43.5	0.0000054	0.0001	0.00018	0.00422	0.094	0.000005	1.49	0.0015	16	0.0442
W46	2017-09-08 15:44	0.00001	0.0057	0.00048	0.0674	0.01	0.00002	0.00005	42.1	0.0000053	0.0001	0.00019	0.00161	0.107	0.000005	1.34	0.001	15.7	0.0492
W46	2017-10-07 15:30	0.00001	0.0066	0.00045	0.0695	0.01	0.00002	0.00005	40.7	0.000005	0.0001	0.00011	0.0014	0.132	0.000005	1.34	0.0014	16.2	0.0546
W46	2017-11-15 13:40	0.00001	0.0043	0.00039	0.104	0.011	0.00002	0.00005	61.6	0.0000115	0.00011	0.00015	0.00229	0.059	0.000005	2.14	0.0018	25.5	0.114
W46	2017-12-04 14:20	0.00001	0.0066	0.00061	0.127	0.014	0.00002	0.00005	76.1	0.0000217	0.00022	0.00021	0.00299	0.095	0.000005	2.94	0.0017	31.1	0.337
W46	2018-05-21 15:10	0.00001	0.0122	0.00043	0.0486	0.01	0.00002	0.00005	27.3	0.000005	0.0001	0.00015	0.00409	0.078	0.000005	1.3	0.001	10.5	0.0238
W46	2018-06-20 15:35	0.00001	0.0068	0.00055	0.0908	0.012	0.00002	0.00005	42.7	0.000005	0.00018	0.0001	0.00402	0.11	0.000005	2.05	0.0015	18.2	0.173
W46	2018-07-23 10:30	0.00001	0.0046	0.00048	0.0765	0.01	0.00002	0.00005	44.2	0.000005	0.0001	0.0002	0.00174	0.104	0.000005	1.5	0.0017	17.9	0.0507
W46	2018-08-14 16:40	0.00001	0.0074	0.00047	0.0715	0.01	0.00002	0.00005	40.2	0.000005	0.0001	0.0002	0.00206	0.092	0.000005	1.28	0.0014	15.4	0.0351
W46	2018-09-03 15:45	0.00001	0.005	0.00044	0.0661	0.01	0.00002	0.00005	39.5	0.000005	0.0001	0.00017	0.00186	0.103	0.000005	1.25	0.0014	14.3	0.0421
W46	2018-10-08 14:40	0.00001	0.0032	0.00043	0.0798	0.011	0.00002	0.00005	47.1	0.000005	0.00011	0.00013	0.00167	0.169	0.000005	1.58	0.0016	21.5	0.0796
W46	2018-11-04 13:40	0.00001	0.0042	0.00044	0.0856	0.011	0.00002	0.00005	51.8	0.0000191	0.00013	0.00015	0.00155	0.296	0.000005	1.66	0.0018	21	0.137
W46	2019-04-25 14:05	0.00001	0.0042	0.00035	0.0648	0.01	0.00002	0.00005	48.2	0.000005	0.0001	0.00013	0.00329	0.022	0.000005	2.56	0.0022	22	0.00484
W46	2019-05-13 15:35	0.00001	0.0056	0.00038	0.0456	0.01	0.00002	0.00005	27.7	0.0000054	0.0001	0.00015	0.00327	0.058	0.000005	1.32	0.001	11	0.0589
W46	2019-06-15 10:05	0.00001	0.0054	0.00046	0.0659	0.01	0.00002	0.00005	39	0.0000084	0.0001	0.00014	0.00196	0.088	0.000005	1.39	0.0015	15.7	0.0442
W46	2019-07-06 8:10	0.00001	0.0029	0.00044	0.0744	0.011	0.00002	0.00005	47.8	0.000005	0.0001	0.00011	0.00148	0.125	0.000005	1.89	0.0018	20.8	0.0434
W46	2019-08-04 14:50	0.00001	0.0034	0.00045	0.0785	0.016	0.00002	0.00005	44.8	0.000005	0.0001	0.00015	0.00149	0.083	0.000005	1.57	0.0018	19.7	0.0251
W46	2019-09-20 15:00	0.00001	0.0034	0.00039	0.0699	0.01	0.00002	0.00005	45.3	0.000005	0.0001	0.00016	0.00151	0.103	0.000005	1.54	0.0016	17.8	0.0347
W46	2019-10-07 14:50	0.00001	0.0027	0.0004	0.0697	0.01	0.00002	0.00005	45.7	0.000005	0.0001	0.00011	0.00137	0.117	0.000005	1.56	0.0016	19.1	0.0434
W46	2019-11-04 10:45	0.00001	0.0049	0.00035	0.0809	0.012	0.00002	0.00005	51.4	0.0000238	0.0001	0.00014	0.00188	0.117	0.000005	1.79	0.0018	24.1	0.0563
W46	2020-05-30 10:10	0.00001	0.0063	0.00053	0.0619	0.01	0.00002	0.00005	36.5	0.000005	0.00013	0.00015	0.00252	0.154	0.000005	1.43	0.0014	15.3	0.0841
W46	2020-06-13 6:00	0.00001	0.0059	0.00058	0.0645	0.01	0.00002	0.00005	38.3	0.000005	0.00014	0.00014	0.00234	0.186	0.000005	1.34	0.0013	15.4	0.11
W46	2020-08-20 16:25	0.00001	0.0069	0.00046	0.0611	0.01	0.00002	0.00005	35.6	0.000005	0.0001	0.00026	0.00221	0.071	0.000005	0.968	0.001	14.3	0.017
W46	2020-09-11 15:10	0.00001	0.0106	0.00046	0.0573	0.01	0.00002	0.00005	32	0.0000056	0.0001	0.00032	0.00244	0.109	0.000005	0.889	0.001	12.3	0.0238
W46	2020-10-12 10:55	0.00001	0.007	0.00048	0.0614	0.01	0.00002	0.00005	38.8	0.000005	0.0001	0.0002	0.00402	0.083	0.000005	1.41	0.0014	15.9	0.0224
W46	2021-04-25 17:05	0.00001	0.0218	0.00035	0.0315	0.01	0.00002	0.00005	19.8	0.0000137	0.0001	0.0005	0.0138	0.076	0.000005	2.23	0.001	8.6	0.0164
W46	2021-05-18 15:30	0.00001	0.0387	0.00043	0.0324	0.01	0.00002	0.00005	17.7	0.0000063	0.00012	0.0005	0.00833	0.168	0.000005	0.833	0.001	6.59	0.0307
W46	2021-06-10 9:00	0.00001	0.0124	0.00046	0.068	0.01	0.00002	0.00005	35	0.00001	0.0001	0.0005	0.00219	0.076	0.000005	1.28	0.0013	16	0.0291
W46	2021-07-25 9:45	0.00001	0.0075	0.00043	0.0669	0.01	0.00002	0.00005	41.6	0.000005	0.0001	0.0005	0.00194	0.068	0.000005	1.32	0.0016	16.1	0.0208
W46	2021-08-07 10:20	0.00001	0.0079	0.00041	0.0683	0.01	0.00002	0.00005	40.2	0.000005	0.0001	0.0005	0.00181	0.085	0.000005	1.39	0.0016	16.1	0.0283
W46	2021-09-10 16:05	0.00001	0.0096	0.00047	0.0686	0.01	0.00002	0.00005	39.7	0.000005	0.0001	0.0005	0.00214	0.102	0.000005	1.33	0.0016	16.8	0.0323
W46	2021-10-13 15:15	0.00001	0.0044	0.00042	0.0593	0.01	0.00002	0.00005	37.3	0.000005	0.0001	0.0005	0.00144	0.084	0.000005	1.28	0.0014	16.3	0.0317
W5	1994-05-15 0:00	0.0001	0.019	0.0004	0.04	0.1	0.005	0.1	20.9	0.0002	0.001	0.001	0.002	0.044		0.91		5.66	0.007
W5	1994-06-07 0:00	0.0001	0.021	0.0003	0.035	0.1	0.005	0.1	20.1	0.0002	0.001	0.001	0.001	0.096		0.72		5.43	0.006
W5	1994-07-08 0:00	0.0001	0.019	0.0002	0.033	0.1	0.005	0.1	20.1	0.0002	0.001	0.001	0.001	0.031		0.74		4.81	0.005
W5	1994-08-10 0:00	0.0001	0.018	0.0005	0.032	0.1	0.005	0.1	19.2	0.0002	0.001	0.001	0.001	0.03		0.69		4.42	0.005
W5	1994-09-26 0:00	0.0001	0.005	0.0003	0.029	0.1	0.005	0.1	20.5	0.0002	0.001	0.001	0.001	0.03		0.79		4.31	0.005
W5	2005-05-27 0:00	0.00002	0.0117	0.0005	0.034	0.1	0.001		20.3	0.00005	0.0003	0.001	0.001	0.03	0.00002	2	0.005	5.4	0.00345
W5	2005-06-30 0:00	0.00001	0.0148	0.00046	0.0305	0.01	0.0005	0.0005	19.3	0.00005	0.0001	0.0005	0.00105	0.03		2	0.005	4.7	0.00197
W5	2005-07-29 0:00	0.00001	0.008	0.00044	0.0307	0.01	0.0005	0.0005	19.5	0.00005	0.0001	0.0005	0.00084	0.03		2	0.005	4.75	0.00139
W5	2005-08-30 0:00	0.00002	0.0087	0.0005	0.039	0.1	0.001		19.7	0.000017	0.0003	0.001	0.001	0.03	0.00002	2	0.005	5.39	0.00296
W5	2005-09-28 0:00	0.00002	0.009	0.0005	0.04	0.1	0.001		22.7	0.000017	0.0003	0.001	0.001	0.053	0.00002	2	0.005	6.1	0.0108
W5	2005-10-15 0:00	0.00001	0.0072	0.00042	0.0378	0.01	0.0005	0.0005	22.4	0.00005	0.0001	0.0005	0.00071	0.031		2	0.005	6.19	0.00414
W5	2009-07-03 16:00	0.00004	0.036	0.0008	0.062	0.1	0.0002	0.002	38.4	0.00004	0.001	0.002	0.0014	0.035	0.00004	1.44	0.01	9.27	0.002
W5	2011-05-23 0:00	0.00002	0.03	0.0007	0.045	0.05	0.0001	0.001	22	0.00002	0.0005	0.001	0.0026	0.445	0.00002	1.08	0.005	6.27	0.04
W5	2011-05-30 0:00	0.00002	0.021	0.0005	0.036	0.05	0.0001	0.001	17.9	0.00001	0.0005	0.001	0.0018	0.048	0.00002	0.8	0.005	5.17	0.015
W5	2011-06-07 0:00	0.00002	0.033	0.0005	0.034	0.05	0.0001	0.001	17	0.00001	0.0005	0.001	0.0021	0.069	0.00002	0.71	0.005	5.12	0.012
W5	2011-06-16 0:00	0.00002	0.02	0.0005	0.039	0.05	0.0001	0.001	20.5	0.00002	0.0005	0.001	0.0018	0.046	0.00002	0.75	0.005	5.79	0.009
W5	2011-06-27 0:00	0.00002	0.045	0.0006	0.041	0.05	0.0001	0.001	20.3	0.00003	0.0005	0.001	0.0064	0.101	0.00002	0.78	0.005	5.61	0.015
W5	2011-07-03 0:00	0.00002	0.023	0.0006	0.04	0.05	0.0001	0.001	21	0.00001	0.0005	0.001	0.0018	0.072	0.00002	0.79	0.005	6.06	0.01
W5	2011-07-11 0:00	0.00002	0.016	0.0005	0.04	0.05	0.0001	0.001	22.6	0.00001	0.0005	0.001	0.0016	0.045	0.00002	0.88	0.005	5.71	0.016
W5	2011-07-19 0:00	0.00002	0.043	0.0007	0.039	0.05	0.0001	0.001	15.5	0.00001	0.0005	0.001	0.0024	0.091	0.00005	0.64	0.005	4.99	0.015
W5	2011-07-26 0:00	0.00002	0.017	0.0006	0.04	0.05	0.0001	0.001	20.2	0.00001	0.0005	0.001	0.0016	0.074	0.00002	0.73	0.005	5.5	0.02
W5	2011-08-02 0:00	0.00002	0.037	0.0008	0.045	0.05	0.0001	0.001	20.2	0.00002	0.0005	0.001	0.0031	0.393	0.00002	0.59	0.005	5.54	0.038
W5	2011-08-11 0:00	0.00002	0.03	0.0007	0.052	0.05	0.0001	0.001	22	0.00001	0.0005	0.001	0.0022	0.196	0.00002	0.7	0.005	6.4	0.032
W5	2011-08-19 0:00	0.00002	0.033	0.0006	0.041	0.05	0.0001	0.001	19.8	0.00001	0.0005	0.001	0.0021	0.088	0.00002	0.67	0.005	5.88	0.018
W5	2011-08-29 0:00	0.00002	0.014	0.0006	0.04	0.05	0.0001	0.001	22.1	0.00001	0.0005	0.001	0.0018	0.109	0.00002	0.73	0.005	5.85	0.028
W5	2011-09-08 0:00	0.00002	0.011	0.0006	0.043	0.05	0.0001	0.001	23.4	0.00001	0.0005	0.001	0.001	0.129	0.00002	0.78	0.005	6.14	0.029
W5	2011-09-13 0:00	0.00002	0.013	0.0006	0.043	0.05	0.0001	0.001	24	0.00003	0.0005	0.001	0.0012	0.167	0.00002	0.79	0.005	6.57	0.045
W5	2011-09-19 0:00	0.00002	0.017	0.0006	0.049	0.05	0.0001	0.001	26.1	0.00001	0.0005	0.001	0.0023	0.23	0.00002	0.81	0.005	7.04	0.056
W5	2011-09-27 0:00	0.00002	0.016	0.0006	0.045	0.05	0.0001	0.001	28.9	0.00001	0.0005	0.001	0.0015	0.235	0.00002	0.85	0.005	7.62	0.043
W5	2011-10-05 0:00	0.00002	0.015	0.0005	0.043	0.05	0.0001	0.001	25	0.00001	0.0005	0.001	0.0009	0.13	0.00002	0.78	0.005	6.5	0.035
W5	2011-10-11 0:00	0.00002	0.02	0.0006	0.052	0.05	0.0001	0.001	28.4	0.00002	0.0005	0.001	0.0021	0.196	0.00002	0.88	0.005	7.99	0.061
W5	2011-10-19 0:00	0.00002	0.009	0.0006	0.057	0.05	0.0001	0.001	33.9	0.00001	0.0005	0.001	0.0012	0.263	0.00002	0.92	0.005	8.7	0.094
W5	2011-10-26 0:00	0.00002	0.007	0.0005	0.052	0.05	0.0001	0.001	29.5	0.00001	0.0005	0.001	0.0008	0.161	0.00002	0.85	0.005	7.93	0.067
W5	2012-05-07 0:00	0.00002	0.0588	0.00079	0.0572	0.05	0.0001	0.001	21.8	0.000031	0.0005	0.001	0.00382	0.712	0.00001	1.26	0.005	6.05	0.148
W5	2012-05-15 16:55	0.00002	0.0363	0.00072	0.0532	0.05	0.0001	0.001	24.5	0.00001	0.0005	0.001	0.0029	0.503	0.00001	1.05	0.005	7.43	0.0929
W5	2012-05-25 13:45	0.00002	0.0501	0.00063	0.0393	0.05	0.0001	0.001	17.6	0.000022	0.0005	0.001	0.00316	0.275	0.00001	0.806	0.005	5.33	0.0632
W5	2012-06-02 0:00	0.000021	0.04	0.00051	0.0392	0.05	0.0001	0.001	21.9	0.000025	0.0005	0.001	0.00351	0.118	0.00001	1.07	0.005	5.98	0.0198
W5	2012-06-09 0:00	0.00002	0.022	0.00042	0.0333	0.05	0.0001	0.001	18.6	0.00001	0.0005	0.001	0.00134	0.0579	0.00001	0.737	0.005	5.03	0.0137
W5	2012-06-15 10:00	0.00002	0.0315	0.00051	0.0325	0.05	0.0001	0.001	18.6	0.00001	0.0005	0.001	0.00167	0.0888	0.00001	0.726	0.005	5.09	0.0125
W5	2012-06-22 15:46	0.00002	0.015	0.00046	0.0344	0.05	0.0001	0.001	19.6	0.00001	0.0005	0.001	0.00096	0.0378	0.00001	0.708	0.005	5.4	0.0067
W5	2012-06-29 9:15	0.00002	0.0511	0.0005	0.0355	0.05	0.0001	0.001	21.2	0.00001	0.0005	0.001	0.00285	0.107	0.00001	0.775	0.005	5.43	0.0068
W5	2012-07-06 17:45	0.00002	0.0305	0.00053	0.0393	0.05	0.0001	0.001	18.4	0.00001	0.0005	0.001	0.00106	0.067	0.00001	0.73	0.005	4.8	0.0085
W5	2012-07-13 16:35	0.00002	0.0129	0.00046	0.032	0.05	0.0001	0.001	18.9	0.00001	0.0005	0.001	0.00078	0.0379	0.00001	0.668	0.005	4.8	0.0054
W5	2012-07-19 9:00	0.00002	0.0126	0.00046	0.0338	0.05	0.0001	0.001	20.7	0.00001	0.0005	0.001	0.0009	0.0396	0.00001	0.7	0.005	5.19	0.0058
W5	2012-07-29 16:30	0.00002	0.0123	0.00052	0.036	0.05	0.0001	0.001	20.5	0.00001	0.0005	0.001	0.0008	0.0385	0.00001	0.737	0.005	5.27	0.0066
W5	2012-08-02 15:40	0.00002	0.0103	0.00049	0.0352	0.05	0.0001	0.001	21.1	0.00001	0.0005	0.001	0.0031	0.0396	0.00001	0.749	0.005	5.18	0.0071
W5	2012-08-07 9:50	0.00002	0.0159	0.00049	0.0363	0.05	0.0001	0.001	21.1	0.00001	0.0005	0.001	0.00094	0.044	0.00001	0.742	0.005	4.94	0.0077
W5	2012-08-17 10:00	0.00002	0.0087	0.00055	0.0368	0.05	0.0001	0.001	21	0.00001	0.0005	0.001	0.00071	0.044	0.00001	0.728	0.005	5.34	0.0102
W5	2012-08-24 14:00	0.00002	0.008	0.00051	0.0349	0.05	0.0001	0.001	18.9	0.00001	0.0005	0.001	0.0007	0.0455	0.00001	0.739	0.005	5.24	0.0103
W5	2012-08-30 9:30	0.00002	0.0181	0.00056	0.0398	0.05	0.0001	0.001	20.8	0.00001	0.0005	0.001	0.00251	0.198	0.00001	0.764	0.005	5.91	0.0146
W5	2012-09-03 17:00	0.00002	0.0117	0.00056	0.0399	0.05	0.0001	0.001	21.6	0.00001	0.0005	0.001	0.00095	0.0798	0.00001	0.794	0.005	5.74	0.0154
W5	2012-09-11 15:05	0.00002	0.0155	0.00055	0.0439	0.05	0.0001	0.001	24	0.00001	0.0005	0.001	0.00213	0.264	0.00001	0.745	0.005	6.89	0.0295
W5	2012-09-18 8:40	0.00002	0.016	0.00058	0.0456	0.05	0.0001	0.001	24.9	0.00001	0.0005	0.001	0.00155	0.183	0.00001	0.799	0.005	7.1	0.024
W5	2012-09-24 17:41	0.00002	0.0106	0.00056	0.041	0.05	0.0001	0.001	23.5	0.00001	0.0005	0.001	0.00099	0.0816	0.00001	0.82	0.005	5.95	0.0132
W5	2012-10-04 15:00														0.00001				
W5	2012-10-12 14:25														0.00001				
W5	2012-10-20 15:15	0.00002	0.0055	0.00044	0.0395	0.05	0.0001	0.001	22.5	0.00001	0.0005	0.001	0.00067	0.0543	0.00001	0.806	0.005	6.08	0.013
W5	2012-11-11 9:00	0.00002	0.0039	0.00058	0.0638	0.05	0.0001	0.001	29.5	0.00001	0.0005	0.001	0.00058	0.304	0.00001	0.977	0.005	7.77	0.106
W5	2012-11-24 14:00	0.00002	0.0054	0.00044	0.0412	0.05	0.0001	0.001	24.6	0.00001	0.0005	0.001	0.00098	0.0153	0.00001	0.972	0.005	6.41	0.0037
W5	2012-12-12 12:20	0.00002	0.0036	0.00039	0.0388	0.05	0.0001	0.001	23	0.00001	0.0005	0.001	0.00071	0.0115	0.00001	0.823	0.005	5.64	0.0018
W5	2013-05-19 14:50	0.00002	0.0555	0.00056	0.0405	0.05	0.0001	0.001	18.3	0.00001	0.0005	0.001	0.004	0.235	0.00001	1.22	0.005	5.51	0.0397
W5	2013-05-24 15:45	0.00002	0.0346	0.00053	0.0404	0.05	0.0001	0.001	18.9	0.00001	0.0005	0.001	0.00479	0.198	0.00001	1.11	0.005	5.96	0.0437
W5	2013-05-31 15:00	0.00002	0.0351	0.00053	0.0314	0.05	0.0001	0.001	16.8	0.000012	0.0005	0.001	0.00226	0.122	0.00001	0.95	0.005	4.58	0.0195
W5	2013-06-08 15:30	0.00002	0.0137	0.00041	0.0326	0.05	0.0001	0.001	20.7	0.00001	0.0005	0.001	0.00107	0.0386	0.00001	0.737	0.005	5.2	0.005
W5	2013-06-16 11:55	0.00002	0.0165	0.0004	0.0335	0.05	0.0001	0.001	20.3	0.00001	0.0005	0.001	0.00131	0.0343	0.00001	0.747	0.005	5.54	0.0041
W5	2013-06-18 10:00	0.00002	0.0188	0.00042	0.0332	0.05	0.0001	0.001	20.4	0.00001	0.0005	0.001	0.00112	0.0424	0.00001	0.702	0.005	5.4	0.0038
W5	2013-06-25 10:20	0.00002	0.0133	0.00044	0.0338	0.05	0.0001	0.001	20.1	0.00001	0.0005	0.001	0.00083	0.027	0.00001	0.741	0.005	5.17	0.0031
W5	2013-07-02 10:50	0.00002	0.0138	0.0005	0.0343	0.05	0.0001	0.001	21.9	0.00001	0.0005	0.001	0.00086	0.0266	0.00001	0.759	0.005	4.9	0.0031
W5	2013-07-11 13:05	0.00002	0.0113	0.00047	0.0317	0.05	0.0001	0.001	18.8	0.00001	0.0005	0.001	0.00077	0.0263	0.00001	0.776	0.005	5.04	0.0041
W5	2013-07-19 9:10	0.00002	0.0102	0.00041	0.0332	0.05	0.0001	0.001	19.3	0.00001	0.0005	0.001	0.00068	0.0209	0.00001	0.763	0.005	4.71	0.0032
W5	2013-07-23 10:35	0.00002	0.0302	0.00052	0.0343	0.05	0.0001	0.001	17.8	0.00001	0.0005	0.001	0.00131	0.0812	0.00001	0.673	0.005	4.86	0.007
W5	2013-07-31 9:25	0.00002	0.0251	0.00053	0.0361	0.05	0.0001	0.001	19.8	0.00001	0.0005	0.001	0.00135	0.0625	0.00001	0.948	0.005	5.21	0.0056
W5	2013-08-09 10:45	0.00002	0.0128	0.0005	0.0349	0.05	0.0001	0.001	19.2	0.00001	0.0005	0.001	0.00113	0.0288	0.00001	0.768	0.005	4.58	0.005
W5	2013-08-16 11:45	0.00002	0.0142	0.0005	0.0355	0.05	0.0001	0.001	19.7	0.00001	0.0005	0.001	0.00096	0.0261	0.00001	0.771	0.005	4.79	0.0055
W5	2013-08-22 11:35	0.00002	0.0102	0.00051	0.0345	0.05	0.0001	0.001	19.8	0.00001	0.0005	0.001	0.00079	0.0305	0.00001	0.758	0.005	4.97	0.0089
W5	2013-08-27 10:45	0.00002	0.0128	0.00055	0.0388	0.05	0.0001	0.001	20.8	0.00001	0.0005	0.001	0.00081	0.0577	0.00001	0.818	0.005	5.43	0.0074
W5	2013-09-03 16:15	0.00002	0.0122	0.00054	0.0369	0.05	0.0001	0.001	19.8	0.00001	0.0005	0.001	0.00085	0.0587	0.00001	0.793	0.005	5.36	0.0071
W5	2013-09-09 13:15	0.00002	0.01	0.00055	0.041	0.05	0.0001	0.001	21	0.00001	0.0005	0.001	0.00077	0.0448	0.00001	0.84	0.005	5.39	0.008
W5	2013-09-18 10:40	0.00002	0.0099	0.00049	0.0382	0.05	0.0001	0.001	21.8	0.00001	0.0005	0.001	0.00102	0.0672	0.00001	0.81	0.005	5.57	0.0149
W5	2013-09-24 9:50	0.00002	0.017	0.00057	0.0382	0.05	0.0001	0.001	20.6	0.00001	0.0005	0.001	0.00126	0.0827	0.00001	0.742	0.005	5.73	0.0115
W5	2013-10-03 10:30	0.00002	0.0109	0.00052	0.0378	0.05	0.0001	0.001	21.8	0.00001	0.0005	0.001	0.00095	0.0807	0.00001	0.775	0.005	5.92	0.0118

Station	Date / Time	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W46	2017-06-03 15:30	0.00157	7.83	0.00129	0.00005	0.0001	5.53	0.000184	4.31	0.0001	0.283	0.00077	0.00001	0.000925	0.00122	0.0027	0.0003
W46	2017-07-04 15:40	0.00201	9.83	0.00105	0.00005	0.0001	7.65	0.000204	5.79	0.0001	0.411	0.0003	0.00001	0.00149	0.00096	0.001	0.0003
W46	2017-08-03 16:10	0.00208	10.8	0.00114	0.00005	0.0001	8.42	0.000199	5.87	0.0001	0.467	0.00036	0.00001	0.00133	0.00096	0.0012	0.0003
W46	2017-09-08 15:44	0.00173	10.1	0.00098	0.00005	0.0001	6.18	0.000115	6.05	0.0001	0.428	0.0003	0.00001	0.00129	0.00071	0.0014	0.0003
W46	2017-10-07 15:30	0.00182	10.5	0.00095	0.00005	0.0001	7.77	0.000167	6.19	0.0001	0.457	0.0003	0.00001	0.00142	0.00055	0.0012	0.0003
W46	2017-11-15 13:40	0.00175	15	0.00102	0.00005	0.0001	14.5	0.000183	7.55	0.0001	0.706	0.0003	0.00001	0.00185	0.00051	0.003	0.0003
W46	2017-12-04 14:20	0.00171	21.7	0.00135	0.00005	0.0001	21.9	0.000216	9.43	0.0001	0.796	0.00047	0.00001	0.00194	0.0005	0.005	0.0003
W46	2018-05-21 15:10	0.00119	7.33	0.00089	0.00005	0.0001	4.82	0.000114	4.52	0.0001	0.275	0.00046	0.00001	0.000975	0.00078	0.001	0.0003
W46	2018-06-20 15:35	0.00293	12.1	0.00119	0.00005	0.0001	10.8	0.000252	4.84	0.0001	0.501	0.00032	0.00001	0.00221	0.00137	0.001	0.0003
W46	2018-07-23 10:30	0.00226	12	0.00085	0.00005	0.0001	10.6	0.000244	5.78	0.0001	0.498	0.0003	0.00001	0.00189	0.00081	0.001	0.0003
W46	2018-08-14 16:40	0.00198	10.3	0.00102	0.00005	0.0001	6.74	0.000192	6.15	0.0001	0.444	0.0003	0.00001	0.00139	0.00078	0.001	0.0003
W46	2018-09-03 15:45	0.00188	9.72	0.00106	0.00005	0.0001	6.74	0.000176	5.97	0.0001	0.409	0.0003	0.00001	0.00143	0.00062	0.001	0.0003
W46	2018-10-08 14:40	0.00215	13.2	0.0008	0.00005	0.0001	11.4	0.000233	6.4	0.0001	0.584	0.0003	0.00001	0.00179	0.00052	0.001	0.0003
W46	2018-11-04 13:40	0.00171	13.4	0.00089	0.00005	0.0001	11.3	0.000166	6.74	0.0001	0.584	0.00038	0.00001	0.00172	0.00051	0.0013	0.0003
W46	2019-04-25 14:05	0.00221	12.4	0.0005	0.00005	0.0001	11.8	0.00033	7.32	0.0001	0.584	0.0003	0.00001	0.00201	0.0005	0.001	0.0003
W46	2019-05-13 15:35	0.00125	6.42	0.00062	0.00005	0.0001	4.89	0.000198	4.64	0.0001	0.322	0.0003	0.00001	0.000988	0.00058	0.001	0.0003
W46	2019-06-15 10:05	0.00248	10.4	0.00093	0.00005	0.0001	8.9	0.00016	5.76	0.0001	0.468	0.00034	0.00001	0.00197	0.00074	0.001	0.0003
W46	2019-07-06 8:10	0.00275	13.2	0.0008	0.00005	0.0001	12	0.000232	5.72	0.0001	0.594	0.0003	0.00001	0.00272	0.00078	0.001	0.0003
W46	2019-08-04 14:50	0.00248	12.1	0.00073	0.00005	0.0001	11	0.000298	6.21	0.0001	0.544	0.0003	0.00001	0.00209	0.00071	0.001	0.0003
W46	2019-09-20 15:00	0.00209	11.6	0.00094	0.00005	0.0001	9.37	0.000179	6.35	0.0001	0.488	0.0003	0.00001	0.00174	0.00054	0.001	0.0003
W46	2019-10-07 14:50	0.00223	13.2	0.00062	0.00005	0.0001	11.4	0.000188	5.76	0.0001	0.554	0.0003	0.00001	0.00197	0.0005	0.001	0.0003
W46	2019-11-04 10:45	0.00208	14.6	0.00077	0.00005	0.0001	12.6	0.000218	6.44	0.0001	0.623	0.00031	0.00001	0.002	0.0005	0.0012	0.0003
W46	2020-05-30 10:10	0.00201	9.86	0.00091	0.00005	0.0001	7.44	0.000173	5.18	0.0001	0.414	0.00035	0.00001	0.00161	0.00096	0.001	0.0002
W46	2020-06-13 6:00	0.00212	9.78	0.00093	0.00005	0.0001	7.85	0.00024	5.25	0.0001	0.424	0.00036	0.00001	0.00162	0.00092	0.001	0.0002
W46	2020-08-20 16:25	0.00165	8.85	0.00102	0.00005	0.0001	5.04	0.000172	5.76	0.0001	0.359	0.00032	0.00001	0.000998	0.00078	0.001	0.00021
W46	2020-09-11 15:10	0.00148	8.14	0.00118	0.00005	0.0001	4.82	0.000131	6.42	0.0001	0.338	0.00047	0.00001	0.000833	0.00069	0.001	0.00024
W46	2020-10-12 10:55	0.00214	10.6	0.00108	0.00005	0.0001	11.4	0.000321	5.78	0.0001	0.43	0.0003	0.00001	0.00117	0.00057	0.001	0.0002
W46	2021-04-25 17:05	0.000809	4.97	0.00081	0.00005	0.0001	3.4	0.00014	4.62	0.0001	0.219	0.00073	0.00001	0.000302	0.0005	0.0017	0.0002
W46	2021-05-18 15:30	0.000716	4.06	0.0015	0.00005	0.0001	2.25	0.000136	4	0.0001	0.17	0.00097	0.00001	0.000358	0.00078	0.001	0.00042
W46	2021-06-10 9:00	0.00203	9.98	0.00109	0.00005	0.0001	7.54	0.000179	5.88	0.0001	0.396	0.00055	0.00001	0.00142	0.00083	0.0021	0.0002
W46	2021-07-25 9:45	0.00225	10.4	0.00086	0.00005	0.0001	6.97	0.000164	6.2	0.0001	0.463	0.00037	0.00001	0.00137	0.00079	0.001	0.0002
W46	2021-08-07 10:20	0.00221	10.8	0.0009	0.00005	0.0001	8.48	0.000196	6.33	0.0001	0.485	0.00038	0.00001	0.00139	0.00064	0.001	0.0002
W46	2021-09-10 16:05	0.00216	10.2	0.00083	0.00005	0.0001	7.16	0.000159	6.13	0.0001	0.445	0.00049	0.00001	0.00136	0.0006	0.001	0.0002
W46	2021-10-13 15:15	0.00195	10	0.00064	0.00005	0.0001	7	0.000164	6.35	0.0001	0.414	0.0003	0.00001	0.0013	0.00051	0.001	0.0002
W5	1994-05-15 0:00	0.001	2.16	0.001	0.001	0.0001		0.0005	2.7		0.11			0.0007	0.03	0.005	
W5	1994-06-07 0:00	0.001	2	0.001	0.001	0.0001		0.0005	3.26		0.095			0.00065	0.03	0.005	
W5	1994-07-08 0:00	0.001	1.63	0.001	0.001	0.0001		0.0005	3.04		0.088			0.00047	0.03	0.005	
W5	1994-08-10 0:00	0.001	1.44	0.001	0.001	0.0001		0.0005	2.53		0.088			0.00057	0.03	0.005	
W5	1994-09-26 0:00	0.001	1.59	0.001	0.001	0.0001		0.0005	2.38		0.086			0.00067	0.03	0.005	
W5	2005-05-27 0:00	0.001	2	0.001	0.0005	0.0005		0.001		0.0005		0.01	0.0002	0.00081	0.03	0.005	
W5	2005-06-30 0:00	0.00108	2	0.0005	0.000257	0.0001		0.001	2.83	0.0001	0.0774	0.01	0.0001	0.00069	0.001	0.005	
W5	2005-07-29 0:00	0.00116	2	0.0005	0.00005	0.0001		0.001	2.49	0.0001	0.0878	0.01	0.0001	0.00076	0.001	0.001	
W5	2005-08-30 0:00	0.0012	2.5	0.001	0.0005	0.0005		0.001		0.0005		0.01	0.0002	0.00086	0.03	0.005	
W5	2005-09-28 0:00	0.0011	2.5	0.001	0.0005	0.0005		0.001		0.0005		0.01	0.0002	0.0008	0.03	0.005	
W5	2005-10-15 0:00	0.00112	2.5	0.0005	0.00005	0.0001		0.001	3.26	0.0001	0.121	0.01	0.0001	0.001	0.001	0.0014	
W5	2009-07-03 16:00	0.002	3	0.002	0.0004	0.001	6	0.0003	5.76	0.01	0.165	0.01	0.0001	0.0015	0.01	0.01	0.001
W5	2011-05-23 0:00	0.001	3.76	0.001	0.0002	0.0005	4	0.0001	4.07	0.005	0.176	0.005	0.00005	0.0006	0.005	0.005	0.0005
W5	2011-05-30 0:00	0.001	2.47	0.001	0.0002	0.0005	3	0.0001	3.33	0.005	0.113	0.005	0.00005	0.0008	0.005	0.005	0.0005
W5	2011-06-07 0:00	0.001	2.37	0.001	0.0002	0.0005	3	0.0001	3.56	0.005	0.105	0.005	0.00005	0.0007	0.005	0.005	0.0005
W5	2011-06-16 0:00	0.001	2.49	0.001	0.0002	0.0005	3	0.0002	3.04	0.005	0.122	0.005	0.00005	0.0009	0.005	0.005	0.0005
W5	2011-06-27 0:00	0.001	2.7	0.001	0.0002	0.0005	3	0.0001	3.91	0.005	0.12	0.005	0.00005	0.0009	0.005	0.006	0.0005
W5	2011-07-03 0:00	0.001	2.84	0.001	0.0002	0.0005	4	0.0001	4.2	0.005	0.121	0.005	0.00005	0.0008	0.005	0.005	0.0005
W5	2011-07-11 0:00	0.001	2.56	0.001	0.0002	0.0005	4	0.0001	3.81	0.005	0.115	0.005	0.00005	0.0008	0.005	0.005	0.0005
W5	2011-07-19 0:00	0.001	2.93	0.001	0.0002	0.0005	3	0.0001	4.59	0.005	0.12	0.005	0.00005	0.0008	0.005	0.005	0.0005
W5	2011-07-26 0:00	0.001	2.78	0.001	0.0002	0.0005	4	0.0001	3.77	0.005	0.129	0.005	0.00005	0.0008	0.005	0.005	0.0005
W5	2011-08-02 0:00	0.001	3.69	0.002	0.0002	0.0005	3	0.0001	5.32	0.005	0.138	0.005	0.00005	0.0006	0.005	0.005	0.0005
W5	2011-08-11 0:00	0.001	3.55	0.001	0.0002	0.0005	3	0.0001	4.92	0.005	0.154	0.005	0.00005	0.0008	0.005	0.005	0.0005
W5	2011-08-19 0:00	0.001	3.36	0.001	0.0002	0.0005	3	0.0001	5.26	0.005	0.138	0.005	0.00005	0.0008	0.005	0.005	0.0005
W5	2011-08-29 0:00	0.001	2.86	0.001	0.0002	0.0005	3	0.0001	3.82	0.005	0.136	0.005	0.00005	0.0008	0.005	0.005	0.0005
W5	2011-09-08 0:00	0.001	2.92	0.001	0.0002	0.0005	4	0.0001	3.61	0.005	0.143	0.005	0.00005	0.0009	0.005	0.005	0.0005
W5	2011-09-13 0:00	0.001	3.27	0.001	0.0002	0.0005	3	0.0001	3.84	0.005	0.156	0.005	0.00005	0.0009	0.005	0.005	0.0005
W5	2011-09-19 0:00	0.001	3.56	0.001	0.0002	0.0005	3	0.0001	4.23	0.005	0.167	0.005	0.00005	0.0009	0.005	0.005	0.0005
W5	2011-09-27 0:00	0.001	3.72	0.001	0.0002	0.0005	4	0.0001	4.29	0.005	0.159	0.005	0.00005	0.0008	0.005	0.005	0.0005
W5	2011-10-05 0:00	0.001	3.15	0.001	0.0002	0.0005	4	0.0001	3.7	0.005	0.152	0.005	0.00005	0.0009	0.005	0.005	0.0005
W5	2011-10-11 0:00	0.001	3.97	0.001	0.0002	0.0005	5	0.0001	4.49	0.005	0.182	0.005	0.00005	0.0009	0.005	0.005	0.0005
W5	2011-10-19 0:00	0.001	4.8	0.001	0.0002	0.0005	5	0.0002	5.57	0.005	0.229	0.005	0.00005	0.0009	0.005	0.005	0.0005
W5	2011-10-26 0:00	0.001	4.07	0.001	0.0002	0.0005	5	0.0002	4.56	0.005	0.204	0.005	0.00005	0.001	0.005	0.005	0.0005
W5	2012-05-07 0:00	0.001	3.99	0.0018	0.0002	0.0005	3	0.00018	4.13	0.005	0.147	0.005	0.00005	0.0006	0.005	0.005	0.0005
W5	2012-05-15 16:55	0.001	4.53	0.0015	0.0002	0.0005	3.5	0.00017	4.67	0.005	0.169	0.005	0.00005	0.00084	0.005	0.005	0.0005
W5	2012-05-25 13:45	0.001	3.17	0.0018	0.0002	0.0005	3	0.00011	3.45	0.005	0.129	0.005	0.00005	0.00073	0.005	0.005	0.0005
W5	2012-06-02 0:00	0.001	2.85	0.001	0.0002	0.0005	3.5	0.00012	3.55	0.005	0.132	0.005	0.00005	0.00091	0.005	0.0082	0.0005
W5	2012-06-09 0:00	0.001	2.37	0.001	0.0002	0.0005	3	0.00016	3.55	0.005	0.103	0.005	0.00005	0.00096	0.005	0.005	0.0005
W5	2012-06-15 10:00	0.001	2.43	0.001	0.0002	0.0005	3	0.00015	3.88	0.005	0.103	0.005	0.00005	0.00072	0.005	0.005	0.0005
W5	2012-06-22 15:46	0.001	2.08	0.001	0.0002	0.0005	3.2	0.00016	3.19	0.005	0.101	0.005	0.00005	0.00086	0.005	0.005	0.0005
W5	2012-06-29 9:15	0.0014	1.79	0.001	0.0002	0.0005	3.4	0.00013	3.19	0.005	0.0932	0.005	0.00005	0.00075	0.005	0.005	0.0005
W5	2012-07-06 17:45	0.001	1.91	0.001	0.0002	0.0005	3.7	0.00017	3.41	0.005	0.0989	0.005	0.00005	0.00074	0.005	0.005	0.0005
W5	2012-07-13 16:35	0.001	1.96	0.001	0.0002	0.0005	3	0.00014	3	0.005	0.0978	0.005	0.00005	0.00078	0.005	0.005	0.0005
W5	2012-07-19 9:00	0.0011	2.05	0.001	0.0002	0.0005	3.1	0.00017	3.2	0.005	0.1	0.005	0.00005	0.00077	0.005	0.005	0.0005
W5	2012-07-29 16:30	0.0012	2.14	0.001	0.0002	0.0005	3.5	0.00018	3.26	0.005	0.108	0.005	0.00005	0.00086	0.005	0.005	0.0005
W5	2012-08-02 15:40	0.0014	2.12	0.001	0.0002	0.0005	3.7	0.00015	3.22	0.005	0.106	0.005	0.00005	0.00079	0.005	0.005	0.0005
W5	2012-08-07 9:50	0.0012	2.05	0.001	0.0002	0.0005	3.9	0.00019	3.08	0.005	0.109	0.005	0.00005	0.0008	0.005	0.005	0.0005
W5	2012-08-17 10:00	0.0012	2.27	0.001	0.0002	0.0005	3.5	0.00014	3.18	0.005	0.12	0.005	0.00005	0.00083	0.005	0.005	0.0005
W5	2012-08-24 14:00	0.0013	2.3	0.001	0.0002	0.0005	3.5	0.00015	2.86	0.005	0.115	0.005	0.00005	0.00087	0.005	0.005	0.0005
W5	2012-08-30 9:30	0.0012	3	0.001	0.0002	0.0005	3.9	0.00012	3.72	0.005	0.135	0.005	0.00005	0.0009	0.005	0.005	0.0005
W5	2012-09-03 17:00	0.0012	2.69	0.001	0.0002	0.0005	3.8	0.00011	3.36	0.005	0.132	0.005	0.00005	0.00092	0.005	0.005	0.0005
W5	2012-09-11 15:05	0.0012	3.78	0.001	0.0002	0.0005	3.2	0.00014	4.28	0.005	0.158	0.005	0.00005	0.00089	0.005	0.005	0.0005
W5	2012-09-18 8:40	0.0012	3.81	0.001	0.0002	0.0005	3.5	0.00012	4.24	0.005	0.165	0.005	0.00005	0.00094	0.005	0.0056	0.0005
W5	2012-09-24 17:41	0.0012	2.85	0.001	0.0002	0.0005	3.8	0.0001	3.72	0.005	0.14	0.005	0.00005	0.00091	0.005	0.005	0.0005
W5	2012-10-04 15:00																
W5	2012-10-12 14:25																
W5	2012-10-20 15:15	0.0012	2.66	0.001	0.0002	0.0005	4	0.00017	3.18	0.005	0.133	0.005	0.00005	0.00092	0.005	0.005	0.0005
W5	2012-11-11 9:00	0.0011	3.82	0.001	0.0002	0.0005	6.1	0.00017	3.7	0.005	0.218	0.005	0.00005	0.001	0.005	0.005	0.0005
W5	2012-11-24 14:00	0.0015	2.45	0.001	0.0002	0.0005	20.4	0.00019	3.19	0.005	0.13	0.005	0.00005	0.00112	0.005	0.005	0.0005
W5	2012-12-12 12:20	0.0013	2.2	0.0012	0.0002	0.0005	3.3	0.00017	2.9	0.005	0.121	0.005	0.00005	0.001	0.005	0.005	0.0005
W5	2013-05-19 14:50	0.001	3.33	0.0014	0.0002	0.0005	3.2	0.00014	3.1	0.005	0.14	0.005	0.00005	0.00066	0.005	0.005	0.0005
W5	2013-05-24 15:45	0.0011	3.78	0.0012	0.0002	0.0005	3.6	0.00011	3.32	0.005	0.142	0.005	0.00005	0.0007	0.005	0.005	0.0005
W5	2013-05-31 15:00	0.001	2.37	0.001	0.0002	0.0005	3	0.0002	2.91	0.005	0.107	0.005	0.00005	0.00076	0.005	0.005	0.0005
W5	2013-06-08 15:30	0.001	1.93	0.001	0.0002	0.0005	3.3	0.00014	3.2	0.005	0.101	0.005	0.00005	0.00086	0.005	0.005	0.0005
W5	2013-06-16 11:55	0.001	2.05	0.001	0.0002	0.0005	3	0.0002	3.48	0.005	0.0988	0.005	0.00005	0.00084	0.005	0.005	0.0005
W5	2013-06-18 10:00	0.001	1.94	0.001	0.0002	0.0005	4.3	0.00015	3.55	0.005	0.094	0.005	0.00005	0.0008	0.005	0.005	0.0005
W5	2013-06-25 10:20	0.001	1.73	0.001	0.0002	0.0005	3.7	0.00017	3.3	0.005	0.0915	0.005	0.00005	0.00082	0.005	0.005	0.0005
W5	2013-07-02 10:50	0.0011	1.79	0.001	0.0002	0.0005	3.7	0.00018	3.46	0.005	0.0936	0.005	0.00005	0.00077	0.005	0.005	0.0005
W5	2013-07-11 13:05	0.0011	1.87	0.001	0.0002	0.0005	3	0.00017	3.03	0.005	0.0937	0.005	0.00005	0.00075	0.005	0.005	0.0005
W5	2013-07-19 9:10	0.0012	1.82	0.001	0.0002	0.0005	3	0.00012	2.77	0.005	0.097	0.005	0.00005	0.00076	0.005	0.005	0.0005
W5	2013-07-23 10:35	0.001	2.51	0.001	0.0002	0.0005	3	0.00011	3.95	0.005	0.11	0.005	0.00005	0.00073	0.005	0.005	0.0005
W5	2013-07-31 9:25	0.0012	2.62	0.001	0.0002	0.0005	3.9	0.00015	3.04	0.005	0.114	0.005	0.00005	0.00094	0.005	0.005	0.0005
W5	2013-08-09 10:45	0.0013	2.12	0.001	0.0002	0.0005	3	0.00011	2.99	0.005	0.109	0.005	0.00005	0.0008	0.005	0.005	0.0005
W5	2013-08-16 11:45	0.0013	2.26	0.001	0.0002	0.0005	3.3	0.00013	3.12	0.005	0.111	0.005	0.00005	0.00084	0.005	0.005	0.0005
W5	2013-08-22 11:35	0.0012	2.31	0.001	0.0002	0.0005	3	0.00014	2.82	0.005	0.113	0.005	0.00005	0.0009	0.005	0.005	0.0005
W5	2013-08-27 10:45	0.0013	2.65	0.001	0.0002	0.0005	3.3	0.00012	3.67	0.005	0.127	0.005	0.00005	0.00094	0.005	0.005	0.0005
W5	2013-09-03 16:15	0.0012	2.75	0.001	0.0002	0.0005	3.1	0.00011	3.45	0.005	0.122	0.005	0.00005	0.00092	0.005	0.005	0.0005
W5	2013-09-09 13:15	0.0014	2.51	0.001	0.0002	0.0005	4.4	0.00012	3.22	0.005	0.134	0.005	0.00005	0.00099	0.005	0.005	0.0005
W5	2013-09-18 10:40	0.0013	2.92	0.001	0.0002	0.0005	3.5	0.00011	3.46	0.005	0.138	0.005	0.00005	0.0009	0.005	0.005	0.0005
W5	2013-09-24 9:50	0.0011	3.09	0.001	0.0002	0.0005	3.4	0.00014	3.87	0.005	0.133	0.005	0.00005	0.00095	0.005	0.005	0.0005
W5	2013-10-03 10:30	0.0012	3.12	0.001	0.0002	0.0005	3	0.00014	3.74	0.005	0.134	0.005	0.00005	0.00096	0.005	0.005	0.0005

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species						Dissolved Elements																																	
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N-NO_2$	$N-NO_3$	$N-NH_3$	SO_4-D	Chlord	Fluord	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W5	2013-10-11 11:40	69.9	159	33.1	7.94	98	6.5	4.3	99	0.005	0.021	0.0094	10.7	0.57	0.1	0.00002	0.0117	0.00042	0.0369	0.05	0.0001	0.001	22	0.00001	0.0005	0.001	0.00067	0.0548	0.00001	0.806	0.005	5.75	0.0088	0.0011	2.7	0.001	0.0002	0.0005	4.1	0.00013	3.07	0.005	0.124	0.005	0.00005	0.0009	0.005	0.005	0.0005
W5	2013-10-18 10:00	75.5	168	123.1	7.89	134	9.9	4.2	98.1	0.005	0.038	0.013	11.1	1.4	0.13	0.00002	0.006	0.00047	0.037	0.05	0.0001	0.001	22.7	0.00001	0.0005	0.001	0.00087	0.0624	0.00001	0.837	0.005	6.12	0.0112	0.0013	2.89	0.001	0.0002	0.0005	4.1	0.00015	3.04	0.005	0.132	0.005	0.00005	0.00103	0.005	0.005	0.0005
W5	2013-10-22 9:45	67.9	155	57.7	8	78	8.2	3.5	98.2	0.005	0.033	0.029	10.7	0.5	0.12	0.00002	0.0058	0.00039	0.0358	0.05	0.0001	0.001	23.8	0.00001	0.0005	0.001	0.00062	0.0324	0.00001	0.837	0.005	5.54	0.0081	0.0013	2.39	0.001	0.0002	0.0005	4.3	0.00012	2.93	0.005	0.117	0.005	0.00005	0.00095	0.005	0.005	0.0005
W5	2013-10-31 14:50	73.6	167	90.4	7.94	86	53.2	3.4	98.7	0.005	0.048	0.0082	11.8	0.81	0.12	0.00002	0.0062	0.00041	0.038	0.05	0.0001	0.001	22.3	0.00001	0.0005	0.001	0.00078	0.0388	0.00001	0.81	0.005	5.98	0.0092	0.0012	2.75	0.001	0.0002	0.0005	3	0.00014	3.1	0.005	0.131	0.005	0.00005	0.00105	0.005	0.005	0.0005
W5	2013-11-08 14:30	71.9	162	112.6	8.17	76	5.3	0.1	82.3	0.005	0.043	0.008	10.7	0.53	0.12	0.00002	0.0042	0.00039	0.0365	0.05	0.0001	0.001	22.1	0.00001	0.0005	0.001	0.00053	0.0204	0.00001	0.825	0.005	5.43	0.0052	0.0012	2.22	0.001	0.0002	0.0005	3	0.00016	2.89	0.005	0.113	0.005	0.00005	0.00094	0.005	0.005	0.0005
W5	2013-12-06 10:15	85.8	192			90	1			0.005	0.071	0.013	13.3	0.65	0.095	0.00002	0.0041	0.00045	0.047	0.05	0.0001	0.001	27	0.00001	0.0005	0.001	0.00072	0.0395	0.00001	0.944	0.005	6.48	0.0102	0.0013	2.73	0.001	0.0002	0.0005	4.1	0.00021	3.56	0.005	0.145	0.005	0.00005	0.00105	0.005	0.005	0.0005
W5	2013-12-09 11:45	78.1	180	-34.5	8.28	98	1	0	82.8	0.005	0.072	0.013	12.6	0.5	0.1	0.00002	0.0047	0.0004	0.0422	0.05	0.0001	0.001	23.6	0.00001	0.0005	0.001	0.00089	0.0164	0.00001	0.895	0.005	5.87	0.0036	0.0013	2.25	0.001	0.0002	0.0005	3.7	0.00016	3.08	0.005	0.126	0.005	0.00005	0.00105	0.005	0.005	0.0005
W5	2013-12-16 11:00	75.7	175	100.7	6.77	108	1	0	63.8	0.005	0.073	0.01	12.9	0.5	0.11	0.00002	0.003	0.0004	0.0409	0.05	0.0001	0.001	24.1	0.00001	0.0005	0.001	0.0006	0.0108	0.00001	0.858	0.005	5.85	0.0026	0.0013	2.32	0.001	0.0002	0.0005	3.8	0.00017	3.38	0.005	0.124	0.005	0.00005	0.00104	0.005	0.005	0.0005
W5	2014-01-02 12:45	79.3	185	254.2	7.5	108	1	0.1	22.3	0.005	0.077	0.053	12.7	0.5	0.11	0.00002	0.0038	0.00045	0.0466	0.05	0.0001	0.001	27.3	0.00001	0.0005	0.001	0.0006	0.076	0.00001	0.889	0.005	6.13	0.0225	0.0013	2.65	0.001	0.0002	0.0005	3.1	0.00016	3.68	0.005	0.138	0.005	0.00005	0.00107	0.005	0.005	0.0005
W5	2014-01-08 10:45	78.8	179	47.1	7.82	100	5.4	0	71.3	0.005	0.073	0.023	12.5	0.5	0.11	0.00002	0.0033	0.00043	0.0454	0.05	0.0001	0.001	24.7	0.00001	0.0005	0.001	0.0007	0.0592	0.00001	0.861	0.005	5.75	0.0169	0.0013	2.36	0.001	0.0002	0.0005	3.7	0.00016	3.2	0.005	0.145	0.005	0.00005	0.00103	0.005	0.005	0.0005
W5	2014-01-13 12:00	80.4	181	200.8	7.61	104	1.2	0	38.3	0.005	0.078	0.006	14	0.55	0.095	0.00002	0.003	0.00044	0.0427	0.05	0.0001	0.001	24.8	0.00001	0.0005	0.001	0.00059	0.0574	0.00001	0.823	0.005	6.2	0.0138	0.0011	2.46	0.001	0.0002	0.0005	4.4	0.00019	3.11	0.005	0.134	0.005	0.00005	0.0009	0.005	0.005	0.0005
W5	2014-01-26 14:00	77.2	181	50.4	7.78	90	1.4	0	91.7	0.005	0.076	0.023	13.5	0.5	0.12	0.00002	0.0052	0.00043	0.0414	0.05	0.0001	0.001	24.1	0.00001	0.0005	0.001	0.00097	0.0448	0.00001	0.838	0.005	6.12	0.0105	0.0013	2.51	0.001	0.0002	0.0005	4	0.00017	3.14	0.005	0.128	0.005	0.00005	0.00096	0.005	0.005	0.0005
W5	2014-01-30 11:50	80.5	183			86	1.7			0.005	0.077	0.0074	12.9	0.5	0.11	0.00002	0.003	0.0004	0.0439	0.05	0.0001	0.001	25.3	0.00001	0.0005	0.001	0.00082	0.033	0.00001	0.855	0.005	6.41	0.0094	0.0013	2.49	0.001	0.0002	0.0005	4.7	0.00018	3.28	0.005	0.134	0.005	0.00005	0.00101	0.005	0.005	0.0005
W5	2014-02-04 11:45	82.7	185	118.7	7.97	108	2.3	0	58.6	0.005	0.068	0.014	13.2	1.1	0.14	0.00002	0.003	0.00046	0.047	0.05	0.0001	0.001	27.2	0.00001	0.0005	0.001	0.00053	0.0402	0.00001	0.912	0.005	6.05	0.0109	0.0012	2.35	0.001	0.0002	0.0005	5	0.00016	3.69	0.005	0.14	0.005	0.00005	0.00086	0.005	0.005	0.0005
W5	2014-02-10 15:00	83.5	187	267.5	7.78	98	80.1	0	66.2	0.005	0.071	0.021	17.3	0.87	0.11	0.00002	0.003	0.00042	0.0506	0.05	0.0001	0.001	29.8	0.00001	0.0005	0.001	0.00065	0.0594		0.99	0.005	7.07	0.017	0.0013	2.85	0.001	0.0002	0.0005	4.8	0.00018	3.59	0.005	0.155	0.005	0.00005	0.0011	0.005	0.005	0.0005
W5	2014-02-20 8:40	86.7	201	37.2	7.58	137	1	0	86.3	0.005	0.07	0.015	14.6	1	0.12	0.00002	0.0035	0.00048	0.0492	0.05	0.0001	0.001	26.6	0.00001	0.0005	0.001	0.00088	0.113	0.00001	0.932	0.005	6.9	0.031	0.0012	2.87	0.001	0.0002	0.0005	4.4	0.00016	3.3	0.005	0.157	0.005	0.00005	0.00102	0.005	0.005	0.0005
W5	2014-03-02 11:20	96.6	219	249.2	7.95	114	1	0	40.8	0.005	0.066	0.012	15.8	0.9	0.12	0.00002	0.003	0.00056	0.0582	0.05	0.0001	0.001	29.7	0.00001	0.0005	0.001	0.00052	0.234	0.00001	0.921	0.005	7.69	0.0617	0.0012	3.39	0.001	0.0002	0.0005	4.9	0.00017	3.53	0.005	0.195	0.005	0.00005	0.00107	0.005	0.005	0.0005
W5	2014-03-06 14:10	97	221	-15.4	8.24	126	8.2	0	47.3	0.005	0.067	0.018	17.4	1.1	0.13	0.00002	0.003	0.00056	0.0572	0.05	0.0001	0.001	29.8	0.00001	0.0005	0.001	0.00055	0.228	0.00001	0.941	0.005	7.44	0.0631	0.0012	3.2	0.001	0.0002	0.0005	6.3	0.00016	3.77	0.005	0.195	0.005	0.00005	0.00104	0.005	0.005	0.0005
W5	2014-03-15 16:35	109	250	25.7	7.4	142	1	0.4	57.1	0.005	0.05	0.018	19.2	1.1	0.13	0.00002	0.0033	0.00075	0.0711	0.05	0.0001	0.001	33.9	0.00001	0.0005	0.001	0.00071	0.442	0.00001	1.03	0.005	8.8	0.119	0.0011	4.09	0.001	0.0002	0.0005	6.9	0.00018	3.91	0.005	0.26	0.005	0.00005	0.00121	0.005	0.005	0.0005
W5	2014-03-22 16:30	107	246	27.7	7.35	162	1	0.2	97.4	0.005	0.051	0.021	18.2	0.89	0.15	0.00002	0.003	0.00071	0.0728	0.05	0.0001	0.001	32.9	0.00001	0.0005	0.001	0.00047	0.446	0.00001	0.916	0.005	9.22	0.115	0.0011	4.14	0.001	0.0002	0.0005	6.5	0.00017	3.48	0.005	0.266	0.005	0.00005	0.00106	0.005	0.005	0.0005
W5	2014-03-27 14:25	117	270	26.1	7.3	152	1	0.2	620	0.005	0.047	0.042	22.1	1.4	0.16	0.00002	0.0044	0.00086	0.0791	0.05	0.0001	0.001	37.8	0.000016	0.0005	0.001	0.00083	0.532	0.00001	1.05	0.005	9.36	0.137	0.0011	4.46	0.001	0.0002	0.0005	8.4	0.00015	4.25	0.005	0.294	0.005	0.00005	0.00112	0.005	0.005	0.0005
W5	2014-04-03 11:25	121	277	28.4	7.31	174	1.2	0.2	60	0.005	0.052	0.02	21	0.95	0.16	0.00002	0.003	0.00086	0.0807	0.05	0.0001	0.001	39	0.00001	0.0005	0.001	0.00074	0.604	0.00001	0.955	0.005	9.02	0.139	0.001	4.17	0.001	0.0002	0.0005	7.7	0.00011	4.43	0.005	0.292	0.005	0.00005	0.00107	0.005	0.005	0.0005
W5	2014-04-08 10:30	179	430	8.4	7.78	280	3.2	0.1	75.3	0.005	0.057	0.02	36.8	6.2	0.37	0.00002	0.0052	0.00068	0.081	0.05	0.0001	0.001	53.8	0.00001	0.0005	0.001	0.00444	0.246	0.00001	3.11	0.005	16.9	0.0767	0.0011	12.7	0.001	0.0002	0.0005	13.6	0.00029	7.49	0.005	0.378	0.005	0.00005	0.00118	0.005	0.005	0.0005
W5	2014-05-01 15:45	54	130	64.1	8.19	114	294	1.3	95.6	0.0063	0.281	0.036	0.5	2.1	0.14	0.00002	0.0385	0.00054	0.0364	0.05	0.0001	0.001	16	0.000012	0.0005	0.001	0.00694	0.326	0.00001	1.61	0.005	4.83	0.113	0.001	4.04	0.0016	0.0002	0.0005	3.2	0.00023	3.04	0.005	0.135	0.005	0.00005	0.00025	0.005	0.005	0.0005
W5	2014-05-17 17:00	76.9	179	94.6	7.42	114	69.2	8.8	94.3	0.0078	0.24	0.021	13.4	1.4	0.12	0.00002	0.0163	0.00047	0.0434	0.05	0.0001	0.001	23.5	0.00001	0.0005	0.001	0.00269	0.102	0.00001	1.07	0.005	6.45	0.0195	0.0013	3.57	0.001	0.0002	0.0005	4.3	0.00021	3.57	0.005	0.166	0.005	0.00005	0.001	0.005	0.005	0.0005
W5	2014-05-23 11:40	71.6	172	114.4	7.44	126	330	4.4	90.9	0.01	0.35	0.043	13.8	1.4	0.14	0.00002	0.0339	0.00058	0.0412	0.05	0.0001	0.001	22.1	0.000012	0.0005	0.001	0.00376	0.227	0.00001	1.14	0.005	6.37	0.0202	0.0015	4.13	0.0012	0.0002	0.0005	3.7	0.00023	3.95	0.005	0.18	0.005	0.00005	0.00076	0.005	0.005	0.0005
W5	2014-05-28 11:40	72.7	164	109.7	8.36	100	57.7	7.6	93.9	0.005	0.05	0.005	12.6	0.62	0.12	0.00002	0.0141	0.00045	0.0368	0.05	0.0001	0.001	21.7	0.00001	0.0005	0.001	0.00145	0.0597	0.00001	0.798	0.005	5.85	0.007	0.0011	2.67	0.001	0.0002	0.0005	3.7	0.00015	3.47	0.005	0.124	0.005	0.00005	0.00092	0.005	0.005	0.0005
W5	2014-06-07 16:45	70.9	162	119.8	7.36	90	50.5	10.2	93.1	0.005	0.036	0.01	11.6	0.64	0.11	0.00002	0.0129	0.00043	0.0356	0.05	0.0001	0.001	21.9	0.00001	0.0005	0.001	0.00109	0.0279	0.00001	0.758	0.005	5.72	0.0061	0.001	2.23	0.001	0.0002	0.0005	3.8	0.00018	3.49	0.005	0.105	0.005	0.00005	0.00087	0.005	0.005	0.0005
W5	2014-06-12 17:25	71.9	166	121.5	8.37	102	17.7	11.1	93.8	0.005	0.032	0.013	9.95	0.55	0.11	0.00002	0.0098	0.00043	0.0357	0.05	0.0001	0.001	21	0.00001	0.0005	0.001	0.00095	0.0235	0.00001	0.763	0.005	5.57	0.0063	0.001	2.23	0.001	0.0002	0.0005	3.9	0.00014	3.05	0.005	0.106	0.005	0.00005	0.00086	0.005	0.005	0.0005
W5	2014-06-20 15:20	67.3	154	164.6	8.39	83	12.9	10.4	91.5	0.005	0.02	0.0072	9.96	0.5	0.099	0.00002	0.0104	0.00043	0.0349	0.05	0.0001	0.001	20.3	0.00001	0.0005	0.001	0.0008	0.0231	0.00001	0.742	0.005	5.45	0.0048	0.001	1.93	0.001	0.0002	0.0005	3.5	0.00016	2.98	0.005	0.0956	0.005	0.00005	0.00088	0.005	0.005	0.0005
W5	2014-06-26 16:15	65.1	147	191.8	8.3	78	12.5	12.1	96.1	0.005	0.02	0.018	9.75	0.5	0.1	0.00002	0.0113	0.00044	0.0338	0.05	0.0001	0.001	18.8	0.00001	0.0005	0.001	0.00078	0.0245	0.00001	0.733	0.005	5.05	0.0058	0.001	1.76	0.001	0.0002	0.0005	3.8	0.00014	2.7	0.005	0.0939	0.005	0.00005	0.00084	0.005	0.005	0.0005
W5	2014-07-01 15:15	65.4	147	192.7	8.39	90	40.6	13.6	90.3	0.005	0.02	0.019	9.27	0.5	0.11	0.00002	0.0118	0.00045	0.033	0.05	0.0001	0.001	19.9	0.000012	0.0005	0.001	0.00075	0.02	0.00001	0.773	0.005	5.1	0.0062	0.0011	1.78	0.001	0.0002	0.0005	4.2	0.00014	3.17	0.005	0.0958	0.005	0.00005	0.00082	0.005	0.005	0.0005
W5	2014-07-10 10:45	65.6	149	185.8	8.31	86	11	13.7	90.9	0.005	0.02	0.016	10.4	0.53	0.11	0.00002	0.014	0.00044	0.0338	0.05	0.0001	0.001	20	0.00001	0.0005	0.001	0.00097	0.0293	0.00001	0.77	0.005	5.3	0.0092	0.001	1.9	0.001	0.0002	0.0005	4	0.00017	2.93	0.005	0.096	0.005	0.00005	0.00079	0.005	0.005	0.0005
W5	2014-07-17 15:10	65.2	147	143.7	7.95	78	9.7	15	92.3	0.005	0.02	0.013	9.87	0.67	0.11	0.00002	0.0092	0.00041	0.0339	0.05	0.0001	0.001	19.9	0.00001	0.0005	0.001	0.00087	0.0166	0.00001	0.708	0.005	5.37	0.0076	0.0011	1.9	0.001	0.0002	0.0005	3	0.00016	2.6	0.005	0.0953	0.005	0.00005	0.00079	0.005	0.005	0.0005
W5	2014-07-23 15:00	64.6	147	91.8	8.41	68	18.6	14.3	85.4	0.005	0.02	0.018	10	0.7	0.12	0.00002	0.0111	0.00044	0.0351	0.05	0.0001	0.001	19.7	0.00001	0.0005	0.001	0.00109	0.0342	0.00001	0.821	0.005	5.28	0.0074	0.0011	2.65	0.001	0.0002	0.0005	5	0.00018	3.17	0.005	0.117	0.005	0.00005	0.00077	0.005	0.005	0.0005
W5	2014-07-31 14:15	64.5	145	148.1	7.97	76	44.3	12.7	94.2	0.005	0.02	0.0057	8.56	0.88	0.11	0.00002	0.031	0.00069	0.0351	0.05	0.0001	0.001	18	0.000011	0.0005	0.001	0.002	0.0667	0.00001	0.741	0.005	5.55	0.0111	0.0011	3.15	0.001	0.0002	0.0005	5.3	0.0001	3.7	0.005	0.123	0.005	0.00005	0.00081	0.005	0.005	0.0005
W5	2014-08-07 10:55	63.4	148	181	8.01	74	8.5	13.9	104.2	0.005	0.02	0.0096	11	0.5	0.11	0.00002	0.0121	0.00072	0.0342	0.05	0.0001	0.001	20.3	0.00001	0.0005	0.001	0.00085	0.0238	0.00001	0.783	0.005	4.84	0.0072	0.0012	1.96	0.001	0.0002	0.0005	3	0.00014	2.83	0.005	0.107	0.005	0.00005	0.00085	0.005	0.005	0.0005
W5	2014-08-13 13:40	66	147	112.6	8.07	74	9.1	14.4	86.2	0.005	0.02	0.02	9.64	0.5	0.11	0.00002	0.0079	0.0005	0.0363	0.05	0.0001	0.001	21.4	0.00001	0.0005	0.001	0.0015	0.0179	0.00001	0.844	0.005	4.85	0.0091	0.0012	1.98	0.001	0.0002	0.0005	3.5	0.00014	3.05	0.005	0.107	0.005	0.00005	0.00082	0.005	0.005	0.0005
W5	2014-08-18 15:50	65	146	124.3	8.08	76	15	13.6	89.1	0.005	0.02	0.11	8.29	0.51	0.11	0.00002	0.0094	0.00055	0.0361	0.05	0.0001	0.001	18.5	0.00001	0.0005	0.001	0.00109	0.0277	0.00001	0.858	0.005	4.93	0.011	0.0012	2.01	0.001	0.0002	0.0005	3	0.00013	2.35	0.005	0.109	0.005	0.00005	0.00083	0.005	0.005	0.0005
W5	2014-08-26 10:10	67.1	154	155.6	8.04	86	4.4	12.2	90.9	0.005	0.02	0.029	9.68	0.62	0.11	0.00002	0.0066	0.0005	0.0349	0.05	0.0001	0.001	18.8	0.00001	0.0005	0.001	0.00064	0.0228	0.00001	0.757	0.005	5.22	0.0065	0.0012	2.16	0.001	0.0002	0.0005	4	0.00013	2.49	0.005	0.114	0.005	0.00005	0.00088	0.005	0.005	0.0005
W5	2014-09-01 15:00	66.7	147	146.2	8.13	118	3.7	10.9	91.4	0.005	0.02	0.034	9.8	0.62	0.11	0.00002	0.0092	0.00049	0.034	0.05	0.0001	0.001	20.5	0.00001	0.0005	0.001	0.00059	0.0222	0.00001	0.781	0.005	5.12	0.0058	0.0012	2.07	0.001	0.0002	0.0005	4.9	0.00013	2.83	0.005	0.115	0.005	0.00005	0.00089	0.005	0.005	0.0005
W5	2014-09-11 16:00	68.5	153	171.9	8.1	122	16.2	8.9	103.2	0.005	0.02	0.026	10.7	0.69	0.096	0.00002	0.0137	0.00043	0.0351	0.05	0.0001	0.001	20.2	0.00001	0.0005	0.001	0.00097	0.0298	0.00001	0.789	0.005	5.16	0.0062	0.0012	2.28	0.001	0.0002	0.0005	3.6	0.00016	3.02	0.005	0.111	0.005	0.00005	0.00096	0.005	0.005	0.0005
W5	2014-09-16 11:30	65.1	148	160.3	8.07	102	6.4	9.6	88.2	0.005	0.02	0.023	9.46	0.61	0.11	0.00002	0.0112	0.00043	0.0346	0.05	0.0001	0.001	20.3	0.00001	0.0005	0.001	0.00066	0.0302	0.00001	0.791	0.005	5.34	0.0065	0.0013	2.21	0.001	0.0002	0.0005	3.5	0.00015	2.96	0.005	0.117	0.005	0.00005	0.00088	0.005	0.005	0.0005
W5	2014-09-22 15:15	68.2	154	169	8.12	84	10.4	8.1	90.9	0.005	0.02	0.022	10.4	0.5	0.12	0.00002	0.0069	0.00044	0.0346	0.05	0.0001	0.001	19.8	0.00001	0.0005	0.001	0.00068	0.0232	0.00001	0.777	0.005	5.28	0.0054	0.0012	2.29	0.001	0.0002	0.0005	3	0.00011	2.67	0.005	0.119	0.005	0.00005	0.00094	0.005	0.005	0.0005
W5	2014-09-30 16:15	69.5	162	160.8	8.04	95	15.1	5.3	92.8	0.005	0.038	0.016	12.1	1.1	0.12	0.00002	0.0091	0.00045	0.0366	0.05	0.0001	0.001	20.5	0.00001	0.0005	0.001	0.00081	0.0446	0.00001	0.744	0.005	5.91	0.0075	0.0011	2.85	0.001	0.0002	0.0005	4.2	0.00014	3.1	0.005	0.129	0.005	0.00005	0.00098	0.005	0.005	0.0005
W5	2014-10-07 15:00	73.6	163	160.4	8.06	104	12.5	3.3	97.3	0.005	0.028	0.005	10.4	0.56	0.11	0.00002	0.0064	0.0004	0.0335	0.05	0.0001	0.001	21.7	0.00001	0.0005	0.001	0.00066	0.0228	0.00001	0.741	0.005	5.33	0.0045	0.0012	2.26	0.001	0.0002	0.0005	3.8	0.00016	3.2	0.005	0.114	0.005	0.00005	0.00092	0.005	0.005	0.0005
W5	2014-10-14 15:45	68.7	161	203.7	7.75	96	5.1	3.8	93.3	0.005	0.028	0.005	10.6	0.5	0.095	0.00002	0.0078	0.00038	0.0345	0.05	0.0001	0.001	22.6	0.00001	0.0005	0.001	0.00063	0.0257	0.00001	0.849	0.005	5.7	0.0058	0.0011	2.41	0.001	0.0002	0.0005	4	0.00014	3.31	0.005	0.121	0.005	0.00005	0.00099	0.005	0.005	0.0005
W5	2014-10-25 15:15	69	156	114.7	8.09	90	8.1	2.9	94.1	0.005	0.03	0.032	10.3	0.5	0.11	0.00002	0.0067	0.00036	0.0351	0.05	0.0001	0.001	22.2	0.00001	0.0005	0.001	0.00082	0.0311	0.00001	0.738	0.005	5.6	0.0055	0.0011	2.15	0.001	0.0002	0.0005	3.6	0.00016	3	0.005	0.11	0.005	0.00005	0.00095	0.005	0.005	0.0005
W5	2014-10-31 15:45	70	157	244.4	7.93	100	5.5	0.6	92.4	0.005	0.03	0.007	9.91	0.5	0.11	0.00002	0.0052	0.00041	0.0317	0.05	0.0001	0.001	25	0.00001	0.0005	0.001	0.00061	0.0252	0.00001	0.814	0.005	5.39	0.0111	0.0012	2.03	0.001	0.0002	0.0005	3.3	0.00019	3.12	0.005	0.0979	0.005	0.00005	0.00081	0.005	0.005	0.0005
W5	2014-11-06 16:10	71.1	165	172.6	8.07	104	16	-1.7	96.6	0.005	0.031	0.005	10	0.77	0.1	0.00002	0.0076	0.00036	0.0333	0.05	0.0001	0.001	21.4	0.00001	0.0005	0.001	0.00057	0.0231	0.00001	0.763	0.005	5.74	0.0067	0.0012	2.14	0.001	0.0002	0.0005	3.4	0.00013	2.71	0.005	0.106	0.005	0.00005	0.0009	0.005	0.005	0.0005
W5	2014-11-11 14:20	69.8	157	195.1	8.03	92	7.6	-0.7	94.8	0.005	0.032	0.0081	9.97	1.5	0.11	0.00002	0.0078	0.00041	0.0372	0.05	0.0001	0.001	23.2	0.00001	0.0005	0.001	0.00065	0.0321	0.00001	0.855	0.005	6.17	0.0107	0.0012	2.39	0.001	0.0002	0.0005	3.6	0.00017	2.99	0.005	0.115	0.005	0.00005	0.00093	0.005	0.005	0.0005
W5	2014-12-05 15:20	80.1	179	176.8	8.05	116	107	-1.9	90.4	0.005	0.055	0.21	12.7	0.97	0.12	0.00002	0.0042	0.00048	0.042	0.05	0.0001	0.001	27.5	0.00001	0.0005	0.001	0.00068	0.0118	0.00001	0.975	0.005	6.23	0.0031	0.0015	2.18	0.001	0.0002	0.0005	5.2	0.00019	3.52	0.005	0.134	0.005	0.00005	0.00109	0.005	0.005	0.0005
W5	2014-12-12 13:45	76.9	171	223.6	7.99	100	12.7	-1.9	69.8	0.005	0.054	0.031	12	0.76	0.1	0.00002	0.0044	0.0004	0.036	0.05	0.0001	0.001	23.9	0.00001	0.0005	0.001	0.00078	0.0125	0.00001	0.9	0.005	5.87	0.0018	0.0013	2.05	0.001	0.0002	0.0005	3.7	0.00019	3.12	0.005	0.118	0.005	0.00005	0.00092	0.005	0.005	0.0005
W5	2015-01-01 14:50	79.6	182	74.3	7.83	92	1	-2	90.3	0.005	0.065	0.018	12.7	0.5	0.11	0.00002	0.0059	0.00043	0.0404	0.05	0.0001	0.001	25.1	0.00001	0.0005	0.001	0.00077	0.0189	0.00001	0.922	0.005	6.52	0.0031	0.0013	2.45	0.001	0.0002	0.0005	5.3	0.00016	3.29	0.005	0.121	0.005	0.00005	0.00103	0.005	0.0059	0.0005
W5	2015-01-09 10:55	81.6	186	95.7	7.87	96	23.1	-0.7	86.2	0.005	0.101	0.018	14	0.5	0.12	0.00002	0.0034	0.00044	0.0425	0.05	0.0001	0.001	25.9	0.00001	0.0005	0.001	0.00072	0.0119	0.00001	0.913	0.005	6.5	0.0015	0.0014	2.31	0.001	0.0002	0.0005	4.2	0.00017	3.38	0.005	0.132	0.005	0.00005	0.00111	0.005	0.005	0.0005
W5	2015-01-15 10:50	75.8	172	56.9	7.97	100	1.4	-2.2	97.9	0.005	0.065	0.011	11.3	0.82	0.11	0.00002	0.003	0.00043	0.0378	0.05	0.0001	0.001	23	0.00001	0.0005	0.001	0.00061	0.0144	0.00001	0.812	0.005	5.6	0.0027	0.0012	2.04	0.001	0.0002	0.0005	3.7	0.00017	3	0.005	0.115	0.005	0.00005	0.00095	0.005	0.005	0.0005
W5	2015-01-24 17:17	76.8	174	100.3	7.79	96	3.2	-2.2	88.1	0.005	0.065	0.0051	12	0.5	0.1	0.00002	0.0032	0.00042	0.041	0.05	0.0001	0.001	26.1	0.00001	0.0005	0.001	0.00065	0.0145	0.00001	0.893	0.005	6.15	0.0027	0.0013	2.05	0.001	0.0002	0.0005	5	0.00018	3.33	0.005	0.121	0.005	0.00005	0.00097	0.005	0.005	0.0005
W5	2015-01-30 10:50	75.5	177	121.3	8.32	106	1.8	-2.3	90.1	0.005	0.072	0.052	11.5	0.5	0.11	0.00002	0.0034	0.00042	0.0391	0.05	0.0001	0.001	22.6	0.00001	0.0005	0.001	0.00055	0.0122	0.00001	0.906	0.005	6.34	0.0017	0.0012	2.17	0.001	0.0002	0.0005	4.5	0.00019	2.89	0.005	0.119	0.005	0.00005	0.00095	0.005	0.005	0.0005
W5	2015-02-07 10:00	79.8	181	119.7	8.39	112	1	0.5	70.1	0.005	0.071	0.012	12.1	0.51	0.11	0.00002	0.0041	0.00042	0.0401	0.05	0.0001	0.001	26	0.00001	0.0005	0.001	0.00058	0.0114	0.00001	0.873	0.005	5.71	0.0015	0.0013	2.02	0.001	0.0002	0.0005	4.5	0.0002	3.2	0.005	0.127	0.005	0.00005	0.00099	0.005	0.005	0.0005
W5	2015-02-15 16:20	77.6	175	146.1	7.79	100	1	0	88.8	0.005	0.075	0.14	12	0.5	0.091	0.00002	0.0035	0.0004	0.0449	0.05	0.0001	0.001	25.2	0.00001	0.0005	0.001	0.00062	0.009	0.00001	0.902	0.005	6.29	0.0014	0.0014	2.28	0.001	0.0002	0.0005	3.8	0.00018	3.2	0.005	0.127	0.005	0.00005	0.00119	0.005	0.005	0.0005
W5	2015-02-21 14:50	82.2	172	134.9	7.86	106	2.6	0	87.4	0.005	0.06	0.012	12.8	0.5	0.11	0.00002	0.0033	0.0004	0.0384	0.05	0.0001	0.001	24	0.00001	0.0005	0.001	0.00076	0.0107	0.00001	0.846	0.005	5.93	0.0015	0.0013	1.97	0.001	0.0002	0.0005	4.5	0.00018	3.02	0.005	0.117	0.005	0.00005	0.001	0.005	0.005	0.0005
W5	2015-02-27 10:40	78.8	176	178.7	8.1	90	4.6	0	83.3	0.005	0.08	0.012	12.2	1	0.088	0.00002	0.0036	0.00039	0.0451	0.05	0.0001	0.001	23.6	0.00001	0.0005	0.001	0.00097	0.0106	0.00001	0.896	0.005	6.05	0.0015	0.0014	2.11	0.001	0.0002	0.0005	3	0.00017	2.88	0.005	0.14	0.005	0.00005	0.00105	0.005	0.005	0.0005
W5	2015-03-03 14:15	79.8	178	131.6	8.32	112	2.7	0	83.1	0.005	0.085	0.0078	12.5	0.68	0.11	0.00002	0.0099	0.00041	0.0384	0.05	0.0001	0.001	23.7	0.00001	0.0005	0.001	0.00246	0.0239	0.00001	0.907	0.005	6.27	0.0021	0.0012	2.18	0.001	0.0002	0.0005	4.9	0.00016	3.02	0.005	0.115	0.005	0.00005	0.00097	0.005	0.0082	0.0005
W5	2015-03-14 14:15	78.3	180			92	1.2			0.005	0.045	0.0091	12	0.5	0.12	0.00002	0.0037	0.0004	0.0411	0.05	0.0001	0.001	25.6	0.00001	0.0005	0.001	0.00126	0.0124	0.00001	0.932	0.005	5.78	0.0014	0.0013	2.08	0.001	0.0002	0.0005	4	0.00017	3.24	0.005	0.125	0.005	0.00005	0.00098	0.005	0.0128	0.0005
W5	2015-03-15 14:15			144.9	7.87			0	63.4																																								
W5	2015-03-17 14:15	74.3	176	175	7.92	114	5.9	0	98.5	0.005	0.064	0.016	12.5	0.5	0.1	0.00002	0.005	0.00039	0.0439	0.05	0.0001	0.001	24	0.00001	0.0005	0.001	0.00076	0.0098	0.00001	0.851	0.005	6.02	0.0014	0.0014	2.1	0.001	0.0002	0.0005	3.9	0.00018	2.99	0.005	0.128	0.005	0.00005	0.00108	0.005	0.005	0.0005
W5	2015-03-27 14:30			189.6	7.93			0	82.7																																								
W5	2015-04-02 15:20	93.3	213	156.1	7.77	124	20.9	0	79.1	0.005	0.085	0.027	16.7	0.72	0.11	0.00002	0.0059	0.00051	0.0494	0.05	0.0001	0.001	29.6	0.00001	0.0005	0.001	0.00374	0.0146	0.00001	1.19	0.005	8.12	0.0119	0.0018	2.82	0.001	0.0002	0.0005	5.3	0.00024	3.62	0.005	0.157	0.005	0.00005	0.00124	0.005	0.0355	0.0005
W5	2015-04-30 16:50	71.3	170	198.2	7.84	112	79	0.9	93.8	0.005	0.184	0.029	10.6	1.8	0.13	0.00002	0.0192	0.00045	0.0408	0.05	0.0001	0.001	23.8	0.00001	0.0005	0.001	0.00375	0.119	0.00001	1.32	0.005	6.12	0.0545	0.0012	3.42	0.001	0.0002	0.0005	4	0.00015	3.71	0.005	0.159	0.005	0.00005	0.00075	0.005	0.005	0.0005
W5	2015-05-09 15:20	77.9	179	135.3	7.81	106	8.9	9.5	107.2	0.005	0.027	0.017	12.3	0.61	0.11	0.00002	0.0166	0.0005	0.0419	0.05	0.0001	0.001	23.4	0.00001	0.0005	0.001	0.00116	0.0337	0.00001	0.968	0.005	6.42	0.0083	0.001	3.13	0.001	0.0002	0.0005	4.3	0.00011	3.2	0.005	0.14	0.005	0.00005	0.0012	0.005	0.005	0.0005
W5	2015-05-14 15:10	75.8	186	126.8	7.53	122	50.5	8.9	92.6	0.005	0.19	0.019	13.7	1.3	0.14	0.00002	0.0176	0.00052	0.0436	0.05	0.0001	0.001	22.5	0.00001	0.0005	0.001	0.00259	0.101	0.00001	1.24	0.005	7.14	0.0149	0.0012	4.76	0.001	0.0002	0.0005	4.2	0.00017	3.37	0.005	0.187	0.005	0.00005	0.00097	0.005	0.005	0.0005
W5	2015-05-21 11:00	70.3	162	138	7.88	100	98.7	9.7	90.7	0.005	0.096	0.034	10.2	0.9	0.11	0.00002	0.0144	0.00048	0.0379	0.05	0.0001	0.001	22.3	0.00001	0.0005	0.001	0.0014	0.0486	0.00001	1.01	0.005	5.93	0.0096	0.0011	3.01	0.001	0.0002	0.0005	4.5	0.00015	3.34	0.005	0.138	0.005	0.00005	0.00098	0.005	0.005	0.0005
W5	2015-05-28 15:40	65.5	149	120.2	8.09	72	72.4	12.2	95.1	0.005	0.034	0.023	9.2	1.1	0.094	0.00002	0.0299	0.00039	0.031	0.05	0.0001	0.001	16.8	0.00001	0.0005	0.001	0.00087	0.0201	0.00001	0.664	0.005	4.61	0.0048	0.001	1.78	0.001	0.0002	0.0005	3.1	0.00017	2.3	0.005	0.0896	0.005	0.00005	0.00092	0.005	0.005	0.0005
W5	2015-06-05 16:35	66.2	150	121.8	8	82	37.9	11.3	94.7	0.005	0.02	0.0067	9.07	0.5	0.096	0.00002	0.0144	0.00045	0.0355	0.05	0.0001	0.001	21.5	0.00001	0.0005	0.001	0.00083	0.0248	0.00001	0.784	0.005	5.52	0.0037	0.001	1.97	0.001	0.0002	0.0005	4	0.00015	3.74	0.005	0.097	0.005	0.00005	0.00085	0.005	0.005	0.0005
W5	2015-06-11 11:05	62.2	147	137.5	8.08	76	19	11.5	86.4	0.005	0.042	0.014	8.68	0.54	0.1	0.00002	0.0108	0.00042	0.0332	0.05	0.0001	0.001	20.7	0.00001	0.0005	0.001	0.00093	0.018	0.00001	0.734	0.005	5.81	0.0022	0.001	1.83	0.001	0.0002	0.0005	3	0.00015	3.11	0.005	0.093	0.005	0.00005	0.0008	0.005	0.005	0.0005
W5	2015-06-15 11:30	65.1	149	160.6	8	92	12.6	12.4	92.1	0.005	0.02	0.038	10.9	0.5	0.091	0.00002	0.0127	0.00044	0.0342	0.05	0.0001	0.001	20.9	0.00001	0.0005	0.001	0.00072	0.016	0.00001	0.703	0.005	5.11	0.0026	0.001	1.77	0.001	0.0002	0.0005	3.3	0.00015	3.23	0.005	0.0939	0.005	0.00005	0.00084	0.005	0.005	0.0005
W5	2015-06-25 9:55	65.5	146	133.5	7.81	70	7.5	13.4	86.9	0.005	0.021	0.017	10	0.5	0.099	0.00002	0.018	0.00045	0.0348	0.05	0.0001	0.001	22.4	0.00001	0.0005	0.001	0.00075	0.0175	0.00001	0.807	0.005	5.19	0.003	0.0011	1.75	0.001	0.0002	0.0005	5	0.00011	3.12	0.005	0.1	0.005	0.00005	0.00083	0.005	0.005	0.0005
W5	2015-07-02 15:10	64	149	98.3	8.07	88	7	14.9	90.6	0.005	0.02	0.025	10.8	0.5	0.11	0.00002	0.0132	0.00047	0.0349	0.05	0.0001	0.001	20.1	0.00001	0.0005	0.001	0.00078	0.0184	0.00001	0.772	0.005	5.54	0.0036	0.0011	2.11	0.001	0.0002	0.0005	3.4	0.00013	3.14	0.005	0.105	0.005	0.00005	0.00082	0.005	0.005	0.0005
W5	2015-07-09 10:30	64.2	144	163.2	8.14	74	9.6	12.8	98.6	0.005	0.02	0.021	9.72	0.5	0.11	0.00002	0.0106	0.00045	0.0358	0.05	0.0001	0.001	22	0.00001	0.0005	0.001	0.00078	0.0129	0.00001	0.98	0.005	5.33	0.0032	0.0012	2.08	0.001	0.0002	0.0005	4.1	0.00014	3.55	0.005	0.102	0.005	0.00005	0.00095	0.005	0.005	0.0005
W5	2015-07-17 10:15	66.6	149	138.8	8.16	80	23.1	14	75.8	0.005	0.02	0.021	10.9	0.5	0.1	0.00002	0.0178	0.00046	0.0326	0.05	0.0001	0.001	20	0.00001	0.0005	0.001	0.00069	0.016	0.00001	0.733	0.005	5	0.003	0.0011	2.03	0.001	0.0002	0.0005	3	0.00012	3.39	0.005	0.103	0.005	0.00005	0.00081	0.005	0.005	0.0005
W5	2015-07-23 10:25	65.8	151			92	13.7			0.005	0.02	0.013	10.7	0.5	0.088	0.00002	0.0162	0.00046	0.0338	0.05	0.0001	0.001	21.4	0.00001	0.0005	0.001	0.00053	0.0135	0.00001	0.68	0.005	4.54	0.0035	0.0011	1.65	0.001	0.0002	0.0005	6.8	0.00011	3.28	0.005	0.0972	0.005	0.00005	0.00085	0.005	0.005	0.0005
W5	2015-07-23 10:25	65.8	151	128.4	8.17	92	13.7	11.8	84	0.005	0.02	0.013	10.7	0.5	0.088	0.00002	0.0162	0.00046	0.0338	0.05	0.0001	0.001	21.4	0.00001	0.0005	0.001	0.00053	0.0135	0.00001	0.68	0.005	4.54	0.0035	0.0011	1.65	0.001	0.0002	0.0005	6.8	0.00011	3.28	0.005	0.0972	0.005	0.00005	0.00085	0.005	0.005	0.0005
W5	2015-07-27 11:05	62.2	146	147.8	8.14	64	7.3	14.7	85.4	0.005	0.02	0.035	9.63	0.5	0.11	0.00002	0.0123	0.0005	0.0332	0.05	0.0001	0.001	20.3	0.00001	0.0005	0.001	0.00063	0.0163	0.00001	0.713	0.005	4.54	0.0047	0.0011	1.79	0.001	0.0002	0.0005	3.9	0.00016	2.83	0.005	0.0993	0.005	0.00005	0.0008	0.005	0.005	0.0005
W5	2015-10-08 11:10	69.3	160	160.4	7.8	88	1	4.4	89.2	0.005	0.022	0.018	10.1	0.7	0.11	0.00002	0.0099	0.00042	0.0333	0.05	0.0001	0.001	19.8	0.00001	0.0005	0.001	0.00059	0.0215	0.00001	0.689	0.005	5.19	0.0065	0.001	2.12	0.001	0.0002	0.0005	3.5	0.00015	2.71	0.005	0.113	0.005	0.00005	0.00095	0.005	0.005	0.0005
W5	2016-06-17 16:50	70.9	159	149.9	8.01	84.1	28.7	14.6	91.4	0.001	0.0117	0.0063	10.6	0.5		0.00001	0.0179	0.00048	0.0362	0.01	0.00002	0.00005	22	0.000005	0.0001	0.00012	0.00097	0.026	0.000005	0.79	0.001	5.82	0.00698	0.000984	2.27	0.0005	0.00005	0.0001	3.9	0.000171	3.48	0.0001	0.11	0.00043	0.00001	0.000998	0.0005	0.001	0.0003
W5	2016-08-02 11:10	67.2	155	110.6	7.95	81.2	5.3	15.7	88.9	0.001	0.0091	0.005	10.7	0.5		0.00001	0.0099	0.00057	0.0377	0.01	0.00002	0.00005	21.5	0.000005	0.0001	0.0001	0.00081	0.023	0.000005	0.74	0.001	5.46	0.00595	0.00118	2.38	0.0005	0.00005	0.0001	3.64	0.000102	3.31	0.0001	0.123	0.0003	0.00001	0.000964	0.0005	0.001	0.0003
W5	2016-10-24 15:25	71.8	156			84.4	6.3			0.001	0.055	0.005	11.5	0.5		0.00001	0.0034	0.0004	0.0366	0.01	0.00002	0.00005	21.3	0.000005	0.0001	0.0001	0.00054	0.015	0.000005	0.8	0.001	5.28	0.0074	0.00121	2.13	0.0005	0.00005	0.00012	3.66	0.00016	2.74	0.0001	0.114	0.0003	0.00001	0.000948	0.0005	0.001	0.0003
W5	2017-06-13 15:00	67.8	144	171.3	7.35	79.6	153	8.3	91.8	0.001	0.0921	0.0229	9.91	0.57		0.00001	0.0637	0.00072	0.0386	0.01	0.00002	0.00005	17.9	0.0000133	0.00013	0.00031	0.00426	0.203	0.000005	0.74	0.001	5.49	0.0237	0.000868	3.54	0.00174	0.000083	0.00013	3.14	0.000132	3.98	0.0001	0.134	0.00287	0.00001	0.000739	0.00136	0.0017	0.00039
W5	2017-10-16 15:55	69.6	152	231.1	7.36	83.7	3	4.1	94.2	0.001	0.0225	0.005	11.7	0.23		0.00001	0.005	0.00043	0.0355	0.01	0.00002	0.00005	21.4	0.000005	0.0001	0.0001	0.00062	0.023	0.000005	0.78	0.0013	5.38	0.00805	0.00117	2.28	0.0005	0.00005	0.0001	3.82	0.000125	2.68	0.0001	0.116	0.0003	0.00001	0.00102	0.0005	0.001	0.0003
W5	2018-02-13 15:02	78.8	182	149.7	8.03	94.3	27.3	0	101.4	0.001	0.0761	0.0066	13	0.5		0.00001	0.0046	0.00041	0.0427	0.01	0.00002	0.00005	24.7	0.0000211	0.0001	0.00026	0.00348	0.01	0.000005	1.01	0.001	5.68	0.00242	0.0013	2.31	0.0005	0.00005	0.00025	4.51	0.000211	2.94	0.0001	0.125	0.0003	0.00001	0.00104	0.0005	0.0097	0.0003
W5	2018-06-06 14:30	70.9	163	141.5	8.08	86.7	21.7	9.9	112.9	0.001	0.0259	0.005	11.5	0.5		0.00001	0.0199	0.00048	0.0405	0.01	0.00002	0.00005	22.1	0.0000078	0.0001	0.0001	0.00132	0.051	0.000005	0.87	0.001	6.47	0.0102	0.000996	2.98	0.0007	0.00005	0.0001	3.82	0.000172	3.55	0.0001	0.134	0.00065	0.00001	0.00107	0.0005	0.0011	0.0003
W5	2018-08-28 15:20	68.9	151	131.3	7.96	82.3	28	12.5	114.2	0.001	0.0268	0.005	11.4	0.5		0.00001	0.0329	0.00053	0.0425	0.01	0.00002	0.00005	20	0.0000126	0.0001	0.00017	0.0036	0.076	0.000005	0.8	0.001	5.52	0.011	0.00113	3.03	0.0005	0.000074	0.00011	3.59	0.000128	3.57	0.0001	0.135	0.00193	0.00001	0.00102	0.0005	0.0019	0.0003
W5	2018-10-12 14:35	68.7	153	135.2	7.79	81.4	4	3.3	95.3	0.001	0.021	0.005	11.7	0.5		0.00001	0.0053	0.00042	0.0365	0.01	0.00002	0.00005	20.3	0.000005	0.0001	0.0001	0.00054	0.021	0.000005	0.78	0.001	5.14	0.007	0.00131	2.14	0.0005	0.00005	0.0001	3.65	0.000149	2.81	0.0001	0.113	0.0003	0.00001	0.00111	0.0005	0.001	0.0003
W5	2019-02-11 14:50	76.2	171	234.3	7.91	92.9	19.5	0	78.1	0.001	0.122	0.0136	12.8	0.5		0.00001	0.0074	0.00045	0.0403	0.01	0.00002	0.00005	24.7	0.000213	0.0001	0.00021	0.00554	0.013	0.000005	1.04	0.0011	5.77	0.00573	0.00159	2.26	0.0005	0.00005	0.00015	5.19	0.000171	2.82	0.0001	0.133	0.0003	0.00001	0.00112	0.0005	0.0322	0.0003
W5	2019-05-31 16:30	70.7	155	181.1	7.6	82.9	28.5	12.3	98	0.0014	0.0119	0.005	11.3	0.5		0.00001	0.0146	0.00049	0.0364	0.01	0.00002	0.00005	20	0.0000087	0.0001	0.00013	0.00113	0.027	0.000005	0.75	0.001	5.81	0.00712	0.001	2.52	0.00055	0.00005	0.0001	3.78	0.000181	3.04	0.0001	0.118	0.00042	0.00001	0.00107	0.0005	0.001	0.0003
W5	2019-08-05 10:00	65.3	154	87.5	7.95	77.8	5.5	17.2	90.1	0.001	0.0067	0.0051	11.2	0.5		0.00001	0.0084	0.00053	0.0345	0.01	0.00002	0.00005	18.9	0.0000079	0.0001	0.0001	0.00092	0.017	0.000005	0.79	0.001	5.25	0.00627	0.00129	2.33	0.0005	0.00005	0.0001	4.03	0.000141	2.9	0.0001	0.113	0.0003	0.00001	0.000953	0.0005	0.0085	0.0003
W5	2019-10-14 16:15	70.8	150	206.2	7.77	85.4	3.5	3.8	113.9	0.001	0.0239	0.0073	11.6	0.23		0.00001	0.0062	0.00042	0.0396	0.01	0.00002	0.00005	22.5	0.000005	0.0001	0.00011	0.00049	0.018	0.000005	0.82	0.001	5.39	0.00544	0.00134	2.16	0.0005	0.00005	0.0001	3.96	0.000144	2.69	0.0001	0.132	0.0003	0.00001	0.00109	0.0005	0.001	0.0003
W5	2020-06-24 10:30	65.2	153	209	7.75	94.7	36.6	11.1	97.4	0.001	0.0148	0.0069	10.8	0.14		0.00001	0.0184	0.0005	0.0327	0.01	0.00002	0.00005	21.4	0.0000101	0.0001	0.00016	0.00111	0.03	0.000005	0.744	0.001	5.72	0.00565	0.00102	1.97	0.00058	0.00005	0.0001	3.61	0.000194	3.3	0.0001	0.0999	0.0007	0.00001	0.000897	0.00056	0.001	0.0002
W5	2020-08-24 14:40	68.9	153	186.7	7.71	101	21.3	12.2	86.7	0.001	0.0134	0.0065	11.1	0.23		0.00001	0.0269	0.00055	0.0404	0.01	0.00002	0.00005	21.4	0.000005	0.0001	0.00019	0.00121	0.06	0.000005	0.747	0.001	6.43	0.00874	0.00117	2.87	0.00054	0.00005	0.0001	3.69	0.000121	3.81	0.0001	0.133	0.0006	0.00001	0.000993	0.00059	0.001	0.0002
W5	2020-10-14 10:20	76.1	177	191.4	7.84	107	5	4.5	91.8	0.001	0.026	0.0052	14.4	0.31		0.00001	0.0083	0.00047	0.0401	0.01	0.00002	0.00005	23.7	0.000005	0.0001	0.00011	0.00076	0.028	0.000005	0.805	0.001	6.46	0.00856	0.0013	3.02	0.0005	0.00005	0.0001	4.58	0.000135	3.4	0.0001	0.151	0.0003	0.00001	0.00115	0.0005	0.001	0.0002
W5	2021-05-24 14:40	44.2	105	173.1	7.15	105	25.8	2.6	123.5	0.001	0.005	0.0235	4.67	0.43		0.00001	0.0949	0.0008	0.0368	0.01	0.000021	0.00005	16.4	0.000012	0.00021	0.00062	0.00733	0.419	0.0000071	0.755	0.001	4.8	0.0273	0.000499	3.33	0.00225	0.000057	0.0001	1.76	0.000148	4.15	0.0001	0.113	0.00284	0.00001	0.000287	0.00112	0.0012	0.00067
W5	2021-06-21 9:55	70.5	162	162.3	7.37	100	56.4	8.8	108.3	0.001	0.0405	0.005	11.8	0.2		0.00001	0.0223	0.00045	0.036	0.01	0.00002	0.00005	21.1	0.000005	0.0001	0.0005	0.00165	0.04	0.000005	0.852	0.001	6.27	0.00725	0.00102	2.51	0.00068	0.00005	0.0001	4.16	0.000228	3.7	0.0001	0.123	0.00078	0.00001	0.000951	0.0005	0.001	0.0002
W5	2021-07-07 16:15	64	149	126.9	8.09	91.3	59.3	16.4	80.2	0.001	0.0268	0.005	10.5	0.12		0.00001	0.0212	0.00057	0.0304	0.01	0.00002	0.00005	23.2	0.0000075	0.0001	0.0005	0.00104	0.028	0.000005	0.773	0.001	4.55	0.00539	0.00112	1.57	0.0005	0.00005	0.0001	3.03	0.000189	3.06	0.0001	0.0908	0.0008	0.00001	0.000786	0.0005	0.001	0.0002
W5	2021-08-10 14:45	66	147	145	7.75	87.8	12.6	15.7	101.9	0.001	0.0065	0.005	10.8	0.19		0.00001	0.0118	0.00051	0.033	0.01	0.00002	0.00005	19.9	0.000005	0.0001	0.0005	0.00066	0.02	0.000005	0.797	0.001	4.76	0.00578	0.0013	1.95	0.0005	0.00005	0.0001	3.45	0.000144	2.66	0.0001	0.105	0.0003	0.00001	0.000938	0.0005	0.001	0.0002
W5	2021-09-20 7:50	65.4	151	96.7	7.87	88.8	8.6	8.6	98.7	0.001	0.0156	0.005	11.7	0.24		0.00001	0.0107	0.00043	0.0348	0.01	0.00002	0.00005	19.4	0.0000056	0.0001	0.0005	0.00083	0.022	0.000005	0.839	0.001	5.06	0.00651	0.00123	2.14	0.0005	0.00005	0.0001	4.09	0.000163	2.85	0.0001	0.108	0.0003	0.00001	0.000958	0.0005	0.0011	0.0002
W5	2021-10-12 16:50	71.9	166	101.9	8.07	95.8	5.8	5.6	109.9	0.001	0.0234	0.005	12.1	0.2		0.00001	0.016	0.0004	0.0364	0.01	0.00002	0.00005	21.2	0.0000116	0.0001	0.0005	0.00105	0.033	0.000005	0.786	0.001	5.48	0.00785	0.00123	2.16	0.0005	0.00005	0.0001	3.61	0.000182	2.86	0.0001	0.114	0.00057	0.00001	0.00102	0.0005	0.0015	0.0002
W5	2021-11-08 10:40	77.3	176	104.7	7.79	106	27.8	0.8	91.7	0.001	0.045	0.005	13.4	0.22		0.00001	0.0097	0.00045	0.0401	0.01	0.00002	0.00005	24.8	0.0000115	0.0001	0.0005	0.00182	0.034	0.000005	0.91	0.001	6.59	0.00801	0.00123	2.45	0.0005	0.00005	0.0001	4.27	0.000243	3.02	0.0001	0.132	0.00048	0.00001	0.00107	0.0005	0.001	0.0002
W50	2008-08-25 0:00																																																
W50	2008-08-26 0:00																																																
W50	2008-08-29 0:00	159	374			284	34			0.05	0.16		33.3	3.52																																			
W50	2009-02-28 0:00	205	541			384	6						79.2	5.21		0.00001	0.005	0.0005	0.086	0.023	0.00004	0.0001	64.8	0.00001	0.0002	0.0004	0.009	0.01	0.00001	3.5	0.002	20.5	0.193	0.00566	18.7	0.002	0.0002	0.0006	24.6	0.0007	5.55	0.0001	0.56	0.0007	0.00001	0.0031	0.00036	0.011	0.0002
W50	2009-03-07 0:00				8.1			3.2																																									
W50	2009-04-05 0:00	216	582		7.9	402	2						82.3	4.2		0.00001	0.018	0.0005	0.084	0.025	0.00004	0.0001	69.2	0.00006	0.00022	0.0006	0.011	0.06	0.00001	4	0.002	22.6	0.353	0.00636	22.2	0.003	0.0002	0.0007	30.1	0.0008	5.8	0.0001	0.549	0.002	0.00001	0.0031	0.00044	0.018	0.0002
W50	2009-04-06 0:00																																																
W50	2009-05-02 0:00	188	511			360	6						72.4	4.85		0.00001	0.028	0.0004	0.076	0.022	0.00004	0.0001	67.5	0.00004	0.00031	0.0017	0.014	0.13	0.00001	4.4	0.002	20.2	0.243	0.00511	19.6	0.002	0.0003	0.001	24.4	0.0007	5.67	0.0001	0.493	0.0026	0.00001	0.0029	0.00083	0.006	0.0003

Attachment 3: Sitewide Database

Station	Date / Time	Alk-T (mg/L)	Cond-L (µS/cm)	ORP (mV)	pH-F	TDS (mg/L)	TSS (mg/L)	Temp-F (°C)	O-DO-% (%)	$N-NO_2$ (mg/L)	$N-NO_3$ (mg/L)	$N-NH_3$ (mg/L)	SO_4-D (mg/L)	Chlord (mg/L)	Fluord (mg/L)
		General Parameters								Anions & Nitrogen Species					
W50	2009-05-09 0:00	191	467		8.56	324	2	3		0.005	0.6			4	
W50	2009-05-18 0:00	184	482		7.23	338	3						60.5	4.53	
W50	2009-05-26 0:00				7.88										
W50	2009-05-27 0:00	182	479			310	4						56.8	3.04	
W50	2009-06-03 0:00	180	474		8.11	308	2	5.4					54.8	3.8	
W50	2009-06-07 0:00	150	434			310	3						58.1	3.81	
W50	2009-06-11 0:00	157	438		8.19	308	6	6.3					55.4	3.7	
W50	2009-06-20 0:00	182	467		7.8	272	2	4.4					50.1	4.38	
W50	2009-06-29 0:00	184	466		7.9	318	2	6.1					58.4	4.64	
W50	2009-07-06 0:00				7.84			14.4							
W50	2009-07-13 0:00	154	430		7.82	524	6	14.5					47.4	3.44	
W50	2009-07-27 0:00	72	321			234	42	12.6			6.08		46.6	8.84	
W50	2009-08-10 0:00				8.03			3.8							
W50	2009-08-11 0:00	196	487			348	2						62.3	6.59	
W50	2009-08-18 0:00	96	390		7.85	280	3	12.04			5.73		53.1	17.6	
W50	2009-08-25 0:00	91	403		7.82	248	6	11.95			6.34		52.6	24.2	
W50	2009-09-07 0:00	82	442		7.86	320	6	12.1			7.46		54.5	30.9	
W50	2009-09-17 0:00	78	445		7.81	328	3	10.7			7.95		70.2	31	
W50	2009-09-23 0:00	86	456		9.5	312	2	9.5			7.94		64.5	31.1	
W50	2009-10-05 0:00	90	478		7.8	328	3	6.4			8.65		75	33.8	
W50	2009-10-12 0:00	90	476		7.84	334	2	4.9			9.26		66.1	40.5	
W50	2009-10-19 0:00	99	484		7.43	304	3	3.8			8.94		65.5	25.1	
W50	2009-10-27 0:00	102	468		7.16	342	2	3.6			9.34		70.2	24.9	
W50	2010-06-16 0:00	170	512		7.62	310	1	5.3		0.008	6.1	0.023	68	10	0.46
W50	2010-07-04 0:00	170	535		8.03	370	2	5.49	102.9	0.011	6.9	0.005	72	9.3	0.48
W50	2010-07-11 0:00	170	527		7.84	310	1	5.52	85.5	0.008	6.6	0.03	67	8.6	0.48
W50	2010-07-15 0:00	120	522		7.99	340	1	15.34	103	0.158	9.4	0.26	70	29	0.35
W50	2010-10-13 0:00	150	623			390	3			0.097	14.3	0.3	97	21	0.52
W50	2010-10-14 0:00	140	627			400	1			0.081	14.5	0.17	99	22	0.5
W50	2010-10-15 0:00	140	649		7.84	410	1	3.88	104	0.085	15.3	0.2	100	27	0.42
W50	2010-10-16 0:00	140	650			410	1			0.089	15.3	0.31	110	24	0.43
W50	2010-10-17 0:00	140	680			470	1			0.094	16.2	0.77	110	28	0.48
W50	2010-10-18 0:00	140	697			450	1			0.102	16	1	110	24	0.5
W50	2010-10-19 0:00	140	644			410	1			0.081	14	0.37	91	25	0.44
W50	2010-11-07 0:00	180	601		7.98	370	1	2.97		0.06	10.8	0.008	86	7.3	0.53
W50	2010-11-11 2:00	180	604		7.99	400	1	3		0.007	10.8	0.067	86	7.7	0.45
W50	2011-05-02 0:00	37	96			92	2			0.005	0.07		5	2.3	0.15
W50	2011-05-07 0:00	24	55			54	27			0.005	0.02	0.006	0.5	1.1	0.06
W50	2011-10-18 0:00	190	494		7.02	290	4	3.8	20.2	0.005	1.92	0.018	50	5.5	
W50	2011-11-13 0:00	183	479		7.83	284	5.3	2.5	91.1	0.005	3.1	0.0091		5.7	
W50	2012-04-13 18:48	182	462		7.86	254	30.4	0	85.2	0.0116	2.47	0.11	46.3	4.5	0.38
W50	2012-04-14 11:10	201	505		7.62	294	2.9	2	92.2	0.0073	2.74	0.012	48.7	5.1	0.45
W50	2012-04-15 9:50	207	511		8.01	308	3.7	2.4	84.5	0.0072	2.85	0.017	46.7	5.1	0.42
W50	2012-04-16 11:00	204	513			312	1.7			0.0051	2.75	0.015	48.2	5.1	0.43
W50	2012-04-17 11:00				7.79			2.4	85.2						
W50	2012-04-18 10:30	195	521		7.88	314	17.9	2.3	92.3	0.0097	4.89	0.034	57.5	5.9	0.35
W50	2012-04-19 13:50	195	518		7.77	308	5.8	2.5	87.3	0.0096	5.15	0.0251	59.1	5.9	0.35
W50	2012-04-20 16:05	192	515		7.79	324	7	2.4	8.39	0.0079	4.77	0.021	55.7	5.4	0.36
W50	2012-04-21 16:30	189	515		7.78	316	4.7	2.4	90.8	0.0091	4.63	0.017	52.5	5.6	0.38
W50	2012-04-22 15:30	188	512		7.65	328	5	2.5	92.5	0.0089	4.66	0.021	51.6	5.3	0.37
W50	2012-04-23 14:46	190	511		7.62	334	4.9	2.5	99.2	0.0092	4.71	0.017	51.7	5.2	0.36
W50	2012-04-24 0:00	193	512		7.58	322	8	2.1	98.3	0.0087	4.78	0.016	49.4	5.4	0.36
W50	2012-04-25 0:00	186	512		7.58	316	3.8	2.4	90.9	0.0086	4.51	0.018	50.8	5.2	0.37
W50	2012-04-26 0:00	184	510	187.2	7.57	310	4.4	2.4	88.6	0.0093	4.51	0.021	52.6	5.3	0.38
W50	2012-04-27 0:00	183	510	143.7	7.77	322	3.9	2.4	86.5	0.0097	4.52	0.018	50.9	5.5	0.37
W50	2012-04-28 0:00	185	511	156.3	7.6	324	4.2	2.3	87.3	0.0091	4.55	0.021	50.5	5.3	0.37
W50	2012-04-29 0:00	184	511	133.2	7.47	308	4.1	2.3	89.2	0.0103	4.37	0.016	50	5.3	0.37
W50	2012-04-30 0:00	185	512	88.7	7.48	314	3.9	2.4	81.8	0.0099	4.47	0.018	50.7	5.2	0.37
W50	2012-05-01 14:30	191	507	79.6	7.73	322	3.6	2.6	82.1	0.0085	4.37	0.016	51.9	5.1	0.37
W50	2012-05-02 15:45	190	497	94.5	7.65	322	4.1	2.4	84	0.0087	4.47	0.013	51.4	5.6	0.37
W50	2012-05-03 10:30	190	502	87	7.59	316	3.8	2.5	82.6	0.0112	4.21	0.019	50.4	5.4	0.37
W50	2012-05-04 14:30	104	388	95.1	7.25	264	6.6	3.5	87.2	0.0084	2.97	0.021	40.7	4.3	0.27
W50	2012-05-05 9:30	104	388	95.2	7.52	230	6.3	3.1	70.8	0.0083	2.96	0.017	40.1	4.2	0.27
W50	2012-05-06 14:00	153	411	84.4	7.55	246	10.6	3.1	70.2	0.0101	3.21	0.022	43.6	4.6	0.31
W50	2012-05-07 0:00	195	477	26	7.7	286	3.7	4.3	46.9	0.005	1.6	0.0062	44.2	5	0.4
W50	2012-05-09 14:00	163	433	132	7.3	286	6.1	3.2	94.6	0.0099	3.16	0.027	46.3	4.4	0.32
W50	2012-05-10 17:00	151	399	80.6	7.83	258	6.8	3.6	95	0.0091	2.91	0.03	42	3.9	0.29
W50	2013-04-22 11:45	193	478	397.4	8.64	286	13.7	1.9		0.005	2.42	0.032	47.6	5.2	0.31
W50	2013-04-23 8:10			-418.2	8.07			1.8							
W50	2013-04-25 6:40			15.2	7.8			1.6	114						
W50	2013-04-26 6:40	196	484			280	3.7			0.0077	3.15	0.035	46.5	5.8	0.32
W50	2013-04-30 5:50	176	447	-14.1	7.79	280	3	1.2	105.2	0.0149	2.71	0.023	38.2	5.1	0.29
W50	2013-05-03 13:45	173	437			252	2.9			0.0115	2.59	0.043			
W50	2013-05-05 15:00	169	423	36.7	7.59	252	6.4	1.6	106.5	0.0084	2.61	0.048	39.5	5.7	0.26
W50	2013-05-07 16:30	165	441	45.4	8.8	278	8.8	1.5	91.9	0.0187	12.2	0.044	40.8	11	0.29
W50	2013-05-16 14:50	46.2	116	67.7	8.1	116	3.5	4.2	85.8	0.0646	0.953	0.079	0.82	1.9	0.12
W50	2013-05-23 0:00	46.8	133	5.5	8.25	118	27.8	3.7	92.7	0.0371	0.906	0.043	0.5	4.9	0.12
W50	2013-05-24 7:30	48.7	142	-11.9	7.97	132	19.4	3.6	96	0.0415	1.2	0.056	3.22	4.9	0.13
W50	2013-05-25 7:25			10.6	7.91			4.7	88.5						
W50	2013-05-26 7:15			37.5	7.54			5.4	86.9						
W50	2013-05-27 6:50				8			8							
W50	2013-05-28 8:25	63.8	205	41.5	7.81	156	8.5	7.1	74.9	0.048	2.13	0.082	21.6	6.1	0.2
W50	2013-05-29 8:00	70.9	228	40.6	7.53	170	7	0.6	93.8	0.0495	2.29	0.088	24.1	6.1	0.22
W50	2013-05-30 7:50			34.5	7.84			6.3	94						
W50	2013-05-31 8:30	81.5	252		7.6	192	7.5	8.5		0.0486	2.43	0.083	30.9	6.8	0.24
W50	2013-06-07 0:00	161	372	20.3	7.32	242	2.1	6.1	73	0.0105	0.662	0.043	24.7	4.3	0.33
W50	2013-07-11 0:00	187	417	124.7	6.99	286	20.8	6.4	19.1	0.005	0.02	0.043	26.6	6.3	0.3
W50	2014-02-27 8:40	185	453	131.6	8.16	264	6.7	1	86.5	0.005	0.225	0.012	32.7	10	0.34
W50	2014-03-08 10:25	192	446	133.1	8.35	258	12.8	1.2	87.3	0.005	0.215	0.015	34	10	0.32
W50	2014-03-10 7:45	192	448	213.1	8.34	254	5.9	1	84	0.005	0.211	0.016	33.5	10	0.33
W50	2014-03-21 9:50	188	448	196.2	7.98	254	1	1.5	82.3	0.005	0.192	0.011	33.1	10	0.35
W50	2014-03-27 8:45	188	443	112.3	8.06	196	1	1.4	119.1	0.005	0.183	0.019	32.7	10	0.36
W50	2014-04-02 14:00	195	457	122.2	8.03	278	1	2	111.3	0.005	0.192	0.023	31.4	9.9	0.36
W50	2014-04-07 7:00	174	440	126.4	7.77	256	8.3	2	92.3	0.0075	0.605	0.062	33.4	11	0.3
W50	2014-04-17 9:10	185	463	237.1	7.77	290	13.6	2.1	94.1	0.0161	1	0.24	38.3	11	0.29
W50	2014-04-21 13:45	176	442	99.7	8.01	268	11.8	2.2	13.7	0.0153	1.07	0.13	35.5	11	0.31
W50	2014-04-28 11:20	116	326	190.8	8.15	216	16.7	2.4	111.4	0.0143	1.68	0.13	35	7	0.29
W50	2014-05-06 7:35	124	339	178.5	7.8	228	8.7	2.8	98.9	0.0182	1.7	0.18	34.5	7.4	0.27
W50	2014-05-18 16:20	124	344	104.4	7.15	216	7.2	5.7	86.2	0.0271	1.8	0.18	47.3	6.4	0.25
W50	2014-05-22 7:50	99.6	313	104.4	7.36	217	24.3	5.9	93.8	0.0369	2.89	0.17	40.4	5.6	0.26
W50	2014-05-26 8:30	110	359	128.7	7.4	230	20.1	7.3	95.3	0.03	2.75	0.18	44.1	5.5	0.1
W50	2014-11-17 14:00	171	511	194.7	7.85	327	1	-0.2	98.9	0.005	2.15	0.012	79.6	6.6	0.38
W50	2014-11-24 14:15	172	517	225.6	7.88	332	1	0.6	92.4	0.005	1.93	0.029	88	7	0.17
W50	2014-12-03 8:40	161	510	184.2	7.92	298	1	0	96.3	0.005	2.21	0.0058	81.5	6.6	0.38
W50	2014-12-09 7:25	147	491	76.8	7.73	302	2.5	1.7	90.06	0.0266	3.06	0.082	85.3	7.5	0.43
W50	2014-12-15 9:15	136	497	163.1	7.75	308	1	1.5	80.2	0.0254	3.24	0.083	91.8	7.6	0.41
W50	2014-12-16 9:00	137	499	124.4	7.6	274	1	1.4	86.7	0.0241	3.3	0.088	95.7	7.5	0.43
W50	2014-12-20 9:00	158	508	210.5	8.02	356	1	-0.6	105.1	0.005	1.99	0.014	82.6	7	0.4
W50	2015-04-08 7:10	150	500	152.3	7.63	276	1.2	3	74.9	0.0102	2.91	0.092	81.2	8	0.38
W50	2015-04-14 16:40	154	503	179.7	7.52	282	1.3	3.1	75.3	0.0111	2.89	0.065	83.7	9	0.37
W50	2015-04-20 8:20	91.3	314	183.4	7.89	192	8.6	2.6	94.9	0.0668	2.15	0.069	45.2	7.1	0.22
W50	2015-04-27 7:50	101	341	140.9	7.85	216	2.5	2.9	93.5	0.0401	2.65	0.062	44.3	6.7	0.26
W50	2015-05-07 15:25	189	594	146.2	7.33	364	1.3	3.6	93.6	0.0094	3.53	0.18	83.1	14	0.39
W50	2015-05-14 11:15	95.4	296	96.4	7.93	184	3.8	11.1	90.4	0.0525	1.57	0.031	35.3	6.1	0.21
W50	2015-05-15 7:05			107.9	8.01			10.9	89.7						

Dissolved Elements (all mg/L)

Station	Date / Time	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
W50	2009-05-09 0:00	0.00001	0.012	0.0004	0.071	0.026	0.0001	0.0005	57.9	0.00002	0.0002	0.0008	0.012	0.02	0.0001	3.7	0.002	17.3	0.172	0.008	18.2
W50	2009-05-18 0:00	0.00001	0.018	0.0004	0.07	0.024	0.00004	0.0001	65.3	0.00002	0.00018	0.0016	0.012	0.03	0.00001	3.8	0.002	18	0.151	0.00699	18.1
W50	2009-05-26 0:00																				
W50	2009-05-27 0:00	0.00001	0.006	0.0004	0.072	0.018	0.00004	0.0001	56.9	0.00003	0.00014	0.0015	0.01	0.01	0.00001	3.7	0.002	16.4	0.0867	0.00735	16.6
W50	2009-06-03 0:00	0.00001	0.007	0.0005	0.065	0.025	0.00004	0.0001	55.8	0.00001	0.00019	0.001	0.009	0.03	0.00001	3.5	0.002	15.8	0.0816	0.0069	16.4
W50	2009-06-07 0:00	0.00001	0.026	0.0005	0.078	0.025	0.00005	0.0001	53.4	0.00005	0.00027	0.0004	0.075	0.18	0.00001	6	0.002	15.9	0.254	0.0104	17.5
W50	2009-06-11 0:00	0.00001	0.013	0.0003	0.044	0.026	0.00004	0.0001	51.5	0.00001	0.00016	0.0007	0.02	0.29		5.1	0.002	14.6	0.167	0.00692	16.7
W50	2009-06-20 0:00	0.00001	0.005	0.0005	0.07	0.021	0.00004	0.0001	57.1	0.00001	0.00014	0.0017	0.008	0.01	0.00001	4	0.001	16.7	0.0846	0.0074	17.6
W50	2009-06-29 0:00	0.00001	0.005	0.0004	0.069	0.025	0.00005	0.0001	60.6	0.00001	0.00017	0.0004	0.013	0.01	0.00001	4	0.002	18	0.113	0.00704	17.9
W50	2009-07-06 0:00																				
W50	2009-07-13 0:00	0.00002	0.088	0.0006	0.084	0.025	0.00004	0.0001	53.1	0.00004	0.0008	0.0007	0.073	0.28	0.00001	5.9	0.002	15.8	0.401	0.0105	16.2
W50	2009-07-27 0:00	0.00001	0.028	0.0008	0.141	0.025	0.00004	0.001	37.5	0.00002	0.0004	0.0004	0.022	0.1	0.00001	2.9	0.002	9.6	0.15	0.0151	11
W50	2009-08-10 0:00																				
W50	2009-08-11 0:00	0.00001	0.007	0.0004	0.081	0.02	0.00004	0.001	56.5	0.00002	0.00014	0.0011	0.007	0.01		3.5	0.002	17.2	0.278	0.0075	16.9
W50	2009-08-18 0:00	0.00001	0.041	0.0004	0.111	0.024	0.00004	0.001	42.5	0.00001	0.00024	0.0011	0.005	0.02	0.00001	3.9	0.002	11.8	0.208	0.013	15.7
W50	2009-08-25 0:00	0.00001	0.061	0.0003	0.131	0.026	0.00004	0.001	43.4	0.00028	0.00026	0.001	0.003	0.09	0.00001	3.5	0.002	11.9	0.273	0.0139	16.6
W50	2009-09-07 0:00	0.00001	0.046	0.0004	0.135	0.03	0.00004	0.001	48.2	0.00005	0.00043	0.001	0.006	0.04	0.00001	3.5	0.002	12.4	0.3	0.014	19.1
W50	2009-09-17 0:00	0.00001	0.049	0.0003	0.136	0.032	0.00004	0.001	52.2	0.00002	0.00027	0.0008	0.005	0.01	0.00005	3.2	0.002	13.4	0.303	0.015	20.2
W50	2009-09-23 0:00	0.00001	0.046	0.0004	0.142	0.029	0.00004	0.001	52.3	0.00001	0.00022	0.0004	0.001	0.01	0.00001	3.7	0.002	13.4	0.319	0.0163	17.6
W50	2009-10-05 0:00	0.00001	0.023	0.0006	0.141	0.032	0.00004	0.001	56.3	0.00001	0.00027	0.0004	0.001	0.01	0.00001	3.7	0.002	14.4	0.322	0.0171	18.6
W50	2009-10-12 0:00	0.00001	0.035	0.0005	0.136	0.032	0.00004	0.001	51.5	0.00001	0.00029	0.0004	0.001	0.01	0.00001	3.4	0.002	13.5	0.319	0.017	17.2
W50	2009-10-19 0:00	0.00001	0.117		0.136	0.031	0.00004	0.001	52.8	0.00013	0.00038	0.0004	0.014	0.08	0.00001	3.6	0.002	14.2	0.367	0.0169	16.8
W50	2009-10-27 0:00	0.00001	0.027	0.0005	0.127	0.037	0.00004	0.001	54	0.00001	0.00022	0.001	0.001	0.03	0.00001	3.8	0.002	14.1	0.341	0.0165	18.9
W50	2010-06-16 0:00		0.01	0.0004	0.079	0.1	0.0002	0.001	58		0.0005		0.005	0.02	0.0002	4	0.01	17	0.01	0.006	19
W50	2010-07-04 0:00		0.01	0.0004	0.086	0.1	0.0002	0.001	57		0.0005		0.006	0.02	0.0002	4	0.01	18	0.015	0.006	19
W50	2010-07-11 0:00		0.01	0.0004	0.075	0.1	0.0002	0.001	60		0.0005		0.005	0.02	0.0002	4	0.01	17	0.005	0.006	18
W50	2010-07-15 0:00		0.079	0.0005	0.08	0.1	0.0002	0.001	58		0.0005		0.003	0.02	0.0002	5	0.01	15	0.031	0.014	25
W50	2010-10-13 0:00	0.00002	0.066	0.0005	0.097	0.05	0.0001	0.001	68.2	0.00001	0.0005	0.001	0.0057	0.007	0.00003	6.13	0.005	18.5	0.099	0.016	24.9
W50	2010-10-14 0:00	0.00002	0.063	0.0004	0.096	0.05	0.0001	0.001	65.8	0.00001	0.0005	0.001	0.0053	0.005	0.00002	6.32	0.005	18.7	0.102	0.017	25.4
W50	2010-10-15 0:00	0.00002	0.054	0.0004	0.094	0.05	0.0001	0.001	60.7	0.00001	0.0005	0.001	0.0045	0.005	0.00004	6.22	0.005	18.1	0.103	0.017	25.7
W50	2010-10-16 0:00	0.00002	0.068	0.0004	0.096	0.05	0.0001	0.001	66.8	0.00001	0.0005	0.001	0.0044	0.009	0.00002	6.24	0.005	17.5	0.108	0.019	26.7
W50	2010-10-17 0:00	0.00002	0.052	0.0004	0.098	0.057	0.0001	0.001	72	0.00001	0.0005	0.001	0.0051	0.005	0.00002	5.94	0.005	19.8	0.108	0.017	30
W50	2010-10-18 0:00	0.00002	0.049	0.0004	0.097	0.061	0.0001	0.001	74.4	0.00001	0.0005	0.001	0.004	0.005	0.00002	5.57	0.005	20.2	0.111	0.017	31.4
W50	2010-10-19 0:00	0.00002	0.048	0.0004	0.099	0.05	0.0001	0.001	67.8	0.00001	0.0005	0.001	0.0047	0.005	0.00002	5.97	0.005	19.2	0.104	0.015	28
W50	2010-11-07 0:00	0.00002	0.008	0.0003	0.101	0.05	0.0001	0.001	69.7	0.00001	0.0005	0.001	0.0043	0.005	0.00002	4.15	0.005	20.2	0.068	0.008	21.3
W50	2010-11-11 2:00	0.00002	0.008	0.0004	0.104	0.05	0.0001	0.001	71.6	0.00001	0.0005	0.001	0.0045	0.005	0.00002	4.68	0.005	22	0.077	0.007	23.2
W50	2011-05-02 0:00	0.00002	0.066	0.0004	0.03	0.05	0.0001	0.001	13.1	0.00003	0.0005	0.001	0.0281	0.094	0.00002	3.47	0.005	4.6	0.127	0.002	1.69
W50	2011-05-07 0:00	0.00002	0.063	0.0003	0.02	0.05	0.0001	0.001	7.55	0.00002	0.0005	0.001	0.0042	0.186	0.00002	1.07	0.005	2.34	0.03	0.001	1.37
W50	2011-10-18 0:00	0.00002	0.011	0.0003	0.08	0.05	0.0001	0.001	56.8	0.00001	0.0005	0.001	0.0051	0.02	0.00002	3.41	0.005	17.3	0.002	0.008	19.1
W50	2011-11-13 0:00	0.00002	0.0062	0.00039	0.0756	0.05	0.0001	0.001	49.9	0.00001	0.0005	0.001	0.00638	0.005	0.00002	3.94	0.005	17.1	0.0151	0.0067	18.1
W50	2012-04-13 18:48	0.00002	0.0066		0.0702	0.05	0.0001	0.001	54.5	0.000011	0.0005	0.0012	0.00781	0.0181	0.00001	3.59	0.005	17	0.0734	0.0059	16.1
W50	2012-04-14 11:10	0.00002	0.0119	0.0004	0.0792	0.05	0.0001	0.001	60.7	0.000012	0.0005	0.001	0.00727	0.0165	0.00001	3.64	0.005	19	0.104	0.0063	18.1
W50	2012-04-15 9:50	0.00002	0.0041	0.00038	0.0799	0.05	0.0001	0.001	60.4	0.00001	0.0005	0.001	0.00523	0.005	0.00001	3.74	0.005	18.7	0.0373	0.0067	18
W50	2012-04-16 11:00	0.00002	0.0048	0.00039	0.0798	0.05	0.0001	0.001	60.7	0.00001	0.0005	0.001	0.0057	0.005	0.00001	3.66	0.005	18.9	0.0445	0.0062	17.9
W50	2012-04-17 11:00																				
W50	2012-04-18 10:30	0.00002	0.0078	0.0004	0.0866	0.05	0.0001	0.001	61.3	0.000021	0.0005	0.001	0.0253	0.0421	0.00001	3.66	0.005	20.3	0.0446	0.0057	18.4
W50	2012-04-19 13:50	0.00002	0.0062	0.00038	0.086	0.05	0.0001	0.001	62	0.000021	0.0005	0.001	0.0246	0.0407	0.00001	3.6	0.005	20.2	0.0436	0.0057	18.2
W50	2012-04-20 16:05	0.00002	0.0097	0.00037	0.0884	0.05	0.0001	0.001	64.6	0.000025	0.0005	0.001	0.0262	0.0516	0.00001	3.75	0.005	20	0.0448	0.0055	18.1
W50	2012-04-21 16:30	0.00002	0.0063	0.0004	0.0854	0.05	0.0001	0.001	63.5	0.000024	0.0005	0.001	0.0246	0.041	0.00001	3.62	0.005	19.9	0.0413	0.0057	18.1
W50	2012-04-22 15:30	0.00002	0.0069	0.00041	0.0865	0.05	0.0001	0.001	63.1	0.000032	0.0005	0.001	0.0249	0.043	0.00001	3.62	0.005	20	0.041	0.0057	18.2
W50	2012-04-23 14:46	0.00002	0.0068	0.0004	0.0861	0.05	0.0001	0.001	57.2	0.000015	0.0005	0.001	0.0239	0.0439	0.00001	3.46	0.005	18.6	0.0402	0.0057	16.9
W50	2012-04-24 0:00	0.00002	0.0058	0.0004	0.0843	0.05	0.0001	0.001	59.4	0.000025	0.0005	0.001	0.0247	0.0383	0.00001	3.64	0.005	19.4	0.0387	0.0054	17.5
W50	2012-04-25 0:00	0.00002	0.019	0.00038	0.0864	0.05	0.0001	0.001	59.5	0.000019	0.0005	0.001	0.0256	0.0449	0.00001	3.54	0.005	19.6	0.0402	0.0056	17.3
W50	2012-04-26 0:00	0.00002	0.0104	0.00038	0.0868	0.05	0.0001	0.001	57.4	0.000022	0.0005	0.001	0.0254	0.0477	0.00001	3.59	0.005	19.2	0.0435	0.0055	17.5
W50	2012-04-27 0:00	0.00002	0.0076	0.00043	0.0854	0.05	0.0001	0.001	62.2	0.000025	0.0005	0.001	0.0244	0.0442	0.00001	3.68	0.005	19.9	0.0422	0.0054	18.1
W50	2012-04-28 0:00	0.00002	0.0215	0.00041	0.0865	0.05	0.0001	0.001	62.9	0.000027	0.0005	0.001	0.0271	0.0784	0.00001	3.71	0.005	20.1	0.0449	0.0054	18.2
W50	2012-04-29 0:00	0.00002	0.0064	0.0004	0.0848	0.05	0.0001	0.001	61.8	0.000022	0.0005	0.001	0.0245	0.0432	0.00001	3.68	0.005	19.8	0.0448	0.0056	17.9
W50	2012-04-30 0:00	0.00002	0.0061	0.00038	0.0852	0.05	0.0001	0.001	60.7	0.000019	0.0005	0.001	0.0245	0.0447	0.00001	3.65	0.005	19.7	0.0488	0.0054	17.9
W50	2012-05-01 14:30	0.00002	0.0066	0.00045	0.0874	0.05	0.0001	0.001	60.7	0.000016	0.0005	0.001	0.026	0.0493	0.00001	3.68	0.005	19.9	0.0545	0.0057	17.7
W50	2012-05-02 15:45	0.00002	0.0099	0.00044	0.0868	0.05	0.0001	0.001	59.1	0.000021	0.0005	0.001	0.026	0.0572	0.00001	3.67	0.005	19.8	0.0579	0.0056	17.6
W50	2012-05-03 10:30	0.00002	0.0063	0.00043	0.0856	0.05	0.0001	0.001	60.6	0.000022	0.0005	0.001	0.0257	0.0504	0.00001	3.61	0.005	19.4	0.0547	0.0055	17.5
W50	2012-05-04 14:30	0.00002	0.0239	0.00038	0.0691	0.05	0.0001	0.001	45.7	0.000033	0.0005	0.001	0.027	0.0851	0.00001	2.93	0.005	14.5	0.0703	0.0039	12.7
W50	2012-05-05 9:30	0.00002	0.0165	0.00037	0.0688	0.05	0.0001	0.001	44.9	0.000021	0.0005	0.001	0.0253	0.0812	0.00001	2.91	0.005	14.7	0.0742	0.004	12.8
W50	2012-05-06 14:00	0.00002	0.0136	0.00038	0.0718	0.05	0.0001	0.001	49.6	0.000019	0.0005	0.001	0.0254	0.0768	0.00001	3.09	0.005	14.8	0.0683	0.0043	13
W50	2012-05-07 0:00	0.00002	0.0056	0.00036	0.0782	0.05	0.0001	0.001	61.1	0.000012	0.0005	0.001	0.0071	0.0174	0.00001	3.63	0.005	18.2	0.0227	0.0063	17.6
W50	2012-05-09 14:00	0.00002	0.0209	0.00037	0.0795	0.05	0.0001	0.001	52.6	0.000024	0.0005	0.001	0.0281	0.105	0.00001	3.38	0.005	16.9	0.1	0.0046	14.7
W50	2012-05-10 17:00	0.00002	0.016	0.00039	0.0745	0.05	0.0001	0.001	48.8	0.000024	0.0005	0.001	0.0256	0.12	0.00001	3.07	0.005	15.2	0.119	0.0044	13.3
W50	2013-04-22 11:45	0.00002	0.0077	0.00033	0.0761	0.05	0.0001	0.001	59.8	0.00001	0.0005	0.001	0.0167	0.029	0.00001	3.1	0.005	18.7	0.0126	0.0044	14.8
W50	2013-04-23 8:10																				
W50	2013-04-25 6:40																				
W50	2013-04-26 6:40	0.00002	0.0052	0.00029	0.0775	0.05	0.0001	0.001	56.3	0.00001	0.0005	0.001	0.0176	0.0265	0.00001	3.02	0.005	19	0.0041	0.0038	14.8
W50	2013-04-30 5:50	0.00002	0.0033	0.0003	0.0729	0.05	0.0001	0.001	52	0.00001	0.0005	0.001	0.0158	0.023	0.00001	2.9	0.005	17.3	0.0049	0.0037	15.4
W50	2013-05-03 13:45	0.00002	0.0042	0.00032	0.0715	0.05	0.0001	0.001	49.2	0.00001	0.0005	0.001	0.0142	0.0213	0.00001	2.84	0.005	16.5	0.0111	0.0039	15.1
W50	2013-05-05 15:00	0.00002	0.0047	0.0003	0.0701	0.05	0.0001	0.001	49.8	0.00001	0.0005	0.001	0.0149	0.0308	0.00001	2.76	0.005	16.2	0.0206	0.0037	15.1
W50	2013-05-07 16:30	0.00002	0.0062	0.00035	0.0746	0.05	0.0001	0.001	51.7	0.00001	0.0005	0.001	0.0195	0.0869	0.00001	3.09	0.005	16.7	0.0999	0.0038	14.4
W50	2013-05-16 14:50	0.00002	0.0496	0.00027	0.0361	0.05	0.0001	0.001	17.3	0.00001	0.0005	0.001	0.0223	0.131	0.00001	1.44	0.005	5.03	0.026	0.0014	3.54
W50	2013-05-23 0:00	0.00002	0.12	0.00029	0.0371	0.05	0.0001	0.001	15.5	0.000014	0.0005	0.001	0.0322	0.205	0.00001	2.12	0.005	4.53	0.0309	0.0017	5.69
W50	2013-05-24 7:30																				
W50	2013-05-25 7:25																				
W50	2013-05-26 7:15																				
W50	2013-05-27 6:50																				
W50	2013-05-28 8:25	0.00002	0.0363	0.00027	0.0441	0.05	0.0001	0.001	21.3	0.000013	0.0005	0.001	0.0243	0.117	0.00001	3.62	0.005	6.47	0.0441	0.0039	8.79
W50	2013-05-29 8:00	0.00002	0.0345	0.00027	0.047	0.05	0.0001	0.001	23.1	0.00001	0.0005	0.001	0.0237	0.114	0.00001	3.8	0.005	7.22	0.0462	0.0046	9.53
W50	2013-05-30 7:50																				
W50	2013-05-31 8:30	0.00002	0.0342	0.00032	0.0516	0.05	0.0001	0.001	26.7	0.000013	0.0005	0.001	0.0258	0.11	0.00001	3.78	0.005	8.6	0.0494	0.0049	10.5
W50	2013-06-07 0:00	0.00002	0.0105	0.00041	0.075	0.05	0.0001	0.001	44.2	0.00001	0.0005	0.001	0.0082	0.0231	0.00001	3.02	0.005	12.8	0.0938	0.0057	11.3
W50	2013-07-11 0:00	0.00002	0.0095	0.00031	0.105	0.05	0.0001	0.001	47.7	0.000022	0.0005	0.001	0.00323	0.0131	0.00001	2.74	0.005	14.3	0.0586	0.0047	13.1
W50	2014-02-27 8:40	0.00002	0.0037	0.00037	0.0719	0.05	0.0001	0.001	54.3	0.00001	0.0005	0.001	0.006	0.0068	0.00001	2.96	0.005	16.7	0.0396	0.0052	13.3
W50	2014-03-08 10:25	0.00002	0.004	0.00039	0.0731	0.05	0.0001	0.001	53	0.00001	0.0005	0.001	0.00586	0.0099	0.00001	3.16	0.005	16.7	0.0751	0.0054	14
W50	2014-03-10 7:45	0.00002	0.0036	0.0004	0.0734	0.05	0.0001	0.001	53.6	0.00001	0.0005	0.001	0.00602	0.011	0.00001	3.17	0.005	17.3	0.0626	0.0052	14
W50	2014-03-21 9:50	0.00002	0.0049	0.00039	0.0709	0.05	0.0001	0.001	51.6	0.00001	0.0005	0.001	0.00566	0.009	0.00001	3.05	0.005	16.9	0.0517	0.0056	13.5
W50	2014-03-27 8:45	0.00002	0.0044	0.00041	0.0737	0.05	0.0001	0.001	55.1	0.00001	0.0005	0.001	0.00641	0.0164	0.00001	3.19	0.005	17.6	0.0673	0.0055	13.4
W50	2014-04-02 14:00	0.00002	0.0062	0.00039	0.0695	0.05	0.0001	0.001	55	0.00001	0.0005	0.001	0.0071	0.0223	0.00001	3.02	0.005	16.5	0.0675	0.0054	13.1
W50	2014-04-07 7:00	0.00002	0.0035	0.00039	0.0733	0.05	0.0001	0.001	52.3	0.00001	0.0005	0.001	0.0124	0.0361	0.00001	3.09	0.005	16.1	0.0174	0.004	12.6
W50	2014-04-17 9:10	0.00002	0.0055	0.00036	0.0754	0.05	0.0001	0.001	52.7	0.000013	0.0005	0.001	0.0211	0.0513	0.00001	3.39	0.005	16.8	0.142	0.0043	14
W50	2014-04-21 13:45	0.00002	0.0058	0.00036	0.0745	0.05	0.0001	0.001	51.9	0.000013	0.0005	0.001	0.0241	0.0478	0.00001	3.4	0.005	16.4	0.157	0.0046	14.1
W50	2014-04-28 11:20	0.00002	0.0154	0.00035	0.0541	0.05	0.0001	0.001	35.5	0.000018	0.0005	0.001	0.0241	0.0771	0.00001	4.03	0.005	10.4	0.0811	0.0057	13.9
W50	2014-05-06 7:35	0.00002	0.0233	0.00036	0.0609	0.05	0.0001	0.001	38.5	0.000019	0.0005	0.001	0.0271	0.103	0.00005	3.64	0.005	12.4	0.119	0.005	13
W50	2014-05-18 16:20	0.00002	0.0215	0.00039	0.0654	0.05	0.0001	0.001	39.2	0.000017	0.0005	0.001	0.0225	0.204	0.00001	3.3	0.005	11.6	0.272	0.004	10.6
W50	2014-05-22 7:50	0.00002	0.0264	0.00056	0.0709	0.05	0.0001	0.001	37	0.000018	0.0005	0.001	0.0263	0.25	0.00001	4.17	0.005	10.9	0.257	0.0055	11.3
W50	2014-05-26 8:30	0.00002	0.0262	0.0006	0.0744	0.05	0.0001	0.001	41.7	0.00002	0.0005	0.001	0.0256	0.3	0.00001	4.05	0.005	12.4	0.33	0.0054	11.4
W50	2014-11-17 14:00	0.00002	0.0056	0.00034	0.0792	0.05	0.0001	0.001	61.5	0.00001	0.0005	0.001	0.00523	0.0132	0.00001	4.11	0.005	17.9	0.0624	0.0052	17
W50	2014-11-24 14:15	0.00002	0.0055	0.00032	0.0811	0.05	0.0001	0.001	61.2	0.000022	0.0005	0.001	0.00489	0.0139	0.00001	4.28	0.005	19.1	0.068	0.0053	17.5
W50	2014-12-03 8:40	0.00002	0.0044	0.00031	0.0834	0.05	0.0001	0.001	62.2	0.00001	0.0005	0.001	0.005	0.014	0.00001	4.13	0.005	18.1	0.0737	0.0054	17.3
W50	2014-12-09 7:25		0.0035	0.00039	0.0671	0.057	0.0001	0.001	54.6	0.00001	0.0005	0.001	0.00818	0.0094	0.00001	7.21	0.005	17.8	0.0043	0.0093	19.8
W50	2014-12-15 9:15	0.00002	0.003	0.00038	0.0667	0.055	0.0001	0.001	56.9	0.00001	0.0005	0.001	0.00803	0.0099	0.00001	7.14	0.005	17.4	0.0067	0.0091	19.4
W50	2014-12-16 9:00	0.00002	0.003	0.00036	0.0693	0.057	0.0001	0.001	59	0.00001	0.0005	0.001	0.00784	0.0092	0.00001	7.15	0.005	17.1	0.0076	0.0094	19.1
W50	2014-12-20 9:00	0.00002	0.003	0.00033	0.0793	0.05	0.0001	0.001	68.4	0.00001	0.0005	0.001	0.00478	0.0154	0.00001	4.35	0.005	19.9	0.0587	0.0054	18.3
W50	2015-04-08 7:10	0.00002	0.003	0.00034	0.0651	0.059	0.0001	0.001	52.9	0.00001	0.0005	0.001	0.00833	0.0105	0.00001	6.33	0.005	16.6	0.0099	0.0082	18.7
W50	2015-04-14 16:40	0.00002	0.0041	0.00034	0.0659	0.056	0.0001	0.001	53.5	0.00001	0.0005	0.001	0.00886	0.0121	0.00001	6.08	0.005	16.7	0.0235	0.0076	19.2
W50	2015-04-20 8:20	0.00002	0.0069	0.00023	0.043	0.066	0.0001	0.001	31.5	0.00001	0.0005	0.001	0.0117	0.0157	0.00001	4.73	0.005	9.09	0.0325	0.0057	17.9
W50	2015-04-27 7:50	0.00002	0.0088	0.00026	0.0508	0.05	0.0001	0.001	35.6	0.00001	0.0005	0.001	0.0173	0.0488	0.00001	4.38	0.005	10.7	0.058	0.0052	15.5
W50	2015-05-07 15:25	0.00002	0.0085	0.00032	0.0816	0.05	0.0001	0.001	73.7	0.00001	0.0005	0.001	0.0104	0.0454	0.00001	5.8	0.005	21.5	0.051	0.0063	20.9
W50	2015-05-14 11:15	0.00002	0.0111	0.00035	0.0454	0.05	0.0001	0.001	42.7	0.00001	0.0005	0.001	0.0186	0.199	0.00001	3.08	0.005	9.43	0.0878	0.0033	12.8
W50	2015-05-15 7:05																				

Station	Date / Time	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
W50	2009-05-09 0:00	0.0019	0.0001	0.0009	20.3	0.0006	5.33	0.001	0.474	0.0013	0.00005	0.003	0.0005	0.007	
W50	2009-05-18 0:00	0.002	0.0001	0.0007	18.4	0.0006	5.33	0.0001	0.496	0.002	0.00001	0.0028	0.00037	0.004	0.0002
W50	2009-05-26 0:00														
W50	2009-05-27 0:00	0.002	0.0002	0.0009	17.6	0.0006	4.87	0.0001	0.482	0.0009	0.00001	0.0026	0.00038	0.007	0.0001
W50	2009-06-03 0:00	0.003	0.0002	0.0011	16.3	0.0007	4.78	0.0001	0.497	0.0011	0.00001	0.0023	0.00042	0.009	0.0002
W50	2009-06-07 0:00	0.002	0.0004	0.0011	19.4	0.0018	4.48	0.0001	0.606	0.0026	0.00001	0.0012	0.00068	0.005	0.0002
W50	2009-06-11 0:00	0.001	0.0001	0.001	17	0.001	4.41	0.0001	0.512	0.0017	0.00001	0.0018	0.00065	0.006	0.0002
W50	2009-06-20 0:00	0.002	0.0001	0.0012	16.7	0.001	5.16	0.0001	0.472	0.0005	0.00001	0.0014	0.00084	0.001	0.001
W50	2009-06-29 0:00	0.002	0.0001	0.001	19.5	0.0006	5.62	0.0001	0.529	0.0007	0.00001	0.0023	0.00039	0.006	0.0002
W50	2009-07-06 0:00														
W50	2009-07-13 0:00	0.002	0.0007	0.0075	15.8	0.0006	4.28	0.0001	0.614	0.005	0.00001	0.0012	0.00046	0.011	0.0002
W50	2009-07-27 0:00	0.001	0.0004	0.0017	15.5	0.0017	2.9	0.0001	0.634	0.0054	0.00001	0.0014	0.0019	0.005	0.0006
W50	2009-08-10 0:00														
W50	2009-08-11 0:00	0.002	0.0004	0.0002	20.8	0.0007	5.78	0.0001	0.48	0.0006	0.00001	0.0022	0.0004	0.004	0.0002
W50	2009-08-18 0:00	0.001	0.0006	0.0015	17.7	0.0012	3.24	0.0001	0.598	0.0006	0.00001	0.0005	0.0007	0.003	0.0001
W50	2009-08-25 0:00	0.001	0.0006	0.0014	17.5	0.001	3.08	0.0001	0.648	0.0005	0.00001	0.0004	0.0007	0.003	0.0001
W50	2009-09-07 0:00	0.001	0.0008	0.0021	18.2	0.0016	3.15	0.0003	0.724	0.0014	0.00001	0.0004	0.0007	0.005	0.0001
W50	2009-09-17 0:00	0.001	0.0003	0.0015	23.4	0.0015	3.22	0.0001	0.78	0.0007	0.00001	0.0004	0.0006	0.006	0.0001
W50	2009-09-23 0:00	0.001	0.0001	0.001	21.5	0.0016	3.02	0.0001	0.8	0.0004	0.00001	0.0004	0.0006	0.002	0.0001
W50	2009-10-05 0:00	0.002	0.0001	0.001	25	0.0022	3.08	0.0001	0.854	0.0004	0.00001	0.0004	0.0006	0.001	0.0001
W50	2009-10-12 0:00	0.002	0.0001	0.0007	22	0.0021	2.88	0.0001	0.89	0.01	0.00001	0.0004	0.0005	0.001	0.0001
W50	2009-10-19 0:00	0.002	0.0002	0.0013	21.8	0.0022	3.27	0.0001	0.9	0.01	0.00001	0.0006	0.0008	0.005	0.0001
W50	2009-10-27 0:00	0.003	0.0001	0.0007	23.4	0.0024	3.15	0.0001	0.882	0.01	0.00001	0.0006	0.0006	0.004	0.0002
W50	2010-06-16 0:00	0.001	0.0002	0.0005	60	0.0013	5.16	0.005	0.643	0.01	0.00005	0.0025	0.005		0.002
W50	2010-07-04 0:00	0.001	0.0002	0.0005	60	0.0015	5.29	0.005	0.609	0.01	0.00005	0.0027	0.005		0.002
W50	2010-07-11 0:00	0.001	0.0002	0.0005	60	0.0015	5.4	0.005	0.555	0.01	0.00005	0.0024	0.005		0.002
W50	2010-07-15 0:00	0.001	0.0002	0.0005	60	0.0026	4.31	0.005	1.05	0.01	0.00005	0.0008	0.005		0.002
W50	2010-10-13 0:00	0.001	0.0002	0.0005	39	0.0045	5.36	0.005	1.3	0.005	0.00005	0.0017	0.005	0.005	0.0005
W50	2010-10-14 0:00	0.001	0.0002	0.0005	40	0.0046	5.03	0.005	1.33	0.005	0.00005	0.0016	0.005	0.005	0.0005
W50	2010-10-15 0:00	0.001	0.0002	0.0005	40	0.0045	4.39	0.005	1.38	0.005	0.00005	0.0013	0.005	0.005	0.0005
W50	2010-10-16 0:00	0.001	0.0002	0.0005	44	0.0048	4.46	0.005	1.62	0.005	0.00005	0.0012	0.005	0.005	0.0005
W50	2010-10-17 0:00	0.001	0.0002	0.0005	39	0.0049	4.39	0.005	1.7	0.005	0.00005	0.0014	0.005	0.005	0.0005
W50	2010-10-18 0:00	0.001	0.0002	0.0005	43	0.0049	4.4	0.005	1.85	0.005	0.00005	0.0016	0.005	0.005	0.0005
W50	2010-10-19 0:00	0.001	0.0002	0.0005	34	0.0042	4.52	0.005	1.32	0.005	0.00005	0.0013	0.005	0.005	0.0005
W50	2010-11-07 0:00	0.001	0.0002	0.0005	30	0.0026	5.92	0.005	0.742	0.005	0.00005	0.003	0.005	0.005	0.0005
W50	2010-11-11 2:00	0.001	0.0002	0.0005	33	0.0026	6.13	0.005	0.728	0.005	0.00005	0.0028	0.005	0.005	0.0005
W50	2011-05-02 0:00	0.003	0.0002	0.0005	3	0.0002	3.1	0.005	0.091	0.005	0.00005	0.0001	0.005	0.009	0.0005
W50	2011-05-07 0:00	0.001	0.0002	0.0005	3	0.0001	2.22	0.005	0.061	0.005	0.00005	0.0001	0.005	0.005	0.0005
W50	2011-10-18 0:00	0.001	0.0002	0.0005	20	0.0006	5.75	0.005	0.731	0.005	0.00005	0.0022	0.005	0.005	0.0005
W50	2011-11-13 0:00	0.001	0.0002	0.0005	18.6	0.00102	4.31	0.005	0.562	0.005	0.00005	0.00231	0.005	0.005	0.0005
W50	2012-04-13 18:48	0.001	0.0002	0.0005	16	0.00073	4.92	0.005	0.577	0.005	0.00005	0.00269	0.005	0.0092	0.0005
W50	2012-04-14 11:10	0.001	0.0002	0.0005	17.9	0.0008	5.41	0.005	0.615	0.005	0.00005	0.00282	0.005	0.005	0.0005
W50	2012-04-15 9:50	0.001	0.0002	0.0005	17.9	0.00078	5.32	0.005	0.63	0.005	0.00005	0.00301	0.005	0.005	0.0005
W50	2012-04-16 11:00	0.001	0.0002	0.0005	18.1	0.00084	5.38	0.005	0.629	0.005	0.00005	0.00297	0.005	0.005	0.0005
W50	2012-04-17 11:00														
W50	2012-04-18 10:30	0.0011	0.0002	0.0005	20.8	0.00209	5.78	0.005	0.663	0.005	0.00005	0.00181	0.005	0.005	0.0005
W50	2012-04-19 13:50	0.001	0.0002	0.0005	20.7	0.00188	5.89	0.005	0.657	0.005	0.00005	0.0018	0.005	0.005	0.0005
W50	2012-04-20 16:05	0.0011	0.0002	0.0005	19.5	0.00181	5.93	0.005	0.666	0.005	0.00005	0.00182	0.005	0.0066	0.0005
W50	2012-04-21 16:30	0.0011	0.0002	0.0005	20.4	0.00195	5.96	0.005	0.653	0.005	0.00005	0.00179	0.005	0.005	0.0005
W50	2012-04-22 15:30	0.001	0.0002	0.0005	19.8	0.00187	5.95	0.005	0.653	0.005	0.00005	0.00182	0.005	0.005	0.0005
W50	2012-04-23 14:46	0.001	0.0002	0.0005	19.8	0.00169	5.45	0.005	0.648	0.005	0.00005	0.00201	0.005	0.005	0.0005
W50	2012-04-24 0:00	0.001	0.0002	0.0005	19.3	0.0019	5.56	0.005	0.635	0.005	0.00005	0.00181	0.005	0.005	0.0005
W50	2012-04-25 0:00	0.0014	0.0002	0.0005	18.1	0.00175	5.49	0.005	0.657	0.005	0.00005	0.00197	0.005	0.005	0.0005
W50	2012-04-26 0:00	0.0011	0.0002	0.0005	18.3	0.00174	5.49	0.005	0.643	0.005	0.00005	0.00191	0.005	0.005	0.0005
W50	2012-04-27 0:00	0.001	0.0002	0.0005	19.6	0.00168	5.97	0.005	0.633	0.005	0.00005	0.00182	0.005	0.005	0.0005
W50	2012-04-28 0:00	0.0011	0.0002	0.0005	20.2	0.00176	5.96	0.005	0.638	0.005	0.00005	0.00182	0.005	0.005	0.0005
W50	2012-04-29 0:00	0.001	0.0002	0.0005	19.5	0.00185	5.89	0.005	0.635	0.005	0.00005	0.00182	0.005	0.005	0.0005
W50	2012-04-30 0:00	0.001	0.0002	0.0005	19.4	0.00161	5.78	0.005	0.633	0.005	0.00005	0.0018	0.005	0.005	0.0005
W50	2012-05-01 14:30	0.001	0.0002	0.0005	18.7	0.00173	5.75	0.005	0.643	0.005	0.00005	0.00185	0.005	0.005	0.0005
W50	2012-05-02 15:45	0.001	0.0002	0.0005	18.1	0.0016	5.67	0.005	0.637	0.005	0.00005	0.00182	0.005	0.005	0.0005
W50	2012-05-03 10:30	0.001	0.0002	0.0005	18.6	0.00161	5.82	0.005	0.631	0.005	0.00005	0.00181	0.005	0.005	0.0005
W50	2012-05-04 14:30	0.001	0.0002	0.0005	13.3	0.00123	4.44	0.005	0.474	0.005	0.00005	0.00131	0.005	0.005	0.0005
W50	2012-05-05 9:30	0.001	0.0002	0.0005	13.4	0.00115	4.17	0.005	0.472	0.005	0.00005	0.00131	0.005	0.005	0.0005
W50	2012-05-06 14:00	0.001	0.0002	0.0005	15.3	0.00129	5.07	0.005	0.497	0.005	0.00005	0.00141	0.005	0.005	0.0005
W50	2012-05-07 0:00	0.0011	0.0002	0.0005	17	0.00063	5.67	0.005	0.607	0.005	0.00005	0.00262	0.005	0.005	0.0005
W50	2012-05-09 14:00	0.001	0.0002	0.0005	15.3	0.00143	4.89	0.005	0.548	0.005	0.00005	0.00161	0.005	0.005	0.0005
W50	2012-05-10 17:00	0.001	0.0002	0.0005	14.2	0.00126	4.54	0.005	0.513	0.005	0.00005	0.00155	0.005	0.005	0.0005
W50	2013-04-22 11:45	0.001	0.0002	0.0005	15.7	0.00087	4.57	0.005	0.594	0.005	0.00005	0.00178	0.005	0.005	0.0005
W50	2013-04-23 8:10														
W50	2013-04-25 6:40														
W50	2013-04-26 6:40	0.001	0.0002	0.0005	16.4	0.0008	4.49	0.005	0.578	0.005	0.00005	0.00159	0.005	0.005	0.0005
W50	2013-04-30 5:50	0.001	0.0002	0.0005	14.9	0.00093	4.15	0.005	0.549	0.005	0.00005	0.00153	0.005	0.005	0.0005
W50	2013-05-03 13:45	0.001	0.0002	0.0005	13.3	0.00064	3.85	0.005	0.536	0.005	0.00005	0.00158	0.005	0.005	0.0005
W50	2013-05-05 15:00	0.001	0.0002	0.0005	13.2	0.00062	3.86	0.005	0.524	0.005	0.00005	0.00154	0.005	0.005	0.0005
W50	2013-05-07 16:30	0.001	0.0002	0.0005	13.3	0.0007	4.06	0.005	0.537	0.005	0.00005	0.00149	0.005	0.005	0.0005
W50	2013-05-16 14:50	0.0012	0.0002	0.0005	3	0.00026	2.61	0.005	0.147	0.005	0.00005	0.0004	0.005	0.005	0.0005
W50	2013-05-23 0:00	0.0015	0.0002	0.0005	4.1	0.00027	2.36	0.005	0.241	0.0052	0.00005	0.00024	0.005	0.005	0.0005
W50	2013-05-24 7:30														
W50	2013-05-25 7:25														
W50	2013-05-26 7:15														
W50	2013-05-27 6:50														
W50	2013-05-28 8:25	0.001	0.0002	0.0005	7.3	0.00033	2.12	0.005	0.619	0.005	0.00005	0.00037	0.005	0.005	0.0005
W50	2013-05-29 8:00	0.001	0.0002	0.0005	8.1	0.00036	2.18	0.005	0.671	0.005	0.00005	0.00044	0.005	0.005	0.0005
W50	2013-05-30 7:50														
W50	2013-05-31 8:30	0.0011	0.0002	0.0005	9.1	0.00061	2.65	0.005	0.654	0.005	0.00005	0.00056	0.005	0.005	0.0005
W50	2013-06-07 0:00	0.0013	0.0002	0.0005	8.4	0.00036	3.89	0.005	0.547	0.005	0.00005	0.00135	0.005	0.005	0.0005
W50	2013-07-11 0:00	0.0024	0.0002	0.0005	9.1	0.00024	5.73	0.005	0.565	0.005	0.00005	0.00082	0.005	0.005	0.0005
W50	2014-02-27 8:40	0.001	0.0002	0.0005	11	0.0003	4.73	0.005	0.569	0.005	0.00005	0.00202	0.005	0.005	0.0005
W50	2014-03-08 10:25	0.001	0.0002	0.0005	12.7	0.00032	4.89	0.005	0.577	0.005	0.00005	0.00183	0.005	0.005	0.0005
W50	2014-03-10 7:45	0.001	0.0002	0.0005	12.2	0.0003	4.88	0.005	0.572	0.005	0.00005	0.00192	0.005	0.005	0.0005
W50	2014-03-21 9:50	0.001	0.0002	0.0005	11.1	0.00035	4.54	0.005	0.596	0.005	0.00005	0.00191	0.005	0.005	0.0005
W50	2014-03-27 8:45	0.001	0.0002	0.0005	11.4	0.00027	5.24	0.005	0.582	0.005	0.00005	0.00205	0.005	0.005	0.0005
W50	2014-04-02 14:00	0.001	0.0002	0.0005	10.7	0.0003	5.19	0.005	0.558	0.005	0.00005	0.00195	0.005	0.005	0.0005
W50	2014-04-07 7:00	0.0011	0.0002	0.0005	11.5	0.00049	4.76	0.005	0.577	0.005	0.00005	0.00124	0.005	0.005	0.0005
W50	2014-04-17 9:10	0.001	0.0002	0.0005	12.2	0.00062	4.88	0.005	0.652	0.005	0.00005	0.00131	0.005	0.005	0.0005
W50	2014-04-21 13:45	0.001	0.0002	0.0005	12.9	0.00059	4.92	0.005	0.647	0.005	0.00005	0.00127	0.005	0.005	0.0005
W50	2014-04-28 11:20	0.001	0.0002	0.0005	11.5	0.00071	3.47	0.005	0.632	0.005	0.00005	0.00074	0.005	0.005	0.0005
W50	2014-05-06 7:35	0.001	0.0002	0.0005	12.6	0.00076	3.71	0.005	0.668	0.005	0.00005	0.00082	0.005	0.005	0.0005
W50	2014-05-18 16:20	0.001	0.0002	0.0005	13.1	0.00077	3.75	0.005	0.641	0.005	0.00005	0.00083	0.005	0.005	0.0005
W50	2014-05-22 7:50	0.0012	0.0002	0.0005	14.2	0.00094	3.5	0.005	0.789	0.005	0.00005	0.00077	0.005	0.005	0.0005
W50	2014-05-26 8:30	0.0012	0.0002	0.0005	15.1	0.00086	3.66	0.005	0.873	0.005	0.00005	0.00084	0.005	0.005	0.0005
W50	2014-11-17 14:00	0.001	0.0002	0.0005	28.7	0.00047	4.15	0.005	0.756	0.005	0.00005	0.00192	0.005	0.005	0.0005
W50	2014-11-24 14:15	0.001	0.0002	0.0005	30.2	0.00054	4.35	0.005	0.755	0.005	0.00005	0.00178	0.005	0.005	0.0005
W50	2014-12-03 8:40	0.001	0.0002	0.0005	27.9	0.00051	4.12	0.005	0.779	0.005	0.00005	0.00187	0.005	0.005	0.0005
W50	2014-12-09 7:25	0.0019	0.0002	0.0005	31.3	0.0009	1.47	0.005	1.4	0.005	0.00005	0.00142	0.005	0.005	0.0005
W50	2014-12-15 9:15	0.001	0.0002	0.0005	32.2	0.00095	1.57	0.005	1.44	0.005	0.00005	0.00142	0.005	0.005	0.0005
W50	2014-12-16 9:00	0.001	0.0002	0.0005	32	0.00097	1.63	0.005	1.45	0.005	0.00005	0.00138	0.005	0.005	0.0005
W50	2014-12-20 9:00	0.001	0.0002	0.0005	30	0.00048	4.76	0.005	0.803	0.005	0.00005	0.00192	0.005	0.005	0.0005
W50	2015-04-08 7:10	0.001	0.0002	0.0005	30.6	0.00085	2.12	0.005	1.31	0.005	0.00005	0.00142	0.005	0.005	0.0005
W50	2015-04-14 16:40	0.001	0.0002	0.0005	25.2	0.00119	2.42	0.005	1.22	0.005	0.00005	0.00129	0.005	0.005	0.0005
W50	2015-04-20 8:20	0.001	0.0002	0.0005	14.6	0.00096	1.91	0.005	0.678	0.005	0.00005	0.00072	0.005	0.005	0.0005
W50	2015-04-27 7:50	0.001	0.0002	0.0005	16.7	0.00071	2.53	0.005	0.732	0.005	0.00005	0.00087	0.005	0.005	0.0005
W50	2015-05-07 15:25	0.001	0.0002	0.0005	31.2	0.00143	4.5	0.005	1.21	0.005	0.00005	0.00191	0.005	0.005	0.0005
W50	2015-05-14 11:15	0.001	0.0002	0.0005	10.3	0.00097	3.16	0.005	0.514	0.005	0.00005	0.00065	0.005	0.005	0.0005
W50	2015-05-15 7:05														

Attachment 3: Sitewide Database

Station	Date / Time	Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	N-NO2	N-NO3	N-NH3	SO4-D	Chlord	Fluord
		General Parameters								Anions & Nitrogen Species					
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W50	2015-05-15 7:05	96	298	107.9	8.01	178	3.6	10.9	89.7	0.0575	1.58	0.036	36.1	6.7	0.21
W50	2015-05-19 8:30	114	344	94.6	7.97	224	6	12.1	88.4	0.0541	1.78	0.058	38.6	6.6	0.25
W50	2015-05-27 15:03	176	532	129.4	7.48	318	1.8	4.6	94.8	0.0296	2.72	0.14	74.3	11	0.36
W50	2016-04-12 15:00	201	527	178.3	7.27	303	5.3	2.7	87.2	0.008	0.793	0.287	57.9	11.2	
W50	2016-04-15 11:23	194	508		7.8	288	3.3	2.3		0.0077	0.841	0.219	54.8	10.6	
W50	2016-04-21 15:20	185	493	142.7	7.59	278	8	2.9	98.8	0.0043	0.853	0.175	52.4	10.2	
W50	2016-04-26 11:25	184	478	178.6	7.46	272	3	2.6	74.2	0.0042	0.884	0.153	50.2	9.9	
W50	2016-04-27 9:05	180	478	138.5	7.69	270	3	2.5	83	0.0053	0.881	0.151	49.8	9.82	
W50	2016-05-02 16:50	176	454	100.4	7.54	256	4.7	3.4	84.1	0.0037	0.938	0.12	46.7	9.28	
W50	2016-05-22 11:30	124	352	153	7.56	203	3.3	7.1	85.9	0.0239	2.45	0.0538	38.3	5.72	
W50	2016-05-25 9:50	122	350	145.1	7.68	201	4	7	86.4	0.0208	2.47	0.0523	37.9	5.61	
W50	2016-05-31 8:55	125	343	138.8	7.77	205	4	7.2	88.4	0.0203	2.49	0.0566	39.1	5.81	
W50	2016-06-01 7:45				8.8			7.3							
W50	2016-06-07 14:35	125	343	141.4	7.67	205	3	7.7	89.6	0.0212	2.45	0.0878	38.8	5.8	
W50	2016-06-17 8:00	124	345	133.7	7.62	202	4	9.5	79.9	0.0301	2.58	0.143	38.9	5.27	
W50	2016-06-23 9:35			170.8	7.6			11	77.7						
W50	2016-06-23 9:35	121	348	170.8	7.6	205	3	11	77.7	0.046	2.91	0.0968	40	5.1	
W50	2016-07-10 15:45	127	352	138.4	7.56	208	3	12	88.7	0.0635	2.48	0.124	41.2	5.18	
W50	2016-07-12 9:58	127	347	137.2	7.66	207	4	11.2	80.3	0.0896	2.4	0.24	41.2	5.15	
W50	2016-07-19 9:50			95.2	7.58			11.3	71.3						
W50	2016-07-19 9:50	129	357	95.2	7.58	209	5.3	11.3	71.3	0.0611	2.41	0.106	41	5.11	
W50	2016-07-26 15:25	128	359	103.2	7.51	211	5.3	11.4	81	0.0853	2.25	0.33	42.2	5.25	
W50	2016-08-02 14:40	130	377	116.2	7.47	222	4	12.6	77.2	0.0619	2.72	0.196	44.6	5.28	
W50	2016-08-11 14:15	142	432	133.2	7.45	279	3	14	78.6	0.0573	3.9	0.199	52.8	5.47	
W50	2016-08-15 8:45	141	409	130.3	7.63	248	3	13.6	73	0.0645	4.04	0.111	54.2	5.52	
W50	2016-08-17 8:50			138.5	7.62			13.7	78.3						
W50	2016-08-17 8:50	142	405	138.5	7.62	251	3	13.7	78.3	0.0585	4.04	0.097	54.4	5.52	
W50	2016-08-18 8:25			121.5	7.71			13.5	73.6						
W50	2016-08-28 17:00	152	441	151.1	7.19	274	4	14.4	70.1	0.0585	5.01	0.0806	60.8	5.6	
W50	2016-09-04 8:15	34	109	149.2	7.12	90.7	3	13.6	89.3	0.0249	3.14	0.0282	33.5	2.96	
W50	2016-09-04 8:55														
W50	2016-09-06 15:45			156.7	7.86			14.3	88.1						
W50	2016-09-06 15:45	85.2	258	156.7	7.86	154	5.2	14.3	88.1	0.0236	3.14	0.048	33.6	3.03	
W50	2016-09-07 15:45														
W50	2016-09-13 7:30	62.7	165	108.6	7.56	93.8	3	12.4	42	0.0119	1.6	0.0173	17.1	1.8	
W50	2016-09-16 13:25	85.4	252	171.7	7.22	146	3	12.8	92.8	0.0193	2.95	0.0497	31.8	2.9	
W50	2016-09-20 7:55	79	238	109.6	7.85	142	3	10.7	90.4	0.0162	2.92	0.0405	31.4	2.8	
W50	2016-09-27 16:00	78.8	223	147.6	7.23	137	3	9.6	94	0.0149	2.91	0.0286	30.1	2.61	
W50	2016-10-04 13:30	81.7	215	133.8	7.59	138	3	6.9	95.8	0.0143	2.73	0.0259	28.3	2.55	
W50	2016-10-11 8:05			115.7	7.68			3.7	87.7						
W50	2016-10-12 7:40			122.1	7.89			3.8	89.4						
W50	2016-10-12 7:40	168	469	122.1	7.89	297	3	3.8	89.4	0.017	5.65	0.0308	67.9	6.08	
W50	2016-10-13 8:30			108.4	7.79			3.8	91.2						
W50	2016-10-14 7:50			108.7	7.7			3.9	104.2						
W50	2016-10-15 7:50			106.1	7.57			3.9	91.2						
W50	2016-10-16 8:00			107.9	7.61			3.8	86.7						
W50	2016-10-17 7:55			107	7.73			3.8	128.8						
W50	2016-10-18 9:00	174	483	123.2	7.81	304	3	4	85.5	0.0203	5.37	0.0697	68.8	6.34	
W50	2016-10-19 7:10			109.4	7.61			3.9	91						
W50	2016-10-20 8:30			108.4	7.76			3.9	90.8						
W50	2016-10-21 8:10			117.8	7.58			3.9	85.9						
W50	2016-10-22 8:25			120.7	7.62			3.9	87.6						
W50	2016-10-23 8:20			124.4	7.59			3.7	88.1						
W50	2016-10-24 8:05			122.1	7.63			3.5	88.1						
W50	2016-10-25 8:30	180	497	120	7.71	307	3	3.5	85.5	0.0209	5.13	0.073	67.3	6.38	
W50	2017-05-02 8:10	117	334	181.3	6.87	204	3	4.9	102	0.0717	2.08	0.156	43.1	5.1	
W50	2017-05-09 7:35	126	357	97.1	7.6	204	3	7.4	83.8	0.0504	2.07	0.0598	46.4	5.3	
W50	2017-05-16 9:15	115	324	98.3	7.64	200	3	10.7	82.6	0.0628	2.09	0.0349	44.9	4.96	
W50	2017-05-23 8:00	116	336	162.6	7.51	197	4.4	10.5	86.6	0.0487	1.9	0.0164	45.6	5	
W50	2017-05-30 15:45	120	342	109.7	8.41	194	3	13.7	83.8	0.0356	1.77	0.0182	43.7	4.83	
W50	2017-05-31 15:45														
W50	2017-06-06 9:50	118	328	186.6	7.68	194	5	13.8	89.5	0.0291	1.93	0.0145	43.9	4.31	
W50	2017-06-13 8:30	122	340	149.4	7.64	205	3	14	79.1	0.0264	2.23	0.0251	48.2	4.39	
W50	2017-06-20 8:20	120	343	98.9	7.89	203	3	15	82.8	0.0601	2.35	0.0457	46.4	3.97	
W50	2017-07-11 14:50	133	399	115.7	8.41	231	3	16.8	87.2	0.0352	3.27	0.0318	55.4	4.44	
W50	2017-07-27 8:10	125	387	185.1	7.31	235	3.1	17.9	70.7	0.0214	2.5	0.0205	57.1	4.98	
W50	2017-08-01 8:05	151	431	92.9	7.82	248	6.6	18	74.7	0.023	2.36	0.028	57.3	5.23	
W50	2018-06-10 9:00	147	406	197.1	7.9	242	3.6	13.9	80.4	0.0061	1.75	0.0118	58.8	5.11	
W50	2018-06-12 9:05			154	7.86			13	84						
W50	2018-06-12 9:05	144	406	154	7.86	242	3	13	84	0.0058	1.77	0.0135	59.4	5.11	
W50	2018-06-19 9:30	155	421	155.4	7.88	254	3	15.6	81.3	0.0063	1.88	0.0172	61.2	5.17	
W50	2018-06-26 8:30	154	451	158.2	8.09	257	3	16.6	78.6	0.0073	1.97	0.0183	63.9	5.25	
W50	2018-07-03 8:50	157	423	141.5	7.8	255	3	15.5	74.5	0.0081	1.9	0.023	62	4.78	
W50	2018-07-17 9:10			147.6	7.81			15	88.1						
W50	2018-07-17 9:10	161	436	147.6	7.81	258	3	15	88.1	0.0043	1.75	0.0107	63.7	4.88	
W50	2018-08-12 8:20	168	472	193.1	7.85	283	3	15.4	83.6	0.0051	1.58	0.0089	70.5	5.39	
W50	2018-08-28 9:10			146.6	7.9			13.6	102.8						
W50	2018-08-28 9:10	170	445	146.6	7.9	280	3	13.6	102.8	0.0035	1.58	0.0063	69.8	5.32	
W50	2019-06-04 8:25	261	555	127.3	7.02	327	3	0.8	1.9	0.001	0.0116	0.173	47.4	7.07	
W50	2019-07-15 8:05	262	551	7.25	7.28	323	10.2	3.4	2.8	0.001	0.0259	0.21	45.9	7.08	
W50	2019-10-08 9:05	287	571	15.9	7.38	334	4.2	2.7	9	0.0014	0.0355	0.269	40.6	7.1	
W50	2019-11-04 7:20	284	514	132.3	7.26	341	4.4	3.1	10.1	0.0024	0.005	0.282	40.3	7.48	
W50	2020-04-27 10:36	239	543	10.9	7.27	328	3	1.8	8.8	0.002	0.0181	0.231	42.5	7.06	
W50	2020-07-07 7:10	258	563	-29.3	7.27	352	9.2	2.4	10.1	0.0012	0.0155	0.21	43.6	6.7	
W50	2020-07-13 10:40	255	567	171.6	7.11	352	7.8	2.3	20.3	0.001	0.0156	0.216	41.6	6.52	
W50	2020-07-21 5:50			185.5				2.8	10.6						
W50	2020-07-21 5:50	250	549	185.5		356	4.4	2.8	10.6	0.001	0.0129	0.228	45.1	6.36	
W50	2020-07-29 15:00	252	542	78.9	7.13	344	3	3.4	9.3	0.001	0.013	0.223	44.2	6.42	
W50	2020-08-04 6:35	242	534	89	7.32	334	29.9	3.1	5.4	0.001	0.0105	0.218	45.2	6.2	
W50	2020-08-10 8:30	241	558	288.5		345	20.1	4.1	16.9	0.001	0.007	0.205	46.7	6.09	
W50	2020-08-17 8:30	258	557	7.4		352	3	3.1	12.9	0.0029	0.0126	0.189	45.4	6.06	
W50	2020-08-26 9:15			116.2	7.18			3.5	9.6						
W50	2020-08-26 9:15	243	535	116.2	7.18	345	6.2	3.5	9.6	0.0012	0.005	0.245	44.8	5.9	
W50	2020-08-31 15:50			127.9	7.52			5.6	15.1						
W50	2020-09-01 15:50	244	546			362	3			0.001	0.0233	0.221	44.1	5.91	
W50	2020-09-08 6:20			47.2	7.2			3.1	6.3						
W50	2020-09-08 6:20	235	520	47.2	7.2	337	3	3.1	6.3	0.0014	0.0081	0.236	44.2	5.89	
W50	2020-09-14 9:45	239	529	142.1	7.5	335	3	3.2	4.4	0.001	0.0073	0.297	44.6	5.86	
W50	2020-09-25 16:25	238	528	71	7.31	338	3	3.3	4.1	0.001	0.0071	0.297	46.5	5.95	
W50	2020-09-28 11:30	244	530	88.9	7.22	338	3	3.3	4.1	0.001	0.0067	0.295	45.9	6.18	
W50	2020-10-05 8:20	242	530	133.3	7.07	349	3	3.2	8.1	0.0012	0.0128	0.244	48.7	6.15	
W50	2020-10-13 6:37			192	7.69			4.8	82.3						
W50	2020-10-13 6:37	171	499	192	7.69	343	3.8	4.8	82.3	0.0074	1.38	0.0198	90.8	6.19	
W50	2020-11-03 9:40	227	534	172.5	7.13	341	3	2.2	7.4	0.0012	0.0381	0.249	58.6	6.43	
W50	2020-11-10 10:55	228	518	160.7	6.86	336	3	2.1	10.6	0.0012	0.0152	0.256	56.6	6.19	
W50	2020-11-17 11:25	231	529	139	7.12	329	3	2.5	3.5	0.0016	0.016	0.241	60.3	6.21	
W50	2020-11-24 10:45	225	530	170.7	7.31	353	3	2.1	40.8	0.0013	0.0259	0.249	60.2	6.19	
W50	2020-12-01 10:45	228	501	122.7	7.21	355	3	2.1	7.8	0.001	0.0216	0.246	63	6.53	
W50	2020-12-08 12:55	226	500	53.1	7.15	353	3	1.9	7.2	0.0024	1.4	0.262	64.2	6.48	
W50	2020-12-15 10:50	218	527	50.1	7.29	338	3	0.6	10.3	0.0019	0.027	0.251	62	6.51	
W50	2021-05-10 15:05	182	429	78.6	6.91	288	2.4	1.7	16.9	0.0026	0.0426	0.167	49.2	4.76	
W50	2021-05-21 7:30	201	477	94	6.97	323	1.4	1.5	10.8	0.001	0.053	0.191	57.3	5.42	
W50	2021-05-25 6:50			130.2	6.86			1.4	11						
W50	2021-05-25 6:50	196	465	130.2	6.86	317	1.3	1.4	11	0.001	0.0275	0.192	54.8	5.22	
W50	2021-05-26 11:25														

Station	Date / Time	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D
		Dissolved Elements																	
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W50	2015-05-15 7:05	0.00002	0.0093	0.00032	0.046	0.05	0.0001	0.001	30.1	0.00001	0.0005	0.001	0.0182	0.15	0.00001	3.15	0.005	9.62	0.0968
W50	2015-05-19 8:30	0.00002	0.01	0.00046	0.054	0.05	0.0001	0.001	36.7	0.000013	0.0005	0.001	0.0172	0.234	0.00001	3.34	0.005	11.5	0.186
W50	2015-05-27 15:03	0.00002	0.0295	0.00036	0.0746	0.052	0.0001	0.001	55	0.00001	0.0005	0.001	0.0114	0.0872	0.00001	5.18	0.005	18.3	0.152
W50	2016-04-12 15:00	0.00001	0.0034	0.00028	0.0754	0.031	0.00002	0.00005	66.5	0.0000089	0.0001	0.0001	0.00953	0.047	0.000005	3.34	0.0012	20.9	0.66
W50	2016-04-15 11:23	0.00001	0.0026	0.00028	0.0747	0.036	0.00002	0.00005	62.7	0.000005	0.0001	0.0001	0.0101	0.046	0.000005	3.18	0.0013	19.9	0.403
W50	2016-04-21 15:20	0.00001	0.0025	0.00028	0.0682	0.037	0.00002	0.00005	62	0.0000061	0.0001	0.0001	0.00995	0.035	0.000005	3.16	0.0013	19	0.163
W50	2016-04-26 11:25	0.00001	0.0019	0.00027	0.0666	0.036	0.00002	0.00005	59.4	0.000005	0.0001	0.0001	0.0107	0.015	0.000005	3.21	0.0016	18.2	0.0338
W50	2016-04-27 9:05	0.00001	0.0027	0.00026	0.0641	0.035	0.00002	0.00005	60	0.000005	0.0001	0.0001	0.0109	0.014	0.000005	3.23	0.0016	18.2	0.0834
W50	2016-05-02 16:50	0.00001	0.0032	0.00026	0.0624	0.036	0.00002	0.00005	54.6	0.000005	0.0001	0.0001	0.0113	0.019	0.000005	3.14	0.0014	17.1	0.0648
W50	2016-05-22 11:30	0.00001	0.0104	0.00029	0.0538	0.037	0.00002	0.00005	45.4	0.0000058	0.0001	0.00012	0.0191	0.048	0.0000051	3.13	0.0012	12.7	0.0741
W50	2016-05-25 9:50	0.00001	0.0164	0.00026	0.0518	0.037	0.00002	0.00005	45.6	0.000005	0.0001	0.00013	0.0192	0.056	0.000005	2.95	0.001	12.9	0.0299
W50	2016-05-31 8:55	0.00001	0.0091	0.00028	0.0543	0.036	0.00002	0.00005	46	0.0000052	0.0001	0.00012	0.0199	0.06	0.000005	2.87	0.0012	12.6	0.104
W50	2016-06-01 7:45																		
W50	2016-06-07 14:35	0.00001	0.009	0.00028	0.0547	0.038	0.00002	0.00005	46.4	0.000005	0.0001	0.00012	0.0185	0.078	0.000005	3.12	0.001	12.5	0.174
W50	2016-06-17 8:00	0.00001	0.0115	0.0003	0.0561	0.036	0.00002	0.00005	44.8	0.0000066	0.0001	0.00014	0.0191	0.06	0.000005	3.14	0.0013	12.6	0.104
W50	2016-06-23 9:35																		
W50	2016-06-23 9:35	0.00001	0.0144	0.00036	0.0569	0.038	0.00002	0.00005	46.6	0.000007	0.0001	0.0001	0.0178	0.06	0.000005	3.12	0.0011	12.6	0.105
W50	2016-07-10 15:45	0.00001	0.015	0.00036	0.06	0.036	0.00002	0.00005	46.1	0.0000075	0.0001	0.00014	0.019	0.053	0.000005	2.83	0.001	12.3	0.223
W50	2016-07-12 9:58	0.00001	0.0168	0.00034	0.0596	0.035	0.00002	0.00005	45.6	0.0000108	0.0001	0.00014	0.0193	0.063	0.000005	2.96	0.001	12.3	0.38
W50	2016-07-19 9:50																		
W50	2016-07-19 9:50	0.00001	0.0143	0.00035	0.0576	0.037	0.00002	0.00005	47.2	0.000005	0.0001	0.00024	0.0165	0.062	0.000005	2.9	0.0012	12.9	0.23
W50	2016-07-26 15:25	0.00001	0.0116	0.00041	0.067	0.038	0.00002	0.00005	46.5	0.000011	0.00011	0.0001	0.0194	0.053	0.000005	2.94	0.001	12.8	0.52
W50	2016-08-02 14:40	0.00001	0.0136	0.00036	0.0627	0.036	0.00002	0.00005	50.8	0.0000091	0.0001	0.00011	0.0218	0.038	0.000005	3.15	0.0012	13.6	0.188
W50	2016-08-11 14:15	0.00001	0.0141	0.00034	0.0693	0.042	0.00002	0.00005	56	0.0000076	0.0001	0.0001	0.018	0.05	0.000005	3.34	0.0015	14.3	0.145
W50	2016-08-15 8:45	0.00001	0.0132	0.00038	0.0672	0.043	0.00002	0.00005	54	0.0000052	0.0001	0.00012	0.0168	0.043	0.000005	3.35	0.0013	14.2	0.084
W50	2016-08-17 8:50																		
W50	2016-08-17 8:50	0.00001	0.0116	0.00033	0.0638	0.04	0.00002	0.00005	55.6	0.0000053	0.0001	0.0001	0.0161	0.042	0.000005	3.41	0.0012	15	0.0745
W50	2016-08-18 8:25																		
W50	2016-08-28 17:00	0.00001	0.014	0.00033	0.069	0.041	0.00002	0.00005	60.9	0.000005	0.0001	0.00013	0.0177	0.04	0.000005	3.42	0.0013	15.3	0.0407
W50	2016-09-04 8:15	0.00001	0.0043	0.00012	0.0147	0.031	0.00002	0.00005	11	0.000005	0.0001	0.0001	0.00354	0.01	0.000005	0.97	0.001	3.23	0.00635
W50	2016-09-04 8:55																		
W50	2016-09-06 15:45																		
W50	2016-09-06 15:45	0.00001	0.0065	0.0002	0.0373	0.031	0.00002	0.00005	31.1	0.000005	0.0001	0.0001	0.00884	0.021	0.000005	1.92	0.001	8.25	0.0157
W50	2016-09-07 15:45																		
W50	2016-09-13 7:30	0.00001	0.0033	0.00012	0.0256	0.03	0.00002	0.00005	15.6	0.000005	0.0001	0.0001	0.0044	0.01	0.000005	1.24	0.001	4.34	0.027
W50	2016-09-16 13:25	0.00001	0.0038	0.00018	0.0371	0.026	0.00002	0.00005	28.4	0.000005	0.0001	0.0001	0.00807	0.015	0.000005	1.78	0.001	7.66	0.00918
W50	2016-09-20 7:55	0.00001	0.002	0.00017	0.0342	0.028	0.00002	0.00005	28.7	0.000005	0.0001	0.0001	0.00777	0.012	0.000005	1.76	0.001	8.14	0.00833
W50	2016-09-27 16:00	0.00001	0.0022	0.00014	0.0314	0.029	0.00002	0.00005	25.3	0.000005	0.0001	0.0001	0.0068	0.015	0.000005	1.59	0.001	7.28	0.00781
W50	2016-10-04 13:30	0.00001	0.0014	0.00015	0.0318	0.029	0.00002	0.00005	25.8	0.000005	0.0001	0.0001	0.00636	0.01	0.000005	1.66	0.001	7.19	0.00208
W50	2016-10-11 8:05																		
W50	2016-10-12 7:40																		
W50	2016-10-12 7:40	0.00001	0.0026	0.00031	0.0749	0.035	0.00002	0.00005	62.4	0.000005	0.0001	0.0001	0.0146	0.027	0.000005	3.24	0.0015	17.8	0.0101
W50	2016-10-13 8:30																		
W50	2016-10-14 7:50																		
W50	2016-10-15 7:50																		
W50	2016-10-16 8:00																		
W50	2016-10-17 7:55																		
W50	2016-10-18 9:00	0.00001	0.0013	0.00038	0.0808	0.032	0.00002	0.00005	62.5	0.0000076	0.0001	0.0001	0.0156	0.058	0.000005	3.39	0.001	18.9	0.0757
W50	2016-10-19 7:10																		
W50	2016-10-20 8:30																		
W50	2016-10-21 8:10																		
W50	2016-10-22 8:25																		
W50	2016-10-23 8:20																		
W50	2016-10-24 8:05																		
W50	2016-10-25 8:30	0.00001	0.0017	0.00033	0.0807	0.033	0.00002	0.00005	64.3	0.000005	0.0001	0.00011	0.0148	0.065	0.000005	3.58	0.0015	18.8	0.0965
W50	2017-05-02 8:10	0.00001	0.006	0.00026	0.0537	0.04	0.00002	0.00005	39.1	0.0000239	0.0001	0.0001	0.0185	0.054	0.000005	2.57	0.001	10.9	0.284
W50	2017-05-09 7:35	0.00001	0.0125	0.00025	0.0536	0.038	0.00002	0.00005	39.1	0.0000095	0.0001	0.0001	0.021	0.062	0.000005	2.68	0.001	12.6	0.0984
W50	2017-05-16 9:15	0.00001	0.0081	0.0003	0.0539	0.05	0.00002	0.00005	43.8	0.0000115	0.0001	0.0001	0.0227	0.064	0.000005	2.73	0.001	10.8	0.082
W50	2017-05-23 8:00	0.00001	0.0062	0.00028	0.0549	0.042	0.00002	0.00005	41.4	0.0000076	0.0001	0.00011	0.0221	0.062	0.000005	2.62	0.001	11.3	0.0262
W50	2017-05-30 15:45	0.00001	0.0049	0.00031	0.054	0.034	0.00002	0.00005	39.1	0.0000082	0.0001	0.00012	0.0257	0.053	0.000005	2.44	0.0013	11.7	0.0159
W50	2017-05-31 15:45																		
W50	2017-06-06 9:50	0.00001	0.0063	0.00037	0.0582	0.026	0.00002	0.00005	40.9	0.0000054	0.0001	0.00016	0.0281	0.054	0.000005	2.31	0.001	11.9	0.0138
W50	2017-06-13 8:30	0.00001	0.0061	0.00039	0.0644	0.024	0.00002	0.00005	43.2	0.0000076	0.0001	0.00016	0.0271	0.062	0.000005	2.5	0.001	12.7	0.0122
W50	2017-06-20 8:20	0.00001	0.0111	0.00039	0.0617	0.028	0.00002	0.00005	44.1	0.000005	0.0001	0.00018	0.0263	0.079	0.000005	2.43	0.001	12.3	0.0224
W50	2017-07-11 14:50	0.00001	0.0085	0.0005	0.0642	0.025	0.00002	0.00005	46.8	0.0000052	0.0001	0.00018	0.0263	0.095	0.000005	2.53	0.001	14.9	0.0117
W50	2017-07-27 8:10	0.00001	0.009	0.0004	0.063	0.028	0.00002	0.00005	55.4	0.0000056	0.0001	0.00012	0.0265	0.087	0.000005	2.41	0.0012	15.7	0.0145
W50	2017-08-01 8:05	0.00001	0.0094	0.00048	0.0755	0.027	0.00002	0.00005	52	0.0000066	0.0001	0.00015	0.0276	0.085	0.000005	2.87	0.0011	16.6	0.0389
W50	2018-06-10 9:00	0.00001	0.0083	0.0005	0.0509	0.015	0.00002	0.00005	51.8	0.000005	0.0001	0.0001	0.0313	0.046	0.0000244	2.71	0.0012	16.2	0.0159
W50	2018-06-12 9:05																		
W50	2018-06-12 9:05	0.00001	0.0093	0.00042	0.061	0.014	0.00002	0.00005	53	0.0000066	0.0001	0.0001	0.0305	0.049	0.0000258	2.61	0.0011	16.4	0.0206
W50	2018-06-19 9:30	0.00001	0.0109	0.00038	0.0677	0.014	0.00002	0.00005	55.7	0.000005	0.0001	0.00014	0.0319	0.057	0.000005	2.73	0.0012	16.4	0.0127
W50	2018-06-26 8:30	0.00001	0.0091	0.00039	0.0723	0.013	0.00002	0.00005	54.3	0.0000067	0.0001	0.00012	0.0321	0.059	0.000005	2.82	0.0022	17.7	0.0155
W50	2018-07-03 8:50	0.00001	0.0126	0.0004	0.0732	0.013	0.00002	0.00005	55.1	0.0000077	0.0001	0.00014	0.0294	0.068	0.000005	2.66	0.0012	16.8	0.0126
W50	2018-07-17 9:10																		
W50	2018-07-17 9:10	0.00001	0.0093	0.00044	0.0654	0.013	0.00002	0.00005	54.8	0.000005	0.0001	0.00018	0.0246	0.059	0.000005	2.46	0.0012	16.6	0.0286
W50	2018-08-12 8:20	0.00001	0.004	0.00045	0.0754	0.014	0.00002	0.00005	63.1	0.000005	0.0001	0.00013	0.0256	0.018	0.000005	2.83	0.0012	20.2	0.0162
W50	2018-08-28 9:10																		
W50	2018-08-28 9:10	0.00001	0.0034	0.00043	0.0751	0.013	0.00002	0.00005	61.7	0.000005	0.0001	0.00017	0.0244	0.017	0.000005	2.76	0.0012	19	0.00884
W50	2019-06-04 8:25	0.00001	0.0069	0.00038	0.106	0.017	0.00002	0.00005	69.6	0.0000798	0.00068	0.00025	0.00335	0.029	0.000005	2.26	0.0012	25.9	3.33
W50	2019-07-15 8:05	0.00001	0.0089	0.00044	0.0716	0.015	0.00002	0.00005	65.3	0.0000244	0.00039	0.00023	0.0048	0.015	0.000005	2.29	0.0012	26.6	2.54
W50	2019-10-08 9:05	0.00001	0.0092	0.0004	0.123	0.016	0.00002	0.00005	66.8	0.0000236	0.00135	0.00032	0.00126	0.045	0.000005	2.42	0.0014	25.3	3.77
W50	2019-11-04 7:20	0.00001	0.0127	0.00047	0.132	0.017	0.00002	0.00005	69.6	0.000239	0.00182	0.00037	0.00253	0.053	0.000005	2.68	0.0015	29.5	4.14
W50	2020-04-27 10:36	0.00001	0.0152	0.00064	0.102	0.02	0.00002	0.00005	57.5	0.0000413	0.0013	0.00033	0.00426	0.405	0.000005	2.56	0.0012	23.8	2.76
W50	2020-07-07 7:10	0.00001	0.0111	0.00042	0.104	0.016	0.00002	0.00005	66.2	0.0000721	0.00112	0.00037	0.00284	0.08	0.000005	2.46	0.0014	25.6	3.12
W50	2020-07-13 10:40	0.00001	0.0088	0.00042	0.103	0.017	0.00002	0.00005	69.6	0.0000502	0.00106	0.00036	0.00295	0.074	0.000005	2.4	0.0014	26.5	3.21
W50	2020-07-21 5:50																		
W50	2020-07-21 5:50	0.00001	0.0097	0.00044	0.107	0.015	0.00002	0.00005	72	0.0000624	0.00116	0.00038	0.00345	0.086	0.000005	2.59	0.0015	26.1	3.38
W50	2020-07-29 15:00	0.00001	0.0279	0.00051	0.106	0.017	0.00002	0.00005	63.1	0.0000635	0.00106	0.00043	0.00793	0.108	0.000005	2.48	0.0014	24.8	3.06
W50	2020-08-04 6:35	0.00001	0.0102	0.00044	0.0964	0.018	0.00002	0.00005	61.3	0.0000421	0.00094	0.00037	0.00335	0.076	0.000005	2.36	0.0015	23.4	3.19
W50	2020-08-10 8:30	0.00001	0.0063	0.00046	0.107	0.017	0.00002	0.00005	65.1	0.0000275	0.00101	0.00032	0.0024	0.12	0.000005	2.56	0.0014	25	4.19
W50	2020-08-17 8:30	0.00001	0.0084	0.00049	0.0958	0.016	0.00002	0.00005	66.5	0.0000246	0.00114	0.00035	0.00251	0.24	0.000005	2.36	0.0014	24	3.07
W50	2020-08-26 9:15																		
W50	2020-08-26 9:15	0.00001	0.0084	0.00045	0.114	0.017	0.00002	0.00005	67.8	0.0000372	0.00127	0.00042	0.00258	0.145	0.000005	2.41	0.0014	24.8	3.91
W50	2020-08-31 15:50																		
W50	2020-09-01 15:50	0.00001	0.012	0.00047	0.112	0.017	0.00002	0.00005	75.3	0.0000279	0.00129	0.00033	0.00251	0.222	0.000005	2.52	0.0014	30.3	4.3
W50	2020-09-08 6:20																		
W50	2020-09-08 6:20	0.00001	0.0086	0.00052	0.114	0.016	0.00002	0.00005	62.3	0.0000313	0.00136	0.00033	0.00217	0.236	0.000005	2.58	0.0013	24.9	4.08
W50	2020-09-14 9:45	0.00001	0.009	0.00047	0.121	0.019	0.00002	0.00005	60.7	0.0000478	0.00138	0.00037	0.00201	0.165	0.000005	2.43	0.0014	24	3.96
W50	2020-09-25 16:25	0.00001	0.0096	0.00057	0.118	0.017	0.00002	0.00005	62.3	0.000135	0.00174	0.00051	0.00232	0.167	0.000005	2.4	0.0014	25.7	4.1
W50	2020-09-28 11:30	0.00001	0.0122	0.00048	0.112	0.017	0.00002	0.00005	58.9	0.0000748	0.00154	0.00048	0.00298	0.136	0.000005	2.37	0.0013	25.3	3.94
W50	2020-10-05 8:20	0.00001	0.0106	0.00061	0.122	0.016	0.00002	0.00005	66.8	0.000047	0.00164	0.00051	0.00213	0.314	0.000005	2.57	0.0015	24.7	3.98
W50	2020-10-13 6:37																		
W50	2020-10-13 6:37	0.00001	0.0026	0.00038	0.0692	0.012	0.00002	0.00005	73.4	0.0000056	0.0001	0.00012	0.027	0.028	0.000005	2.7	0.0015	20	0.00339
W50	2020-11-03 9:40	0.00001	0.0088	0.00046	0.114	0.015	0.00002	0.00005	61.7	0.0000999	0.00141	0.00036	0.00333	0.252	0.000005	2.62	0.0014	24.5	3.12
W50	2020-11-10 10:55	0.00001	0.0081	0.00053	0.111	0.015	0.00002	0.00005	60.7	0.0000568	0.00161	0.00034	0.00244	0.288	0.000005	2.2	0.0014	21.7	2.87
W50	2020-11-17 11:25	0.00001	0.0084	0.00047	0.109	0.016	0.00002	0.00005	61.9	0.000078	0.00125	0.00031	0.0025	0.082	0.000005	2.42	0.0015	23.1	3.1
W50	2020-11-24 10:45	0.00001	0.0088	0.00047	0.113	0.018	0.00002	0.00005	69.7	0.0000877	0.00145	0.00034	0.00266	0.095	0.000005	2.49	0.0015	26.1	3.3
W50	2020-12-01 10:45	0.00001	0.0089	0.00044	0.119	0.018	0.00002	0.00005	70.9	0.0000946	0.00132	0.00033	0.00269	0.093	0.000005	2.45	0.0016	24.4	3.32
W50	2020-12-08 12:55	0.00001	0.0079	0.00041	0.118	0.016	0.00002	0.00005	62.4	0.0000693	0.00143	0.00038	0.00255	0.123	0.000005	2.63	0.0014	24.6	3.15
W50	2020-12-15 10:50	0.00001	0.0096	0.00044	0.125	0.016	0.00002	0.00005	62.8	0.0000769	0.00134	0.00037	0.00256	0.103	0.000005	2.24	0.0014	23.7	3.3
W50	2021-05-10 15:05	0.00001	0.0224	0.0004	0.0887	0.014	0.00002	0.00005	49.6	0.0000571	0.001	0.0005	0.0195	0.123	0.000005	2.86	0.0013	18.4	1.85
W50	2021-05-21 7:30	0.00001	0.0108	0.00046	0.0897	0.015	0.00002	0.00005	63.6	0.0000655	0.00111	0.0005	0.0061	0.095	0.000005	2.3	0.0012	22.6	2.2
W50	2021-05-25 6:50																		
W50	2021-05-25 6:50	0.00001	0.0171	0.0005	0.0886	0.015	0.00002	0.00005	60.3	0.0000614	0.00104	0.0005	0.0112	0.107	0.000005	2.32	0.0012	22.3	2.09
W50	2021-05-26 11:25																		

Station	Date / Time	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W50	2015-05-15 7:05	0.0032	13.3	0.001	0.0002	0.0005	9.6	0.00072	2.28	0.005	0.5	0.005	0.00005	0.00063	0.005	0.005	0.0005
W50	2015-05-19 8:30	0.0039	13.9	0.001	0.0002	0.0005	13.9	0.00062	2.23	0.005	0.603	0.005	0.00005	0.00083	0.005	0.005	0.0005
W50	2015-05-27 15:03	0.0063	18.3	0.001	0.0002	0.0005	24.8	0.00108	2.98	0.005	1.13	0.005	0.00005	0.00154	0.005	0.005	0.0005
W50	2016-04-12 15:00	0.00301	18.1	0.00069	0.00005	0.0001	19.5	0.000409	3.61	0.0001	0.656	0.0003	0.00001	0.00143	0.0005	0.0013	0.0003
W50	2016-04-15 11:23	0.003	15.9	0.00068	0.00005	0.0001	18	0.000399	3.42	0.0001	0.636	0.0003	0.00001	0.00139	0.0005	0.001	0.0003
W50	2016-04-21 15:20	0.00307	16.2	0.00063	0.00005	0.0001	18.6	0.000441	3.22	0.0001	0.63	0.0003	0.00001	0.00143	0.0005	0.001	0.0003
W50	2016-04-26 11:25	0.00311	16.2	0.00059	0.00005	0.0001	16.7	0.000449	3.01	0.0001	0.616	0.0003	0.00001	0.00131	0.0005	0.001	0.0003
W50	2016-04-27 9:05	0.00312	16.4	0.0006	0.00005	0.0001	16.8	0.00043	2.95	0.0001	0.597	0.0003	0.00001	0.00128	0.0005	0.001	0.0003
W50	2016-05-02 16:50	0.00313	14.9	0.00067	0.00005	0.0001	15.5	0.000385	2.85	0.0001	0.58	0.0003	0.00001	0.00122	0.0005	0.001	0.0003
W50	2016-05-22 11:30	0.00278	11.9	0.00065	0.00005	0.0001	14.1	0.00103	2.91	0.0001	0.474	0.0003	0.00001	0.000887	0.0005	0.002	0.0003
W50	2016-05-25 9:50	0.0029	11.7	0.00062	0.00006	0.0001	14.3	0.000896	2.89	0.0001	0.489	0.00044	0.00001	0.0009	0.0005	0.0045	0.0003
W50	2016-05-31 8:55	0.00284	12.1	0.00073	0.00005	0.0001	13	0.000996	2.91	0.0001	0.478	0.0003	0.00001	0.000871	0.0005	0.0014	0.0003
W50	2016-06-01 7:45																
W50	2016-06-07 14:35	0.00286	12.1	0.00067	0.00005	0.0001	13.1	0.000934	2.92	0.0001	0.475	0.0003	0.00001	0.000875	0.0005	0.0018	0.0003
W50	2016-06-17 8:00	0.0029	11.8	0.00071	0.00006	0.0001	14.2	0.00093	2.69	0.0001	0.479	0.00036	0.00001	0.000859	0.0005	0.0018	0.0003
W50	2016-06-23 9:35																
W50	2016-06-23 9:35	0.00299	11.7	0.00066	0.000131	0.0001	14.2	0.00119	2.5	0.0001	0.47	0.0006	0.00001	0.000825	0.0005	0.001	0.0003
W50	2016-07-10 15:45	0.0033	12.5	0.00069	0.000147	0.0001	14.4	0.000985	2.73	0.0001	0.497	0.00056	0.00001	0.000774	0.0005	0.0014	0.0003
W50	2016-07-12 9:58	0.00342	12	0.00071	0.000291	0.0001	14.5	0.00103	2.68	0.0001	0.487	0.00074	0.00001	0.000843	0.0005	0.001	0.0003
W50	2016-07-19 9:50																
W50	2016-07-19 9:50	0.00308	11.6	0.00086	0.000125	0.0001	13.9	0.00102	2.85	0.0001	0.48	0.00058	0.00001	0.000804	0.0005	0.001	0.0003
W50	2016-07-26 15:25	0.00311	13.1	0.00078	0.000057	0.0001	14.3	0.00104	2.76	0.0001	0.484	0.00056	0.00001	0.000879	0.0005	0.001	0.0003
W50	2016-08-02 14:40	0.00318	13.1	0.0008	0.00005	0.0001	15	0.00114	2.98	0.0001	0.514	0.00084	0.00001	0.000874	0.0005	0.002	0.0003
W50	2016-08-11 14:15	0.00369	13	0.00068	0.000098	0.0001	18.5	0.00108	3.18	0.0001	0.569	0.00099	0.00001	0.00101	0.0005	0.001	0.0003
W50	2016-08-15 8:45	0.00357	13.8	0.00062	0.000056	0.0001	18.3	0.0012	3.2	0.0001	0.568	0.0008	0.00001	0.000983	0.0005	0.001	0.0003
W50	2016-08-17 8:50																
W50	2016-08-17 8:50	0.00348	13.1	0.0006	0.00006	0.0001	18.8	0.0012	3.37	0.0001	0.55	0.00069	0.00001	0.001	0.0005	0.001	0.0003
W50	2016-08-18 8:25																
W50	2016-08-28 17:00	0.00393	14.4	0.00063	0.00005	0.0001	19.6	0.00146	3.26	0.0001	0.627	0.00084	0.00001	0.00113	0.0005	0.001	0.0003
W50	2016-09-04 8:15	0.00103	4.62	0.0005	0.000069	0.0001	4.46	0.000339	0.711	0.0001	0.138	0.0003	0.00001	0.000172	0.0005	0.001	0.0003
W50	2016-09-04 8:55																
W50	2016-09-06 15:45																
W50	2016-09-06 15:45	0.00216	10.5	0.0005	0.000061	0.0001	11.4	0.000774	1.79	0.0001	0.346	0.0003	0.00001	0.000598	0.0005	0.001	0.0003
W50	2016-09-07 15:45																
W50	2016-09-13 7:30	0.00179	9	0.0005	0.00005	0.0001	5.47	0.000427	1.19	0.0001	0.196	0.0003	0.00001	0.000105	0.0005	0.0018	0.0003
W50	2016-09-16 13:25	0.0019	9.34	0.0005	0.00005	0.0001	9.99	0.000801	1.7	0.0001	0.313	0.0003	0.00001	0.000578	0.0005	0.0017	0.0003
W50	2016-09-20 7:55	0.00192	9.18	0.0005	0.00005	0.0001	9.67	0.0007	1.65	0.0001	0.316	0.0003	0.00001	0.000565	0.0005	0.001	0.0003
W50	2016-09-27 16:00	0.00158	9.53	0.0005	0.00005	0.0001	9.74	0.000687	1.55	0.0001	0.275	0.0003	0.00001	0.000516	0.0005	0.001	0.0003
W50	2016-10-04 13:30	0.00144	11.5	0.0005	0.00005	0.0001	10	0.000719	1.55	0.0001	0.279	0.0003	0.00001	0.000524	0.0005	0.001	0.0003
W50	2016-10-11 8:05																
W50	2016-10-12 7:40																
W50	2016-10-12 7:40	0.00358	13.9	0.00067	0.000175	0.0001	22.5	0.00167	3.46	0.0001	0.68	0.0003	0.00001	0.00133	0.0005	0.0015	0.0003
W50	2016-10-13 8:30																
W50	2016-10-14 7:50																
W50	2016-10-15 7:50																
W50	2016-10-16 8:00																
W50	2016-10-17 7:55																
W50	2016-10-18 9:00	0.00351	15	0.00058	0.000074	0.0001	22.9	0.00162	3.79	0.0001	0.678	0.0003	0.00001	0.00138	0.0005	0.001	0.0003
W50	2016-10-19 7:10																
W50	2016-10-20 8:30																
W50	2016-10-21 8:10																
W50	2016-10-22 8:25																
W50	2016-10-23 8:20																
W50	2016-10-24 8:05																
W50	2016-10-25 8:30	0.0038	15.3	0.00061	0.00005	0.0001	23.3	0.00147	3.92	0.0001	0.693	0.0003	0.00001	0.00137	0.0005	0.001	0.0003
W50	2017-05-02 8:10	0.00336	12.2	0.00061	0.000203	0.0001	14.5	0.000652	2.71	0.0001	0.419	0.0003	0.00001	0.000953	0.0005	0.0018	0.0003
W50	2017-05-09 7:35	0.00279	12.7	0.00054	0.000074	0.0001	15.7	0.000567	3.14	0.0001	0.463	0.0003	0.00001	0.000918	0.0005	0.001	0.0003
W50	2017-05-16 9:15	0.00295	13.8	0.00065	0.000072	0.0001	14.3	0.000587	2.73	0.0001	0.466	0.00038	0.00001	0.000856	0.0005	0.001	0.0003
W50	2017-05-23 8:00	0.00271	13.2	0.0007	0.000158	0.0001	15.1	0.000618	2.53	0.0001	0.447	0.00032	0.00001	0.000798	0.0005	0.0011	0.0003
W50	2017-05-30 15:45	0.00274	12.5	0.00078	0.000095	0.0001	15.2	0.000628	2.33	0.0001	0.429	0.00035	0.00001	0.000807	0.0005	0.001	0.0003
W50	2017-05-31 15:45																
W50	2017-06-06 9:50	0.00222	11.1	0.00092	0.00005	0.0001	13.2	0.000611	2.3	0.0001	0.403	0.00064	0.00001	0.000696	0.0005	0.001	0.0003
W50	2017-06-13 8:30	0.00235	11.1	0.00097	0.00005	0.0001	15.4	0.000724	2.35	0.0001	0.411	0.00067	0.00001	0.000759	0.0005	0.001	0.0003
W50	2017-06-20 8:20	0.0022	11.5	0.0011	0.000077	0.0001	14.7	0.000703	2.81	0.0001	0.409	0.00075	0.00001	0.000689	0.0005	0.001	0.0003
W50	2017-07-11 14:50	0.00237	12.4	0.00082	0.000593	0.0001	17.9	0.000905	3.16	0.0001	0.442	0.00042	0.00001	0.000821	0.0005	0.001	0.0003
W50	2017-07-27 8:10	0.00272	12.9	0.00077	0.000311	0.0001	19.2	0.000756	2.96	0.0001	0.487	0.0003	0.00001	0.000947	0.00051	0.001	0.0003
W50	2017-08-01 8:05	0.00274	13.3	0.00088	0.000141	0.0001	19.4	0.000654	3.01	0.0001	0.501	0.0003	0.00001	0.001	0.0005	0.001	0.0003
W50	2018-06-10 9:00	0.00294	11.5	0.00089	0.000172	0.0001	19.6	0.000948	3.43	0.0001	0.471	0.0004	0.00001	0.00125	0.0005	0.001	0.0003
W50	2018-06-12 9:05																
W50	2018-06-12 9:05	0.00271	11.2	0.00092	0.000101	0.0001	18.7	0.000877	3.49	0.0001	0.482	0.00037	0.00001	0.00117	0.0005	0.0018	0.0003
W50	2018-06-19 9:30	0.00275	11.1	0.00081	0.000106	0.0001	18.8	0.00082	3.31	0.0001	0.527	0.00053	0.00001	0.00126	0.0005	0.001	0.0003
W50	2018-06-26 8:30	0.00269	11.4	0.00082	0.000115	0.0001	21	0.00101	3.3	0.0001	0.533	0.00036	0.00001	0.00127	0.0005	0.001	0.0003
W50	2018-07-03 8:50	0.00259	11.1	0.00086	0.000105	0.0001	21.4	0.000809	3.6	0.0001	0.531	0.00056	0.00001	0.00124	0.0005	0.001	0.0003
W50	2018-07-17 9:10																
W50	2018-07-17 9:10	0.00262	11.1	0.00072	0.000129	0.0001	21.9	0.000899	3.62	0.0001	0.506	0.0006	0.00001	0.00125	0.0005	0.001	0.0003
W50	2018-08-12 8:20	0.00301	13	0.00082	0.00005	0.0001	22.1	0.000741	3.29	0.0001	0.588	0.0003	0.00001	0.00129	0.0005	0.001	0.0003
W50	2018-08-28 9:10																
W50	2018-08-28 9:10	0.00283	12.7	0.0007	0.00005	0.0001	24	0.000781	3.52	0.0001	0.559	0.0003	0.00001	0.00134	0.0005	0.001	0.0003
W50	2019-06-04 8:25	0.00585	15.1	0.0102	0.00005	0.0001	17.1	0.000211	6.57	0.0001	0.629	0.0003	0.00001	0.00252	0.0005	0.001	0.00033
W50	2019-07-15 8:05	0.00442	15.6	0.0052	0.00005	0.0001	17.2	0.000216	7.25	0.0001	0.631	0.0003	0.00001	0.0018	0.0005	0.0019	0.00032
W50	2019-10-08 9:05	0.00534	15.5	0.00799	0.00005	0.0001	14.6	0.000343	6.98	0.0001	0.665	0.00043	0.00001	0.0017	0.0005	0.0016	0.00038
W50	2019-11-04 7:20	0.00568	16.1	0.00858	0.00005	0.0001	14	0.000309	7.29	0.0001	0.647	0.00057	0.00001	0.00166	0.0005	0.0026	0.00038
W50	2020-04-27 10:36	0.006	12.8	0.00977	0.00005	0.0001	14.9	0.000279	6.82	0.0001	0.556	0.00051	0.00001	0.0016	0.00066	0.001	0.00045
W50	2020-07-07 7:10	0.00598	14.3	0.00924	0.00005	0.0001	14.7	0.0002	7.25	0.0001	0.601	0.00032	0.00001	0.00161	0.0005	0.0027	0.0004
W50	2020-07-13 10:40	0.00588	14.6	0.00913	0.00005	0.0001	15.9	0.000187	7.1	0.0001	0.566	0.00052	0.00001	0.00164	0.0005	0.0017	0.0004
W50	2020-07-21 5:50																
W50	2020-07-21 5:50	0.00618	15.1	0.00993	0.00005	0.0001	15.1	0.000192	7	0.0001	0.661	0.00035	0.00001	0.00165	0.00072	0.0014	0.00041
W50	2020-07-29 15:00	0.00611	14.8	0.0094	0.00005	0.0001	14.7	0.00022	7.15	0.0001	0.624	0.0013	0.00001	0.00156	0.00054	0.0039	0.00046
W50	2020-08-04 6:35	0.00647	13.6	0.00918	0.00005	0.0001	13.8	0.000216	7.1	0.00034	0.584	0.00044	0.00001	0.00144	0.00062	0.0014	0.00041
W50	2020-08-10 8:30	0.00736	15.8	0.00866	0.00005	0.0001	17.3	0.000276	7.03	0.0001	0.627	0.00033	0.00001	0.00162	0.0005	0.0018	0.00041
W50	2020-08-17 8:30	0.00666	14.6	0.00844	0.00005	0.0001	15.3	0.000168	7.14	0.0001	0.579	0.00042	0.00001	0.00134	0.00051	0.001	0.00042
W50	2020-08-26 9:15																
W50	2020-08-26 9:15	0.00668	14.5	0.00965	0.00005	0.0001	14.5	0.000186	6.82	0.0001	0.602	0.00044	0.00001	0.00122	0.00055	0.0014	0.00041
W50	2020-08-31 15:50																
W50	2020-09-01 15:50	0.00724	18.2	0.00904	0.00005	0.0001	14.9	0.000195	7.26	0.0001	0.698	0.00088	0.00001	0.00125	0.0005	0.001	0.00043
W50	2020-09-08 6:20																
W50	2020-09-08 6:20	0.0069	14.7	0.0095	0.00005	0.0001	16.3	0.000209	7.3	0.0001	0.567	0.0005	0.00001	0.00136	0.00052	0.001	0.0004
W50	2020-09-14 9:45	0.00692	14.1	0.00968	0.00005	0.0001	15.6	0.000178	7.36	0.0001	0.577	0.00047	0.00001	0.00139	0.00057	0.0022	0.00044
W50	2020-09-25 16:25	0.00724	14.4	0.0105	0.00005	0.00012	15.9	0.000145	6.89	0.0001	0.562	0.00049	0.00001	0.00143	0.00076	0.001	0.00043
W50	2020-09-28 11:30	0.00691	14.4	0.0106	0.00005	0.0001	16.6	0.000204	7.06	0.0001	0.569	0.0007	0.00001	0.0014	0.0006	0.0011	0.00045
W50	2020-10-05 8:20	0.00683	15.1	0.0097	0.00005	0.0001	15.8	0.000157	7	0.0001	0.607	0.00048	0.00001	0.00136	0.00064	0.001	0.00041
W50	2020-10-13 6:37																
W50	2020-10-13 6:37	0.00316	12.2	0.00087	0.00005	0.0001	29.3	0.00102	4.01	0.0001	0.68	0.0003	0.00001	0.00119	0.0005	0.001	0.0002
W50	2020-11-03 9:40	0.00608	14.2	0.00974	0.00005	0.0001	19.6	0.000148	7.08	0.0001	0.613	0.00034	0.00001	0.00137	0.00082	0.004	0.00043
W50	2020-11-10 10:55	0.00611	12.4	0.009	0.00005	0.0001	19.7	0.000151	6.98	0.0001	0.567	0.00038	0.00001	0.00132	0.00058	0.001	0.00043
W50	2020-11-17 11:25	0.00596	13.8	0.00936	0.00005	0.0001	21.4	0.000192	7.06	0.0001	0.57	0.00044	0.00001	0.00136	0.00054	0.001	0.0004
W50	2020-11-24 10:45	0.00639	14.3	0.00984	0.00005	0.0001	22.3	0.000222	7.24	0.0001	0.601	0.00043	0.00001	0.00141	0.00055	0.001	0.00046
W50	2020-12-01 10:45	0.0066	13.9	0.00939	0.00005	0.0001	23.3	0.000202	7.06	0.0001	0.605	0.00032	0.00001	0.0014	0.00053	0.0025	0.00048
W50	2020-12-08 12:55	0.00642	14	0.00974	0.00005	0.0001	22.3	0.000163	7.21	0.0001	0.596	0.00037	0.00001	0.00136	0.00052	0.0024	0.00042
W50	2020-12-15 10:50	0.00596	13.4	0.00953	0.00005	0.0001	23.1	0.000227	7.04	0.0001	0.588	0.00044	0.00001	0.00134	0.0005	0.0066	0.00038
W50	2021-05-10 15:05	0.00514	10.6	0.00775	0.00005	0.0001	17.7	0.000262	6.27	0.0001	0.452	0.00076	0.00001	0.00113	0.00063	0.001	0.00049
W50	2021-05-21 7:30	0.00564	12.8	0.00802	0.00005	0.0001	19.7	0.000197	6.44	0.0001	0.56	0.0006	0.00001	0.00133	0.00064	0.001	0.00045
W50	2021-05-25 6:50																
W50	2021-05-25 6:50	0.00547	12.8	0.00803	0.00005	0.0001	18.9	0.00022	6.28	0.0001	0.55	0.0006	0.00001	0.00131	0.00062	0.001	0.00052
W50	2021-05-26 11:25																

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N-NO_2$	$N-NO_3$	$N-NH_3$	SO_4-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W50	2021-05-31 11:15	61	142	140.9	6.89	93.3	1	9.3	72.3	0.113	1.58	0.123	1.95	0.85	
W50	2021-06-08 6:35			141.5	6.68			1.9	84.2						
W50	2021-06-08 6:35	194	473	141.5	6.68	304	2.5	1.9	84.2	0.0017	0.04	0.19	54.5	5.51	
W50	2021-06-16 15:10	219	521	46.2	7.21	329	5	2.7	12.9	0.0017	0.0344	0.18	61.8	6.09	
W50	2021-06-23 10:50	215	511	95.6	7.25	321	1	2.7	18.2	0.0013	0.0211	0.192	57.1	5.9	
W50	2021-06-28 14:00	213	506	76.2	7.01	318	1	2.7	17	0.004	0.0422	0.152	57	5.77	0.349
W50	2021-07-05 9:50	212	511	60.9	7.2	324	12.7	2.6	16.5	0.0023	0.0482	0.178	56.6	5.96	
W50	2021-07-12 15:20	217	502	162.3	6.93	316	3.1	3.9	30.4	0.0016	0.0289	0.155	53.5	5.85	
W50	2021-07-20 12:30	232	489	38.3	7.14	330	2.7	3	16.6	0.0016	0.045	0.146	49.3	5.36	
W50	2021-07-28 10:50	217	461	37.2	7.21	328	1	3	17.5	0.0044	0.0416	0.149	49.4	5.44	
W50	2021-08-04 7:55	212	509	41.7	7.03	302	1	3.1	12.5	0.0014	0.0212	0.149	45.9	5.26	
W50	2021-08-09 16:15	221	497	191.8	6.83	314	1.2	4.2	9	0.0025	0.0168	0.158	45.5	5.47	
W50	2021-08-17 8:25	222	500	38.1	6.8	309	1	3.4	16.1	0.0015	0.0116	0.145	42.8	5.18	
W50	2021-08-23 16:35	220	477	22	7.15	315	1	3.8	11	0.0013	0.0119	0.169	41.8	5.15	
W50	2021-08-29 11:20	216	484	65.9	7.2	311	1	4.1	10	0.0018	0.0101	0.165	39.7	5.06	
W50	2021-09-06 15:00	213	468	43.7	7.36	303	1	4.3	12.9	0.001	0.0138	0.146	41.9	5.1	
W50	2021-09-14 11:20	224	475	40.1	7.36	307	1	3.6	14.1	0.001	0.0063	0.176	37.4	4.81	
W50	2021-09-20 12:30	215	470	40	7.28	296	1	3.4	12	0.0012	0.0084	0.176	37.7	4.94	
W50	2021-09-23 16:00	57.1	114	62.7	7.53	66.3	1	8.4	131.9	0.0022	0.126	0.0128	1.71	2.46	
W50	2021-09-28 10:45			33	7.25			3.6	11.7						
W50	2021-09-28 10:45	193	439	33	7.25	261	1.1	3.6	11.7	0.0014	0.0098	0.149	28.1	4.3	
W50	2021-10-05 17:00			41.7	7.64			3.3	19.4						
W50	2021-10-05 17:00	198	452	41.7	7.64	276	1	3.3	19.4	0.0015	0.0095	0.154	35.6	4.9	
W50	2021-10-11 10:05	203	466	48.5	7.55	287	7.1	3	10.9	0.0011	0.0106	0.172	36.2	4.92	
W50	2021-10-17 15:25	212	463	69.4	7.32	298	1	3.1	12.5	0.001	0.0158	0.178	37.1	5.07	
W50	2021-10-26 9:50	212	462	60.5	7.48	301	2	3	13.6	0.001	0.0055	0.175	39.1	5.28	
W50	2021-11-02 10:15	216	482	8.5	7.34	301	1	2.6	10.2	0.001	0.0055	0.188	37	5.14	
W50	2021-11-09 15:10	218	474	14.8	7.14	297	3.3	2.2	11.7	0.0014	0.0066	0.172	38.5	5.26	
W50	2021-11-16 14:15	215	473	38	7.35	299	1	2.1	14	0.001	0.0184	0.188	39.6	5.45	
W50	2021-11-27 15:15	216	474	33.1	7.29	300	22.4	1.6	21	0.0064	0.0284	0.202	40	5.51	
W50	2021-12-01 14:15	222	477	50.7	7.65	305	2.7	2.5	16.2	0.001	0.0071	0.205	38.8	5.47	
W50	2021-12-11 7:20	182	451	65.4	7.36	276	2.8	8.3	96.1	0.0014	0.0883	0.0571	46.4	5.24	
W50	2021-12-14 14:50	209	463	82	7.36	304	19.7	5.4	42.9	0.001	0.0151	0.184	42.1	5.47	
W50	2021-12-18 7:50			76.8	7.81			1.3	9.1						
W50	2021-12-18 7:50	211	462	76.8	7.81	301	1	1.3	9.1	0.001	0.0087	0.195	41	5.43	
W50	2021-12-24 14:05	215	469	52.3	7.7	298	40.4	2	52.3	0.0025	0.0262	0.207	40.1	5.52	
W50	2021-12-28 11:05	211	473	21.9	7.74	297	24.4	0	26.4	0.0022	0.0504	0.2	40.9	5.58	
W50	2022-01-08 14:00	180	433			279	1.2			0.001	0.0988	0.0336	46.2	5.61	
W50	2022-01-10 13:55	179	430			278	1			0.001	0.111	0.0384	46.1	5.25	
W6	1994-06-07 0:00		139			86	19			0.003	0.051	0.005		0.6	0.18
W6	1994-07-08 0:00		148			102	22			0.002	0.008	0.041		1	0.16
W6	1994-08-10 0:00		208			143	19			0.002	0.021	0.007		1.1	0.31
W6	2005-05-27 0:00	32	127			103	13.5			0.0016	0.0316	0.02	11.8	0.5	
W6	2005-06-30 0:00	99.1	174			123	11.5			0.001	0.0086	0.02	1	0.73	
W6	2005-07-29 0:00		319			198	22.2			0.001	0.0223	0.02		0.5	
W6	2005-08-30 0:00	109	200			147	3			0.001	0.005	0.02	2.62	0.5	
W6	2005-09-28 0:00	93	192			133	3.5			0.001	0.005	0.02	4.04	0.5	
W6	2005-10-15 0:00		180			128	3			0.001	0.0061	0.02		0.52	
W6	2006-06-02 11:30	76.6	112			96	115			0.001	0.0241	0.021	1.88	0.5	0.176
W6	2006-08-25 0:00	120	223			160					0.03		2.4		
W6	2006-09-06 0:00	112	212				4				0.03		2.3		
W6	2007-06-20 0:00	83	151			130	16				0.1		2.1	0.4	
W6	2007-09-18 0:00	112	194			172	8				0.02		2.51	0.59	
W6	2008-06-17 0:00	93	175			120	17			0.07	0.01		1.64	0.29	
W6	2008-09-18 0:00	87	174			150	4			0.01	0.01		3.29	0.41	
W6	2009-04-14 0:00	201	624			464	138						6.28	6.32	
W6	2009-04-30 0:00	41	104		8.2	112	190	5.6	170				7.44	0.76	
W6	2009-07-28 0:00	92	338			228	38						42.9	6.17	
W6	2009-08-06 0:00	155	413		7.25	296	2	9.6			2.92		48.4	9.84	
W6	2009-08-18 0:00														
W6	2009-08-25 0:00				7.82			10.8							
W6	2009-10-07 0:00	96	475		8.14	352	3	4.22	108.5		8.09		63.3	33.3	
W6	2009-10-25 0:00	120	501		8.12	270	4	2.36	99.4	0.061	7.8	0.134			
W6	2010-06-02 0:00	200	466		7.38	280	2	1.5		0.005	0.97	0.031	49	6.4	0.43
W6	2010-06-04 0:00	100	189		7.87	96	1	2.6		0.005	0.02	0.034	0.5	0.5	0.2
W6	2010-06-06 0:00	100	187			120	5	1.6		0.005	0.02	0.06	0.5	0.5	0.21
W6	2010-06-14 0:00	100	184		6.65	130	13	3.8		0.005	0.02	0.016	1.4	0.5	0.23
W6	2010-06-16 0:00	100	188		6.8	120	5	2.5		0.005	0.03	0.013	0.5	0.5	0.22
W6	2010-06-18 0:00	100	191		7.03	120	6	2.9		0.005	0.02		0.5	0.5	0.23
W6	2010-06-20 0:00	100	182		6.38	110	5	3.1		0.005	0.02		0.7	0.5	0.23
W6	2010-06-22 0:00	100	190		7.8	120	8	1.92	102	0.005	0.02	0.01	0.5	0.5	0.23
W6	2010-06-24 0:00	100	189		7.91	96	4	2.38	101.2	0.005	0.02	0.012	0.5	0.5	0.25
W6	2010-06-26 0:00	100	189		7.78	92	5	2.45	99.4	0.005	0.02	0.034	0.5	0.5	0.24
W6	2010-06-28 0:00	99	189		7.99	130	19	2.79	101.7	0.005	0.02	0.031	0.5	0.5	0.22
W6	2010-07-05 0:00	87	170		7.99	130	60	3.71	101.4	0.005	0.02	0.15	0.5	0.5	0.2
W6	2010-08-05 0:00	110	207		7.96	130	8	6.72	76.7	0.005	0.02	0.014	0.5	0.5	0.23
W6	2010-09-09 0:00	110	210		7.99	160	31	5.1	79.6	0.005	0.02	0.005	0.5	0.7	0.26
W6	2010-10-08 0:00	110	209		7.75	140	46	-0.18	94.2	0.005	0.02	0.053	2.1	0.5	0.21
W6	2011-08-19 0:00	190	485			280	2			0.005	1.05	0.006			
W6	2012-07-17 9:05	103	201	74.9	7.92	122	1130	4.8	92.3	0.005	0.026	0.14	1.82	1	0.25
W6	2012-07-30 10:55	103	202	22.5	7.89	124	614	5.2	98.8	0.0072	0.052	0.07	0.5	0.58	0.3
W6	2012-08-09 16:30	116	220	-22.9	8.09	144	566	6.4	97.9	0.0066	0.022	0.025	0.64	1.1	0.28
W6	2012-08-25 8:15	109	212	134.6	7.76	138	1160	4.7	92.8	0.005	0.045	0.023	0.5	0.92	0.28
W6	2012-09-13 15:00	87.1	174	64.9	7.95	118	50.3	1.9	94.3	0.005	0.034	0.011	0.62	1.1	0.22
W6	2012-10-13 14:25	99.1	193	27.8	8.3	150	44.7	0	94.7	0.005	0.042	0.016	1.52	0.87	0.23
W6	2012-11-12 8:40	138	275	249.6	6.69	162	2.2	-0.1		0.005	0.02	0.025	5.81	1.1	0.23
W6	2013-05-14 14:45	25.5	55.1	137.8	7.6	84	13.1	0.1	92.1	0.005	0.02	0.13	0.5	1.5	0.083
W6	2013-06-22 9:20	97.8	195	79.4	7.61	118	172	1.6	88.6	0.0132	0.028	0.024	1.88	1.1	0.22
W6	2013-07-12 15:20	93.8	180	93.3	7.69	136	25.2	4.4	87.7	0.005	0.02	0.012	1.27	1	0.23
W6	2013-08-22 16:15	107	205	22.8	7.81	144	19.7	5.4	102.4	0.005	0.02	0.014	0.53	0.84	0.23
W6	2013-09-06 13:40	105	204	20.4	7.6	130	5.2	4.5	98.7	0.005	0.03	0.0061	0.62	1.2	0.26
W6	2013-10-07 15:30	98.1	191	36.2	7.66	176	74.4	1.2	102.3	0.005	0.042	0.044	1.89	0.8	0.25
W6	2013-11-16 10:30	121	245	98.6	7.96	120	33.4	-0.1	68.3	0.005	0.02	0.015	1.48	0.78	0.24
W6	2013-12-07 11:30	164	326		7.5	194	3.6	0		0.005	0.02	0.0076	5.36	1.4	0.28
W6	2014-02-21 10:00	158	315	190	7.41	177	27	0	59.6	0.005	0.026	0.027	6.58	1.8	0.27
W6	2014-05-12 16:00	51.2	102	89	7.92	96	8.5	0.3	88.2	0.005	0.02	0.033	0.5	1	0.12
W6	2014-06-21 11:30	95.3	191	114.8	8.14	106	51	1.4	90.4	0.0059	0.042	0.021	0.87	0.9	0.23
W6	2014-07-22 15:15	98.8	192	41	7.13	128	145	4.2	90.8	0.005	0.02	0.023	0.5	0.77	0.25
W6	2014-08-20 16:45	115	221	39	7.83	140	157	5	94	0.005	0.02	0.016	0.5	1.3	0.25
W6	2014-09-02 16:20	160	337	27.8	7.85	194	1.8	2.2	94.9	0.005	0.097	0.029	17.9	1.9	0.36
W6	2014-10-16 16:00	99.1	203	61.1	7.88	90	2.1	-1.2	89.4	0.005	0.02	0.014	0.6	0.78	0.22
W6	2014-11-30 15:30	182	362	198.1	8.2	230	1.7	-1.9	30.6	0.005	0.02	0.0054	5.95	1.7	0.3
W6	2015-05-31 11:10	101	191	174.1	7.55	92	301	1.2	91.8	0.005	0.037	0.019	0.85	1.1	0.22
W6	2015-06-10 16:30	91.3	193	118.2	7.86	126	56.3	3.2	96.1	0.007	0.027	0.027	0.73	0.72	0.25
W6	2015-07-12 16:50	109	211	61.1	7.47	126	79.5	3.2	75.2	0.005	0.031	0.02	0.85	0.88	0.24
W6	2015-08-21 11:25	104	206	55.8	8.03	144	103	3.3	90.5	0.005	0.02	0.032	0.5	0.65	0.25
W6	2015-09-22 16:15	100	206	60.3	7.94	148	1	2.1	88.1	0.005	0.02	0.025	0.77	0.97	0.25
W6	2015-10-15 16:25	103	210	40.2	7.51	136	6.9	-0.1	84.6	0.005	0.02	0.017	1.11	1.3	0.24
W6	2016-04-28 16:35	50	104	96.5	7.68	54.1	4	0.1	109.6	0.001	0.005	0.008	0.76	0.5	
W6	2016-05-24 15:35			90.6	7.58			1.8	92.6						
W6	2016-06-18 16:35	107	201	26.4	7.57	110	14	5.3	92.1	0.001	0.017	0.0055	1.93	0.5	
W6	2016-07-06 16:45	117	217	30.2	7.72	119	68	3.5	86.3	0.001	0.005	0.005	2	0.5	
W6	2016-08-16 15:05	124	220	16	7.54	128	12.7	6	90	0.001	0.0076	0.009	1.48	0.53	
W6	2016-09-06 15:15	126	224	93	7.93	127	6.9	5.2	94.2	0.001	0.005	0.0057	1.71	0.65	
W6	2016-10-12 15:20	165	280	105.5	7.43	162	102	0.1	45.7	0.001	0.0061	0.0079	2.9	0.91	

Station	Date / Time	Dissolved Elements																			
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W50	2021-05-31 11:15	0.00001	0.0051	0.00017	0.0164	0.061	0.00002	0.00005	9.34	0.0000223	0.00018	0.0005	0.00288	0.027	0.000005	1.1	0.001	3.32	0.275	0.00138	24.4
W50	2021-06-08 6:35																				
W50	2021-06-08 6:35	0.00001	0.0087	0.00038	0.0844	0.02	0.00002	0.00005	56.3	0.0000516	0.00093	0.0005	0.0048	0.062	0.000005	2.28	0.0014	19.8	1.94	0.00542	14.2
W50	2021-06-16 15:10	0.00001	0.0086	0.00038	0.0913	0.019	0.00002	0.00005	59.3	0.0000575	0.00103	0.0005	0.00424	0.08	0.000005	2.19	0.0014	20.9	1.97	0.00563	13.7
W50	2021-06-23 10:50	0.00001	0.0172	0.00037	0.0947	0.018	0.00002	0.00005	58.5	0.000052	0.00098	0.0005	0.00454	0.103	0.000005	2.27	0.0013	21.8	1.99	0.00526	14.1
W50	2021-06-28 14:00	0.00001	0.0112	0.00038	0.0878	0.017	0.00002	0.00005	59.4	0.0000356	0.00087	0.0005	0.00523	0.095	0.000005	2.29	0.0013	21	1.82	0.00472	14.2
W50	2021-07-05 9:50	0.00001	0.0095	0.00042	0.0864	0.02	0.00002	0.00005	65	0.0000439	0.00103	0.0005	0.00428	0.124	0.000005	2.1	0.0014	21.2	2.06	0.00487	13.1
W50	2021-07-12 15:20	0.00001	0.0071	0.00035	0.0912	0.017	0.00002	0.00005	57.3	0.0000434	0.00097	0.0005	0.00408	0.097	0.000005	2.26	0.0013	21.2	2.02	0.0051	13.4
W50	2021-07-20 12:30	0.00001	0.0079	0.00042	0.0936	0.016	0.00002	0.00005	60.5	0.0000318	0.00093	0.0005	0.0047	0.115	0.000005	2.35	0.0014	22.5	1.98	0.00488	13.9
W50	2021-07-28 10:50	0.00001	0.0094	0.00044	0.115	0.017	0.00002	0.00005	65.1	0.0000519	0.00104	0.0005	0.00467	0.115	0.000005	2.42	0.0015	24.3	2.31	0.00521	14.3
W50	2021-08-04 7:55	0.00001	0.0088	0.00043	0.0943	0.016	0.00002	0.00005	54.4	0.0000528	0.00103	0.0005	0.00351	0.144	0.000005	2.21	0.001	19.3	2.07	0.00648	13.3
W50	2021-08-09 16:15	0.00001	0.0074	0.00042	0.089	0.018	0.00002	0.00005	59.7	0.0000413	0.00106	0.0005	0.00371	0.125	0.000005	2.17	0.0014	21.1	2.16	0.0058	12.9
W50	2021-08-17 8:25	0.00001	0.0078	0.00041	0.0916	0.016	0.00002	0.00005	56.7	0.0000474	0.00125	0.0005	0.00306	0.183	0.000005	2.14	0.0014	21.3	2.29	0.00574	13.1
W50	2021-08-23 16:35	0.00001	0.0079	0.00049	0.11	0.016	0.00002	0.00005	60.8	0.0000408	0.00132	0.0005	0.00293	0.196	0.000005	2.48	0.0015	22.4	2.6	0.00668	13.8
W50	2021-08-29 11:20	0.00001	0.0158	0.0005	0.101	0.019	0.00002	0.00005	62.9	0.0000507	0.0013	0.0005	0.00448	0.18	0.000005	2.5	0.0014	20.9	2.56	0.00595	14.2
W50	2021-09-06 15:00	0.00001	0.0079	0.00049	0.102	0.018	0.00002	0.00005	57.2	0.0000452	0.00118	0.0005	0.00246	0.141	0.000005	2.4	0.0013	20.6	2.39	0.00609	12.7
W50	2021-09-14 11:20	0.00001	0.0086	0.00051	0.108	0.015	0.00002	0.00005	57.6	0.0000357	0.00148	0.0005	0.00251	0.266	0.000005	2.3	0.0014	20.8	2.88	0.0067	12.4
W50	2021-09-20 12:30	0.00001	0.0092	0.00049	0.102	0.016	0.00002	0.00005	52.6	0.0000445	0.00126	0.0005	0.00284	0.162	0.000005	2.47	0.0012	19.4	2.4	0.00587	12.9
W50	2021-09-23 16:00	0.00001	0.0053	0.0001	0.00641	0.012	0.00002	0.00005	3.71	0.000005	0.0001	0.0005	0.00118	0.01	0.000005	0.511	0.001	1.24	0.0684	0.00039	19.4
W50	2021-09-28 10:45																				
W50	2021-09-28 10:45	0.00001	0.0109	0.00042	0.0804	0.016	0.00002	0.00005	48.5	0.0000415	0.00098	0.0005	0.00248	0.128	0.000005	2.2	0.0014	16.9	1.73	0.00559	12.3
W50	2021-10-05 17:00																				
W50	2021-10-05 17:00	0.00001	0.0116	0.0005	0.089	0.014	0.00002	0.00005	47.7	0.0000409	0.00113	0.0005	0.00263	0.152	0.000005	2.27	0.0013	19.4	2.14	0.00547	13.3
W50	2021-10-11 10:05	0.00001	0.0098	0.00048	0.0939	0.015	0.00002	0.00005	50.9	0.000046	0.00135	0.0005	0.00254	0.207	0.000005	2.24	0.0013	20.8	2.49	0.00602	13.4
W50	2021-10-17 15:25	0.00001	0.01	0.00052	0.102	0.015	0.00002	0.00005	55.6	0.0000456	0.00137	0.0005	0.00252	0.191	0.000005	2.46	0.0014	19.5	2.53	0.006	13.5
W50	2021-10-26 9:50	0.00001	0.0093	0.00048	0.105	0.016	0.00002	0.00005	57.6	0.0000638	0.00139	0.0005	0.00241	0.165	0.000005	2.28	0.0014	19.6	2.72	0.00611	13.1
W50	2021-11-02 10:15	0.00001	0.0099	0.00049	0.106	0.015	0.00002	0.00005	56.8	0.0000438	0.00154	0.0005	0.00212	0.236	0.000005	2.42	0.0017	19.8	2.99	0.00627	12.6
W50	2021-11-09 15:10	0.00001	0.013	0.00053	0.122	0.014	0.00002	0.00005	59.8	0.0000503	0.00191	0.0005	0.00492	0.33	0.000005	2.51	0.0013	22.9	3.28	0.00685	14.3
W50	2021-11-16 14:15	0.00001	0.0191	0.00051	0.105	0.013	0.00002	0.00005	54.2	0.0000524	0.00154	0.0005	0.0024	0.277	0.000005	2.23	0.0013	20	3.05	0.00619	12.3
W50	2021-11-27 15:15	0.00001	0.0083	0.00049	0.105	0.016	0.00002	0.00005	55	0.0000358	0.00152	0.0005	0.00218	0.247	0.000005	2.25	0.0014	19.1	3.06	0.00624	12.4
W50	2021-12-01 14:15	0.00001	0.0089	0.00049	0.105	0.016	0.00002	0.00005	56.7	0.0000641	0.00154	0.0005	0.00281	0.244	0.000005	2.47	0.0013	19.3	3.24	0.00629	12.4
W50	2021-12-11 7:20	0.00001	0.0058	0.0004	0.057	0.016	0.00002	0.00005	54.5	0.0000264	0.00049	0.0005	0.00816	0.131	0.000005	2.85	0.0012	17.1	0.681	0.00718	11.2
W50	2021-12-14 14:50	0.00001	0.0104	0.00046	0.0885	0.016	0.00002	0.00005	57	0.0000771	0.00118	0.0005	0.00332	0.181	0.000005	2.39	0.0013	20.2	2.09	0.00608	13.1
W50	2021-12-18 7:50																				
W50	2021-12-18 7:50	0.00001	0.0087	0.00047	0.086	0.016	0.00002	0.00005	55.4	0.0000456	0.00119	0.0005	0.00269	0.177	0.000005	2.28	0.0013	19.4	2.23	0.0063	12.7
W50	2021-12-24 14:05	0.00001	0.0084	0.00045	0.0957	0.014	0.00002	0.00005	52.6	0.0000383	0.00131	0.00062	0.00231	0.234	0.000005	2.14	0.0016	19	2.56	0.00676	11.9
W50	2021-12-28 11:05	0.00001	0.0086	0.00045	0.106	0.015	0.00002	0.00005	53.2	0.0000353	0.00148	0.00056	0.00213	0.18	0.000005	2.25	0.0018	19	2.79	0.00737	12.1
W50	2022-01-08 14:00	0.00001	0.0032	0.00038	0.0491	0.015	0.00002	0.00005	58.3	0.0000191	0.00026	0.0005	0.00838	0.045	0.000005	2.82	0.0012	16.5	0.345	0.00568	11.4
W50	2022-01-10 13:55	0.00001	0.0034	0.00039	0.0492	0.014	0.00002	0.00005	58.6	0.0000182	0.00031	0.0005	0.00815	0.049	0.000005	2.82	0.0012	16.2	0.407	0.00573	11
W6	1994-06-07 0:00	0.0001	0.016	0.0002	0.037	0.1	0.005	0.1	19.2	0.0002	0.001	0.001	0.001	0.113		0.68		5.24	0.005	0.001	3.35
W6	1994-07-08 0:00	0.0001	0.029	0.0002	0.038	0.1	0.005	0.1	21	0.0002	0.001	0.001	0.002	0.109		0.34		5.65	0.007	0.001	3.58
W6	1994-08-10 0:00	0.0001	0.015	0.0003	0.054	0.1	0.005	0.1	30	0.0002	0.001	0.001	0.001	0.039		0.54		7.6	0.005	0.001	5.38
W6	2005-05-27 0:00	0.00002	0.0144	0.0005	0.035	0.1	0.001		17.9		0.0003		0.0016	0.072	0.00002	2	0.005	5.01	0.00543	0.001	2.8
W6	2005-06-30 0:00	0.00001	0.0056	0.00039	0.0429	0.01	0.0005	0.0005	25.2		0.0001	0.0005	0.00101	0.03		2	0.005	6.72	0.00324	0.000448	4.8
W6	2005-07-29 0:00	0.00001	0.007	0.00026	0.0668	0.01	0.0005	0.0005	46.9		0.0001	0.0005	0.00247	0.062		2	0.005	13.2	0.0145	0.000818	7.3
W6	2005-08-30 0:00	0.00002	0.0067	0.0005	0.053	0.1	0.001		29	0.000017	0.0003		0.001	0.064	0.00002	2	0.005	8.1	0.0211	0.001	4.6
W6	2005-09-28 0:00	0.00002	0.0067	0.0005	0.048	0.1	0.001		28.8	0.000017	0.0003		0.0011	0.1	0.00002	2	0.005	8.25	0.0245	0.001	4.4
W6	2005-10-15 0:00	0.00001	0.0769	0.00042	0.0419	0.01	0.0005	0.0005	26.7		0.0001	0.0005	0.00108	0.088		2	0.005	7.66	0.0162	0.000395	4.5
W6	2006-06-02 11:30	0.00001	0.0252	0.00044	0.0315	0.01	0.0005	0.0005	17.8		0.0001	0.0005	0.00175	0.096		2	0.005	4.95	0.00673	0.000305	3.3
W6	2006-08-25 0:00								31.7									8.7			
W6	2006-09-06 0:00	0.0001	0.008	0.0005	0.051	0.002	0.0001	0.0005	30	0.00001	0.0001	0.0006	0.001	0.11		0.6	0.001	7.7	0.046	0.001	4.8
W6	2007-06-20 0:00																				
W6	2007-09-18 0:00																				
W6	2008-06-17 0:00																				
W6	2008-09-18 0:00	0.00001	0.012	0.0004	0.039	0.004	0.00004		23.7	0.00001	0.00022	0.0013	0.002	0.09	0.00001	0.4	0.001	6.33	0.0099	0.00027	4.27
W6	2009-04-14 0:00	0.00001	0.038	0.0004	0.046	0.017	0.00004	0.0001	23.6	0.00002	0.00033	0.0004	0.043	0.06	0.00001	7.4	0.004	45.8	0.0307	0.00312	35.1
W6	2009-04-30 0:00	0.00001	0.097	0.0003	0.026	0.007	0.00004	0.0001	14.5	0.00023	0.00014	0.0007	0.008	0.12	0.00001	1.9	0.001	4.9	0.0147	0.00042	3
W6	2009-07-28 0:00																				
W6	2009-08-06 0:00																				
W6	2009-08-18 0:00	0.00001	0.03	0.0004	0.101	0.023	0.00004	0.001	46.1	0.00001	0.00014	0.001	0.004	0.02	0.00001	3.5	0.002	14.2	0.0808	0.0098	14.9
W6	2009-08-25 0:00																				
W6	2009-10-07 0:00																				
W6	2009-10-25 0:00	0.00002	0.023	0.0003	0.118	0.05	0.0001	0.001	57.9	0.00001	0.0005		0.0021	0.01	0.00002	3.34	0.005	15.2	0.215	0.015	17.3
W6	2010-06-02 0:00	0.0001	0.01	0.0004	0.074	0.1	0.0002	0.001	56		0.0005		0.001	0.02	0.0002	2	0.01	20	0.01	0.003	13
W6	2010-06-04 0:00	0.0001	0.01	0.0004	0.043	0.1	0.0002	0.001	23		0.0005		0.001	0.027	0.0002	1	0.01	6	0.001	0.001	3
W6	2010-06-06 0:00	0.0001	0.01	0.0004	0.046	0.1	0.0002	0.001	27		0.0005		0.001	0.027		1	0.01	7	0.001	0.001	4
W6	2010-06-14 0:00	0.0001	0.01	0.0004	0.038	0.1	0.0002	0.001	25		0.0005		0.001	0.021	0.0002	1	0.01	7	0.001	0.001	5
W6	2010-06-16 0:00	0.0001	0.01	0.0005	0.044	0.1	0.0002	0.001	25		0.0005		0.006	0.021	0.0002	1	0.01	7	0.001	0.001	4
W6	2010-06-18 0:00	0.0001	0.01	0.0004	0.044	0.1	0.0002	0.001	26		0.0005		0.001	0.021	0.0002	1	0.01	7	0.001	0.001	4
W6	2010-06-20 0:00	0.0001	0.01	0.0004	0.043	0.1	0.0002	0.001	25		0.0005		0.001	0.027	0.0002	1	0.01	7	0.001	0.001	4
W6	2010-06-22 0:00	0.0001	0.01	0.0004	0.044	0.1	0.0002	0.001	25		0.0005		0.001	0.025	0.0002	1	0.01	7	0.001	0.001	4
W6	2010-06-24 0:00	0.0001	0.01	0.0004	0.043	0.1	0.0002	0.001	26		0.0005		0.001	0.025	0.0002	1	0.01	7	0.001	0.001	4
W6	2010-06-26 0:00	0.0001	0.01	0.0004	0.045	0.1	0.0002	0.001	25		0.0005		0.001	0.025	0.0002	1	0.01	7	0.001	0.001	4
W6	2010-06-28 0:00	0.0001	0.01	0.0004	0.044	0.1	0.0002	0.001	25		0.0005		0.001	0.025	0.0002	1	0.01	7	0.001	0.001	4
W6	2010-07-05 0:00	0.0001	0.015	0.0004	0.047	0.1	0.0002	0.001	22		0.0005		0.001	0.092	0.0002	1	0.01	6	0.005	0.001	4
W6	2010-08-05 0:00	0.0001	0.012	0.0005	0.056	0.1	0.0002	0.001	31		0.0005		0.002	0.069	0.0002	1	0.01	8	0.018	0.001	4
W6	2010-09-09 0:00	0.0001	0.011	0.0004	0.053	0.1	0.0002	0.001	30		0.0005		0.001	0.061	0.0002	1	0.01	8	0.02	0.001	4
W6	2010-10-08 0:00	0.00002	0.008	0.0004	0.05	0.05	0.0001	0.001	28.8	0.00001	0.0005		0.0008	0.054	0.00002	0.42	0.005	7.52	0.019	0.001	3.79
W6	2011-08-19 0:00	0.00002	0.01	0.0003	0.077	0.05	0.0001	0.001	53.6	0.00001	0.0005		0.0025	0.025	0.00002	1.66	0.005	22.2	0.019	0.003	15.2
W6	2012-07-17 9:05	0.00002	0.0161	0.00053	0.0597	0.05	0.0001	0.001	29.7	0.00001	0.0005		0.00105	0.0679	0.00001	0.52	0.005	7.16	0.0542	0.001	4.31
W6	2012-07-30 10:55	0.00002	0.0186	0.00059	0.0601	0.05	0.0001	0.001	28.9	0.00001	0.0005		0.00089	0.0814	0.00001	0.542	0.005	7.02	0.102	0.001	4.2
W6	2012-08-09 16:30	0.00002	0.0173	0.00081	0.0681	0.05	0.0001	0.001	31.9	0.00001	0.0005		0.00083	0.0845	0.00001	0.578	0.005	7.95	0.134	0.001	4.56
W6	2012-08-25 8:15	0.00002	0.0138	0.00081	0.063	0.05	0.0001	0.001	28.9	0.00001	0.0005		0.00103	0.0799	0.00001	0.648	0.005	7.34	0.134	0.001	4.21
W6	2012-09-13 15:00	0.00002	0.0169	0.00047	0.0451	0.05	0.0001	0.001	24.1	0.00001	0.0005		0.00145	0.108	0.00001	0.411	0.005	6.66	0.0408	0.001	3.89
W6	2012-10-13 14:25														0.00001						
W6	2012-11-12 8:40	0.00002	0.0062	0.00039	0.0697	0.05	0.0001	0.001	41.6	0.00001	0.0005		0.00143	0.0235	0.00001	0.562	0.005	11.8	0.0013	0.001	6.34
W6	2013-05-14 14:45	0.00002	0.0591	0.00037	0.0195	0.05	0.0001	0.001	8.75	0.000012	0.0005		0.0035	0.183	0.00001	1.73	0.005	2.31	0.0433	0.001	0.999
W6	2013-06-22 9:20	0.00002	0.0095	0.00053	0.0493	0.05	0.0001	0.001	26.4	0.00001	0.0005		0.00096	0.0718	0.00001	0.724	0.005	7.04	0.0293	0.001	3.95
W6	2013-07-12 15:20	0.00002	0.0066	0.00046	0.0438	0.05	0.0001	0.001	24.1	0.00001	0.0005		0.00095	0.105	0.00001	0.482	0.005	6.83	0.022	0.001	4.07
W6	2013-08-22 16:15	0.00002	0.0084	0.00052	0.0495	0.05	0.0001	0.001	28.3	0.00001	0.0005		0.00119	0.103	0.00001	0.489	0.005	7.54	0.0286	0.001	4.33
W6	2013-09-06 13:40	0.00002	0.0083	0.00056	0.0499	0.05	0.0001	0.001	28.4	0.00001	0.0005		0.00089	0.111	0.00001	0.554	0.005	7.18	0.0323	0.001	4.02
W6	2013-10-07 15:30	0.00002	0.0132	0.00051	0.0518	0.05	0.0001	0.001	30.7	0.00001	0.0005		0.00097	0.145	0.00001	0.581	0.005	7.36	0.048	0.001	4.6
W6	2013-11-16 10:30	0.00002	0.0057	0.00048	0.0582	0.05	0.0001	0.001	33.2	0.00001	0.0005		0.00084	0.124	0.00001	0.589	0.005	8.66	0.0399	0.001	4.77
W6	2013-12-07 11:30	0.00002	0.0041	0.00061	0.0725	0.05	0.0001	0.001	44.6	0.000011	0.0005		0.00156	0.0144	0.00001	0.562	0.005	11.7	0.0017	0.001	6.36
W6	2014-02-21 10:00	0.00002	0.004	0.00055	0.0829	0.05	0.0001	0.001	44.6	0.00001	0.0005		0.00299	0.0168	0.00001	0.934	0.005	11.9	0.0071	0.001	6.65
W6	2014-05-12 16:00	0.00002	0.0157	0.00042	0.0285	0.05	0.0001	0.001	13.6	0.00001	0.0005		0.002	0.107	0.00001	1.13	0.005	3.76	0.0357	0.001	2.25
W6	2014-06-21 11:30	0.00002	0.015	0.00042	0.0472	0.05	0.0001	0.001	25.6	0.00001	0.0005		0.0019	0.2	0.00001	0.668	0.005	7.07	0.0316	0.001	4.44
W6	2014-07-22 15:15	0.00002	0.0185	0.00041	0.0472	0.05	0.0001	0.001	27	0.00001	0.0005		0.00254	0.0998	0.00001	0.535	0.005	6.96	0.0175	0.001	4.04
W6	2014-08-20 16:45	0.00002	0.0075	0.00069	0.0575	0.05	0.0001	0.001	31.9	0.00001	0.0005		0.00098	0.127	0.00001	0.637	0.005	8.53	0.035	0.001	4.91
W6	2014-09-02 16:20	0.00002	0.003	0.00042	0.0678	0.05	0.0001	0.001	38.7	0.00001	0.0005		0.0014	0.139	0.00001	1.23	0.005	15.4	0.05	0.0019	9.85
W6	2014-10-16 16:00	0.00002	0.0058	0.00046	0.0457	0.05	0.0001	0.001	26.7	0.00001	0.0005		0.00081	0.094	0.00001	0.506	0.005	7.2	0.0255	0.001	4.29
W6	2014-11-30 15:30	0.00002	0.0076	0.00047	0.0808	0.05	0.0001	0.001	50.4	0.00001	0.0005		0.00181	0.014	0.00001	0.595	0.005	13.5	0.0015	0.001	7.38
W6	2015-05-31 11:10	0.00002	0.0072	0.00043	0.0451	0.05	0.0001	0.001	26.1	0.00001	0.0005		0.00112	0.0564	0.00001	0.684	0.005	6.96	0.0138	0.001	4
W6	2015-06-10 16:30	0.00002	0.0072	0.00042	0.0447	0.05	0.0001	0.001	26.2	0.00001	0.0005		0.00106	0.0543	0.00001	0.641	0.005	7.03	0.0082	0.001	4.14
W6	2015-07-12 16:50	0.00002	0.0068	0.00038	0.0501	0.05	0.0001	0.001	28.4	0.00001	0.0005		0.00095	0.0603	0.00001	0.566	0.005	7.54	0.0166	0.001	4.48
W6	2015-08-21 11:25	0.00002	0.0117	0.00041	0.0468	0.05	0.0001	0.001	28.8	0.00001	0.0005		0.00109	0.082	0.00001	0.453	0.005	6.98	0.0191	0.001	4.25
W6	2015-09-22 16:15	0.00002	0.0148	0.00048	0.0485	0.05	0.0001	0.001	30.3	0.00001	0.0005		0.00099	0.112	0.00001	0.536	0.005	7.59	0.0298	0.001	4.42
W6	2015-10-15 16:25	0.00002	0.0096	0.00044	0.0444	0.05	0.0001	0.001	27.8	0.00001	0.0005		0.00128	0.0989	0.00001	0.462	0.005	7.56	0.0243	0.001	4.41
W6	2016-04-28 16:35	0.00001	0.0219	0.00051	0.0292	0.01	0.00002	0.00005	15.7	0.0000058	0.00011	0.00035	0.00316	0.102	0.0000107	0.94	0.001	4.11	0.00714	0.000247	2.38
W6	2016-05-24 15:35																				
W6	2016-06-18 16:35	0.00001	0.0089	0.00047	0.0514	0.01	0.00002	0.00005	31.3	0.000005	0.0001	0.00021	0.00131	0.095	0.000005	0.63	0.001	7.64	0.0176	0.000498	4.57
W6	2016-07-06 16:45	0.00001	0.0067	0.00043	0.0565	0.01	0.00002	0.00005	33.2	0.000005	0.0001	0.00018	0.00108	0.076	0.000005	0.59	0.001	7.92	0.0317	0.000546	4.82
W6	2016-08-16 15:05	0.00001	0.0096	0.00052	0.0566	0.01	0.00002	0.00005	37.3	0.000005	0.00013	0.00024	0.00114	0.137	0.000005	0.57	0.001	8.91	0.0455	0.00044	4.48
W6	2016-09-06 15:15	0.00001	0.0103	0.00054	0.0598	0.01	0.00002	0.00005	35.3	0.000005	0.00012	0.00026	0.00126	0.138	0.000005	0.56	0.001	8.58	0.0438	0.000502	4.64
W6	2016-10-12 15:20	0.00001	0.0056	0.00045	0.0699	0.01	0.00002	0.00005	42.2	0.000005	0.0001	0.0002	0.00096	0.063	0.000005	0.55	0.001	10.4	0.025	0.000469	5.82

Station	Date / Time	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W50	2021-05-31 11:15	0.00125	0.00005	0.0001	2.42	0.000096	1.25	0.0001	0.0854	0.0003	0.00001	0.000197	0.0005	0.001	0.0002
W50	2021-06-08 6:35														
W50	2021-06-08 6:35	0.00652	0.00005	0.0001	18.5	0.000175	6.53	0.0001	0.524	0.00035	0.00001	0.00122	0.0005	0.001	0.00037
W50	2021-06-16 15:10	0.00621	0.00005	0.0001	19.3	0.000156	6	0.0001	0.562	0.00038	0.00001	0.00148	0.0005	0.001	0.00033
W50	2021-06-23 10:50	0.00598	0.00005	0.0001	19.9	0.000276	6.17	0.0001	0.562	0.0012	0.00001	0.00147	0.0005	0.001	0.00034
W50	2021-06-28 14:00	0.00566	0.00005	0.0001	18.6	0.000176	6.35	0.0001	0.564	0.00069	0.00001	0.00125	0.00054	0.001	0.00035
W50	2021-07-05 9:50	0.00569	0.00005	0.0001	17.4	0.000177	6	0.0001	0.57	0.00043	0.00001	0.00142	0.0005	0.001	0.00031
W50	2021-07-12 15:20	0.00585	0.00005	0.0001	18.2	0.000231	6.19	0.0001	0.554	0.00032	0.00001	0.0014	0.0005	0.001	0.0003
W50	2021-07-20 12:30	0.00602	0.00005	0.0001	16.5	0.00012	6.47	0.0001	0.59	0.00032	0.00001	0.00127	0.0005	0.0011	0.00034
W50	2021-07-28 10:50	0.00613	0.00005	0.0001	16.6	0.000212	6.91	0.0001	0.622	0.00048	0.00001	0.00123	0.0005	0.001	0.00036
W50	2021-08-04 7:55	0.00623	0.00005	0.0001	14.8	0.00013	6.17	0.0001	0.567	0.00033	0.00001	0.00129	0.0005	0.001	0.00034
W50	2021-08-09 16:15	0.00602	0.00005	0.0001	15.4	0.000212	6.44	0.0001	0.56	0.00034	0.00001	0.00138	0.00051	0.001	0.00034
W50	2021-08-17 8:25	0.00653	0.00005	0.0001	13.8	0.00016	6	0.0001	0.531	0.00039	0.00001	0.00138	0.0005	0.001	0.00033
W50	2021-08-23 16:35	0.00708	0.00005	0.0001	13.8	0.000179	6.8	0.0001	0.604	0.00038	0.00001	0.00139	0.00057	0.001	0.00038
W50	2021-08-29 11:20	0.00699	0.00005	0.0001	14.6	0.000196	6.87	0.0001	0.559	0.0008	0.00001	0.00124	0.00052	0.0029	0.00036
W50	2021-09-06 15:00	0.00653	0.00005	0.0001	13.8	0.000197	6.51	0.0001	0.549	0.0006	0.00001	0.00136	0.00051	0.001	0.00036
W50	2021-09-14 11:20	0.00691	0.00005	0.0001	12.9	0.000168	6.72	0.0001	0.534	0.00041	0.00001	0.00126	0.00067	0.001	0.00039
W50	2021-09-20 12:30	0.007	0.00005	0.0001	13.6	0.000175	6.74	0.0001	0.529	0.00042	0.00001	0.00123	0.00057	0.0023	0.00039
W50	2021-09-23 16:00	0.0005	0.00005	0.0001	0.5	0.00005	0.588	0.0001	0.0368	0.0003	0.00001	0.000046	0.0005	0.001	0.0002
W50	2021-09-28 10:45														
W50	2021-09-28 10:45	0.00636	0.00005	0.0001	9.28	0.000132	6.56	0.0001	0.475	0.00038	0.00001	0.00105	0.0006	0.001	0.00038
W50	2021-10-05 17:00														
W50	2021-10-05 17:00	0.00703	0.00005	0.0001	11.7	0.00018	6.29	0.0001	0.471	0.00052	0.00001	0.00104	0.00059	0.001	0.00038
W50	2021-10-11 10:05	0.00736	0.00005	0.0001	12.5	0.000221	6.57	0.0001	0.494	0.0003	0.00001	0.00121	0.00061	0.001	0.0004
W50	2021-10-17 15:25	0.00733	0.00005	0.0001	12.7	0.000149	6.71	0.0001	0.502	0.0004	0.00001	0.00131	0.00064	0.001	0.00038
W50	2021-10-26 9:50	0.00727	0.00005	0.0001	12.8	0.000212	7.11	0.0001	0.513	0.00039	0.00001	0.00116	0.00063	0.004	0.00037
W50	2021-11-02 10:15	0.00754	0.00005	0.0001	12.4	0.000183	6.45	0.0001	0.542	0.00039	0.00001	0.00122	0.001	0.001	0.0004
W50	2021-11-09 15:10	0.00834	0.00005	0.0001	13.1	0.000246	7.07	0.00031	0.556	0.00068	0.00001	0.00142	0.00075	0.0012	0.00045
W50	2021-11-16 14:15	0.00756	0.00005	0.0001	12.1	0.00018	6.43	0.0001	0.546	0.00142	0.00001	0.00111	0.00082	0.001	0.00043
W50	2021-11-27 15:15	0.00757	0.00005	0.0001	13.2	0.000188	6.66	0.0001	0.521	0.00043	0.00001	0.00118	0.00064	0.0018	0.00038
W50	2021-12-01 14:15	0.00799	0.00005	0.0001	12.6	0.000163	6.54	0.0001	0.535	0.00049	0.00001	0.00112	0.0007	0.0026	0.00042
W50	2021-12-11 7:20	0.00255	0.00005	0.0001	15.7	0.000345	5.41	0.0001	0.52	0.00033	0.00001	0.00133	0.0005	0.0016	0.00021
W50	2021-12-14 14:50	0.00724	0.00005	0.0001	14.2	0.000201	7.07	0.0001	0.558	0.00057	0.00001	0.00136	0.00053	0.0035	0.0004
W50	2021-12-18 7:50														
W50	2021-12-18 7:50	0.00744	0.00005	0.0001	13.9	0.0002	7.15	0.0001	0.549	0.00049	0.00001	0.00128	0.00059	0.0011	0.00041
W50	2021-12-24 14:05	0.00742	0.00005	0.0001	12.8	0.000132	7.19	0.0001	0.538	0.00044	0.00001	0.00126	0.00078	0.0012	0.00041
W50	2021-12-28 11:05	0.00738	0.00005	0.0001	13.3	0.000124	7.19	0.0001	0.546	0.00037	0.00001	0.0014	0.0008	0.0053	0.00037
W50	2022-01-08 14:00	0.00184	0.00005	0.0001	14.9	0.000311	5.58	0.0001	0.54	0.0003	0.00001	0.00123	0.0005	0.0025	0.0002
W50	2022-01-10 13:55	0.00187	0.00005	0.0001	14.7	0.000256	5.85	0.0001	0.541	0.0003	0.00001	0.00125	0.0005	0.0013	0.00023
W6	1994-06-07 0:00	0.001	0.001	0.0001		0.0005	7.27		0.085			0.00004	0.03	0.005	
W6	1994-07-08 0:00	0.001	0.001	0.0001		0.0005	7.42		0.093			0.00003	0.03	0.005	
W6	1994-08-10 0:00	0.001	0.001	0.0001		0.0005	8.66		0.136			0.00009	0.03	0.005	
W6	2005-05-27 0:00	0.0015		0.0005				0.0005		0.01	0.0002	0.0002	0.03	0.005	
W6	2005-06-30 0:00	0.00099	0.00005	0.0001			7.18	0.0001	0.102	0.01	0.0001	0.000134	0.001	0.021	
W6	2005-07-29 0:00	0.0006	0.000083	0.0001			5.51	0.0001	0.274	0.01	0.0001	0.0014	0.001	0.0025	
W6	2005-08-30 0:00	0.0011		0.0005				0.0005		0.01	0.0002	0.0002	0.03	0.005	
W6	2005-09-28 0:00	0.0012		0.0005				0.0005		0.01	0.0002	0.0002	0.03	0.005	
W6	2005-10-15 0:00	0.00118	0.00005	0.0001			6.93	0.0001	0.108	0.01	0.0001	0.000122	0.001	0.0015	
W6	2006-06-02 11:30	0.00182	0.00005	0.0001			4.84	0.0001	0.0682	0.01	0.0001	0.000081	0.001	0.003	
W6	2006-08-25 0:00														
W6	2006-09-06 0:00	0.0006	0.0001	0.0002	0.9	0.0002	7.54	0.001	0.136	0.0005	0.00005	0.0005	0.0016	0.002	
W6	2007-06-20 0:00														
W6	2007-09-18 0:00														
W6	2008-06-17 0:00														
W6	2008-09-18 0:00	0.002	0.0001	0.0008		0.0012	6.29	0.0001	0.098	0.001	0.00001	0.0004	0.00073	0.003	0.0002
W6	2009-04-14 0:00	0.001	0.0002	0.003	34.5	0.0011	3.63	0.0001	0.419	0.0032	0.00001	0.004	0.00029	0.049	0.0001
W6	2009-04-30 0:00	0.001	0.0003	0.0006	2.5		2.3	0.0001	0.099	0.0044	0.00001	0.0004	0.00047	0.006	0.0004
W6	2009-07-28 0:00														
W6	2009-08-06 0:00														
W6	2009-08-18 0:00	0.001	0.0005	0.0013	16.6	0.0012	4.06	0.0001	0.584	0.0004	0.00001	0.0008	0.0006	0.002	0.0001
W6	2009-08-25 0:00														
W6	2009-10-07 0:00														
W6	2009-10-25 0:00	0.001	0.0002	0.0006	24	0.002	4.2	0.005	0.817	0.005	0.00005	0.0009	0.005	0.005	0.0005
W6	2010-06-02 0:00	0.001	0.0002	0.0005	60		5.16	0.005	0.623	0.01	0.00005	0.0028	0.005		0.002
W6	2010-06-04 0:00	0.001	0.0002	0.0005	60		5.66	0.005	0.099	0.01	0.00005	0.0003	0.005		0.002
W6	2010-06-06 0:00	0.001	0.0002	0.0005	60		6.95	0.005	0.115	0.01	0.00005	0.0004	0.005		0.002
W6	2010-06-14 0:00	0.001	0.0002	0.0005	60		7.21	0.005	0.099	0.01	0.00005	0.0003	0.005		0.002
W6	2010-06-16 0:00	0.001	0.0002	0.0005	60		6.57	0.005	0.117	0.01	0.00005	0.0003	0.005		0.002
W6	2010-06-18 0:00	0.001	0.0002	0.0005	60		7.25	0.005	0.111	0.01	0.00005	0.0003	0.005		0.002
W6	2010-06-20 0:00	0.001	0.0002	0.0005	60		6.72	0.005	0.109	0.01	0.00005	0.0003	0.005		0.002
W6	2010-06-22 0:00	0.001	0.0002	0.0005	60		6.78	0.005	0.109	0.01	0.00005	0.0003	0.005		0.002
W6	2010-06-24 0:00	0.001	0.0002	0.0005	60		6.84	0.005	0.109	0.01	0.00005	0.0003	0.005		0.002
W6	2010-06-26 0:00	0.001	0.0002	0.0005	60		6.94	0.005	0.118	0.01	0.00005	0.0003	0.005		0.002
W6	2010-06-28 0:00	0.001	0.0002	0.0005	60		7.64	0.005	0.115	0.01	0.00005	0.0002	0.005		0.002
W6	2010-07-05 0:00	0.001	0.0002	0.0005	60		6.24	0.005	0.112	0.01	0.00005	0.0002	0.005		0.002
W6	2010-08-05 0:00	0.001	0.0002	0.0005	60		7.84	0.005	0.13	0.01	0.00005	0.0002	0.005		0.002
W6	2010-09-09 0:00	0.001	0.0002	0.0005	60		7.77	0.005	0.13	0.01	0.00005	0.0002	0.005		0.002
W6	2010-10-08 0:00	0.001	0.0002	0.0005	3	0.0001	6.98	0.005	0.125	0.005	0.00005	0.0002	0.005	0.005	0.0005
W6	2011-08-19 0:00	0.001	0.0002	0.0005	18	0.0004	5.54	0.005	0.617	0.005	0.00005	0.0025	0.005	0.005	0.0005
W6	2012-07-17 9:05	0.001	0.0002	0.0005	3	0.00012	7.25	0.005	0.131	0.005	0.00005	0.00034	0.005	0.005	0.0005
W6	2012-07-30 10:55	0.001	0.0002	0.0005	3	0.0001	6.95	0.005	0.135	0.005	0.00005	0.00039	0.005	0.005	0.0005
W6	2012-08-09 16:30	0.001	0.0002	0.0005	3	0.0001	8.13	0.005	0.151	0.005	0.00005	0.00038	0.005	0.005	0.0005
W6	2012-08-25 8:15	0.001	0.0002	0.0005	3	0.0001	6.56	0.005	0.143	0.005	0.00005	0.0004	0.005	0.005	0.0005
W6	2012-09-13 15:00	0.0014	0.0002	0.0005	3	0.0001	6.42	0.005	0.11	0.005	0.00005	0.00013	0.005	0.005	0.0005
W6	2012-10-13 14:25														
W6	2012-11-12 8:40	0.0014	0.0002	0.0005	3	0.0001	8.72	0.005	0.189	0.005	0.00005	0.00032	0.005	0.005	0.0005
W6	2013-05-14 14:45	0.0013	0.0002	0.0005	3	0.0001	2.67	0.005	0.0363	0.005	0.00005	0.0001	0.005	0.005	0.0005
W6	2013-06-22 9:20	0.0012	0.0002	0.0005	3	0.0001	6.57	0.005	0.115	0.005	0.00005	0.00028	0.005	0.005	0.0005
W6	2013-07-12 15:20	0.0011	0.0002	0.0005	3	0.0001	7.05	0.005	0.112	0.005	0.00005	0.00017	0.005	0.005	0.0005
W6	2013-08-22 16:15	0.0011	0.0002	0.0005	3	0.0001	7.24	0.005	0.132	0.005	0.00005	0.00017	0.005	0.005	0.0005
W6	2013-09-06 13:40	0.0011	0.0002	0.0005	3	0.0001	7.48	0.005	0.132	0.005	0.00005	0.00016	0.005	0.005	0.0005
W6	2013-10-07 15:30	0.0013	0.0002	0.0005	3	0.0001	7.39	0.005	0.126	0.005	0.00005	0.00018	0.005	0.005	0.0005
W6	2013-11-16 10:30	0.001	0.0002	0.0005	3	0.0001	8.28	0.005	0.144	0.005	0.00005	0.00019	0.005	0.005	0.0005
W6	2013-12-07 11:30	0.0011	0.0002	0.0005	3	0.0001	9.38	0.005	0.2	0.005	0.00005	0.00039	0.005	0.005	0.0005
W6	2014-02-21 10:00	0.0012	0.0002	0.0005	3	0.00012	10.4	0.005	0.189	0.005	0.00005	0.00029	0.005	0.005	0.0005
W6	2014-05-12 16:00	0.0012	0.0002	0.0005	3	0.0001	3.74	0.005	0.0631	0.005	0.00005	0.0001	0.005	0.005	0.0005
W6	2014-06-21 11:30	0.0014	0.0002	0.0005	3	0.00012	6.21	0.005	0.118	0.005	0.00005	0.00027	0.005	0.005	0.0005
W6	2014-07-22 15:15	0.0012	0.0002	0.0005	3	0.0001	6.93	0.005	0.114	0.005	0.00005	0.00017	0.005	0.005	0.0005
W6	2014-08-20 16:45	0.0011	0.0002	0.0005	3	0.0001	7.8	0.005	0.145	0.005	0.00005	0.0002	0.005	0.005	0.0005
W6	2014-09-02 16:20	0.0016	0.0002	0.0005	5.9	0.00011	5.87	0.005	0.411	0.005	0.00005	0.00129	0.005	0.005	0.0005
W6	2014-10-16 16:00	0.001	0.0002	0.0005	3	0.0001	6.83	0.005	0.122	0.005	0.00005	0.00015	0.005	0.005	0.0005
W6	2014-11-30 15:30	0.0015	0.0002	0.0005	3	0.0001	8.95	0.005	0.225	0.005	0.00005	0.00082	0.005	0.005	0.0005
W6	2015-05-31 11:10	0.001	0.0002	0.0005	3	0.00011	6.35	0.005	0.118	0.005	0.00005	0.0003	0.005	0.005	0.0005
W6	2015-06-10 16:30	0.001	0.0002	0.0005	3	0.0001	6.73	0.005	0.114	0.005	0.00005	0.00024	0.005	0.005	0.0005
W6	2015-07-12 16:50	0.0011	0.0002	0.0005	3	0.0001	6.89	0.005	0.128	0.005	0.00005	0.00026	0.005	0.005	0.0005
W6	2015-08-21 11:25	0.0012	0.0002	0.0005	3	0.0001	7.61	0.005	0.13	0.005	0.00005	0.00019	0.005	0.005	0.0005
W6	2015-09-22 16:15	0.0013	0.0002	0.0005	3	0.0001	7.69	0.005	0.131	0.005	0.00005	0.00019	0.005	0.005	0.0005
W6	2015-10-15 16:25	0.0012	0.0002	0.0005	3	0.0001	7.32	0.005	0.118	0.005	0.00005	0.00018	0.005	0.005	0.0005
W6	2016-04-28 16:35	0.00158	0.00005	0.0001	0.5	0.000089	5.03	0.0001	0.0652	0.00076	0.00001	0.000049	0.00069	0.001	0.00038
W6	2016-05-24 15:35														
W6	2016-06-18 16:35	0.00118	0.00005	0.0001	0.86	0.000058	6.88	0.0001	0.127	0.00057	0.00001	0.000248	0.00072	0.0022	0.0003
W6	2016-07-06 16:45	0.00121	0.00005	0.0001	0.9	0.000081	6.95	0.0001	0.144	0.00043	0.00001	0.000307	0.00063	0.0015	0.0003
W6	2016-08-16 15:05	0.00143	0.00005	0.0001	0.72	0.000082	8.09	0.0001	0.146	0.00037	0.00001	0.000199	0.00075	0.001	0.0003
W6	2016-09-06 15:15	0.00138	0.00005	0.0001	0.78	0.000057	7.97	0.0001	0.155	0.00039	0.00001	0.000177	0.00068	0.0041	0.0003
W6	2016-10-12 15:20	0.00145	0.00005	0.0001	0.7	0.000087	8.04	0.0001	0.182	0.00032	0.00001	0.000286	0.0005	0.001	0.0003

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N-NO_2$	$N-NO_3$	$N-NH_3$	SO_4-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W6	2016-11-03 15:00	177	310	84.6	7.79	174	3	-0.1	52.9	0.001	0.005	0.005	4.33	1.01	
W6	2017-05-24 16:20	70.2	141	116	7.17	73.8	55.6	2.3	88.6	0.001	0.005	0.0099	1.32	0.81	
W6	2017-06-05 15:35	63.7	122	111.1	7.27	66.7	294	3.1	99.3	0.001	0.0077	0.0311	1.36	1.24	
W6	2017-07-04 16:05	109	197	62.2	7.78	109	4.5	5.5	100.1	0.001	0.0165	0.007	1.86	0.61	
W6	2017-08-03 16:45	118	211			119	3			0.001	0.0092	0.0069	1.4	0.61	
W6	2017-09-08 16:13	127	227	157.7	7.21	126	3	4.6	100.8	0.001	0.005	0.0063	5	0.82	
W6	2017-10-07 15:55	121	224	96.2	7.48	122	3	2	101.3	0.001	0.005	0.005	2.57	0.97	
W6	2018-05-21 15:30	62.8	123	121.5	7.97	66	3	2.8	94.8	0.001	0.025	0.013	1.1	1	
W6	2018-06-20 15:55	104	200	107.5	7.67	109	3	6	96	0.001	0.0125	0.0085	1.7	0.55	
W6	2018-07-23 11:00	151	245	99	7.6	139	38.5	5.3	83.7	0.001	0.0085	0.0073	2.17	0.5	0.254
W6	2018-08-14 17:10	118	226	117.1	7.74	119	3	5.3	90.5	0.001	0.005	0.005	1.87	0.52	
W6	2018-09-03 16:15	109	204	76.4	7.65	108	3	3.9	88.1	0.001	0.005	0.005	1.91	0.97	
W6	2019-05-13 16:00	59.7	117	155.1	7.33	96	6.4	0.7	92.3	0.001	0.005	0.0077	0.53	0.92	
W6	2019-06-15 10:50	84.6	165	125.1	7.65	88.6	9.8	3.2	82.4	0.001	0.0101	0.01	1.98	1.51	
W6	2019-07-06 8:35	133	247	98.5	7.69	134	3	5.7	72.5	0.001	0.0098	0.0096	1.49	0.9	
W6	2019-08-04 15:15	141	255	10.9	7.58	137	63.5	7.3	80	0.001	0.0054	0.009	2.57	0.83	
W6	2019-09-20 15:50	133	238	159.6	7.64	132	3	2.9	88.3	0.001	0.005	0.0053	2.43	1.19	
W6	2019-10-08 14:25	136	242	132.1	8.17	133	9.8	0	86.9	0.001	0.0226	0.0052	2.86	1.38	
W6	2020-05-30 10:40	80.1	163	105.3	7.54	116	55.5	2.2	82.8	0.001	0.0132	0.0062	2.15	0.88	
W6	2020-06-11 10:05	74.8	156	136.4	7.5	116	66.1	2.2	88	0.001	0.005	0.0113	2.18	1.06	
W6	2020-08-20 17:00	92.4	179	132.5	7.44	131	4.9	4.3	88.6	0.001	0.005	0.0119	1.3	1.33	
W6	2020-09-11 16:35	81.7	168	222.1	7.9	123	4.6	2.8	97.4	0.001	0.005	0.0069	1.98	1.87	
W6	2020-10-12 12:20	84	175	175	7.63	125	3	0.1	91.5	0.001	0.005	0.009	2.9	1.84	
W6	2021-05-18 15:55	34.4	78.7	207.9	6.91	87.4	18.2	1.2	93.3	0.001	0.005	0.0114	0.35	0.77	
W6	2021-06-10 9:15	67.6	141	101	7.65	106	1.9	2.9	85.7	0.001	0.005	0.0063	1.39	1.76	
W6	2021-07-25 9:15	90.2	175	64.3	7.71	119	3.3	5.1	86.4	0.001	0.005	0.005	0.94	1.17	
W6	2021-08-07 11:00	99.6	188	97.3	7.4	126	1	6.8	82.6	0.001	0.005	0.005	0.86	0.92	
W6	2021-09-10 16:30	98.8	189	73.9	7.79	127	1.4	4.6	104.7	0.001	0.005	0.0052	1.29	0.87	
W6	2021-10-13 15:40	90.8	181	97.1	7.86	118	8.5	0	77.7	0.001	0.005	0.005	2.22	1.03	
W62	2016-01-28 15:30	291	951	140.9	7.2	630	26.6	0.4	53.5	0.0264	11.3	0.063	153	25	0.38
W62	2016-02-03 15:55	284	913	108.4	7.37	534	3.4	1.5	45.6	0.0282	10.5	0.045	154	24	0.36
W62	2016-03-29 13:30	332	994	116.1	7.84	623	3.2	3.6	84.3	0.0444	9.84	0.0344	137	30.1	
W62	2016-04-26 16:15	240	817	137.6	7.47	515	6	2.2	97.4	0.119	8.38	0.23	139	20	
W62	2016-05-06 14:25			154.1	7.71			0.3	83.2						
W62	2016-05-20 14:35	303	859	126.4	7.79	545	11.3	4.3	76.1	0.0218	6.16	0.005	128	20.5	
W62	2016-05-24 15:35	82.9	161			86.1	58			0.001	0.0084	0.0066	1.71	0.53	
W62	2016-06-25 16:40	312	890	73	7.82	572	7.3	4.5	83.5	0.009	6.34	0.0134	141	21.7	
W62	2016-07-15 16:30														
W62	2016-08-30 15:50	292	1120	79.7	7.8	803	10	2	128.2	0.0209	10.4	0.005	294	26.8	
W62	2016-09-17 15:35	330	1050	141.8	7.87	714	7.3	2.7	79	0.0205	7.43	0.0088	231	23.8	
W62	2016-10-16 16:00	345	977	120.3	7.58	691	5.8	1.6	62.8	0.0109	6.64	0.0052	206	24.6	
W62	2016-11-04 14:20	332	965	72.6	7.87	645	12	1.6	86.7	0.0266	6.24	0.005	184	25.7	
W62	2016-12-01 15:50	373	1070	63.5	8.12	701	3	0.7	88.4	0.0137	6.36	0.005	197	27.1	
W62	2017-01-04 15:25	363	1060	74.9	7.98	675	3	1.5	91.4	0.0093	5.96	0.0247	183	34	
W62	2017-02-01 14:35	368	989	107.3	8.04	639	3	2.7	88.6	0.005	4.94	0.0159	164	27.8	
W62	2017-03-06 14:15	349	1060	263.2	7.78	779	3	6	122.1	0.0532	5.49	0.0092	234	27.6	
W62	2017-04-04 11:25	365	998	64.1	8.23	730	3	2.5	93.2	0.0085	4.17	0.005	191	28.1	
W62	2017-05-08 9:45	353	1050	162.1	7.32	712	3	1.3	110.3	0.0237	6.83	0.0056	207	29.7	
W62	2017-06-06 16:40	344	920	163.4	7.42	596	3	2.9	116.8	0.0468	5.49	0.0563	147	24.7	
W62	2017-07-03 10:50		887	255.7	7.54	569	9.5	4	81	0.053	5.55	0.0166	134	25.2	
W62	2017-08-01 17:15	339	1020	149.6	7.73	652	5	3.7	91.4	0.0485	7.35	0.0132	176	30	
W62	2017-08-23 11:25	336	969			655	3.3			0.0406	6.86	0.0171	192	26.5	
W62	2017-09-01 15:45	334	950		8	649	3.9	5.1		0.0392	6.57	0.0151	179	24.8	
W62	2017-09-04 8:45	334	1010	169.1	7.35	610	11.3	2.3	97.2	0.0467	5.89	0.0091	164	22.9	
W62	2017-10-02 15:40	336	934	227.4	7.42	629	6	2.3	88.4	0.0408	6.31	0.0094	178	22	
W62	2017-11-09 15:00	369	992	178.3	7.92	701	3	0.8	76.6	0.0546	6.46	0.0096	191	25	
W62	2017-12-07 11:15	390	1040	262.9	7.43	709	3	2.8	69.6	0.0355	5.8	0.01	192	25.4	
W62	2018-01-15 10:30	388	1060	55	7.91	698	8	1.3	98.8	0.0058	4.62	0.0107	189	26.6	
W62	2018-02-12 16:40	353	1040	211.5	7.49	648	6	2.1	87.8	0.0091	4.27	0.0057	169	25.9	
W62	2018-03-12 11:20	402	1080	217.2	6.99	678	3	3.6	101.7	0.005	3.88	0.0086	178	26.3	
W62	2018-04-09 16:35	343	1010	142.1	7.81	662	8.6	1.3	89.41	0.0603	4.93	0.0128	191	28	
W62	2018-05-07 15:10	271	1110	256.1	6.86	784	35.3	2.3	137	0.0786	26.5	0.023	255	18.1	
W62	2018-06-07 11:00	278	1030	96	7.86	715	10.3	3.8	117.5	0.0659	10.6	0.0242	244	17.1	
W62	2018-07-02 15:00	271	785	183.9	7.54	495	5.1	3.3	97.9	0.0272	5.58	0.009	131	14.8	
W62	2018-08-06 14:10	356	1050	244.1	7.66	724	16	6.2	72.8	0.0427	7.57	0.0084	219	23.6	
W62	2018-09-14 16:40	310	1070	145.7	7.81	710	25	2.2	96.2	0.0744	10.1	0.0171	233	22.3	
W62	2018-10-24 15:55	388	1200	154.7	7.9	827	3	1.4	89.1	0.0645	11.2	0.0144	251	28	
W62	2018-11-18 16:40	380	1190	249.8	6.06	854	4.8	0	49.1	0.0462	9.84	0.0128	278	31.2	
W62	2018-12-01 10:45	395	1270	195	7.92	909	6	1.2	99.6	0.0319	9.86	0.0115	292	31.1	0.41
W62	2019-01-04 11:10	432	1320	231.3	7.22	864	4.8	4.6	92.5	0.017	8.41	0.0101	264	28.8	
W62	2019-02-02 10:45	437	1260	244	6.7	851	7.7	2.1	85.6	0.005	8.09	0.0115	256	30	
W62	2019-03-03 10:45	413	1210	152.3	7.28	811	3.3	4.1	119.2	0.005	7.1	0.0108	238	30.7	
W62	2019-04-09 10:40	344	1130	141.8	8.01	763	3	2	109	0.0257	11.1	0.0116	248	31.4	
W62	2019-05-07 17:05	385	1150	218.1	7.93	771	7.9	5	81.7	0.0062	8.98	0.0107	225	29.4	
W62	2019-06-06 15:00	315	1050	175.6	7.57	699	4.6	0.8	86	0.0109	8.26	0.0102	209	27.8	
W62	2019-07-04 10:45	331	983	127.8	7.96	641	8.6	9.3	76.5	0.005	6.32	0.0099	177	23.1	
W62	2019-08-10 10:00	303	987	168.8	7.93	760	11.2	6.4	84.4	0.014	7.12	0.0113	206	23.4	0.38
W62	2019-09-01 11:15	387	1110	170.7	7.78	759	3	4.9	87.7	0.0066	8.43	0.0129	212	25.5	
W62	2019-10-13 14:35	380	1280	172.7	7.36	974	5.5	3.9	85.7	0.0066	10.7	0.0089	352	27.6	
W62	2019-11-10 9:00	416	1260	179.7	7.94	867	10	3.2	82.6	0.0062	11	0.0142	251	27.6	
W62	2019-12-23 13:55	422	1270	164.6	8.09	926	19.2		105.3	0.01	10.7	0.011	286	30.1	0.49
W62	2020-01-20 16:10	458	1320	169.2	7.38	943	8.1	-0.1	32.2	0.005	10.1	0.0073	270	29.4	
W62	2020-02-21 10:15	416	1300	199.6	7.95	951	8.1	2	77.7	0.01	9.78	0.0074	261	30.1	
W62	2020-03-09 9:20	461	1310	138	7.31	902	3	2.8	76.8	0.005	9.44	0.0096	250	29.5	0.344
W62	2020-04-13 8:05	468	1330	137.7	7.49	958	9.4	2.9	69.6	0.0138	10.1	0.0134	268	31.1	
W62	2020-05-25 11:05	281	1230	170.2	7.25	885	19.4	2.7	70.4	0.0351	24.8	0.0256	303	20.4	
W62	2020-06-18 11:20	299	1170	196.2	7.63	826	3.5	12.3	85.1	0.0169	19.1	0.0094	272	20.1	
W62	2020-08-01 15:40	278	1190	140.2	7.68	802	3	12.7	78.4	0.005	15.7	0.0105	279	43.2	
W62	2020-09-04 11:00	298	1160	21.5	7.87	814	39.2	2.5	93.1	0.012	16.2	0.0144	259	32.7	
W62	2020-10-15 17:25	356	1250	239.4	7.53	917	20.4	1.7	96.5	0.0174	18.4	0.0107	280	30.2	
W62	2020-11-10 11:35	338	1250	184.8	7.71	902	3	1.3	72.2	0.005	18.9	0.0063	272	29.2	
W62	2020-12-08 14:05	406	1210	169.2	7.73	955	3	1.2	67.2	0.005	19.2	0.0083	278	30.5	
W62	2021-01-05 15:00	396	1260	165.7	7.94	900	23.7	0.7	62	0.005	16	0.0148	240	28.2	
W62	2021-02-02 11:00	356	1280	156.4	7.92	914	8.4	3.5	73.6	0.0356	18.3	0.0061	266	30.1	
W62	2021-03-22 14:20	420	1310	90.9	7.41	890	4.7	0.5	96.3	0.0095	17.8	0.0055	245	28.4	
W62	2021-04-18 10:00	89.6	798			541	12.2			0.0683	12.6	0.248	251	17.3	
W62	2021-05-10 14:25	218	1050	191.7	7.19	734		2.4	108.8	0.0494	26.2	0.0327	235	16.5	
W62	2021-06-14 11:35	236	991	156.6	7.63	709	370	3.5	126.5	0.0116	19.6	0.0139	222	17.6	
W62	2021-07-11 14:15	314	1110	198.7	6.56	790	8.4	7	104.7	0.0053	18.7	0.0104	240	24	
W62	2021-08-12 16:55	314	1160	130	7.26	807	9.4	1.9		0.005	16.5	0.0072	247	27.6	
W62	2021-09-08 13:50	340	1190	119.6	8.02	828	175	2.3	120	0.005	15.9	0.017	252	25.7	
W62	2021-10-04 15:00	349	1150	107.9	7.67	776	11.1	1.6	90.6	0.0107	15.6	0.0104	219	25.5	
W62	2021-11-06 14:45	350	1160	62.2	7.99	781	6.1	0.2	112.1	0.005	15.2	0.005	222	27.6	
W62	2021-12-24 14:45	348	1150	89.6	7.55	757	5.4	0.7	129.7	0.0058	13.7	0.0083	213	26.4	
W62	2022-01-12 13:35	348	1150			814	2.4			0.0102	14.4	0.005	222	24.9	
W7	1994-06-07 0:00		121			97	79			0.005	0.063	0.007		1	0.17
W7	1994-07-08 0:00		133			93	13			0.004	0.048	0.009		1.2	0.16
W7	1994-08-10 0:00		199			128	5			0.002	0.06	0.005		1.1	0.35
W7	2005-05-27 0:00	36.7	152			116	30.5			0.0018	0.0824	0.02	0.5	0.5	
W7	2005-06-30 0:00	117	233			153	14			0.0017	0.172	0.02	10.2	0.92	
W7	2005-07-29 0:00		323			197	19.7			0.001	0.169	0.02		0.5	
W7	2005-08-30 0:00	113	211			148	3			0.001	0.0226	0.02	6.02	0.5	
W7	2005-09-28 0:00	95.9	190			142	361			0.001	0.0586	0.02	5.62	0.5	
W7	2005-10-15 0:00		194			145	7.5			0.001	0.102	0.021		0.5	
W7	2006-06-02 11:30	49.4	98.8			104	705			0.0015	0.0449	0.062	2.98	0.5	0.155

Station	Date / Time	Dissolved Elements																			
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W6	2016-11-03 15:00	0.00001	0.005	0.00039	0.0723	0.01	0.00002	0.00005	43.3	0.000005	0.0001	0.00024	0.00163	0.013	0.000005	0.56	0.001	11.6	0.00129	0.000504	6.8
W6	2017-05-24 16:20	0.00001	0.0155	0.00054	0.0369	0.01	0.00002	0.00005	19.9	0.0000064	0.00011	0.00023	0.00244	0.07	0.000005	0.74	0.001	5.46	0.0249	0.000417	3.25
W6	2017-06-05 15:35	0.00001	0.0194	0.00051	0.0335	0.01	0.00002	0.00005	17.4	0.000005	0.00015	0.00028	0.0023	0.162	0.000005	0.42	0.001	4.55	0.0257	0.000364	3.17
W6	2017-07-04 16:05	0.00001	0.008	0.00046	0.0465	0.01	0.00002	0.00005	28	0.000005	0.0001	0.00017	0.00126	0.151	0.000005	0.47	0.001	7.44	0.0218	0.000479	4.48
W6	2017-08-03 16:45	0.00001	0.0067	0.00052	0.0563	0.01	0.00002	0.00005	32.5	0.000005	0.0001	0.00023	0.00124	0.095	0.000005	0.5	0.001	8.15	0.0352	0.000441	4.86
W6	2017-09-08 16:13	0.00001	0.0062	0.00052	0.0559	0.01	0.00002	0.00005	34.5	0.000005	0.00011	0.00023	0.00106	0.098	0.000005	0.53	0.001	8.87	0.0381	0.000452	5.02
W6	2017-10-07 15:55	0.00001	0.0047	0.0005	0.0505	0.01	0.00002	0.00005	31.6	0.000005	0.0001	0.00019	0.00092	0.083	0.000005	0.49	0.001	8.4	0.0357	0.000413	4.79
W6	2018-05-21 15:30	0.00001	0.0165	0.00049	0.0348	0.01	0.00002	0.00005	18.2	0.0000073	0.0001	0.00029	0.00294	0.069	0.000005	0.71	0.001	4.92	0.00396	0.000354	3.34
W6	2018-06-20 15:55	0.00001	0.0092	0.00048	0.0594	0.01	0.00002	0.00005	30.2	0.000005	0.0001	0.00021	0.00164	0.065	0.000005	0.56	0.001	8.24	0.0103	0.000537	5.1
W6	2018-07-23 11:00	0.00001	0.0109	0.0005	0.0546	0.01	0.00002	0.00005	31.8	0.000005	0.0001	0.0003	0.00114	0.095	0.000005	0.46	0.001	8.5	0.0283	0.00048	5.18
W6	2018-08-14 17:10	0.00001	0.0064	0.00054	0.0536	0.01	0.00002	0.00005	31.2	0.000005	0.0001	0.00025	0.00122	0.073	0.000005	0.44	0.001	8.23	0.0239	0.000454	5.13
W6	2018-09-03 16:15	0.00001	0.0107	0.00046	0.0473	0.01	0.00002	0.00005	27.7	0.000005	0.0001	0.00024	0.00128	0.085	0.000005	0.38	0.001	7.3	0.0237	0.000399	4.58
W6	2019-05-13 16:00	0.00001	0.0057	0.00046	0.0293	0.01	0.00002	0.00005	15.4	0.000005	0.0001	0.0002	0.00156	0.05	0.000005	0.71	0.001	4.41	0.0439	0.000371	2.79
W6	2019-06-15 10:50	0.00001	0.0072	0.00044	0.0383	0.01	0.00002	0.00005	23.6	0.000005	0.0001	0.00023	0.00157	0.049	0.000005	0.33	0.001	6.09	0.00475	0.000467	4.17
W6	2019-07-06 8:35	0.00001	0.0053	0.00057	0.0589	0.01	0.00002	0.00005	35.3	0.000005	0.0001	0.00021	0.00153	0.058	0.000005	0.47	0.001	9.71	0.0126	0.000705	5.88
W6	2019-08-04 15:15	0.00001	0.0057	0.0006	0.055	0.01	0.00002	0.00005	32.7	0.000005	0.0001	0.00024	0.00123	0.072	0.000005	0.48	0.001	9.47	0.0234	0.000615	6.03
W6	2019-09-20 15:50	0.00001	0.0047	0.00052	0.052	0.01	0.00002	0.00005	32.8	0.000005	0.0001	0.0002	0.00115	0.067	0.000005	0.58	0.001	9.25	0.0237	0.000542	5.69
W6	2019-10-08 14:25	0.00001	0.004	0.00041	0.0483	0.01	0.00002	0.00005	32.4	0.000005	0.0001	0.00018	0.00098	0.052	0.000005	0.44	0.001	8.64	0.0231	0.000561	5.48
W6	2020-05-30 10:40	0.00001	0.0081	0.00047	0.0384	0.01	0.00002	0.00005	23.1	0.000005	0.0001	0.00025	0.00194	0.047	0.000005	0.452	0.001	6.17	0.0044	0.000426	4.1
W6	2020-06-11 10:05	0.00001	0.0097	0.00038	0.0351	0.01	0.00002	0.00005	23.7	0.000005	0.0001	0.0003	0.00197	0.116	0.000005	0.29	0.001	5.87	0.00717	0.000421	3.84
W6	2020-08-20 17:00	0.00001	0.0095	0.00047	0.0414	0.01	0.00002	0.00005	26.3	0.000005	0.0001	0.00025	0.0015	0.061	0.000005	0.258	0.001	7.13	0.00757	0.000376	4.36
W6	2020-09-11 16:35	0.00001	0.0125	0.00044	0.0394	0.01	0.00002	0.00005	24.4	0.0000124	0.0001	0.00033	0.00198	0.065	0.000005	0.288	0.001	6.34	0.00584	0.000327	4.02
W6	2020-10-12 12:20	0.00001	0.0087	0.00043	0.0371	0.01	0.00002	0.00005	25.3	0.000005	0.0001	0.00028	0.00152	0.053	0.000005	0.275	0.001	7.29	0.00725	0.00032	3.9
W6	2021-05-18 15:55	0.00001	0.0516	0.00054	0.0283	0.01	0.00002	0.00005	13.2	0.0000103	0.00018	0.00053	0.00556	0.192	0.000005	0.898	0.001	3.37	0.0175	0.000238	1.99
W6	2021-06-10 9:15	0.00001	0.0133	0.0004	0.0384	0.01	0.00002	0.00005	19.3	0.000005	0.0001	0.0005	0.00215	0.057	0.000005	0.328	0.001	5.73	0.00449	0.000356	3.84
W6	2021-07-25 9:15	0.00001	0.0091	0.00041	0.041	0.01	0.00002	0.00005	24.6	0.000005	0.0001	0.0005	0.00137	0.044	0.000005	0.235	0.001	6.66	0.0055	0.00033	4.21
W6	2021-08-07 11:00	0.00001	0.0067	0.00039	0.0436	0.01	0.00002	0.00005	25.4	0.000005	0.0001	0.0005	0.00119	0.044	0.000005	0.249	0.001	6.8	0.00865	0.000356	4.32
W6	2021-09-10 16:30	0.00001	0.0084	0.00039	0.0442	0.01	0.00002	0.00005	27.8	0.000005	0.0001	0.0005	0.00134	0.044	0.000005	0.376	0.001	7.22	0.00809	0.00034	4.15
W6	2021-10-13 15:40	0.00001	0.0057	0.00032	0.037	0.01	0.00002	0.00005	23.1	0.000005	0.0001	0.0005	0.00097	0.034	0.000005	0.33	0.001	7.06	0.00473	0.000322	3.89
W62	2016-01-28 15:30		0.0058	0.00011	0.113	0.05	0.0001	0.001	129	0.000029	0.0005		0.0181	0.0113	0.00001	4.36	0.005	41	0.108	0.0044	24.5
W62	2016-02-03 15:55		0.0089	0.00022	0.107	0.05	0.0001	0.001	114	0.000032	0.0005		0.0186	0.0114	0.00001	3.44	0.005	39.8	0.0993	0.0053	23.8
W62	2016-03-29 13:30	0.00001	0.0034	0.00044	0.118	0.017	0.00002	0.00005	144	0.000014	0.00015	0.00011	0.0483	0.063	0.000005	4.86	0.0021	42	0.0928	0.00638	21.6
W62	2016-04-26 16:15	0.00001	0.0056	0.0004	0.0999	0.019	0.00002	0.00005	115	0.0000383	0.00018	0.00017	0.0529	0.034	0.000005	4.64	0.0028	32.8	0.208	0.00822	21.6
W62	2016-05-06 14:25																				
W62	2016-05-20 14:35	0.00001	0.0052	0.00038	0.103	0.019	0.00002	0.00005	124	0.000026	0.00014	0.00015	0.0501	0.052	0.000005	5.11	0.0023	35.9	0.124	0.00744	22.2
W62	2016-05-24 15:35	0.00001	0.0144	0.00043	0.0414	0.01	0.00002	0.00005	23.5	0.000005	0.0001	0.00022	0.00195	0.072	0.000005	0.64	0.001	6.16	0.016	0.00042	3.69
W62	2016-06-25 16:40	0.00001	0.0045	0.00037	0.107	0.019	0.00002	0.00005	127	0.0000268	0.00014	0.00014	0.0629	0.058	0.000005	5.09	0.0022	37.8	0.0783	0.00756	23.5
W62	2016-07-15 16:30																				
W62	2016-08-30 15:50	0.00001	0.0023	0.00036	0.163	0.057	0.00002	0.00005	181	0.0000176	0.0001	0.0001	0.0409	0.045	0.000005	5.87	0.0033	41.7	0.0307	0.00803	31.9
W62	2016-09-17 15:35	0.00001	0.0036	0.00038	0.155	0.036	0.00002	0.00005	154	0.0000133	0.00012	0.00013	0.0508	0.048	0.000005	5.33	0.0027	42	0.038	0.00706	26.4
W62	2016-10-16 16:00	0.00001	0.0026	0.0004	0.131	0.025	0.00002	0.00005	150	0.0000147	0.00011	0.00018	0.0438	0.035	0.000005	5.24	0.0022	40.8	0.045	0.00602	26.4
W62	2016-11-04 14:20	0.00001	0.0022	0.00032	0.112	0.025	0.00002	0.00005	141	0.0000194	0.00011	0.00014	0.0418	0.028	0.000005	4.95	0.0017	38.1	0.118	0.00558	24.4
W62	2016-12-01 15:50	0.00001	0.0025	0.00039	0.124	0.022	0.00002	0.00005	155	0.0000192	0.00011	0.00019	0.0478	0.046	0.000005	4.94	0.0023	39.4	0.062	0.00608	24.9
W62	2017-01-04 15:25	0.00001	0.0034	0.00039	0.108	0.02	0.00002	0.00005	149	0.0000176	0.0001	0.00014	0.0494	0.031	0.000005	4.69	0.0028	37.1	0.0271	0.00623	22.4
W62	2017-02-01 14:35	0.00001	0.004	0.00035	0.121	0.021	0.00002	0.00005	139	0.0000148	0.0001	0.00018	0.0451	0.026	0.000025	4.68	0.0018	37.7	0.0207	0.00525	22.4
W62	2017-03-06 14:15	0.00001	0.0025	0.00035	0.14	0.029	0.00002	0.00005	163	0.0000164	0.0001	0.00015	0.0459	0.021	0.000005	5.95	0.0032	40.3	0.0302	0.00696	31
W62	2017-04-04 11:25	0.00001	0.0049	0.00035	0.122	0.024	0.00002	0.00005	147	0.0000174	0.00012	0.00018	0.0519	0.031	0.000005	5.95	0.0023	39.8	0.0406	0.00747	25.8
W62	2017-05-08 9:45	0.00001	0.0023	0.00034	0.128	0.031	0.00002	0.00005	159	0.0000196	0.0001	0.0001	0.0432	0.018	0.000005	5.96	0.003	41.6	0.0402	0.00811	26.2
W62	2017-06-06 16:40	0.00001	0.0033	0.00038	0.0975	0.019	0.00002	0.00005	127	0.0000148	0.00011	0.00019	0.0592	0.037	0.000005	5.04	0.0027	36.9	0.0382	0.00584	23.3
W62	2017-07-03 10:50	0.00001	0.0036	0.00042	0.0917	0.019	0.00002	0.00005	123	0.0000175	0.00013	0.00018	0.0633	0.053	0.000005	4.76	0.0021	35.8	0.0657	0.00581	21.8
W62	2017-08-01 17:15	0.00001	0.006	0.00042	0.109	0.021	0.00002	0.00005	142	0.0000312	0.00013	0.0002	0.0633	0.037	0.000005	5.39	0.003	39.5	0.0505	0.00627	23.3
W62	2017-08-23 11:25	0.00001	0.0037	0.0004	0.111	0.021	0.00002	0.00005	134	0.0000117	0.0001	0.00018	0.0495	0.023	0.000005	5.16	0.0028	39	0.0329	0.00607	26
W62	2017-09-01 15:45	0.00001	0.0025	0.00039	0.107	0.022	0.00002	0.00005	132	0.000016	0.00012	0.00019	0.0489	0.023	0.000005	4.99	0.0027	38.8	0.0463	0.00642	26
W62	2017-09-04 8:45	0.00001	0.0022	0.00036	0.105	0.021	0.00002	0.00005	131	0.0000145	0.00013	0.00016	0.0422	0.023	0.000005	5.05	0.0026	36.5	0.0574	0.00597	23.7
W62	2017-10-02 15:40	0.00001	0.0083	0.00034	0.101	0.019	0.00002	0.00005	130	0.0000141	0.0001	0.00016	0.0492	0.033	0.000005	4.68	0.0023	38.5	0.0285	0.00624	25.3
W62	2017-11-09 15:00	0.00001	0.0032	0.00039	0.109	0.021	0.00002	0.00005	155	0.0000144	0.00011	0.00023	0.058	0.022	0.000005	5.63	0.0028	44.8	0.0337	0.00644	29.2
W62	2017-12-07 11:15	0.00001	0.0023	0.0004	0.11	0.022	0.00002	0.00005	156	0.0000164	0.00011	0.00022	0.0541	0.014	0.000005	5.39	0.0025	43	0.0391	0.00653	27
W62	2018-01-15 10:30	0.00001	0.0024	0.00041	0.108	0.019	0.00002	0.00005	154	0.0000306	0.0001	0.0001	0.053	0.016	0.000005	5.27	0.0021	44.1	0.036	0.00595	26.1
W62	2018-02-12 16:40	0.00001	0.0017	0.00036	0.104	0.021	0.00002	0.00005	151	0.0000204	0.0001	0.00016	0.0379	0.01	0.000005	4.69	0.0026	39.7	0.0127	0.00506	27
W62	2018-03-12 11:20	0.00001	0.0045	0.00045	0.117	0.019	0.00002	0.00005	140	0.0000175	0.00011	0.00016	0.0585	0.02	0.000005	5.07	0.002	43.2	0.0427	0.00533	26.2
W62	2018-04-09 16:35	0.00001	0.0029	0.00044	0.0887	0.02	0.00002	0.00005	144	0.0000261	0.00011	0.00015	0.0449	0.013	0.000005	4.81	0.0017	40.3	0.0277	0.00747	26.9
W62	2018-05-07 15:10	0.00001	0.0108	0.00058	0.112	0.035	0.00002	0.00005	151	0.0000192	0.00014	0.0001	0.0428	0.027	0.0000063	6.28	0.0042	43.2	0.0332	0.0138	30.2
W62	2018-06-07 11:00	0.000011	0.0081	0.00072	0.0877	0.035	0.00002	0.00005	158	0.0000265	0.00013	0.0001	0.0577	0.04	0.000005	7.6	0.0041	40.5	0.0532	0.0113	33.3
W62	2018-07-02 15:00	0.00001	0.0049	0.00043	0.0727	0.021	0.00002	0.00005	103	0.0000798	0.0001	0.00017	0.0656	0.03	0.000005	4.63	0.0026	31.2	0.0271	0.00628	22.7
W62	2018-08-06 14:10	0.00001	0.0062	0.0006	0.11	0.025	0.00002	0.00005	158	0.0000344	0.00016	0.00021	0.0711	0.057	0.000005	6.14	0.0036	42.5	0.0536	0.0106	28.2
W62	2018-09-14 16:40	0.00001	0.0084	0.00057	0.114	0.028	0.00002	0.00005	145	0.0000326	0.00018	0.00019	0.0543	0.034	0.000005	6.38	0.0036	41.6	0.064	0.01	30.7
W62	2018-10-24 15:55	0.000017	0.0032	0.0005	0.109	0.027	0.00002	0.00005	173	0.0000452	0.00014	0.0002	0.0631	0.039	0.000005	6.57	0.0036	52.8	0.0432	0.00945	33.3
W62	2018-11-18 16:40	0.00001	0.0041	0.00052	0.112	0.027	0.00002	0.00005	179	0.0000328	0.00016	0.00034	0.0651	0.039	0.000005	6.42	0.0034	53.7	0.0411	0.00941	33.6
W62	2018-12-01 10:45	0.00001	0.0022	0.00049	0.116	0.027	0.00002	0.00005	207	0.0000217	0.00014	0.00026	0.063	0.028	0.000005	7.08	0.0036	55.8	0.0316	0.00943	35
W62	2019-01-04 11:10	0.00001	0.0022	0.00044	0.108	0.024	0.00002	0.00005	186	0.0000208	0.00013	0.0002	0.0576	0.032	0.000005	6.05	0.0036	50.9	0.0276	0.00834	32.1
W62	2019-02-02 10:45	0.00001	0.0023	0.00056	0.113	0.025	0.00002	0.00005	183	0.000022	0.00011	0.0002	0.0537	0.027	0.000005	5.96	0.003	47.4	0.0321	0.00791	30.7
W62	2019-03-03 10:45	0.00001	0.0022	0.00047	0.101	0.025	0.00002	0.00005	176	0.0000272	0.00011	0.00019	0.0567	0.023	0.000005	5.72	0.0029	49.7	0.026	0.00715	31.4
W62	2019-04-09 10:40	0.00001	0.0022	0.00041	0.0997	0.026	0.00002	0.00005	152	0.0000261	0.00013	0.00022	0.0442	0.021	0.000005	5.99	0.0038	42.7	0.0369	0.0109	27.4
W62	2019-05-07 17:05	0.00001	0.0178	0.00055	0.0922	0.025	0.00002	0.00005	164	0.0000281	0.00013	0.00019	0.0501	0.042	0.000005	5.98	0.0032	47.1	0.0415	0.00744	28.9
W62	2019-06-06 15:00	0.00001	0.004	0.0006	0.091	0.025	0.00002	0.00005	155	0.0000167	0.00011	0.00017	0.0562	0.03	0.000005	6.09	0.0031	45.7	0.0317	0.00797	29
W62	2019-07-04 10:45	0.00001	0.0024	0.00055	0.0811	0.022	0.00002	0.00005	140	0.0000193	0.0001	0.00018	0.05	0.031	0.000005	5.44	0.0027	41.3	0.0374	0.00629	27.5
W62	2019-08-10 10:00	0.00001	0.0033	0.00054	0.0965	0.025	0.00002	0.00005	144	0.0000177	0.00012	0.00025	0.0407	0.029	0.000005	5.19	0.0032	41.4	0.0343	0.00809	29.3
W62	2019-09-01 11:15	0.00001	0.0039	0.0005	0.1	0.024	0.00002	0.00005	165	0.0000174	0.00013	0.00025	0.0462	0.074	0.000005	6.13	0.0031	46.4	0.036	0.00792	34
W62	2019-10-13 14:35	0.00001	0.0025	0.00054	0.133	0.04	0.00002	0.00005	210	0.0000479	0.00012	0.00023	0.0552	0.028	0.000005	7.06	0.0039	60.8	0.0152	0.00953	40.6
W62	2019-11-10 9:00	0.00001	0.0021	0.00055	0.116	0.029	0.00002	0.00005	190	0.0000312	0.0001	0.00021	0.0546	0.031	0.000005	7.04	0.0034	54.9	0.0158	0.0088	37.7
W62	2019-12-23 13:55	0.00001	0.0038	0.00052	0.114	0.032	0.00002	0.00005	209	0.0000224	0.00012	0.00023	0.051	0.029	0.000005	6.83	0.0036	55.5	0.0197	0.00918	37.3
W62	2020-01-20 16:10	0.00001	0.0024	0.0006	0.104	0.029	0.00002	0.00005	206	0.0000199	0.00012	0.00026	0.0494	0.028	0.000005	6.5	0.0031	52.6	0.0118	0.00837	37.2
W62	2020-02-21 10:15	0.00001	0.0022	0.00059	0.094	0.031	0.00002	0.00005	223	0.0000165	0.00011	0.00024	0.0532	0.026	0.000005	6.83	0.0034	60.8	0.0118	0.00851	36.5
W62	2020-03-09 9:20	0.00001	0.0029	0.00061	0.0989	0.027	0.00002	0.00005	173	0.0000244	0.0001	0.00024	0.0529	0.03	0.000005	6.22	0.0031	54.2	0.00828	0.00744	32.5
W62	2020-04-13 8:05	0.00001	0.0031	0.0006	0.111	0.026	0.00002	0.00005	196	0.000115	0.00013	0.00024	0.0614	0.03	0.000005	6.46	0.003	55.6	0.0229	0.00736	36.2
W62	2020-05-25 11:05	0.00001	0.0025	0.00046	0.0978	0.039	0.000036	0.00005	176	0.0000849	0.00011	0.00017	0.0386	0.024	0.000005	7.37	0.0042	49.2	0.0251	0.0143	33.1
W62	2020-06-18 11:20	0.00001	0.002	0.00044	0.0888	0.045	0.00002	0.00005	157	0.0000518	0.0001	0.00014	0.035	0.018	0.000005	5.8	0.0034	43.9	0.0153	0.0106	30.2
W62	2020-08-01 15:40	0.00001	0.0026	0.00046	0.089	0.039	0.00002	0.00005	154	0.000034	0.0001	0.00021	0.042	0.024	0.000005	5.93	0.0065	39.4	0.0128	0.0113	27.4
W62	2020-09-04 11:00	0.000013	0.0186	0.00039	0.092	0.034	0.00002	0.00005	171	0.0000693	0.0001	0.00022	0.058	0.06	0.000005	6.46	0.0041	44.3	0.0444	0.0135	30.3
W62	2020-10-15 17:25	0.00001	0.0029	0.00043	0.101	0.03	0.00002	0.00005	184	0.0000614	0.0001	0.00026	0.0724	0.036	0.000005	6.93	0.0039	49.4	0.0442	0.0103	36.2
W62	2020-11-10 11:35	0.00001	0.0028	0.00047	0.0912	0.029	0.00002	0.00005	202	0.0000285	0.00012	0.00021	0.0514	0.046	0.000005	6.74	0.0038	50.7	0.0229	0.0105	34.5
W62	2020-12-08 14:05	0.00001	0.0024	0.00044	0.0992	0.03	0.00002	0.00005	194	0.000038	0.00011	0.00026	0.0558	0.039	0.000005	7.63	0.0037	56.7	0.0146	0.00906	37.6
W62	2021-01-05 15:00	0.00001	0.0031	0.00051	0.106	0.028	0.00002	0.00005	200	0.0000296	0.00015	0.0002	0.049	0.023	0.000005	6.76	0.0032	59.5	0.0535	0.00858	36.8
W62	2021-02-02 11:00	0.00001	0.0029	0.00054	0.102	0.027	0.00002	0.00005	197	0.0000252	0.00011	0.00029	0.0537	0.054	0.000005	7.19	0.0035	59.1	0.0105	0.00848	37.6
W62	2021-03-22 14:20	0.00001	0.002	0.00051	0.0894	0.027	0.00002	0.00005	170	0.0000209	0.00011	0.00025	0.0498	0.028	0.000005	6.54	0.0034	53.4	0.00506	0.00755	34.8
W62	2021-04-18 10:00	0.00001	0.004	0.00025	0.0511	0.04	0.00002	0.00005	115	0.0000361	0.0001	0.0001	0.0218	0.01	0.000005	4.98	0.004	21.8	0.0406	0.00914	14.9
W62	2021-05-10 14:25	0.000014	0.0048	0.00042	0.0853	0.038	0.00002	0.00005	141	0.0000507	0.00015		0.0439	0.042	0.0000051	6.17	0.0036	37.4	0.0805	0.0141	24.3
W62	2021-06-14 11:35	0.00001	0.0248	0.00035	0.0736	0.033	0.00002	0.00005	141	0.0000272	0.0001	0.0005	0.0549	0.036	0.000005	6.2	0.0033	36.3	0.028	0.0111	27.4
W62	2021-07-11 14:15	0.00001	0.032	0.00039	0.0758	0.032	0.00002	0.00005	151	0.000209	0.0001	0.0005	0.0461	0.079	0.000005	5.9	0.0032	40.9	0.0272	0.00945	28.6
W62	2021-08-12 16:55	0.00001	0.003	0.00039	0.0839	0.033	0.00002	0.00005	165	0.0000245	0.0001	0.0005	0.0468	0.032	0.000005	6.37	0.0036	42.4	0.0262	0.00927	28.6
W62	2021-09-08 13:50	0.00001	0.003	0.00041	0.0861	0.032	0.00002	0.00005	172	0.0000335	0.0001	0.0005	0.0501	0.021	0.000005	6.21	0.0029	46.5	0.0221	0.00842	32.3
W62	2021-10-04 15:00	0.00001	0.0023	0.00034	0.0838	0.024	0.00002	0.00005	145	0.0000189	0.0001	0.0005	0.0445	0.021	0.000005	5.64	0.0027	42.1	0.019	0.00703	28.1
W62	2021-11-06 14:45	0.00001	0.003	0.00033	0.0919	0.023	0.00002	0.00005	154	0.0000196	0.0001	0.0005	0.0378	0.028	0.000005	6.01	0.0025	44.5	0.016	0.00574	29
W62	2021-12-24 14:45	0.00001	0.003	0.00036	0.0775	0.024	0.00002	0.00005	150	0.0000236	0.0001	0.0005	0.0443	0.026	0.000005	5.33	0.0032	42.7	0.0135	0.00737	28.5
W62	2022-01-12 13:35	0.00001	0.0049	0.00044	0.0778	0.027	0.00002	0.00005	178	0.0000463	0.0001	0.0005	0.0468	0.036	0.000005	5.74	0.0029	45.8	0.0138	0.00715	30.1
W7	1994-06-07 0:00	0.0001	0.055	0.0002	0.044	0.1	0.005	0.1	16.6	0.0002	0.001	0.001	0.003	0.281		0.6		5.71	0.058	0.001	3.01
W7	1994-07-08 0:00	0.0001	0.057	0.0002	0.044	0.1	0.005	0.1	17.5	0.0002	0.001	0.001	0.002	0.237		0.59		5.7	0.012	0.001	3.04
W7	1994-08-10 0:00	0.0001	0.021	0.0003	0.058	0.1	0.005	0.1	26.4	0.0002	0.001	0.001	0.001	0.126		0.83		8.46	0.044	0.001	5.23
W7	2005-05-27 0:00	0.00002	0.0236	0.0005	0.045	0.1	0.001		19.5		0.0003	0.001	0.0018	0.136	0.00002	2	0.005	6.77	0.0193	0.001	3.9
W7	2005-06-30 0:00	0.00001	0.0086	0.00042	0.0609	0.01	0.0005	0.0005	30		0.0001	0.0005	0.00119	0.07		2	0.005	10.2	0.0415	0.00124	6.9
W7	2005-07-29 0:00	0.00001	0.0096	0.00035	0.061	0.01	0.0005	0.0005	41.3		0.0001	0.0005	0.00404	0.105		2	0.005	15.6	0.0244	0.00127	8.8
W7	2005-08-30 0:00	0.00002	0.0156	0.00051	0.062	0.1	0.001		27.8	0.000017	0.0003	0.001	0.0014	0.292	0.00002	2	0.005	9.7	0.0315	0.001	5.9
W7	2005-09-28 0:00	0.00002	0.0186	0.00054	0.055	0.1	0.001		27.4	0.000017	0.0003	0.001	0.0016	0.32	0.00002	2	0.005	9.32	0.0414	0.001	5.3
W7	2005-10-15 0:00	0.00001	0.0155	0.00048	0.0502	0.01	0.0005	0.0005	27.1		0.00011	0.0005	0.00127	0.253		2	0.005	9.35	0.0383	0.000925	5.5
W7	2006-06-02 11:30	0.00001	0.0714	0.00062	0.0341	0.01	0.0005	0.0005	14.4		0.00033	0.00055	0.00212	0.546		2	0.005	4.85	0.0882	0.000697	3.8

Station	Date / Time	Dissolved Elements													
		Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W6	2016-11-03 15:00	0.00156	0.00005	0.0001	1.41	0.000082	8.03	0.0001	0.199	0.0003	0.00001	0.000504	0.0005	0.001	0.0003
W6	2017-05-24 16:20	0.00155	0.00005	0.0001	0.61	0.000123	5.39	0.0003	0.0856	0.00077	0.00001	0.000135	0.00077	0.001	0.0003
W6	2017-06-05 15:35	0.00184	0.00005	0.0001	0.67	0.000103	4.98	0.0001	0.0751	0.00088	0.00001	0.000075	0.00098	0.001	0.00033
W6	2017-07-04 16:05	0.00139	0.00005	0.0001	0.58	0.000077	6.91	0.0001	0.127	0.00044	0.00001	0.000201	0.00064	0.001	0.0003
W6	2017-08-03 16:45	0.00153	0.00005	0.0001	0.5	0.000088	7.34	0.0001	0.144	0.00034	0.00001	0.000185	0.00066	0.0015	0.0003
W6	2017-09-08 16:13	0.0014	0.00005	0.0001	0.52	0.000073	7.48	0.0001	0.149	0.0003	0.00001	0.000217	0.00056	0.001	0.0003
W6	2017-10-07 15:55	0.00128	0.00005	0.0001	0.94	0.000061	7.53	0.0001	0.14	0.0003	0.00001	0.000171	0.0005	0.001	0.0003
W6	2018-05-21 15:30	0.00176	0.00005	0.0001	0.5	0.000101	4.79	0.0001	0.0802	0.00072	0.00001	0.000081	0.00069	0.001	0.0003
W6	2018-06-20 15:55	0.00158	0.00005	0.0001	0.52	0.00007	6.64	0.0001	0.135	0.00035	0.00001	0.000247	0.00072	0.001	0.0003
W6	2018-07-23 11:00	0.00137	0.00005	0.0001	0.96	0.000082	6.9	0.0001	0.141	0.00059	0.00001	0.000236	0.00053	0.001	0.0003
W6	2018-08-14 17:10	0.00139	0.00005	0.0001	0.66	0.000098	7.62	0.0001	0.142	0.00037	0.00001	0.000202	0.00054	0.001	0.0003
W6	2018-09-03 16:15	0.00141	0.00005	0.0001	0.5	0.000065	7.09	0.0001	0.121	0.00115	0.00001	0.000167	0.00053	0.001	0.0003
W6	2019-05-13 16:00	0.00105	0.00005	0.0001	0.5	0.000075	4.48	0.0001	0.074	0.0003	0.00001	0.000087	0.0006	0.001	0.0003
W6	2019-06-15 10:50	0.00145	0.00005	0.0001	0.89	0.000074	6.16	0.0001	0.109	0.0004	0.00001	0.000116	0.00051	0.001	0.0003
W6	2019-07-06 8:35	0.00166	0.00005	0.0001	0.82	0.000094	7.36	0.0001	0.165	0.0003	0.00001	0.000401	0.00055	0.001	0.0003
W6	2019-08-04 15:15	0.0015	0.00005	0.0001	1.24	0.000075	8.07	0.0001	0.156	0.00034	0.00001	0.00031	0.0005	0.001	0.0003
W6	2019-09-20 15:50	0.0015	0.00005	0.0001	0.8	0.000076	7.77	0.0001	0.153	0.0003	0.00001	0.000277	0.0005	0.001	0.0003
W6	2019-10-08 14:25	0.00126	0.00005	0.0001	1.02	0.000056	7.18	0.0001	0.154	0.0003	0.00001	0.00026	0.0005	0.001	0.0003
W6	2020-05-30 10:40	0.00146	0.00005	0.0001	0.77	0.000147	5.87	0.0001	0.0983	0.00044	0.00001	0.000145	0.00059	0.001	0.00024
W6	2020-06-11 10:05	0.00152	0.00005	0.0001	0.67	0.000142	5.87	0.0001	0.0994	0.00033	0.00001	0.000161	0.00058	0.001	0.00025
W6	2020-08-20 17:00	0.00142	0.00005	0.0001	0.76	0.000096	6.1	0.0001	0.116	0.00049	0.00001	0.000148	0.00055	0.001	0.00024
W6	2020-09-11 16:35	0.00156	0.00005	0.0001	0.88	0.000092	6.21	0.0001	0.11	0.00057	0.00001	0.000097	0.00052	0.001	0.00029
W6	2020-10-12 12:20	0.00123	0.00005	0.0001	1	0.000055	6.43	0.0001	0.117	0.00037	0.00001	0.0001	0.0005	0.001	0.00023
W6	2021-05-18 15:55	0.00241	0.00005	0.0001	0.5	0.000108	4.47	0.0001	0.0569	0.00252	0.00001	0.00005	0.00083	0.001	0.00072
W6	2021-06-10 9:15	0.0017	0.00005	0.0001	0.72	0.000085	6.15	0.0001	0.0909	0.00064	0.00001	0.000079	0.00064	0.001	0.00027
W6	2021-07-25 9:15	0.00114	0.00005	0.0001	0.5	0.000076	6.42	0.0001	0.11	0.0003	0.00001	0.000087	0.00063	0.001	0.0002
W6	2021-08-07 11:00	0.00122	0.00005	0.0001	0.5	0.000081	6.54	0.0001	0.121	0.0003	0.00001	0.000106	0.00056	0.001	0.0002
W6	2021-09-10 16:30	0.0011	0.00005	0.0001	0.5	0.000066	6.22	0.0001	0.119	0.00045	0.00001	0.000105	0.0005	0.001	0.0002
W6	2021-10-13 15:40	0.00082	0.00005	0.0001	0.89	0.00005	6.39	0.0001	0.105	0.0003	0.00001	0.0001	0.0005	0.001	0.0002
W62	2016-01-28 15:30	0.001		0.0005	60.7	0.00348	7.61	0.005	1.06	0.005	0.00005	0.00565	0.005	0.263	0.0005
W62	2016-02-03 15:55	0.001		0.0005	46.6	0.00318	6.88	0.005	1.01	0.005	0.00005	0.006	0.005	0.799	0.0005
W62	2016-03-29 13:30	0.00123	0.00005	0.0001	44.2	0.00371	7.47	0.0001	1.28	0.0003	0.00001	0.00494	0.00058	0.402	0.0003
W62	2016-04-26 16:15	0.00092	0.00005	0.0001	47.3	0.00412	6.13	0.0001	1.16	0.0003	0.00001	0.0035	0.00054	0.0923	0.0003
W62	2016-05-06 14:25														
W62	2016-05-20 14:35	0.00092	0.00005	0.0001	46.6	0.00343	6.97	0.0001	1.21	0.00049	0.00001	0.00374	0.0005	0.0641	0.0003
W62	2016-05-24 15:35	0.00161	0.00005	0.0001	0.86	0.000095	5.94	0.0001	0.1	0.00087	0.00001	0.000145	0.00077	0.0018	0.0003
W62	2016-06-25 16:40	0.0011	0.00005	0.0001	50.9	0.004	7.05	0.0001	1.27	0.0003	0.00001	0.00357	0.00058	0.0678	0.0003
W62	2016-07-15 16:30														
W62	2016-08-30 15:50	0.00111	0.00005	0.0001	91.1	0.00485	6.8	0.0001	2.39	0.0003	0.00001	0.00485	0.0005	0.153	0.0003
W62	2016-09-17 15:35	0.00114	0.00005	0.0001	80.3	0.00465	7.91	0.0001	1.8	0.00035	0.00001	0.00426	0.0005	0.0303	0.0003
W62	2016-10-16 16:00	0.00098	0.00005	0.0001	73.7	0.00389	7.48	0.0001	1.5	0.0003	0.00001	0.00439	0.0005	0.107	0.0003
W62	2016-11-04 14:20	0.00082	0.00005	0.0001	61.8	0.00283	7.79	0.0001	1.46	0.0003	0.00001	0.00438	0.0005	0.406	0.0003
W62	2016-12-01 15:50	0.00111	0.00005	0.0001	67.1	0.00305	8.35	0.0001	1.58	0.0003	0.00001	0.00455	0.0005	0.138	0.0003
W62	2017-01-04 15:25	0.00105	0.000092	0.0001	58.6	0.00278	7.77	0.0001	1.54	0.0003	0.00001	0.00468	0.0005	0.131	0.0003
W62	2017-02-01 14:35	0.0011	0.00005	0.0001	56.8	0.00198	8.23	0.0001	1.35	0.0003	0.00001	0.00441	0.0005	0.113	0.0003
W62	2017-03-06 14:15	0.00093	0.00005	0.0001	81.7	0.00271	7.68	0.0001	1.67	0.0003	0.00001	0.00467	0.0005	0.16	0.0003
W62	2017-04-04 11:25	0.00124	0.000064	0.0001	68.2	0.00209	7.78	0.00033	1.64	0.0003	0.00001	0.00469	0.0005	0.139	0.0003
W62	2017-05-08 9:45	0.00096	0.00005	0.0001	69.7	0.0033	7.37	0.0001	1.75	0.0003	0.00001	0.00494	0.0005	0.125	0.0003
W62	2017-06-06 16:40	0.00102	0.00005	0.0001	47	0.0021	7.3	0.0001	1.36	0.0003	0.00001	0.00355	0.00052	0.0684	0.0003
W62	2017-07-03 10:50	0.00096	0.00005	0.0001	45.5	0.00246	7.67	0.0001	1.33	0.0003	0.00001	0.00398	0.00051	0.0798	0.0003
W62	2017-08-01 17:15	0.00116	0.00005	0.00013	58.6	0.00307	7.59	0.0001	1.55	0.0003	0.00001	0.00395	0.00051	0.193	0.0003
W62	2017-08-23 11:25	0.001	0.00005	0.0001	60.7	0.00365	7.39	0.0001	1.44	0.0003	0.00001	0.00391	0.00052	0.032	0.0003
W62	2017-09-01 15:45	0.00096	0.00005	0.0001	64.5	0.00366	7.42	0.0001	1.46	0.0003	0.00001	0.0043	0.00051	0.0321	0.0003
W62	2017-09-04 8:45	0.00088	0.00005	0.0001	56.9	0.00341	7.04	0.0001	1.44	0.0003	0.00001	0.00425	0.0005	0.0484	0.0003
W62	2017-10-02 15:40	0.00091	0.00005	0.0001	61.4	0.00393	7.47	0.0001	1.4	0.0003	0.00001	0.00448	0.00051	0.0484	0.0003
W62	2017-11-09 15:00	0.00105	0.00005	0.0001	65	0.0032	8.08	0.0001	1.61	0.00037	0.00001	0.00489	0.00057	0.0728	0.0003
W62	2017-12-07 11:15	0.00107	0.00005	0.0001	63.4	0.00294	7.79	0.0001	1.67	0.00036	0.00001	0.00448	0.00054	0.0751	0.0003
W62	2018-01-15 10:30	0.00114	0.00005	0.00011	60.2	0.0025	7.92	0.0001	1.53	0.0003	0.00001	0.00445	0.00055	0.128	0.0003
W62	2018-02-12 16:40	0.00088	0.00005	0.0001	58	0.00162	7.54	0.0001	1.36	0.0003	0.00001	0.00549	0.00064	0.176	0.0003
W62	2018-03-12 11:20	0.0011	0.00005	0.0001	61.2	0.00159	8.29	0.0001	1.51	0.0003	0.00001	0.00481	0.00068	0.118	0.0003
W62	2018-04-09 16:35	0.00101	0.00005	0.0001	61.7	0.00241	6.64	0.0001	1.57	0.0003	0.00001	0.00493	0.00052	0.0942	0.0003
W62	2018-05-07 15:10	0.00074	0.00005	0.0001	82.9	0.0115	5.59	0.0001	1.95	0.00143	0.00001	0.00437	0.0005	0.0138	0.0003
W62	2018-06-07 11:00	0.00102	0.00005	0.00011	83.7	0.00438	6.36	0.0001	1.86	0.00077	0.00001	0.00475	0.0006	0.0161	0.0003
W62	2018-07-02 15:00	0.00075	0.00005	0.0001	45.2	0.00235	6.56	0.0001	1.14	0.0003	0.00001	0.00366	0.00058	0.0545	0.0003
W62	2018-08-06 14:10	0.00131	0.00005	0.00011	75.6	0.00341	6.95	0.0001	1.73	0.0006	0.00001	0.00492	0.00078	0.0281	0.0003
W62	2018-09-14 16:40	0.00116	0.00005	0.00012	75.1	0.00398	6.93	0.0001	1.63	0.00059	0.00001	0.00425	0.0007	0.0358	0.0003
W62	2018-10-24 15:55	0.00115	0.00005	0.0001	85.1	0.00387	7.3	0.0001	2.01	0.0006	0.00001	0.00478	0.00061	0.0274	0.0003
W62	2018-11-18 16:40	0.00159	0.00005	0.00011	94.7	0.00407	7.67	0.0001	1.95	0.0006	0.00001	0.00559	0.00062	0.0562	0.0003
W62	2018-12-01 10:45	0.00124	0.00005	0.00011	107	0.00442	7.9	0.0001	2.24	0.0003	0.00001	0.00588	0.00064	0.0303	0.0003
W62	2019-01-04 11:10	0.00114	0.00005	0.0001	98.5	0.00364	8.05	0.0001	1.98	0.0003	0.00001	0.00548	0.00054	0.0334	0.0003
W62	2019-02-02 10:45	0.00102	0.00005	0.0001	81.9	0.00326	7.57	0.0001	1.91	0.0003	0.00001	0.00559	0.00059	0.0434	0.0003
W62	2019-03-03 10:45	0.00122	0.00005	0.0001	78.6	0.00254	7.75	0.0001	1.89	0.0003	0.00001	0.00562	0.00065	0.0569	0.0003
W62	2019-04-09 10:40	0.00091	0.00005	0.0001	78.1	0.00493	6.1	0.0001	1.88	0.0003	0.00001	0.00533	0.00062	0.0408	0.0003
W62	2019-05-07 17:05	0.00113	0.00005	0.0001	82.5	0.00365	7.59	0.0001	1.7	0.0015	0.00001	0.00523	0.00083	0.0309	0.0003
W62	2019-06-06 15:00	0.00115	0.00005	0.00012	74.8	0.00319	7.8	0.0001	1.77	0.00038	0.00001	0.0054	0.00079	0.0112	0.0003
W62	2019-07-04 10:45	0.00116	0.00005	0.0001	62.1	0.00243	7.17	0.0001	1.56	0.0003	0.00001	0.00481	0.00069	0.0119	0.0003
W62	2019-08-10 10:00	0.00112	0.00005	0.00011	73.1	0.00371	6.85	0.0001	1.65	0.0006	0.00001	0.00443	0.00077	0.0069	0.0003
W62	2019-09-01 11:15	0.00123	0.00005	0.0001	74.7	0.0034	7.54	0.0001	1.96	0.0003	0.00001	0.00484	0.0007	0.0062	0.0003
W62	2019-10-13 14:35	0.00114	0.00005	0.0001	122	0.00519	7.24	0.0001	2.48	0.0003	0.00001	0.00559	0.00072	0.054	0.0003
W62	2019-11-10 9:00	0.00116	0.00005	0.0001	84.9	0.00407	8.32	0.0001	2.29	0.0003	0.00001	0.00549	0.00071	0.0945	0.0003
W62	2019-12-23 13:55	0.00121	0.00005	0.0001	96.2	0.00423	7.74	0.0001	2.36	0.0003	0.00001	0.00627	0.00073	0.0132	0.0003
W62	2020-01-20 16:10	0.00109	0.00005	0.0001	92	0.00512	8.07	0.0001	2.29	0.00031	0.00001	0.00581	0.00071	0.0724	0.00024
W62	2020-02-21 10:15	0.00113	0.00005	0.0001	89.3	0.00372	8.18	0.0001	2.46	0.00033	0.00001	0.00601	0.00075	0.316	0.00024
W62	2020-03-09 9:20	0.00112	0.00005	0.0001	81.3	0.00382	8.39	0.0001	1.97	0.0003	0.00001	0.00564	0.00074	0.465	0.00023
W62	2020-04-13 8:05	0.00134	0.00005	0.00013	95.7	0.00372	8.25	0.0001	2.12	0.0003	0.00001	0.00578	0.00073	0.482	0.00024
W62	2020-05-25 11:05	0.0009	0.00005	0.00014	110	0.0107	6.16	0.00013	2.15	0.00032	0.00001	0.00624	0.00057	0.0202	0.0002
W62	2020-06-18 11:20	0.00072	0.00005	0.0001	92.5	0.00798	6.52	0.0001	1.78	0.0003	0.00001	0.00498	0.00052	0.0105	0.0002
W62	2020-08-01 15:40	0.00058	0.00005	0.0001	90.3	0.007	5.94	0.0001	1.89	0.0003	0.00001	0.0045	0.00054	0.0129	0.0002
W62	2020-09-04 11:00	0.00103	0.00005	0.00011	94.8	0.00714	6.89	0.00012	1.88	0.00242	0.00001	0.00464	0.00053	0.057	0.0002
W62	2020-10-15 17:25	0.00119	0.00005	0.0001	95.3	0.0072	7.91	0.0001	2.37	0.0003	0.00001	0.00475	0.0005	0.0334	0.00022
W62	2020-11-10 11:35	0.0011	0.00005	0.0001	104	0.00735	7.54	0.0001	2.16	0.0003	0.00001	0.00538	0.00058	0.0524	0.00023
W62	2020-12-08 14:05	0.00127	0.00005	0.0001	103	0.00606	7.97	0.0001	2.24	0.0006	0.00001	0.00541	0.00057	0.0357	0.00022
W62	2021-01-05 15:00	0.0015	0.00005	0.0001	92.8	0.00613	7.44	0.0001	2.16	0.0003	0.00001	0.00603	0.00056	0.0436	0.00023
W62	2021-02-02 11:00	0.0013	0.00005	0.0001	95.1	0.00678	8.04	0.0001	2.26	0.00034	0.00001	0.00572	0.00062	0.0313	0.00022
W62	2021-03-22 14:20	0.0012	0.00005	0.0001	89.9	0.00521	7.87	0.0001	2.11	0.0003	0.00001	0.0054	0.0006	0.0906	0.00022
W62	2021-04-18 10:00	0.0005	0.00005	0.00016	76	0.00582	2.21	0.0001	1.34	0.0003	0.00001	0.00141	0.0005	0.0082	0.0002
W62	2021-05-10 14:25	0.00077	0.00005	0.0001	85.5	0.00753	5.56	0.0001	1.61	0.0008	0.00001	0.00429	0.00051	0.0175	0.0002
W62	2021-06-14 11:35	0.00074	0.00005	0.0001	76.8	0.00629	6.17	0.0001	1.69	0.00076	0.00001	0.00361	0.0005	0.0223	0.0002
W62	2021-07-11 14:15	0.00086	0.00005	0.0001	82.9	0.00582	6.63	0.0001	1.74	0.00447	0.00001	0.00427	0.00066	0.0249	0.0002
W62	2021-08-12 16:55	0.001	0.00005	0.0001	84.8	0.0052	6.6	0.0001	1.82	0.0003	0.00001	0.00465	0.0005	0.025	0.0002
W62	2021-09-08 13:50	0.00107	0.00005	0.0001	92	0.00486	7.02	0.0001	1.82	0.0006	0.00001	0.00534	0.00052	0.0096	0.00021
W62	2021-10-04 15:00	0.00099	0.00005	0.0001	70.2	0.00398	7.34	0.0001	1.67	0.0003	0.00001	0.00444	0.0005	0.0222	0.0002
W62	2021-11-06 14:45	0.00087	0.00005	0.0001	64.6	0.00346	7.5	0.0001	1.63	0.0006	0.00001	0.00457	0.00061	0.0222	0.0002
W62	2021-12-24 14:45	0.00116	0.00005	0.0001	68.8	0.0035	7.83	0.0001	1.73	0.0003	0.00001	0.0051	0.00059	0.0102	0.0002
W62	2022-01-12 13:35	0.00112	0.00005	0.0001	74.4	0.00408	7.94	0.0001	1.73	0.00042	0.00001	0.00472	0.00053	0.0132	0.00021
W7	1994-06-07 0:00	0.002	0.001	0.0001		0.0005	4.32		0.166			0.00025	0.03	0.005	
W7	1994-07-08 0:00	0.003	0.001	0.0001		0.0005	5.16		0.179			0.00014	0.03	0.005	
W7	1994-08-10 0:00	0.001	0.001	0.0001		0.0005	5.5		0.283			0.00031	0.03	0.005	
W7	2005-05-27 0:00	0.0016	0.0005	0.0005				0.0005		0.01	0.0002	0.00036	0.03	0.005	
W7	2005-06-30 0:00	0.00093	0.00005	0.0001			5.72	0.0001	0.284	0.01	0.0001	0.000759	0.001	0.0064	
W7	2005-07-29 0:00	0.00095	0.00005	0.0001			5.47	0.0001	0.277	0.01	0.0001	0.000994	0.001	0.002	
W7	2005-08-30 0:00	0.0015	0.0005	0.0005				0.0005		0.01	0.0002	0.00055	0.03	0.005	
W7	2005-09-28 0:00	0.0018	0.0005	0.0005				0.0005		0.01	0.0002	0.00038	0.03	0.005	
W7	2005-10-15 0:00	0.00146	0.00005	0.0001			6.44	0.0001	0.23	0.01	0.0001	0.000515	0.001	0.001	
W7	2006-06-02 11:30	0.0022	0.000054	0.0001			4.19	0.0001	0.11	0.01	0.0001	0.000216	0.0017	0.001	

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N\text{-}NO_2$	$N\text{-}NO_3$	$N\text{-}NH_3$	SO_4-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W7	2006-06-08 10:40														
W7	2006-06-15 0:00	95	193			114	53				0.18	0.027	10.5		
W7	2006-06-23 0:00	130	246			176	328				0.23	0.028	15.1		
W7	2006-06-28 0:00	106	213			120	103				0.112	0.01			
W7	2006-07-07 0:00	120	205			184	3				0.205		10.8		
W7	2006-07-12 0:00	120	238				2				0.18	0.014	10.4		
W7	2006-07-20 0:00	122	233				2				0.19	0.012	10.5		
W7	2006-07-26 0:00	121	259				9				0.18	0.016	11.6		
W7	2006-08-02 0:00	125	256				4				0.15	0.015	10		
W7	2006-08-10 0:00	125	259				2				0.16	0.014	10		
W7	2006-08-25 0:00	131	261			180					0.12	0.027	11		
W7	2006-08-30 0:00	129	258			200	2				0.11	0.012	10.5		
W7	2006-09-06 0:00	129	258				4				0.08	0.011	10.3		
W7	2006-09-13 0:00	128	254				5				0.094	0.011	10		
W7	2006-09-20 0:00	127	263				3				0.11	0.008	11		
W7	2006-09-28 0:00	128	266			182					0.08	0.011	11		
W7	2006-10-04 0:00	122	258				2				0.1	0.079	10.9		
W7	2006-10-12 0:00	130	266			164	4				0.12	0.024	11.3		
W7	2007-06-05 0:00	118	208			162	76				0.1		11	0.7	
W7	2007-06-20 0:00	116	230			164	6				0.3		12.2	0.6	
W7	2007-07-18 0:00	128	250			170	4				0.3		11.9	0.6	
W7	2007-08-24 0:00	139	246			198	4				0.2		10.3	0.3	
W7	2007-09-18 0:00	124	224			182	20			0.02	0.05		8.21	0.46	
W7	2007-10-30 0:00	128	268			176	3			0.14	0.02		13	0.96	
W7	2008-04-22 0:00	187	364			264	2			0.07	0.02		27.6	0.8	
W7	2008-06-03 0:00	94	201			134	2			0.04	0.03		10.4	0.38	
W7	2008-06-17 0:00	115	237			156	10			0.05	0.14		12.9	0.42	
W7	2008-08-06 0:00														
W7	2008-09-18 0:00	82	170			170	28			0.01	0.03		5.44	0.57	
W7	2008-10-28 0:00														
W7	2009-04-30 0:00	12	36		7.6	52	2	0.4	183				0.65	0.38	
W7	2009-06-08 0:00	95	208		7.74	156	32	3.27					8.6	4.1	
W7	2009-07-28 0:00	128	270			184	4						13	0.82	
W7	2009-08-06 0:00	159	260		7.5	202	2	4.4			0.18		13	0.39	
W7	2009-08-24 0:00														
W7	2009-08-25 0:00				8.04			3.02							
W7	2009-08-31 0:00														
W7	2009-10-07 0:00	116	249		8.24	180	7	-0.8	109		0.12		9.9	0.61	
W7	2009-10-25 0:00	130	266		8.23	130	4	0.2	88	0.005	0.15	0.01			
W7	2010-04-19 0:00	82	167		7.31	142	7	1					8.2	0.91	
W7	2010-04-27 0:00	32	64		7.65	62	4	-0.07	59.2	0.005	0.02	0.015	7	1.4	0.08
W7	2010-04-29 0:00	31	66		7.72	62	4	-0.07	8.8	0.01	0.04	0.016	5	0.9	0.09
W7	2010-05-01 0:00	40	78		7.15	74	15	-0.06	102.2	0.008	0.07	0.031	5	1.2	0.11
W7	2010-05-03 0:00	42	85		7.74	80	12	0.04	90.2	0.005	0.02	0.016	0.5	0.8	0.11
W7	2010-05-05 0:00	53	102			76	12			0.005	0.02	0.01	0.5	0.9	0.13
W7	2010-05-07 0:00	58	113		7.95	62	18	0.03	83.3	0.007	0.1	0.051	0.5	0.8	0.13
W7	2010-05-09 0:00	86	180		8.03	130	4	0.8	129.2	0.005	0.07	0.005	9.1	1.2	0.22
W7	2010-05-10 0:00	83	163		8.06	130	4	0.07	133.9	0.006	0.13	0.015	3.9	0.6	0.2
W7	2010-05-12 0:00	83	166			100	4			0.005	0.03		5.4	0.5	0.11
W7	2010-05-14 0:00	73	149		7.26	130	15	1.1		0.005	0.02	0.034	5.2	0.5	0.18
W7	2010-05-16 0:00	260	590		7.32	120	12	1.1		0.005	0.03	0.068	7.6	0.6	0.2
W7	2010-05-17 0:00	80	160		7.52	130	11	1		0.005	0.02	0.037	5.6	0.5	0.19
W7	2010-05-19 0:00	98	195		7.62	120	4	1		0.005	0.06	0.02	9.7	0.5	0.25
W7	2010-05-21 0:00	96	191		8.02	120	22	1.2		0.005	0.05	0.017	9.3	0.8	0.26
W7	2010-05-23 0:00	100	204		7.61	150	33	1		0.006	0.06	0.013	9.9	1	0.28
W7	2010-05-25 0:00	100	211		7.24	140	140	1.2		0.025	0.08	0.07	11	0.8	0.28
W7	2010-05-27 0:00	110	231		7.53	140	350	3		0.005	0.13	0.052	12	0.5	0.3
W7	2010-05-29 0:00	110	232		7.73	160	200	1		0.011	0.22	0.1	12	0.7	0.32
W7	2010-05-31 0:00	120	236		7.83	160	290	1.2		0.023	0.12		12	0.7	0.32
W7	2010-06-02 0:00	120	243		7.26	140	81	1.4		0.023	0.14	0.01	12	0.5	0.31
W7	2010-06-04 0:00	120	240		7.48	140	60	3.1		0.014	0.16	0.34	13	0.8	0.31
W7	2010-06-06 0:00	130	250			170	39	1.9		0.013	0.16	0.1	12	0.5	0.32
W7	2010-06-14 0:00	130	250			150	43	3.8		0.005	0.16	0.016	13	0.5	0.35
W7	2010-06-16 0:00	130	259		6.78	150	17	2.6		0.005	0.17	0.016	14	0.5	0.35
W7	2010-06-18 0:00	130	256		7.03	140	28	3		0.005	0.15		12	0.5	0.34
W7	2010-06-20 0:00	120	240		7.1	140	33	3.4		0.008	0.13		10	0.5	0.31
W7	2010-06-22 0:00	110	208		7.92	140	300	3.25	107.1	0.005	0.12	0.014	8.2	0.5	0.25
W7	2010-06-24 0:00	110	214		7.95	130	64	3.55	105.6	0.007	0.07	0.012	6.4	0.5	0.28
W7	2010-06-26 0:00	120	230		8.03	120	21	3.12	107.3	0.005	0.1	0.009	7.8	0.5	0.3
W7	2010-06-28 0:00	120	248		7.89	150	9	2.94	105.1	0.005	0.13	0.022	9.7	0.5	0.29
W7	2010-07-05 0:00	100	202		8.02	150	53	4.48	104.5	0.005	0.07	0.027	2.5	0.5	0.22
W7	2010-08-05 0:00				7.91	170		5.57	78.1						
W7	2010-09-12 0:00	100	212		8.02	210	11	4.06	84.5	0.005	0.03	0.039	6.4	0.7	0.22
W7	2010-10-08 0:00	120	233		7.85	150	3	-0.18	100.3	0.005	0.07	0.069	8.8	0.5	0.23
W7	2011-04-27 0:00	34	79			72	1			0.005	0.02	0.01	5	1.9	0.1
W7	2011-05-02 0:00	27	57			40	7			0.005	0.02		5	1.7	0.08
W7	2011-06-01 0:00	96	196			120	23					0.012	6.1	0.5	0.24
W7	2011-06-16 0:00	92	195			130	85			0.005	0.1	0.013			
W7	2011-07-01 0:00	73	146			120	150			0.007	0.05	0.016	0.5		
W7	2011-08-02 0:00	54	113			110	400			0.005	0.06			1.8	0.14
W7	2011-08-16 0:00	94	191			150	22			0.005	0.06	0.015			
W7	2011-08-19 0:00	92	185			140	22			0.005	0.04	0.006			
W7	2011-09-12 0:00	110	217		7.92	170	1	1.9	133.5	0.005	0.05	0.025		1.3	
W7	2011-10-06 0:00	120	233		7.65	150	4	0	83.1	0.005	0.11	0.019	8.9	1	
W7	2011-11-22 0:00	134	280			156	26.7			0.005	0.136	0.0214		0.8	
W7	2012-01-24 9:30	165	349			226	4			0.005	0.324	0.005	18	0.8	0.43
W7	2012-02-25 0:00	155	339		7.16	216	4	0	74.6	0.005	0.289	0.006	17.8	0.9	0.42
W7	2012-03-05 11:30	154	343		6.72	176	3.2	0	78.9	0.005	0.195	0.0067	19	0.5	0.42
W7	2012-04-24 7:25	36.2	75		7.43	100	11.2	0	106.3	0.0101	0.02	0.005	0.5	1.4	0.1
W7	2012-05-06 9:00	8.45	92.3	116.8	7.1	88	4.2	0	58.4	0.005	0.02	0.011	0.5	0.5	0.12
W7	2012-06-19 9:40	87.4	178	44.5	7.59	128	165	4.1	95.1	0.0148	0.083	0.18	0.5	1.1	0.17
W7	2012-07-17 9:49	128	254	45.6	7.76	164	34.1	5.4	97.4	0.005	0.089	0.065	4.63	0.96	0.23
W7	2012-07-30 8:35	138	272	16	7.86	180	9.2	4.4	97.6	0.005	0.124	0.13	5.31	0.58	0.28
W7	2012-08-08 9:25	143	278	-6.2	8.44	192	3.3	4.7	98.5	0.005	0.13	0.014	5.43	1.2	0.29
W7	2012-08-23 8:15	147	285	-2.4	7.79	200	1.5	4.6	84.8		0.21	0.049	5.23	1.2	0.27
W7	2012-09-13 14:04	115	230	76.7	7.98	154	15.3	1.9	94.1	0.005	0.078	0.0087	3.85	1.2	0.18
W7	2012-10-16 9:40	132	261	18	7.89	166	9.9	0.4	118.3	0.005	0.125	0.028	7.47	1.2	0.19
W7	2012-11-02 15:30	150	319			214	2.2			0.005	0.219	0.026	14.4	0.82	0.29
W7	2012-12-29 13:45	207	444	289.9	7.97	262	1	-0.3	72.5	0.005	0.063	0.025	29.1	1.9	0.43
W7	2013-04-30 18:00	187	387	-50	8.18	246	5.8	0	101.8	0.005	0.132	0.0082	24.1	1.4	0.53
W7	2013-05-14 16:15	29.4	61.3	109.7	8.2	70	55.3	0	92.4	0.005	0.02	0.066	0.5	1.5	0.064
W7	2013-06-19 17:50	113	237		8.6	164	10.1	4.6		0.005	0.141	0.04	7.87	1.1	0.25
W7	2013-07-13 13:50	127	263	108.7	7.74	156	5	3.6	90	0.005	0.17	0.023	9.73	0.99	0.26
W7	2013-08-21 8:15	143	286	32.7	7.81	172	3.8	4.2	101	0.005	0.157	0.051	8.32	0.93	0.27
W7	2013-09-06 14:45	140	280	38.1	7.75	280	11.8	4	93.5	0.005	0.128	0.017	5.66	1.3	0.24
W7	2013-10-21 6:15	138	288	16.6	7.58	168	7.4	0	77.7	0.005	0.168	0.048	10.3	1.3	0.25
W7	2013-11-16 11:00	153	324	94.7	7.69	164	1.5	-0.1	61.8	0.005	0.257	0.027	15.1	1	0.35
W7	2013-12-07 11:55	166	354		6.3	220	1	0		0.005	0.206	0.025	16.7	1.2	0.31
W7	2014-01-06 11:00	185	393	228.2	7.8	244	1	0	96.8	0.005	0.28	0.0096	23.7	0.94	0.48
W7	2014-04-23 13:40	30.6	64.1	155.2	7.72	84	14.7	0	94.4	0.005	0.02	0.014	0.5	1.7	0.076
W7	2014-05-05 7:15	48.2	105	90.3	8.19	114	3.5	-0.1	98.4	0.005	0.02	0.014	0.5	1.4	0.096
W7	2014-06-21 12:20	122	257	96.2	8.06	130	21.5	1.9	89.8	0.005	0.197	0.024	11.9	1.1	0.3
W7	2014-06-30 8:15	130	278	65.3	8.11	176	4.5	2.5	89.1	0.005	0.199	0.025	11.3	1.2	0.33
W7	2014-07-04 14:00	132	276	73.2	8.13	144	2.2	3.4	89.3	0.005	0.209	0.013	11.9	0.74	0.37
W7	2014-08-10 11:00	142	291	60.6	7.92	172	2.9	2.3	94.7	0.005	0.159	0.025	12.9	0.91	0.33

Station	Date / Time	Dissolved Elements																			
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W7	2006-06-08 10:40																				
W7	2006-06-15 0:00		0.013	0.0004	0.063	0.003	0.0001	0.0005	26.9	0.00001	0.0001	0.0005	0.001	0.09		0.4	0.001	8.9	0.044	0.001	5.9
W7	2006-06-23 0:00		0.011	0.0005	0.067	0.002	0.0001	0.0005	31.8	0.00001	0.0001	0.0007	0.001	0.09		1.1	0.001	10.4	0.043	0.001	5.9
W7	2006-06-28 0:00		0.407	0.0008	0.079	0.002	0.0001	0.0005	22.8	0.00003	0.0009	0.0015	0.003	0.06		0.8	0.001	9.2	0.011	0.001	6.2
W7	2006-07-07 0:00		0.005	0.0006	0.067	0.005	0.0001	0.0007	26.5	0.00001	0.0001	0.0011	0.001	0.06		0.8	0.001	10.7	0.023	0.002	6.7
W7	2006-07-12 0:00		0.006	0.0005	0.064	0.005	0.0001	0.0007	26.9	0.00001	0.0001	0.001	0.001	0.06		0.9	0.001	10.5	0.022	0.001	6.6
W7	2006-07-20 0:00		0.006	0.0004	0.068	0.004	0.0001	0.0005	33	0.00001	0.0001	0.0007	0.001	0.11		1	0.001	11.7	0.042	0.001	6.7
W7	2006-07-26 0:00		0.008	0.0004	0.072	0.002	0.0001	0.0005	33.4	0.00001	0.0001	0.0005	0.002	0.1		1	0.001	10.9	0.044	0.001	7
W7	2006-08-02 0:00		0.008	0.0002	0.07	0.004	0.0001	0.0005	33.3	0.00001	0.0001	0.0005	0.001	0.07		1.1	0.001	11	0.033	0.001	7.2
W7	2006-08-10 0:00		0.009	0.0005	0.073	0.005	0.0001	0.0005	32.9	0.00001	0.0001	0.0007	0.001	0.08		1	0.001	10.8	0.039	0.001	7.2
W7	2006-08-25 0:00		0.012	0.0004	0.071	0.005	0.0001	0.0005	32.4	0.00001	0.0002	0.0006	0.001	0.08		0.9	0.001	11.7	0.037	0.001	6.7
W7	2006-08-30 0:00		0.013	0.0004	0.067	0.004	0.0001	0.0005	33.6	0.00001	0.0001	0.0008	0.002	0.1		1.2	0.002	11.7	0.038	0.001	7.7
W7	2006-09-06 0:00		0.005	0.0005	0.068	0.005	0.0001	0.0005	33.5	0.00001	0.0001	0.0008	0.002	0.1		0.8	0.002	11.2	0.036	0.001	7.5
W7	2006-09-13 0:00		0.008	0.0003	0.064	0.005	0.0001	0.0005	32.3	0.00001	0.0001	0.0009	0.001	0.11		0.9	0.002	11.4	0.03	0.001	7.4
W7	2006-09-20 0:00		0.007	0.0005	0.069	0.005	0.0001	0.0005	33.5	0.00028	0.0001	0.0007	0.001	0.09		1	0.002	11.6	0.04	0.001	6.6
W7	2006-09-28 0:00		0.011	0.0004	0.071	0.003	0.0001	0.0005	33.3	0.00001	0.0001	0.0008	0.001	0.08		1.1	0.001	11.1	0.035	0.001	7.4
W7	2006-10-04 0:00		0.005	0.0003	0.068	0.004	0.0001	0.0005	32.6	0.00001	0.0001	0.0005	0.001	0.11		1.1	0.001	10.9	0.035	0.001	7.3
W7	2006-10-12 0:00		0.007	0.0004	0.067	0.005	0.0001	0.0005	34	0.00001	0.0001	0.0005	0.001	0.09		1.1	0.001	11.4	0.043	0.001	7.4
W7	2007-06-05 0:00																				
W7	2007-06-20 0:00		0.014	0.0004	0.06	0.005	0.0001	0.0005	29.6	0.00001	0.0001	0.0006	0.002	0.05	0.0001	1	0.001	9.8	0.031	0.001	7.4
W7	2007-07-18 0:00		0.011	0.0005	0.066	0.005	0.0001	0.0005	32	0.00001	0.0001	0.001	0.002	0.04	0.0001	0.9	0.001	11.6	0.019	0.001	7.6
W7	2007-08-24 0:00																				
W7	2007-09-18 0:00		0.007	0.0004	0.059	0.004	0.0001	0.0005	26.9	0.00001	0.0001	0.0016	0.001	0.08	0.0001	0.9	0.001	9.8	0.018	0.002	7.2
W7	2007-10-30 0:00																				
W7	2008-04-22 0:00		0.02	0.0002	0.075	0.005	0.00004		40.9		0.00008	0.0012	0.001	0.02	0.00001	2.68	0.002	20.4	0.025	0.00161	12.6
W7	2008-06-03 0:00																				
W7	2008-06-17 0:00	0.00001	0.02	0.0002	0.056	0.006	0.00004				0.00014	0.0013	0.001	0.07			0.001		0.0682	0.00149	
W7	2008-08-06 0:00	0.00006	0.014	0.0004	0.068	0.004	0.0001	0.0005	31.8	0.00001	0.0001	0.0006	0.002	0.07	0.0001	1	0.001	10.6	0.02	0.001	7.4
W7	2008-09-18 0:00	0.00001	0.07	0.0003	0.043	0.004	0.00004		20	0.00001	0.00025	0.0016	0.004	0.2	0.00001	0.53	0.001	6.63	0.0198	0.00072	4.92
W7	2008-10-28 0:00	0.00001	0.009	0.0005	0.061	0.006	0.00004		30.5	0.00001	0.0001	0.0005	0.001	0.078	0.00001	0.8	0.001	11.4	0.0338	0.00108	6.4
W7	2009-04-30 0:00	0.00001	0.053	0.0002	0.01	0.004	0.00004	0.0001	5.23	0.00008	0.0001	0.0006	0.005	0.07	0.00001	1.5	0.001	1.68	0.0114	0.00013	1.2
W7	2009-06-08 0:00	0.00001	0.013	0.0003	0.052	0.004	0.00004	0.0001	23.8	0.00001	0.00013	0.0004	0.002	0.05	0.00001	0.7	0.001	8.18	0.0129	0.00127	5.3
W7	2009-07-28 0:00																				
W7	2009-08-06 0:00																				
W7	2009-08-24 0:00																				
W7	2009-08-25 0:00																				
W7	2009-08-31 0:00	0.00001	0.01	0.0004	0.056	0.004	0.00004	0.001	29.1	0.00001	0.0001	0.0012	0.004	0.1	0.00001	0.9	0.001	9.9	0.0128	0.0011	6.8
W7	2009-10-07 0:00																				
W7	2009-10-25 0:00	0.00002	0.007	0.0003	0.067	0.05	0.0001	0.001	32.6	0.00004	0.0005	0.001	0.0012	0.046	0.00002	0.95	0.005	10.8	0.024	0.001	6.68
W7	2010-04-19 0:00	0.00001	0.019	0.0003	0.039	0.004	0.00004	0.001	19.9	0.00002	0.00017	0.0004	0.006	0.09	0.00001	2.1	0.001	7.3	0.0188	0.0008	5
W7	2010-04-27 0:00	0.00002	0.075	0.0003	0.022	0.05	0.0001	0.001	9.79	0.00001	0.0005	0.001	0.0041	0.15	0.00002	1.04	0.005	2.87	0.001	0.001	1.86
W7	2010-04-29 0:00	0.00002	0.065	0.0003	0.023	0.05	0.0001	0.001	9.79	0.00001	0.0005	0.001	0.0034	0.18	0.00002	0.9	0.005	2.86	0.001	0.001	1.92
W7	2010-05-01 0:00	0.00002	0.053	0.0004	0.025	0.05	0.0001	0.001	11	0.00002	0.0005	0.001	0.0032	0.26	0.00002	0.71	0.005	3.26	0.001	0.001	2.22
W7	2010-05-03 0:00	0.00002	0.047	0.0004	0.027	0.05	0.0001	0.001	12	0.00001	0.0005	0.001	0.0027	0.378	0.00002	0.64	0.005	3.67	0.001	0.001	2.6
W7	2010-05-05 0:00	0.00002	0.038	0.0005	0.03	0.05	0.0001	0.001	12.9	0.00001	0.0005	0.001	0.0025	0.574	0.00002	0.57	0.005	4.09	0.001	0.001	2.85
W7	2010-05-07 0:00	0.00002	0.028	0.0004	0.034	0.05	0.0001	0.001	14.7	0.00001	0.0005	0.001	0.0026	0.359	0.00002	0.68	0.005	4.9	0.001	0.001	3.35
W7	2010-05-09 0:00	0.00002	0.023	0.0004	0.044	0.05	0.0001	0.001	20.5	0.00001	0.0005	0.001	0.0018	0.297	0.00002	0.78	0.005	6.97	0.001	0.001	4.54
W7	2010-05-10 0:00	0.00002	0.021	0.0004	0.046	0.05	0.0001	0.001	20.7	0.00002	0.0005	0.001	0.0022	0.276	0.00002	0.8	0.005	7.08	0.001	0.001	4.69
W7	2010-05-12 0:00	0.00002	0.017	0.0004	0.046	0.05	0.0001	0.001	21.1	0.00001	0.0005	0.001	0.0016	0.173	0.00002	0.77	0.005	7.06	0.001	0.001	4.6
W7	2010-05-14 0:00	0.00002	0.096	0.0004	0.044	0.05	0.0001	0.001	18.7	0.00001	0.0005	0.001	0.0031	0.339	0.00002	0.71	0.005	6.27	0.039	0.001	4.05
W7	2010-05-16 0:00	0.00002	0.012	0.0003	0.045	0.05	0.0001	0.001	22.3	0.00001	0.0005	0.001	0.0013	0.08	0.0002	0.8	0.005	7.28	0.001	0.001	4.75
W7	2010-05-17 0:00	0.00002	0.018	0.0004	0.043	0.05	0.0001	0.001	20.9	0.00001	0.0005	0.001	0.0012	0.068	0.0002	0.78	0.005	6.82	0.001	0.001	4.36
W7	2010-05-19 0:00	0.00002	0.016	0.0003	0.049	0.05	0.0001	0.001	24.4	0.00001	0.0005	0.001	0.0017	0.069	0.00002	0.85	0.005	9.16	0.001	0.001	6.6
W7	2010-05-21 0:00		0.013	0.0004	0.05	0.1	0.0002	0.001	24		0.0005		0.001	0.057	0.0002	1	0.01	8	0.001	0.001	6
W7	2010-05-23 0:00		0.017	0.0004	0.053	0.1	0.0002	0.001	25		0.0005		0.001	0.069	0.0002	1	0.01	9	0.001	0.001	6
W7	2010-05-25 0:00		0.024		0.065	0.1	0.0005	0.001	30		0.0005		0.003	0.062	0.00002	1	0.01	12	0.001	0.002	8
W7	2010-05-27 0:00		0.028		0.055	0.1	0.0005	0.001	27		0.0005		0.003	0.069	0.00002	1	0.01	11	0.014	0.002	8
W7	2010-05-29 0:00		0.017	0.0005	0.056	0.1	0.0002	0.001	29		0.0005		0.002	0.051	0.00002	1	0.01	10	0.015	0.002	6
W7	2010-05-31 0:00		0.02	0.0004	0.058	0.1	0.0002	0.001	27		0.0005		0.002	0.05	0.00002	1	0.01	10	0.012	0.002	7
W7	2010-06-02 0:00		0.012	0.0004	0.058	0.1	0.0002	0.001	29		0.0005		0.001	0.03	0.0002	1	0.01	10	0.001	0.002	6
W7	2010-06-04 0:00		0.013	0.0004	0.058	0.1	0.0002	0.001	29		0.0005		0.001	0.03	0.0002	1	0.01	10	0.001	0.002	6
W7	2010-06-06 0:00		0.01	0.0004	0.062	0.1	0.0002	0.001	33		0.0005		0.001	0.024		1	0.01	11	0.004	0.002	7
W7	2010-06-14 0:00		0.011	0.0004	0.064	0.1	0.0002	0.001	31		0.0005		0.001	0.025	0.0002	1	0.01	11	0.002	0.002	8
W7	2010-06-16 0:00		0.01	0.0004	0.064	0.1	0.0002	0.001	30		0.0005		0.001	0.026	0.0002	1	0.01	11	0.004	0.002	7
W7	2010-06-18 0:00		0.01	0.0004	0.064	0.1	0.0002	0.001	30		0.0005		0.001	0.023	0.0002	1	0.01	11	0.001	0.002	7
W7	2010-06-20 0:00		0.014	0.0004	0.06	0.1	0.0002	0.001	28		0.0005		0.001	0.028	0.0002	1	0.01	10	0.003	0.002	7
W7	2010-06-22 0:00		0.033	0.0005	0.055	0.1	0.0002	0.001	25		0.0005		0.002	0.082	0.0002	1	0.01	9	0.001	0.001	6
W7	2010-06-24 0:00		0.018	0.0004	0.052	0.1	0.0002	0.001	25		0.0005		0.001	0.056	0.0002	1	0.01	9	0.001	0.001	6
W7	2010-06-26 0:00		0.012	0.0004	0.06	0.1	0.0002	0.001	26		0.0005		0.001	0.038	0.0002	1	0.01	10	0.003	0.001	7
W7	2010-06-28 0:00		0.01	0.0004	0.061	0.1	0.0002	0.001	29		0.0005		0.001	0.028	0.0002	1	0.01	10	0.002	0.001	7
W7	2010-07-05 0:00		0.019	0.0004	0.054	0.1	0.0002	0.001	23		0.0005		0.002	0.104	0.0002	1	0.01	8	0.003	0.001	6
W7	2010-08-05 0:00		0.011	0.0004	0.065	0.1	0.0002	0.001	30		0.0005		0.002	0.112	0.0002	1	0.01	10	0.023	0.001	6
W7	2010-09-12 0:00		0.016	0.0005	0.055	0.1	0.0002	0.001	28		0.0005		0.001	0.231	0.0002	1	0.01	9	0.017	0.001	5
W7	2010-10-08 0:00	0.00002	0.011	0.0004	0.06	0.05	0.0001	0.001	29.2	0.00001	0.0005	0.001	0.0012	0.127	0.00002	0.71	0.005	9.34	0.027	0.001	5.34
W7	2011-04-27 0:00	0.00002	0.057	0.0003	0.024	0.05	0.0001	0.001	11.2	0.00003	0.0005	0.001	0.0077	0.148	0.00002	1.75	0.005	3.57	0.027	0.001	2.12
W7	2011-05-02 0:00	0.00002	0.076	0.0002	0.02	0.05	0.0001	0.001	8.48	0.00004	0.0005	0.001	0.007	0.169	0.00002	1.39	0.005	2.57	0.021	0.001	1.43
W7	2011-06-01 0:00	0.00002	0.013	0.0003	0.056	0.05	0.0001	0.001	23.5	0.00001	0.0005	0.001	0.0016	0.099	0.00002	0.85	0.005	8.19	0.011	0.001	5.09
W7	2011-06-16 0:00	0.00002	0.022	0.0004	0.053	0.05	0.0001	0.001	24.9	0.00001	0.0005	0.001	0.0019	0.207	0.00002	0.67	0.005	8.56	0.011	0.001	5.67
W7	2011-07-01 0:00	0.00002	0.034	0.0007	0.053	0.05	0.0001	0.001	20.6	0.00001	0.0005	0.001	0.0031	0.441	0.00005	0.39	0.005	6.25	0.037	0.001	4.4
W7	2011-08-02 0:00	0.00002	0.051	0.0007	0.048	0.05	0.0001	0.001	15.6	0.00002	0.0005	0.001	0.0041	0.614	0.00002	0.29	0.005	4.85	0.064	0.001	3.69
W7	2011-08-16 0:00	0.00002	0.036	0.0007	0.057	0.05	0.0001	0.001	26	0.00001	0.0005	0.001	0.0019	0.593	0.00002	0.46	0.005	7.96	0.054	0.001	4.81
W7	2011-08-19 0:00	0.00002	0.033	0.0008	0.053	0.05	0.0001	0.001	24.2	0.00001	0.0005	0.001	0.002	0.556	0.00002	0.41	0.005	7.89	0.06	0.001	4.58
W7	2011-09-12 0:00	0.00002	0.024	0.0007	0.061	0.05	0.0001	0.001	30.8	0.00001	0.0005	0.001	0.0016	0.616	0.00002	0.62	0.005	10.1	0.079	0.001	5.73
W7	2011-10-06 0:00	0.00002	0.013	0.0006	0.057	0.05	0.0001	0.001	27.9	0.00003	0.0005	0.001	0.0012	0.346	0.00002	0.62	0.005	9.89	0.07	0.001	5.68
W7	2011-11-22 0:00	0.00002	0.0076	0.0004	0.075	0.05	0.0001	0.001	38.3	0.00001	0.0005	0.001	0.00109	0.167	0.00002	0.864	0.005	12.8	0.0626	0.0013	6.99
W7	2012-01-24 9:30	0.00002	0.0053	0.00041	0.0882	0.05	0.0001	0.001	43	0.000035	0.0005	0.001	0.00114	0.0944	0.00001	1.6	0.005	14.9	0.0614	0.0015	8.72
W7	2012-02-25 0:00	0.00002	0.0211	0.00033	0.0796	0.05	0.0001	0.001	41.2	0.000064	0.0005	0.001	0.0154	0.0488	0.00001	1.63	0.005	15.1	0.007	0.0014	8.86
W7	2012-03-05 11:30	0.00002	0.0031	0.00039	0.0803	0.05	0.0001	0.001	41.2	0.00001	0.0005	0.001	0.00122	0.0124	0.00001	1.5	0.005	14.2	0.0015	0.0011	8.03
W7	2012-04-24 7:25	0.00002	0.0499	0.00048	0.0319	0.05	0.0001	0.001	10.2	0.000023	0.0005	0.001	0.00523	0.475	0.00001	1.18	0.005	3.2	0.0486	0.001	1.9
W7	2012-05-06 9:00	0.00002	0.0442	0.00044	0.0324	0.05	0.0001	0.001	11.9	0.000016	0.0005	0.001	0.00273	0.462	0.00001	0.948	0.005	4.04	0.0113	0.001	2.44
W7	2012-06-19 9:40	0.00002	0.0265	0.0007	0.0543	0.05	0.0001	0.001	23.5	0.00001	0.0005	0.001	0.00163	0.56	0.00001	0.583	0.005	8.07	0.0433	0.0013	5.29
W7	2012-07-17 9:49	0.00002	0.0197	0.00086	0.0706	0.05	0.0001	0.001	33	0.000012	0.0005	0.001	0.00127	0.965	0.00001	0.791	0.005	11	0.0366	0.0015	6.55
W7	2012-07-30 8:35	0.00002	0.0171	0.00095	0.0727	0.05	0.0001	0.001	33.9	0.00001	0.0005	0.001	0.00123	0.964	0.00001	0.833	0.005	12.1	0.0534	0.0015	6.98
W7	2012-08-08 9:25	0.00002	0.0184	0.001	0.0769	0.05	0.0001	0.001	35.9	0.00001	0.0005	0.001	0.00112	1.06	0.00001	0.882	0.005	12.6	0.0554	0.0016	7.09
W7	2012-08-23 8:15	0.00002	0.0178	0.00088	0.0756	0.05	0.0001	0.001	35.7	0.00001	0.0005	0.001	0.0017	0.978	0.00001	0.942	0.005	13	0.057	0.0016	7.35
W7	2012-09-13 14:04	0.00002	0.0239	0.00074	0.0599	0.05	0.0001	0.001	30.1	0.00001	0.0005	0.001	0.00244	0.734	0.00001	0.567	0.005	9.91	0.0956	0.001	5.77
W7	2012-10-16 9:40	0.00002	0.0114	0.0006	0.0633	0.05	0.0001	0.001	33.2	0.00001	0.0005	0.001	0.00094	0.603	0.00001	0.675	0.005	11.2	0.073	0.0011	6.34
W7	2012-11-02 15:30	0.00002	0.0095	0.00053	0.0862	0.05	0.0001	0.001	39.3	0.000031	0.0005	0.001	0.00236	0.183	0.00001	1.34	0.005	14.6	0.101	0.0013	8.07
W7	2012-12-29 13:45	0.00002	0.0061	0.00051	0.119	0.05	0.0001	0.001	56.1	0.00001	0.0005	0.001	0.00232	0.0301	0.00001	2.54	0.005	20.2	0.0374	0.0012	12.2
W7	2013-04-30 18:00	0.00002	0.0031	0.00025	0.101	0.05	0.0001	0.001	46.8	0.00001	0.0005	0.001	0.00108	0.0143	0.00001	1.92	0.005	18.3	0.0528	0.0013	10.1
W7	2013-05-14 16:15	0.00002	0.0436	0.00029	0.023	0.05	0.0001	0.001	8.81	0.00001	0.0005	0.001	0.00365	0.306	0.00001	1.03	0.005	2.75	0.103	0.001	1.52
W7	2013-06-19 17:50	0.00002	0.0134	0.00051	0.0664	0.05	0.0001	0.001	30	0.00001	0.0005	0.001	0.00124	0.291	0.00001	0.955	0.005	9.47	0.0339	0.0016	5.88
W7	2013-07-13 13:50	0.00002	0.0138	0.00053	0.072	0.05	0.0001	0.001	34.9	0.00001	0.0005	0.001	0.00121	0.416	0.00001	0.91	0.005	11	0.026	0.0015	6.52
W7	2013-08-21 8:15	0.00002	0.0122	0.00056	0.0737	0.05	0.0001	0.001	35.2	0.00001	0.0005	0.001	0.00101	0.3	0.00001	0.934	0.005	12.7	0.0355	0.0015	7.34
W7	2013-09-06 14:45	0.00002	0.016	0.00081	0.0718	0.05	0.0001	0.001	34.9	0.00001	0.0005	0.001	0.00113	0.663	0.00001	0.887	0.005	12.3	0.081	0.0013	7.31
W7	2013-10-21 6:15	0.00002	0.0093	0.00067	0.0715	0.05	0.0001	0.001	38	0.00001	0.0005	0.001	0.00111	0.549	0.00001	0.878	0.005	12.6	0.1	0.0012	7.03
W7	2013-11-16 11:00	0.00002	0.0053	0.00048	0.08	0.05	0.0001	0.001	39.4	0.00001	0.0005	0.001	0.0008	0.169	0.00001	1.15	0.005	13.3	0.0809	0.0016	7.71
W7	2013-12-07 11:55	0.00002	0.0035	0.00053	0.0919	0.05	0.0001	0.001	43.3	0.00001	0.0005	0.001	0.00078	0.109	0.00001	1.38	0.005	14.5	0.143	0.0011	8.17
W7	2014-01-06 11:00	0.00002	0.004	0.00055	0.11	0.05	0.0001	0.001	51.5	0.00001	0.0005	0.001	0.00165	0.0409	0.00001	1.89	0.005	17.9	0.0275	0.0015	10.7
W7	2014-04-23 13:40	0.00002	0.063	0.00027	0.0212	0.05	0.0001	0.001	9.4	0.000019	0.0005	0.001	0.00887	0.115	0.00001	1.46	0.005	3.05	0.0264	0.001	1.54
W7	2014-05-05 7:15	0.00002	0.0384	0.00046	0.031	0.05	0.0001	0.001	13.9	0.00001	0.0005	0.001	0.00445	0.248	0.00001	0.807	0.005	4.53	0.0521	0.001	2.84
W7	2014-06-21 12:20	0.00002	0.0232	0.00037	0.0643	0.05	0.0001	0.001	29.9	0.00001	0.0005	0.001	0.00109	0.0916	0.00001	0.925	0.005	11.4	0.0195	0.0015	7.26
W7	2014-06-30 8:15	0.00002	0.008	0.00033	0.0709	0.05	0.0001	0.001	32.2	0.00001	0.0005	0.001	0.00132	0.0614	0.00001	1.06	0.005	11.9	0.0193	0.0015	7.41
W7	2014-07-04 14:00	0.00002	0.0061	0.00035	0.0699	0.05	0.0001	0.001	31.9	0.00001	0.0005	0.001	0.00088	0.0621	0.00001	1.05	0.005	12	0.0169	0.0015	7.28
W7	2014-08-10 11:00	0.00002	0.0058	0.00032	0.0679	0.05	0.0001	0.001	32.9	0.00001	0.0005	0.001	0.00098	0.123	0.00001	0.961	0.005	12.4	0.0239	0.0018	7.19

Station	Date / Time	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W7	2006-06-08 10:40														
W7	2006-06-15 0:00	0.001	0.0001	0.0002	3.5	0.0002	5.35	0.001	0.236	0.0007	0.00005	0.0007	0.0011	0.001	
W7	2006-06-23 0:00	0.0013	0.0001	0.0002	4.3	0.0003	5.5	0.001	0.321	0.0006	0.00005	0.001	0.001	0.002	
W7	2006-06-28 0:00	0.0036	0.0005	0.0002	3.4	0.0002	6.48	0.001	0.284	0.0117	0.00005	0.0009	0.0029	0.005	
W7	2006-07-07 0:00	0.0015	0.0001	0.0002	4	0.0002	6.8	0.001	0.322	0.0007	0.00005	0.0005	0.0013	0.001	
W7	2006-07-12 0:00	0.0007	0.0001	0.0002	4	0.0002	5.36	0.001	0.322	0.0005	0.00005	0.0007	0.0018	0.001	
W7	2006-07-20 0:00	0.0006	0.0002	0.0002	4.1	0.0002	6.34	0.001	0.284	0.0005	0.00005	0.001	0.0016	0.001	
W7	2006-07-26 0:00	0.0021	0.0001	0.0002	4.2	0.0002	5.35	0.001	0.274	0.0005	0.00005	0.001	0.0007	0.001	
W7	2006-08-02 0:00	0.0006	0.0001	0.0002	4	0.0002	5.87	0.001	0.247	0.0005	0.00005	0.001	0.0013	0.001	
W7	2006-08-10 0:00	0.0006	0.0001	0.0002	4	0.0002	5.9	0.001	0.343	0.0006	0.00005	0.001	0.0015	0.001	
W7	2006-08-25 0:00	0.0009	0.0001	0.0002	3.8	0.0002	6.32	0.001	0.344	0.0005	0.00005	0.0011	0.0017	0.003	
W7	2006-08-30 0:00	0.0012	0.0001	0.0002	3.7	0.0002	5.84	0.001	0.333	0.0008	0.00005	0.001	0.0008	0.005	
W7	2006-09-06 0:00	0.001	0.0001	0.0002	3.7	0.0002	6.02	0.001	0.355	0.0005	0.00005	0.001	0.0018	0.002	
W7	2006-09-13 0:00	0.0009	0.0001	0.0002	3.5	0.0002	5.56	0.001	0.321	0.0006	0.00005	0.001	0.0014	0.001	
W7	2006-09-20 0:00	0.0005	0.0001	0.0002	3.9	0.0002	5.74	0.001	0.319	0.0005	0.00005	0.001	0.0015	0.001	
W7	2006-09-28 0:00	0.0008	0.0001	0.0002	3.7	0.0002	5.97	0.001	0.34	0.0005	0.00005	0.001	0.0015	0.002	
W7	2006-10-04 0:00	0.0007	0.0001	0.0002	3.7	0.0002	5.93	0.001	0.326	0.0007	0.00005	0.001	0.0011	0.001	
W7	2006-10-12 0:00	0.0006	0.0001	0.0002	3.9	0.0003	6.08	0.001	0.344	0.0006	0.00005	0.0011	0.0009	0.002	
W7	2007-06-05 0:00														
W7	2007-06-20 0:00	0.0005	0.0001	0.0002	4.2	0.0002	5.02	0.001	0.307	0.0009	0.00005	0.0012	0.0016	0.004	
W7	2007-07-18 0:00	0.0007	0.0001	0.0002	3.9	0.0002	6.1	0.001	0.34	0.0006	0.00005	0.0012	0.0024	0.006	
W7	2007-08-24 0:00														
W7	2007-09-18 0:00	0.0008	0.0001	0.0002	2.9	0.0002	6.17	0.001	0.31	0.0006	0.00005	0.0006	0.0044	0.002	
W7	2007-10-30 0:00														
W7	2008-04-22 0:00	0.001	0.0001	0.006			3.97	0.004	0.497	0.0011	0.00001	0.0021	0.00059	0.001	0.0001
W7	2008-06-03 0:00														
W7	2008-06-17 0:00	0.001	0.0001	0.001		0.0022		0.0001	0.289	0.0015	0.00001	0.0014	0.00091	0.002	0.0003
W7	2008-08-06 0:00	0.001	0.0001	0.0014	3.5	0.0002	5.81	0.001	0.336	0.0005	0.00005	0.0011	0.001	0.006	
W7	2008-09-18 0:00	0.001	0.0017	0.0008			5.8	0.0001	0.173	0.0055	0.00001	0.0004	0.00094	0.003	0.0004
W7	2008-10-28 0:00	0.001	0.0001	0.0009			6.6	0.0001	0.276	0.0011	0.00001	0.0007	0.00067	0.001	0.0002
W7	2009-04-30 0:00	0.001	0.0001	0.0007	0.4		1.48	0.0001	0.029	0.0015	0.00001	0.0004	0.00024	0.009	0.0002
W7	2009-06-08 0:00	0.001	0.0001	0.0011	2.8		4.13	0.0001	0.24	0.0011	0.00001	0.0008	0.0008	0.002	0.0003
W7	2009-07-28 0:00														
W7	2009-08-06 0:00														
W7	2009-08-24 0:00														
W7	2009-08-25 0:00														
W7	2009-08-31 0:00	0.001	0.0004	0.0009	3		6.04	0.0001	0.256	0.0004	0.00001	0.0007	0.0007	0.001	0.0002
W7	2009-10-07 0:00														
W7	2009-10-25 0:00	0.001	0.0002	0.0005	4	0.0002	6.3	0.005	0.334	0.005	0.00005	0.0012	0.005	0.005	0.0005
W7	2010-04-19 0:00	0.001	0.0003	0.001	2.7		4.15	0.0001	0.212	0.01	0.00001	0.0005	0.0005	0.005	0.0001
W7	2010-04-27 0:00	0.001	0.0002	0.0005	3	0.0001	2.94	0.005	0.071	0.005	0.00005	0.0001	0.005	0.005	0.0005
W7	2010-04-29 0:00	0.001	0.0002	0.0005	3	0.0001	2.89	0.005	0.076	0.005	0.00005	0.0001	0.005	0.005	0.0005
W7	2010-05-01 0:00	0.001	0.0002	0.0005	3	0.0001	3.27	0.005	0.088	0.005	0.00005	0.0002	0.005	0.005	0.0005
W7	2010-05-03 0:00	0.001	0.0002	0.0005	3	0.0001	3.63	0.005	0.097	0.005	0.00005	0.0002	0.005	0.005	0.0005
W7	2010-05-05 0:00	0.001	0.0002	0.0005	3	0.0001	3.84	0.005	0.116	0.005	0.00005	0.0003	0.005	0.005	0.0005
W7	2010-05-07 0:00	0.002	0.0002	0.0005	3	0.0001	3.77	0.005	0.129	0.005	0.00005	0.0003	0.005	0.005	0.0005
W7	2010-05-09 0:00	0.001	0.0002	0.0005	3	0.0001	4.61	0.005	0.192	0.005	0.00005	0.0006	0.005	0.005	0.0005
W7	2010-05-10 0:00	0.001	0.0002	0.0005	3	0.0001	4.62	0.005	0.195	0.005	0.00005	0.0006	0.005	0.005	0.0005
W7	2010-05-12 0:00	0.001	0.0002	0.0005	3	0.0001	5	0.005	0.201	0.005	0.00005	0.0006	0.005	0.005	0.0005
W7	2010-05-14 0:00	0.002	0.0002	0.0005	3	0.0001	4.35	0.005	0.178	0.005	0.00005	0.0005	0.005	0.005	0.0005
W7	2010-05-16 0:00	0.001	0.0002	0.0005	3	0.0001	4.68	0.005	0.207	0.005	0.00005	0.0007	0.005	0.005	0.0005
W7	2010-05-17 0:00	0.001	0.0002	0.0005	3	0.0001	4.22	0.005	0.191	0.005	0.00005	0.0006	0.005	0.005	0.0005
W7	2010-05-19 0:00	0.001	0.0002	0.0005	3	0.0003	5.24	0.005	0.21	0.005	0.00005	0.0008	0.005	0.005	0.0005
W7	2010-05-21 0:00	0.001	0.0002	0.0005	60		4.98	0.005	0.22	0.01	0.00005	0.0008	0.005		0.002
W7	2010-05-23 0:00	0.001	0.0002	0.0005	60		5.24	0.005	0.235	0.01	0.00005	0.0009	0.005		0.002
W7	2010-05-25 0:00		0.0002	0.0005	60		6.05	0.005	0.306	0.01	0.00005	0.0011	0.005		0.002
W7	2010-05-27 0:00		0.0002	0.0005	60		5.4	0.005	0.277	0.01	0.00005	0.0011	0.005		0.002
W7	2010-05-29 0:00	0.001	0.0002	0.0005	60		5.26	0.005	0.289	0.01	0.00005	0.0014	0.005		0.002
W7	2010-05-31 0:00	0.001	0.0002	0.0005	60			0.005	0.286	0.01	0.00005	0.0014	0.005		0.002
W7	2010-06-02 0:00	0.001	0.0002	0.0005	60		5.16	0.005	0.293	0.01	0.00005	0.0015	0.005		0.002
W7	2010-06-04 0:00	0.001	0.0002	0.0005	60		4.96	0.005	0.275	0.01	0.00005	0.0014	0.005		0.002
W7	2010-06-06 0:00	0.001	0.0002	0.0005	60		5.46	0.005	0.313	0.01	0.00005	0.0015	0.005		0.002
W7	2010-06-14 0:00	0.001	0.0002	0.0005	60		5.87	0.005	0.314	0.01	0.00005	0.0015	0.005		0.002
W7	2010-06-16 0:00	0.001	0.0002	0.0005	60		5.32	0.005	0.338	0.01	0.00005	0.0015	0.005		0.002
W7	2010-06-18 0:00	0.001	0.0002	0.0005	60		5.82	0.005	0.318	0.01	0.00005	0.0015	0.005		0.002
W7	2010-06-20 0:00	0.001	0.0002	0.0005	60		5.69	0.005	0.3	0.01	0.00005	0.0012	0.005		0.002
W7	2010-06-22 0:00	0.001	0.0002	0.0005	60		5.86	0.005	0.249	0.01	0.00005	0.0008	0.005		0.002
W7	2010-06-24 0:00	0.001	0.0002	0.0005	60		5.79	0.005	0.259	0.01	0.00005	0.0008	0.005		0.002
W7	2010-06-26 0:00	0.004	0.0002	0.0005	60		6.05	0.005	0.305	0.01	0.00005	0.001	0.005		0.002
W7	2010-06-28 0:00	0.001	0.0002	0.0005	60		6.64	0.005	0.314	0.01	0.00005	0.001	0.005		0.002
W7	2010-07-05 0:00	0.001	0.0002	0.0005	60		6.08	0.005	0.255	0.01	0.00005	0.0006	0.005		0.002
W7	2010-08-05 0:00	0.001	0.0002	0.0005	60		6.47	0.005	0.303	0.01	0.00005	0.0007	0.005		0.002
W7	2010-09-12 0:00	0.002	0.0002	0.0005	60		7.17	0.005	0.253	0.01	0.00005	0.0005	0.005		0.002
W7	2010-10-08 0:00	0.001	0.0002	0.0005	3	0.0001	6.54	0.005	0.277	0.005	0.00005	0.0007	0.005	0.005	0.0005
W7	2011-04-27 0:00	0.001	0.0002	0.0005	3	0.0001	3.09	0.005	0.084	0.005	0.00005	0.0001	0.005	0.005	0.0005
W7	2011-05-02 0:00	0.001	0.0002	0.0005	3	0.0001	2.52	0.005	0.062	0.005	0.00005	0.0001	0.005	0.01	0.0005
W7	2011-06-01 0:00	0.001	0.0002	0.0005	4	0.0001	5.26	0.005	0.25	0.005	0.00005	0.0007	0.005	0.005	0.0005
W7	2011-06-16 0:00	0.002	0.0002	0.0005	3	0.0001	6.52	0.005	0.213	0.005	0.00005	0.0005	0.005	0.005	0.0005
W7	2011-07-01 0:00	0.002	0.0002	0.0005	3	0.0001	6.61	0.005	0.154	0.005	0.00005	0.0003	0.005	0.005	0.0005
W7	2011-08-02 0:00	0.003	0.0002	0.0005	3	0.0001	5.78	0.005	0.12	0.005	0.00005	0.0002	0.005	0.005	0.0005
W7	2011-08-16 0:00	0.002	0.0002	0.0005	3	0.0001	6.96	0.005	0.21	0.005	0.00005	0.0004	0.005	0.005	0.0005
W7	2011-08-19 0:00	0.002	0.0002	0.0005	3	0.0001	6.9	0.005	0.197	0.005	0.00005	0.0003	0.005	0.005	0.0005
W7	2011-09-12 0:00	0.002	0.0002	0.0005	3	0.0001	7.71	0.005	0.266	0.005	0.00005	0.0005	0.005	0.005	0.0005
W7	2011-10-06 0:00	0.001	0.0002	0.0005	3	0.0001	6.17	0.005	0.266	0.005	0.00005	0.0006	0.005	0.005	0.0005
W7	2011-11-22 0:00	0.0012	0.0002	0.0005	4.6	0.00016	8.07	0.005	0.366	0.005	0.00005	0.00106	0.005	0.005	0.0005
W7	2012-01-24 9:30	0.001	0.0002	0.0005	7.3	0.00043	7.24	0.005	0.456	0.005	0.00005	0.00163	0.005	0.005	0.0005
W7	2012-02-25 0:00	0.001	0.00024	0.0005	7.3	0.00034	6.43	0.005	0.448	0.005	0.00005	0.0015	0.005	0.0083	0.0005
W7	2012-03-05 11:30	0.001	0.0002	0.0005	6.1	0.00031	5.99	0.005	0.468	0.005	0.00005	0.00145	0.005	0.005	0.0005
W7	2012-04-24 7:25	0.0012	0.0002	0.0005	3	0.0001	2.94	0.005	0.0774	0.005	0.00005	0.00014	0.005	0.005	0.0005
W7	2012-05-06 9:00	0.0012	0.0002	0.0005	3	0.0001	3.7	0.005	0.105	0.005	0.00005	0.0001	0.005	0.005	0.0005
W7	2012-06-19 9:40	0.002	0.0002	0.0005	3	0.00015	6.21	0.005	0.191	0.005	0.00005	0.00043	0.005	0.005	0.0005
W7	2012-07-17 9:49	0.0016	0.0002	0.0005	3	0.00013	6.79	0.005	0.306	0.005	0.00005	0.00074	0.005	0.005	0.0005
W7	2012-07-30 8:35	0.0015	0.0002	0.0005	3	0.00016	6.86	0.005	0.329	0.005	0.00005	0.00091	0.005	0.005	0.0005
W7	2012-08-08 9:25	0.0017	0.0002	0.0005	3	0.00014	7	0.005	0.357	0.005	0.00005	0.00096	0.005	0.005	0.0005
W7	2012-08-23 8:15	0.0016	0.0002	0.0005	3.1	0.00015	7.06	0.005	0.35	0.005	0.00005	0.00097	0.005	0.005	0.0005
W7	2012-09-13 14:04	0.0036	0.0002	0.0005	3	0.00014	6.7	0.005	0.247	0.005	0.00005	0.00052	0.005	0.005	0.0005
W7	2012-10-16 9:40	0.0015	0.0002	0.0005	3.4	0.00014	6.8	0.005	0.303	0.005	0.00005	0.00077	0.005	0.005	0.0005
W7	2012-11-02 15:30	0.0012	0.00021	0.0005	5.2	0.00018	6.94	0.005	0.407	0.005	0.00005	0.00135	0.005	0.005	0.0005
W7	2012-12-29 13:45	0.0011	0.0002	0.0005	10.9	0.00045	9.63	0.005	0.535	0.005	0.00005	0.00133	0.005	0.005	0.0005
W7	2013-04-30 18:00	0.001	0.0002	0.0005	8	0.00043	6.83	0.005	0.607	0.005	0.00005	0.00213	0.005	0.005	0.0005
W7	2013-05-14 16:15	0.001	0.0002	0.0005	3	0.0001	2.15	0.005	0.063	0.005	0.00005	0.0001	0.005	0.005	0.0005
W7	2013-06-19 17:50	0.0012	0.0002	0.0005	3.5	0.00019	5.92	0.005	0.277	0.005	0.00005	0.00098	0.005	0.005	0.0005
W7	2013-07-13 13:50	0.0013	0.0002	0.0005	3.2	0.00015	7.01	0.005	0.327	0.005	0.00005	0.00105	0.005	0.005	0.0005
W7	2013-08-21 8:15	0.0012	0.0002	0.0005	3.2	0.00015	6.79	0.005	0.364	0.005	0.00005	0.00107	0.005	0.005	0.0005
W7	2013-09-06 14:45	0.0016	0.0002	0.0005	3	0.00017	7.12	0.005	0.339	0.005	0.00005	0.00088	0.005	0.005	0.0005
W7	2013-10-21 6:15	0.0012	0.0002	0.0005	4.2	0.00017	7.18	0.005	0.353	0.005	0.00005	0.00093	0.005	0.005	0.0005
W7	2013-11-16 11:00	0.001	0.0002	0.0005	5.4	0.00024	6.47	0.005	0.418	0.005	0.00005	0.0015	0.005	0.005	0.0005
W7	2013-12-07 11:55	0.001	0.0002	0.0005	5.3	0.00024	7.02	0.005	0.439	0.005	0.00005	0.00126	0.005	0.005	0.0005
W7	2014-01-06 11:00	0.001	0.0002	0.0005	6.9	0.00028	8.37	0.005	0.56	0.005	0.00005	0.00185	0.005	0.0084	0.0005
W7	2014-04-23 13:40	0.001	0.0002	0.0005	3	0.00012	2.57	0.005	0.0743	0.005	0.00005	0.00012	0.005	0.005	0.0005
W7	2014-05-05 7:15	0.0016	0.0002	0.0005	3	0.0001	3.59	0.005	0.113	0.005	0.00005	0.0002	0.005	0.005	0.0005
W7	2014-06-21 12:20	0.001	0.0002	0.0005	4.6	0.00016	5.48	0.005	0.311	0.005	0.00005	0.00124	0.005	0.005	0.00136
W7	2014-06-30 8:15	0.001	0.0002	0.0005	4.1	0.00014	5.37	0.005	0.354	0.005	0.00005	0.00132	0.005	0.005	0.0005
W7	2014-07-04 14:00	0.001	0.0002	0.0005	4.1	0.00014	5.75	0.005	0.348	0.005	0.00005	0.00126	0.005	0.005	0.0005
W7	2014-08-10 11:00	0.001	0.0002	0.0005	4.7	0.00015	6.43	0.005	0.355	0.005	0.00005	0.00107	0.005	0.005	0.0005

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N\text{-}NO_2$	$N\text{-}NO_3$	$N\text{-}NH_3$	SO_4-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W7	2014-09-06 9:10	140	275	69.9	7.85	168	10.5	1.2	94.7	0.005	0.089	0.016	8.19	0.93	0.27
W7	2014-10-31 11:30	150	304	127.8	7.29	176	2.6	-1.6	87.6	0.005	0.202	0.022	11.9	1.2	0.33
W7	2014-11-05 14:10	148	304	50.6	7.77	174	3.2	-1.6	86.3	0.005	0.194	0.027	14	1.3	0.33
W7	2014-12-09 11:25	190	374	-129.6	7.93	322	1	-1.9	90.26	0.005	0.124	0.024	19.4	1.2	0.46
W7	2015-01-15 14:30	252	516	166.9	8.08	308	3.2	-2.2	92.4	0.005	0.123	0.034	29.4	1.5	0.66
W7	2015-03-07 11:40	183	394	124.6	8.18	246	6	0	88.4	0.005	0.02	0.0094	26.1	0.85	0.56
W7	2015-04-14 16:20	195	397	196.7	8.04	192	1	0	90.3	0.005	0.047	0.011	22.8	1.4	0.44
W7	2015-05-31 13:25	100	209	153.4	7.51	110	36.4	0	90.9	0.005	0.029	0.014	7.99	0.96	0.24
W7	2015-06-10 15:05	117	246	62.3	7.49	148	90.3	0.1	92.3	0.005	0.115	0.045	9.43	0.93	0.31
W7	2015-07-11 14:10	143	294	35.5	7.67	174	38.4	1.2	77.8	0.005	0.196	0.039	12.3	0.65	0.34
W7	2015-08-21 14:10	140	283	28.1	7.85	178	161	3	87.6	0.005	0.106	0.043	8.29	0.58	0.32
W7	2015-09-22 16:45	134	277	31.9	7.84	184	1.6	1.9	83.6	0.005	0.073	0.045	9.22	0.84	0.31
W7	2015-10-15 17:10	138	290	37.1	7.53	188	4.1	0	84.1	0.005	0.112	0.038	10.5	1.2	0.32
W7	2015-12-13 15:51	172	345		8.5	176	11.1	0.1	30.9	0.005	0.11	0.0059	16.5	1	0.38
W7	2016-01-05 12:54	218	441	74.4	8.14	212	23.3	0	32.8	0.005	0.02	0.005	26.5	1.5	0.51
W7	2016-04-28 17:05	69.5	146	115.4	7.72	76.1	3.3	0.1	105.6	0.001	0.0063	0.0069	3.89	0.5	
W7	2016-05-24 16:20	95	188	51.6	7.55	102	229	0.3	87.3	0.001	0.0611	0.027	6	0.5	
W7	2016-06-18 17:10	129	257	14	7.5	143	109	3.7	88.1	0.001	0.122	0.0204	10.1	0.5	
W7	2016-06-23 14:50	134	275	22.7	7.62	151	19.8	3.1	84.7	0.001	0.151	0.015	11.3	0.5	
W7	2016-07-06 17:00	145	288	4.5	7.65	156	71.3	3.4	78.6	0.001	0.133	0.0184	11.2	0.5	
W7	2016-07-19 10:05	151	291	5.4	7.71	163	38	4.2	82.6	0.001	0.147	0.0215	10.7	0.5	
W7	2016-08-17 13:25	157	288	41.2	7.81	163	10	4.5	91.1	0.001	0.0883	0.0156	8.54	0.5	
W7	2016-09-06 11:40	147	269	52.9	7.8	155	12.6	3.8	90.5	0.001	0.0564	0.014	7.35	0.5	
W7	2016-10-12 16:00	170	301	49.3	7.42	178	3	-0.1	60.6	0.001	0.147	0.0373	11.8	0.56	
W7	2016-10-23 16:40	164	302	47.5	7.68	175	3	-0.1	82.3	0.001	0.171	0.0266	12.5	0.52	
W7	2016-11-03 15:25	169	316	50.6	7.65	173	3	-0.1	76.6	0.0012	0.185	0.0259	12.9	0.57	
W7	2017-05-16 8:50	76.3	149	106.4	7.58	83.5	3	-0.1	101.9	0.001	0.005	0.007	4.32	0.56	
W7	2017-06-27 9:30	118	228	130.1	8.13	126	22	2.3	91	0.001	0.144	0.0114	8.7	0.5	
W7	2017-07-04 16:35	132	254			140	10.7			0.001	0.155	0.0147	10.3	0.5	
W7	2017-08-01 11:20	127	253	138.5	7.58	136	21.4	4	90.7	0.001	0.115	0.014	7.3	0.28	
W7	2017-09-08 16:45	148	273	103.7	7.27	158	6.8	3.6	98.7	0.001	0.0536	0.0094	8.8	0.5	
W7	2017-10-03 14:30	150	288	57.6	7.5	157	4.9	0.8	96	0.001	0.118	0.0148	10.1	0.5	
W7	2017-11-15 14:15	185	341	273.3	7.55	204	50.7	0	34.6	0.0017	0.121	0.0443	14.6	0.73	
W7	2017-12-04 14:45	207	407	200.2	7.58	225	3.3	0	26.9	0.001	0.0106	0.0148	18	0.94	
W7	2018-05-15 10:30	70.5	142	120.6	8.1	77.4	20.7	0.1	104.4	0.001	0.0104	0.0117	3.8	0.5	0.158
W7	2018-06-05 16:30	90.2	181	187.8	7.86	96.4	28.7	0	68.8	0.001	0.0218	0.0101	6.12	0.5	
W7	2018-07-03 11:45	105	199	162.9	7.82	110	61.4	3.6	32.6	0.001	0.0794	0.0098	6.52	0.21	
W7	2018-08-21 11:15	145	283	68.9	7.75	154	3	3.5	89.2	0.001	0.118	0.0116	9.91	0.5	
W7	2018-09-03 16:50	138	267	15.6	7.67	145	7.1	3.2	89.6	0.001	0.0888	0.0143	8.87	0.5	
W7	2018-10-08 15:15	163	312	42.7	7.52	175	5.2	0.1	70.2	0.001	0.172	0.0271	13.3	0.58	
W7	2019-05-14 11:00	111	216	212	7.63	169	3	0	96.9	0.001	0.005	0.0109	7.31	0.81	
W7	2019-06-30 13:50	150	287	69.8	8.31	162	10.4	2.2	83	0.001	0.186	0.0197	14.3	0.53	
W7	2019-07-06 10:50	158	306	38.4	7.52	173	18.2	2.1	81.7	0.001	0.175	0.0107	13.8	0.51	
W7	2019-08-04 9:40	157	306	43.7	7.32	167	4.3	3.5	87	0.001	0.139	0.0188	13	0.5	
W7	2019-09-24 13:50	163	306	33.1	7.64	172	3.1	0.9	87.1	0.001	0.0867	0.0142	12.5	0.43	
W7	2019-10-07 13:45	169	305	108.8	7.76	178	8.4		82.5	0.001	0.13	0.0204	14	0.5	
W7	2019-11-05 8:40	203	310	121	7.77	207	64.2	0.2	64	0.001	0.144	0.0504	15.3	0.55	
W7	2020-05-19 18:00	86.1	167	123.3	7.93	128	3	0	96.1	0.001	0.005	0.0066	5.95	0.36	
W7	2020-06-11 10:40	117	241	89.7	7.49	156	7.9	0.2	79	0.001	0.0552	0.0145	10.4	0.37	
W7	2020-07-08 10:55	132	269	182.4	7.64	168	19.6	2.5	85.1	0.001	0.0833	0.0091	8.95	0.28	
W7	2020-08-20 17:45	122	237	100.7	7.5	162	20.3	4.1	90.8	0.001	0.0461	0.0109	6.75	0.2	
W7	2020-08-30 10:00	121	231	120.5	6.95	159	9.9	3.3	87	0.001	0.0555	0.0152	7.49	0.22	
W7	2020-09-01 7:20	123	246	87.1	7.87	173	4.2	3.5	90.4	0.001	0.049	0.0126	7.09	0.22	
W7	2020-09-07 15:10	124	251	160	7.55	164	4.2	3.3	86.1	0.001	0.0544	0.0173	8.67	0.26	
W7	2020-09-14 12:50	123	245	192	8.1	162	3	1.3	94.8	0.0025	0.0248	0.0114	8.06	0.29	
W7	2020-09-28 11:00	125	244	109.2	7.68	161	3	1	86.1	0.001	0.0512	0.0131	8.68	0.31	
W7	2020-10-05 15:45	121	237	173.8	7.83	162	9.4	2.2	92.4	0.001	0.0471	0.0161	8.33	0.34	
W7	2020-10-12 12:55	120	242	156.4	7.6	161	3	0.5	91.9	0.001	0.0687	0.0124	8.58	0.35	
W7	2021-05-18 16:45	48.5	104	188.6	7.23	88.7	26.4	0	98.8	0.001	0.005	0.0216	2.44	0.22	
W7	2021-05-24 11:00	30.6	69	183.5	7.08	86.6	372	0	122.6	0.001	0.005	0.0301	1.1	0.13	
W7	2021-05-31 10:20	61.7	129	183	7.11	104	103	1.4	92.2	0.001	0.0352	0.0178	3.23	0.14	
W7	2021-06-08 10:10	80.5	169	173.4	7.37	123	35.5	1.6	116.1	0.001	0.057	0.0112	5.25	0.17	
W7	2021-06-16 14:30	113	224	98.1	7.89	146	46.7	3.8	93.6	0.001	0.1	0.0086	8.62	0.27	
W7	2021-06-23 9:10	125	249	125.1	7.82	161	6.8	2.3	98.6	0.001	0.118	0.007	8.96	0.28	
W7	2021-06-28 13:10	130	264	121.7	7.44	176	4.3	3.8	88.3	0.001	0.126	0.0103	9.84	0.5	0.329
W7	2021-07-07 8:35	143	291	71	7.91	182	3.3	3.2	95.5	0.001	0.159	0.006	11.7	0.37	
W7	2021-07-13 9:35	139	279	137.1	7.26	173	2	2.2	88.9	0.001	0.155	0.0089	11.1	0.34	
W7	2021-07-20 11:15	153	285	61.8	7.8	186	4.6	3.3	93	0.001	0.143	0.0153	11.1	0.32	
W7	2021-07-28 9:50	146	267	58.8	7.86	188	5.7	3.7	98.8	0.001	0.123	0.007	10.6	0.32	
W7	2021-08-02 9:55	149	307	89.5	7.15	182	10.1	3.6	91.1	0.001	0.146	0.0091	11.2	0.33	
W7	2021-08-10 17:00	145	277	145.7	7.49	179	29.8	5.2	101.9	0.001	0.0788	0.0116	8.14	0.24	
W7	2021-08-16 13:45	145	287	82.6	7.54	178	3.5	4.1	90.8	0.001	0.0886	0.0078	8.44	0.24	
W7	2021-08-24 10:45	151	292	56.4	7.89	181	2.3	2.6	86.8	0.001	0.115	0.0066	9.2	0.27	
W7	2021-08-29 10:35	148	295	108	7.99	186	3.5	3.3	100.5	0.001	0.111	0.007	9.74	0.3	
W7	2021-09-07 10:30	186	292	40.6	7.92	206	15.9	2.2	88.2	0.001	0.0844	0.007	10	0.33	
W7	2021-09-13 16:35	154	297	128.6	7.52	185	2.2	2.9	86.8	0.001	0.0659	0.0129	9.5	0.3	
W7	2021-09-20 11:35	150	287	83.2	7.91	180	30.6	0.4	97.7	0.001	0.094	0.0077	10.2	0.35	
W7	2021-09-26 10:35	150	301	59.8	7.89	180	3.7	0.8	87.2	0.001	0.0968	0.006	9.19	0.36	
W7	2021-10-06 8:10	142	285	43.1	7.99	176	1	0	102.4	0.001	0.11	0.0135	10	0.39	
W7	2021-10-11 9:40	148	300	77.7	7.8	183	14.5	0	86.4	0.001	0.12	0.0143	10.4	0.38	
W7	2021-10-17 15:00	146	288	107	7.74	182	4.8	0	85.3	0.001	0.149	0.0074	10.7	0.39	
W8	1994-05-15 0:00		232			161	1			0.003	0.005	0.011		1.3	0.12
W8	1994-07-08 0:00		455			312	236			0.004	0.036	0.013		1.4	0.19
W8	1994-08-10 0:00		737			509	318			0.006	0.044	0.02		4.3	0.4
W8	1994-09-26 0:00		597			408	453			0.007	0.027	0.021		0.9	0.27
W8	2005-05-27 0:00	174	113			111	3			0.001	0.0225	0.02	166	0.5	
W8	2005-06-30 0:00	89	176			144	3			0.001	0.005	0.041	1	0.86	
W8	2005-07-29 0:00		203			141	24.7			0.001	0.005	0.02		0.5	
W8	2005-08-30 0:00	99.2	179			147	3			0.0011	0.005	0.023	5.1	0.5	
W8	2005-09-28 0:00	74.7	165			135	3			0.001	0.005	0.02	7.72	0.5	
W8	2005-10-15 0:00		190			140	5.5			0.001	0.0374	0.026		0.5	
W8	2006-05-08 0:00		47.8			116	9.4			0.001	0.005	0.02		0.5	0.049
W8	2006-05-14 18:00	27.6	67.4			107	12.8			0.001	0.005	0.037	1.92	0.5	0.133
W8	2006-05-17 16:00	32.3	71.5			105	3			0.001	0.005		2.14	0.5	0.088
W8	2006-05-20 16:30	39	88.8			116	70.6			0.001	0.005		4.22	0.5	0.096
W8	2006-05-23 15:30	42.1	94.4			113	3			0.001	0.005		4.97	0.5	0.098
W8	2006-05-29 14:00	41.6	91.7			104	3			0.001	0.005		4.88	0.5	0.098
W8	2006-06-02 11:30	48	100			110	5.4			0.001	0.005	0.034	5.35	0.5	0.098
W8	2006-06-08 13:32	46.4	105			127	3			0.001	0.005	0.042	5.07	0.5	0.091
W8	2006-06-15 0:00	89	229			150	8				0.03	0.02	32		
W8	2006-06-23 0:00	84	176			154	2				0.03	0.026	7.9		
W8	2006-06-28 0:00	92	236			138	18				0.002	0.003			
W8	2006-07-07 0:00	87	177			224	2				0.002		7.6		
W8	2006-07-12 0:00	114	284				2				0.06	0.025	39		
W8	2006-08-02 0:00	108	219				4				0.03	0.009	6.5		
W8	2006-08-10 0:00	118	237				2				0.03	0.009	4		
W8	2006-09-06 0:00	152	278				2				0.03	0.004	7.4		
W8	2006-09-13 0:00	145	282				2				0.003	0.005	8		
W8	2006-09-20 0:00	142	281				2				0.03	0.006	7		
W8	2006-10-04 0:00	143	282				2				0.03	0.03	6.8		
W8	2006-12-28 0:00														
W8	2008-05-03 0:00														
W8	2008-05-07 0:00														
W8	2008-05-27 0:00														
W8	2009-05-10 0:00	162	784			610	12			2.53	41.6			3.5	

Station	Date / Time	Dissolved Elements																			
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W7	2014-09-06 9:10	0.00002	0.007	0.00038	0.0686	0.05	0.0001	0.001	33	0.00001	0.0005	0.001	0.00081	0.2	0.00001	0.931	0.005	11.9	0.0235	0.0014	7.48
W7	2014-10-31 11:30	0.00002	0.0051	0.00037	0.0767	0.05	0.0001	0.001	39.8	0.00001	0.0005	0.001	0.00074	0.129	0.00001	1.23	0.005	14.5	0.0512	0.0015	8.51
W7	2014-11-05 14:10	0.00002	0.0067	0.00036	0.0758	0.05	0.0001	0.001	36.1	0.00001	0.0005	0.002	0.00083	0.122	0.00001	1.12	0.005	13.9	0.05	0.0016	8.05
W7	2014-12-09 11:25	0.00002	0.0051	0.00043	0.0971	0.05	0.0001	0.001	47.3	0.00001	0.0005	0.001	0.0012	0.0461	0.00001	1.86	0.005	17.2	0.0398	0.0014	9.93
W7	2015-01-15 14:30	0.00002	0.0037	0.00042	0.115	0.05	0.0001	0.001	59.2	0.00001	0.0005	0.001	0.00166	0.0103	0.00001	2.6	0.005	24.2	0.0134	0.0017	14.8
W7	2015-03-07 11:40	0.00002	0.003	0.0002	0.0822	0.05	0.0001	0.001	45.4	0.00001	0.0005	0.001	0.00127	0.0102	0.00001	2.57	0.005	17.9	0.0069	0.001	10.5
W7	2015-04-14 16:20	0.00002	0.0068	0.00032	0.0812	0.05	0.0001	0.001	43.2	0.00001	0.0005	0.001	0.00357	0.0187	0.00001	2.73	0.005	19.1	0.0111	0.0018	11.2
W7	2015-05-31 13:25	0.00002	0.0068	0.00034	0.0528	0.05	0.0001	0.001	24.1	0.00001	0.0005	0.001	0.00119	0.0818	0.00001	0.852	0.005	8.95	0.0644	0.0013	6.04
W7	2015-06-10 15:05	0.00002	0.0063	0.00042	0.0677	0.05	0.0001	0.001	29.1	0.00001	0.0005	0.001	0.0009	0.0949	0.00001	1.01	0.005	11.4	0.187	0.0016	7.09
W7	2015-07-11 14:10	0.00002	0.0084	0.00036	0.0749	0.05	0.0001	0.001	34.5	0.00001	0.0005	0.001	0.00145	0.0831	0.00001	1.05	0.005	12.7	0.0305	0.0014	7.84
W7	2015-08-21 14:10	0.00002	0.0109	0.00041	0.0681	0.05	0.0001	0.001	33.4	0.00001	0.0005	0.001	0.001	0.12	0.00001	0.926	0.005	11.8	0.0216	0.0014	7.73
W7	2015-09-22 16:45	0.00002	0.0097	0.0004	0.0693	0.05	0.0001	0.001	36	0.00001	0.0005	0.001	0.00084	0.116	0.00001	0.972	0.005	12.8	0.0287	0.0014	8.31
W7	2015-10-15 17:10	0.00002	0.009	0.00031	0.0695	0.05	0.0001	0.001	35.2	0.00001	0.0005	0.001	0.001	0.0983	0.00001	0.957	0.005	11.9	0.0282	0.0012	7.49
W7	2015-12-13 15:51	0.00002	0.0076	0.00027	0.0837	0.05	0.0001	0.001	45.1	0.00001	0.0005	0.001	0.00099	0.0485	0.00001	1.57	0.005	18	0.0102	0.001	10.4
W7	2016-01-05 12:54	0.00002	0.0081	0.00031	0.109	0.05	0.0001	0.001	56.4	0.00001	0.0005	0.001	0.00184	0.0138	0.00001	2.05	0.005	20.2	0.0072	0.0012	13.1
W7	2016-04-28 17:05	0.00001	0.0219	0.00041	0.0357	0.01	0.00002	0.00005	18.7	0.000005	0.00014	0.0003	0.00368	0.18	0.0000079	0.75	0.001	6.62	0.0272	0.000664	4.12
W7	2016-05-24 16:20	0.00001	0.0138	0.00047	0.0523	0.01	0.00002	0.00005	23.1	0.0000058	0.00019	0.00029	0.00189	0.151	0.000005	0.8	0.001	8.56	0.103	0.00117	5.8
W7	2016-06-18 17:10	0.00001	0.008	0.00044	0.0688	0.01	0.00002	0.00005	34.2	0.000005	0.0001	0.0002	0.00118	0.069	0.000005	1.1	0.001	11.7	0.032	0.00143	7.64
W7	2016-06-23 14:50	0.00001	0.0052	0.00039	0.0766	0.01	0.00002	0.00005	37.1	0.000005	0.0001	0.00024	0.00101	0.07	0.000005	1.18	0.0012	12.6	0.0297	0.00153	7.53
W7	2016-07-06 17:00	0.00001	0.0064	0.0004	0.0778	0.01	0.00002	0.00005	36.4	0.000005	0.0001	0.00016	0.00102	0.066	0.000005	1.13	0.0012	12.1	0.0467	0.00163	8.02
W7	2016-07-19 10:05	0.00001	0.0051	0.00041	0.0748	0.01	0.00002	0.00005	39.2	0.000005	0.0001	0.00019	0.00089	0.077	0.000005	1.17	0.0012	13.4	0.0372	0.00146	7.58
W7	2016-08-17 13:25	0.00001	0.0107	0.00048	0.0752	0.01	0.00002	0.00005	37.6	0.000005	0.00011	0.00025	0.00123	0.139	0.000005	1.07	0.001	12.8	0.0371	0.0015	7.83
W7	2016-09-06 11:40	0.00001	0.0095	0.00052	0.0792	0.01	0.00002	0.00005	37	0.0000131	0.00011	0.0003	0.00141	0.193	0.000005	0.94	0.001	12.9	0.0313	0.00134	8.27
W7	2016-10-12 16:00	0.00001	0.0042	0.00045	0.0845	0.01	0.00002	0.00005	40.3	0.000005	0.00014	0.00018	0.00079	0.169	0.000005	1.17	0.0011	13.4	0.0849	0.00124	8
W7	2016-10-23 16:40	0.00001	0.0039	0.00043	0.082	0.01	0.00002	0.00005	38.7	0.000005	0.00011	0.00017	0.00079	0.11	0.000005	1.28	0.001	14.3	0.0667	0.00121	7.85
W7	2016-11-03 15:25	0.00001	0.0079	0.00038	0.0682	0.01	0.00002	0.00005	38.7	0.000005	0.00011	0.00013	0.00063	0.128	0.000005	1.06	0.001	10.8	0.0724	0.00115	6.71
W7	2017-05-16 8:50	0.00001	0.0279	0.00049	0.0413	0.01	0.00002	0.00005	19.8	0.0000084	0.00019	0.00038	0.00568	0.17	0.000005	0.87	0.001	7	0.0314	0.000846	4.88
W7	2017-06-27 9:30	0.00001	0.0101	0.00039	0.0599	0.01	0.00002	0.00005	27.9	0.000005	0.0001	0.00029	0.00147	0.084	0.000005	0.84	0.001	10.1	0.0203	0.0014	6.84
W7	2017-07-04 16:35	0.00001	0.008	0.00041	0.0636	0.01	0.00002	0.00005	30.3	0.000005	0.0001	0.00023	0.00144	0.053	0.000005	0.98	0.001	11.3	0.0263	0.00161	7.43
W7	2017-08-01 11:20	0.00001	0.0171	0.00046	0.076	0.01	0.00002	0.00005	30.6	0.000005	0.00011	0.00033	0.00239	0.14	0.000005	0.85	0.0011	11.8	0.0272	0.00131	7.59
W7	2017-09-08 16:45	0.00001	0.0082	0.00044	0.0777	0.01	0.00002	0.00005	36.4	0.000005	0.0001	0.00021	0.00097	0.083	0.000005	1.2	0.001	14	0.0351	0.00156	8.71
W7	2017-10-03 14:30	0.00001	0.0053	0.00042	0.0702	0.01	0.00002	0.00005	34.5	0.000005	0.0001	0.00017	0.00091	0.102	0.000005	1.02	0.001	12.8	0.0405	0.00137	7.95
W7	2017-11-15 14:15	0.00001	0.0041	0.00055	0.101	0.01	0.00002	0.00005	48.2	0.0000087	0.00022	0.00017	0.00087	0.185	0.000005	1.43	0.0013	17.5	0.195	0.0012	9.25
W7	2017-12-04 14:45	0.00001	0.0042	0.00055	0.103	0.01	0.00002	0.00005	48.6	0.0000208	0.00014	0.00023	0.00241	0.02	0.000005	1.57	0.001	19.6	0.126	0.00101	11.9
W7	2018-05-15 10:30	0.00001	0.0389	0.00061	0.0417	0.01	0.00002	0.00005	18.5	0.0000075	0.00024	0.00041	0.00671	0.601	0.000005	0.7	0.001	6.91	0.0422	0.000699	4.22
W7	2018-06-05 16:30	0.00001	0.0147	0.00041	0.047	0.01	0.00002	0.00005	21.1	0.0000058	0.00016	0.00026	0.003	0.094	0.000005	0.77	0.001	8.01	0.0833	0.00115	5.9
W7	2018-07-03 11:45	0.00001	0.0197	0.00044	0.0573	0.01	0.00002	0.00005	23.8	0.000005	0.0001	0.00041	0.00251	0.103	0.000005	0.7	0.001	9.19	0.0141	0.00122	6.38
W7	2018-08-21 11:15	0.00001	0.0092	0.00044	0.0769	0.01	0.00002	0.00005	34.3	0.000005	0.0001	0.00021	0.00145	0.105	0.000005	1.09	0.0011	13.4	0.0353	0.00151	8.34
W7	2018-09-03 16:50	0.00001	0.0077	0.00044	0.0652	0.01	0.00002	0.00005	32.5	0.000005	0.0001	0.00022	0.00132	0.131	0.000005	0.94	0.001	11.4	0.0335	0.00145	7.71
W7	2018-10-08 15:15	0.00001	0.0037	0.00053	0.0831	0.01	0.00002	0.00005	36.7	0.0000057	0.00014	0.00017	0.00098	0.191	0.000005	1.23	0.0012	15.4	0.0677	0.00133	9.02
W7	2019-05-14 11:00	0.00001	0.0087	0.00047	0.0526	0.01	0.00002	0.00005	24.7	0.000005	0.0001	0.00025	0.00281	0.14	0.000005	1.11	0.001	9.47	0.0271	0.00105	5.74
W7	2019-06-30 13:50	0.00001	0.004	0.00041	0.0792	0.01	0.00002	0.00005	34.1	0.000005	0.0001	0.00015	0.0008	0.06	0.000005	1.2	0.0011	12.7	0.049	0.00147	8.41
W7	2019-07-06 10:50	0.00001	0.0038	0.00039	0.0828	0.01	0.00002	0.00005	38.5	0.000005	0.0001	0.00014	0.0008	0.065	0.000005	1.39	0.0011	14.5	0.0469	0.00148	9.01
W7	2019-08-04 9:40	0.00001	0.0042	0.0004	0.0765	0.01	0.00002	0.00005	34.6	0.000005	0.0001	0.00015	0.00081	0.056	0.000005	1.21	0.0011	14.1	0.0395	0.00144	8.82
W7	2019-09-24 13:50	0.00001	0.0036	0.00038	0.0811	0.01	0.00002	0.00005	35.9	0.000005	0.0001	0.00015	0.00098	0.073	0.000005	1.28	0.0011	14.3	0.033	0.0016	9.29
W7	2019-10-07 13:45	0.00001	0.0035	0.0004	0.0746	0.01	0.00002	0.00005	37.9	0.000005	0.0001	0.00012	0.00079	0.08	0.000005	1.21	0.0012	13.3	0.0391	0.00144	8.49
W7	2019-11-05 8:40	0.00001	0.0048	0.00057	0.0879	0.01	0.00002	0.00005	40.7	0.0000318	0.00013	0.00017	0.00154	0.21	0.000005	1.39	0.0013	16.3	0.0913	0.00121	9.35
W7	2020-05-19 18:00	0.00001	0.0175	0.00043	0.0418	0.01	0.00002	0.00005	21.2	0.000005	0.0001	0.00034	0.00391	0.073	0.000005	0.702	0.001	8.88	0.0102	0.00116	6.26
W7	2020-06-11 10:40	0.00001	0.0071	0.00048	0.0617	0.01	0.00002	0.00005	29.6	0.000005	0.00014	0.00024	0.0015	0.158	0.000005	0.844	0.001	10.6	0.082	0.00244	6.94
W7	2020-07-08 10:55	0.00001	0.0058	0.00038	0.0661	0.01	0.00002	0.00005	32.8	0.000005	0.0001	0.00023	0.00115	0.041	0.000005	0.92	0.001	12.1	0.0156	0.00152	7.9
W7	2020-08-20 17:45	0.00001	0.0186	0.00037	0.0599	0.01	0.00002	0.00005	30.3	0.0000102	0.0001	0.00034	0.00373	0.092	0.000005	0.717	0.001	11.2	0.0119	0.00125	7.4
W7	2020-08-30 10:00	0.00001	0.012	0.00043	0.0564	0.01	0.00002	0.00005	27.8	0.000005	0.0001	0.00036	0.00192	0.096	0.000005	0.666	0.001	10.5	0.0122	0.0011	6.97
W7	2020-09-01 7:20	0.00001	0.0122	0.00042	0.0657	0.01	0.00002	0.00005	37	0.000005	0.0001	0.00036	0.00183	0.086	0.000005	0.82	0.001	13.5	0.0152	0.00131	9.09
W7	2020-09-07 15:10	0.00001	0.011	0.0004	0.064	0.01	0.00002	0.00005	30.1	0.0000121	0.0001	0.00037	0.00209	0.089	0.000005	0.821	0.001	11.5	0.016	0.00127	7.27
W7	2020-09-14 12:50	0.00001	0.0114	0.00039	0.0576	0.01	0.00002	0.00005	30.2	0.000005	0.0001	0.00039	0.00147	0.095	0.000005	0.787	0.001	10.8	0.0146	0.00121	6.89
W7	2020-09-28 11:00	0.00001	0.0134	0.00039	0.0531	0.01	0.00002	0.00005	31.1	0.000005	0.0001	0.0004	0.00578	0.096	0.000005	0.803	0.001	11.1	0.0144	0.00129	7.05
W7	2020-10-05 15:45	0.00001	0.0103	0.00044	0.0651	0.01	0.00002	0.00005	31	0.000005	0.0001	0.00048	0.00154	0.075	0.000005	0.872	0.001	11.7	0.0148	0.00129	8.01
W7	2020-10-12 12:55	0.00001	0.0086	0.0004	0.0592	0.01	0.00002	0.00005	30.4	0.000005	0.0001	0.00031	0.00157	0.092	0.000005	0.791	0.001	11.4	0.0146	0.00116	7.37
W7	2021-05-18 16:45	0.00001	0.0518	0.00044	0.0307	0.01	0.00002	0.00005	13.8	0.0000083	0.00014	0.0005	0.00729	0.226	0.000005	0.628	0.001	4.92	0.0277	0.00059	3.16
W7	2021-05-24 11:00	0.00001	0.109	0.00056	0.0341	0.01	0.000022	0.00005	11.3	0.0000061	0.00031	0.00068	0.00859	0.609	0.000006	0.349	0.001	3.6	0.0454	0.000342	2.57
W7	2021-05-31 10:20	0.00001	0.0427	0.00052	0.0435	0.01	0.000028	0.00005	16.8	0.000005	0.00015	0.00051	0.00468	0.31	0.000005	0.44	0.001	5.63	0.0179	0.000858	3.83
W7	2021-06-08 10:10	0.00001	0.0237	0.00046	0.0457	0.01	0.00002	0.00005	21.3	0.000005	0.0001	0.0005	0.00301	0.164	0.000005	0.576	0.001	7.45	0.00576	0.00114	5.11
W7	2021-06-16 14:30	0.00001	0.013	0.00039	0.0555	0.01	0.00002	0.00005	26.1	0.0000073	0.0001	0.0005	0.00212	0.067	0.000005	0.768	0.001	9.3	0.00784	0.00144	6.06
W7	2021-06-23 9:10	0.00001	0.0094	0.00032	0.0676	0.01	0.00002	0.00005	30.2	0.000005	0.0001	0.0005	0.00164	0.051	0.000005	0.935	0.001	11.4	0.00826	0.00156	7.51
W7	2021-06-28 13:10	0.00001	0.0374	0.00039	0.0751	0.01	0.00002	0.00005	32.1	0.0000071	0.0001	0.0005	0.00166	0.097	0.000005	1.05	0.001	12.5	0.0134	0.00169	8.13
W7	2021-07-07 8:35	0.00001	0.0068	0.00037	0.0716	0.01	0.00002	0.00005	36.5	0.000005	0.0001	0.0005	0.00119	0.038	0.000005	1.09	0.0012	12.8	0.0118	0.00154	8.37
W7	2021-07-13 9:35	0.00001	0.0057	0.00031	0.0707	0.01	0.00002	0.00005	33.5	0.000005	0.0001	0.0005	0.00104	0.037	0.000005	1.08	0.0011	12.3	0.0128	0.00163	7.73
W7	2021-07-20 11:15	0.00001	0.0068	0.00035	0.077	0.01	0.00002	0.00005	35.4	0.0000053	0.0001	0.0005	0.00121	0.044	0.000005	1.14	0.0011	13.1	0.0144	0.00177	7.91
W7	2021-07-28 9:50	0.00001	0.0077	0.00037	0.08	0.01	0.00002	0.00005	37.6	0.000005	0.0001	0.0005	0.0014	0.058	0.000005	1.16	0.0012	14.4	0.0149	0.00173	8.94
W7	2021-08-02 9:55	0.00001	0.0059	0.0004	0.0736	0.01	0.00002	0.00005	33.8	0.000005	0.0001	0.0005	0.00116	0.045	0.000005	1.19	0.0012	12.8	0.0175	0.00163	8.57
W7	2021-08-10 17:00	0.00001	0.0083	0.00041	0.0688	0.01	0.00002	0.00005	33.9	0.000005	0.0001	0.0005	0.00129	0.076	0.000005	0.95	0.001	12.8	0.0159	0.00177	8.64
W7	2021-08-16 13:45	0.00001	0.0096	0.00034	0.0663	0.01	0.00002	0.00005	33.3	0.000005	0.0001	0.0005	0.00141	0.09	0.000005	0.984	0.001	12.9	0.0148	0.00162	8.54
W7	2021-08-24 10:45	0.00001	0.0055	0.00038	0.0687	0.01	0.00002	0.00005	32.8	0.000005	0.0001	0.0005	0.00118	0.086	0.000005	1.03	0.0011	12.7	0.0164	0.00175	8.71
W7	2021-08-29 10:35	0.00001	0.0097	0.00044	0.0784	0.01	0.00002	0.00005	36.8	0.000005	0.0001	0.0005	0.00236	0.092	0.000005	1.17	0.0011	13.9	0.0186	0.00173	9.08
W7	2021-09-07 10:30	0.00001	0.0057	0.00039	0.0718	0.01	0.00002	0.00005	35.9	0.000005	0.0001	0.0005	0.00102	0.076	0.000005	1.1	0.0011	13.3	0.0206	0.00172	8.41
W7	2021-09-13 16:35	0.00001	0.0121	0.00037	0.074	0.01	0.00002	0.00005	34.6	0.000005	0.0001	0.0005	0.00166	0.071	0.000005	1.21	0.0012	13.1	0.0199	0.00179	8.58
W7	2021-09-20 11:35	0.00001	0.0058	0.00035	0.072	0.01	0.00002	0.00005	32.7	0.000005	0.0001	0.0005	0.00089	0.062	0.000005	1.14	0.001	13	0.0196	0.00169	8.33
W7	2021-09-26 10:35	0.00001	0.0054	0.00036	0.0673	0.01	0.00002	0.00005	33.8	0.000005	0.0001	0.0005	0.00075	0.063	0.000005	1.09	0.0013	12.5	0.017	0.00172	8.26
W7	2021-10-06 8:10	0.00001	0.0042	0.00039	0.0641	0.01	0.00002	0.00005	32.6	0.0000253	0.0001	0.0005	0.00102	0.065	0.000005	1.02	0.001	13	0.0233	0.00152	8.6
W7	2021-10-11 9:40	0.00001	0.005	0.00043	0.0682	0.01	0.00002	0.00005	34.4	0.000005	0.0001	0.0005	0.0009	0.066	0.000005	1.08	0.001	14.1	0.0242	0.00153	8.78
W7	2021-10-17 15:00	0.00001	0.0049	0.00035	0.0725	0.01	0.00002	0.00005	34.8	0.000005	0.0001	0.0005	0.00096	0.061	0.000005	1.15	0.0011	13.4	0.0181	0.00173	8.59
W8	1994-05-15 0:00	0.0001	0.036	0.0004	0.041	0.1	0.005	0.1	21	0.0002	0.001	0.001	0.003	0.101		1.5		15.7	0.025	0.001	8.1
W8	1994-07-08 0:00	0.0001	0.005	0.0004	0.07	0.1	0.005	0.1	40.9	0.0002	0.001	0.001	0.005	0.14		1.16		31.2	0.092	0.001	15.8
W8	1994-08-10 0:00	0.0001	0.033	0.0006	0.112	0.1	0.005	0.1	63.1	0.0002	0.001	0.001	0.004	0.143		1.77		52	0.146	0.001	35.1
W8	1994-09-26 0:00	0.0001	0.018	0.0004	0.082	0.1	0.005	0.1	50.6	0.0002	0.001	0.001	0.004	0.134		1.67		41.5	0.11	0.001	23.2
W8	2005-05-27 0:00	0.00002	0.0427	0.0005	0.039	0.1	0.001		16.6	0.00005	0.0003	0.001	0.0141	0.194	0.00002	2	0.005	5.05	0.00284	0.001	2.6
W8	2005-06-30 0:00	0.00001	0.0193	0.00043	0.0466	0.01	0.0005	0.0005	24.8	0.00005	0.0001	0.00061	0.00942	0.249		2	0.005	7.68	0.0142	0.000547	4.5
W8	2005-07-29 0:00	0.00001	0.0201	0.00045	0.0538	0.01	0.0005	0.0005	30.9	0.00005	0.00014	0.00052	0.00863	0.352		2	0.005	9.39	0.0206	0.000589	3.9
W8	2005-08-30 0:00	0.00002	0.0259	0.0005	0.054	0.1	0.001		26.3	0.000017	0.0003	0.001	0.0081	0.544	0.00002	2	0.005	8.28	0.0296	0.001	3.9
W8	2005-09-28 0:00	0.00002	0.0305	0.0005	0.049	0.1	0.001		25.3	0.000017	0.0003	0.001	0.0081	0.556	0.00002	2	0.005	7.73	0.0387	0.001	3.9
W8	2005-10-15 0:00	0.000031	0.0258	0.0005	0.0479	0.01	0.0005	0.0005	26.8	0.00005	0.00028	0.0005	0.00561	0.711		2	0.005	7.92	0.223	0.00169	4.8
W8	2006-05-08 0:00	0.00001	0.0919	0.00025	0.0253	0.01	0.0005	0.0005	8.55	0.00005	0.00017	0.0005	0.0159	0.196		2	0.005	2.33	0.034	0.000179	2
W8	2006-05-14 18:00	0.00001	0.0709	0.00037	0.0349	0.01	0.0005	0.0005	12.1	0.00005	0.00028	0.0005	0.0174	0.291		2	0.005	3.35	0.0782	0.000363	2
W8	2006-05-17 16:00																				
W8	2006-05-20 16:30																				
W8	2006-05-23 15:30																				
W8	2006-05-29 14:00																				
W8	2006-06-02 11:30	0.00001	0.0642	0.0004	0.0364	0.01	0.0005	0.0005	16.3	0.00005	0.0001	0.00052	0.017	0.188		2	0.005	4.85	0.00329	0.000474	3.2
W8	2006-06-08 13:32																				
W8	2006-06-15 0:00		0.023	0.0004	0.064	0.004	0.0001	0.0005	32.4	0.00001	0.0001	0.0005	0.013	0.28		0.5	0.001	9	0.133	0.002	5.8
W8	2006-06-23 0:00		0.024	0.0004	0.05	0.002	0.0001	0.0005	25.4	0.00001	0.0001	0.0009	0.011	0.22		0.4	0.001	7.2	0.018	0.001	3.5
W8	2006-06-28 0:00		0.15	0.0006	0.071	0.002	0.0001	0.0005	26.9	0.00001	0.0005	0.0008	0.042	0.34		1.3	0.001	8.4	0.098	0.002	5.8
W8	2006-07-07 0:00		0.017	0.0006	0.054	0.002	0.0001	0.0007	21	0.00003	0.0001	0.0007	0.011	0.31		0.4	0.001	7.4	0.012	0.001	4.4
W8	2006-07-12 0:00		0.006	0.0004	0.072	0.008	0.0001	0.0007	34.7	0.00002	0.0001	0.0008	0.007	0.19		1.2	0.001	11.5	0.147	0.003	7.3
W8	2006-08-02 0:00		0.015	0.0004	0.058	0.002	0.0001	0.0005	31.4	0.00001	0.0002	0.0006	0.007	0.28		0.4	0.001	9.3	0.02	0.001	5.4
W8	2006-08-10 0:00		0.022	0.0004	0.061	0.002	0.0001	0.0005	31.6	0.00001	0.0002	0.0014	0.008	0.29		0.4	0.001	9.2	0.077	0.001	5.3
W8	2006-09-06 0:00		0.012	0.0005	0.062	0.002	0.0001	0.0005	38.8	0.00001	0.0001	0.001	0.007	0.39		0.5	0.001	11.9	0.037	0.001	6.2
W8	2006-09-13 0:00		0.015	0.0004	0.063	0.002	0.0001	0.0005	39.1	0.00001	0.0001	0.0009	0.006	0.37		0.7	0.001	12.6	0.041	0.001	6.3
W8	2006-09-20 0:00		0.015	0.0004	0.064	0.002	0.0001	0.0005	40.4	0.00001	0.0001	0.001	0.006	0.29		0.6	0.001	13	0.053	0.001	5.7
W8	2006-10-04 0:00		0.012	0.0005	0.063	0.002	0.0001	0.0005	38.5	0.00011	0.0002	0.0007	0.005	0.27		0.6	0.001	11.9	0.049	0.001	6
W8	2006-12-28 0:00		0.005	0.0002	0.057	0.021	0.0001	0.0005	50.2	0.00001	0.0006	0.0011	0.001	0.01	0.0001	1.5	0.004	26.9	0.013	0.002	16.6
W8	2008-05-03 0:00		0.05	0.0003	0.043	0.005	0.00004		18.4	0.00008	0.00027	0.0014	0.05	0.09	0.00001	2.05	0.001	4.29	0.0611	0.00354	4.33
W8	2008-05-07 0:00																				
W8	2008-05-27 0:00			0.0006	0.09	0.069	0.00004		89.1	0.00008	0.00064	0.0012	0.038	0.15	0.00001	4.6	0.003	19.6	0.13	0.0124	14.1
W8	2009-05-10 0:00	0.00002	0.009	0.0006	0.11	0.072	0.0001	0.0005	107	0.00009	0.0008	0.0006	0.096	0.02	0.0001	7.6	0.004	19.8	0.147	0.013	20.2

Station	Date / Time	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W7	2014-09-06 9:10	0.001	0.0002	0.0005	3.2	0.00017	5.64	0.005	0.352	0.005	0.00005	0.00104	0.005	0.005	0.0005
W7	2014-10-31 11:30	0.001	0.0002	0.0005	4.9	0.0002	6.85	0.005	0.406	0.005	0.00005	0.00134	0.005	0.005	0.0005
W7	2014-11-05 14:10	0.0015	0.0002	0.0005	4.3	0.00015	5.82	0.005	0.394	0.005	0.00005	0.00138	0.005	0.005	0.0005
W7	2014-12-09 11:25	0.001	0.0002	0.0005	6.9	0.00029	7.52	0.005	0.502	0.005	0.00005	0.00149	0.005	0.005	0.0005
W7	2015-01-15 14:30	0.001	0.0002	0.0005	10.3	0.00058	8.85	0.005	0.723	0.005	0.00005	0.00233	0.005	0.005	0.0005
W7	2015-03-07 11:40	0.0011	0.0002	0.0005	8.2	0.00046	7.45	0.005	0.51	0.005	0.00005	0.00103	0.005	0.005	0.0005
W7	2015-04-14 16:20	0.001	0.0002	0.0005	7.2	0.00038	8.36	0.005	0.514	0.005	0.00005	0.00173	0.005	0.005	0.0005
W7	2015-05-31 13:25	0.001	0.0002	0.0005	3.1	0.00014	4.51	0.005	0.249	0.005	0.00005	0.00098	0.005	0.005	0.0005
W7	2015-06-10 15:05	0.001	0.0002	0.0005	4.1	0.00016	5.07	0.005	0.305	0.005	0.00005	0.00134	0.005	0.005	0.0005
W7	2015-07-11 14:10	0.001	0.0002	0.0005	4.1	0.00013	5.58	0.005	0.372	0.005	0.00005	0.00146	0.005	0.005	0.0005
W7	2015-08-21 14:10	0.001	0.0002	0.0005	3	0.00014	5.95	0.005	0.37	0.005	0.00005	0.00118	0.005	0.005	0.0005
W7	2015-09-22 16:45	0.001	0.0002	0.0005	4	0.00013	6.66	0.005	0.372	0.005	0.00005	0.00115	0.005	0.005	0.0005
W7	2015-10-15 17:10	0.001	0.0002	0.0005	3	0.00017	6.13	0.005	0.355	0.005	0.00005	0.00123	0.005	0.005	0.0005
W7	2015-12-13 15:51	0.0023	0.0005	0.0005	6.2	0.00021	7.92	0.005	0.424	0.005	0.00005	0.00077	0.005	0.005	0.0005
W7	2016-01-05 12:54	0.001	0.0002	0.0005	3.3	0.00032	9.76	0.005	0.543	0.005	0.00005	0.00121	0.005	0.005	0.0005
W7	2016-04-28 17:05	0.00135	0.00005	0.0001	1.49	0.000092	4.48	0.0001	0.164	0.00058	0.00001	0.000358	0.00062	0.0024	0.0003
W7	2016-05-24 16:20	0.00123	0.00005	0.0001	2.48	0.000122	4.9	0.0001	0.228	0.0005	0.00001	0.000661	0.00106	0.0038	0.0003
W7	2016-06-18 17:10	0.00081	0.00005	0.0001	3.76	0.000183	5.74	0.0001	0.321	0.00038	0.00001	0.0012	0.00086	0.001	0.0003
W7	2016-06-23 14:50	0.00086	0.00005	0.0001	3.9	0.000172	5.92	0.0001	0.36	0.0003	0.00001	0.0014	0.00074	0.001	0.0003
W7	2016-07-06 17:00	0.0009	0.00005	0.0001	4.01	0.000174	5.57	0.0001	0.396	0.0003	0.00001	0.00151	0.00075	0.0021	0.0003
W7	2016-07-19 10:05	0.00083	0.00005	0.0001	3.8	0.000163	6.15	0.0001	0.388	0.0003	0.00001	0.00135	0.00073	0.001	0.0003
W7	2016-08-17 13:25	0.00108	0.00005	0.0001	3.03	0.000181	6.48	0.0001	0.378	0.00036	0.00001	0.00121	0.00077	0.0013	0.0003
W7	2016-09-06 11:40	0.00133	0.00005	0.0001	2.64	0.000133	6.86	0.0001	0.362	0.00051	0.00001	0.00108	0.00077	0.0018	0.0003
W7	2016-10-12 16:00	0.00089	0.00005	0.0001	3.54	0.000174	6.21	0.0001	0.418	0.0003	0.00001	0.0013	0.0005	0.001	0.0003
W7	2016-10-23 16:40	0.00077	0.00005	0.0001	4.05	0.000184	6.08	0.0001	0.424	0.0003	0.00001	0.00142	0.0005	0.001	0.0003
W7	2016-11-03 15:25	0.00067	0.00005	0.0001	4.23	0.000215	5.93	0.0001	0.436	0.0003	0.00001	0.00144	0.0005	0.001	0.0003
W7	2017-05-16 8:50	0.00175	0.00005	0.0001	1.54	0.000141	4.75	0.0001	0.169	0.0006	0.00001	0.00041	0.00068	0.001	0.00043
W7	2017-06-27 9:30	0.00125	0.00005	0.0001	3	0.000174	5.86	0.0001	0.279	0.0006	0.00001	0.000948	0.00088	0.001	0.0003
W7	2017-07-04 16:35	0.001	0.00005	0.0001	3.6	0.000169	5.84	0.0001	0.332	0.00032	0.00001	0.00122	0.00086	0.001	0.0003
W7	2017-08-01 11:20	0.00138	0.00005	0.0001	2.28	0.000119	6.22	0.0001	0.317	0.0006	0.00001	0.000917	0.00119	0.0012	0.0003
W7	2017-09-08 16:45	0.00099	0.00005	0.0001	2.55	0.000143	6.17	0.0001	0.372	0.0003	0.00001	0.000824	0.00075	0.001	0.0003
W7	2017-10-03 14:30	0.00083	0.00005	0.0001	3.36	0.000154	6.32	0.0001	0.377	0.0003	0.00001	0.00146	0.00057	0.001	0.0003
W7	2017-11-15 14:15	0.00095	0.00005	0.0001	5.34	0.000161	7.17	0.0001	0.523	0.00035	0.00001	0.00118	0.0005	0.004	0.0003
W7	2017-12-04 14:45	0.00106	0.00005	0.00011	6.49	0.000128	7.46	0.0001	0.503	0.0003	0.00001	0.00112	0.0005	0.0302	0.0003
W7	2018-05-15 10:30	0.00174	0.00005	0.0001	1.37	0.000137	4.26	0.0001	0.157	0.00131	0.00001	0.000375	0.00128	0.001	0.00048
W7	2018-06-05 16:30	0.00185	0.00005	0.0001	1.76	0.000129	4.02	0.0001	0.216	0.00064	0.00001	0.000798	0.00097	0.001	0.0003
W7	2018-07-03 11:45	0.00163	0.00005	0.0001	2.06	0.000137	5.73	0.0001	0.242	0.001	0.00001	0.000705	0.00104	0.001	0.00035
W7	2018-08-21 11:15	0.00097	0.00005	0.0001	3.41	0.000178	5.97	0.0001	0.392	0.00044	0.00001	0.00131	0.00078	0.001	0.0003
W7	2018-09-03 16:50	0.00108	0.00005	0.0001	2.56	0.000197	6.03	0.0001	0.326	0.00046	0.00001	0.00114	0.0007	0.001	0.0003
W7	2018-10-08 15:15	0.00079	0.00005	0.0001	4.31	0.000212	6.46	0.0001	0.43	0.0003	0.00001	0.00134	0.00058	0.001	0.0003
W7	2019-05-14 11:00	0.00101	0.00005	0.0001	2.7	0.000181	5.08	0.0001	0.267	0.00037	0.00001	0.000847	0.00076	0.001	0.0003
W7	2019-06-30 13:50	0.00062	0.00005	0.0001	4.66	0.00024	5.42	0.0001	0.353	0.0003	0.00001	0.00186	0.0008	0.001	0.0003
W7	2019-07-06 10:50	0.00068	0.00005	0.0001	4.97	0.000233	5.68	0.0001	0.417	0.0003	0.00001	0.00191	0.00074	0.001	0.0003
W7	2019-08-04 9:40	0.00071	0.00005	0.0001	4.8	0.000195	6.31	0.0001	0.403	0.0003	0.00001	0.00162	0.00077	0.001	0.0003
W7	2019-09-24 13:50	0.00085	0.00005	0.0001	4.54	0.000183	6.11	0.0001	0.405	0.0003	0.00001	0.00166	0.00059	0.001	0.0003
W7	2019-10-07 13:45	0.00055	0.00005	0.0001	4.68	0.000169	5.41	0.0001	0.455	0.0003	0.00001	0.00166	0.0005	0.001	0.0003
W7	2019-11-05 8:40	0.0006	0.00005	0.0001	5.26	0.000202	6.23	0.0001	0.457	0.00041	0.00001	0.00132	0.00053	0.0021	0.0003
W7	2020-05-19 18:00	0.00144	0.00005	0.0001	1.86	0.00017	5	0.0001	0.208	0.00054	0.00001	0.000515	0.00085	0.001	0.00035
W7	2020-06-11 10:40	0.00101	0.00005	0.0001	3.24	0.000176	5.16	0.0001	0.298	0.00031	0.00001	0.00116	0.00095	0.001	0.0002
W7	2020-07-08 10:55	0.00088	0.00005	0.0001	3.35	0.00013	5.81	0.0001	0.371	0.0003	0.00001	0.00124	0.00077	0.001	0.0002
W7	2020-08-20 17:45	0.0012	0.00005	0.0001	2.62	0.000158	6.53	0.0001	0.33	0.00119	0.00001	0.000707	0.0007	0.0034	0.00026
W7	2020-08-30 10:00	0.00122	0.00005	0.0001	2.52	0.00013	6.09	0.0001	0.287	0.00046	0.00001	0.000599	0.00069	0.001	0.00026
W7	2020-09-01 7:20	0.00124	0.00005	0.0001	2.3	0.000164	6.42	0.0001	0.371	0.00051	0.00001	0.000648	0.00074	0.001	0.00025
W7	2020-09-07 15:10	0.001	0.00005	0.0001	2.92	0.000271	6.14	0.0001	0.346	0.00043	0.00001	0.000795	0.00061	0.001	0.00025
W7	2020-09-14 12:50	0.00113	0.00005	0.0001	3.18	0.000112	6.31	0.0001	0.312	0.00039	0.00001	0.00078	0.00056	0.001	0.00023
W7	2020-09-28 11:00	0.00096	0.00005	0.0001	3.24	0.000139	5.76	0.0001	0.324	0.00079	0.00001	0.000782	0.00059	0.0013	0.00021
W7	2020-10-05 15:45	0.0011	0.00005	0.0001	2.57	0.000127	6.04	0.0001	0.323	0.00044	0.00001	0.00066	0.00068	0.001	0.00021
W7	2020-10-12 12:55	0.001	0.00005	0.0001	3.12	0.000088	6.37	0.0001	0.31	0.0004	0.00001	0.000716	0.00055	0.001	0.00021
W7	2021-05-18 16:45	0.00159	0.00005	0.0001	0.83	0.000129	3.88	0.0001	0.128	0.00124	0.00001	0.000216	0.00088	0.0011	0.00049
W7	2021-05-24 11:00	0.0023	0.00005	0.0001	0.64	0.000107	4.21	0.0001	0.0813	0.00254	0.00001	0.000105	0.00144	0.0014	0.00076
W7	2021-05-31 10:20	0.00189	0.00005	0.0001	1.14	0.000165	4.74	0.0001	0.152	0.00137	0.00001	0.00027	0.00124	0.001	0.00058
W7	2021-06-08 10:10	0.00136	0.00005	0.00011	1.98	0.00017	5.56	0.0001	0.196	0.00088	0.00001	0.000445	0.00101	0.001	0.00041
W7	2021-06-16 14:30	0.00106	0.00005	0.0001	2.6	0.000167	5.14	0.0001	0.273	0.0005	0.00001	0.000792	0.00082	0.001	0.00024
W7	2021-06-23 9:10	0.00098	0.00005	0.0001	3.15	0.000207	5.85	0.0001	0.323	0.00059	0.00001	0.00103	0.00077	0.001	0.0002
W7	2021-06-28 13:10	0.00112	0.00005	0.0001	3.41	0.000268	6.29	0.0001	0.352	0.00199	0.00001	0.00113	0.00102	0.001	0.0002
W7	2021-07-07 8:35	0.0008	0.00005	0.0001	3.48	0.000205	6.22	0.0001	0.381	0.0003	0.00001	0.00132	0.00073	0.001	0.0002
W7	2021-07-13 9:35	0.00069	0.00005	0.0001	3.94	0.000203	5.8	0.0001	0.373	0.0003	0.00001	0.00128	0.00066	0.001	0.0002
W7	2021-07-20 11:15	0.0008	0.00005	0.0001	3.68	0.000197	6.04	0.0001	0.387	0.00032	0.00001	0.00129	0.00077	0.001	0.0002
W7	2021-07-28 9:50	0.00081	0.00005	0.0001	3.47	0.000183	6.64	0.0001	0.415	0.00044	0.00001	0.00118	0.0008	0.001	0.0002
W7	2021-08-02 9:55	0.00079	0.00005	0.0001	3.61	0.000237	6.12	0.0001	0.396	0.0004	0.00001	0.00134	0.00076	0.001	0.0002
W7	2021-08-10 17:00	0.00094	0.00005	0.0001	2.74	0.00018	6.24	0.0001	0.362	0.00033	0.00001	0.00113	0.00085	0.001	0.0002
W7	2021-08-16 13:45	0.00091	0.00005	0.0001	2.69	0.000106	5.85	0.0001	0.371	0.00048	0.00001	0.00112	0.00075	0.001	0.0002
W7	2021-08-24 10:45	0.00112	0.00005	0.0001	3.66	0.00017	6.1	0.0001	0.397	0.0003	0.00001	0.0012	0.00067	0.001	0.0002
W7	2021-08-29 10:35	0.00094	0.00005	0.0001	3.69	0.000198	6.42	0.0001	0.395	0.00044	0.00001	0.00122	0.00069	0.0013	0.0002
W7	2021-09-07 10:30	0.00077	0.00005	0.0001	3.49	0.000168	6	0.0001	0.383	0.0003	0.00001	0.00131	0.00062	0.001	0.0002
W7	2021-09-13 16:35	0.00079	0.00005	0.0001	3.28	0.000189	6.07	0.0001	0.401	0.00055	0.00001	0.00128	0.00063	0.0013	0.0002
W7	2021-09-20 11:35	0.0007	0.00005	0.0001	3.49	0.000151	5.97	0.0001	0.388	0.0003	0.00001	0.00126	0.00055	0.001	0.0002
W7	2021-09-26 10:35	0.00063	0.00005	0.0001	3.41	0.00015	6.17	0.0001	0.39	0.00038	0.00001	0.00124	0.00064	0.001	0.0002
W7	2021-10-06 8:10	0.00079	0.00005	0.0001	3.34	0.000176	5.84	0.0001	0.346	0.0003	0.00001	0.00115	0.00054	0.0022	0.0002
W7	2021-10-11 9:40	0.0008	0.00005	0.0001	3.43	0.000157	5.84	0.0001	0.369	0.0003	0.00001	0.0013	0.00052	0.001	0.0002
W7	2021-10-17 15:00	0.0007	0.00005	0.0001	3.6	0.000166	6.23	0.0001	0.39	0.0003	0.00001	0.00146	0.00058	0.001	0.0002
W8	1994-05-15 0:00	0.001	0.001	0.0001		0.0005	3.12		0.233			0.00049	0.03	0.006	
W8	1994-07-08 0:00	0.003	0.001	0.0001		0.0005	4.95		0.405			0.00086	0.03	0.005	
W8	1994-08-10 0:00	0.001	0.001	0.0001		0.0005	5.46		0.736			0.0021	0.03	0.005	
W8	1994-09-26 0:00	0.001	0.001	0.0001		0.0005	5.21		0.553			0.00167	0.03	0.005	
W8	2005-05-27 0:00	0.0018		0.0005		0.001		0.0005		0.01	0.0002	0.0002	0.03	0.005	
W8	2005-06-30 0:00	0.00144	0.00005	0.0001		0.001	5.25	0.0001	0.113	0.01	0.0001	0.000059	0.001	0.0012	
W8	2005-07-29 0:00	0.00157	0.00005	0.0001		0.001	4.95	0.0001	0.132	0.01	0.0001	0.000074	0.001	0.0019	
W8	2005-08-30 0:00	0.0016		0.0005		0.001		0.0005		0.01	0.0002	0.0002	0.03	0.005	
W8	2005-09-28 0:00	0.0015		0.0005		0.001		0.0005		0.01	0.0002	0.0002	0.03	0.005	
W8	2005-10-15 0:00	0.00096	0.00005	0.0001		0.001	6.54	0.0001	0.171	0.01	0.0001	0.000093	0.001	0.001	
W8	2006-05-08 0:00	0.00113	0.00005	0.0001		0.001	2.33	0.0001	0.0326	0.01	0.0001	0.000022	0.001	0.0042	
W8	2006-05-14 18:00	0.00185	0.00005	0.0001		0.001	3.04	0.0001	0.0513	0.01	0.0001	0.000043	0.001	0.0019	
W8	2006-05-17 16:00														
W8	2006-05-20 16:30														
W8	2006-05-23 15:30														
W8	2006-05-29 14:00														
W8	2006-06-02 11:30	0.00204	0.00005	0.0001		0.001	4.04	0.0001	0.07	0.01	0.0001	0.00004	0.001	0.0017	
W8	2006-06-08 13:32														
W8	2006-06-15 0:00	0.001	0.0001	0.0002	10.4	0.0002	6.11	0.001	0.221	0.0021	0.00005	0.0005	0.0008	0.001	
W8	2006-06-23 0:00	0.002	0.0001	0.0002	2.8	0.0002	5.3	0.001	0.121	0.0009	0.00005	0.0005	0.0006	0.001	
W8	2006-06-28 0:00	0.002	0.0002	0.0002	10.9	0.0002	6.92	0.001	0.223	0.0067	0.00005	0.0005	0.0014	0.002	
W8	2006-07-07 0:00	0.0023	0.0001	0.0002	3	0.0002	6.44	0.001	0.127	0.0012	0.00005	0.0005	0.001	0.003	
W8	2006-07-12 0:00	0.0011	0.0023	0.0002	14.6	0.0002	6.35	0.001	0.334	0.0012	0.00005	0.0005	0.0015	0.001	
W8	2006-08-02 0:00	0.0011	0.0001	0.0002	2.7	0.0002	5.96	0.001	0.108	0.0007	0.00005	0.0005	0.001	0.001	
W8	2006-08-10 0:00	0.0015	0.0001	0.0002	2.5	0.0002	5.75	0.001	0.15	0.0011	0.00005	0.0005	0.0015	0.001	
W8	2006-09-06 0:00	0.0014	0.0001	0.0002	2.8	0.0002	6.02	0.001	0.191	0.0008	0.00005	0.0005	0.0017	0.001	
W8	2006-09-13 0:00	0.0013	0.0001	0.0002	2.6	0.0002	5.69	0.001	0.177	0.0008	0.00005	0.0005	0.0014	0.001	
W8	2006-09-20 0:00	0.0007	0.0001	0.0002	2.6	0.0002	5.97	0.001	0.174	0.0005	0.00005	0.0005	0.0017	0.001	
W8	2006-10-04 0:00	0.0017	0.0001	0.0002	2.4	0.0002	5.88	0.001	0.18	0.0009	0.00005	0.0005	0.001	0.001	
W8	2006-12-28 0:00	0.0005	0.0001	0.0002	15.5	0.0002	6.2	0.001	0.661	0.0017	0.00005	0.0022	0.003	0.001	
W8	2008-05-03 0:00	0.002	0.0001	0.0024		0.0006	1.13	0.004	0.178	0.0022	0.00001	0.0006	0.00029	0.001	0.0002
W8	2008-05-07 0:00														
W8	2008-05-27 0:00	0.001	0.0001	0.0023		0.0029	1.94	0.004	1.05	0.0048	0.00001	0.0016	0.00062	0.005	0.0003
W8	2009-05-10 0:00	0.0014	0.0001	0.0002	23.6	0.0041	4.78	0.001	1.22	0.0014	0.00005	0.0007	0.0005	0.005	

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species						Dissolved Elements																																	
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N-NO_2$	$N-NO_3$	$N-NH_3$	SO_4-D	Chlord	Fluord	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W8	2009-05-28 0:00	180	881		7.4	648	14	1.2					96.3	3.61		0.00001	0.021	0.0004	0.114	0.081	0.00004	0.0001	120	0.00211	0.00109	0.0004	0.165	0.06	0.00001	6.1	0.002	21.8	0.396	0.00799	20.1	0.002	0.0002	0.0009	29.4	0.0041	5.01	0.0001	1.1	0.0019	0.00001	0.001	0.00036	0.007	0.0001
W8	2009-06-04 0:00	135	370		7.57	208	5	5.5					42.2	3.8		0.00001	0.029	0.0003	0.088	0.013	0.00004	0.0001	43.2	0.00002	0.00064	0.0004	0.024	0.61	0.00001	2.2	0.001	11.9	0.848	0.00459	10.9	0.001	0.0001	0.0012	12.5	0.0006	5.39	0.0001	0.425	0.0025	0.00001	0.0005	0.00043	0.004	0.0001
W8	2009-06-07 0:00	237	1090			820	12						144	3.98		0.00015	0.023	0.0005	0.14	0.13	0.00004	0.0001	172	0.00011	0.00184	0.0004	0.107	0.1	0.00001	6.6	0.002	29	0.642	0.00898	25.7	0.002	0.0001	0.0036	48	0.0049	7.08	0.0001	1.53	0.0026	0.00001	0.0018	0.0006	0.006	0.0001
W8	2009-06-10 0:00	144	398		7.27	280	5	7.7					48.1	6.9		0.00001	0.014	0.0004	0.091	0.017	0.00004	0.0001	46.6	0.00001	0.00056	0.0004	0.018	0.5		2.4	0.001	13.2	0.811	0.00534	12.9	0.001	0.0001	0.0009	14.6	0.0006	5.4	0.0001	0.489	0.0017	0.00001	0.0006	0.00031	0.004	0.0001
W8	2009-06-16 0:00				7.94			0.9																																									
W8	2009-06-29 0:00	226	965		7.5	634	15	1.1					140	3.75		0.00022	0.005	0.0006	0.128	0.106	0.00004	0.0001	146	0.0001	0.00102	0.0004	0.1	0.04	0.00002	6.5	0.003	25.9	0.575	0.0113	24.7	0.002	0.0001	0.0011	46.6	0.0061	6.98	0.0001	1.4	0.001	0.00001	0.0019	0.00053	0.006	0.0002
W8	2009-07-06 0:00				7.37			11																																									
W8	2009-07-13 0:00	261	1210		7.35	5	6	0.9					124	4.37		0.00076	0.054	0.0005	0.178	0.141	0.00004	0.0001	191	0.00014	0.00144	0.0004	0.207	0.17	0.00001	6.4	0.002	32.4	0.854	0.0062	22.6	0.002	0.0001	0.001	41.5	0.0006	6.38	0.0001	1.6	0.0013	0.00001	0.0018	0.00061	0.006	0.0001
W8	2009-07-27 0:00	303	1340			1040	6	1.9					155	1.12		0.00036	0.005	0.0005	0.202	0.138	0.00004	0.001	224	0.00017	0.00174	0.0013	0.31	0.1	0.00001	6.6	0.002	40.6	1.12	0.0062	24.2	0.003	0.0004	0.001	51.6	0.0034	7.3	0.0001	1.73	0.0011	0.00001	0.0027	0.0006	0.005	0.0003
W8	2009-08-05 0:00	332	1330			1030	10						132	5.41		0.00001	0.021	0.0007	0.212	0.1	0.00004	0.001	213	0.00017	0.00178	0.0014	0.333	0.17		6.6	0.003	40.2	1.09	0.0063	23	0.004	0.0005	0.001	44.2	0.0033	6.69	0.0001	1.54	0.0019	0.00001	0.0027	0.0007	0.005	0.0002
W8	2009-08-10 0:00				8.16			3.4																																									
W8	2009-08-11 0:00	247	672			490	3				12.1		68	4.81		0.00001	0.005	0.0006	0.094	0.042	0.00004	0.001	118	0.00008	0.00102	0.0004	0.13	0.07		4.3	0.002	25.7	0.998	0.0057	18.7	0.002	0.0001	0.0002	22.6	0.0019	6.34	0.0001	0.95	0.0012	0.00001	0.0019	0.0006	0.007	0.0002
W8	2009-08-19 0:00	372	1400		8.15	1010	6	3.4			60.3		184	5.4		0.00001	0.005	0.001	0.218	0.104	0.00004	0.001	231	0.00021	0.00204	0.0053	0.352	0.05	0.00003	7	0.003	46.4	2.04	0.006	25.2	0.005	0.0001	0.0002	61.3	0.0053	7.35	0.0001	1.73	0.001	0.00001	0.003	0.0021	0.001	0.0003
W8	2009-08-31 0:00	325	1400			1120	8				75.2		157	5.27		0.00001	0.01	0.0005	0.206	0.134	0.00004	0.001	224	0.00018	0.00226	0.0014	0.345	0.09	0.00003	6.6	0.003	40.6	2.16	0.0056	25.7	0.004	0.0005	0.001	52.3	0.0034	7.23	0.0001	1.7	0.0012	0.00001	0.0025	0.0007	0.007	0.0002
W8	2009-09-07 0:00	330	1390		8.2	1170	14	1.4			69.4		60	4.97		0.00001	0.022	0.0005	0.148	0.032	0.00004	0.001	97.3	0.00006	0.00136	0.0016	0.064	0.24	0.00001	4.3	0.005	34.6	1.55	0.005	19.9	0.002	0.0007	0.0019	20	0.0011	6.69	0.0001	1.03	0.0019	0.00001	0.0021	0.0008	0.004	0.0003
W8	2009-09-18 0:00	390	998		7.19	730	8	3.7			15.9		79.3	2.64		0.00003	0.027	0.0009	0.135	0.028	0.00004	0.001	125	0.00008	0.0014	0.0018	0.061	0.47	0.00001	5.4	0.008	56.2	1.88	0.0064	25.7	0.003	0.0003	0.001	26.4	0.0023	8.43	0.0001	1.43	0.0025	0.00001	0.0028	0.0014	0.002	0.0004
W8	2009-09-23 0:00	278	1040		8.01	738	12	3.3			39.7		129	3.74		0.00001	0.005	0.0005	0.146	0.102	0.00004	0.001	161	0.00008	0.00105	0.001	0.134	0.02	0.00001	6.9	0.004	30.7	1.07	0.0214	24	0.003	0.0001	0.0002	42.9	0.006	7.18	0.0001	1.59	0.0009	0.00001	0.0029	0.0008	0.002	0.0002
W8	2009-10-05 0:00	261	1170		7.8	910	16	1			48.4		174	4.49		0.00001	0.005	0.0005	0.167	0.128	0.00004	0.001	190	0.00009	0.00127	0.0008	0.137	0.02	0.00001	6.3	0.002	32.9	1.39	0.0058	26.6	0.005	0.0001	0.0002	57.9	0.0058	7.5	0.0001	1.39	0.0014	0.00001	0.002	0.0007	0.002	0.0002
W8	2009-10-12 0:00	263	1050		7.35	774	22	1			41.1		132	4.51		0.00001	0.005	0.0006	0.156	0.107	0.00004	0.001	164	0.00011	0.00139	0.0004	0.115	0.03	0.00001	5.7	0.002	29	1.62	0.0062	24.4	0.005	0.0001	0.0003	43.9	0.0039	7.34	0.0001	1.25	0.01	0.00001	0.0022	0.0007	0.002	0.0002
W8	2009-10-19 0:00	168	710		8.06	520	2	2.5			19.8		103	8.78		0.00001	0.017		0.152	0.049	0.00004	0.001	78	0.00016	0.00061	0.0004	0.038	0.22	0.00001	10.2	0.005	19.8	0.556	0.0236	29.8	0.002	0.0001	0.0008	34.4	0.0059	4.36	0.0001	1.7	0.01	0.00001	0.0018	0.0003	0.01	0.0001
W8	2010-06-03 0:00	420	1460		7.85	1200	41	3.7		2.93	59	0.87	130	24	0.3		0.01	0.0009	0.167	0.1	0.0002	0.001	216	0.0002	0.0023		0.283	0.098	0.0002	7	0.01	44	3.56	0.019	27	0.003	0.0002	0.0005	60	0.0038	7.55	0.005	1.92	0.01	0.00005	0.0039	0.005	0.01	0.002
W8	2010-06-14 0:00	350	1540		7.19	1200	4	3.4		2.5	62	0.82	140	40	0.32		0.01	0.0007	0.173	0.1	0.0002	0.001	227	0.0002	0.002		0.254	0.125	0.0002	7	0.01	51	3.18	0.013	35	0.003	0.0002	0.0005	60	0.0028	8.24	0.005	2.07	0.01	0.00005	0.0045	0.005	0.01	0.002
W8	2010-06-17 0:00	180	756		6.94	460	5	10.6		0.39	20.3	0.2	95	21	1.31		0.018	0.0004	0.104	0.1	0.0002	0.001	71	0.0001	0.0005		0.031	0.066	0.0002	19	0.01	17	0.456	0.037	46	0.001	0.0002	0.0005	60	0.0064	4.62	0.005	1.45	0.01	0.00005	0.0015	0.005	0.01	0.002
W8	2010-06-21 0:00	410	1610		7.24	1300	3	3.2		2.13	75	4.2	140	54	0.3		0.01	0.0008	0.178	0.1	0.0002	0.001	235	0.0002	0.0018		0.226	0.082	0.0002	8	0.01	49	2.98	0.011	28	0.003	0.0002	0.0005	60	0.0038	7.61	0.005	2.08	0.01	0.00005	0.0038	0.005	0.01	0.002
W8	2010-06-25 0:00	440	1520		7.66	1100	2	2.93	93.4	1.83	64	0.68	130	32	0.28		0.01	0.0006	0.188	0.1	0.0002	0.001	222	0.0002	0.0018		0.228	0.099	0.0002	7	0.01	50	3.2	0.012	31	0.005	0.0002	0.0005	60	0.0027	8.32	0.005	2.03	0.01	0.00005	0.0042	0.005	0.01	0.002
W8	2010-07-04 0:00	180	899		7.88	590	96	8.83	93.7	0.398	31.5	0.5	130	17	1.17		0.016	0.0004	0.127	0.1	0.0002	0.001	89	0.0001	0.0005		0.058	0.02	0.0002	19	0.01	22	0.55	0.04	45	0.001	0.0002	0.0005	60	0.0063	4.82	0.005	1.51	0.01	0.00005	0.0015	0.005	0.01	0.002
W8	2010-07-11 0:00	290	1330		7.97	970	110	1.72	95.1	1.32	65	0.91	170	14	0.36		0.01	0.0005	0.134	0.1	0.0002	0.001	190	0.0002	0.0012		0.14	0.02	0.0002	9	0.01	35	1.35	0.013	26	0.002	0.0002	0.0005	60	0.0043	6.48	0.005	1.98	0.01	0.00005	0.0022	0.005	0.01	0.002
W8	2010-07-18 0:00	280	1340		7.93	1000	660	1.28	104.9	1.51	69		140	12	0.31		0.012	0.0005	0.148	0.1	0.0002	0.001	167	0.0002	0.001		0.163	0.02	0.0002	9	0.01	34	1.19	0.011	26	0.002	0.0002	0.0005	60	0.0038	6.94	0.005	1.9	0.01	0.00005	0.0019	0.005	0.01	0.002
W8	2010-07-25 0:00	200	1500		7.65	1400	120	1.01	74.1	1.9	106	1.4	160	7.8	0.34		0.01	0.0004	0.205	0.1	0.0002	0.001	207	0.0002	0.0013		0.073	0.069	0.0002	10	0.01	40	1.16	0.015	26	0.002	0.0002	0.0005	61	0.0091	7.01	0.005	2.04	0.01	0.00005	0.0015	0.005	0.01	0.002
W8	2010-08-02 0:00	210	1580		7.5	1400	19	2.24	80.3	0.009	116	0.9	160	7.8	0.29		0.01	0.0004	0.22	0.1	0.0002	0.001	225	0.0001	0.001		0.075	0.028	0.0002	10	0.01	45	0.95	0.009	31	0.002	0.0002	0.0005	72	0.0085	7.75	0.005	2.07	0.01	0.00005	0.0017	0.005	0.01	0.002
W8	2010-08-09 0:00	230	1580		7.56	1200	660	0.83	77.8	0.61	103	0.46	230	8.9	0.25		0.01	0.0004	0.217	0.1	0.0002	0.001	225	0.0002	0.0009		0.096	0.02	0.0002	9	0.01	43	1	0.008	29	0.002	0.0002	0.0005	79	0.0096	7.69	0.005	2.1	0.01	0.00005	0.0018	0.005	0.01	0.002
W8	2010-08-15 0:00	230	1570		7.61	1200	19	0.57	82.4	1.24	97	0.48	250	9.4	0.24		0.01	0.0005	0.212	0.1	0.0002	0.001	224	0.0002	0.0011		0.121	0.037	0.0002	8	0.01	44	1.02	0.008	28	0.007	0.0002	0.0005	77	0.0099	7.06	0.005	1.85	0.01	0.00005	0.0017	0.005	0.01	0.002
W8	2010-08-22 0:00	180			7.97	1400	82	1.29	90.5	0.64	99	0.62	250	8.7	0.33		0.011	0.0005	0.213	0.1	0.0002	0.001	244	0.0002	0.001		0.08	0.054	0.0002	9	0.01	43	0.936	0.012	29	0.001	0.0002	0.0005	88	0.0133	7.34	0.005	1.98	0.01	0.00005	0.0014	0.005	0.01	0.002
W8	2010-08-29 0:00	120	708		7.97	450	30	7.97	72.7	0.407	16.1	0.24	130	16	1.67		0.1	0.0005	0.087	0.1	0.0002	0.001	46	0.0001	0.0005		0.008	0.02	0.0002	32	0.015	12	0.157	0.057	53	0.001	0.0002	0.0005	60	0.0139	2.7	0.005	2.11	0.01	0.00005	0.0006	0.005	0.01	0.002
W8	2010-09-05 0:00	230	1350		7.65	1000	110	1.41	72.1	0.62	72	0.72	200	7.2	0.37		0.01	0.0006	0.179	0.1	0.0002	0.001	188	0.0001	0.0007		0.082	0.032	0.0002	8	0.01	37	0.719	0.018	24	0.003	0.0002	0.001	69	0.0139	6.73	0.005	1.95	0.01	0.00005	0.0024	0.005	0.01	0.002
W8	2010-09-09 0:00	220	1390		7.92	1200	55	1.18	83.7	0.369	70	0.53	200	6.6	0.32		0.011	0.0004	0.186	0.1	0.0002	0.001	195	0.0002	0.0008		0.094	0.173	0.0002	8	0.01	39	0.815	0.011	26	0.002	0.0002	0.0005	81	0.0146	7.36	0.005	1.77	0.01	0.00005	0.0022	0.005	0.01	0.002
W8	2010-09-16 0:00	220	1330		7.55	920	42	0.29	108.3	0.337	69	0.54	190	6.3	0.29		0.01	0.0004	0.185	0.1	0.0002	0.001	184	0.0002	0.0007		0.115	0.02	0.0002	7	0.01	35	0.778	0.007	25	0.004	0.0002	0.0005	76	0.0117	6.78	0.005	1.5	0.01	0.00005	0.0019	0.005	0.01	0.002
W8	2010-09-23 0:00	240	1270		7.63	1000	32	0	86.1	0.361	60	0.64	180	6.9	0.29		0.01	0.0004	0.172	0.1	0.0002	0.001	177	0.0001	0.0007		0.1	0.021	0.0002	7	0.01	35	0.832	0.009	27	0.001	0.0002	0.0005	79	0.0127	7.45	0.005	1.52	0.01	0.00005	0.002	0.005	0.01	0.002
W8	2010-10-07 0:00	240	1230		7.61	920	68	-0.13	94.1	0.331	59	0.57	200	6.5	0.29	0.00002	0.008	0.0005	0.171	0.071	0.0001	0.001	171	0.00017	0.0008	0.001	0.112	0.022	0.00002	6.92	0.005	33.1	0.985	0.009	23.7	0.001	0.0002	0.0005	70	0.0128	6.99	0.005	1.55	0.005	0.00005	0.0021	0.005	0.005	0.0005
W8	2011-04-01 0:00	130	812			450	7			0.83	26.3	1.1	110	29	1.43	0.00002	0.012	0.0005	0.125	0.092	0.0001	0.001	61.4	0.00006	0.0005	0.001	0.014	0.055	0.00002	18.9	0.015	14.5	0.558	0.063	58.1	0.001	0.0002	0.0005	37	0.0124	3.79	0.005	1.51	0.005	0.00005	0.0009	0.005	0.022	0.0005
W8	2011-04-07 0:00	140	864			550	3			0.63	31	1.5	120	28	1.5	0.00002	0.077	0.0005	0.128	0.09	0.0001	0.001	65	0.00006	0.0005	0.001	0.0132	0.042	0.00002	25.9	0.014	16.2	0.621	0.064	58.5	0.001	0.0002	0.0005	43	0.0158	4.24	0.005	1.65	0.005	0.00005	0.0011	0.005	0.005	0.0005
W8	2011-04-21 0:00	180	655			390	150			0.177	19.2	0.094	74	2.7	0.42	0.00002	0.006	0.0002	0.09	0.05	0.0001	0.001	70.5	0.00009	0.0005	0.001	0.0791	0.019	0.00002	5.24	0.005	24.4	0.241	0.014	15.1	0.001	0.0002	0.0005	24	0.0038	4.44	0.005	1.24	0.005	0.00005	0.0013	0.005	0.005	0.0005
W8	2011-04-30 0:00	330	1140			780	16			0.499	27.9	0.161	180	7.8	0.38	0.00002	0.004	0.0005	0.107	0.05	0.0001	0.001	163	0.00018	0.0007	0.001	0.207	0.056	0.00002	6.14	0.005	36.7	1.48	0.013	23.2	0.002	0.0002	0.0005	68	0.0042	6.2	0.005	1.67	0.005	0.00005	0.0029	0.005	0.005	0.0005
W8	2011-05-06 0:00	200	522			320	56			0.03	5.1	0.042	65	2.8	0.37	0.00002	0.013	0.0004	0.064	0.05	0.0001	0.001	59.8	0.00003	0.0005	0.001	0.0887	0.05	0.00002	3.79	0.005	22.7	0.168	0.008	17.9	0.001	0.0002	0.0005	20	0.0019	4.91	0.005	0.697	0.005	0.00005	0.0022	0.005	0.005	0.0005
W8	2011-05-13 0:00	190				530	9			0.177	41	0.41	120	4.3	0.47	0.00007	0.144	0.0004	0.109	0.052	0.0001	0.001	139	0.00022	0.0005	0.001	0.323	0.344	0.00002	7.31	0.005	38.6	0.543	0.018	20.6	0.001	0.0002	0.0005	49	0.0114	7.24	0.005	2.22	0.007	0.00005	0.0026	0.005	0.005	0.0005
W8	2011-05-20 0:00	140	457			260	12			0.109	8.5	0.802	57	3.2	0.34	0.00002	0.007	0.0003	0.076	0.05	0.0001	0.001	48.6	0.00006	0.001	0.001	0.0566	0.062	0.00002	6.44	0.005	13.8	1.98	0.018	12.3	0.002	0.0002	0.0005	20	0.0009	2.97	0.005	0.673	0.005	0.00005	0.0013	0.005	0.005	0.0005
W8	2011-05-25 0:00	350	1310			940	21			0.265	46	0.141	190	8.7	0.33	0.00002	0.005	0.0006	0.147	0.072	0.0001	0.001	189	0.00012	0.0008	0.001	0.195	0.042	0.00002	6.95	0.005	44.3	1.7	0.013	26.5	0.002	0.0002	0.0005	76	0.0055	7.06	0.005	1.9	0.005	0.00005	0.0035	0.005	0.005	0.0005
W8	2011-06-10 0:00	360	1340			1000	70			0.159	50	0.124	190	7.7	0.33	0.00002	0.005	0.0005	0.143	0.05	0.0001	0.001	194	0.00012	0.0006	0.001	0.154	0.052	0.00002	7.14	0.005	43.3	1.35	0.013	26.2	0.003	0.0002	0.0005	72	0.0046	7.09	0.005	1.9	0.005	0.00005	0.0036	0.005	0.005	0.0005
W8	2011-06-17 0:00	370	834			500	3			0.03	6					0.00002	0.006	0.0005	0.11	0.05	0.0001	0.001	82	0.00016	0.0005	0.001	0.131	0.106	0.00002	5.03	0.007	45.2	0.847	0.007	29.1	0.001	0.0002	0.0005	25	0.0021	6.67	0.005	1.2	0.005	0.00005	0.0026	0.005	0.005	0.0005
W8	2011-06-24 0:00	220	1170			870	46			0.122	53	0.227	150			0.00002	0.034	0.0005	0.138	0.065	0.0001	0.001	180	0.00042	0.0005	0.001	0.0936	0.106	0.00002	7.36	0.005	34.1	0.426	0.01	24.6	0.004	0.0002	0.0005	62	0.0154	7.84	0.005	1.63	0.005	0.00005	0.0027	0.005	0.013	0.0005
W8	2011-06-30 0:00	210	1010			790	15			0.108	53	0.135	150			0.00002	0.005		0.12	0.058	0.0001	0.001	151	0.00007	0.0005	0.001	0.0751	0.1	0.00002	6.7	0.005	28.5	0.401	0.011	21.1	0.001	0.0002	0.0005	56	0.014	6.94	0.005	1.34	0.005	0.00005	0.0024	0.005	0.005	0.0005
W8	2011-07-08 0:00	220	1110			820	33			0.102	53	0.005	150			0.00002	0.013	0.0004	0.129	0.067	0.0001	0.001	169	0.00014	0.0005	0.001	0.0872	0.033	0.00002	7.33	0.005	32.3	0.479	0.01	22.4	0.002	0.0002	0.0005	61	0.0124	7.45	0.005	1.45	0.005	0.00005	0.0025	0.005	0.014	0.0005
W8	2011-07-15 0:00	210	1220			910	87			0.087	59	0.11	200	6.3	0.33	0.00002	0.007	0.0003	0.149	0.071	0.0001	0.001	161	0.00013	0.0005	0.001	0.0986	0.027	0.00002	8.48	0.005	35.7	0.607	0.01	28	0.001	0.0002	0.0005	83	0.0117	5.95	0.005	1.7	0.005	0.00005	0.002	0.005	0.005	0.0005
W8	2011-07-21 0:00	210	1110			800	130			0.068	56	0.044	160			0.00002	0.008	0.0003	0.114	0.056	0.0001	0.001	148	0.00009	0.0005	0.001	0.098	0.014	0.00005	6.53	0.005	29.5	0.4	0.01	20.9	0.001	0.0002	0.0005	58	0.0123	7.04	0.005	1.39	0.005	0.00005	0.0026	0.005	0.005	0.0005
W8	2011-07-31 0:00	240	1320			1000	64			0.087	67	0.083	190			0.00002	0.01	0.0004	0.162	0.067	0.0001	0.001	198	0.00013	0.0006	0.001	0.127	0.045	0.00002	7.74	0.005	39.2	0.865	0.006	26.7	0.001	0.0002	0.0005	82	0.014	7.79	0.005	1.68	0.005	0.00005	0.0026	0.005	0.005	0.0005
W8	2011-08-05 0:00	230	1350			1000	2			0.095	69	0.12	190			0.00002	0.016	0.0004	0.155	0.059	0.0001	0.001	193	0.00012	0.0006	0.001	0.113	0.052	0.00002	7.23	0.005	39	0.755	0.006	26.6	0.002	0.0002	0.0005	80	0.0132	7.01	0.005	1.66	0.005	0.00005	0.0026	0.005	0.01	0.0005
W8	2011-08-08 0:00	220	1240			1100	24			0.09	23	0.071				0.00002	0.013	0.0003	0.147	0.062	0.0001	0.001	201	0.00012	0.0005	0.001	0.106	0.023	0.00002	7.03	0.005	36.1	0.569	0.007	25.1	0.001	0.0002	0.0005	66	0.013	7.92	0.005	1.58	0.005	0.00005	0.0025	0.005	0.005	0.0005
W8	2011-08-09 0:00	220	1290			1200	7			0.103	48	0.07				0.00003	0.02	0.0004	0.151	0.059	0.0001	0.001	212	0.00012	0.0005	0.001	0.109	0.062	0.00002	6.97	0.005	36	0.631	0.006	25.1	0.002	0.0002	0.0005	72	0.0135	7.88	0.005	1.56	0.005	0.00005	0.0023	0.005	0.013	0.0005
W8	2011-08-10 0:00	230	1370			1100	98			0.112	86					0.00002	0.009	0.0004	0.161	0.062	0.0001	0.001	196	0.00013	0.0005	0.001	0.106	0.034	0.00002	6.99	0.005	37.7	0.678	0.007	25.6	0.002	0.0002	0.0005	80	0.0137	7.54	0.005	1.7	0.005	0.00005	0.0026	0.005	0.005	0.0005
W8	2011-08-11 0:00	220	1210			950	15			0.088	63					0.00002	0.005	0.0004	0.141	0.059	0.0001	0.001	155	0.00009	0.0005	0.001	0.103	0.016	0.00002	7.29	0.005	33.5	0.486	0.008	22.9	0.001	0.0002	0.0005	62	0.0129	6.7	0.005	1.66	0.005	0.00005	0.0029	0.005	0.005	0.0005
W8	2011-08-12 0:00	220	1210			1100	24			0.094	68	0.112				0.00002	0.005	0.0005	0.137	0.076	0.0001	0.001	177	0.00011	0.0005	0.001	0.0999	0.02	0.00002	6.78	0.012	32.7	0.509	0.007	22.8	0.001	0.0002	0.0005	61	0.0143	7.5	0.005	1.51	0.005	0.00005	0.0022	0.005	0.005	0.0005
W8	2011-08-13 0:00	98	216			150	23			0.028	0.06	0.011				0.00002	0.008	0.0004	0.057	0.05	0.0001	0.001	33.2	0.00001	0.0005	0.001	0.0226	0.085	0.00002	1.34	0.005	6.06	0.134	0.003	3.56	0.001	0.0002	0.0005	3	0.0001	7.2	0.005	0.154	0.005	0.00005	0.0002	0.005	0.006	0.0005
W8	2011-08-14 0:00	230	1210			1000	43			0.102	69	0.09				0.00002	0.007	0.0004	0.146	0.06	0.0001	0.001	168	0.00011	0.0012	0.001	0.0969	0.374	0.00002	7.18	0.005	32.1	0.527	0.007	21.6	0.001	0.0002	0.0005	62	0.0139	6.96	0.005	1.61	0.005	0.00005	0.0024	0.005	0.005	0.0005
W8	2011-08-15 0:00	230	1230			1100	56			0.094	69	0.095				0.00002	0.011	0.0004	0.145	0.058	0.0001	0.001	175	0.00011	0.0005	0.001	0.158	0.027	0.00002	7.68	0.005	34.5	0.555	0.006	23	0.001	0.0002	0.0005	68	0.0144	7.14	0.005	1.62	0.005	0.00005	0.0023	0.005	0.032	0.0005
W8	2011-08-16 0:00	230	1290			1100	13			0.121	72	0.067				0.00002	0.006	0.0004	0.158	0.058	0.0001	0.001	177	0.00013	0.0006	0.001	0.117	0.025	0.00002	7.14	0.005	36	0.653	0.006	24.2	0.001	0.0002	0.0005	68	0.0132	7.06	0.005	1.65	0.005	0.00005	0.0023	0.005	0.005	0.0005
W8	2011-08-17 0:00	230	1350			1100	6			0.134	74	0.085				0.00002	0.006	0.0004	0.15	0.06	0.0001	0.001	184	0.00013	0.0006	0.001	0.115	0.056	0.00002	7.12	0.005	36	0.691	0.006	24.5	0.001	0.0002	0.0005	70	0.0136	6.77	0.005	1.58	0.005	0.00005	0.0023	0.005	0.005	0.0005
W8	2011-08-18 0:00	240	1370			1100	14			0.141	75	0.079				0.00002	0.007	0.0005	0.161	0.063	0.0001	0.001	193	0.00015	0.0007	0.001	0.128	0.036	0.00002	6.9	0.005	36.6	0.792	0.006	23.9	0.001	0.0002	0.0005	74	0.0132	6.96	0.005	1.68	0.005	0.00005	0.0024	0.005	0.005	0.0005
W8	2011-08-19 0:00	310	804			560	6			0.014	10.5	0.026				0.00002	0.008	0.0005	0.104	0.05	0.0001	0.001	89.5	0.00011	0.0005	0.001	0.133	0.056	0.00002	4.1	0.006	38.5	0.364	0.006	25	0.001	0.0002	0.0005	31	0.0055	7.32	0.005	1.13	0.005	0.00005	0.0023	0.005	0.005	0.0005
W8	2011-08-20 0:00	250	1410			1100	18			0.175	80	0.087				0.00002	0.006	0.0004	0.175	0.069	0.0001	0.001	204	0.00014	0.0006	0.001	0.128	0.034	0.00002	7.06	0.005	40.5	0.819	0.006	25.3	0.002	0.0002	0.0005	74	0.0126	7.1	0.005	1.8	0.005	0.00005	0.0025	0.005	0.005	0.0005
W8	2011-08-21 0:00	260	1430			1100	6			0.178	82	0.098				0.00002	0.01	0.0005	0.176	0.053	0.0001	0.001	216	0.00014	0.0006	0.001	0.131	0.057	0.00002	7.62	0.005	41.8	0.849	0.006	26.9	0.002	0.0002	0.0005	81	0.0131	7.65	0.005	1.82	0.005	0.00005	0.0026	0.005	0.005	0.0005
W8	2011-08-27 0:00	270	1460			1200	7			0.171	83	0.108	180			0.00002	0.005	0.0003	0.186	0.052	0.0001	0.001	227	0.00016	0.0007	0.001	0.137	0.039	0.00002	7.79	0.005	44.8	0.914	0.005	28.2	0.002	0.0002	0.0005	86	0.0126	7.71	0.005	1.83	0.005	0.00005	0.0025	0.005	0.005	0.0005
W8	2011-09-10 0:00	240	1450		7.38	1100	21	0.2	120	0.083	80	0.118		9.8		0.00002	0.006	0.0003	0.192	0.058	0.0001	0.001	283	0.00017	0.0005	0.001	0.132	0.045	0.00002	8.01	0.005	44.1	0.77	0.005	29.5	0.001	0.0002	0.0005	95	0.0193	9.51	0.005	1.92	0.005	0.00005	0.0027	0.005	0.005	0.0005
W8	2011-09-16 0:00				7.71	1200	130	1.3	96.1			0.11				0.00002	0.027	0.0003	0.188	0.057	0.0001	0.001	220	0.00021	0.0005	0.001	0.169	0.084	0.00002	7.31	0.005	43.1	0.807	0.005	28.9	0.002	0.0002	0.0005	84	0.0135	7.08	0.005	1.8	0.005	0.00005	0.0026	0.005	0.008	0.0005
W8	2011-09-23 0:00	300	1480		7.62	1200	15	0.3	82.9	0.083	74	0.071	230	9		0.00002	0.019	0.0004	0.177	0.068	0.0001	0.001	235	0.00023	0.0006	0.001	0.182	0.077	0.00002	8.11	0.005	47.1	0.94	0.006	31.7	0.003	0.0003	0.0005	99	0.0123	7.83	0.005	1.9	0.005	0.00005	0.0032	0.005	0.011	0.0005
W8	2011-09-30 0:00	320	1520		7.41	1100	80	0	90	0.076	67	0.06	230	9.4		0.00002	0.022	0.0004	0.21	0.088	0.0001	0.001	237	0.0002	0.0006	0.001	0.201	0.081	0.00002	7.96	0.005	46.9	1.04	0.005	30.8	0.002	0.0002	0.0005	90	0.0116	7.75	0.005	1.86	0.005	0.00005	0.003	0.005	0.007	0.0005
W8	2013-10-29 14:55	459	1920	108.4	7.64	1660	176	0.5	14	3.62	8.16	2.1	255	210	0.32	0.00002	0.0152	0.00075	0.13	0.068	0.0001	0.001	285	0.000031	0.00869	0.001	0.0233	0.347	0.00001	10.4	0.0162	92.9	2.53	0.0272	49.6	0.0035	0.0002	0.0005	108	0.0024	5.87	0.005	3.08	0.005	0.000056	0.00302	0.005	6.75	0.0005
W8	2013-11-07 9:30	542	2140	164	7.02	1680	140	-0.1	20.9	4.14	7.51	1.9	275	210	0.37	0.000023	0.0043	0.00083	0.139	0.068	0.0001	0.001	304	0.000028	0.00936	0.001	0.0226	0.378	0.00001	10.7	0.0171	92.3	2.81	0.0259	49	0.0038	0.0002	0.0005	114	0.00255	6.46	0.005	3.06	0.005	0.000052	0.00314	0.005	7.21	0.0005
W8	2013-11-15 8:15	542	2110	155.7	7.78	1550	134	0	42.3	3.99	6.28	2.3	307	210	0.4	0.000032	0.003	0.00148	0.135	0.061	0.0001	0.001	292	0.000017	0.00944	0.001	0.0208	0.455	0.00001	11.6	0.0165	92.4	2.95	0.0254	49.6	0.004	0.0002	0.0005	108	0.00249	5.57	0.005	3.01	0.005	0.000056	0.00355	0.005	8.04	0.0005
W8	2013-11-29 15:10		2240		7.7	1310		0		4.5	5.23	2.3	310	200	0.4	0.000033	0.0043	0.00105	0.148	0.077	0.0001	0.001	334	0.000028	0.0105	0.001	0.0166	0.826	0.00001	13.3	0.0191	108	3.71	0.0291	56.6	0.0049	0.0002	0.0005	125	0.00278	6.65	0.005	3.36	0.005	0.000061	0.00365	0.005	9.49	0.0005
W8A	2008-05-03 0:00																0.05	0.0002	0.031	0.005	0.00004		11.6	0.00008	0.00024	0.0018	0.023	0.09	0.00002	2.05	0.001	6.74	0.0178	0.00033	5.28	0.002	0.0001	0.002		0.0006	1.24	0.004	0.116	0.0018	0.00001	0.0006	0.00046	0.004	0.0003
W8A	2008-05-07 0:00																																																
W8A	2009-05-01 0:00				7.1			0.4																																									
W8A	2009-05-02 0:00	212	343			254	6540						24.7	1.4		0.00001	0.028	0.0004	0.055	0.012	0.00004	0.0001	43.6	0.00007	0.00023	0.0004	0.094	0.05	0.00001	11.2	0.004	11.5	0.255	0.0192	14.9	0.005	0.0001	0.0003	8.8	0.001	3.06	0.0001	0.634	0.0025	0.00001	0.0008	0.00047	0.002	0.0001
W8A	2009-05-10 0:00	195	415			308	311			0.106	1.58			1.6		0.00005	0.024	0.0007	0.068	0.018	0.0001	0.0005	46.5	0.00008	0.0004	0.0005	0.172	0.06	0.0001	8.1	0.005	18.1	0.345	0.017	15.9	0.0046	0.0001	0.0002	9.1	0.0012	4.12	0.001	0.802	0.0013	0.00005	0.0014	0.0008	0.002	
W8A	2009-05-28 0:00	328	690		7.44	476	146	1.7					54.3	1.04		0.00001	0.088	0.0008	0.093	0.01	0.00004	0.0001	65.9	0.00097	0.00078	0.0011	0.121	0.31	0.00001	6.9	0.006	41.8	0.858	0.00877	23.6	0.003	0.0003	0.0012	16.9	0.0008	5.98	0.0001	0.998	0.0071	0.00001	0.002	0.00095	0.005	0.0001
W8A	2009-06-04 0:00	192	925		7.69	658	502	1.4					114	5		0.00001	0.092	0.0004	0.103	0.11	0.00004	0.0001	127	0.00015	0.00094	0.0004	0.164	0.24	0.00001	6.2	0.003	21.7	0.392	0.00885	19.5	0.002	0.0001	0.0014	35.1	0.0057	5.34	0.0001	1.23	0.0082	0.00001	0.0012	0.00078	0.004	0.0002
W8A	2009-06-07 0:00	227	807			578	11						103	3.75		0.00002	0.007	0.0006	0.134	0.076	0.00004	0.0001	117	0.00005	0.00081	0.0004	0.067	0.11	0.00001	5.4	0.003	26.5	0.662	0.00768	22.2	0.002	0.0001	0.0009	34.4	0.0027	6.63	0.0001	1.16	0.0013	0.00001	0.0016	0.00045	0.004	0.0001
W8A	2009-06-10 0:00	190	994		7.76	758	127	1.4					138	5.8		0.00001	0.021	0.0004	0.12	0.112	0.00004	0.0001	142	0.00014	0.00079	0.0007	0.171	0.07		6.2	0.003	24	0.352	0.00882	21.7	0.002	0.0003	0.001	43.4	0.0075	5.64	0.0001	1.34	0.0024	0.00001	0.0014	0.00046	0.005	0.0002
W8A	2009-06-16 0:00				7.98			3																																									
W8A	2009-06-29 0:00	219	725		8	514	10	4.4					93	3.34		0.00001	0.007	0.0006	0.122	0.063	0.00004	0.0001	102	0.00006	0.00078	0.0004	0.071	0.14	0.00001	5.5	0.003	25.6	0.7	0.00841	21.8	0.002	0.0001	0.0008	31	0.0032	6.56	0.0001	1.11	0.0013	0.00001	0.0016	0.00056	0.004	0.0002
W8A	2009-07-06 0:00				8.13			5.2																																									
W8A	2009-07-13 0:00	228	684		6.87	5	4	4.3					67.6	4.01		0.00025	0.023	0.0005	0.129	0.051	0.00004	0.0001	93.6	0.00004	0.00068	0.0004	0.068	0.2	0.00001	4.4	0.002	24.3	0.805	0.00629	18.5	0.001	0.0001	0.0007	22.5	0.0006	5.83	0.0001	0.926	0.0007	0.00001	0.0014	0.00026	0.005	0.0001
W8A	2009-07-27 0:00	332	745			498	6	7.54					66.4	0.64		0.00014	0.016	0.0008	0.123	0.03	0.00004	0.001	86.6	0.00004	0.00068	0.0013	0.08	0.3	0.00001	5.8	0.006	44.2	0.945	0.0083	26.5	0.002	0.0005	0.0009	22.2	0.0008	7.52	0.0001	1.11	0.0023	0.00001	0.0026	0.001	0.003	0.0003
W8A	2009-08-06 0:00	339	710		8.26	516	4	5.7					55.2	3.18		0.00001	0.019	0.0004	0.119	0.028	0.00004	0.001	85.2	0.00003	0.00064	0.0014	0.069	0.26		4.7	0.005	38.4	0.896	0.0057	23	0.002	0.0005	0.0006	18.4	0.0006	6.97	0.0001	1	0.0018	0.00001	0.0016	0.0008	0.002	0.0002
W8A	2009-08-10 0:00				8.27			3.5																																									
W8A	2009-08-11 0:00	388	753			536	8				0.8		51.1	1.52		0.00001	0.051	0.0014	0.093	0.014	0.00004	0.001	77.6	0.00009	0.00075	0.0014	0.084	0.44		5.4	0.007	44.5	1.05	0.0066	23.9	0.003	0.0001	0.0002	17	0.0016	7.82	0.0001	0.935	0.0099	0.00001	0.0022	0.0017	0.025	0.0003
W8A	2009-08-19 0:00	310	677		8.33	496	21	5.5			3.95		58.5	3		0.00001	0.009	0.0008	0.11	0.02	0.00004	0.001	82.2	0.00004	0.00094	0.0015	0.066	0.17	0.00001	5.1	0.004	34.9	1.33	0.0059	20.1	0.002	0.0005	0.0009	19.5	0.0007	7.37	0.0001	0.816	0.0008	0.00001	0.0017	0.0009	0.002	0.0003
W8A	2009-08-21 0:00	390	841			540	10			0.33	7.4	0.015	52	2.6	0.3	0.00002	0.007	0.0009	0.122	0.05	0.0001	0.001	99.3	0.00006	0.0011	0.001	0.0676	0.262	0.00002	5.58	0.007	45.6	1.53	0.007	22.4	0.002	0.0002	0.0005	22	0.0015	8.77	0.005	1.15	0.005	0.00005	0.0025	0.005	0.005	0.0005
W8A	2009-08-31 0:00	373	927			648	28				14.8		98.2	3.09		0.00001	0.022	0.001	0.139	0.022	0.00004	0.001	114	0.00005	0.00143	0.0016	0.064	0.37	0.00001	5.6	0.006	54.6	1.8	0.0054	24.8	0.003	0.0005	0.0008	32.8	0.0022	8.2	0.0001	1.17	0.0018	0.00001	0.0025	0.0014	0.006	0.0004
W8A	2009-09-07 0:00	336	837		8.54	600	14	5.2			14.9		131	3.38		0.00001	0.013	0.0005	0.184	0.116	0.00004	0.001	201	0.00017	0.0021	0.001	0.272	0.09	0.00002	5.9	0.003	35.8	2.39	0.0052	24.6	0.003	0.0005	0.0012	43.6	0.0032	6.8	0.0001	1.57	0.0011	0.00001	0.0022	0.0006	0.004	0.0002
W8A	2009-09-18 0:00	389	1010		7.4	726	10	3.7			17		84.8	2.79		0.00003	0.023	0.0012	0.148	0.029	0.00004	0.001	130	0.0001	0.0016	0.0019	0.072	0.55	0.00001	5.6	0.008	53.9	2.24	0.007	25.6	0.003	0.0003	0.0009	28.2	0.0024	8.6	0.0001	1.47	0.0023	0.00001	0.0029	0.0015	0.003	0.0004
W8A	2009-09-23 0:00	288	851		8.46	606	26	3.6			21.8		88.3	3.43		0.00001	0.005	0.0008	0.135	0.052	0.00004	0.001	120	0.00006	0.00071	0.0016	0.059	0.07	0.00001	5.8	0.004	32.7	0.897	0.0169	21.3	0.003	0.0001	0.0003	29.4	0.0045	7.14	0.0001	1.31	0.001	0.00001	0.0026	0.001	0.001	0.0002
W8A	2009-09-30 0:00	303	923		8.06	646	8	1			21.9		95.6	4.01		0.00001	0.005	0.0008	0.148	0.054	0.00004	0.001	132	0.00007	0.00119	0.0009	0.069	0.1	0.00001	5.5	0.004	39.1	1.5	0.0058	24.1	0.004	0.0001	0.0004	31.9	0.003	7.64	0.0001	1.18	0.0014	0.00001	0.0019	0.0008	0.002	0.0002
W8A	2009-10-05 0:00	261	736		8.04	520	2	1.5			13.8		75.5	3.69		0.00001	0.005	0.0005	0.12	0.041	0.00004	0.001	103	0.00003	0.0009	0.0008	0.048	0.08	0.00001	4.5	0.003	30.4	1.16	0.005	19	0.003	0.0001	0.0002	25.2	0.0015	7.06	0.0001	0.927	0.0013	0.00001	0.0014	0.0007	0.001	0.0002
W8A	2009-10-12 0:00	303	802		8.04	578	5	1			13.7		74.3	4.12		0.00001	0.005	0.0005	0.129	0.039	0.00004	0.001	110	0.00005	0.00094	0.0006	0.062	0.05	0.00001	4.5	0.003	32.7	1.32	0.0057	21.4	0.004	0.0001	0.0004	24.8	0.0015	7.28	0.0001	1.04	0.01	0.00001	0.002	0.0007	0.002	0.0002
W8A	2009-10-19 0:00	235	778		7.73	568	2	3.8			18.3		95	6.95		0.00001	0.067		0.15	0.048	0.00004	0.001	94.8	0.00012	0.00081	0.0004	0.07	0.41	0.00001	8.2	0.004	27.2	0.897	0.0167	26.9	0.003	0.0001	0.0014	31.7	0.0042	5.55	0.0001	1.48	0.01	0.00001	0.0019	0.0008	0.009	0.0002
W8A	2009-11-09 0:00	274	799		7.25	534	2	1			10.8		89.5	6.54		0.00001	0.005	0.0006	0.132	0.043	0.00004	0.001	102	0.00008	0.00073	0.0004	0.052	0.15	0.00001	7	0.005	30.6	1.07	0.0099	30.4	0.003	0.0001	0.0012	29.8	0.0025	6.88	0.0001	1.19	0.01	0.00001	0.0017	0.0006	0.006	0.0002
W8A	2009-11-16 0:00	273	818		7.49	566	7	1			15.8		87.5	7.01		0.00001	0.11	0.0005	0.135	0.046	0.00004	0.001	94.1	0.0013	0.00071	0.001	0.084	0.28	0.00001	7.5	0.005	29.8	0.956	0.013	28.2	0.003	0.0005	0.001	29.2	0.0026	6.12	0.0001	1.53	0.01	0.00001	0.0019	0.0009	0.017	0.0002
W8A	2010-06-03 0:00	240	731		7.63	470	7	9.2		0.253	14	0.31	82	15	0.86		0.022	0.0005	0.103	0.1	0.0002	0.001	93	0.0001	0.0005		0.043	0.03	0.0002	12	0.01	25	0.328	0.024	36	0.001	0.0002	0.0005	60	0.0038	5.94	0.005	1.36	0.01	0.00005	0.0019	0.005	0.01	0.002
W8A	2010-06-14 0:00	250	771		7.31	540	4	9.2		0.159	14.3	0.22	92	18	0.84		0.02	0.0004	0.109	0.1	0.0002	0.001	82	0.0001	0.0005		0.047	0.053	0.0002	12	0.01	27	0.416	0.02	40	0.001	0.0002	0.0005	60	0.0032	6.33	0.005	1.25	0.01	0.00005	0.0021	0.005	0.01	0.002
W8A	2010-06-17 0:00	400	913		7.08	610	4	4.3		0.015	10.5	0.15	74	11	0.38		0.01	0.0007	0.115	0.1	0.0002	0.001	113	0.0001	0.0005		0.09	0.06	0.0002	6	0.01	43	0.744	0.009	26	0.001	0.0002	0.0005	60	0.0019	8.37	0.005	1.26	0.01	0.00005	0.0031	0.005	0.01	0.002
W8A	2010-06-25 0:00	360	831		7.99	530	4	3.73	105.1	0.018	10.9	0.05	76	9.3	0.38		0.01	0.0005	0.118	0.1	0.0002	0.001	100	0.0001	0.0005		0.089	0.067	0.0002	6	0.01	37	0.604	0.009	23	0.001	0.0002	0.0005	60	0.0018	8.38	0.005	1.19	0.01	0.00005	0.0026	0.005	0.01	0.002
W8A	2010-07-04 0:00	220	761		7.5	520	4	2.27	97.8	0.113	20.1	0.19	110	4.8	0.37		0.061	0.0006	0.1	0.1	0.0002	0.001	86	0.0001	0.0007		0.147	0.138	0.0002	6	0.01	30	0.961	0.013	20	0.001	0.0002	0.0005	60	0.0047	7.36	0.005	1.06	0.01	0.00005	0.0022	0.005	0.01	0.002
W8A	2010-07-11 0:00	320	867		8.09	600	2	3.73	94.7	0.035	23.2	0.045	91	7.8	0.37		0.01	0.0006	0.111	0.1	0.0002	0.001	110	0.0001	0.0005		0.097	0.063	0.0002	6	0.01	34	0.62	0.01	22	0.001	0.0002	0.0005	60	0.0038	7.44	0.005	1.18	0.01	0.00005	0.0024	0.005	0.01	0.002
W8A	2010-07-18 0:00	270	845		8.09	580	4	2.89	105.8	0.074	23		97	5.7	0.35		0.013	0.0006	0.109	0.1	0.0002	0.001	96	0.0001	0.0005		0.099	0.055	0.0002	5	0.01	30	0.654	0.011	21	0.001	0.0002	0.0005	60	0.0054	7.69	0.005	1.09	0.01	0.00005	0.0026	0.005	0.01	0.002

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	N-NO$_2$	N-NO$_3$	N-NH$_3$	SO$_4$-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W8A	2010-07-25 0:00	220	794		7.94	560	60	3.08	73.3	0.142	22.8	0.28	110	4.7	0.42
W8A	2010-08-02 0:00	310	974		7.89	630	2	3.68	79.7	0.06	29	0.15	110	8.3	0.39
W8A	2010-08-09 0:00	350	968		7.86	610	19	3.74	82.9	0.068	23.5	0.062	100	6.2	0.37
W8A	2010-08-15 0:00	350	976		8.03	640	19	4.29	92.1	0.114	23	0.11	100	5.7	0.36
W8A	2010-08-22 0:00	270			8.06	650	100	3.58	93.8	0.61	32	0.22	120	7.1	0.44
W8A	2010-08-29 0:00	270	919		7.8	640	10	3.78	68.2	0.068	27	0.09	120	5.1	0.4
W8A	2010-09-05 0:00	360	943		7.97	640	3	2.34	78.2	0.044	19.3	0.15	97	5.9	0.4
W8A	2010-09-09 0:00	350	954		8.06	780	25	3.24	83.6	0.051	8.9	0.039	100	4.4	0.39
W8A	2010-09-16 0:00	370	917		8.08	420	9	2.91	109.3	0.033	15.1	0.093	86	3.5	0.41
W8A	2010-09-23 0:00	380	883		8.16	610	3	0.77	91.4	0.016	10.4	0.06	83	4.4	0.37
W8A	2010-10-07 0:00	390	854		8.16	550	4	0.01	101.8	0.012	7.7	0.041	79	2.6	0.37
W8A	2011-04-01 0:00	130	770			450	3			0.57	23.3	0.51	110	27	1.19
W8A	2011-04-07 0:00	140	809			520	1			0.56	30	0.8	110	26	1.24
W8A	2011-04-21 0:00	290	703			370	3			0.017	4.9	0.085	76	2.8	0.4
W8A	2011-04-25 0:00	240	638			390	11			0.04	6.6	0.084	75	3	0.38
W8A	2011-04-30 0:00	170	524			320	42			0.058	7.8	0.161	71	4.7	0.42
W8A	2011-05-06 0:00	190	493			290	37			0.029	4.8	0.051	56	2.8	0.35
W8A	2011-05-13 0:00	240				380	18			0.026	6.5	0.019	73	3.1	0.38
W8A	2011-05-21 0:00	280	680			430	100			0.077	6.8	0.007	74	3.8	0.38
W8A	2011-05-25 0:00	280	707			480	30			0.025	8.6	0.042	80	4.6	0.4
W8A	2011-06-10 0:00	330	762			490	35			0.02	6.2	0.029	71	0.5	0.41
W8A	2011-06-17 0:00	360	1410			990	170			0.328	54				
W8A	2011-06-24 0:00	330	752			480	25			0.013	5.6	0.032	63		
W8A	2011-06-30 0:00	280	621			410	49			0.017	6.1	0.019	55		
W8A	2011-07-08 0:00	310	727			510	44			0.012	5.9	0.04	85		
W8A	2011-07-15 0:00	300	736			470	270			0.022	8.5	0.008	73	3.5	0.34
W8A	2011-07-21 0:00	270	804			550	43			0.024	16.6	0.024	100		
W8A	2011-07-31 0:00	310	846			550	3			0.016	14.6	0.042	97		
W8A	2011-08-05 0:00	280	809			520	19			0.026	14.4	0.043	94		
W8A	2011-08-08 0:00	240	708			570	30			0.046	7.8	0.022			
W8A	2011-08-09 0:00	240	740			540	16			0.038	12.8	0.009			
W8A	2011-08-10 0:00	250	769			550	13			0.031	14.2				
W8A	2011-08-11 0:00	260	763			540	12			0.022	13.9				
W8A	2011-08-12 0:00	280	792			640	15			0.023	15.2	0.039			
W8A	2011-08-13 0:00	280	808			640	7			0.021	14.6	0.043			
W8A	2011-08-14 0:00	290	821			620	7			0.017	14	0.038			
W8A	2011-08-15 0:00	300	823			630	94			0.018	17.7	0.035			
W8A	2011-08-16 0:00	300	828			660	70			0.02	13.3	0.038			
W8A	2011-08-17 0:00	310	832			700	10			0.017	12.5	0.042			
W8A	2011-08-18 0:00	300	816			580	8			0.016	11.1	0.018			
W8A	2011-08-19 0:00	250	1390			1200	21			0.157	72	0.076			
W8A	2011-08-20 0:00	310	799			540	7			0.015	9.9	0.02			
W8A	2011-08-21 0:00	310	790			550	6			0.013	9.7	0.013			
W8A	2011-08-27 0:00	320	823			520	5			0.015	12.1	0.048	91		
W8A	2011-09-03 0:00	350	842		7.68	540	2	2	85.4	0.006	7	0.042		3.8	
W8A	2011-09-10 0:00	360	858		7.64	560	1	1.6	125.8	0.005	8.8	0.032		4.6	
W8A	2011-09-16 0:00	360	850		7.59	510	2	0.2	86.4	0.007	7.7	0.019	87	3.2	
W8A	2011-09-23 0:00	370	826		7.66	530	7	1.1	87.6	0.005	6.3	0.028	85	2.9	
W8A	2011-09-30 0:00	370	828		7.62	500	4	0.9	88.6	0.005	5.3	0.055	85	3.8	
W8A	2011-10-08 0:00	370	848		7.6	510	1	0.4	89.6	0.005	5.5	0.009		3.8	
W8A	2011-11-08 0:00	380	850		7.64	518	10.6	0	87.7	0.007	6.07	0.0273		3.4	
W8A	2011-11-21 0:00	394	874			524	6.3			0.005	5.29	0.0222		3.8	
W8A	2011-11-28 0:00	393	855			524	2.4			0.005	4.37	0.028	92.3	3.3	0.43
W8A	2011-12-05 0:00	392	887			506	4			0.007	3.54	0.0351	83.3	3.2	
W8A	2012-09-20 11:20	358	941	104.7	7.49	752	23.3	3.7	55.8	0.0233	12.4	0.11	131	4.7	0.49
W8A	2012-09-25 7:35	332	1040	134.7	7.3	584	5.1	1	46	0.0373	24.9	0.041	150	4.6	0.42
W8A	2012-10-12 11:10	370	898	143.3	7.35	576	20.3	0	43.3	0.0111	9.41	0.03	107	3.5	0.41
W8A	2012-10-19 13:10	391	912	112	7.52	556	34.6	0.2	42.2	0.0114	6	0.051	97.4	2.9	0.36
W8A	2012-10-25 16:40	381	982		8.2	752	19.9	0.2		0.0136	13.5	0.037	118	3.8	0.42
W8A	2012-11-05 15:10	406	967			602	8.2			0.0108	9.8	0.024	110	3.6	0.42
W8A	2012-11-09 15:45	296	1130	216.7	8.2	796	8.8	-0.1		0.036	33.3	0.031	179	6.7	0.54
W8A	2012-11-18 16:30	429	946	294.5	7.48	650	12	-0.1		0.0075	5.56	0.02	94.4	3.3	0.39
W8A	2012-12-11 16:15	435	935	199.4	7.47	628	15.7	2	59.7	0.0085	4.17	0.012	90.1	2.9	0.4
W8A	2012-12-28 9:30	434	927			448	24.9			0.005	3.23	0.014	96.4	2.8	0.38
W8A	2013-01-02 0:00	445	936	250.9	7.36	530	4.9	0.3	73.4	0.005	3.04	0.11	86.6	2.9	0.38
W8A	2013-01-09 0:00	443	954	258.2	7.58	570	4	0	57.4	0.005	2.49	0.03	93.4	3.2	0.39
W8A	2013-01-14 0:00	440	928	202.3	7.54	566	9	-1.1	51.5	0.005	2.56	0.036	85.1	2.7	0.38
W8A	2013-01-22 0:00	447	924	111.9	7.75	578	10.7	0	62.3	0.005	2.45	0.063	87.4	2.8	0.37
W8A	2013-02-03 0:00	451	938			552	12.2			0.005	2.18	0.086	87	2.8	0.38
W8A	2013-02-07 0:00	450	950			578	14.6			0.005	2.5	0.066	88	3	0.39
W8A	2013-02-09 16:30	306	933	158.4	7.29	706	2.2	5.2	86.7	0.005	15.2	0.03	138	7.7	0.45
W8A	2013-02-12 0:00														
W8A	2013-02-13 0:00	444	974			564	1.2			0.0112	3.44	0.068	99.6	3.2	0.34
W8A	2013-02-21 0:00	446	949			628	3.6			0.005	2.19	0.18	89.4	2.7	0.38
W8A	2013-02-27 0:00	452	942			542	13.5			0.005	1.63	0.086	81.5	2.6	0.35
W8A	2013-03-04 0:00	461	943	-392.8	7.53	578	3.8	0.5	54.1	0.005	1.73	0.058	78.1	2.7	0.37
W8A	2013-03-14 0:00	460	939	-426.7	7.54	568	18.9	0.3	45.7	0.005	1.71	0.042	87.5	3.1	0.37
W8A	2013-03-19 0:00	466	970	-405.6	7.41	580	37.3	5.2	66.2	0.005	1.87	0.054	87.9	3	0.33
W8A	2013-03-29 0:00	482	989	-407.3	7.73	612	6.3	1.3	85.4	0.05	2.06	0.094	89.1	3.6	0.39
W8A	2013-04-01 16:45	499	1030	-406.5	7.48	628	11.8	1.2	52.6	0.005	2.61	0.031	92	4.4	0.37
W8A	2013-04-06 9:45	557	1170	-397.9	7.74	722	4.5	0.2	72.4	0.05	6.58	0.089	123	6.4	0.4
W8A	2013-04-13 10:30	490	1020		7.7	670	16.6	0.4		0.0054	1.64	0.057	104	3.8	0.37
W8A	2013-04-17 10:45	498	4710		7.2	2810	28.8	0.2		0.0275	3.06	0.14	102	1300	0.34
W8A	2013-04-25 15:00	494	1650	-34.2	7.2	588	12.2	2.7	38.2	0.0237	3.1	0.041	90.4	180	0.4
W8A	2013-05-02 11:15	403	936	-51.1	8.01	598	39.5	1.3	58.7	0.0323	1.8	0.065	84.1	22	0.38
W8A	2013-05-03 0:00														
W8A	2013-05-12 10:40	64.3	172	35.5	7.4	174	165	1.5	67.6	0.005	0.534	0.081	6.15	2.3	0.24
W8A	2013-05-17 16:30	176	484		7.5	316	8.9	1.9		0.0152	2.38	0.037	69.3	7.6	0.37
W8A	2013-05-25 13:55	269	711	-64.1	8.63	464	49.3	3.1	79.4	0.0082	3.48	0.042	96.6	6.9	0.41
W8A	2013-05-30 8:45	255	679	39	7.35	502	19	3.3	62.3	0.0091	3.4	0.038	97.8	6.9	0.44
W8A	2013-06-08 0:00	312	785	88.4	7.01	486	24.8	3	48.8	0.0189	4.23	0.025	104	6.8	0.41
W8A	2013-06-15 0:00	327	804		6.2	564	9.3	5.6		0.0117	4.03	0.03	111	7.8	0.41
W8A	2013-06-18 0:00	345	875		8	666	17.2	4.7		0.0622	5.74	0.034	125	13	0.43
W8A	2013-06-24 0:00	358	917		8	766	17	5.2		0.0201	7.45	0.0106	131	7.3	0.42
W8A	2013-07-01 0:00	359	958	101.9	7.28	612	5.3	3.7	58	0.0099	8.75	0.032	144	9.1	0.42
W8A	2013-07-11 0:00	359	938		8	668	9.1	2		0.009	8.8	0.019	146	8.6	0.42
W8A	2013-07-19 0:00	369	992	133.1	7.37	746	2.5	7.5	58.1	0.0244	11.2	0.032	148	9.2	0.47
W8A	2013-07-23 0:00	309	868		8.5	566	4.7	5.7		0.05	9.1	0.082	136	9	0.45
W8A	2013-07-31 16:15	266	861	102.7	7.36	568	14.9	2.7	68.4	0.0063	18.4	0.34	143	7.7	0.53
W8A	2013-08-09 11:30	323	947	140.5	7.27	784	6.7	3.9	67.9	0.05	12.3	0.03	154	7.9	0.5
W8A	2013-08-15 9:40	347	961		7.8	688	5.7	7.1		0.005	11.3	1.6	151	7.7	0.48
W8A	2013-08-19 16:00	349	969	192.1	7.41	658	9.9	3.3	57.1	0.0068	11.1	0.03	150	8.7	0.48
W8A	2013-08-26 11:00	347	990	199.3	7.34	706	6.1	1.9	70.7	0.005	13.3	0.024	169	9	0.44
W8A	2013-09-17 14:15	328	975	184	7.12	744	6.4	2.5	54.7	0.005	12	0.02	164	9.9	0.5
W8A	2013-09-28 17:00	307	885	185.2	7	620	4.9	1.2	62.9	0.01	9.39	0.022	154	8.8	0.46
W8A	2013-10-04 11:30	312	919			624	17.1			0.0106	9.83	0.029	146	9.3	0.51
W8A	2013-10-09 14:45	329	960	187.9	7.09	672	7.4	0.6	51.5	0.0161	10.1	0.053	150	9.9	0.46
W8A	2013-10-17 15:30	331	1010	157.5	7.29	666	14.3	1.5	49.3	0.0296	13.8	0.033	176	11	0.54
W8A	2013-10-22 11:45	349	994	167.8	7.31	634	4.1	0.1	54.5	0.0116	11	0.12	163	10	0.49
W8A	2013-10-29 14:30			162.9	7.2			1.8	38.4						
W8A	2013-11-02 8:00	362	999	156	7.31	658	21.7	0.7	72.1	0.05	9.88	0.023	150	10	0.45
W8A	2013-11-07 10:00	366	1050	148.8	7.46	756	7.2	-0.1	53.5	0.009	12.6	0.035	172	11	0.47
W8A	2013-11-15 8:40	357	1160	150.4	8.03	782	4.6	0	58.5	0.0532	17.2	0.018	225	16	0.51
W8A	2013-11-19 10:45	282	1100	-113.9	7.55	768	13.2	0.2	76.6	0.0143	21.4	0.03	218	17	0.54
W8A	2013-11-29 15:30		1050	269.9	7.53	652	11.4	0	50.7	0.0102	13.1	0.036	195	11	0.41

Station	Date / Time	Dissolved Elements																		
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W8A	2010-07-25 0:00		0.01	0.0007	0.123	0.1	0.0002	0.001	102	0.0001	0.0005		0.096	0.083	0.0002	5	0.01	28	0.506	0.014
W8A	2010-08-02 0:00		0.01	0.0006	0.146	0.1	0.0002	0.001	130	0.0001	0.0006		0.146	0.065	0.0002	7	0.01	38	0.962	0.011
W8A	2010-08-09 0:00		0.012	0.0007	0.145	0.1	0.0002	0.001	128	0.0001	0.0005		0.138	0.07	0.0002	7	0.01	40	0.884	0.01
W8A	2010-08-15 0:00		0.01	0.0007	0.143	0.1	0.0002	0.001	124	0.0002	0.0005		0.153	0.07	0.0002	6	0.01	40	0.875	0.009
W8A	2010-08-22 0:00		0.011	0.0007	0.141	0.1	0.0002	0.001	133	0.0002	0.0008		0.121	0.068	0.0002	7	0.01	34	0.822	0.014
W8A	2010-08-29 0:00		0.01	0.0008	0.128	0.1	0.0002	0.001	122	0.0001	0.0005		0.117	0.034	0.0002	6	0.01	33	0.618	0.011
W8A	2010-09-05 0:00		0.012	0.0007	0.148	0.1	0.0002	0.001	110	0.0001	0.0005		0.115	0.065	0.0002	5	0.01	41	0.687	0.009
W8A	2010-09-09 0:00		0.01	0.0005	0.133	0.1	0.0002	0.001	112	0.0001	0.0006		0.114	0.043	0.0002	7	0.01	44	0.733	0.008
W8A	2010-09-16 0:00		0.01	0.0006	0.127	0.1	0.0002	0.001	105	0.0001	0.0005		0.117	0.076	0.0002	6	0.01	45	0.659	0.007
W8A	2010-09-23 0:00		0.01	0.0005	0.115	0.1	0.0002	0.001	103	0.0001	0.0005		0.12	0.094	0.0002	6	0.01	46	0.691	0.007
W8A	2010-10-07 0:00	0.00002	0.008	0.0005	0.108	0.05	0.0001	0.001	91.3	0.00017	0.0005	0.001	0.102	0.065	0.00002	4.8	0.007	42.5	0.588	0.005
W8A	2011-04-01 0:00	0.00002	0.017	0.0004	0.118	0.082	0.0001	0.001	62.4	0.00005	0.0005	0.001	0.0169	0.026	0.00002	16.2	0.014	14.3	0.203	0.035
W8A	2011-04-07 0:00	0.00002	0.005	0.0004	0.122	0.074	0.0001	0.001	62.8	0.00003	0.0005	0.001	0.0145	0.017	0.00002	21.3	0.013	15.2	0.119	0.036
W8A	2011-04-21 0:00	0.00002	0.003	0.0003	0.081	0.05	0.0001	0.001	76	0.00007	0.0005	0.001	0.0844	0.035	0.00002	4.03	0.007	30	0.314	0.005
W8A	2011-04-25 0:00	0.00002	0.006	0.0003	0.07	0.05	0.0001	0.001	74.1	0.00007	0.0005	0.001	0.0897	0.041	0.00002	3.78	0.005	24.9	0.361	0.007
W8A	2011-04-30 0:00	0.00003	0.008	0.0004	0.062	0.05	0.0001	0.001	58.3	0.00006	0.0005	0.001	0.123	0.045	0.00002	3.56	0.005	18	0.288	0.011
W8A	2011-05-06 0:00	0.00002	0.01	0.0004	0.064	0.05	0.0001	0.001	55.6	0.00003	0.0005	0.001	0.0775	0.043	0.00002	3.84	0.005	21.5	0.173	0.008
W8A	2011-05-13 0:00	0.00003	0.01	0.0005	0.082	0.05	0.0001	0.001	74.2	0.00007	0.0005	0.001	0.11	0.057	0.00002	4.46	0.005	28.4	0.331	0.007
W8A	2011-05-21 0:00	0.00003	0.014	0.0006	0.087	0.05	0.0001	0.001	80.7	0.00014	0.0005	0.001	0.133	0.128	0.00002	4.45	0.005	29.6	0.658	0.008
W8A	2011-05-25 0:00	0.00002	0.008	0.0006	0.08	0.05	0.0001	0.001	78.8	0.00003	0.0005	0.001	0.0468	0.043	0.00002	4.75	0.006	36.4	0.134	0.01
W8A	2011-06-10 0:00	0.00002	0.025	0.0005	0.095	0.05	0.0001	0.001	83.2	0.00014	0.0005	0.001	0.0678	0.08	0.00002	5.15	0.006	42.5	0.289	0.008
W8A	2011-06-17 0:00	0.00002	0.062	0.0006	0.142	0.052	0.0001	0.001	199	0.00014	0.0007	0.001	0.193	0.129	0.00002	6.85	0.005	43.5	1.18	0.011
W8A	2011-06-24 0:00	0.00002	0.008	0.0006	0.097	0.05	0.0001	0.001	85.3	0.00008	0.0005	0.001	0.0679	0.056	0.00002	4.96	0.006	43.2	0.17	0.006
W8A	2011-06-30 0:00	0.00002	0.016	0.0006	0.087	0.05	0.0001	0.001	74.3	0.00009	0.0005	0.001	0.163	0.1	0.00002	4.6	0.006	32.4	0.378	0.006
W8A	2011-07-08 0:00	0.00002	0.013	0.0006	0.094	0.05	0.0001	0.001	84.2	0.00012	0.0005	0.001	0.144	0.09	0.00002	5.11	0.006	40.6	0.351	0.005
W8A	2011-07-15 0:00	0.00002	0.014	0.0006	0.102	0.05	0.0001	0.001	77.6	0.0002	0.0005	0.001	0.167	0.075	0.00002	5.34	0.006	37.9	0.441	0.006
W8A	2011-07-21 0:00	0.00002	0.016	0.0005	0.103	0.05	0.0001	0.001	84.7	0.00013	0.0005	0.001	0.144	0.074	0.00005	5.3	0.006	38.7	0.403	0.007
W8A	2011-07-31 0:00	0.00002	0.013	0.0006	0.113	0.05	0.0001	0.001	98.9	0.00015	0.0005	0.001	0.162	0.08	0.00002	5.69	0.007	46.2	0.487	0.007
W8A	2011-08-05 0:00	0.00002	0.03	0.0006	0.106	0.05	0.0001	0.001	94.5	0.00018	0.0005	0.001	0.162	0.11	0.00002	5.36	0.007	41.1	0.403	0.007
W8A	2011-08-08 0:00	0.00002	0.015	0.0006	0.095	0.05	0.0001	0.001	103	0.00012	0.0005	0.001	0.155	0.091	0.00002	5.14	0.005	34.1	0.296	0.007
W8A	2011-08-09 0:00	0.00002	0.019	0.0006	0.1	0.05	0.0001	0.001	96.4	0.00012	0.0005	0.001	0.151	0.084	0.00002	5.14	0.005	33.7	0.312	0.007
W8A	2011-08-10 0:00	0.00005	0.022	0.0006	0.105	0.05	0.0001	0.001	91.8	0.00014	0.0005	0.001	0.153	0.083	0.00002	5.09	0.006	34.8	0.333	0.007
W8A	2011-08-11 0:00	0.00002	0.011	0.0006	0.104	0.05	0.0001	0.001	110	0.00012	0.0005	0.001	0.15	0.092	0.00002	5.35	0.005	35.7	0.336	0.008
W8A	2011-08-12 0:00	0.00002	0.012	0.0006	0.108	0.05	0.0001	0.001	92	0.00013	0.0005	0.001	0.147	0.069	0.00002	5.48	0.008	36.7	0.385	0.008
W8A	2011-08-13 0:00	0.00002	0.008	0.0005	0.107	0.05	0.0001	0.001	91.1	0.00012	0.0005	0.001	0.136	0.069	0.00002	5.09	0.008	35.9	0.375	0.007
W8A	2011-08-14 0:00	0.00002	0.009	0.0005	0.104	0.05	0.0001	0.001	90.8	0.00012	0.0005	0.001	0.132	0.061	0.00002	5.28	0.006	38.2	0.397	0.007
W8A	2011-08-15 0:00	0.00002	0.009	0.0005	0.109	0.05	0.0001	0.001	90.9	0.00013	0.0005	0.001	0.129	0.056	0.00002	5.37	0.006	38.8	0.394	0.007
W8A	2011-08-16 0:00	0.00002	0.01	0.0005	0.113	0.05	0.0001	0.001	87.3	0.00013	0.0005	0.001	0.129	0.057	0.00002	5.27	0.006	38.4	0.409	0.007
W8A	2011-08-17 0:00	0.00002	0.007	0.0005	0.106	0.05	0.0001	0.001	98.3	0.00012	0.0005	0.001	0.133	0.058	0.00002	5	0.006	40.2	0.393	0.007
W8A	2011-08-18 0:00	0.00002	0.007	0.0006	0.104	0.05	0.0001	0.001	98.2	0.00012	0.0005	0.001	0.144	0.056	0.00002	4.95	0.006	39.4	0.402	0.006
W8A	2011-08-19 0:00	0.00002	0.028	0.0005	0.175	0.072	0.0001	0.001	211	0.00015	0.0007	0.001	0.13	0.055	0.00002	6.26	0.005	39.7	0.79	0.006
W8A	2011-08-20 0:00	0.00002	0.009	0.0005	0.104	0.05	0.0001	0.001	89.6	0.00011	0.0005	0.001	0.129	0.05	0.00002	4.03	0.006	37.3	0.355	0.006
W8A	2011-08-21 0:00	0.00002	0.008	0.0005	0.104	0.05	0.0001	0.001	94.2	0.00011	0.0005	0.001	0.134	0.046	0.00002	5.05	0.006	41.2	0.366	0.007
W8A	2011-08-27 0:00	0.00002	0.006	0.0004	0.102	0.05	0.0001	0.001	98.3	0.00015	0.0005	0.001	0.146	0.054	0.00002	5.26	0.007	42.7	0.375	0.006
W8A	2011-09-03 0:00	0.00002	0.008	0.0004	0.099	0.05	0.0001	0.001	91.6	0.00009	0.0005	0.001	0.102	0.036	0.00002	4.7	0.008	43.2	0.302	0.005
W8A	2011-09-10 0:00	0.00002	0.007	0.0004	0.104	0.05	0.0001	0.001	96.4	0.0001	0.0005	0.001	0.103	0.033	0.00002	5	0.008	51	0.325	0.005
W8A	2011-09-16 0:00	0.00002	0.005	0.0003	0.096	0.05	0.0001	0.001	88.1	0.00011	0.0005	0.001	0.124	0.033	0.00002	4.65	0.009	48.1	0.334	0.005
W8A	2011-09-23 0:00	0.00002	0.012	0.0004	0.088	0.05	0.0001	0.001	85	0.00012	0.0005	0.001	0.125	0.05	0.00002	4.41	0.009	45.8	0.323	0.005
W8A	2011-09-30 0:00	0.00002	0.014	0.0003	0.102	0.05	0.0001	0.001	86.5	0.00007	0.0005	0.001	0.104	0.042	0.00002	4.5	0.007	48	0.252	0.005
W8A	2011-10-08 0:00	0.00002	0.011	0.0004	0.107	0.05	0.0001	0.001	107	0.00009	0.0005	0.001	0.108	0.045	0.00002	4.87	0.009	52.6	0.251	0.005
W8A	2011-11-08 0:00	0.00002	0.0065	0.0003	0.0894	0.05	0.0001	0.001	88.9	0.000114	0.0005	0.001	0.112	0.0249	0.00002	4.8	0.01	55	0.285	0.0055
W8A	2011-11-21 0:00	0.00002	0.0125	0.00035	0.0985	0.05	0.0001	0.001	91.6	0.000284	0.0005	0.001	0.141	0.0678	0.00002	4.9	0.0102	57.4	0.379	0.0053
W8A	2011-11-28 0:00	0.00002	0.0126	0.00033	0.0895	0.05	0.0001	0.001	83.4	0.000128	0.0005	0.001	0.123	0.0515	0.00002	4.78	0.0105	47.9	0.341	0.0048
W8A	2011-12-05 0:00	0.00002	0.011	0.00025	0.088	0.05	0.0001	0.001	82.6	0.000098	0.0005	0.001	0.136	0.0488	0.00002	4.41	0.0106	52.4	0.353	0.0047
W8A	2012-09-20 11:20	0.00002	0.0159	0.00038	0.0964	0.05	0.0001	0.001	105	0.000168	0.0005	0.001	0.126	0.075	0.00001	5.46	0.0078	50.4	0.468	0.0085
W8A	2012-09-25 7:35	0.00002	0.004	0.00039	0.0918	0.05	0.0001	0.001	93.5	0.000123	0.0005	0.001	0.0959	0.0312	0.00001	5.22	0.0083	48.7	0.431	0.007
W8A	2012-10-12 11:10														0.00001					
W8A	2012-10-19 13:10	0.00002	0.0051	0.00036	0.0875	0.05	0.0001	0.001	89.8	0.000104	0.0005	0.001	0.0804	0.0388	0.00001	4.94	0.0084	49.5	0.386	0.0067
W8A	2012-10-25 16:40	0.00002	0.0042	0.00038	0.0906	0.05	0.0001	0.001	92.4	0.000089	0.0005	0.001	0.0843	0.0419	0.00001	4.84	0.0094	53.2	0.362	0.0074
W8A	2012-11-05 15:10	0.00002	0.157	0.00043	0.102	0.05	0.0001	0.001	119	0.000102	0.0005	0.001	0.136	0.336	0.00001	5.34	0.0099	51.5	0.36	0.0093
W8A	2012-11-09 15:45	0.000007	0.00262	0.000288	0.0905	0.05	0.00001	0.000005	105	0.000142	0.000146	0.0001	0.0998	0.022		5.14	0.0092	52.4	0.36	0.00875
W8A	2012-11-18 16:30	0.00002	0.004	0.0003	0.0861	0.05	0.0001	0.001	97.6	0.000119	0.0005	0.001	0.0928	0.031	0.00001	4.95	0.0098	54.8	0.345	0.0076
W8A	2012-12-11 16:15	0.00002	0.0071	0.00039	0.0848	0.05	0.0001	0.001	91.2	0.000112	0.0005	0.001	0.0878	0.0366	0.00001	4.69	0.0111	63	0.326	0.0056
W8A	2012-12-28 9:30	0.00002	0.004	0.00029	0.0808	0.05	0.0001	0.001	83.7	0.000088	0.0005	0.001	0.0965	0.0273	0.00001	4.69	0.0109	61.1	0.307	0.0049
W8A	2013-01-02 0:00	0.00002	0.0159	0.00036	0.0906	0.05	0.0001	0.001	84.7	0.000128	0.0005	0.001	0.0899	0.0482	0.00001	4.97	0.0125	57	0.267	0.0046
W8A	2013-01-09 0:00	0.00002	0.003	0.00027	0.083	0.05	0.0001	0.001	77.6	0.000106	0.0005	0.001	0.103	0.0204	0.00001	4.86	0.0115	62.5	0.309	0.0043
W8A	2013-01-14 0:00	0.00002	0.0034	0.00026	0.0801	0.05	0.0001	0.001	78.6	0.000081	0.0005	0.001	0.0894	0.0257	0.00001	4.49	0.0105	57.9	0.267	0.0041
W8A	2013-01-22 0:00	0.00003	0.0097	0.0003	0.0814	0.05	0.0001	0.001	84.1	0.000103	0.0005	0.001	0.114	0.0509	0.00001	5.56	0.0125	61.2	0.304	0.0042
W8A	2013-02-03 0:00	0.00002	0.003	0.00026	0.0806	0.05	0.0001	0.001	76.7	0.000101	0.0005	0.001	0.111	0.0248	0.00001	4.68	0.011	62.5	0.302	0.004
W8A	2013-02-07 0:00	0.00002	0.004	0.00026	0.0856	0.05	0.0001	0.001	83.8	0.000082	0.0005	0.001	0.0897	0.0367	0.00001	4.81	0.0118	61.6	0.273	0.0035
W8A	2013-02-09 16:30	0.00002	0.0046	0.00056	0.106	0.05	0.0001	0.001	110	0.00012	0.0005	0.001	0.0999	0.0633	0.00001	5.11	0.006	43.2	0.296	0.0103
W8A	2013-02-12 0:00																			
W8A	2013-02-13 0:00	0.00002	0.0051	0.00027	0.0847	0.05	0.0001	0.001	87	0.000111	0.0005	0.001	0.106	0.0323	0.00001	4.73	0.0111	59.9	0.3	0.0045
W8A	2013-02-21 0:00	0.00002	0.003	0.00026	0.0831	0.05	0.0001	0.001	83.3	0.000117	0.0005	0.001	0.112	0.0359	0.00001	4.73	0.0114	64.9	0.313	0.0034
W8A	2013-02-27 0:00	0.00002	0.0032	0.00027	0.08	0.05	0.0001	0.001	80.5	0.000099	0.0005	0.001	0.097	0.032	0.00001	4.46	0.0115	63	0.29	0.0033
W8A	2013-03-04 0:00	0.00002	0.003	0.00027	0.084	0.05	0.0001	0.001	84.1	0.000119	0.0005	0.001	0.12	0.0354	0.00001	4.76	0.0121	63.7	0.33	0.0044
W8A	2013-03-14 0:00	0.00002	0.003	0.00014	0.0897	0.05	0.0001	0.001	93.3	0.000115	0.0005	0.001	0.114	0.0361	0.00001	4.88	0.0114	65	0.311	0.0044
W8A	2013-03-19 0:00	0.00002	0.0031	0.00023	0.084	0.05	0.0001	0.001	92.7	0.000135	0.0005	0.001	0.132	0.0395	0.00001	5.3	0.0119	66.9	0.412	0.0034
W8A	2013-03-29 0:00	0.00002	0.003	0.00029	0.0914	0.05	0.0001	0.001	88.9	0.00013	0.0005	0.001	0.12	0.0504	0.00001	4.85	0.0114	64.6	0.51	0.0035
W8A	2013-04-01 16:45	0.00002	0.0139	0.00054	0.102	0.05	0.0001	0.001	104	0.000112	0.0005	0.001	0.0995	0.0715	0.00001	5.18	0.011	62.7	0.577	0.0038
W8A	2013-04-06 9:45	0.00002	0.0065	0.00094	0.126	0.05	0.0001	0.001	153	0.000161	0.0005	0.001	0.122	0.098	0.00001	5.52	0.0075	59.3	0.991	0.006
W8A	2013-04-13 10:30	0.00002	0.0031	0.00047	0.106	0.05	0.0001	0.001	109	0.000084	0.0005	0.001	0.103	0.0629	0.00001	4.99	0.0092	57.5	0.883	0.005
W8A	2013-04-17 10:45	0.00002	0.003	0.00057	0.202	0.05	0.0001	0.001	333	0.000254	0.00054	0.001	0.0773	0.152	0.00001	7.58	0.0112	86.2	1	0.0071
W8A	2013-04-25 15:00	0.000034	0.0113	0.00055	0.119	0.05	0.0001	0.001	135	0.000142	0.0005	0.001	0.125	0.104	0.00001	5.56	0.0099	65.4	1.31	0.0068
W8A	2013-05-02 11:15	0.00002	0.0052	0.00051	0.111	0.05	0.0001	0.001	97.6	0.000103	0.0005	0.001	0.0832	0.0913	0.00001	5.15	0.0082	46	0.864	0.0052
W8A	2013-05-03 0:00																			
W8A	2013-05-12 10:40	0.00002	0.0541	0.00056	0.0293	0.05	0.0001	0.001	24.6	0.00005	0.0005	0.001	0.236	0.153	0.00001	2.44	0.005	5.76	0.0817	0.0034
W8A	2013-05-17 16:30	0.00002	0.0177	0.00057	0.0706	0.05	0.0001	0.001	59.4	0.000107	0.0005	0.001	0.159	0.144	0.00001	4.3	0.005	21.3	0.465	0.0087
W8A	2013-05-25 13:55	0.00002	0.0077	0.0006	0.0939	0.05	0.0001	0.001	80.8	0.000113	0.0005	0.001	0.111	0.11	0.00001	5.01	0.005	30	0.47	0.0072
W8A	2013-05-30 8:45	0.00002	0.0063	0.00056	0.092	0.05	0.0001	0.001	86.3	0.000179	0.0005	0.001	0.15	0.149	0.00001	4.83	0.0057	34.4	0.691	0.0078
W8A	2013-06-08 0:00	0.00002	0.0063	0.00059	0.0889	0.05	0.0001	0.001	83	0.000154	0.0005	0.001	0.142	0.0927	0.00001	5.16	0.0062	39.1	0.571	0.0071
W8A	2013-06-15 0:00	0.00002	0.0058	0.00054	0.0935	0.05	0.0001	0.001	82.9	0.000112	0.0005	0.001	0.108	0.0791	0.00001	5.02	0.0068	38.5	0.411	0.0061
W8A	2013-06-18 0:00	0.00002	0.0178	0.00045	0.095	0.05	0.0001	0.001	86.3	0.000127	0.0005	0.001	0.114	0.0856	0.00001	4.98	0.0071	42.9	0.46	0.0065
W8A	2013-06-24 0:00	0.00002	0.0058	0.00045	0.105	0.05	0.0001	0.001	98	0.000164	0.0005	0.001	0.104	0.0503	0.00001	5.21	0.0078	45.9	0.41	0.0077
W8A	2013-07-01 0:00	0.00002	0.0083	0.00044	0.111	0.05	0.0001	0.001	106	0.000153	0.0005	0.001	0.0967	0.0899	0.00001	5.63	0.0072	47.5	0.455	0.0073
W8A	2013-07-11 0:00	0.00002	0.0051	0.00042	0.103	0.05	0.0001	0.001	92.5	0.000153	0.0005	0.001	0.0912	0.0573	0.00001	4.8	0.0073	46.1	0.381	0.0078
W8A	2013-07-19 0:00	0.00002	0.007	0.00033	0.103	0.05	0.0001	0.001	113	0.000236	0.0005	0.001	0.121	0.061	0.00001	5.4	0.0079	47	0.419	0.0095
W8A	2013-07-23 0:00	0.000043	0.007	0.00054	0.116	0.05	0.0001	0.001	155	0.000305	0.0005	0.001	0.157	0.073	0.00001	5.94	0.0064	46.8	0.578	0.0112
W8A	2013-07-31 16:15	0.00002	0.0086	0.0005	0.102	0.05	0.0001	0.001	99.3	0.00015	0.0005	0.001	0.111	0.0775	0.00001	5.33	0.0075	39.7	0.35	0.0124
W8A	2013-08-09 11:30	0.00002	0.0046	0.00046	0.106	0.05	0.0001	0.001	103	0.000137	0.0005	0.001	0.0769	0.043	0.00001	5.23	0.0064	43.6	0.354	0.011
W8A	2013-08-15 9:40	0.00002	0.0042	0.00042	0.108	0.05	0.0001	0.001	113	0.00013	0.0005	0.001	0.0942	0.0627	0.00001	5.13	0.0074	47	0.336	0.0106
W8A	2013-08-19 16:00	0.00002	0.07	0.00046	0.109	0.05	0.0001	0.001	126	0.000154	0.0005	0.001	0.0898	0.227	0.00001	5.23	0.0067	47.8	0.314	0.0101
W8A	2013-08-26 11:00	0.00002	0.0041	0.00043	0.111	0.05	0.0001	0.001	110	0.000131	0.0005	0.001	0.0919	0.0626	0.00001	5.29	0.0064	47.9	0.36	0.0105
W8A	2013-09-17 14:15	0.00002	0.0037	0.00052	0.102	0.05	0.0001	0.001	113	0.00009	0.0005	0.001	0.0788	0.0598	0.00001	4.97	0.0052	42.2	0.314	0.0107
W8A	2013-09-28 17:00	0.00002	0.0052	0.00049	0.0918	0.05	0.0001	0.001	102	0.000129	0.0005	0.001	0.0874	0.0645	0.00001	4.75	0.006	42.5	0.419	0.0098
W8A	2013-10-04 11:30	0.00002	0.0057	0.00053	0.0994	0.05	0.0001	0.001	105	0.0001	0.0005	0.001	0.0774	0.0614	0.00001	5.15	0.0065	42.5	0.363	0.0117
W8A	2013-10-09 14:45	0.00002	0.0034	0.00046	0.102	0.05	0.0001	0.001	125	0.000196	0.0005	0.001	0.123	0.0467	0.00001	5.64	0.0062	47.6	0.488	0.0103
W8A	2013-10-17 15:30	0.00002	0.0042	0.00051	0.0986	0.05	0.0001	0.001	112	0.000135	0.0005	0.001	0.0823	0.0505	0.00001	5.24	0.0071	46.9	0.4	0.0107
W8A	2013-10-22 11:45	0.000024	0.0042	0.00057	0.104	0.05	0.0001	0.001	130	0.000237	0.0005	0.001	0.126	0.0633	0.00001	5.32	0.0067	44.4	0.41	0.0122
W8A	2013-10-29 14:30																			
W8A	2013-11-02 8:00	0.00002	0.0048	0.0005	0.114	0.05	0.0001	0.001	131	0.000208	0.0005	0.001	0.12	0.0627	0.00001	5.77	0.0059	47	0.438	0.0108
W8A	2013-11-07 10:00	0.00002	0.0695	0.00051	0.113	0.05	0.0001	0.001	133	0.000189	0.0005	0.001	0.12	0.0586	0.00001	5.47	0.0065	47.9	0.408	0.0116
W8A	2013-11-15 8:40	0.00002	0.0039	0.0009	0.12	0.05	0.0001	0.001	146	0.000151	0.0005	0.001	0.0963	0.0683	0.00001	6.22	0.0063	52.2	0.481	0.013
W8A	2013-11-19 10:45	0.000061	0.0053	0.00078	0.107	0.05	0.0001	0.001	136	0.000189	0.0005	0.001	0.136	0.0585	0.00001	5.49	0.005	38.2	0.384	0.0144
W8A	2013-11-29 15:30	0.000021	0.0059	0.0008	0.109	0.05	0.0001	0.001	159	0.000192	0.0005	0.001	0.126	0.108	0.00001	6.19	0.0056	46.4	0.635	0.0118

Station	Date / Time	Dissolved Elements (continued)														
		Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W8A	2010-07-25 0:00	20	0.002	0.0002	0.0005	60	0.0069	7.58	0.005	0.992	0.01	0.00005	0.0021	0.005	0.01	0.002
W8A	2010-08-02 0:00	26	0.002	0.0002	0.0005	60	0.0071	8.64	0.005	1.48	0.01	0.00005	0.003	0.005	0.01	0.002
W8A	2010-08-09 0:00	26	0.002	0.0002	0.0005	60	0.0059	8.62	0.005	1.54	0.01	0.00005	0.0035	0.005	0.01	0.002
W8A	2010-08-15 0:00	23	0.006	0.0002	0.0005	60	0.0059	7.86	0.005	1.44	0.01	0.00005	0.0036	0.005	0.01	0.002
W8A	2010-08-22 0:00	22	0.002	0.0002	0.0005	60	0.0093	7.91	0.005	1.82	0.01	0.00005	0.0031	0.005	0.01	0.002
W8A	2010-08-29 0:00	25	0.001	0.0002	0.0005	60	0.0055	8.05	0.005	1.21	0.01	0.00005	0.0025	0.005	0.01	0.002
W8A	2010-09-05 0:00	24	0.004	0.0002	0.001	60	0.0042	7.13	0.005	1.59	0.01	0.00005	0.0034	0.005	0.01	0.002
W8A	2010-09-09 0:00	27	0.002	0.0002	0.0005	60	0.0043	7.89	0.005	1.47	0.01	0.00005	0.003	0.005	0.01	0.002
W8A	2010-09-16 0:00	26	0.004	0.0002	0.0005	60	0.003	7.55	0.005	1.29	0.01	0.00005	0.003	0.005	0.01	0.002
W8A	2010-09-23 0:00	31	0.001	0.0002	0.0005	60	0.0024	7.83	0.005	1.28	0.01	0.00005	0.0029	0.005	0.01	0.002
W8A	2010-10-07 0:00	24.9	0.001	0.0002	0.0005	25	0.002	7.28	0.005	1.18	0.005	0.00005	0.0027	0.005	0.005	0.0005
W8A	2011-04-01 0:00	54.7	0.001	0.0002	0.0005	35	0.0109	3.95	0.005	1.28	0.005	0.00005	0.0007	0.005	0.012	0.0005
W8A	2011-04-07 0:00	54.4	0.001	0.0002	0.0005	41	0.0129	4.1	0.005	1.32	0.005	0.00005	0.0007	0.005	0.005	0.0005
W8A	2011-04-21 0:00	21.5	0.001	0.0002	0.0005	24	0.0018	6.06	0.005	0.916	0.005	0.00005	0.0026	0.005	0.005	0.0005
W8A	2011-04-25 0:00	18.3	0.001	0.0002	0.0005	24	0.0021	5.51	0.005	0.796	0.005	0.00005	0.0024	0.005	0.005	0.0005
W8A	2011-04-30 0:00	14.5	0.001	0.0002	0.0005	23	0.0026	4.77	0.005	0.673	0.005	0.00005	0.002	0.005	0.005	0.0005
W8A	2011-05-06 0:00	17.2	0.001	0.0002	0.0005	19	0.0017	4.67	0.005	0.668	0.005	0.00005	0.002	0.005	0.005	0.0005
W8A	2011-05-13 0:00	19.9	0.001	0.0002	0.0005	25	0.0025	5.82	0.005	0.827	0.005	0.00005	0.0026	0.005	0.005	0.0005
W8A	2011-05-21 0:00	19.5	0.001	0.0002	0.0005	26	0.0026	6.58	0.005	0.927	0.005	0.00005	0.0023	0.005	0.005	0.0005
W8A	2011-05-25 0:00	22.8	0.001	0.0002	0.0005	26	0.0026	6.88	0.005	1	0.005	0.00005	0.0029	0.005	0.005	0.0005
W8A	2011-06-10 0:00	27.4	0.001	0.0002	0.0005	27	0.0018	6.82	0.005	1.02	0.005	0.00005	0.0027	0.005	0.005	0.0005
W8A	2011-06-17 0:00	27.9	0.003	0.0002	0.0005	71	0.005	6.75	0.005	2.06	0.005	0.00005	0.0036	0.005	0.005	0.0005
W8A	2011-06-24 0:00	28	0.001	0.0002	0.0005	24	0.002	7.66	0.005	1.06	0.005	0.00005	0.0028	0.005	0.005	0.0005
W8A	2011-06-30 0:00	20.9	0.001	0.0002	0.0005	21	0.0026	7.34	0.005	0.909	0.005	0.00005	0.0018	0.005	0.005	0.0005
W8A	2011-07-08 0:00	25.3	0.002	0.0002	0.0005	27	0.003	8.04	0.005	0.988	0.005	0.00005	0.0018	0.005	0.005	0.0005
W8A	2011-07-15 0:00	24.3	0.003	0.0002	0.0005	27	0.0038	6.77	0.005	1	0.005	0.00005	0.0021	0.005	0.011	0.0005
W8A	2011-07-21 0:00	24.3	0.001	0.0002	0.0005	35	0.0073	6.99	0.005	1.16	0.005	0.00005	0.0021	0.005	0.005	0.0005
W8A	2011-07-31 0:00	28.5	0.001	0.0002	0.0005	37	0.0067	8.35	0.005	1.28	0.005	0.00005	0.0024	0.005	0.005	0.0005
W8A	2011-08-05 0:00	27.2	0.002	0.0004	0.0005	39	0.0073	7.56	0.005	1.23	0.005	0.00005	0.0024	0.005	0.014	0.0005
W8A	2011-08-08 0:00	23.9	0.002	0.0002	0.0005	33	0.0083	8.35	0.005	1.02	0.005	0.00005	0.0019	0.005	0.005	0.0005
W8A	2011-08-09 0:00	23.7	0.002	0.0002	0.0005	35	0.0082	7.75	0.005	1.05	0.005	0.00005	0.0019	0.005	0.006	0.0005
W8A	2011-08-10 0:00	23.6	0.002	0.0002	0.0005	37	0.0084	7.62	0.005	1.09	0.005	0.00005	0.0021	0.005	0.005	0.0005
W8A	2011-08-11 0:00	24.2	0.001	0.0002	0.0005	34	0.0111	9.29	0.005	1.1	0.005	0.00005	0.0022	0.005	0.005	0.0005
W8A	2011-08-12 0:00	25.2	0.001	0.0002	0.0005	34	0.0086	7.29	0.005	1.13	0.005	0.00005	0.0022	0.005	0.005	0.0005
W8A	2011-08-13 0:00	24.2	0.001	0.0002	0.0005	34	0.0079	7.16	0.005	1.12	0.005	0.00005	0.0021	0.005	0.005	0.0005
W8A	2011-08-14 0:00	25.1	0.001	0.0002	0.0005	36	0.0072	7.09	0.005	1.08	0.005	0.00005	0.0021	0.005	0.005	0.0005
W8A	2011-08-15 0:00	25.5	0.001	0.0002	0.0005	36	0.007	7.03	0.005	1.1	0.005	0.00005	0.0021	0.005	0.005	0.0005
W8A	2011-08-16 0:00	26.3	0.002	0.0003	0.0005	34	0.0069	7.1	0.005	1.16	0.005	0.00005	0.0023	0.005	0.006	0.0005
W8A	2011-08-17 0:00	26.8	0.001	0.0002	0.0005	34	0.0068	7.53	0.005	1.15	0.005	0.00005	0.0024	0.005	0.005	0.0005
W8A	2011-08-18 0:00	26.4	0.001	0.0002	0.0005	36	0.0063	7.75	0.005	1.15	0.005	0.00005	0.0024	0.005	0.005	0.0005
W8A	2011-08-19 0:00	28.2	0.002	0.0002	0.0005	76	0.014	7.57	0.005	1.79	0.005	0.00005	0.0025	0.005	0.006	0.0005
W8A	2011-08-20 0:00	24.2	0.001	0.0002	0.0005	31	0.0051	7.3	0.005	1.11	0.005	0.00005	0.0023	0.005	0.005	0.0005
W8A	2011-08-21 0:00	27.4	0.001	0.0002	0.0005	32	0.0049	7.72	0.005	1.14	0.005	0.00005	0.0027	0.005	0.005	0.0005
W8A	2011-08-27 0:00	28	0.001	0.0002	0.0005	35	0.0057	7.88	0.005	1.2	0.005	0.00005	0.0022	0.005	0.005	0.0005
W8A	2011-09-03 0:00	28.7	0.001	0.0002	0.0005	33	0.0036	7.82	0.005	1.09	0.005	0.00005	0.0026	0.005	0.005	0.0005
W8A	2011-09-10 0:00	32.2	0.001	0.0002	0.0005	37	0.0041	8.03	0.005	1.2	0.005	0.00005	0.0026	0.005	0.006	0.0005
W8A	2011-09-16 0:00	30.6	0.001	0.0002	0.0005	31	0.0034	7.35	0.005	1.17	0.005	0.00005	0.0025	0.005	0.005	0.0005
W8A	2011-09-23 0:00	31.6	0.001	0.0002	0.0005	28	0.0031	7.1	0.005	1.2	0.005	0.00005	0.0029	0.005	0.005	0.0005
W8A	2011-09-30 0:00	29.7	0.001	0.0002	0.0005	29	0.0026	7.16	0.005	1.12	0.005	0.00005	0.0026	0.005	0.005	0.0005
W8A	2011-10-08 0:00	33.2	0.001	0.0002	0.0005	33	0.003	7.44	0.005	1.21	0.005	0.00005	0.0029	0.005	0.005	0.0005
W8A	2011-11-08 0:00	34.3	0.001	0.0002	0.0005	32.4	0.00297	8.01	0.005	1.23	0.005	0.00005	0.00266	0.005	0.005	0.0005
W8A	2011-11-21 0:00	35.8	0.001	0.00033	0.0005	33.7	0.00278	8.47	0.005	1.31	0.005	0.00005	0.00276	0.005	0.0058	0.0005
W8A	2011-11-28 0:00	28.3	0.001	0.0002	0.0005	30.4	0.00237	7.21	0.005	1.11	0.005	0.00005	0.00254	0.005	0.005	0.0005
W8A	2011-12-05 0:00	32.2	0.001	0.0002	0.0005	25.9	0.00216	8.08	0.005	1.18	0.005	0.00005	0.00272	0.005	0.005	0.0005
W8A	2012-09-20 11:20	32.8	0.0019	0.0002	0.0005	41.3	0.00763	7.18	0.005	1.53	0.005	0.00005	0.00295	0.005	2.12	0.0005
W8A	2012-09-25 7:35	31.2	0.001	0.0002	0.0005	37.4	0.00522	7.64	0.005	1.47	0.005	0.00005	0.00281	0.005	1.89	0.0005
W8A	2012-10-12 11:10															
W8A	2012-10-19 13:10	30.9	0.001	0.0002	0.0005	32.9	0.00474	7.28	0.005	1.4	0.005	0.00005	0.00268	0.005	1.13	0.0005
W8A	2012-10-25 16:40	33.6	0.001	0.0002	0.0005	36.9	0.00577	7.91	0.005	1.48	0.005	0.00005	0.00311	0.005	0.791	0.0005
W8A	2012-11-05 15:10	33.6	0.001	0.00021	0.0005	51.8	0.0093	7.14	0.005	1.73	0.0096	0.00005	0.003	0.005	3.76	0.0005
W8A	2012-11-09 15:45	33.9	0.000677	0.000013	0.000044	47.3	0.00785	6.89	0.0002	1.6	0.0005	0.000007	0.00311	0.00038	1.87	0.0001
W8A	2012-11-18 16:30	34	0.001	0.0002	0.0005	41.1	0.00544	7.58	0.005	1.54	0.005	0.00005	0.00326	0.005	1.31	0.0005
W8A	2012-12-11 16:15	37.6	0.002	0.0002	0.0005	36	0.00305	8.82	0.005	1.53	0.005	0.00005	0.00315	0.005	0.739	0.0005
W8A	2012-12-28 9:30	36.2	0.001	0.0002	0.0005	32	0.00237	7.8	0.005	1.49	0.005	0.00005	0.00315	0.005	0.75	0.0005
W8A	2013-01-02 0:00	34.3	0.001	0.0002	0.0005	35.1	0.00252	7.98	0.005	1.57	0.005	0.00005	0.00286	0.005	0.697	0.0005
W8A	2013-01-09 0:00	36.1	0.001	0.0002	0.0005	33.3	0.00215	7.5	0.005	1.58	0.005	0.00005	0.00297	0.005	0.885	0.0005
W8A	2013-01-14 0:00	34.5	0.001	0.00048	0.0005	30.8	0.0021	7.47	0.005	1.51	0.005	0.00005	0.0031	0.005	1.15	0.0005
W8A	2013-01-22 0:00	34.1	0.001	0.0002	0.0005	32.1	0.00198	7.13	0.005	1.51	0.005	0.00005	0.00358	0.005	2.14	0.0005
W8A	2013-02-03 0:00	36	0.001	0.0002	0.0005	30.3	0.00202	7.01	0.005	1.52	0.005	0.00005	0.00313	0.005	1.42	0.0005
W8A	2013-02-07 0:00	34.3	0.001	0.0002	0.0005	30.7	0.00166	8.03	0.005	1.6	0.005	0.00005	0.00313	0.005	0.505	0.0005
W8A	2013-02-09 16:30	31.1	0.001	0.0002	0.0005	55.2	0.0151	7.28	0.005	1.45	0.005	0.00005	0.00224	0.005	0.723	0.0005
W8A	2013-02-12 0:00															
W8A	2013-02-13 0:00	34.3	0.001	0.0002	0.0005	33.5	0.00223	6.7	0.005	1.6	0.005	0.00005	0.00314	0.005	1.97	0.0005
W8A	2013-02-21 0:00	36.3	0.001	0.0002	0.0005	29	0.00185	7.79	0.005	1.6	0.005	0.00005	0.00326	0.005	1.28	0.0005
W8A	2013-02-27 0:00	34.6	0.001	0.0002	0.0005	27.7	0.00174	7.42	0.005	1.53	0.005	0.00005	0.00326	0.005	1.28	0.0005
W8A	2013-03-04 0:00	35.9	0.001	0.0002	0.0005	31	0.00215	7.75	0.005	1.58	0.005	0.00005	0.00317	0.005	2.39	0.0005
W8A	2013-03-14 0:00	36.1	0.001	0.0002	0.0005	37.3	0.00272	7.9	0.005	1.62	0.005	0.00005	0.00297	0.005	3.08	0.0005
W8A	2013-03-19 0:00	37.6	0.001	0.0002	0.0005	29.4	0.00159	8.67	0.005	1.48	0.005	0.00005	0.00372	0.005	0.753	0.0005
W8A	2013-03-29 0:00	35.6	0.001	0.0002	0.0005	30	0.00182	7.95	0.005	1.64	0.005	0.00005	0.00307	0.005	1.07	0.0005
W8A	2013-04-01 16:45	34.6	0.001	0.0002	0.0005	32.3	0.00181	8.44	0.005	1.76	0.005	0.00005	0.00306	0.005	1.55	0.0005
W8A	2013-04-06 9:45	33.1	0.0012	0.0002	0.0005	39.4	0.00333	9.81	0.005	2	0.005	0.00005	0.00302	0.005	1.23	0.0005
W8A	2013-04-13 10:30	34.1	0.001	0.0002	0.0005	33	0.00185	7.73	0.005	1.6	0.005	0.00005	0.00283	0.005	1.35	0.0005
W8A	2013-04-17 10:45	59.5	0.0021	0.0002	0.0005	31.2	0.00181	7.05	0.005	2.26	0.005	0.00005	0.00294	0.005	2.19	0.0005
W8A	2013-04-25 15:00	36.2	0.0013	0.0002	0.0005	29.6	0.00171	7.91	0.005	1.76	0.005	0.00005	0.00327	0.005	3.36	0.0005
W8A	2013-05-02 11:15	29.8	0.001	0.0002	0.0005	26.5	0.00194	6.77	0.005	1.43	0.005	0.00005	0.00247	0.005	0.593	0.0005
W8A	2013-05-03 0:00															
W8A	2013-05-12 10:40	5.18	0.001	0.0002	0.0005	6	0.00127	2.88	0.005	0.287	0.005	0.00005	0.00044	0.005	0.191	0.0005
W8A	2013-05-17 16:30	15.8	0.001	0.0002	0.0005	22	0.00337	4.81	0.005	0.891	0.005	0.00005	0.00184	0.005	0.176	0.0005
W8A	2013-05-25 13:55	23.8	0.001	0.0002	0.0005	32.4	0.00376	5.87	0.005	1.23	0.005	0.00005	0.00175	0.005	0.312	0.0005
W8A	2013-05-30 8:45	24.1	0.001	0.0002	0.0005	33.2	0.00487	6.35	0.005	1.39	0.005	0.00005	0.00217	0.005	1.14	0.0005
W8A	2013-06-08 0:00	26.8	0.001	0.0002	0.0005	33.7	0.00418	6.37	0.005	1.44	0.005	0.00005	0.00234	0.005	1.09	0.0005
W8A	2013-06-15 0:00	26.6	0.001	0.0002	0.0005	34.6	0.0041	6.65	0.005	1.46	0.005	0.00005	0.00228	0.005	0.587	0.0005
W8A	2013-06-18 0:00	29.2	0.001	0.0002	0.0005	37	0.00432	7.04	0.005	1.53	0.005	0.00005	0.0026	0.005	1.58	0.0005
W8A	2013-06-24 0:00	31.4	0.001	0.0002	0.0005	46.2	0.00587	7.27	0.005	1.64	0.005	0.00005	0.00291	0.005	2.2	0.0005
W8A	2013-07-01 0:00	32.6	0.0011	0.0002	0.0005	53.2	0.00832	7.55	0.005	1.67	0.005	0.00005	0.00284	0.005	0.665	0.0005
W8A	2013-07-11 0:00	31	0.001	0.0002	0.0005	51.5	0.00934	7.08	0.005	1.54	0.005	0.00005	0.00267	0.005	0.588	0.0005
W8A	2013-07-19 0:00	32	0.001	0.0002	0.0005	55.7	0.0108	6.76	0.005	1.71	0.005	0.00005	0.00276	0.005	3.19	0.0005
W8A	2013-07-23 0:00	32.4	0.001	0.0002	0.0005	59.5	0.0129	6.94	0.005	1.81	0.005	0.00005	0.00272	0.005	3.88	0.0005
W8A	2013-07-31 16:15	27.9	0.001	0.0002	0.0005	48.9	0.0115	6.65	0.005	1.46	0.005	0.00005	0.0028	0.005	0.32	0.0005
W8A	2013-08-09 11:30	31.4	0.001	0.0002	0.0005	48.2	0.0125	6.84	0.005	1.57	0.005	0.00005	0.00252	0.005	0.998	0.0005
W8A	2013-08-15 9:40	32.1	0.001	0.0002	0.0005	54	0.0141	7.37	0.005	1.58	0.005	0.00005	0.00259	0.005	0.598	0.0005
W8A	2013-08-19 16:00	33.1	0.001	0.0002	0.0005	62.9	0.018	7.25	0.005	1.64	0.006	0.00005	0.00297	0.005	1.86	0.0005
W8A	2013-08-26 11:00	32.2	0.001	0.0002	0.0005	55.1	0.0137	7.67	0.005	1.62	0.005	0.00005	0.00263	0.005	0.6	0.0005
W8A	2013-09-17 14:15	29	0.001	0.0002	0.0005	54.3	0.0139	7.39	0.005	1.46	0.005	0.00005	0.00226	0.005	0.297	0.0005
W8A	2013-09-28 17:00	28.6	0.001	0.0002	0.0005	52.3	0.0104	7.51	0.005	1.35	0.005	0.00005	0.00213	0.005	0.314	0.0005
W8A	2013-10-04 11:30	31.1	0.001	0.0002	0.0005	53.5	0.00998	7.33	0.005	1.49	0.005	0.00005	0.00225	0.005	1.56	0.0005
W8A	2013-10-09 14:45	34.5	0.001	0.0002	0.0005	66	0.0137	7.11	0.005	1.64	0.005	0.00005	0.00223	0.005	3.93	0.0005
W8A	2013-10-17 15:30	32.6	0.001	0.0002	0.0005	55.7	0.0108	7.11	0.005	1.56	0.005	0.00005	0.00252	0.005	4.02	0.0005
W8A	2013-10-22 11:45	33.7	0.001	0.0002	0.0005	66.9	0.0143	7.01	0.005	1.68	0.005	0.00005	0.00262	0.005	4.17	0.0005
W8A	2013-10-29 14:30															
W8A	2013-11-02 8:00	33.1	0.001	0.0002	0.0005	63.8	0.0125	7.29	0.005	1.74	0.005	0.00005	0.00262	0.005	1.91	0.0005
W8A	2013-11-07 10:00	32.7	0.001	0.0002	0.0005	58.1	0.0107	7.73	0.005	1.6	0.005	0.00005	0.00249	0.005	1.71	0.0005
W8A	2013-11-15 8:40	37.2	0.001	0.0002	0.0005	74.9	0.0124	7.26	0.005	1.77	0.005	0.00005	0.00291	0.005	1.17	0.0005
W8A	2013-11-19 10:45	33.3	0.001	0.0002	0.0005	69.4	0.013	7.92	0.005	1.46	0.005	0.00005	0.00178	0.005	1.51	0.0005
W8A	2013-11-29 15:30	36.4	0.0022	0.0002	0.0005	72	0.0111	9.22	0.005	1.8	0.005	0.00005	0.00203	0.005	0.607	0.0005

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species						Dissolved Elements																																	
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N\text{-}NO_2$	$N\text{-}NO_3$	$N\text{-}NH_3$	SO_4-D	Chlord	Fluord	Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W8A	2013-12-06 16:00	383	1160	113.4	7.72	782	4.4	0	39.2	0.0234	17.1	0.067	198	15	0.49	0.00002	0.0037	0.00055	0.11	0.05	0.0001	0.001	158	0.000361	0.0005	0.001	0.193	0.164	0.00001	6.27	0.005	47.1	1.17	0.0145	36.4	0.0014	0.0002	0.0005	72	0.0131	8.28	0.005	2.01	0.005	0.00005	0.00218	0.005	2.98	0.0005
W8A	2013-12-09 10:35	785	2093	208.6	15.01	1386	26.3	2.6	114	0.0174	23.09	0.0433	304	20.2	0.91	0.000042	0.0086	0.00106	0.221	0.1	0.0002	0.002	245	0.000311	0.001	0.002	0.245	0.1469	0.00002	12.32	0.0148	102.5	1.27	0.0206	68.4	0.0023	0.0004	0.001	102.1	0.02136	15.7	0.01	3.37	0.01	0.0001	0.00537	0.01	1.825	0.001
W8A	2013-12-16 15:45	468	1060	188.2	6.41	646	6.9	1.7	77.9	0.0194	4.76	0.024	121	6.7	0.42	0.00002	0.0033	0.00038	0.109	0.05	0.0001	0.001	111	0.000198	0.0005	0.001	0.123	0.0764	0.00001	4.91	0.0094	55.4	0.684	0.0064	34.1	0.001	0.0002	0.0005	38.6	0.00352	8.52	0.005	1.72	0.005	0.00005	0.00313	0.005	1.62	0.0005
W8A	2013-12-23 9:40	463	1020	140.8	7.57	628	2.7	0.4	69.8	0.005	3.63	0.023	117	5.7	0.42	0.00002	0.0043	0.0004	0.112	0.05	0.0001	0.001	110	0.000151	0.0005	0.001	0.122	0.107	0.00001	5.62	0.0109	63.7	0.657	0.0062	39	0.001	0.0002	0.0005	43.3	0.00306	8.39	0.005	1.8	0.005	0.00005	0.00327	0.005	0.901	0.0005
W8A	2014-01-02 16:30	444	987	235.4	7.55	612	8.6		65.1	0.0092	2.89	0.017	109	4.9	0.38	0.00002	0.0032	0.00035	0.105	0.05	0.0001	0.001	107	0.000134	0.0005	0.001	0.1	0.0864	0.00001	4.81	0.0102	56.8	0.522	0.0053	35.9	0.0011	0.0002	0.0005	35.1	0.00238	8.11	0.005	1.6	0.005	0.00005	0.00323	0.005	0.568	0.0005
W8A	2014-01-07 13:40	454	1020	205	7.78	610	5.8	0	60.4	0.005	3.59	0.014	115	5.7	0.42	0.00002	0.003	0.00039	0.105	0.05	0.0001	0.001	104	0.000162	0.0005	0.001	0.113	0.0926	0.00001	5.31	0.0107	60.7	0.557	0.0057	38	0.001	0.0002	0.0005	41.1	0.00281	7.96	0.005	1.84	0.005	0.00005	0.00326	0.005	0.608	0.0005
W8A	2014-01-17 10:20	478	1040	199.5	7.59	642	14.2	0.4	50.8	0.005	3.23	0.014	114	6.3	0.43	0.00002	0.0087	0.00047	0.108	0.05	0.0001	0.001	109	0.000134	0.0005	0.001	0.104	0.104	0.00001	4.98	0.0096	56.7	0.572	0.0059	35.9	0.0012	0.0002	0.0005	35.3	0.00233	7.6	0.005	1.76	0.005	0.00005	0.00304	0.005	0.675	0.0005
W8A	2014-01-21 16:00	473	1060	241.7	7.61	672	10.6	0.1	59.7	0.005	3.85	0.029	126	6.1	0.43	0.00002	0.0033	0.00042	0.112	0.05	0.0001	0.001	112	0.000171	0.0005	0.001	0.125	0.114	0.00001	5.5	0.0093	61.9	0.679	0.006	38.4	0.001	0.0002	0.0005	42	0.00301	7.77	0.005	1.95	0.005	0.00005	0.00296	0.005	0.489	0.0005
W8A	2014-01-28 13:30	476	1070	216.6	7.51	564	11	0.5	61.6	0.005	4.15	0.017	123	6.3	0.4	0.00002	0.0033	0.00039	0.11	0.05	0.0001	0.001	125	0.000212	0.0005	0.001	0.14	0.14	0.00001	5.66	0.0089	61.7	0.836	0.0063	37.9	0.0011	0.0002	0.0005	44.7	0.00321	8.8	0.005	1.94	0.005	0.00005	0.00295	0.005	0.751	0.0005
W8A	2014-02-03 14:00	481	1020	237.8	7.68	660	28.8	0	64.9	0.0058	3.18	0.045	112	5.6	0.45	0.00002	0.004	0.00038	0.109	0.05	0.0001	0.001	110	0.000144	0.0005	0.001	0.108	0.102	0.00001	5.17	0.0099	61.6	0.649	0.005	37.6	0.001	0.0002	0.0005	38.8	0.00227	8.22	0.005	1.87	0.005	0.00005	0.00311	0.005	0.4	0.0005
W8A	2014-02-13 16:30	490	1090	282.8	7.55	670	7.7	0	61.9	0.0134	3.66	0.021	115	5.7	0.41	0.00002	0.0044	0.00037	0.104	0.05	0.0001	0.001	100	0.000203	0.0005	0.001	0.13	0.126		5.1	0.0097	60.7	0.718	0.006	37.9	0.0011	0.0002	0.0005	36.2	0.0026	6.08	0.005	1.88	0.005	0.00005	0.00327	0.005	0.802	0.0005
W8A	2014-02-18 15:45	512	1100	308.8	7.57	680	10.6	0	52.7	0.046	3.58	0.027	112	6.3	0.42	0.00002	0.0036	0.00037	0.108	0.05	0.0001	0.001	102	0.000152	0.0005	0.001	0.11	0.135	0.00001	5.54	0.0113	67.5	0.678	0.0051	41.2	0.001	0.0002	0.0005	37.7	0.00211	7.62	0.005	1.78	0.005	0.00005	0.00348	0.005	0.524	0.0005
W8A	2014-02-27 9:45	497	1100	317.4	7.59	680	20.7	0	61.5	0.0064	3.03	0.031	106	5.7	0.41	0.00002	0.0033	0.00033	0.104	0.05	0.0001	0.001	110	0.000233	0.0005	0.001	0.132	0.124	0.00001	5.12	0.0104	62.5	0.801	0.0055	36.6	0.0011	0.0002	0.0005	35	0.00212	7.82	0.005	1.8	0.005	0.00005	0.0034	0.005	1.41	0.0005
W8A	2014-03-06 9:20	511	1090	320.6	7.92	676	9.1	-0.1	70.9	0.016	3.89	0.018	120	6.2	0.44	0.00002	0.003	0.00036	0.105	0.05	0.0001	0.001	101	0.000122	0.0005	0.001	0.0991	0.127	0.00001	5.34	0.0105	67.6	0.645	0.0045	39.2	0.001	0.0002	0.0005	35.8	0.00175	8.45	0.005	1.74	0.005	0.00005	0.0033	0.005	0.316	0.0005
W8A	2014-03-14 10:45	518	1080	229.5	7.4	666	7.5	1.1	40	0.0077	2.4	0.029	102	5.4	0.42	0.000021	0.003	0.00035	0.103	0.05	0.0001	0.001	109	0.000231	0.0005	0.001	0.135	0.121	0.00001	5.26	0.0113	63.5	0.91	0.0057	37	0.0012	0.0002	0.0005	38.2	0.00213	8.29	0.005	1.82	0.005	0.00005	0.00363	0.005	1.23	0.0005
W8A	2014-03-21 15:10	511	1060	156.5	7.5	678	9.2	0.5	60.5	0.0091	2.23	0.072	98.5	5.2	0.41	0.00002	0.0036	0.00032	0.106	0.05	0.0001	0.001	106	0.000248	0.0005	0.001	0.127	0.141	0.00001	5.12	0.0106	67.3	0.975	0.0054	37	0.0012	0.0002	0.0005	34.1	0.00211	7.24	0.005	1.94	0.005	0.00005	0.00319	0.005	1.53	0.0005
W8A	2014-03-27 10:00	509	1050	233.2	7.46	668	6.5	0.8	53.3	0.0107	1.76	0.033	97.8	5.4	0.4	0.00002	0.0046	0.00033	0.111	0.05	0.0001	0.001	107	0.00018	0.0005	0.001	0.11	0.118	0.00001	5.37	0.0111	67.7	0.835	0.005	38.4	0.0011	0.0002	0.0005	35.1	0.00172	8.27	0.005	1.91	0.005	0.00005	0.00345	0.005	0.892	0.0005
W8A	2014-04-02 16:15	548	1120	233.2	7.28	680	9.8	0.2	47.1	0.0133	1.81	0.048	97	5.6	0.41	0.00002	0.0054	0.00036	0.104	0.05	0.0001	0.001	120	0.000204	0.0005	0.001	0.116	0.157	0.00001	5.53	0.0109	66.3	1.02	0.0051	38.4	0.0012	0.0002	0.0005	36.4	0.00186	8.84	0.005	1.84	0.005	0.00005	0.0032	0.005	1.77	0.0005
W8A	2014-04-07 17:20	561	1150	196.5	7.33	710	19.6	1.2	33.6	0.0331	2.4	0.035	96.2	6.7	0.44	0.00002	0.0036	0.00033	0.113	0.05	0.0001	0.001	121	0.000194	0.0005	0.001	0.13	0.147	0.00001	5.32	0.0097	65.2	1.48	0.0052	38.7	0.0012	0.0002	0.0005	29.8	0.00137	8.83	0.005	1.83	0.005	0.00005	0.00321	0.005	0.618	0.0005
W8A	2014-04-08 7:20																																																
W8A	2014-04-16 11:10	240	667	174.5	7.46	418	9.2	2.3	72.5	0.0126	2.42	0.19	104	3.5	0.37	0.00002	0.0051	0.00057	0.09	0.05	0.0001	0.001	86.8	0.000122	0.0005	0.001	0.0945	0.0778	0.00001	4.49	0.005	28.1	0.672	0.008	21.6	0.001	0.0002	0.0005	35.2	0.00411	5.16	0.005	1.17	0.005	0.00005	0.00152	0.005	0.223	0.0005
W8A	2014-04-22 10:00	144	433	234.4	7.52	324	31.3	0.5	78.3	0.0928	3.62	0.022	64.3	5.7	0.37	0.000027	0.044	0.00064	0.0385	0.05	0.0001	0.001	36.5	0.000056	0.0005	0.001	0.235	0.177	0.00001	2.98	0.005	8.12	0.11	0.0045	8.26	0.001	0.0002	0.0005	12.6	0.00229	3.75	0.005	0.47	0.005	0.00005	0.00053	0.005	0.21	0.0005
W8A	2014-05-02 16:45	148	418	190.2	7.77	312	19	2.3	70.2	0.0166	2.44	0.029	52.4	3.5	0.3	0.00002	0.0249	0.00064	0.0559	0.05	0.0001	0.001	55.9	0.000112	0.0005	0.001	0.167	0.154	0.00001	3.4	0.005	15.1	0.25	0.0055	13.2	0.001	0.0002	0.0005	18.8	0.00303	4.66	0.005	0.798	0.005	0.00005	0.00099	0.005	0.323	0.0005
W8A	2014-05-06 9:30	154	413	184.8	7.7	298	18	0.7	68.4	0.0228	2.17	0.088	50.4	3.4	0.31	0.00002	0.023	0.00056	0.0614	0.05	0.0001	0.001	57.6	0.000099	0.0005	0.001	0.149	0.143	0.00005	3.33	0.005	18	0.277	0.0052	15.3	0.0011	0.0002	0.0005	20.6	0.00313	4.88	0.005	0.849	0.005	0.00005	0.00111	0.005	0.174	0.0005
W8A	2014-05-15 16:10	256	755	207.4	8.03	576	6.1	1.9	63.2	0.0085	6.63	0.021	111	6.2	0.58	0.00002	0.0102	0.00052	0.0771	0.05	0.0001	0.001	86.7	0.000203	0.0005	0.001	0.144	0.102	0.00001	4.54	0.005	27.1	0.521	0.0091	22.2	0.0015	0.0002	0.0005	34.6	0.00604	6.24	0.005	1.21	0.005	0.00005	0.00155	0.005	0.867	0.0005
W8A	2014-05-23 13:40	252	696	204.9	6.94	459	5.7	1.4	64	0.0176	5.66	0.041	103	4.9	0.47	0.00002	0.0205	0.00055	0.0807	0.05	0.0001	0.001	74.1	0.000112	0.0005	0.001	0.122	0.111	0.00001	4.35	0.005	26.5	0.334	0.0073	21.8	0.001	0.0002	0.0005	30.5	0.00467	5.87	0.005	1.19	0.005	0.00005	0.00173	0.005	0.961	0.0005
W8A	2014-05-29 11:00	241	762	214.8	7.74	517	22.3	2.7	58.5	0.0137	8.23	0.027	135	7	0.59	0.00002	0.0094	0.00043	0.0857	0.05	0.0001	0.001	108	0.000295	0.0005	0.001	0.144	0.0698	0.00001	4.69	0.005	31.7	0.629	0.0147	26.4	0.001	0.0002	0.0005	51.2	0.0084	5.86	0.005	1.41	0.005	0.00005	0.00201	0.005	3.71	0.0005
W8A	2014-06-05 9:10	255	764	266.6	7.55	526	16.8	4.4	72.4	0.011	8.34	0.036	118	7.2	0.6	0.00002	0.006	0.00045	0.086	0.05	0.0001	0.001	87.8	0.000143	0.0005	0.001	0.104	0.065	0.00001	4.56	0.005	30.2	0.441	0.014	24.9	0.001	0.0002	0.0005	39.6	0.00747	6.09	0.005	1.28	0.005	0.00005	0.00178	0.005	0.716	0.0005
W8A	2014-06-06 10:45																																																
W8A	2014-06-11 0:45	262	782	217.1	7.79	520	15.8	0.9	52.6	0.0187	7.95	0.032	121	7.8	0.66	0.00002	0.0075	0.00053	0.0813	0.05	0.0001	0.001	89.2	0.000176	0.0005	0.001	0.112	0.0701	0.00001	4.86	0.005	30.3	0.465	0.0147	26.6	0.0012	0.0002	0.0005	38	0.00679	5.64	0.005	1.3	0.005	0.00005	0.0016	0.005	2.3	0.0005
W8A	2014-06-17 10:45	268	800	263.6	7.6	624	5.6	1.4	58.3	0.0192	8.51	0.047	123	8.2	0.62	0.00002	0.0064	0.00052	0.0906	0.05	0.0001	0.001	95.2	0.000184	0.0005	0.001	0.116	0.0713	0.00001	5.14	0.005	31.4	0.505	0.015	27	0.001	0.0002	0.0005	45.5	0.00637	6.06	0.005	1.35	0.005	0.00005	0.00173	0.005	2.22	0.0005
W8A	2014-06-26 9:00	298	891	247.3	7.84	576	82.6	1.6	61.9	0.0288	9.24	0.041	134	8.7	0.61	0.00002	0.0096	0.0005	0.0926	0.05	0.0001	0.001	98.8	0.000213	0.0005	0.001	0.108	0.094	0.00001	5.71	0.005	32.7	0.618	0.015	26.9	0.0011	0.0002	0.0005	47.6	0.00712	5.87	0.005	1.49	0.005	0.00005	0.00166	0.005	1.12	0.0005
W8A	2014-06-30 1:45	296	907	189.5	7.74	648	16.9	3.6	61.9	0.0651	11	0.49	143	9.8	0.59	0.00002	0.0082	0.00078	0.112	0.05	0.0001	0.001	135	0.000153	0.0005	0.001	0.114	0.0799	0.00001	5.86	0.005	37.3	0.444	0.0133	30.7	0.001	0.0002	0.0005	56.3	0.00744	7.6	0.005	1.67	0.005	0.00005	0.0022	0.005	5.17	0.0005
W8A	2014-07-10 14:35	326	976	204.8	7.7	638	16	1.8	58.2	0.119	12.7	0.058	163	11	0.54	0.00002	0.0072	0.00062	0.111	0.05	0.0001	0.001	115	0.000178	0.0005	0.001	0.103	0.0817	0.00001	5.91	0.005	37.1	0.524	0.0127	28.6	0.001	0.0002	0.0005	56.5	0.00806	6.38	0.005	1.79	0.005	0.00005	0.00184	0.005	1	0.0005
W8A	2014-07-15 14:15	363	1140	204.1	7.27	738	62.2	2.2	52.9	0.538	13.9	0.048	174	29	0.55	0.00002	0.0068	0.0006	0.109	0.05	0.0001	0.001	123	0.000187	0.0005	0.001	0.126	0.103	0.00001	5.76	0.0051	42.1	0.632	0.0127	31.1	0.0013	0.0002	0.0005	58.5	0.0082	7.2	0.005	1.81	0.005	0.00005	0.002	0.005	0.687	0.0005
W8A	2014-07-21 11:40	324	1020	209.1	7.7	690	15.5	2.8	70.1	0.0547	15.5	0.09	165	9	0.51	0.00002	0.009	0.00057	0.106	0.05	0.0001	0.001	128	0.00022	0.0005	0.001	0.131	0.0974	0.00001	5.81	0.005	37.4	0.496	0.012	29.8	0.001	0.0002	0.0005	52.4	0.0102	7.04	0.005	1.78	0.005	0.00005	0.00207	0.005	1.98	0.0005
W8A	2014-07-29 11:00	352	1010	174.3	6.88	766	3.8	4.2	56.9	0.0172	11.6	0.033	151	9.6	0.54	0.00002	0.0055	0.00045	0.11	0.05	0.0001	0.001	115	0.000202	0.0005	0.001	0.123	0.113	0.00001	5.58	0.0059	44.4	0.724	0.0111	32	0.0015	0.0002	0.0005	53.8	0.00705	7.1	0.005	1.79	0.005	0.00005	0.00218	0.005	1.3	0.0005
W8A	2014-08-06 16:55	317	1010	179.6	7.22	740	23.2	1	57	0.0115	12.1	0.032	174	9.4	0.5	0.00002	0.008	0.00073	0.114	0.05	0.0001	0.001	133	0.00022	0.0005	0.001	0.129	0.08	0.00001	5.9	0.005	45.1	0.727	0.0136	34.9	0.0012	0.0002	0.0005	57.9	0.00938	7.23	0.005	1.83	0.005	0.00005	0.00219	0.005	1.89	0.0005
W8A	2014-08-14 10:30	328	1110	188.9	7.3	780	32.2	1.8	53.3	0.0109	15.8	0.16	188	11	0.53	0.00002	0.0044	0.00057	0.126	0.05	0.0001	0.001	140	0.000149	0.0005	0.001	0.0885	0.0769	0.00001	5.45	0.005	41.1	0.614	0.0154	32.6	0.001	0.0002	0.0005	74.4	0.0138	7.17	0.005	2.04	0.005	0.00005	0.00221	0.005	0.833	0.0005
W8A	2014-08-18 10:25	345	1120	194.3	7.27	812	31	3.5	53	0.0135	14.6	0.044	197	11	0.52	0.00002	0.0088	0.00061	0.124	0.05	0.0001	0.001	135	0.000243	0.0005	0.001	0.127	0.12	0.00001	6.15	0.0052	45.5	0.806	0.0154	34.4	0.0011	0.0002	0.0005	76.6	0.0133	6.38	0.005	1.99	0.005	0.00005	0.00232	0.005	0.925	0.0005
W8A	2014-08-26 16:10	332	1140	208.3	7.36	834	3.3	2.6	60.6	0.0233	16.5	0.08	170	11	0.54	0.00002	0.0072	0.00058	0.126	0.05	0.0001	0.001	144	0.000227	0.0005	0.001	0.121	0.113	0.00001	6.36	0.005	44.1	0.709	0.0158	32.7	0.0012	0.0002	0.0005	76.7	0.0157	6.2	0.005	2.18	0.005	0.00005	0.00239	0.005	1.25	0.0005
W8A	2014-09-05 9:45	380	1150	150.1	7.77	794	6.2	0.3	58.1	0.0124	14.1	0.29	193	11	0.52	0.00002	0.003	0.00051	0.129	0.05	0.0001	0.001	149	0.00021	0.0005	0.001	0.122	0.154	0.00001	6.05	0.005	48.2	0.845	0.014	35.8	0.0011	0.0002	0.0005	69.4	0.0157	6.66	0.005	2.04	0.005	0.00005	0.00234	0.005	0.217	0.0005
W8A	2014-09-12 11:05	398	1150	199.3	7.21	941	12.3	1.1	56.1	0.0096	12.9	0.034	186	9.5	0.47	0.00002	0.0089	0.00054	0.131	0.05	0.0001	0.001	150	0.000238	0.0005	0.001	0.144	0.18	0.00001	6.14	0.0051	46.8	1.1	0.0139	33.6	0.0014	0.0002	0.0005	57	0.012	7.61	0.005	2.11	0.005	0.00005	0.00246	0.005	0.988	0.0005
W8A	2014-09-15 14:50	393	1190	143.9	7.1	820	3.6	2.6	41.1	0.0165	14.1	0.03	162	11	0.52	0.00002	0.0095	0.0006	0.128	0.05	0.0001	0.001	150	0.000266	0.0005	0.001	0.125	0.179	0.00001	6.57	0.005	50.3	1.05	0.0146	35.9	0.0012	0.0002	0.0005	71.3	0.0135	7.43	0.005	2.09	0.005	0.00005	0.00216	0.005	1.18	0.0005
W8A	2014-09-25 11:10	366	1110	188.7	7.22	800	4	-0.1	48.2	0.0086	13.2	0.03	193	9.2	0.5	0.00002	0.0064	0.00065	0.118	0.05	0.0001	0.001	152	0.000261	0.0005	0.001	0.132	0.182	0.00001	6.11	0.005	45.6	0.94	0.014	33.6	0.0011	0.0002	0.0005	77.6	0.0141	8.05	0.005	2.07	0.005	0.00005	0.00223	0.005	0.49	0.0005
W8A	2014-10-01 15:40	362	1110	191.4	7.11	896	4.8	-0.2	47.2	0.0135	13.3	0.04	185	11	0.56	0.00002	0.0065	0.00051	0.114	0.05	0.0001	0.001	135	0.000392	0.0005	0.001	0.156	0.231	0.00001	6.27	0.005	43.7	1.32	0.0142	32.6	0.0017	0.0002	0.0005	66.5	0.0125	6.49	0.005	2.1	0.005	0.00005	0.00211	0.005	3.83	0.0005
W8A	2014-10-08 15:40	344	1080	203.2	7.23	780	3.7	-1	39.9	0.0132	13.2	0.048	187	12	0.51	0.00002	0.0055	0.0005	0.103	0.05	0.0001	0.001	136	0.000352	0.0005	0.001	0.159	0.212	0.00001	6.05	0.005	42.1	1.33	0.0142	33.2	0.0012	0.0002	0.0005	65.7	0.0118	6.65	0.005	1.99	0.005	0.00005	0.00207	0.005	0.772	0.0005
W8A	2014-10-13 15:15	350	1160	185.5	7.15	845	17.7	1.1	36.7	0.0193	15.2	0.047	218	13	0.55	0.00002	0.024	0.00056	0.113	0.05	0.0001	0.001	146	0.000374	0.0005	0.001	0.15	0.2	0.00001	7.03	0.005	46.6	1.46	0.0142	34.6	0.0013	0.0002	0.0005	75.4	0.0128	7.64	0.005	2.06	0.005	0.00005	0.00226	0.005	1.41	0.0005
W8A	2014-10-21 11:30	382	1230	228.7	7.19	901	6.2	-1.4	47.1	0.324	16.1	0.059	219	18	0.57	0.00002	0.0085	0.00056	0.127	0.05	0.0001	0.001	171	0.000291	0.0005	0.001	0.132	0.214	0.00001	6.53	0.005	47.5	1.45	0.0156	37.4	0.0013	0.0002	0.0005	82	0.0128	7.67	0.005	2.07	0.005	0.00005	0.00236	0.005	1.25	0.0005
W8A	2014-10-28 11:30	361	1210	184.2	7.25	770	6.3	-1.3	39.7	0.0175	16.3	0.065	229	14	0.63	0.00002	0.0171	0.00048	0.125	0.05	0.0001	0.001	165	0.000294	0.0005	0.001	0.131	0.263	0.00001	6.24	0.005	48.9	1.48	0.0171	36.7	0.0013	0.0002	0.0005	82.1	0.0131	7.55	0.005	2.13	0.005	0.00005	0.00244	0.005	0.659	0.0005
W8A	2014-11-05 15:45	375	1280	228.6	7.16	914	7.6	-1.7	43.2	0.0257	15.4	0.085	249	15	0.61	0.00002	0.0074	0.00053	0.129	0.05	0.0001	0.001	171	0.000237	0.0005	0.001	0.0953	0.455	0.00001	6.92	0.005	52.1	1.56	0.0168	37.4	0.0012	0.0002	0.0005	93	0.014	7.34	0.005	2.31	0.005	0.00005	0.00258	0.005	0.624	0.0005
W8A	2014-11-10 10:50	387	1310	214.3	7.14	904	7.8	-1.8	46.5	0.0252	16.1	0.1	260	14	0.64	0.00002	0.0066	0.00056	0.129	0.05	0.0001	0.001	172	0.000258	0.00052	0.001	0.103	0.307	0.00001	6.68	0.005	52.5	1.57	0.0172	39	0.0013	0.0002	0.0005	97.7	0.0145	7.4	0.005	2.34	0.005	0.00005	0.00258	0.005	1.18	0.0005
W8A	2014-11-17 14:50	422	1340	241.6	7.07	972	4.4	-1.9	46.7	0.0264	15.9	0.051	225	13	0.6	0.00002	0.0073	0.00051	0.138	0.05	0.0001	0.001	198	0.000216	0.00056	0.001	0.0959	0.276	0.00001	7.24	0.005	53.8	1.76	0.0166	37.8	0.0014	0.0002	0.0005	105	0.0133	8.83	0.005	2.42	0.005	0.00005	0.00281	0.005	0.376	0.0005
W8A	2014-11-25 11:30	434	474	231.3	7.32	934	6.2	-1.9	60.6	0.0857	1.47	0.051	253	15	0.6	0.00002	0.0066	0.00054	0.131	0.05	0.0001	0.001	174	0.000242	0.00055	0.001	0.109	0.287	0.00001	7.05	0.005	54.1	1.96	0.0174	37.4	0.0014	0.0002	0.0005	88.3	0.0116	7.1	0.005	2.56	0.005	0.00005	0.00279	0.005	1.24	0.0005
W8A	2014-12-05 9:00	474	1390	234.9	7.2	1020	9.5	-1.9	32.3	0.0452	14.6	0.075	240	14	0.56	0.00002	0.013	0.00059	0.141	0.05	0.0001	0.001	198	0.000323	0.00068	0.001	0.121	0.291	0.00001	7.53	0.005	59.4	2.35	0.0187	41.1	0.0015	0.0002	0.0005	98.3	0.012	8.4	0.005	2.69	0.005	0.00005	0.00319	0.005	1.12	0.0005
W8A	2014-12-11 8:55	491	1380	184.2	7.2	962	14.8	-2	23.8	0.065	14.3	0.1	243	16	0.61	0.00002	0.0059	0.00054	0.139	0.05	0.0001	0.001	200	0.000333	0.00076	0.001	0.12	0.304	0.00001	7.16	0.005	58.7	2.48	0.0186	40.4	0.0014	0.0002	0.0005	90.8	0.01	8.25	0.005	2.56	0.005	0.00005	0.00285	0.005	1.49	0.0005
W8A	2014-12-18 14:30	500	1400	201.9	7.22	1000	7.6	-1.9	24.8	0.0809	14.4	0.078	301	16	0.57	0.00002	0.0062	0.00049	0.144	0.05	0.0001	0.001	191	0.000326	0.00075	0.001	0.132	0.314	0.00001	7.3	0.0052	53.8	2.74	0.0187	40.2	0.0022	0.0002	0.0005	97.3	0.0093	8.02	0.005	2.47	0.005	0.00005	0.00287	0.005	1.11	0.0005
W8A	2014-12-22 16:30	487	1380	151.5	7.33	929	5.2	-0.5	28.4	0.117	15.2	0.1	209	16	0.61	0.00002	0.0054	0.00046	0.167	0.05	0.0001	0.001	205	0.000263	0.00072	0.001	0.114	0.243	0.00001	7.97	0.0056	61	2.75	0.019	42.8	0.0015	0.0002	0.0005	88.3	0.0106	8.6	0.005	2.86	0.005	0.00005	0.00321	0.005	1.47	0.0005
W8A	2015-01-02 12:10	508	1420	180.2	7.24	982	7.7	-2.1	42.4	0.181	14.5	0.18	256	15	0.6	0.00002	0.0091	0.00053	0.152	0.05	0.0001	0.001	204	0.000316	0.00093	0.001	0.115	0.325	0.00001	7.39	0.0056	62.8	3.54	0.0166	44.4	0.0035	0.0002	0.0005	77.8	0.00715	8.93	0.005	2.66	0.005	0.00005	0.00297	0.005	1.96	0.0005
W8A	2015-01-06 10:30	574	1480	157.1	7.2	1000		-1.2	36.6	0.208	12	0.15	189	16	0.6	0.00002	0.0095	0.00069	0.147	0.051	0.0001	0.001	215	0.000394	0.00082	0.001	0.138	0.326	0.00001	7.71	0.005	62.4	3.27	0.0184	41.2	0.0019	0.0002	0.0005	88.4	0.00738	9.14	0.005	2.57	0.005	0.00005	0.0029	0.005	1.55	0.0005
W8A	2015-01-13 11:30	517	1440	203.1	7.2	990	12.3	-2.2	40.1	0.226	13.5	0.18	261	16	0.64	0.00002	0.0074	0.00056	0.155	0.05	0.0001	0.001	189	0.000382	0.00093	0.001	0.144	0.294	0.00001	7.53	0.0051	63.4	3.37	0.0196	43.1	0.002	0.0002	0.0005	82.8	0.00889	7.93	0.005	2.88	0.005	0.00005	0.00291	0.005	3.72	0.0005
W8A	2015-01-21 14:00	601	1480	129.4	7.34	1000	7.4	-1.7	19.6	0.227	12.3	0.24	193	16	0.56	0.00002	0.0121	0.00052	0.161	0.05	0.0001	0.001	203	0.000369	0.00114	0.001	0.133	0.293	0.00001	7.17	0.0053	66.1	4.54	0.0161	41.4	0.0019	0.0002	0.0005	75.9	0.00503	8.81	0.005	2.7	0.005	0.00005	0.00271	0.005	0.954	0.00054
W8A	2015-01-29 9:50	607	1470	123.4	7.33	1010	12	-1.1	26.3	0.194	9.9	0.27	190	16	0.6	0.00002	0.0061	0.00063	0.177	0.05	0.0001	0.001	207	0.000358	0.00135	0.001	0.143	0.373	0.00001	7.48	0.005	70.3	5.01	0.015	43.7	0.0024	0.0002	0.0005	63.4	0.00403	9.58	0.005	2.8	0.005	0.00005	0.00301	0.005	1.24	0.00059
W8A	2015-02-03 14:30	629	1500	290.8	7.32	1030	16.5	0.2	30.4	0.196	10.9	0.25	202	17	0.56	0.00002	0.0062	0.0006	0.165	0.05	0.0001	0.001	213	0.000486	0.00132	0.001	0.186	0.462	0.00001	6.88	0.005	68.6	4.88	0.0168	43.6	0.0023	0.0002	0.0005	74.2	0.00474	8.75	0.005	2.73	0.005	0.00005	0.00288	0.005	1.54	0.0005
W8A	2015-02-10 15:30	643	1510	177.9	7.43	1010	11.6	-0.1	16.6	0.275	8.73	0.35	172	17	0.58	0.00002	0.0064	0.0007	0.159	0.05	0.0001	0.001	199	0.000577	0.00145	0.001	0.229	0.392	0.00001	7.33	0.005	69.5	5.71	0.0175	45	0.0029	0.0002	0.0005	60.7	0.00413	8.89	0.005	2.73	0.005	0.00005	0.00277	0.005	1.94	0.00056
W8A	2015-02-18 15:45	662	1530	144.1	7.2	1020	13	0	17.2	0.224	6.76	0.41	177	19	0.64	0.00002	0.0077	0.00065	0.16	0.05	0.0001	0.001	196	0.000672	0.00166	0.001	0.259	0.473	0.00001	6.99	0.0051	68.7	6.16	0.0174	39.3	0.0026	0.0002	0.0005	55.6	0.00386	8.54	0.005	2.78	0.005	0.00005	0.00297	0.005	1.02	0.00066
W8A	2015-02-26 10:30	693	1530	117.2	7.35	1020	14.7	-0.1	32.9	0.221	8.17	0.35	167	18	0.55	0.00002	0.011	0.00136	0.198	0.05	0.0001	0.001	201	0.000502	0.00161	0.001	0.161	0.513	0.00001	7.12	0.005	70.4	5.7	0.0159	42.4	0.004	0.0002	0.0005	57	0.0047	8.18	0.005	3.34	0.005	0.00005	0.00321	0.005	1.96	0.0008
W8A	2015-03-03 9:30	668	1520	139.5	7.27	1010	16.7	-0.1	24.6	0.19	9.65	0.28	175	17	0.57	0.00002	0.0067	0.00063	0.165	0.05	0.0001	0.001	213	0.000487	0.00151	0.001	0.18	0.563	0.00001	6.81	0.005	69.1	5.74	0.0165	41.7	0.0049	0.0002	0.0005	61.7	0.00343	9.39	0.005	2.62	0.005	0.00005	0.00293	0.005	1.4	0.00052
W8A	2015-03-09 13:15	690	1550	183.9	7.17	1070	13.7	-0.1	10.4	0.219	8.06	0.34	174	17	0.56	0.00002	0.012	0.0006	0.182	0.05	0.0001	0.001	225	0.000455	0.00144	0.001	0.162	0.648	0.00001	7.08	0.0053	70.6	6.25	0.0161	42.1	0.0023	0.0002	0.0005	67.4	0.00291	10	0.005	2.81	0.005	0.00005	0.00285	0.005	1.22	0.00077
W8A	2015-03-17 9:00	712	1590	233.1	7.57	1080	13.8	0.1	92.39	0.262	6.59	0.37	153	19	0.54	0.000042	0.0067	0.00062	0.213	0.05	0.0001	0.001	216	0.000501	0.00154	0.001	0.167	0.501	0.00001	7.58	0.0055	72.8	5.96	0.0177	44	0.002	0.0002	0.0005	57.8	0.00495	9.75	0.005	3.14	0.005	0.00005	0.00338	0.005	1.37	0.0008
W8A	2015-03-25 17:30	732	1570	205.6	7.36	1050	27	1.2	91.68	0.218	5.56	0.38	147	18	0.55	0.00002	0.012	0.00063	0.189	0.05	0.0001	0.001	218	0.0005	0.0017	0.001	0.186	0.558	0.00001	7.26	0.0055	73	6.61	0.0158	42.2	0.0024	0.0002	0.0005	50.5	0.00251	9.34	0.005	2.83	0.005	0.00005	0.00298	0.005	1.32	0.00081
W8A	2015-03-30 12:45	712	1470	158.6	7.33	1100	16.8	0.6	17.4	0.179	3.86	0.35	130	18	0.5	0.00002	0.0077	0.00062	0.194	0.05	0.0001	0.001	224	0.000463	0.00187	0.001	0.177	0.457	0.00001	7.06	0.005	74.8	7.03	0.0118	42.2	0.0022	0.0002	0.0005	44.6	0.00218	10.1	0.005	3.05	0.005	0.00005	0.00299	0.005	0.962	0.00087
W8A	2015-04-06 10:30	275	948	155.9	7.23	706	9	2.1	45.6	0.0326	13.1	0.052	185	7.4	0.65	0.00002	0.0038	0.00037	0.0965	0.05	0.0001	0.001	124	0.000274	0.00051	0.001	0.104	0.101	0.00001	5.54	0.005	34	1.58	0.0157	26.5	0.001	0.0002	0.0005	61.7	0.0111	6.12	0.005	1.53	0.005	0.00005	0.00195	0.005	0.324	0.0005
W8A	2015-04-18 13:00	423	1090	168.3	7.14	698	8.5	2.6	37.9	0.0401	6.56	0.069	170	10	0.6	0.00002	0.006	0.0004	0.139	0.052	0.0001	0.001	147	0.000281	0.00079	0.001	0.107	0.16	0.00001	6.78	0.005	45.3	2.41	0.0147	33.6	0.0014	0.0002	0.0005	64.3	0.00647	7.93	0.005	1.94	0.005	0.00005	0.00258	0.005	0.734	0.0005
W8A	2015-04-21 15:30	445	1160	169.2	7.11	754	6.4	1.6	23.6	0.0445	5.73	0.13	173	11	0.64	0.00002	0.0068	0.00041	0.141	0.05	0.0001	0.001	151	0.000283	0.00084	0.001	0.129	0.18	0.00001	6.35	0.005	49.8	2.86	0.0125	34.7	0.0013	0.0002	0.0005	61	0.00486	7.58	0.005	2.01	0.005	0.00005	0.00242	0.005	0.528	0.0005
W8A	2015-04-29 14:30	495	1230	268.8	7.13	792	5.7	1.7	21.2	0.0585	4.62	0.18	164	12	0.53	0.00002	0.0061	0.00044	0.155	0.05	0.0001	0.001	158	0.000354	0.00077	0.001	0.133	0.194	0.00001	6.92	0.005	49.5	2.92	0.013	34.2	0.0014	0.0002	0.0005	61.5	0.00646	8.84	0.005	2.11	0.005	0.00005	0.0022	0.005	1	0.0005
W8A	2015-06-11 16:30	299	969	169.3	6.94	624	20.2	3.2	49.7	0.0233	8.32	0.066	173	10	0.61	0.00002	0.0084	0.0004	0.106	0.05	0.0001	0.001	126	0.000325	0.0005	0.001	0.149	0.118	0.00001	5.98	0.005	38.2	1.35	0.0128	32.2	0.0012	0.0002	0.0005	64.7	0.00835	6.89	0.005	1.61	0.005	0.00005	0.00165	0.005	0.505	0.0005
W8A	2015-06-15 16:45	351	1020	175.3	7.07	676	7.1	1.1	48.9	0.0307	8.38	0.059	179	10	0.61	0.00002	0.0128	0.00033	0.109	0.05	0.0001	0.001	135	0.000341	0.0005	0.001	0.148	0.147	0.00001	6.1	0.005	38	1.39	0.0118	31.7	0.0011	0.0002	0.0005	65.4	0.0084	7.33	0.005	1.65	0.005	0.00005	0.00153	0.005	0.504	0.0005
W8A	2015-06-22 17:00	347	1080	177.2	7.28	792	6.2	3.9	73.6	0.0226	8.06	0.061	189	11	0.66	0.00002	0.0144	0.00049	0.115	0.061	0.0001	0.001	153	0.000365	0.0005	0.001	0.156	0.21	0.00001	6.38	0.005	38.8	1.46	0.0168	30.1	0.001	0.0002	0.0005	82.9	0.0077	8.43	0.005	1.88	0.005	0.00005	0.00164	0.005	0.341	0.0005
W8A	2015-06-29 17:15	364	1090	176	21.6	776	6.9	4.2	44.2	0.0208	7.5	0.1	188	11	0.59	0.00002	0.0198	0.00033	0.101	0.05	0.0001	0.001	154	0.000497	0.0005	0.001	0.213	0.251	0.00001	7.05	0.005	46.3	1.92	0.0191	35.6	0.0015	0.0002	0.0005	75.6	0.0085	7.26	0.005	1.92	0.005	0.00005	0.00169	0.005	0.739	0.0005
W8A	2015-07-06 9:20	343	1080	163.6	7.21	768	5	3.1	63.3	0.0132	12.1	0.071	192	9.6	0.46	0.00002	0.0072	0.00055	0.128	0.05	0.0001	0.001	140	0.000103	0.0005	0.001	0.0819	0.141	0.00001	6.35	0.005	41.7	1.09	0.0115	34.3	0.0013	0.0002	0.0005	66.7	0.00863	7.79	0.005	1.87	0.005	0.00005	0.00182	0.005	0.27	0.0005
W8A	2015-07-16 15:15	357	1050	169.1	7.04	722	6.1	2.4	35.6	0.0146	10.7	0.087	180	8.8	0.5	0.00002	0.0123	0.00048	0.113	0.05	0.0001	0.001	135	0.000252	0.0005	0.001	0.142	0.172	0.00001	5.63	0.005	41.8	1.38	0.012	31.8	0.0014	0.0002	0.0005	64.3	0.0071	7.88	0.005	1.77	0.005	0.00005	0.00173	0.005	0.552	0.0005
W8A	2015-07-20 9:50	364	1090	172.6	7.26	790	7.2	3.1	49.7	0.0126	10.5	0.084	192	8.7	0.52	0.00002	0.0379	0.00051	0.125	0.05	0.0001	0.001	149	0.000253	0.0005	0.001	0.126	0.171	0.00001	6.37	0.005	47.9	1.39	0.0124	37.2	0.0013	0.0002	0.0005	68.1	0.00608	8.37	0.005	2.09	0.005	0.00005	0.00196	0.005	0.265	0.0005
W8A	2015-07-29 15:45	366	1160	159	7.21	896	19.4	1.5	38.5	0.0127	9.44	0.091	210	11	0.59	0.00002	0.015	0.00056	0.118	0.05	0.0001	0.001	154	0.000206	0.0005	0.001	0.101	0.218	0.00001	6.48	0.005	47.4	1.33	0.0138	35.1	0.0012	0.0002	0.0005	76.4	0.00761	7.39	0.005	2.04	0.005	0.00005	0.00202	0.005	0.507	0.0005
W8A	2015-08-05 14:25	352	1130	167	7.65	860	10.2	2.3	52.6	0.0184	9.94	0.065	205	11	0.65	0.000036	0.0056	0.00047	0.126	0.05	0.0001	0.001	148	0.000178	0.0005	0.001	0.0932	0.189	0.00001	6.98	0.005	42.8	1.28	0.0141	33	0.0012	0.0002	0.0005	82.4	0.00833	8.33	0.005	2.01	0.005	0.00005	0.002	0.005	0.29	0.0005
W8A	2015-08-08 14:25																																																
W8A	2015-08-14 11:20	367	1090	155	7.57	804	10.5	2.1	51.7	0.0128	9.36	0.072	186	11	0.58	0.00002	0.0125	0.00047	0.11	0.05	0.0001	0.001	142	0.000297	0.0005	0.001	0.151	0.215	0.00001	5.82	0.005	40.8	1.36	0.0131	32.8	0.0015	0.0002	0.0005	70.8	0.00884	7.65	0.005	1.81	0.005	0.00005	0.00174	0.005	0.383	0.0005
W8A	2015-08-20 9:15	375	1140	191.9	7.3	820	5.2	2.6	43.7	0.0166	10.4	0.13	210	9.9	0.51	0.000055	0.0088	0.00049	0.13	0.05	0.0001	0.001	144	0.00018	0.0005	0.001	0.0922	0.158	0.00001	6.09	0.005	45.3	1.13	0.013	35.3	0.0013	0.0002	0.0005	72.2	0.00912	6.81	0.005	2.05	0.005	0.00005	0.00203	0.005	0.417	0.0005
W8A	2015-08-24 15:10	344	1110	210.3	7.4	858	5	2.1	52	0.0147	10.6	0.061	218	11	0.59	0.00002	0.0086	0.0005	0.126	0.05	0.0001	0.001	165	0.000189	0.0005	0.001	0.108	0.123	0.00001	6.84	0.005	44.1	0.887	0.0136	37	0.0013	0.0002	0.0005	80.5	0.0115	8.79	0.005	1.94	0.005	0.00005	0.0019	0.005	0.438	0.0005
W8A	2015-09-01 14:25	280	996	181.7	7.22	762	3.4	1.3	58.7	0.109	9.73	0.097	207	6.6	0.44	0.00002	0.0155	0.00062	0.122	0.05	0.0001	0.001	127	0.000158	0.0005	0.001	0.105	0.159	0.00001	5.3	0.005	37.1	0.893	0.0119	29.7	0.0013	0.0002	0.0005	77.1	0.0147	7.23	0.005	1.61	0.005	0.00005	0.00196	0.005	0.123	0.0005
W8A	2015-09-02 16:45	283	1050	185.9	7	784	4.2	1.9	47.4	0.102	10.7	0.043	218	7.7	0.49	0.00002	0.0109	0.00056	0.129	0.05	0.0001	0.001	139	0.000223	0.00058	0.001	0.133	0.165	0.00001	5.81	0.005	41.9	1.3	0.0132	32.2	0.0015	0.0002	0.0005	88.5	0.0153	7.57	0.005	1.86	0.005	0.00005	0.00226	0.005	0.377	0.0005
W8A	2015-09-08 10:40	258	1110	169.6	7.16	802	4.8	1.4	49.1	0.0404	13.1	0.048	236	9.1	0.54	0.00002	0.0127	0.00053	0.118	0.05	0.0001	0.001	152	0.000247	0.0005	0.001	0.111	0.109	0.00001	5.46	0.005	40.6	1.01	0.0117	34.3	0.0011	0.0002	0.0005	96.7	0.0163	6.56	0.005	1.78	0.005	0.00005	0.00292	0.005	0.338	0.0005
W8A	2015-09-15 10:15	253	1110	218.8	7.08	786	2.3	2.1	52.1	0.022	11.8	0.029	248	8.9	0.57	0.00002	0.0071	0.00035	0.124	0.05	0.0001	0.001	145	0.000309	0.0005	0.001	0.122	0.101	0.00001	6.23	0.005	41.9	0.957	0.0146	34.5	0.001	0.0002	0.0005	106	0.0139	6.41	0.005	1.96	0.005	0.00005	0.0024	0.005	0.392	0.0005
W8A	2015-09-23 16:30	286	1100	181.1	7.01	774	5.4	1.1	37.1	0.0152	10.9	0.091	248	9.3	0.56	0.00002	0.0191	0.00049	0.128	0.05	0.0001	0.001	161	0.00027	0.0005	0.001	0.112	0.123	0.00001	6.36	0.005	44.3	1.31	0.0144	37.5	0.001	0.0002	0.0005	99.4	0.0127	7.76	0.005	2.06	0.005	0.00005	0.00256	0.005	0.361	0.0005
W8A	2015-10-02 9:40	302	1130	215.6	7.3	926	4	0.1	50.5	0.0181	10.1	0.073	222	10	0.55	0.00002	0.0082	0.0005	0.122	0.05	0.0001	0.001	173	0.000177	0.0005	0.001	0.0927	0.209	0.00001	6.29	0.005	44.1	1.34	0.0141	36.2	0.001	0.0002	0.0005	97.8	0.0114	8.18	0.005	1.92	0.005	0.00005	0.00235	0.005	0.377	0.0005
W8A	2015-10-08 16:10	343	1210	205.3	7.13	874	4.1	0.5	37.2	0.0207	10.1	0.086	272	11	0.54	0.00002	0.0107	0.00052	0.137	0.05	0.0001	0.001	156	0.000155	0.0005	0.001	0.0624	0.3	0.00001	5.98	0.005	45.3	1.6	0.0132	35.9	0.001	0.0002	0.0005	91.7	0.0109	7.09	0.005	2.17	0.005	0.00005	0.00271	0.005	0.336	0.0005
W8A	2015-10-16 15:30	333	1160	154.7	6.81	838	8.1	0.6	24.2	0.0441	10.6	0.11	236	10	0.57	0.00002	0.0089	0.00038	0.119	0.05	0.0001	0.001	157	0.000209	0.0005	0.001	0.0943	0.338	0.00001	6.14	0.005	43.7	1.52	0.0139	35	0.001	0.0002	0.0005	84.9	0.0109	7.43	0.005	1.93	0.005	0.00005	0.00256	0.005	0.381	0.0005
W8A	2015-10-23 16:05	377	1220	115.2	7.37	912	14	0.9	44.1	0.0735	10.6	0.089	222	11	0.62	0.00002	0.0117	0.00045	0.13	0.057	0.0001	0.001	163	0.00017	0.0005	0.001	0.082	0.345	0.00001	6.24	0.005	43.8	1.53	0.0137	36.8	0.0013	0.0002	0.0005	87.3	0.0102	7.87	0.005	2.08	0.005	0.00005	0.00234	0.005	0.812	0.0005
W8A	2015-10-29 15:50	363	1240	110.7	7.18	864	7.4	0.6	35.7	0.0706	11	0.13	273	12	0.61	0.00002	0.0132	0.00041	0.135	0.05	0.0001	0.001	166	0.000294	0.0005	0.001	0.0808	0.319	0.00001	6.44	0.005	44.5	2.23	0.0156	37.4	0.001	0.0002	0.0005	93.4	0.00957	7.35	0.005	2.29	0.005	0.00005	0.00248	0.005	0.309	0.0005
W8A	2015-11-03 13:50	371	1260	75.1	7.21	894	11.7	1.6	51.8	0.0827	10.6	0.16	283	13	0.62	0.000044	0.0092	0.00052	0.132	0.05	0.0001	0.001	205	0.000189	0.0005	0.001	0.0713	0.306	0.00001	8.89	0.005	48.8	2.13	0.0155	41.5	0.0013	0.0002	0.0005	107	0.00998	9.29	0.005	2.25	0.005	0.00005	0.00267	0.005	0.492	0.0005
W8A	2015-11-10 16:30	379	1310	112.6	7.54	924	8.3	0.1	24.8	0.106	11.7	0.14	290	14	0.66	0.00003	0.0092	0.00037	0.118	0.05	0.0001	0.001	189	0.000402	0.00055	0.001	0.127	0.294	0.00001	7.79	0.005	56.7	2.65	0.0167	43.8	0.0011	0.0002	0.0005	119	0.0116	7.59	0.005	2.48	0.005	0.00005	0.00261	0.005	0.174	0.0005
W8A	2015-11-22 16:00	398	1320	249.6	7.04	956	9.9	3.1	32.5	0.173	10	0.3	271	17	0.63	0.000022	0.0091	0.00044	0.132	0.05	0.0001	0.001	189	0.000273	0.00056	0.001	0.0791	0.254	0.00001	6.91	0.005	53	2.79	0.0167	42.6	0.0012	0.0002	0.0005	102	0.00866	8.6	0.005	2.52	0.005	0.00005	0.00296	0.005	0.885	0.0005
W8A	2015-11-28 14:05			119.7	7.22			2.2	20.6																																								
W8A	2015-12-04 11:25	449	1380	113.5	7.16	1000	12	0.3	23.1	0.118	8.92	0.27	255	15	0.56	0.00002	0.036	0.00058	0.164	0.05	0.0001	0.001	207	0.000237	0.00064	0.001	0.0749	0.263	0.00001	7.76	0.005	61.2	2.97	0.015	46.7	0.0014	0.0002	0.0005	105	0.00871	7.41	0.005	2.74	0.005	0.00005	0.00336	0.005	0.456	0.0005
W8A	2015-12-06 17:30																																																
W8A	2015-12-06 17:30																																																
W8A	2015-12-10 17:20	509	1420	-30.1	7.7	986	5	0.1	17.9	0.0952	8.22	0.23	245	15	0.59	0.00002	0.0106	0.00047	0.153	0.05	0.0001	0.001	210	0.000246	0.00063	0.001	0.0791	0.325	0.00001	6.9	0.005	57.9	3.26	0.0154	42.4	0.0012	0.0002	0.0005	105	0.007	9.54	0.005	2.62	0.005	0.00005	0.00305	0.005	0.512	0.0005
W8A	2016-06-18 16:15	336	1030			676	161			0.0488	6.45	0.135	204	8.3		0.00001	0.0085	0.00051	0.131	0.026	0.00002	0.00005	145	0.000211	0.00065	0.00033	0.0736	0.347	0.000005	7.21	0.0037	42	2.07	0.0121	36.1	0.00093	0.00005	0.0001	74.5	0.00801	6.88	0.0001	1.86	0.00052	0.00001	0.00219	0.00073	0.394	0.00036
W8A	2016-06-19 4:15			147.5	6.92			14.4	41.4																																								
W8A	2016-06-26 16:30	359	1140	119.2	6.92	790	229	3.7	33.4	0.0755	7.03	0.147	269	10		0.00001	0.023	0.00042	0.137	0.029	0.00002	0.00005	166	0.00026	0.00065	0.00035	0.0815	0.376	0.000005	7.14	0.0039	47.6	2.32	0.014	39.9	0.00104	0.00005	0.0001	95.6	0.00988	6.9	0.0001	2.01	0.0015	0.00001	0.00218	0.0008	0.285	0.0003
W8A	2016-07-02 15:45	343	1150	130.7	7.05	785	16.7	10.2	56.2	0.0779	7.34	0.168	278	10.1		0.00001	0.0059	0.00035	0.126	0.031	0.00002	0.00005	167	0.000324	0.00059	0.00035	0.0769	0.248	0.000005	6.97	0.004	45	2.21	0.0146	36.3	0.00108	0.00005	0.0001	89.8	0.00978	6.52	0.0001	2.03	0.00044	0.00001	0.00222	0.00052	0.461	0.0003
W8A	2016-07-14 16:25	341	1150	131	6.9	805	52	4.2	34	0.0417	7.68	0.133	291	9.5		0.00001	0.0051	0.00033	0.128	0.03	0.00002	0.00005	172	0.000306	0.00058	0.00034	0.0818	0.318	0.000005	6.83	0.0046	47.4	1.83	0.0149	37.3	0.00113	0.000064	0.0001	96.2	0.00882	6.8	0.0001	2.17	0.00032	0.00001	0.00242	0.00059	0.239	0.00033
W8A	2016-07-19 17:30	341	1210	118	7.02	828	117	4.4	41.5	0.0505	7.89	0.145	302	9.8		0.00001	0.0071	0.00043	0.136	0.03	0.00002	0.00005	176	0.000277	0.0007	0.00036	0.0788	0.33	0.000005	6.91	0.0039	49.7	2.25	0.0134	40.5	0.00128	0.00005	0.0001	97.7	0.0107	7.04	0.0001	2.21	0.00052	0.00001	0.00251	0.00081	0.335	0.00036
W8A	2016-07-30 8:41	277	957	88.8	7		13.3	4.3	62.9	0.0107	8.5	0.0303	219	5.7	0.493	0.000011	0.0076	0.00064	0.119	0.019	0.000025	0.00005	139	0.0000719	0.00036	0.00031	0.0772	0.211		5.76	0.0024	36	0.86	0.0118	31.5	0.00094	0.00005	0.0001	74	0.0122	7.24	0.0001	1.57	0.00036	0.00001	0.00166	0.00076	0.191	0.0003
W8A	2016-08-07 11:00	281	1170	141.9	7.31	828	74.7	5.7	42.7	0.0203	9.75	0.0631	339	8.6		0.00001	0.0051	0.00052	0.142	0.024	0.00002	0.00005	177	0.000112	0.00039	0.00023	0.0547	0.153	0.000005	6.84	0.0029	45	1.11	0.0148	38.7	0.00084	0.00005	0.0001	117	0.0155	6.92	0.0001	2.02	0.0003	0.00001	0.0023	0.00067	0.0959	0.0003

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	N-NO_2	N-NO_3	N-NH_3	SO_4-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W8A	2016-08-11 15:05	298	1160	141	7.37	786	7.1	2.2	65.6	0.0199	8.75	0.0561	291	7.3	
W8A	2016-08-17 15:15	346	1190			821	30			0.0713	7.5	0.0695	306	9.4	
W8A	2016-08-25 16:00	323	1230	147.7	6.83	871	58	6.9	68.9	0.073	8.83	0.0928	348	10.4	
W8A	2016-09-04 16:35	351	1120	138.7	8.66	796	24.2	2.5	54.3	0.0468	6.55	0.062	287	8.6	
W8A	2016-09-09 9:00	336	1050	193	7.21	729	25	1	48.3	0.0406	5.9	0.0533	258	8.3	
W8A	2016-09-13 8:22	358	1090	115.8	7.02	755	16.1	2.9	27.3	0.032	5.62	0.11	257	9	
W8A	2016-09-19 14:50	364	1070	145.7	6.82	729	13.3	4.1	31	0.0864	5.04	0.0994	244	8.9	
W8A	2016-09-20 14:50														
W8A	2016-09-28 15:00	387	1070	120.3	7.06	767	63.7	3.2	43.6	0.0714	5.46	0.141	259	9.7	
W8A	2016-10-03 15:40	406	1080	112.9	7.33	810	22.7	1	34.5	0.0514	5.48	0.223	259	10.2	
W8A	2016-10-11 15:20	390	1230	100.1	7.19	896	34.7	2.6	31.2	0.111	7.65	0.246	329	11.5	
W8A	2016-10-17 15:45	398	1250	156.8	7.37	932	16.1	0.1	30.7	0.119	8.42	0.238	353	12.5	
W8A	2016-10-24 16:50	406	1340	165.3	7.36	948	7.7	0	29	0.115	8.76	0.245	351	13.6	
W8A	2016-10-27 16:21	432	1360			940	20.8			0.145	8.09	0.25	337	14	
W8A	2016-11-01 15:50	481	1330	96.6	7.47	962	33.2	0.2	55	0.322	7.65	0.323	325	13.5	
W8A	2016-11-11 9:45	491	1400	111.4	6.94	976	14.5	5	36.5	0.288	7.35	0.312	321	14.1	
W8A	2016-11-14 11:11	534	1420	88.3	6.92	985	102	2.7	21.1	0.297	6.57	0.357	308	14.9	
W8A	2016-11-22 14:45	550	1440	92.6	7.5	1010	54.7	-0.1	38.3	0.288	6.15	0.531	296	14.6	
W8A	2016-11-29 14:05	590	1500			1030	26.1			0.282	5.25	0.434	276	14.8	
W8A	2016-12-06 16:15	584	1470	36.2	7.14	1010	39.2	5	30	0.295	6.02	0.435	295	14.8	
W8A	2016-12-12 15:45	627	1520	81.3	7.11	1050	19.1	5	38.6	0.262	4.91	0.394	278	15.7	
W8A	2016-12-13 15:45														
W8A	2016-12-20 11:15	672	1520	105.7	7.05	1050	20.6	3.4	34	0.358	3.8	0.426	255	16.1	
W8A	2016-12-27 16:15	619	1550	134.2	7.17	1060	69.7	3	37.5	0.368	4.84	0.414	272	15.4	
W8A	2017-01-02 15:25	638	1570	56.9	7.09	1070	36.5	2.1	32.8	0.374	5.86	0.42	297	16.1	
W8A	2017-01-09 16:15	725	1580	80.7	7.22	1070	39.6	4	69.1	0.442	2.09	0.434	236	16.7	
W8A	2017-01-10 16:15														
W8A	2017-01-17 11:25	741	1590			1080	54.3			0.5	1.92	0.423	226	17.7	
W8A	2017-01-24 13:00	769	1540	152.4	7.23	1100	37.3	2	54.2	0.547	1.52	0.375	233	18.1	
W8A	2017-01-31 13:45	807	1630	52.3	7.19	1110	16.4	3.7	32.1	0.323	0.512	0.42	213	17.7	
W8A	2017-02-07 11:10	805	1610	52.6	7.1	1160	106	2.7	36.6	0.163	0.126	0.432	213	18.9	0.55
W8A	2017-02-14 13:55	833	1610	195.9	7.08	1170	46.3	7.4	33.2	0.079	0.194	0.422	203	20	
W8A	2017-02-21 14:10	817	1600	-10.7	7.21	1140	104	4.6	35.2	0.0718	0.131	0.439	204	18.3	
W8A	2017-02-28 10:45	841	1650	-28.6	7.05	1220	90.9	3.1	19.3	0.051	0.212	0.45	197	18.7	0.54
W8A	2017-03-07 14:50	864	1650	-7.9	6.93	1290	46.7	2.6	26.8	0.0419	0.194	0.461	186	18.2	
W8A	2017-03-14 16:15	883	1740	-54	7.79	1250	40.4	2.2	52	0.038	0.635	0.422	201	20.2	
W8A	2017-03-28 11:00	866	1680	-28.5	6.86	1150	41.5	4	18.5	0.0157	0.465	0.408	191	19.6	
W8A	2017-04-04 10:25	907	1730	43.1	7.2	1250	35.4	0.4	33.2	0.066	0.852	0.477	172	20.1	
W8A	2017-04-11 9:00	842	1600	78	7.44	1180	67.3	0	51.6	0.109	1.22	0.356	182	17.7	
W8A	2017-04-18 8:30	742	1500	88.8	7.1	1080	48.3	0	35.1	0.094	0.587	0.312	216	17.1	
W8A	2017-04-25 11:45	734	1570	75.9	6.68	1030	32.8	4	20.6	0.13	0.518	0.363	199	19.4	
W8A	2017-06-14 16:15	330	719	121.4	6.95	442	37.8	3.7	39.8	0.0125	1.77	0.0414	79.3	6.5	
W8A	2017-06-19 14:15	352	785	132.3	7.26	483	37.5	3.9	31.4	0.0219	1.78	0.073	92.7	6.7	
W8A	2017-06-26 13:30	386	845	125.4	7.11	543	18.4	8.4	33	0.0333	1.89	0.0953	114	6.3	
W8A	2017-07-03 8:45	441	993	123.1	7.57	640	41.3	2.4	28.8	0.0722	2.35	0.145	145	7.6	
W8A	2017-07-11 10:45	452	1100	158.6	7.66	697	34.5	2.6	61.4	0.072	3.28	0.11	171	7.3	
W8A	2017-07-17 11:50	435	1050			684	19.6			0.037	3.15	0.164	170	7.2	
W8A	2017-07-24 7:34	404	1110	184.1	6.58	733	14	5.9	35.9	0.029	4.33	0.136	218	8.3	
W8A	2017-07-31 9:40	357	1100	154.8	7.02	745	79.3	4.9	39.1	0.0254	6.77	0.0867	240	8.15	
W8A	2017-08-07 14:15	342	1100	189.4	7.42	762	84	6.5	93.7	0.0174	7.05	0.129	279	9.96	
W8A	2017-08-14 15:30	392	1150	195.6	7.23	785	38.7	4.6	41.8	0.0345	5.63	0.112	280	10.5	
W8A	2017-08-21 11:00	349	1130	161	7.51	785	16	4.4	41.2	0.0231	6.06	0.112	287	10.7	
W8A	2017-08-28 7:30	373	1150	232.1	7.6	797	50.7	1.4	35.6	0.0387	5.69	0.0851	277	10.4	
W8A	2017-09-01 14:05	379	1180		6.9	842	36.9	8.5		0.0414	6.32	0.091	302	11.2	
W8A	2017-09-04 10:20	393	1250	183.9	6.86	851	46.7	3.7	42.2	0.0686	6.33	0.0744	310	10.9	
W8A	2017-09-11 10:15	324	1050	236.2	7.1	727	20	2.3	71.4	0.0289	6.17	0.0362	266	7.8	
W8A	2017-09-18 10:25	353	1040	177.1	6.95	706	4	1.9	39.1	0.102	5.64	0.0771	242	8.5	
W8A	2017-09-25 11:11	369	1100	145.6	7.07	758	35.8	4.2	32.5	0.14	5.62	0.12	254	9.1	
W8A	2017-10-02 10:50	348	1020	162.4	7.19	696	20.1	1	34.3	0.0895	6.2	0.0988	232	8.45	
W8A	2017-10-09 11:00	362	1060	137	7.25	758	36.3	0.3	34.8	0.106	6.31	0.108	248	9	
W8A	2017-10-17 10:00	413	1290	153.3	7.37	884	4	0.4	35.9	0.246	6.36	0.149	319	12	
W8A	2017-10-23 10:45	430	1300	121.1	7.23	929	21	0.1	27.9	0.138	7.2	0.132	343	13	0.55
W8A	2017-10-30 9:40	447	1350	142.2	7.69	957	36.9	0.4	28.4	0.232	7.01	0.225	337	13.4	
W8A	2017-11-06 10:45	484	1450	196.1	7.15	1050	4.7	-0.1	32.4	0.477	6.6	0.31	381	14.1	
W8A	2017-11-16 10:00	516	1410	205.4	7.28	1070	20	0	69.5	0.448	6.72	0.384	344	14.1	
W8A	2017-11-22 15:30	565	1560	248.4	7.78	1110	16	0	23.5	0.683	6.74	0.442	394	16.2	
W8A	2017-11-28 12:20	524	1470	196.3	7.44	1090	18.3	0.5	22.9	0.768	6.04	0.356	362	15.2	
W8A	2017-12-04 10:00	480	1490	216.7	7.14	1140	42.7	0	19.6	0.568	6.74	0.395	416	15.3	
W8A	2017-12-11 10:55	559	1500	205.2	7.58	1100	37.8	0.5	30.1	0.596	6.27	0.329	361	14.8	
W8A	2017-12-19 13:35	530	1600	172.6	7.75	1100	16.1	0	37.5	1.18	3.49	0.33	361	8.21	
W8A	2017-12-26 11:10	575	1560	228.5	7	1150	8	-0.1	13.1	0.602	7.02	0.282	367	16.1	
W8A	2018-01-02 12:40	613	1580	224.3	6.92	1120	10.7	0.5	19.2	0.585	6.38	0.395	348	16.8	
W8A	2018-01-08 10:45	628	1600	97.3	7.25	1160	11.4	0.3	49.2	0.659	5.34	0.313	328	16.6	
W8A	2018-01-16 11:20	647	1600	122.6	7.28	1160	12.4	0.2	45.6	0.591	5.83	0.295	346	17.9	
W8A	2018-01-23 11:40	691	1620	45.4	7.28	1240	18	-0.1	55.6	0.5	3.67	0.285	313	17.7	
W8A	2018-01-29 11:10	699	1640	19.6	7.57	1150	22.6	0.1	40.6	0.494	3.68	0.387	291	18.1	
W8A	2018-02-06 9:10	734	1700	116.3	7.26	1160	27.5	3.1	52.3	0.428	2.54	0.351	282	18	
W8A	2018-02-13 9:30	751	1750	147.4	7.27	1150	40.7	-0.1	31.3	0.473	2.4	0.347	283	18.7	
W8A	2018-02-20 14:00	776	1650	241	6.23	1180	10.7	0	42.8	0.568	1.26	0.309	250	18.8	
W8A	2018-02-26 16:45	732	1630	75.4	7.16	1120	27.6	-0.1	27	0.667	0.975	0.305	263	20.1	
W8A	2018-03-06 11:00	779	1710	66.2	7.08	1120	45.3	0.2	29.3	0.428	0.615	0.28	249	19.5	
W8A	2018-03-13 9:55	757	1560	98.6	7.1	1110	22.9	-0.1	35.2	0.467	0.235	0.333	240	19.4	
W8A	2018-03-20 9:50	829	1680	65.1	7.27	1210	154	-0.1	40.8	0.157	0.058	0.385	243	20.7	
W8A	2018-03-28 9:20	764	1540	53	7.14	1130	18.8	0.8	27.6	0.205	0.261	0.357	227	19.4	
W8A	2018-04-03 10:30	691	1430	45.7	7.12	1060	20	0.3	25.1	0.229	0.915	0.351	233	19.9	
W8A	2018-04-10 9:10	792	1580	121.9	7.6	1140	34.3	0.4	72	0.529	0.125	0.392	215	19	
W8A	2018-04-17 8:50	463	686	188.5	7.6	711	33.3	-0.1	32.7	0.611	3.54	0.0757	153	11.1	
W8A	2018-04-24 8:40	252	912	203	7.53	618	91.3	3.2	64.4	0.11	16.9	0.0767	194	7.1	
W8A	2018-05-08 10:00	325	1140	194.2	6.38	866	42.8	3.2	71.4	0.292	9.77	0.193	285	9.8	0.59
W8A	2018-05-14 9:35	385	1220	158.1	7.15	831	45.1	1.7	46.1	0.214	8.42	0.181	285	9.9	0.65
W8A	2018-07-02 10:30	226	544	154.4	6.99	340	42.1	6.2	55.7	0.0127	1.93	0.039	72.1	2.76	
W8A	2018-07-09 8:20	304	786	131.7	6.87	488	51.5	4.8	40	0.0363	2.15	0.0426	129	4.84	
W8A	2018-07-16 9:45														
W8A	2018-07-18 15:50	448	1100	95	7.2	722	80.9	6.7	35.3	0.155	3.91	0.126	205	7.75	0.506
W8A	2018-07-23 14:00	421	1160	187.5	6.91	759	144	4.5	68	0.186	5.14	0.159	235	8.37	0.528
W8A	2018-07-30 10:10	428	1210	162	6.93	826	32.2	4	26.8	0.219	4.42	0.163	261	9.3	
W8A	2018-08-06 9:05	418	1160	150	7.12	812	121	0.4	35.7	0.201	4.32	0.149	260	9.3	
W8A	2018-08-13 10:20	267	812	183.4	7.24	523	139	5.1	46.7	0.0993	7.63	0.0595	143	4.36	
W8A	2018-08-20 11:00	243	943	172.8	7.06	545	37.1	4.6	41.9	0.221	5.82	0.0833	174	5.43	
W8A	2018-08-27 10:20	266	808	150.7	6.94	542	200	4	57.9	0.0976	6.33	0.0656	164	5.4	
W8A	2018-09-03 10:30	301	940	164.8	7.18	596	3.3	2.9	51.5	0.0374	6.87	0.0814	196	5.9	
W8A	2018-09-12 16:50	349	1070	165.7	7.07	735	71.3	3.8	49.6	0.0609	6.63	0.123	256	7.8	
W8A	2018-09-17 16:00	336	1020	145.4	7.16	675	89.4	1.9	58	0.0282	5.56	0.106	223	6.91	
W8A	2018-09-24 9:50	348	1150	173	7.02	786	26.1	2.4	34.9	0.0975	6.41	0.19	293	8.9	
W8A	2018-10-01 10:05	398	1300	125.7	7.21	874	36.7	1.6	36.7	0.177	6.51	0.245	310	10	
W8A	2018-10-08 9:30	404	1310	142.9	7.14	855	52.2	0.7	24.1	0.17	5.73	0.209	289	9.6	
W8A	2018-10-15 15:45	430	1330	84.1	7.58	925	9.3	0.6	28.3	0.224	6.05	0.222	320	10.7	
W8A	2018-10-23 9:50	466	1420	144.3	7.3	952	32.4	0.5	34.6	0.258	5.92	0.38	328	11.6	
W8A	2018-10-30 8:10	460	1390	280.1	7.11	965	36.7	0.1	27.2	0.265	5.55	0.223	331	12.2	
W8A	2018-11-06 9:30	525	1480	256.6	7.23	1060	34	0	32.5	0.285	5.66	0.287	367	13.4	
W8A	2018-11-13 10:45	537	1480	241.8	6.99	1050	18	2.8	36.9	0.369	5.33	0.298	348	13.2	
W8A	2018-11-19 8:45	566	1470	240	7.11	1100	30.8	0	21.4	0.452	5.11	0.373	362	14.2	
W8A	2018-11-27 8:00	567	1500	250.6	6.98	1120	13.1	0.1	32.7	0.565	5.1	0.386	370	15.2	
W8A	2018-12-03 14:00	581	1550	208	6.61	1130	14.2	0.8	20.2	0.618	4.57	0.399	359	15.3	0.65
W8A	2018-12-11 14:00	575	1690	206.9	7.06	1120	11.5	0	33.2	0.627	4.57	0.377	350	15.2	

Station	Date / Time	Dissolved Elements																		
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D	Mo-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W8A	2016-08-11 15:05	0.000012	0.0067	0.00055	0.132	0.025	0.00002	0.00005	169	0.000132	0.00043	0.00029	0.0745	0.147	0.000005	6.59	0.0035	43.4	1.23	0.013
W8A	2016-08-17 15:15	0.000011	0.0071	0.00054	0.132	0.029	0.00002	0.00005	169	0.000154	0.00046	0.00035	0.0715	0.187	0.000005	6.93	0.004	47.2	1.49	0.014
W8A	2016-08-25 16:00	0.00001	0.006	0.00049	0.14	0.03	0.00002	0.00005	179	0.000282	0.00053	0.00033	0.109	0.175	0.000005	7.85	0.0041	49.2	1.7	0.0143
W8A	2016-09-04 16:35	0.000011	0.0073	0.00055	0.144	0.028	0.00002	0.00005	166	0.0000808	0.00046	0.0004	0.0714	0.266	0.000005	6.6	0.0039	44.8	1.46	0.0123
W8A	2016-09-09 9:00	0.00001	0.0065	0.00051	0.112	0.025	0.00002	0.00005	153	0.0001	0.00035	0.0003	0.0623	0.244	0.000005	7.21	0.003	40.6	1.13	0.0116
W8A	2016-09-13 8:22	0.000011	0.0064	0.0005	0.129	0.026	0.00002	0.00005	159	0.00021	0.00053	0.0004	0.0832	0.329	0.000005	6.42	0.0036	44.6	1.77	0.0115
W8A	2016-09-19 14:50	0.00001	0.007	0.00045	0.134	0.024	0.00002	0.00005	152	0.000134	0.00049	0.00038	0.0669	0.371	0.000005	6.2	0.0031	40.3	1.61	0.0118
W8A	2016-09-20 14:50																			
W8A	2016-09-28 15:00	0.00001	0.0065	0.0004	0.123	0.027	0.00002	0.00005	155	0.000205	0.00057	0.00038	0.0699	0.372	0.000005	6.74	0.0037	40.3	1.84	0.011
W8A	2016-10-03 15:40	0.00001	0.007	0.00046	0.136	0.031	0.00002	0.00005	175	0.000213	0.0007	0.0004	0.0641	0.394	0.000005	7.58	0.0032	46.3	2.26	0.0111
W8A	2016-10-11 15:20	0.00001	0.0061	0.00038	0.134	0.031	0.00002	0.00005	184	0.00031	0.00063	0.00032	0.0694	0.367	0.000005	7.51	0.0042	51.3	2.32	0.0126
W8A	2016-10-17 15:45	0.00001	0.0055	0.00041	0.139	0.032	0.00002	0.00005	185	0.0003	0.0007	0.00033	0.0654	0.313	0.000005	7.6	0.004	51.8	2.48	0.0125
W8A	2016-10-24 16:50	0.00001	0.0056	0.0004	0.141	0.031	0.00002	0.00005	191	0.000295	0.00067	0.00042	0.0736	0.257	0.000005	8.33	0.0044	52.9	2.72	0.013
W8A	2016-10-27 16:21	0.00001	0.0054	0.00042	0.127	0.032	0.00002	0.00005	190	0.000318	0.00067	0.00047	0.0671	0.341	0.000005	7.4	0.004	50.5	2.7	0.0133
W8A	2016-11-01 15:50	0.00001	0.0062	0.00041	0.149	0.032	0.00002	0.00005	187	0.000341	0.00081	0.00049	0.0657	0.295	0.000005	8.09	0.0048	56.3	3.49	0.0124
W8A	2016-11-11 9:45	0.000011	0.0062	0.00044	0.159	0.029	0.00002	0.00005	195	0.000301	0.00085	0.00054	0.0612	0.357	0.000005	8.19	0.0047	57.9	3.34	0.0117
W8A	2016-11-14 11:11	0.000011	0.0059	0.00045	0.16	0.032	0.00002	0.00005	198	0.0003	0.00091	0.00052	0.0594	0.413	0.000005	7.98	0.005	55.1	3.37	0.0118
W8A	2016-11-22 14:45	0.00001	0.004	0.00044	0.163	0.036	0.00002	0.00005	219	0.000314	0.00132	0.00048	0.0473	0.139	0.000005	8.52	0.0054	63	4.86	0.0119
W8A	2016-11-29 14:05	0.000014	0.0098	0.00045	0.163	0.036	0.00002	0.00005	223	0.00035	0.0014	0.00054	0.0554	0.545	0.000005	9.05	0.0049	70.1	4.49	0.0119
W8A	2016-12-06 16:15	0.000012	0.0504	0.00044	0.167	0.032	0.00002	0.00005	196	0.000347	0.00124	0.00051	0.0608	0.47	0.000005	7.9	0.0043	62.1	4.51	0.0114
W8A	2016-12-12 15:45	0.000011	0.0057	0.0005	0.191	0.034	0.00002	0.00005	221	0.000291	0.0015	0.00068	0.0611	0.463	0.000005	9.06	0.0048	67	5.64	0.0102
W8A	2016-12-13 15:45																			
W8A	2016-12-20 11:15	0.000011	0.0107	0.00049	0.194	0.036	0.00002	0.00005	226	0.000265	0.00147	0.00076	0.0543	0.434	0.000005	8.5	0.0046	65	5.85	0.00983
W8A	2016-12-27 16:15	0.00001	0.0071	0.00056	0.229	0.034	0.00002	0.00005	227	0.000294	0.00172	0.00085	0.0457	0.379	0.000005	10.1	0.0049	74.4	6.5	0.00972
W8A	2017-01-02 15:25	0.000011	0.0074	0.00057	0.184	0.036	0.00002	0.00005	215	0.000267	0.00151	0.00068	0.0484	0.41	0.000005	8.66	0.0041	66.9	5.29	0.0107
W8A	2017-01-09 16:15	0.000017	0.0157	0.00098	0.208	0.036	0.00002	0.00005	225	0.000252	0.00175	0.00073	0.0456	0.564	0.000005	8.77	0.0053	73.9	6.37	0.00992
W8A	2017-01-10 16:15																			
W8A	2017-01-17 11:25	0.00001	0.0095	0.00057	0.218	0.033	0.00002	0.00005	234	0.000311	0.00156	0.00075	0.0587	0.285	0.000005	8.99	0.0049	72.6	6.37	0.00938
W8A	2017-01-24 13:00	0.000016	0.0087	0.00058	0.218	0.04	0.00002	0.00005	232	0.000248	0.00173	0.00092	0.0522	0.501	0.000005	9.12	0.0048	75.4	6.98	0.00937
W8A	2017-01-31 13:45	0.000016	0.0099	0.00069	0.222	0.036	0.00002	0.00005	242	0.00031	0.00231	0.00092	0.0596	0.651	0.000005	9.58	0.0053	73.3	7.88	0.0106
W8A	2017-02-07 11:10	0.000014	0.008	0.00069	0.234	0.037	0.00002	0.00005	242	0.00023	0.00317	0.00081	0.045	1.6	0.000005	9.22	0.0048	76.4	9.02	0.0121
W8A	2017-02-14 13:55	0.000011	0.0061	0.00063	0.204	0.038	0.00002	0.00005	237	0.000198	0.00341	0.00072	0.0311	0.443	0.000005	7.92	0.0053	63.3	8.14	0.0122
W8A	2017-02-21 14:10	0.00002	0.0103	0.00082	0.267	0.036	0.00004	0.0001	241	0.000157	0.0051	0.00111	0.0424	4.09	0.000005	9.24	0.005	78.8	11	0.014
W8A	2017-02-28 10:45	0.00002	0.0079	0.00085	0.253	0.035	0.00004	0.0001	226	0.000148	0.0062	0.00089	0.0278	1.53	0.000005	8.77	0.0042	76.6	11.7	0.0172
W8A	2017-03-07 14:50	0.00002	0.0168	0.00142	0.349	0.038	0.00004	0.0001	262	0.000148	0.00743	0.00151	0.0586	6.92	0.000005	9.8	0.0051	86.1	12.3	0.0171
W8A	2017-03-14 16:15	0.00002	0.0129	0.00117	0.303	0.035	0.00004	0.0001	223	0.000134	0.00623	0.0012	0.0371	4.68	0.000005	8.27	0.0046	73.2	11.1	0.0149
W8A	2017-03-28 11:00	0.00002	0.018	0.00145	0.286	0.038	0.00004	0.0001	234	0.00011	0.00572	0.00141	0.0457	7	0.0000058	9.16	0.0043	79.3	10.8	0.0142
W8A	2017-04-04 10:25	0.000018	0.0127	0.00119	0.279	0.034	0.000022	0.00005	247	0.000168	0.00408	0.00113	0.0396	2.43	0.0000051	8.63	0.0046	82	9.04	0.0113
W8A	2017-04-11 9:00	0.000021	0.0133	0.00096	0.233	0.036	0.000022	0.00005	236	0.000175	0.00279	0.00104	0.0546	0.725	0.0000062	8.34	0.0049	78.8	7.96	0.00593
W8A	2017-04-18 8:30	0.000012	0.143	0.00083	0.241	0.028	0.000028	0.00005	220	0.000245	0.00289	0.00089	0.106	0.389	0.000005	8.08	0.0047	72.9	6.98	0.00603
W8A	2017-04-25 11:45	0.000015	0.0151	0.00062	0.241	0.029	0.00002	0.00005	206	0.00014	0.00281	0.00078	0.0343	0.531	0.000005	8.27	0.0048	69.5	6.82	0.00531
W8A	2017-06-14 16:15	0.000028	0.0125	0.00063	0.101	0.015	0.000022	0.00005	91.9	0.00012	0.00065	0.00046	0.126	0.38	0.000005	4.88	0.0027	28	1.73	0.0041
W8A	2017-06-19 14:15	0.000028	0.0151	0.00064	0.101	0.018	0.000024	0.00005	99.7	0.0000791	0.00073	0.00052	0.116	0.444	0.000005	4.93	0.0031	31.7	1.82	0.00441
W8A	2017-06-26 13:30	0.000019	0.0106	0.00065	0.121	0.018	0.00002	0.00005	111	0.0000798	0.00094	0.00048	0.0895	0.403	0.000005	5.74	0.0034	34.3	2.18	0.00508
W8A	2017-07-03 8:45	0.00251	0.011	0.00064	0.133	0.023	0.00002	0.00005	129	0.000105	0.00101	0.00038	0.0902	0.523	0.000005	5.87	0.0036	39.7	2.49	0.00512
W8A	2017-07-11 10:45	0.000018	0.0103	0.00058	0.15	0.022	0.00002	0.00005	141	0.000097	0.00134	0.00049	0.0714	0.729	0.000005	6.27	0.0035	47.1	2.93	0.00549
W8A	2017-07-17 11:50	0.00002	0.0131	0.00063	0.15	0.024	0.000026	0.00005	141	0.000108	0.00135	0.00049	0.0804	0.433	0.0000051	6.05	0.0037	46.7	2.73	0.00573
W8A	2017-07-24 7:34	0.000019	0.0092	0.00063	0.141	0.027	0.00002	0.00005	155	0.0000936	0.00105	0.00059	0.0747	0.638	0.000005	6.25	0.0041	43.9	2.16	0.00751
W8A	2017-07-31 9:40	0.000019	0.0102	0.00057	0.132	0.027	0.00002	0.00005	158	0.00018	0.00113	0.00086	0.106	0.272	0.0000075	5.61	0.0041	44.7	2.36	0.0091
W8A	2017-08-07 14:15	0.000014	0.0113	0.00054	0.131	0.028	0.00002	0.00005	144	0.000132	0.00078	0.00036	0.0675	0.234	0.000005	6.1	0.004	42.5	1.5	0.011
W8A	2017-08-14 15:30	0.000016	0.0205	0.00047	0.126	0.028	0.00002	0.00005	149	0.00012	0.00082	0.00031	0.0722	0.177	0.0000057	5.95	0.0041	38.5	1.57	0.0115
W8A	2017-08-21 11:00	0.000016	0.0119	0.00054	0.134	0.029	0.00002	0.00005	159	0.000184	0.00102	0.00038	0.1	0.197	0.000005	6.37	0.0043	43.5	1.96	0.0116
W8A	2017-08-28 7:30	0.000012	0.0044	0.00045	0.133	0.027	0.00002	0.00005	168	0.0000988	0.00078	0.00029	0.0621	0.208	0.000005	6.35	0.0033	42.1	1.49	0.0132
W8A	2017-09-01 14:05	0.000017	0.0064	0.00054	0.136	0.03	0.000021	0.00005	159	0.000132	0.00079	0.00035	0.0699	0.273	0.000005	6.34	0.0037	45.5	1.63	0.0133
W8A	2017-09-04 10:20	0.000014	0.0066	0.00048	0.138	0.03	0.00002	0.00005	172	0.000138	0.00086	0.00027	0.0683	0.272	0.000005	6.97	0.004	45.1	1.97	0.0121
W8A	2017-09-11 10:15	0.000011	0.0075	0.00061	0.111	0.025	0.00002	0.00005	151	0.000116	0.00038	0.00065	0.0747	0.147	0.000005	6.02	0.0034	36.9	0.811	0.014
W8A	2017-09-18 10:25	0.000014	0.01	0.00062	0.113	0.024	0.00002	0.00005	139	0.000201	0.00063	0.00038	0.106	0.277	0.000005	5.93	0.0032	39.5	1.41	0.0107
W8A	2017-09-25 11:11	0.000015	0.011	0.00055	0.129	0.028	0.00002	0.00005	154	0.000275	0.00087	0.00038	0.106	0.439	0.000005	7.05	0.0039	44.9	1.86	0.0111
W8A	2017-10-02 10:50	0.00001	0.0082	0.00056	0.108	0.022	0.000027	0.00005	138	0.000194	0.00061	0.0004	0.0983	0.379	0.000005	5.87	0.003	39.5	1.39	0.00972
W8A	2017-10-09 11:00	0.000013	0.01	0.00057	0.115	0.026	0.00002	0.00005	163	0.0003	0.0007	0.00042	0.104	0.374	0.000005	6.63	0.0037	44.9	1.78	0.0112
W8A	2017-10-17 10:00	0.000013	0.0087	0.00053	0.126	0.032	0.00002	0.00005	174	0.000242	0.00069	0.00044	0.0725	0.46	0.000005	7.25	0.0047	48.1	2.08	0.0122
W8A	2017-10-23 10:45	0.00001	0.0072	0.00038	0.143	0.028	0.00002	0.00005	179	0.0000989	0.00062	0.00043	0.0451	0.514	0.000005	6.96	0.0034	50.6	1.74	0.0126
W8A	2017-10-30 9:40	0.00001	0.0068	0.00052	0.14	0.029	0.00002	0.00005	193	0.000185	0.00076	0.00052	0.0494	0.522	0.000005	7.38	0.0036	54.3	2.3	0.0121
W8A	2017-11-06 10:45	0.000012	0.0077	0.0005	0.153	0.031	0.00002	0.00005	205	0.000339	0.00114	0.00046	0.076	0.425	0.0000077	8.06	0.0044	60.7	3.16	0.0114
W8A	2017-11-16 10:00	0.000012	0.0071	0.0005	0.16	0.03	0.00002	0.00005	236	0.000413	0.00103	0.00047	0.0582	0.279	0.000005	8.48	0.0043	66.6	3.32	0.0135
W8A	2017-11-22 15:30	0.000011	0.0053	0.00047	0.156	0.03	0.00002	0.00005	214	0.000276	0.00108	0.00053	0.0683	0.183	0.000005	7.7	0.0036	57	2.95	0.0131
W8A	2017-11-28 12:20	0.000013	0.0119	0.00051	0.153	0.032	0.00002	0.00005	236	0.000307	0.00115	0.0006	0.0765	0.236	0.000005	8.09	0.0044	68.5	3.44	0.0137
W8A	2017-12-04 10:00	0.000011	0.007	0.00065	0.151	0.04	0.00002	0.00005	250	0.000391	0.0013	0.00055	0.0677	0.251	0.000005	9.11	0.0053	65.6	3.75	0.0126
W8A	2017-12-11 10:55	0.00001	0.0059	0.00063	0.172	0.033	0.00002	0.00005	230	0.000339	0.00143	0.00045	0.0639	0.267	0.000005	8.61	0.004	66.2	3.83	0.0134
W8A	2017-12-19 13:35	0.000014	0.009	0.00053	0.168	0.036	0.00002	0.00005	254	0.000518	0.00136	0.00044	0.108	0.311	0.000005	9.55	0.0047	71.5	4.01	0.0144
W8A	2017-12-26 11:10	0.000011	0.0071	0.00058	0.178	0.036	0.00002	0.00005	247	0.000426	0.00147	0.0006	0.0907	0.29	0.000008	9.5	0.0045	72.3	4.55	0.012
W8A	2018-01-02 12:40	0.00001	0.0072	0.00052	0.165	0.034	0.00002	0.00005	221	0.000397	0.00128	0.00045	0.0732	0.246	0.000005	8.7	0.0039	67.6	3.94	0.0135
W8A	2018-01-08 10:45	0.000012	0.0152	0.0009	0.179	0.035	0.00002	0.00005	272	0.000268	0.00147	0.00065	0.0627	0.377	0.000005	8.86	0.0048	71.9	4.83	0.012
W8A	2018-01-16 11:20	0.000012	0.0103	0.00059	0.169	0.033	0.00002	0.00005	242	0.000295	0.00131	0.00067	0.0783	0.332	0.000005	8.98	0.0041	71.2	4.6	0.0117
W8A	2018-01-23 11:40	0.000014	0.01	0.00072	0.217	0.038	0.00002	0.00005	253	0.00021	0.00179	0.00083	0.0559	0.71	0.000005	9.05	0.0042	75.5	5.89	0.00897
W8A	2018-01-29 11:10	0.000022	0.0063	0.00066	0.184	0.037	0.00004	0.0001	273	0.000157	0.00166	0.00061	0.0405	0.378	0.000005	8.13	0.0043	67.5	5.31	0.0114
W8A	2018-02-06 9:10	0.000013	0.0065	0.00064	0.227	0.036	0.00002	0.00005	273	0.000208	0.00159	0.00071	0.0472	0.636	0.000005	7.99	0.0042	65.2	5.27	0.00937
W8A	2018-02-13 9:30	0.000014	0.0067	0.00059	0.175	0.035	0.00002	0.00005	246	0.000375	0.00149	0.00079	0.0899	0.395	0.000005	8.91	0.0043	67.7	4.98	0.0113
W8A	2018-02-20 14:00	0.000018	0.006	0.00071	0.196	0.037	0.000023	0.00005	291	0.000241	0.00161	0.0007	0.0656	0.38	0.000005	8.84	0.005	72.6	5.68	0.00996
W8A	2018-02-26 16:45	0.000015	0.0076	0.00059	0.203	0.037	0.00002	0.00005	246	0.000202	0.00144	0.0007	0.0576	0.326	0.0000059	8.61	0.0045	73.1	5.97	0.00779
W8A	2018-03-06 11:00	0.000016	0.0073	0.00065	0.172	0.036	0.00002	0.00005	239	0.000217	0.0017	0.00072	0.051	0.322	0.0000051	8.25	0.0048	68.4	5.53	0.00911
W8A	2018-03-13 9:55	0.000012	0.007	0.00058	0.213	0.038	0.00002	0.00005	248	0.000227	0.00156	0.00073	0.0541	0.248	0.000005	8.3	0.0047	71.8	5.75	0.00687
W8A	2018-03-20 9:50	0.000016	0.0113	0.00091	0.245	0.04	0.00002	0.00005	272	0.000224	0.00207	0.00108	0.0452	0.761	0.0000081	10.4	0.0039	85.6	7.42	0.00846
W8A	2018-03-28 9:20	0.000016	0.0089	0.00067	0.24	0.035	0.00002	0.00005	267	0.000156	0.00196	0.00067	0.0531	0.387	0.000005	9.21	0.004	81.7	6.61	0.00774
W8A	2018-04-03 10:30	0.000023	0.0083	0.00058	0.232	0.038	0.00002	0.00005	243	0.000149	0.00166	0.00084	0.0414	0.761	0.000005	8.96	0.0049	76	6.08	0.00786
W8A	2018-04-10 9:10	0.000015	0.0081	0.00058	0.198	0.037	0.00002	0.00005	279	0.000184	0.00144	0.00107	0.0474	0.369	0.000005	8.37	0.0038	73.9	5.53	0.00765
W8A	2018-04-17 8:50		0.0063	0.00071	0.145	0.03	0.00002	0.00005	168	0.000169	0.00132	0.00039	0.0805	0.109	0.000005	5.98	0.0042	40.7	2.18	0.00828
W8A	2018-04-24 8:40	0.000013	0.0108	0.00046	0.102	0.023	0.00002	0.00005	129	0.000226	0.00073	0.00021	0.0824	0.078	0.000005	4.9	0.0027	29.8	0.922	0.00837
W8A	2018-05-08 10:00	0.000019	0.009	0.00051	0.117	0.033		0.00005	165	0.000457	0.00118	0.00028	0.133	0.197	0.000005	7.01	0.004	41.3	1.68	0.0124
W8A	2018-05-14 9:35	0.000014	0.0075	0.00052	0.121	0.03	0.00002	0.00005	174	0.000439	0.00101	0.00028	0.118	0.287	0.000005	6.84	0.0039	45.5	1.98	0.0121
W8A	2018-07-02 10:30	0.00003	0.0138	0.00067	0.0706	0.019	0.000031	0.00005	75.1	0.000143	0.00047	0.00031	0.167	0.188	0.0000087	3.96	0.0025	21.6	0.753	0.00522
W8A	2018-07-09 8:20	0.000022	0.0126	0.00073	0.0969	0.022	0.00003	0.00005	104	0.000135	0.00057	0.00036	0.129	0.355	0.000005	4.63	0.0026	28.3	1.01	0.0077
W8A	2018-07-16 9:45																			
W8A	2018-07-18 15:50	0.000018	0.0107	0.00067	0.118	0.026	0.000023	0.00005	138	0.000159	0.00087	0.0006	0.0865	0.838	0.000005	6	0.0037	39.6	1.77	0.0095
W8A	2018-07-23 14:00	0.000016	0.0218	0.00061	0.125	0.027	0.00002	0.00005	149	0.000165	0.00079	0.0005	0.0783	0.674	0.000005	6.17	0.0038	42.1	1.81	0.0106
W8A	2018-07-30 10:10	0.000014	0.0383	0.00061	0.136	0.03	0.00002	0.00005	176	0.000193	0.00097	0.00049	0.068	0.693	0.000005	7.03	0.004	48.9	2.24	0.0129
W8A	2018-08-06 9:05	0.000012	0.0144	0.00051	0.132	0.03	0.000024	0.00005	171	0.000181	0.0008	0.00046	0.0627	0.526	0.000005	6.71	0.0041	47.3	2.15	0.0131
W8A	2018-08-13 10:20	0.000025	0.0209	0.00061	0.105	0.02	0.000026	0.00005	113	0.000168	0.0006	0.00036	0.13	0.217	0.000005	5.29	0.003	32.5	1.07	0.0099
W8A	2018-08-20 11:00	0.000016	0.0107	0.00062	0.105	0.025	0.000026	0.00005	119	0.000145	0.00056	0.0004	0.112	0.34	0.000005	5.53	0.0033	35.5	1.2	0.0106
W8A	2018-08-27 10:20	0.00002	0.0118	0.00067	0.109	0.022	0.000021	0.00005	112	0.000288	0.00061	0.0004	0.133	0.202	0.000005	5.55	0.0032	33	1.12	0.00984
W8A	2018-09-03 10:30	0.000015	0.0094	0.00062	0.103	0.023	0.000023	0.00005	113	0.000175	0.00053	0.00038	0.109	0.334	0.000005	5.25	0.0033	32.9	1.06	0.0102
W8A	2018-09-12 16:50	0.000015	0.0153	0.00048	0.119	0.027	0.00002	0.00005	145	0.000219	0.00052	0.00049	0.0889	0.487	0.000005	6.54	0.0039	40.2	1.27	0.0137
W8A	2018-09-17 16:00	0.000014	0.0097	0.00063	0.108	0.026	0.000021	0.00005	135	0.000198	0.00059	0.00037	0.0951	0.469	0.000006	5.83	0.0034	39.4	1.51	0.0117
W8A	2018-09-24 9:50	0.00001	0.0087	0.00047	0.115	0.031	0.00002	0.00005	154	0.000239	0.00056	0.00042	0.0805	0.41	0.000005	6.69	0.0038	43	1.51	0.0133
W8A	2018-10-01 10:05	0.000012	0.0125	0.00054	0.126	0.031	0.000021	0.00005	178	0.000251	0.00065	0.00042	0.0748	0.734	0.000005	7.2	0.0041	50.4	1.73	0.0141
W8A	2018-10-08 9:30	0.000012	0.0066	0.00051	0.137	0.029	0.00002	0.00005	177	0.000225	0.00058	0.00042	0.0689	0.318	0.000005	7.23	0.0038	53.1	1.75	0.0154
W8A	2018-10-15 15:45	0.000014	0.0237	0.00048	0.145	0.031	0.00002	0.00005	195	0.000275	0.00064	0.00042	0.072	0.355	0.000005	7.45	0.0037	53.7	1.97	0.0145
W8A	2018-10-23 9:50	0.00001	0.0228	0.00044	0.139	0.032	0.00002	0.00005	192	0.000319	0.00079	0.00041	0.0779	0.345	0.000005	7.89	0.0042	53.8	2.24	0.0145
W8A	2018-10-30 8:10	0.00001	0.0098	0.0005	0.142	0.035	0.00002	0.00005	204	0.000255	0.00066	0.00048	0.0722	0.392	0.000005	7.78	0.0041	56.3	2.22	0.0141
W8A	2018-11-06 9:30	0.000014	0.0098	0.00049	0.153	0.034	0.00002	0.00005	208	0.000286	0.00087	0.00078	0.0814	0.415	0.000005	8.54	0.0045	62	2.71	0.0134
W8A	2018-11-13 10:45	0.000012	0.0081	0.00048	0.138	0.032	0.00002	0.00005	213	0.00029	0.00075	0.00056	0.072	0.392	0.000005	7.95	0.0041	61.7	2.78	0.0129
W8A	2018-11-19 8:45	0.000018	0.0102	0.00052	0.153	0.036	0.00002	0.00005	222	0.000378	0.00087	0.00101	0.0765	0.405	0.000005	9.07	0.0047	65.5	3.35	0.0127
W8A	2018-11-27 8:00	0.000013	0.0101	0.00054	0.19	0.036	0.00002	0.00005	238	0.000257	0.00086	0.0006	0.0782	0.314	0.000005	8.64	0.0045	66.2	3.42	0.0127
W8A	2018-12-03 14:00	0.000016	0.01	0.00056	0.181	0.038	0.00002	0.00005	245	0.000376	0.00091	0.00059	0.0746	0.334	0.000005	10.1	0.005	67.9	3.61	0.0125
W8A	2018-12-11 14:00	0.000015	0.0076	0.00051	0.187	0.037	0.00002	0.00005	247	0.000301	0.00097	0.00082	0.0801	0.348	0.000005	8.27	0.0048	72.6	4.11	0.0112

Station	Date / Time	Dissolved Elements (continued)														
		Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W8A	2016-08-11 15:05	36.1	0.00097	0.00005	0.0001	96.4	0.013	7.35	0.0001	1.88	0.00037	0.00001	0.00212	0.00071	0.0861	0.0003
W8A	2016-08-17 15:15	38.9	0.0011	0.00005	0.0001	103	0.0134	7.2	0.0001	2.08	0.00045	0.00001	0.00239	0.00079	0.167	0.0003
W8A	2016-08-25 16:00	41.2	0.00082	0.00005	0.0001	112	0.0146	6.76	0.0001	2.25	0.00039	0.00001	0.00253	0.00076	0.146	0.0003
W8A	2016-09-04 16:35	41.2	0.00118	0.00005	0.0001	92.9	0.0122	7.72	0.0001	2.04	0.0005	0.00001	0.00232	0.00094	0.117	0.0003
W8A	2016-09-09 9:00	32.8	0.00085	0.00005	0.0001	83.5	0.01	7.37	0.0001	1.84	0.00046	0.00001	0.00215	0.0008	0.0709	0.0003
W8A	2016-09-13 8:22	36.6	0.00108	0.00005	0.0001	84.6	0.0109	7.26	0.0001	2.09	0.00044	0.00001	0.00231	0.00099	0.0965	0.00034
W8A	2016-09-19 14:50	34.9	0.00105	0.00005	0.0001	79.9	0.0082	7.17	0.0001	1.99	0.00046	0.00001	0.00248	0.00096	0.13	0.00033
W8A	2016-09-20 14:50															
W8A	2016-09-28 15:00	37.9	0.0011	0.00005	0.0001	93.4	0.00977	7.56	0.0001	2.03	0.00041	0.00001	0.00249	0.0009	0.133	0.00032
W8A	2016-10-03 15:40	40.6	0.00146	0.00005	0.0001	100	0.00934	8.26	0.0001	2.28	0.0005	0.00001	0.00283	0.00081	0.246	0.00039
W8A	2016-10-11 15:20	41	0.00137	0.00005	0.0001	112	0.012	7.11	0.0001	2.55	0.00046	0.00001	0.00305	0.00072	0.184	0.00038
W8A	2016-10-17 15:45	42.4	0.0012	0.00005	0.0001	113	0.011	7.31	0.0001	2.58	0.00035	0.00001	0.00323	0.00094	0.161	0.0004
W8A	2016-10-24 16:50	44.1	0.0013	0.00005	0.00011	125	0.0126	7.23	0.0001	2.62	0.00047	0.00001	0.0033	0.0008	0.176	0.0004
W8A	2016-10-27 16:21	41.9	0.00128	0.00005	0.00012	119	0.0117	7.24	0.0001	2.59	0.00044	0.00001	0.00331	0.00104	0.102	0.00044
W8A	2016-11-01 15:50	43.5	0.00128	0.00005	0.0001	110	0.0107	7.55	0.0001	2.71	0.0005	0.00001	0.00347	0.00093	0.143	0.00052
W8A	2016-11-11 9:45	46.9	0.0016	0.00005	0.0001	116	0.0101	7.85	0.0001	2.79	0.00049	0.00001	0.00363	0.00098	0.175	0.00054
W8A	2016-11-14 11:11	46.5	0.00161	0.00005	0.0001	111	0.0108	8	0.0001	2.83	0.0005	0.00001	0.00399	0.00102	0.245	0.00059
W8A	2016-11-22 14:45	48.1	0.0024	0.00005	0.0001	111	0.00832	7.84	0.0001	3.17	0.00048	0.00001	0.00376	0.00067	0.875	0.00059
W8A	2016-11-29 14:05	52.8	0.00177	0.00005	0.0001	127	0.00857	8.42	0.0001	3.08	0.00054	0.00001	0.00377	0.00107	1.41	0.00062
W8A	2016-12-06 16:15	49.5	0.0019	0.00005	0.0001	104	0.00659	8.07	0.0001	2.93	0.00057	0.00001	0.00384	0.001	0.329	0.00064
W8A	2016-12-12 15:45	51	0.00172	0.00005	0.0001	99.8	0.00631	8.32	0.0001	3.19	0.00065	0.00001	0.00384	0.00154	0.225	0.00077
W8A	2016-12-13 15:45															
W8A	2016-12-20 11:15	51.7	0.00214	0.000063	0.0001	92.6	0.0049	8.49	0.0001	3.19	0.00076	0.00001	0.00395	0.00149	0.241	0.00081
W8A	2016-12-27 16:15	59.4	0.00199	0.00005	0.0001	97	0.00473	8.72	0.0001	3.19	0.00074	0.00001	0.00358	0.00154	0.333	0.00077
W8A	2017-01-02 15:25	47.8	0.00189	0.00005	0.00011	99.2	0.00594	8.4	0.0001	3.04	0.00061	0.00001	0.00388	0.00126	0.376	0.00078
W8A	2017-01-09 16:15	53.9	0.00183	0.00005	0.00012	89.9	0.00409	9.27	0.0001	3.36	0.00084	0.00001	0.00428	0.00169	0.238	0.00096
W8A	2017-01-10 16:15															
W8A	2017-01-17 11:25	54.4	0.00191	0.00005	0.0001	80.9	0.00488	8.75	0.0001	3.38	0.00079	0.00001	0.00396	0.00144	0.255	0.00087
W8A	2017-01-24 13:00	58.1	0.00201	0.00005	0.00012	80.8	0.00281	9.47	0.0001	3.43	0.00085	0.00001	0.00432	0.00192	0.219	0.00102
W8A	2017-01-31 13:45	58.5	0.0018	0.00005	0.00015	80.9	0.00242	9.84	0.0001	3.48	0.00096	0.00001	0.0043	0.00204	0.166	0.00111
W8A	2017-02-07 11:10	55.7	0.0021	0.00005	0.00011	75.2	0.00232	9.52	0.00011	3.6	0.00097	0.00001	0.0043	0.00196	0.26	0.00112
W8A	2017-02-14 13:55	47.3	0.00164	0.00005	0.00018	74.7	0.0016	10.2	0.0001	3.48	0.00074	0.00001	0.0043	0.00143	0.147	0.00112
W8A	2017-02-21 14:10	58.1	0.0021	0.0001	0.0002	74.8	0.00172	10.4	0.0002	3.46	0.00105	0.00002	0.00423	0.0033	0.279	0.00127
W8A	2017-02-28 10:45	53.9	0.0019	0.0001	0.0002	69	0.00165	9.61	0.0002	3.73	0.00096	0.00002	0.0041	0.0022	0.175	0.00133
W8A	2017-03-07 14:50	63	0.0024	0.0001	0.0002	73.1	0.00158	11.6	0.0002	3.85	0.00149	0.00002	0.00428	0.0062	0.131	0.00162
W8A	2017-03-14 16:15	51.2	0.0021	0.0001	0.0002	66.3	0.0013	9.99	0.0002	3.33	0.00118	0.00002	0.00407	0.0046	0.0927	0.00146
W8A	2017-03-28 11:00	56	0.0023	0.0001	0.0002	70.6	0.00148	10.9	0.0002	3.59	0.0014	0.00002	0.0043	0.007	0.181	0.00163
W8A	2017-04-04 10:25	54.2	0.00231	0.00005	0.00018	61.4	0.00175	11.2	0.0001	3.79	0.00108	0.00001	0.00452	0.00365	0.182	0.00165
W8A	2017-04-11 9:00	51.6	0.0024	0.00005	0.00014	59.1	0.00166	10.3	0.0001	3.51	0.0009	0.00001	0.00443	0.00232	0.145	0.00133
W8A	2017-04-18 8:30	52	0.00212	0.00102	0.00013	79.6	0.00102	10.5	0.0001	3.11	0.0018	0.00001	0.00421	0.00183	0.14	0.00098
W8A	2017-04-25 11:45	53	0.00182	0.00005	0.0001	74.5	0.00101	9.81	0.0001	2.82	0.0009	0.00001	0.00353	0.00161	0.121	0.00084
W8A	2017-06-14 16:15	23.7	0.00111	0.00005	0.00016	25.3	0.00261	7.08	0.0001	1.18	0.0006	0.00001	0.00101	0.00114	0.12	0.00051
W8A	2017-06-19 14:15	25.1	0.00134	0.00005	0.0001	30.8	0.00277	7.16	0.0001	1.42	0.00085	0.00001	0.00159	0.00118	0.276	0.00048
W8A	2017-06-26 13:30	28.1	0.00122	0.00005	0.0001	40.3	0.00427	7.82	0.0001	1.43	0.0003	0.00001	0.00124	0.0011	0.18	0.00043
W8A	2017-07-03 8:45	33.1	0.00145	0.000075	0.00013	51.5	0.00451	8.2	0.0001	1.78	0.00058	0.00001	0.00231	0.00116	0.188	0.00047
W8A	2017-07-11 10:45	34.8	0.00177	0.000149	0.00011	58.5	0.00436	8.32	0.0001	1.93	0.00055	0.00001	0.00271	0.00114	0.377	0.00049
W8A	2017-07-17 11:50	34.6	0.0018	0.00005	0.0001	60.6	0.00479	7.89	0.0001	1.82	0.0006	0.00001	0.00252	0.00117	0.153	0.00043
W8A	2017-07-24 7:34	36.5	0.00178	0.00005	0.0001	70.9	0.00516	8.05	0.0001	1.98	0.0006	0.00001	0.00292	0.00099	0.32	0.00038
W8A	2017-07-31 9:40	40.3	0.00169	0.00005	0.00015	76.5	0.00587	7.58	0.0001	1.86	0.0006	0.00001	0.00285	0.00115	0.138	0.00035
W8A	2017-08-07 14:15	41.1	0.00152	0.00005	0.00011	99.7	0.00874	7.09	0.0001	1.83	0.00068	0.00001	0.00321	0.00077	0.362	0.0003
W8A	2017-08-14 15:30	37.8	0.00157	0.00005	0.0001	88.5	0.00751	6.93	0.0001	1.91	0.0009	0.00001	0.00314	0.00082	0.388	0.0003
W8A	2017-08-21 11:00	39.3	0.00142	0.00005	0.0001	89.9	0.00682	7.12	0.0001	1.96	0.0003	0.00001	0.0031	0.00104	0.157	0.00035
W8A	2017-08-28 7:30	41.2	0.002	0.00005	0.0001	100	0.00879	7	0.0001	1.99	0.0006	0.00001	0.00293	0.00064	0.53	0.0003
W8A	2017-09-01 14:05	41.8	0.00138	0.00005	0.00013	108	0.00985	7.25	0.0001	2.04	0.0003	0.00001	0.0033	0.00095	0.271	0.00034
W8A	2017-09-04 10:20	39.6	0.00134	0.00005	0.00011	96.2	0.00871	7.2	0.0001	2.23	0.00043	0.00001	0.00336	0.00098	0.125	0.00039
W8A	2017-09-11 10:15	37	0.00099	0.00005	0.00014	97.9	0.0102	7.38	0.0001	1.79	0.0006	0.00001	0.00242	0.00081	0.178	0.0003
W8A	2017-09-18 10:25	32.9	0.00115	0.00005	0.00011	82	0.00716	7.36	0.0001	1.8	0.00045	0.00001	0.00236	0.00108	0.0931	0.00034
W8A	2017-09-25 11:11	39.9	0.00164	0.00005	0.0001	89.5	0.00737	7.5	0.0001	2.02	0.0006	0.00001	0.00266	0.00113	0.296	0.00037
W8A	2017-10-02 10:50	33.3	0.00142	0.00005	0.00011	80.7	0.00719	7.17	0.0001	1.8	0.0006	0.00001	0.00256	0.00106	0.16	0.00034
W8A	2017-10-09 11:00	38.6	0.00131	0.00005	0.0001	96.8	0.00758	7.56	0.0001	2.12	0.0006	0.00001	0.0025	0.00122	0.11	0.00047
W8A	2017-10-17 10:00	43.5	0.00125	0.00005	0.00011	115	0.00874	7.54	0.0001	2.59	0.00063	0.00001	0.00331	0.0012	0.202	0.00048
W8A	2017-10-23 10:45	43.1	0.00142	0.00005	0.0001	120	0.00852	7.84	0.0001	2.44	0.0006	0.00001	0.00304	0.00123	0.235	0.00044
W8A	2017-10-30 9:40	47.3	0.00177	0.00005	0.00013	111	0.00927	7.53	0.0001	2.57	0.00051	0.00001	0.00338	0.00119	0.342	0.00043
W8A	2017-11-06 10:45	50.1	0.00148	0.00005	0.0001	124	0.00828	7.52	0.0001	2.87	0.0009	0.00001	0.00345	0.00137	0.174	0.00055
W8A	2017-11-16 10:00	50	0.00289	0.00005	0.00017	133	0.00873	8.53	0.0001	3.31	0.0009	0.00001	0.00401	0.00096	0.559	0.00058
W8A	2017-11-22 15:30	46.1	0.00209	0.00005	0.00014	122	0.0083	7.76	0.0001	2.86	0.0006	0.00001	0.00415	0.00103	0.388	0.00055
W8A	2017-11-28 12:20	48.8	0.00174	0.00005	0.00014	129	0.00907	7.83	0.0001	2.98	0.0009	0.00001	0.00386	0.00119	0.212	0.00055
W8A	2017-12-04 10:00	58	0.00182	0.00005	0.00011	148	0.0104	8.28	0.0001	3.03	0.0008	0.00001	0.00395	0.00126	0.207	0.00056
W8A	2017-12-11 10:55	54	0.00162	0.00005	0.00011	118	0.00778	7.84	0.0001	3.3	0.0006	0.00001	0.00422	0.00131	0.199	0.00073
W8A	2017-12-19 13:35	54.4	0.00178	0.00005	0.00018	145	0.00865	7.88	0.0001	3.71	0.00067	0.00001	0.0042	0.00127	0.212	0.0006
W8A	2017-12-26 11:10	55.3	0.00172	0.00005	0.0001	129	0.00716	8.04	0.0001	3.52	0.00095	0.00001	0.00416	0.00136	0.176	0.00072
W8A	2018-01-02 12:40	52.8	0.00199	0.00005	0.0001	139	0.00939	7.91	0.0001	3.27	0.0009	0.00001	0.00365	0.00112	0.229	0.00067
W8A	2018-01-08 10:45	56	0.0023	0.00005	0.00013	121	0.00578	8.49	0.0001	3.6	0.0006	0.00001	0.00447	0.00151	0.361	0.00079
W8A	2018-01-16 11:20	52.5	0.00204	0.00005	0.00018	110	0.00607	8.28	0.0001	3.33	0.0009	0.00001	0.00419	0.00134	0.305	0.0008
W8A	2018-01-23 11:40	56.5	0.00227	0.00005	0.00014	94.3	0.00419	9.38	0.0001	3.6	0.0012	0.00001	0.0049	0.0022	0.173	0.00106
W8A	2018-01-29 11:10	53.4	0.0027	0.0001	0.0002	95	0.0033	8.39	0.0002	3.74	0.00068	0.00002	0.00504	0.0017	0.323	0.0011
W8A	2018-02-06 9:10	50.3	0.00237	0.00005	0.00014	92.6	0.00353	8.84	0.0001	3.26	0.00104	0.00001	0.00473	0.00186	0.267	0.00095
W8A	2018-02-13 9:30	58.1	0.00235	0.00005	0.00016	105	0.00465	8.75	0.0001	3.43	0.00105	0.00001	0.00461	0.00173	0.258	0.001
W8A	2018-02-20 14:00	58.8	0.00182	0.00005	0.00015	89.7	0.00241	9.36	0.0001	4.04	0.00102	0.00001	0.00526	0.00215	0.0947	0.00121
W8A	2018-02-26 16:45	52.3	0.00178	0.00005	0.00013	83.1	0.0024	9.15	0.0001	3.41	0.0012	0.00001	0.00457	0.00201	0.227	0.00107
W8A	2018-03-06 11:00	58.2	0.00235	0.00005	0.00014	89.3	0.00262	9.16	0.0001	3.38	0.00094	0.00001	0.00461	0.00154	0.422	0.00102
W8A	2018-03-13 9:55	55.8	0.00193	0.00005	0.00013	85.5	0.00174	10	0.0001	3.3	0.0009	0.00001	0.00432	0.0017	0.271	0.00095
W8A	2018-03-20 9:50	70.7	0.00207	0.00005	0.00015	86.8	0.00156	10.7	0.0001	3.66	0.00136	0.00001	0.00515	0.00276	0.13	0.00121
W8A	2018-03-28 9:20	63	0.00237	0.00005	0.00013	82.9	0.00129	10.2	0.0001	3.61	0.0009	0.00001	0.00546	0.0021	0.144	0.00111
W8A	2018-04-03 10:30	56.7	0.00188	0.00005	0.00014	79.9	0.00129	9.84	0.0001	3.61	0.0012	0.00001	0.00592	0.00207	0.242	0.00116
W8A	2018-04-10 9:10	59.6	0.00184	0.00005	0.00013	77.2	0.00141	9.88	0.0001	3.68	0.00116	0.00001	0.00571	0.00238	0.162	0.00128
W8A	2018-04-17 8:50	34.3	0.00171	0.00005	0.00017	56.5	0.00573	7.08	0.0001	2.05	0.00046	0.00001	0.00397	0.00088	0.188	0.00043
W8A	2018-04-24 8:40	25.1	0.001	0.00005	0.00011	65.6	0.00606	5.3	0.0001	1.47	0.00054	0.00001	0.0025	0.00055	0.121	0.0003
W8A	2018-05-08 10:00	36.8	0.00161	0.00009	0.00012	93.3	0.00789	5.82	0.0001	2.07	0.00054	0.00001	0.00296	0.00063	0.145	0.0003
W8A	2018-05-14 9:35	38.2	0.00126	0.00005	0.0001	96.6	0.00636	6.06	0.0001	2.11	0.00056	0.00001	0.00312	0.0008	0.0467	0.00031
W8A	2018-07-02 10:30	18.5	0.00119	0.00005	0.00011	25.5	0.00183	5.62	0.0001	0.952	0.00054	0.00001	0.00132	0.00074	0.217	0.0003
W8A	2018-07-09 8:20	23.8	0.00123	0.000059	0.00015	39.2	0.00281	6.05	0.0001	1.39	0.0006	0.00001	0.00176	0.00089	0.183	0.00034
W8A	2018-07-16 9:45															
W8A	2018-07-18 15:50	35.2	0.00149	0.00005	0.00011	69.1	0.00393	6.65	0.0001	1.85	0.00066	0.00001	0.00253	0.00122	0.295	0.00044
W8A	2018-07-23 14:00	38.5	0.00125	0.00005	0.0001	80.4	0.00499	6.64	0.0001	1.95	0.00193	0.00001	0.00267	0.00125	0.238	0.00042
W8A	2018-07-30 10:10	43.5	0.00163	0.000069	0.00011	95.4	0.00511	7.32	0.00036	2.33	0.00411	0.00001	0.00316	0.00151	0.319	0.00046
W8A	2018-08-06 9:05	43.4	0.00152	0.00005	0.0001	97.4	0.00562	7.32	0.0001	2.21	0.00079	0.00001	0.00313	0.00134	0.768	0.00046
W8A	2018-08-13 10:20	28.8	0.00125	0.00005	0.00011	47	0.0028	6.25	0.0001	1.49	0.00192	0.00001	0.00162	0.00092	0.344	0.0003
W8A	2018-08-20 11:00	32.2	0.0013	0.00005	0.0001	63.3	0.0037	6.88	0.0001	1.67	0.0006	0.00001	0.00195	0.00109	0.134	0.00033
W8A	2018-08-27 10:20	32.1	0.00114	0.000067	0.00015	58	0.00362	6.71	0.0001	1.52	0.00062	0.00001	0.00183	0.00089	0.131	0.00032
W8A	2018-09-03 10:30	29.8	0.00105	0.00005	0.0001	62.5	0.00451	6.48	0.0001	1.55	0.00045	0.00001	0.00189	0.00096	0.173	0.0003
W8A	2018-09-12 16:50	38.4	0.00113	0.00005	0.0001	81.7	0.00533	6.37	0.0001	2.19	0.0015	0.00001	0.00269	0.00119	0.328	0.00037
W8A	2018-09-17 16:00	36.5	0.00103	0.00005	0.0001	77.4	0.00524	6.84	0.0001	1.86	0.0006	0.00001	0.00234	0.0012	0.17	0.00035
W8A	2018-09-24 9:50	40	0.00125	0.00005	0.0001	99.7	0.00592	6.76	0.0001	2	0.0006	0.00001	0.00283	0.00113	0.255	0.00033
W8A	2018-10-01 10:05	47	0.00123	0.00005	0.0001	116	0.00844	7.13	0.0001	2.36	0.0015	0.00001	0.00306	0.00128	0.23	0.00044
W8A	2018-10-08 9:30	47.7	0.00115	0.00005	0.0001	115	0.00743	7.26	0.0001	2.59	0.0006	0.00001	0.0033	0.00115	0.555	0.0004
W8A	2018-10-15 15:45	50.1	0.00113	0.00005	0.0001	120	0.00727	7.11	0.0001	2.66	0.0036	0.00001	0.00355	0.00134	0.238	0.0004
W8A	2018-10-23 9:50	48.8	0.00156	0.00005	0.00012	138	0.00789	7.23	0.0001	2.65	0.00284	0.00001	0.00394	0.00131	0.342	0.00046
W8A	2018-10-30 8:10	49.8	0.00132	0.00005	0.0001	129	0.00737	7.89	0.0001	2.73	0.00057	0.00001	0.00426	0.00145	0.563	0.00053
W8A	2018-11-06 9:30	57.9	0.0015	0.000055	0.0001	133	0.00675	8.02	0.0001	2.92	0.0012	0.00001	0.00446	0.00153	0.881	0.00054
W8A	2018-11-13 10:45	51.8	0.0012	0.00005	0.0001	117	0.00661	7.75	0.0001	2.95	0.0009	0.00001	0.00414	0.00153	0.144	0.0006
W8A	2018-11-19 8:45	59.1	0.00143	0.000089	0.00011	124	0.00714	8.13	0.0001	3.12	0.0009	0.00001	0.00497	0.00162	0.3	0.00063
W8A	2018-11-27 8:00	50	0.00186	0.00005	0.00021	126	0.0064	8.17	0.0001	3.31	0.0009	0.00001	0.00434	0.00134	0.456	0.0006
W8A	2018-12-03 14:00	61.5	0.00145	0.00005	0.0001	129	0.0075	8.41	0.0001	3.44	0.0012	0.00001	0.00506	0.00155	0.286	0.00064
W8A	2018-12-11 14:00	58.7	0.0015	0.00005	0.0001	121	0.00548	8.49	0.0001	3.25	0.0009	0.00001	0.00528	0.00158	0.229	0.0007

Attachment 3: Sitewide Database

Station	Date / Time	General Parameters								Anions & Nitrogen Species					
		Alk-T	Cond-L	ORP	pH-F	TDS	TSS	Temp-F	O-DO-%	$N-NO_2$	$N-NO_3$	$N-NH_3$	SO_4-D	Chlord	Fluord
		mg/L	µS/cm	mV		mg/L	mg/L	°C	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W8A	2018-12-18 9:00	608	1620	183	7.21	1110	38	0	32.8	1.02	3.1	0.443	335	15.6	
W8A	2018-12-25 14:35	600	1570	203.9	6.67	1100	76.1	0.6	28.8	0.982	2.88	0.392	334	16.1	
W8A	2018-12-31 14:30	667	1590	115.3	6.88	1140	36.5	0.7	29.9	1.11	2.03	0.384	331	16.8	
W8A	2019-01-08 14:45	694	1650	106.8	7.23	1120	35	0.5	52	0.885	1.34	0.478	307	16.5	
W8A	2019-01-15 10:05	703	1680	172.5	7.06	1140	37.4	15.2	36.9	0.857	1.44	0.467	311	17	
W8A	2019-01-22 8:30	692	1570	36	6.93	1130	52	0.3	13.6	0.637	1.84	0.472	312	17.9	
W8A	2019-01-29 7:40	735	1650	17.5	6.88	1150	16.2	-0.01	37	0.437	1.55	0.486	294	17.9	
W8A	2019-02-05 13:20	741	1650	-4.2	7.08	1120	18.1	2	45.4	0.313	1.17	0.58	281	17.9	
W8A	2019-02-12 10:25	692	1680	55.8	7.17	1120	52.9	0.1	18.8	0.245	1.37	0.558	281	18.1	
W8A	2019-02-19 10:20	725	1600			1110	39.6			0.296	1.05	0.574	275	17.9	
W8A	2019-02-26 7:30	713	1730			1150	33.6			0.26	2.07	0.477	283	18.3	
W8A	2019-03-12 9:40	670	1660	58.5	7.19	1130	31.4	-0.1	29.6	0.224	1.55	0.525	282	19.7	

Station	Date / Time	Dissolved Elements																	
		Ag-D	Al-D	As-D	Ba-D	B-D	Be-D	Bi-D	Ca-D	Cd-D	Co-D	Cr-D	Cu-D	Fe-D	Hg-D	K-D	Li-D	Mg-D	Mn-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W8A	2018-12-18 9:00	0.000019	0.0081	0.00053	0.171	0.036	0.00002	0.00005	232	0.000267	0.00103	0.00064	0.0758	0.35	0.0000098	9.52	0.0051	71.4	4.24
W8A	2018-12-25 14:35	0.000018	0.008	0.00056	0.185	0.037	0.00002	0.00005	232	0.000244	0.00095	0.00065	0.0681	0.332	0.0000061	9.2	0.0051	69	4.38
W8A	2018-12-31 14:30	0.000017	0.0066	0.00051	0.203	0.034	0.00002	0.00005	229	0.00022	0.00106	0.00069	0.0641	0.323	0.0000067	9.17	0.0049	69.8	4.38
W8A	2019-01-08 14:45	0.000021	0.0106	0.00054	0.178	0.032	0.00002	0.00005	232	0.000216	0.00106	0.00066	0.057	0.46	0.000005	8.28	0.0053	67.4	4.56
W8A	2019-01-15 10:05	0.000021	0.0059	0.00055	0.17	0.038	0.00002	0.00005	232	0.000148	0.00112	0.00066	0.0492	0.341	0.000005	8.69	0.0046	71.5	4.55
W8A	2019-01-22 8:30	0.000014	0.0052	0.00061	0.18	0.037	0.00002	0.00005	228	0.000153	0.00107	0.00066	0.0514	0.478	0.000005	8.34	0.0049	69.8	4.65
W8A	2019-01-29 7:40	0.000013	0.0072	0.00074	0.19	0.041	0.00002	0.00005	234	0.000174	0.00135	0.0007	0.0509	1.02	0.000005	9.43	0.005	73	5.15
W8A	2019-02-05 13:20	0.000017	0.0079	0.00077	0.194	0.037	0.00002	0.00005	223	0.000275	0.00143	0.00076	0.0534	1.73	0.000005	8.31	0.0047	68.2	4.98
W8A	2019-02-12 10:25	0.000014	0.0056	0.00094	0.198	0.041	0.00002	0.00005	243	0.000278	0.00167	0.0008	0.0398	0.603	0.000005	8.96	0.0053	75.9	5.55
W8A	2019-02-19 10:20	0.000017	0.0078	0.00091	0.191	0.036	0.00002	0.00005	236	0.000135	0.00165	0.00077	0.0487	2.18	0.0000078	8.1	0.0043	68.5	5.12
W8A	2019-02-26 7:30	0.000014	0.008	0.00084	0.208	0.041	0.00002	0.00005	252	0.000169	0.0016	0.00079	0.0527	1.16	0.000005	9.01	0.0054	76.7	5.57
W8A	2019-03-12 9:40	0.000017	0.0066	0.00054	0.225	0.04	0.00002	0.00005	259	0.000272	0.00142	0.00072	0.0512	0.282	0.000005	9.57	0.0054	73	5.4

Station	Date / Time	Mo-D	Na-D	Ni-D	Pb-D	Sb-D	S-D	Se-D	Si-D	Sn-D	Sr-D	Ti-D	Tl-D	U-D	V-D	Zn-D	Zr-D
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
W8A	2018-12-18 9:00	0.0116	61.6	0.0016	0.00005	0.0001	125	0.00509	8.97	0.0001	3.32	0.0009	0.00001	0.00577	0.00165	0.387	0.0007
W8A	2018-12-25 14:35	0.0113	61.5	0.00142	0.00005	0.0001	122	0.00489	8.2	0.0001	3.37	0.0009	0.00001	0.00533	0.00155	0.531	0.00073
W8A	2018-12-31 14:30	0.0106	64.7	0.00182	0.00005	0.00011	105	0.00397	8.9	0.0001	3.13	0.0009	0.00001	0.00579	0.00164	0.488	0.00072
W8A	2019-01-08 14:45	0.0096	56.7	0.00157	0.00005	0.00014	110	0.00383	8.63	0.0001	3.2	0.0012	0.00001	0.00541	0.00146	0.276	0.00071
W8A	2019-01-15 10:05	0.00969	59.9	0.0015	0.00005	0.0001	103	0.00327	8.57	0.0001	3.09	0.00077	0.00001	0.00582	0.00138	0.415	0.00072
W8A	2019-01-22 8:30	0.00958	60.5	0.00143	0.00005	0.0001	114	0.00315	9.01	0.0001	3.12	0.0009	0.00001	0.00609	0.00158	0.418	0.00073
W8A	2019-01-29 7:40	0.00908	63.6	0.0017	0.00005	0.00015	103	0.00281	9.09	0.00011	3.2	0.00094	0.00001	0.00584	0.00176	0.351	0.00079
W8A	2019-02-05 13:20	0.00925	61.6	0.00154	0.00005	0.00018	97.6	0.00255	8.9	0.0001	3.06	0.00089	0.00001	0.00617	0.00212	0.48	0.00085
W8A	2019-02-12 10:25	0.0102	63.7	0.00183	0.00005	0.00015	103	0.00271	9.1	0.0001	3.29	0.0009	0.00001	0.00664	0.00168	0.461	0.00086
W8A	2019-02-19 10:20	0.0101	55.6	0.00155	0.00005	0.00011	98.7	0.00254	9.74	0.0001	3.43	0.0009	0.00001	0.0063	0.00272	0.791	0.00094
W8A	2019-02-26 7:30	0.0098	66.7	0.00168	0.00005	0.00011	108	0.00262	9.87	0.0001	3.21	0.0012	0.00001	0.00671	0.00228	0.915	0.00088
W8A	2019-03-12 9:40	0.00931	66.7	0.0017	0.00005	0.00012	104	0.00201	9.71	0.0001	3.3	0.0009	0.00001	0.00786	0.00175	0.983	0.00086

Attachment 4: Description of Monitoring Stations

Attachment 4: Monitoring Station Descriptions

Monitoring Station	Description
Surface Water	
MC1	Minto Creek - Minto Canyon
MN	Minto North Pit Water
MN-0.2	Upper West Arm of McGinty Creek
MN-0.5	West Arm McGinty Creek Upstream of Confluence with East Arm
MN-1.5	Upper East Arm of McGinty Creek down from Minto North Deposit
MN-2.5	East Arm of McGinty Creek Upstream of Confluence with West Arm
MN-4.5	Main Stem of McGinty Creek near Confluence of Yukon River
W2	Minto Creek - Near Confluence with Yukon River
W5	Yukon River 100 m Downstream of Minto Creek
W50	Minto Creek - Edge of Mine Property Boundary
W6	Minto Creek - Outside Mine Property Boundary
W7	Minto Creek - Outside Mine Property Boundary
Mine Facilities	
UG1	Underground Portal 1
UG4	Underground Portal 4
W12	Main Pit
W12N	North Pit Surface Water
W12S	South Pit Surface Water
W14	Tailings Thickener Overflow
W16	Main Water Storage Pond (includes W16S and W16DF)
W3	MMER Final Discharge Point (Flume)
W45	Area 2 Pit Water
W46	Minto Creek Tributary Outside Property Boundary
W62	Drystack Tailings Facility Drainage (replaced W8A)
W8	Drystack Tailings Facility Drainage West
W8A	Drystack Tailings Facility Drainage East (Dry)
Groundwater Wells	
MW09-01-01	MW09-01 Zone 1 - Southwest of Main Pit
MW09-01-02	MW09-01 Zone 2 - Southwest of Main Pit
MW09-01-03	MW09-01 Zone 3 - Southwest of Main Pit
MW09-01-04	MW09-01 Zone 4 - Southwest of Main Pit
MW09-01-05	MW09-01 Zone 5 - Southwest of Main Pit
MW09-02-01	MW09-02 Zone 1 - Dry Stack Tailings Facility (discontinued)
MW09-02-03	MW09-02 Zone 3 - Dry Stack Tailings Facility (discontinued)
MW09-03-01	MW09-03 Zone 1 - Minto North Haul Road
MW09-03-02	MW09-03 Zone 2 - Minto North Haul Road
MW09-03-03	MW09-03 Zone 3 - Minto North Haul Road
MW09-03-04	MW09-03 Zone 4 - Minto North Haul Road
MW09-03-05	MW09-03 Zone 5 - Minto North Haul Road
MW09-04-04	MW09-04 Zone 4 - Southeast of Main Pit (discontinued)
MW12-05-01	MW12-05 Zone 1 - Downstream of Water Storage Pond along Minto Creek
MW12-05-02	MW12-05 Zone 2 - Downstream of Water Storage Pond along Minto Creek
MW12-05-03	MW12-05 Zone 3 - Downstream of Water Storage Pond along Minto Creek
MW12-05-04	MW12-05 Zone 4 - Downstream of Water Storage Pond along Minto Creek
MW12-05-05	MW12-05 Zone 5 - Downstream of Water Storage Pond along Minto Creek
MW12-05-06	MW12-05 Zone 6 - Downstream of Water Storage Pond along Minto Creek
MW12-05-07	MW12-05 Zone 7 - Downstream of Water Storage Pond along Minto Creek
MW12-06-01	MW12-06 Zone 1 - Between DSTF and Water Storage Pond
MW12-06-02	MW12-06 Zone 2 - Between DSTF and Water Storage Pond
MW12-06-03	MW12-06 Zone 3 - Between DSTF and Water Storage Pond
MW12-06-04	MW12-06 Zone 4 - Between DSTF and Water Storage Pond
MW12-06-05	MW12-06 Zone 5 - Between DSTF and Water Storage Pond
MW12-06-06	MW12-06 Zone 6 - Between DSTF and Water Storage Pond
MW12-07-01	MW12-07 Zone 1 - Main Mine Facilities East of Main Pit
MW12-07-02	MW12-07 Zone 2 - Main Mine Facilities East of Main Pit
MW12-07-03	MW12-07 Zone 3 - Main Mine Facilities East of Main Pit
MW12-07-04	MW12-07 Zone 4 - Main Mine Facilities East of Main Pit
MW17-08-01	MW17-08 Zone 1 - Background Well West of Southwest Waste Dump
MW17-08-02	MW17-08 Zone 2 - Background Well West of Southwest Waste Dump
MW17-08-03	MW17-08 Zone 3 - Background Well West of Southwest Waste Dump
MW17-08-04	MW17-08 Zone 4 - Background Well West of Southwest Waste Dump
MW17-09-01	MW17-09 Zone 1 - East of Ice Rich Overburden Dump
MW17-10-01	MW17-10 Zone 1 - Between Main Waste Dump and Main Pit
MW17-10-02	MW17-10 Zone 2 - Between Main Waste Dump and Main Pit
MW17-10-03	MW17-10 Zone 3 - Between Main Waste Dump and Main Pit
MW17-11-01	MW17-11 Zone 1 - Minto North Pit
MW17-11-02	MW17-11 Zone 2 - Minto North Pit
MW17-11-03	MW17-11 Zone 3 - Minto North Pit
MW17-11-04	MW17-11 Zone 4 - Minto North Pit
MW17-12-01	MW17-12 Zone 1 - Downstream of Water Storage Pond along Minto Creek
MW17-12-02	MW17-12 Zone 2 - Downstream of Water Storage Pond along Minto Creek
MW17-12-03	MW17-12 Zone 3 - Downstream of Water Storage Pond along Minto Creek
MW17-12-04	MW17-12 Zone 4 - Downstream of Water Storage Pond along Minto Creek
MW17-12-05	MW17-12 Zone 5 - Downstream of Water Storage Pond along Minto Creek
MW17-12-06	MW17-12 Zone 6 - Downstream of Water Storage Pond along Minto Creek
MW17-12-07	MW17-12 Zone 7 - Downstream of Water Storage Pond along Minto Creek
MW17-12-08	MW17-12 Zone 8 - Downstream of Water Storage Pond along Minto Creek

Appendix I – Quarterly Groundwater AMP Exceedance Reviews

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March 30, 2022
Project No: 1CM002.055

Minto Mine
Minto Explorations Ltd.
PO Box 11
Whitehorse, YT Y1A 5X9

Attention: Journey Paulus, Manager, Environment

Dear Journey:

Subject: 2021 Q1 (January - March) Groundwater AMP Events

The Minto Mine Operational Adaptive Management Plan was updated in 2018 for groundwater monitoring, with the review frequency for groundwater triggers changed from monthly to quarterly, at the recommendation of SRK Consulting (SRK) who is the qualified professional (QP). As per AMP2017-02, all data concerning trigger exceedances are sent to the QP within a week of discovery and included in the subsequent review.

- As part of the Minto Mine Operational Adaptive Management Plan, Minto Mine has collected and reviewed groundwater quality data. Minto completed an initial review of data collected at the McGinty Creek groundwater monitoring station (MW09-03) and Minto Creek groundwater monitoring stations MW12-05 and MW12-06 for the first quarter of 2021 (January - March) and compared results to specific performance thresholds (SPT) defined in the Minto Mine Operations Adaptive Management Plan (MEL, 2017-02). McGinty Creek monitoring stations are required to be sampled monthly while the Minto Creek stations are sampled quarterly. Due to issues with sampling equipment and the presence of glycol in some sampling ports, samples were not obtained in January in MW09-03-01 or MW09-03-02, in March in MW09-03-02 and in Q1 for MW12-06-03 and MW12-06-05. For Minto Creek and McGinty Creek, MEL identified exceedances of certain thresholds for sampling rounds conducted in January, February, and March of 2021 and, as per the plan, has contracted a QP to review those data and provide recommendations. SRK Consulting (Canada) Inc. was contacted by Minto environmental staff to provide QP review. This letter presents results of that review and recommendations.

SRK compared data against the 2017-02 AMP thresholds, historical data, and data from surface water at station MN4.5 in lower McGinty Creek and surface water stations W3 and MC1 in Minto Creek. Table 1 summarizes exceedances, observations on the data, interpretation, and recommendations. Figures are included with this review to illustrate the current physical (i.e., water level) setting compared to the Minto North pit. Graphs are included for each parameter exceeding thresholds and includes the full range of data collected to date.

Key conclusions and recommendations are summarized below. Table 1 summarizes observations and recommendations for all parameters.

For MW09-03 (McGinty Creek):

- The Minto North Pit is not a source of water to the groundwater monitored at this station; water levels in the monitoring well are higher than the pit water level. Water levels in the pit have been increasing slowly but remain well below the monitoring well water levels. These data continue to show no hydraulic gradient from the pit towards the monitoring well.
- Water levels at this station have been affected by the mining of Minto North, but the groundwater divide between Minto North and McGinty Creek remains, somewhere in the vicinity of MW09-03.
- Water levels in MW17-11 are generally lower than in MW09-03, with the exception of zone 5, which is screened shallower than zones 1 and 2 in MW09-03 and has higher water levels than all other monitoring points. Water levels in MW17-11 and MW09-03 indicate an overall downward gradient between the shallow-most zone and the remaining deeper zones. Differences in water level between deep zones are less pronounced, and a vertical gradient is not clear.
    - Recommendation: continue collecting water level/pressure profiles at this well according to the routine schedule.
- Concentrations of dissolved arsenic at MW09-03-01 have consistently exceeded SPT 1 since summer of 2016, and inconsistently exceeded thresholds in MW-09-02 in the same period. High variability is observed, but relatively recent data in MW09-03-01 exceeds thresholds more frequently than in the past. Anomalous values were detected in October 2018, September 2019, and June 2020 at nearly an order of magnitude more than recent average concentrations. In between the anomalous events, concentrations decreased to the historic range, suggesting these values are outliers. High concentrations do not correlate exactly with seasonal changes in groundwater level but may indicate an influence from seasonal variation (in recharge, flow, etc.). Vertical profiles and timing of peak concentrations suggest increased loading may be occurring during low flow periods or freshet, possibly suggesting greater mobilization of trace elements when higher volumes of water could infiltrate through the unsaturated zone and mobilize trace elements. Loading calculations included in the Minto Mine - 2019 Groundwater Review and Summary of OAMP SPT Exceedances (SRK 2020) indicate arsenic concentrations would need to increase by at least one order of magnitude for an exceedance in McGinty Creek at MN-4.5 to be observed. While there is some seasonal variability in McGinty Creek chemistry, surface water concentrations are not increasing and remain in the range of baseline data at MN-4.5.
- Concentrations of dissolved cadmium at MW09-03-01 and MW09-03-02 have inconsistently exceeded SPT 1 in he past with high variability in the observed data. Cadmium data exceed thresholds more frequently since 2017 and while average concentrations have increased beginning in 2017, there is no consistent increasing trend with many values in the last two years below the threshold. Seasonal variability seems to be present, with highest concentrations occurring in Q1 and Q2, potentially related to freshet. Cadmium concentrations in McGinty Creek remain low and stable, showing no impact from the groundwater and loading calculations presented in SRK 2020 indicate

groundwater concentrations would need to increase by at least one order of magnitude for an exceedance in McGinty Creek at MN-4.5 to be observed.

- Concentrations of dissolved zinc at MW09-03-01 and MW09-03-02 have inconsistently exceeded SPT 1 and SPT 2 thresholds since the summer of 2016. High variability is observed in the data, but relatively recent data exceeds thresholds more frequently than in the past, MW09-03-02 appeared to show a potential year-to-year increasing trend but values in 2021 and Q1 of 2021 have been lower than the previous two years. High concentrations do not correlate exactly with seasonal changes in groundwater level but may indicate an influence from seasonal variation. Vertical profiles and timing of peak concentrations suggest increased loading may be occurring during freshet when higher volumes of water infiltrate through the unsaturated zone and mobilize trace elements. While there is some seasonal variability in McGinty Creek chemistry, surface water concentrations are not increasing and remain in the range of baseline data. Loading calculations presented in SRK 2020 indicate groundwater concentrations would need to increase by at least one order of magnitude for an exceedance in McGinty Creek at MN-4.5 to be observed.
    - Recommendations: due to the low potential loading of groundwater into McGinty Creek limited action is recommended at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road.
    - The load and accretion study, as recommended in the 2019 Review of OAMP Exceedances, was not conducted in 2021 due to unfavorable conditions with surface water flows which created conditions that would make loading from groundwater undetectable. It is recommended that the load and accretion study be conducted in 2022 if the conditions are appropriate.
- Concentrations of dissolved nitrate at MW09-03-02 have exceeded SPT 2 since the fall of 2016. Concentrations have shown a consistent increasing trend since October 2016 with potential seasonal effects producing higher concentrations in Q4 of each year. Loading calculations presented in SRK 2020 indicate groundwater concentrations would need to increase by a factor of 2 from the highest measurement for an exceedance in McGinty Creek at MN-4.5 to be observed. As the nitrate is likely sourced from blast rock used to construct the haul road, load is expected to flush over time and the increasing trend is not expected to persist indefinitely. Concentrations will continue to be closely monitored. A more detailed review of nitrate behavior is provided in the 2020 Review of OAMP Exceedances. While there is some seasonal variability in McGinty Creek chemistry, surface water concentrations are not increasing and remain in the range of baseline data.
    - Recommendation: due to the low potential loading of groundwater into McGinty Creek limited action is recommended at this time. Continue monitoring as per schedule. Continue to look for seeps from the haul road that can be used for comparison. Compare vertical concentration profiles in MW09-03 and MW17-11 as more annual data becomes available from MW17-11. Conduct load accretion study as recommended in the 2019 Review of OAMP Exceedances, when conditions are appropriate to do so.

For MW12-05 and MW12-06 (Minto Creek):

- Water level data in the deepest zone of MW12-06 decreased sharply between November 2017 and March 2018, which coincides with development of the Minto East underground. Water levels in the

deepest zone increased again between May and August 2018, when development of the underground stopped. More recently, the water level in the deepest zone, MW12-06-01, decreased between Q2 and Q4 2019 which changed the overall vertical gradient from upwards to downwards and then increased again in Q1 2020 reversing the gradient once again. The decrease in water level coincides with the re-start of underground development in September 2019, and while dewatering was continued throughout the temporary underground closure, the increased activity could potentially have influenced the deep groundwater levels. The same trend was not observed in MW12-05 or MW17-12, suggesting these wells are currently outside the area of groundwater affected by the development of the underground. Consistent vertical gradients cannot be identified and there exists a complex multidirectional vertical gradient between other zones. Seasonal fluctuations are apparent in MW12-05, with peak water levels occurring in Q2 of the past 2 years.

  - Recommendation: continue collecting water level/pressure profiles at this well according to the routine schedule. Continue to monitor changes in groundwater pressure as system equilibrates following the cessation of Minto East underground development. Continue to monitor complex multidirectional vertical gradient in MW12-06.

- Concentrations of dissolved selenium in MW12-05 and MW12-06 are mostly below thresholds with only sporadic exceedances occurring since 2016. The highest concentrations in the previous four years in MW12-05 have been observed in Q2, suggesting the elevated values are due to seasonal fluctuations, potentially regarding freshet. No observable trends exist in MW12-06 that can be related to seasonal variation. The Q1 2021 sampling event in MW12-06-01 exceeded SPT 2 for the first time since Q3 2019. Concentrations in this (the deepest) zone have been variable and higher than other zones but no clear increasing trend is present. Surface water concentrations are not increasing and remain in the range of baseline data suggesting no impacts related to groundwater concentrations are being observed.

  - Recommendation: continue monitoring as per routine schedule. Assess sources of potential contaminants and include in the 2021 Review of OAMP Exceedances.

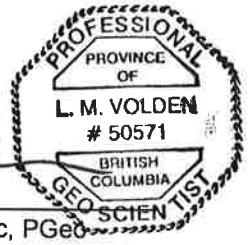
- Concentrations of sulphate at MW12-05-01 and MW12-05-02 continue to be elevated above SPT 2. Concentrations at MW12-05-01 and MW12-05-02 were increasing historically but show signs of stabilization after August 2017. While concentrations are still increasing, data do not show the same rate of increase as was observed prior to 2017, with the exception of the Q4 2019 observation in MW12-05-02, which had a measured concentration of 2400 mg/L, nearly double the previous sampling event. As this magnitude of concentration is isolated to one sampling event, and values have since decreased to be consistent with previous trends, the datapoint is considered an outlier. Previous investigations into the source of elevated sulphate in deep groundwater as observed at MW12-05 conclude it is unrelated to mining activities. Sulphate concentrations in MW17-12 exhibit an increasing gradient with depth but no increasing trend temporally. Minto Creek continues to indicate no trends in sulphate concentration that can clearly be related to changes in groundwater concentrations.

  - Recommendation: continue monitoring as per schedule and review/update investigations as to potential sources of SO_4 as part of the overall review of site groundwater quality.

- Concentrations of dissolved chromium in MW12-06-01 have exceeded SPT 3 since October 2016 and while they are variable, average concentrations increased between Q4 2016 and Q1 2020. Concentrations decreased throughout 2020 with the two most recent values near SPT 2. Elevated Cr-D is isolated to MW12-06-01, the deepest zone in this well (142.3 meters below ground surface). While there may be seasonal trends in Minto Creek, variability within the data is very low and shows no trends that can be clearly related to groundwater concentrations.
    - Recommendation: review potential Cr sources and update risk assessment of Cr loading to Minto Creek in the 2021 Review of OAMP Exceedances.

Sincerely,

SRK Consulting (Canada) Inc.



03/30/22

Laura Volden, MSc, PGeo
Senior Consultant (Hydrogeochemistry)

Reviewed by

Daniel Mackie, PGeo
Principal Consultant (Hydrogeology)

SRK Consulting (Canada) Inc Engineers and Geoscientist BC Permit to Practice No: 1003655

Disclaimer—SRK Consulting (Canada) Inc. has prepared this document for Minto Explorations Ltd.. Any use or decisions by which a third party makes of this document are the responsibility of such third parties. In no circumstance does SRK accept any consequential liability arising from commercial decisions or actions resulting from the use of this report by a third party.

The opinions expressed in this report have been based on the information available to SRK at the time of preparation. SRK has exercised all due care in reviewing information supplied by others for use on this project. Whilst SRK has compared key supplied data with expected values, the accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data. SRK does not accept responsibility for any errors or omissions in the supplied information, except to the extent that SRK was hired to verify the data

Appendix A: Tables

Table 1. Summary of Groundwater Quality Data, AMP Thresholds, Observations and Recommendations

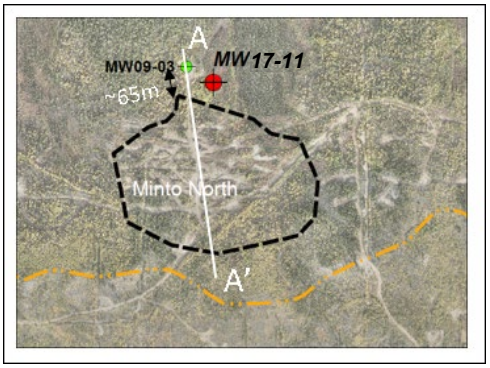
Location	Month	Parameter & Concentration Data		Threshold Exceeded	Observations	Trends	Risk Narrative	Recommendation
McGinty Creek Catchment								
MW09-03-01 Figure A-1, A-2		As-D	mg/L		**Water Level (Figure A-1):** Water levels in MW09-03 Zone 1 and Zone 2 started declining when mining started in Minto North. Declining trend decreased about 6 months after mining completed. Water levels remain higher than pit bottom. Water levels increased between July and September 2016 before returning to previous trend. Similar trend occurred in 2017 when water levels increased between April and September, declined until May 2018 and increased again until September. Water levels increased in Q3 2020, consistent with previous seasonal trends. Peak water levels in 2020 were higher than previous four years. Minto North pit continues to act as a hydraulic sink, and has lowered groundwater levels. Water levels at MW09-03 suggest the presence of a groundwater divide somewhere north of the pit. Seasonal fluctuations indicate some influence from recharge. Loading to McGinty Creek could only occur from haul road material along the pit perimeter **Water Quality (Figure A-2):** Seasonal variations appear to be present, with highest values occurring in Q2 or Q3 (with the exception of outliers). Values during Q1 2021 are in the range of historic data very near SPT 2. As-D values for MN-4.5 in McGinty Creek have been stable in the historic range.	While data from late summer 2015 to August 2017 showed signs of an increasing trend, values exhibit significant variability throughout the year. Peak values during Q2 and Q3 suggest a seasonal trend related to freshet may be present. Elevated values are isolated to October 2018, September 2019 and June 2020 and appear to be outliers. Concentrations from 2016 to 2018 showed potential seasonal variability, becoming relatively stable in 2019. Concentrations from 2016 thru 2020 remained relatively steady.	Lack of any clear upwards trend in McGinty Creek, as measured at MN-4.5, suggests currently no impact. Minto North represents only 0.4% of the McGinty Creek total watershed. Assuming that groundwater flows are proportional to surface water flows (load can only be coming from haul road, not pit leakage) groundwater concentrations would need to be at least 10x higher to result in MN-4.5 As concentrations reaching MN-4.5 SPT1. Overall risk of arsenic loading to McGinty Creek from groundwater is low at this time.	Limited action at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road. Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
	January	N/A	N/A	N/A				
	February	2021-02-27	0.00089	0.00081 (SPT 2)				
	March	N/A	N/A	N/A				
MW09-03-01 Figure A-1, A-2		Cd-D	mg/L		**Water Level (Figure A-1):** see previous section. **Water Quality (Figure A-2):** Concentrations beginning in 2019 have been more sporadic than the past, with the highest concentration measured in September 2019. While most recent data points exceed thresholds, concentrations are in the historical range. Cd-D values have been stable in the historic range for MN-4.5 in McGinty Creek.	Highest concentrations measured to date have been in Q3 of 2019, but are not increasing consistently year-over-year, and show potential seasonal variability. While there is no consistent increasing trend, and variability is high, annual averages increased between 2016 and 2019.	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5, suggests no current impact to surface water. Load study done as part of the 2019 annual groundwater review indicates concentrations need to be at least an order of magnitude higher for threshold exceedances to occur at MN-4.5.	Limited action at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road. Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
	January	N/A	N/A	N/A				
	February	2021-02-27	0.000142	0.000031 (SPT 1)				
	March	N/A	N/A	N/A				
MW09-03-02 Figure A-1, A-3		Cd-D	mg/L		**Water Level (Figure A-1):** see previous section. **Water Quality (Figure A-2):** Concentrations beginning in 2019 have been more sporadic than the past, with the highest concentration measured in September 2019. While most recent data points exceed thresholds, concentrations are lower in 2021 compared to previous years. Cd-D values have been stable in the historic range for MN-4.5 in McGinty Creek.	Highest concentrations measured to date have been in Q3 of 2019, but are not increasing consistently year-over-year, and show potential seasonal variability. While there is no consistent increasing trend, and variability is high, annual averages increased between 2016 and 2019.	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5, suggests no current impact to surface water. Load study done as part of the 2019 annual groundwater review indicates concentrations need to be at least an order of magnitude higher for threshold exceedances to occur at MN-4.5.	Limited action at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road. Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
	January	N/A	N/A	N/A				
	February	2021-02-27	0.0000874	0.000031 (SPT 1)				
	March	2021-03-21	0.0000613	0.000031 (SPT 1)				
MW09-03-02 Figure A-1, A-3		Zn-D	mg/L		**Water Level (Figure A-1):** see previous section. **Water Quality (Figure A-4):** Increased variability in measurements starting in August 2015. Concentrations in Q1 2021 are lower than the majority of sampling events in 2020. Zn-D values have been stable in the historic range for MN-4.5 in McGinty Creek.	Concentrations in Q1 are all above SPT 2 but on average lower than observations from the preceeding two years. Peak concentrations during late Q1 and early Q2 suggest a seasonal trend related to freshet may be present.	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5, suggests no current impact to surface water. Groundwater flux in this zone expected to be low based on low K. Load study done as part of the 2019 annual groundwater review indicates concentrations need to be at least an order of magnitude higher for threshold exceedances to occur at MN-4.5.	Limited action at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road. Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
	January	N/A	N/A	N/A				
	February	2021-02-27	0.0225	0.015 (SPT 2)				
	March	2021-03-21	0.0271	0.015 (SPT 2)				
MW09-03-02 Figure A-1, A-3		NO_3-D	mg/L		**Water Level (Figure A-1):** see previous section. **Water Quality (Figure A-5):** Overall increasing trend is present beginning in 2017. Variability increased drastically in Q3 2019 with sporadic elevated concentrations occuring outside the historic trend. NO_3-D values have been stable in the historic range for MN-4.5 in McGinty Creek.	Clear upward trend from May 2015-Dec 2020. Higher variability beginning in 2018, with highest value recorded occurring in October 2019. Overall trend is increasing but values in Q1 2021 were lower than the previous sampling events.	McGinty Creek, as observed at MN-4.5, does not show increasing or decreasing trends similar to MW09-03-02. Considering the small catchment area for MW09-03-02, even if the well is affected by local recharge, potential loading to McGinty Creek via this groundwater is potentially low. Nitrate is expected to flush from the haul road construction material over time and not increase continuously.	Limited action at this time. Continue monitoring as per routine schedule, continue to look for opportunities to collect samples from surface seeps emanating from haul road and continue to compare data from MW09-03-02 and MN-4.5 to confirm low nitrate concentrations persist in McGinty Creek. Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
	January	N/A	N/A	N/A				
	February	2021-02-27	11.6	0.07 (SPT 2)				
	March	2021-03-21	10.7	0.07 (SPT 2)				

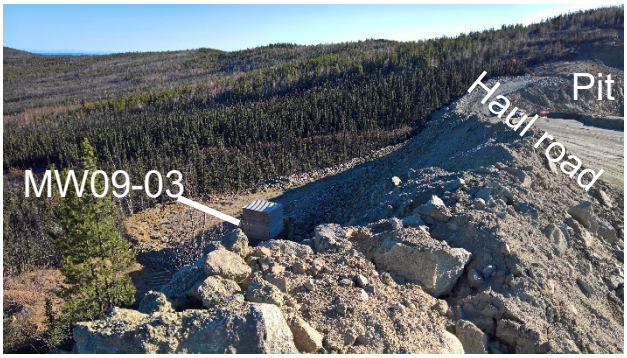
Table 1. Summary of Groundwater Quality Data, AMP Thresholds, Observations and Recommendations

Location	Month	Parameter & Concentration Data		Threshold Exceeded	Observations	Trends	Risk Narrative	Recommendation
Minto Creek Catchment								
MW12-05-01 Figure B-1, B-2		SO_4^{2-}-D	mg/L		**Water Level (Figure B-1):** Water levels show increasing trends in the fall to late winter seasons, followed by a decrease throughout the summer. These trends have occurred for four consecutive years and are likely due to a seasonal fluctuation. Overall vertical gradient remains downward. **Water Quality (Figure B-1):** Concentrations linearly increased until August 2017, stabilizing between 1200 and 1500 mg/L beginning in 2018. SO_4^{2-}-D values have been stable in the historic range at W3 and MC1 in Minto Creek.	Previously observed upwards trend shows signs of stabilization after August 2017 with a slight increase again since Q4 2018. Concentrations have been consistent throughout the last year, suggesting concentrations are continuing to stabilize. No upwards trend observed in Minto Creek. Seasonal variation evident at W8A, but much lower concentration than, and not considered likely to be connected to groundwater at MW12-05 as high concentrations at MW12-05 are at significant depth while W8A was a shallow DSTF monitoring point.	Minto Creek, as observed at W3 and MC1, do not show any upwards trend similar to MW12-05. Downwards gradient in MW12-05 and low flux (low hydraulic conductivity) suggest groundwater discharge not currently reaching creek or groundwater load small compared to surface water load.	No further action at this time. Continue monitoring as per routine schedule. Continue investigation into sulphate source and causes.
	January	N/A	N/A	N/A				
	February	N/A	N/A	N/A				
	March	2021-03-20	1420	1000 (SPT 2)				
MW12-05-02 Figure B-1		Se-D	mg/L		**Water Level (Figure B-1):** see previous section. **Water Quality (Figure B-1):** Selenium values have been mostly below thresholds with isolated exceedances in the past. Concentrations are variable but low. The Q1 value exceeded SPT 1, indicating a major change from the previous sampling event. The concentration was within the range of historic seasonal observations.	Concentrations have been variable in the past but no consistent increasing or decreasing trend is present. The most recent value is within the range of historic concentrations.	Concentrations in Minto Creek, as observed at W3 and MC1, are within the range of background data with no variability. Downwards gradient in MW12-05 and low flux (low hydraulic conductivity) suggest groundwater discharge not currently reaching creek or groundwater load small compared to surface water load.	No further action at this time. Continue monitoring as per routine schedule.
	January	N/A	N/A					
	February	N/A	N/A					
	March	2021-03-20	0.00299	0.93 (SPT 1)				
MW12-05-02 Figure B-1, B-2		SO_4^{2-}-D	mg/L		**Water Level (Figure B-1):** see previous section. **Water Quality (Figure B-1):** Concentrations linearly increased until August 2017, and have since stabilized around 1200 mg/L. SO_4^{2-}-D values have been stable in the historic range at W3 and MC1 in Minto Creek.	Previously observed upwards trend shows signs of stabilization after August 2017 with higher variability since Q1 2018. One value from Q4 2019 was considerably higher (2400 mg/L) but has not occurred since, suggesting it was an outlier. No upwards trend observed in Minto Creek. Seasonal variation evident at W8A, but not likely connected to groundwater at MW12-05.	Minto Creek, as observed at W3 and MC1, do not show any upwards trend similar to MW12-05. Downwards gradient in MW12-05 and low flux (low hydraulic conductivity) suggest groundwater discharge not currently reaching creek or groundwater load small compared to surface water load.	No further action at this time. Continue monitoring as per routine schedule. Continue investigation into sulphate source and causes.
	January	N/A	N/A	N/A				
	February	N/A	N/A	N/A				
	March	2021-03-20	1220	1000 (SPT 2)				
MW12-06-01 Figure C-1, C-2		Cr-D	mg/L		**Water Level (Figure C-1):** Water level data show overall decreasing trend since March 2014. Deepest zone (1) shows steeper decrease in water level between November 2017 and March 2018. This drop is consistent with a decrease in water level in MW12-07 which coincides with development of the Minto East underground. Water level in the deepest zone, MW12-06-01, decreased between Q2 and Q4 2019 but instreased again in Q1 2020. Complex multi-directional gradient is present. **Water Quality (Figure B-1):** Values at other depths in this well are near or below detection. Sampling in zone 1 only began in Oct 2016 but samples have consistently been above SPT 3 with an overall increasing trend until 2020, where values decreased throughout the year. The concentration measured in Q1 2020 is approaching the threshold. Cr-D values have been stable in the historic range at W3 and MC1 in Minto Creek.	Since the fall of 2016 elevated concentrations have been observed in MW12-06-01 and, to a lesser extent, W8A. Concentrations since 2020 have been decreasing, with the Q4 2020 concentration the lowest since recorded to date. Concentration during winter low flow period has increased over last two years.	While elevated concentrations of Cr-D have been continually detected in MW12-06-01, they have been isolated to the deepest zone and elevated concentrations have not been detected in the receiving environment (Minto Creek, down gradient wells, etc.). In addition, elevated Cr-D has not been detected in the mine pits, the underground dewatering pond or any other major sources of contaminated water on site. Currently, the risk posed by elevated Cr-D in MW12-06 is considered low.	No further action at this time. Continue monitoring as per routine schedule.
	January	N/A	N/A					
	February	N/A	N/A					
	March	2021-03-22	0.00262	0.002 (SPT 2)				
MW12-06-01 Figure C-1, C-2		Se-D	mg/L		**Water Level (Figure C-1):** see previous section. **Water Quality (Figure B-1):** Concentrations that exceed the thresholds are isolated, with only two recorded to date. The highest point was observed in Q1 2021 but the majority of observations are below SPT 2. Se-D values have been stable in the historic range at W3 and MC1 in Minto Creek.	Concentrations have been sporadic since 2017 but most remain at low concentrations well below SPT 2. Exceedances have been isolated to 2 events and no clear increasing trend is present.	Exceedances are isolated, and no impacts are observed at monitoring stations in Minto Creek.	No further action at this time. Continue monitoring as per routine schedule.
	January	N/A	N/A	N/A				
	February	N/A	N/A	N/A				
	March	2021-03-22	0.00733	0.006 (SPT 2)				

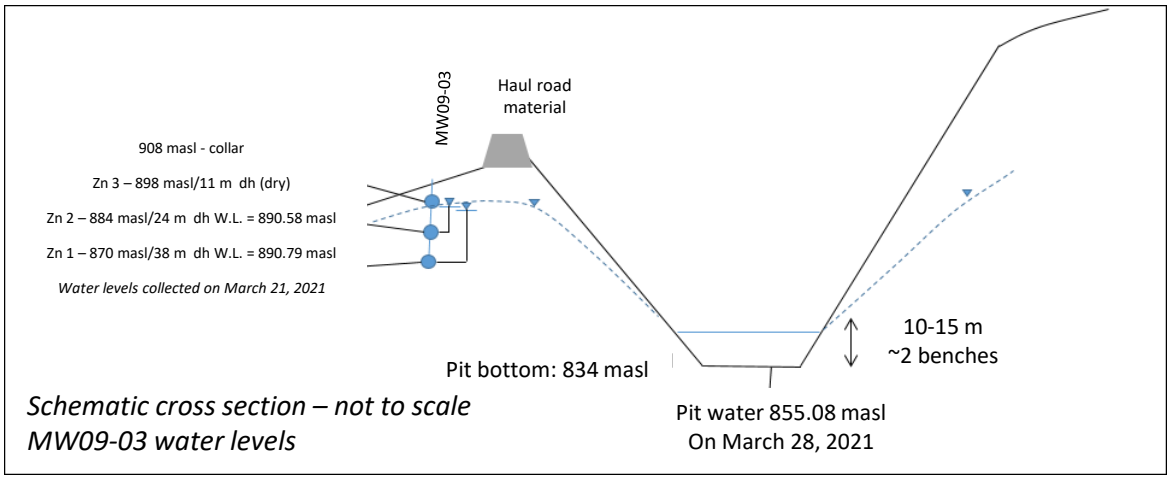
Notes:
'N/A' indicates no sample was taken for that month
'-' indicates value for that month did not trigger a response
Zones with no data or no exceedances: MW09-03-03 (dry), MW12-05-03, MW12-05-04, MW12-05-05, MW12-05-06, MW12-05-07, MW12-06-02, MW12-06-03, MW12-06-04, MW12-06-05, MW12-06-06

Appendix B: Figures

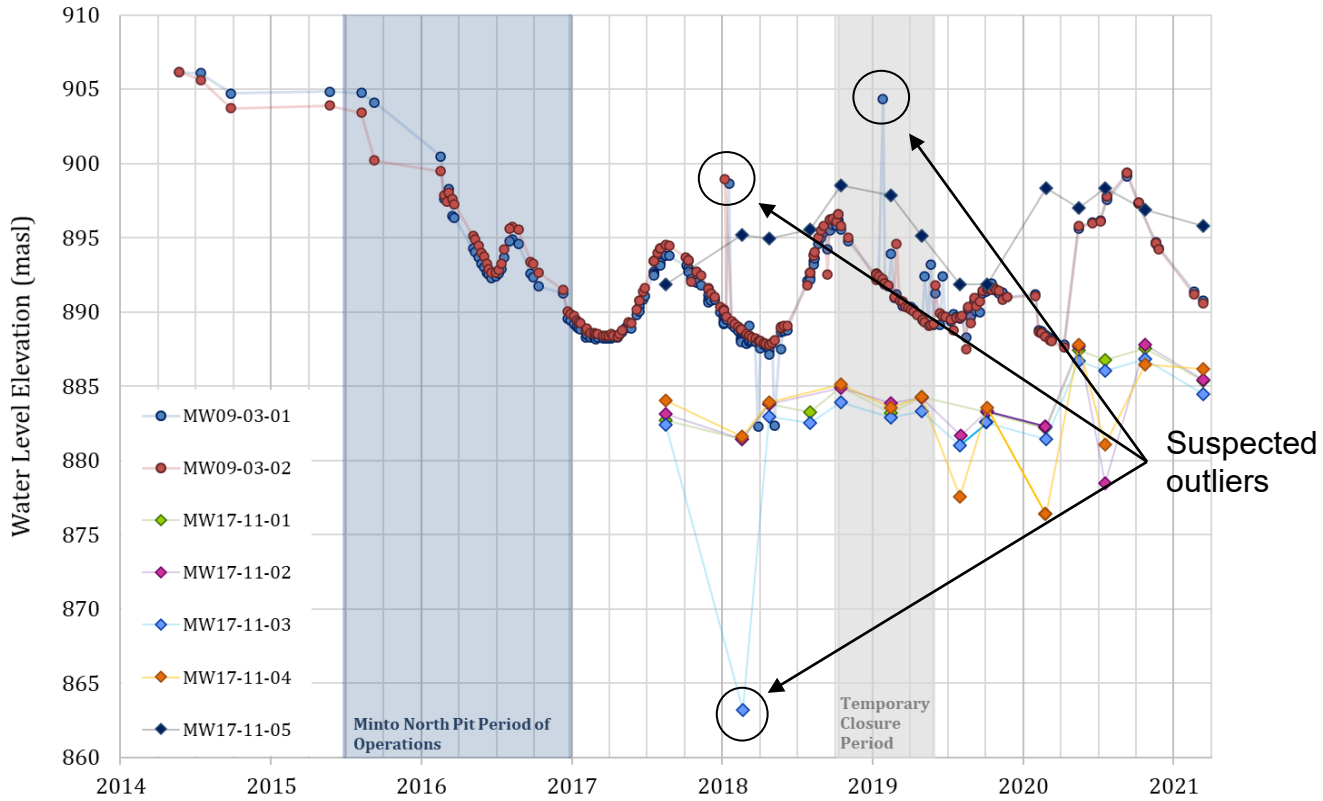




A A'



Schematic cross section – not to scale
MW09-03 water levels



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MINTO METALS

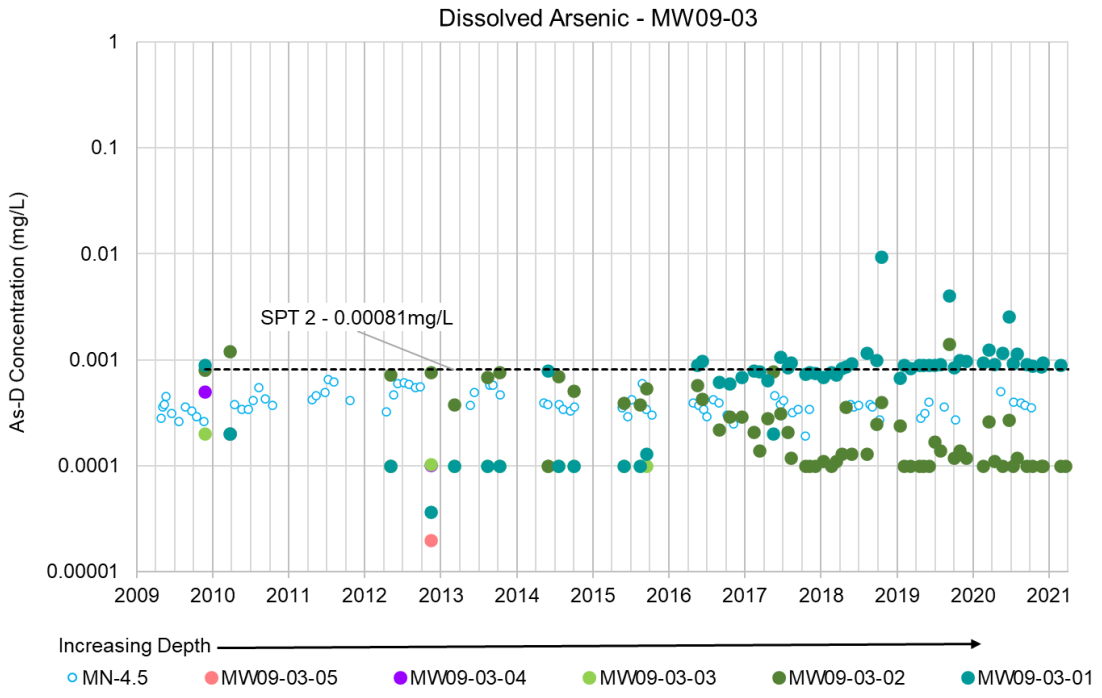
Minto Mine Adaptive Management

Minto North Pit: Physical setting and water levels

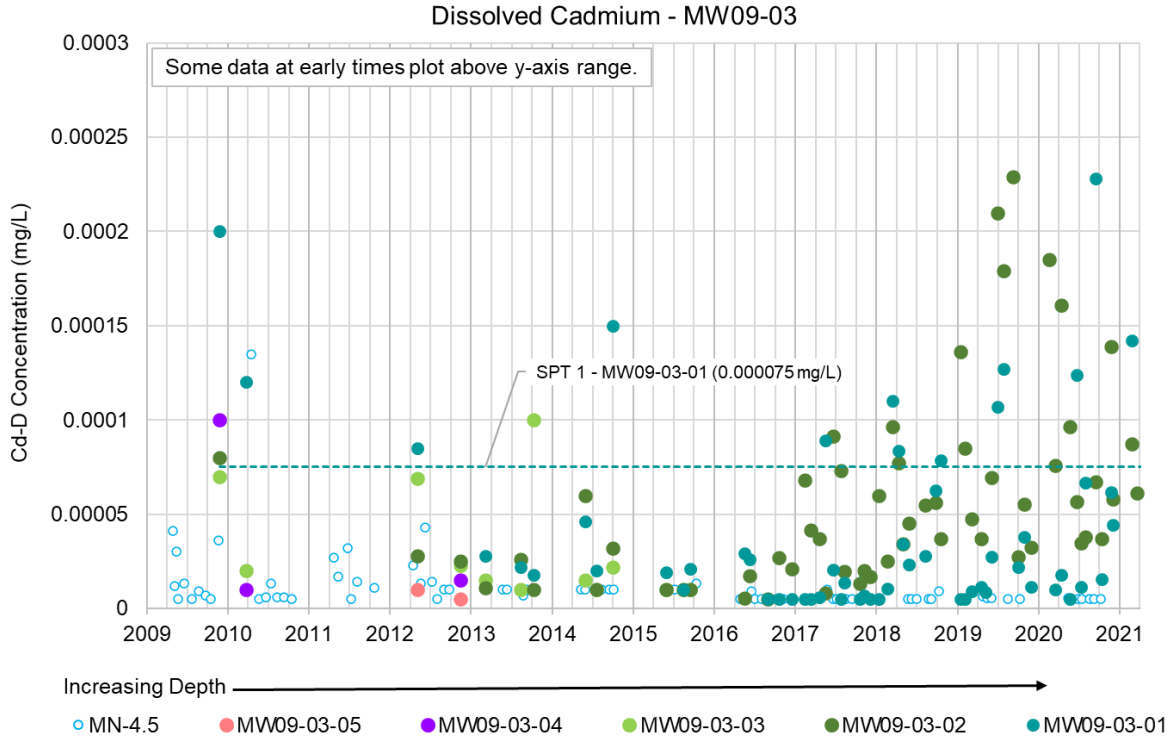
Job No: 1CM002.055
Filename: 1CM002-055_2021Q1_GWAMP_Response_Figures.pptx

Minto Mine

Date:	Approved:	Figure:
April 2022	MSi	**A-1**



MW09-03-01 was the only sampling point to trigger a response
Only SPTs exceeded in Q1 of 2021 shown on graph (applies to MW09-03-01 only)
MN-4.5 is a SW monitoring point in McGinty Creek



MW09-03-01 and MW09-03-02 were the only sampling points to trigger a response
Only SPTs exceeded in Q1 of 2021 shown on graph (applies to MW09-03-01/02 only)
MN-4.5 is a SW monitoring point in McGinty Creek

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220207_Dec_Q4_AMP_Review/02_Analysis%26Charts/Minto_AMPResponse_2021McGintyCreek/Minto_AMPResponse_2021Q1_McGintyCreekGW_MSi.xlsx?d=w6b61af9c4f9542e2a91a65b8eb2a930a&csf=1&web=1&e=oWgqOZ

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MINTO METALS

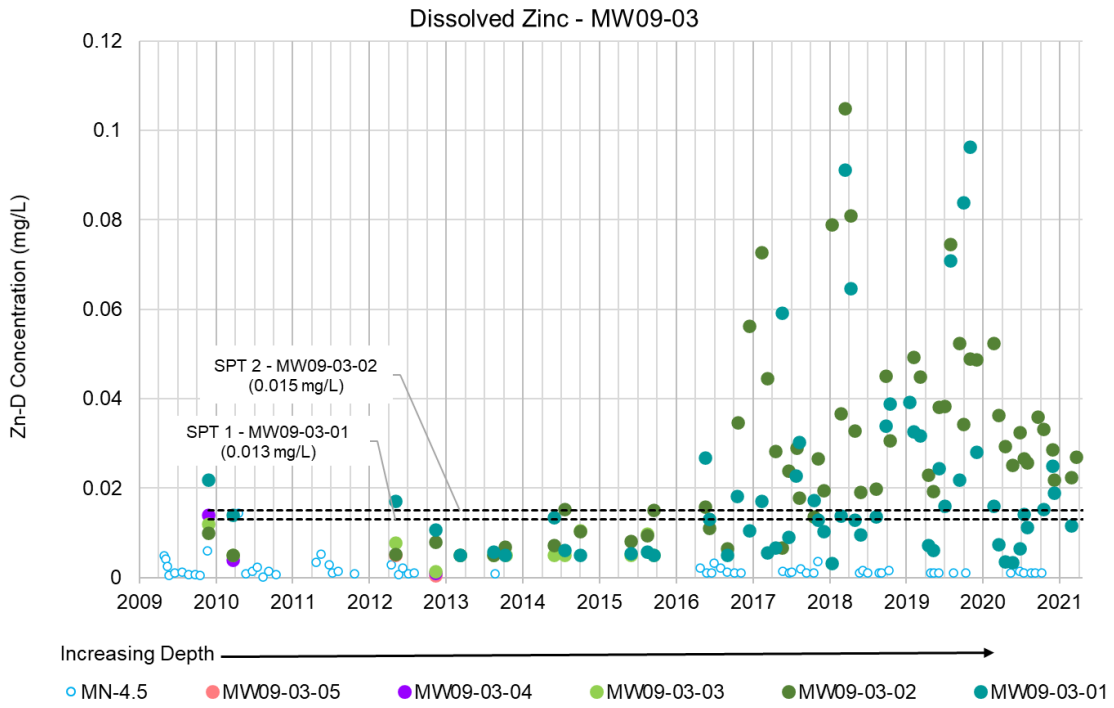
Minto Mine Adaptive Management

MW09-03
As-D and Cd-D SPT Exceedances

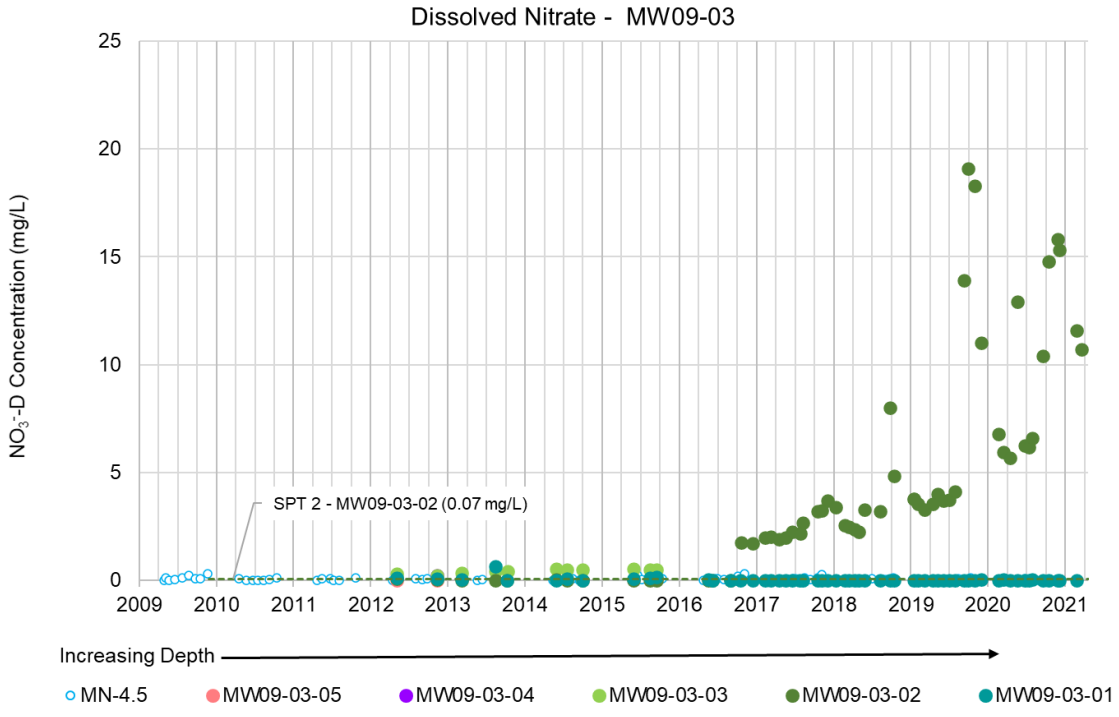
Job No: 1CM002.055
Filename: 1CM002-055_2021Q1_GWAMP_Response_Figures.pptx

Minto Mine

Date: April 2022
Approved: MSi
Figure: A-2



MW09-03-02 was the only sampling point to trigger a response
Only SPTs exceeded in Q1 of 2021 shown on graph (MW09-03-02 only)
MN-4.5 is a SW monitoring point in McGinty Creek



MW09-03-02 was the only sampling point to trigger a response
Only SPTs exceeded in Q1 of 2021 shown on graph (applies to MW09-03-02 only)
MN-4.5 is a SW monitoring point in McGinty Creek

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220207_Dec_Q4_AMP_Review/02_Analysis%26Charts/Minto_AMPResponse_2021McGintyCreek/Minto_AMPResponse-2021Q1_McGintyCreekGW_MSi.xlsx?d=w6b61af9c4f9542e2a91a65b8eb2a930a&csf=1&web=1&e=oWgqOZ

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MINTO METALS

Minto Mine Adaptive Management

MW09-03
Zn-D and NO3 SPT Exceedances

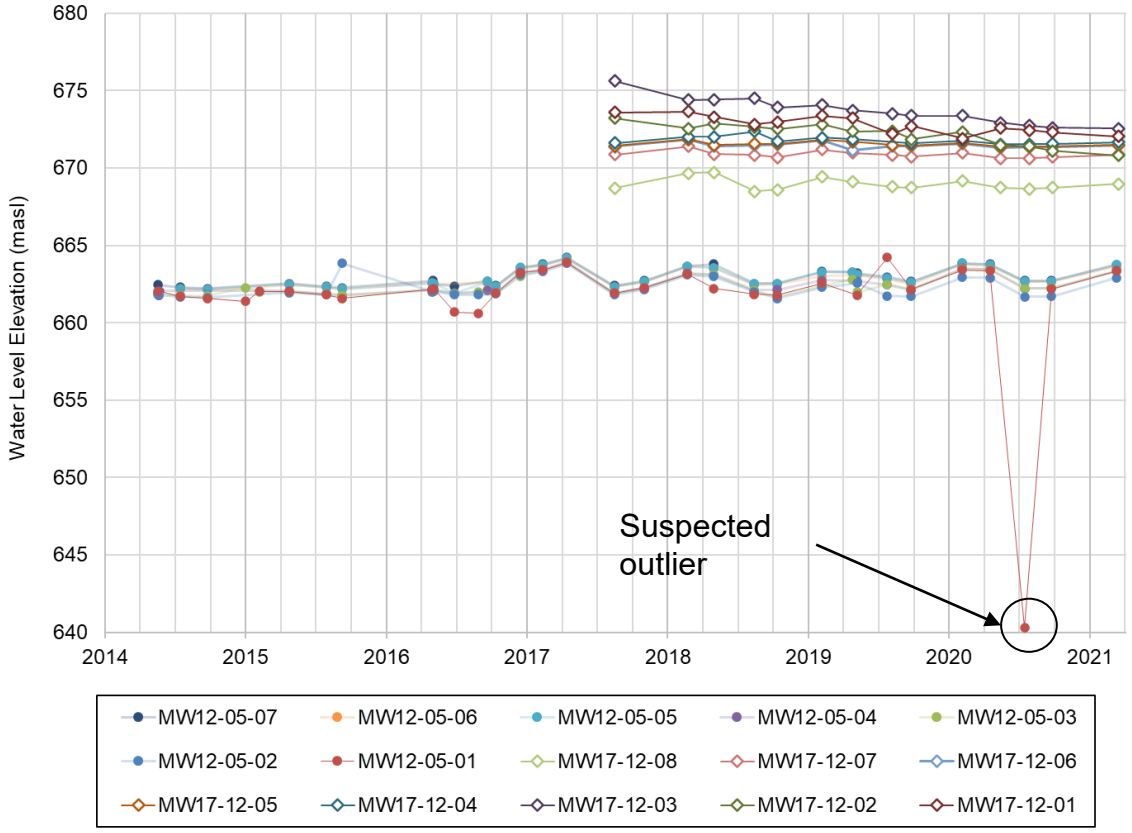
Job No: 1CM002.055
Filename: 1CM002-055_2021Q1_GWAMP_Response_Figures.pptx

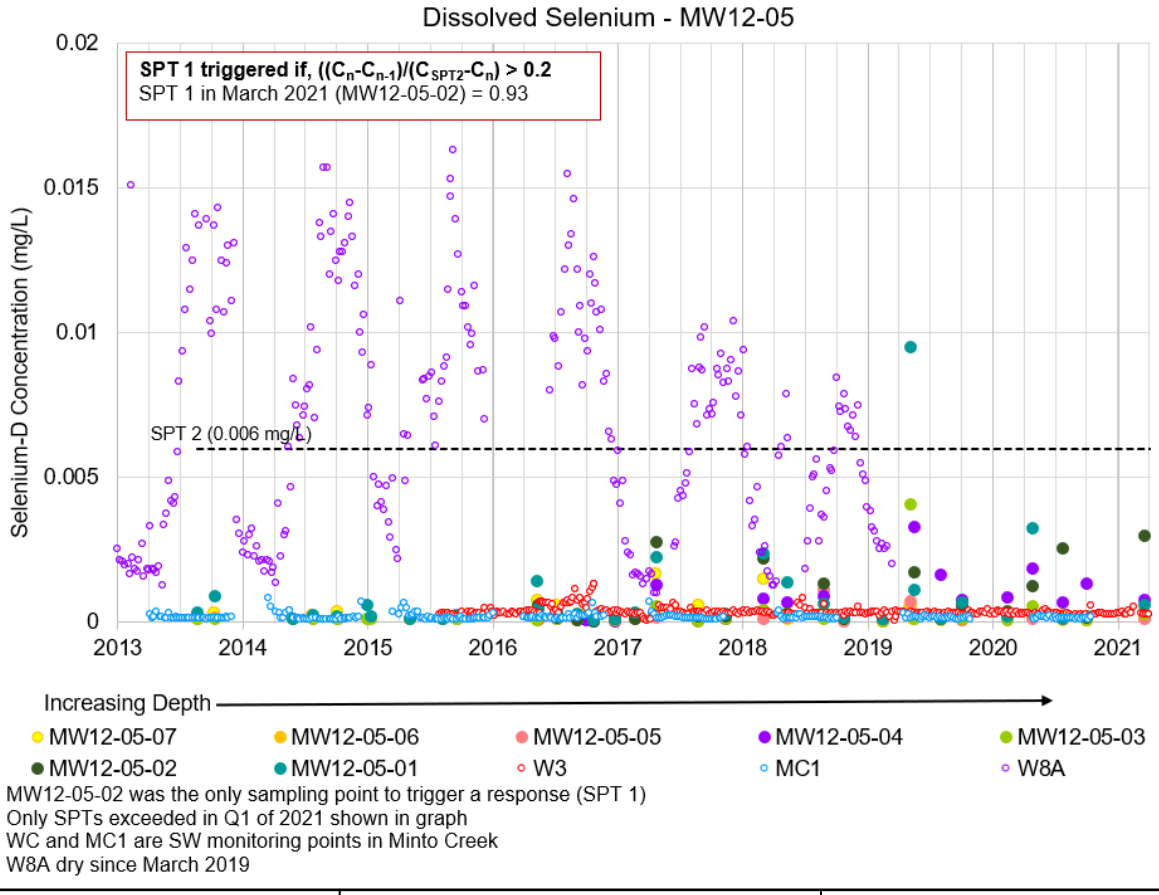
Minto Mine

Date: April 2022

Approved: MSi

Figure: **A-3**





MW12-05-02 was the only sampling point to trigger a response (SPT 1)
Only SPTs exceeded in Q1 of 2021 shown in graph
WC and MC1 are SW monitoring points in Minto Creek
W8A dry since March 2019

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220207_Dec_Q4_AMP_Review/02_Analysis%26Charts/Minto_AMPResponse_2021GWData_2012-2021/Minto_AMPResponse-2021Q1_GWData_2012-2021_MSi.xlsx?d=w6c8c7938b95a4c0e89ac029fa5ce6f64&csf=1&web=1&e=Rs6vWw

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220207_Dec_Q4_AMP_Review/02_Analysis%26Charts/Minto_AMPResponse_2021MintoCreek/Minto_AMPResponse_2021Q1_MintoCreekGW_MSi.xlsx?d=wbc3396fefeea46829cbb27705139 7c79&csf=1&web=1&e=uZpD2s

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MINTO METALS

Minto Mine Adaptive Management

MW12-05 Water Level Data & Se-D SPT Exceedances

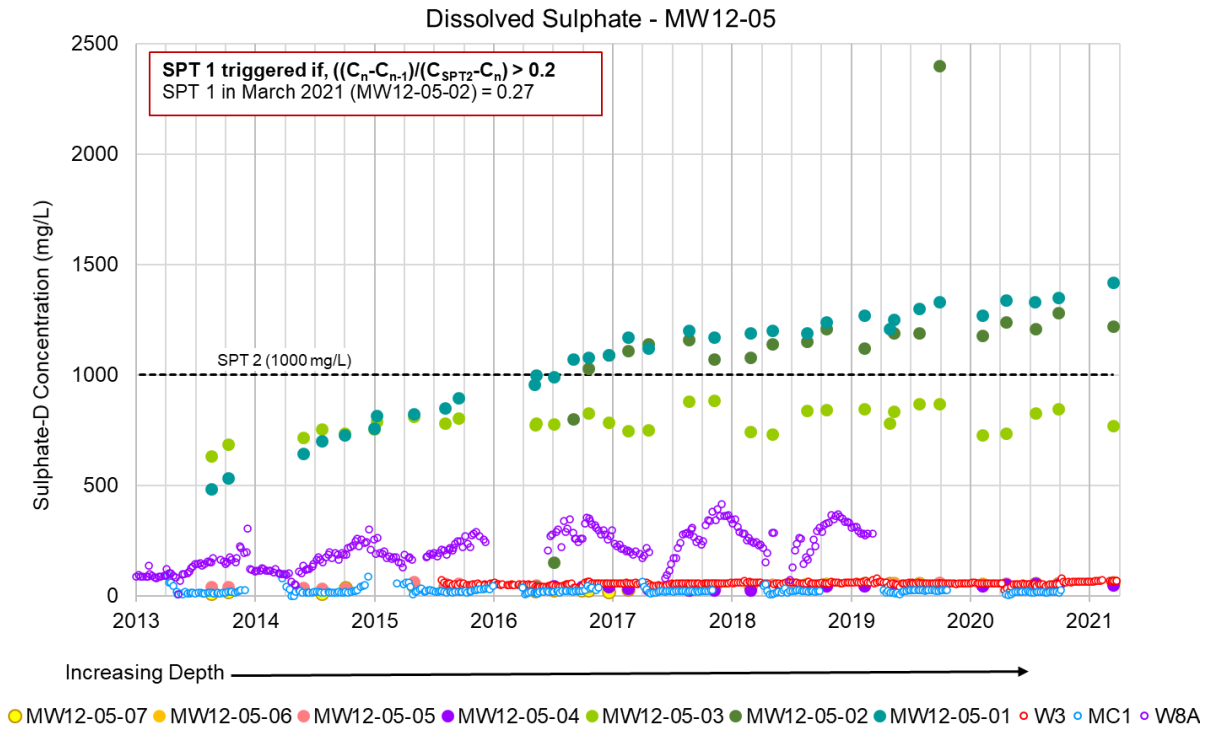
Job No: 1CM002.055
Filename: 1CM002-055_2021Q1_GWAMP_Response_Figures.pptx

Minto Mine

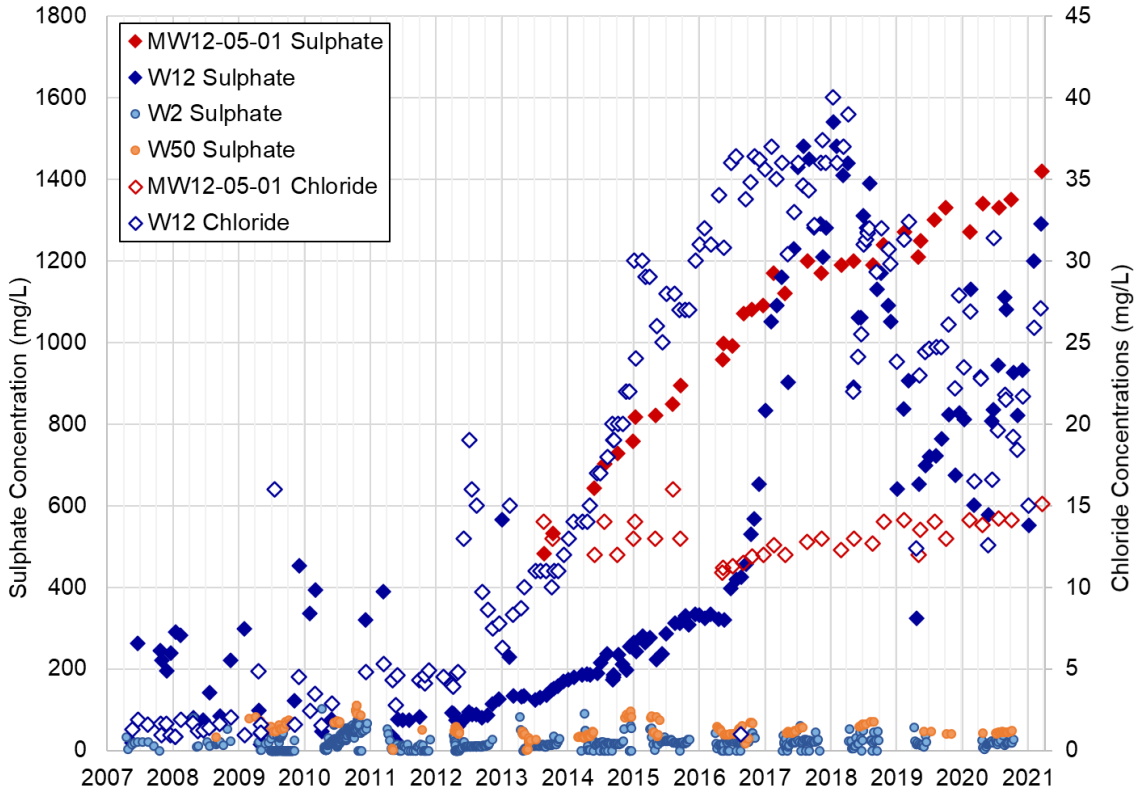
Date: April 2022

Approved: MSi

Figure: B-1



MW12-05-01 and MW12-05-02 were the only sampling points to trigger a response
Only SPTs exceeded in Q1 of 2021 shown in graph (applies to MW12-05-01 and MW12-05-02 only)
WC and MC1 are SW monitoring points in Minto Creek
W8A dry since March 2019



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srk consulting

MINTO METALS

Minto Mine Adaptive Management

MW12-05 & MW12-05-01/W12 (Main Pit)
SO_4^{2-}-D and Cl-D Concentrations

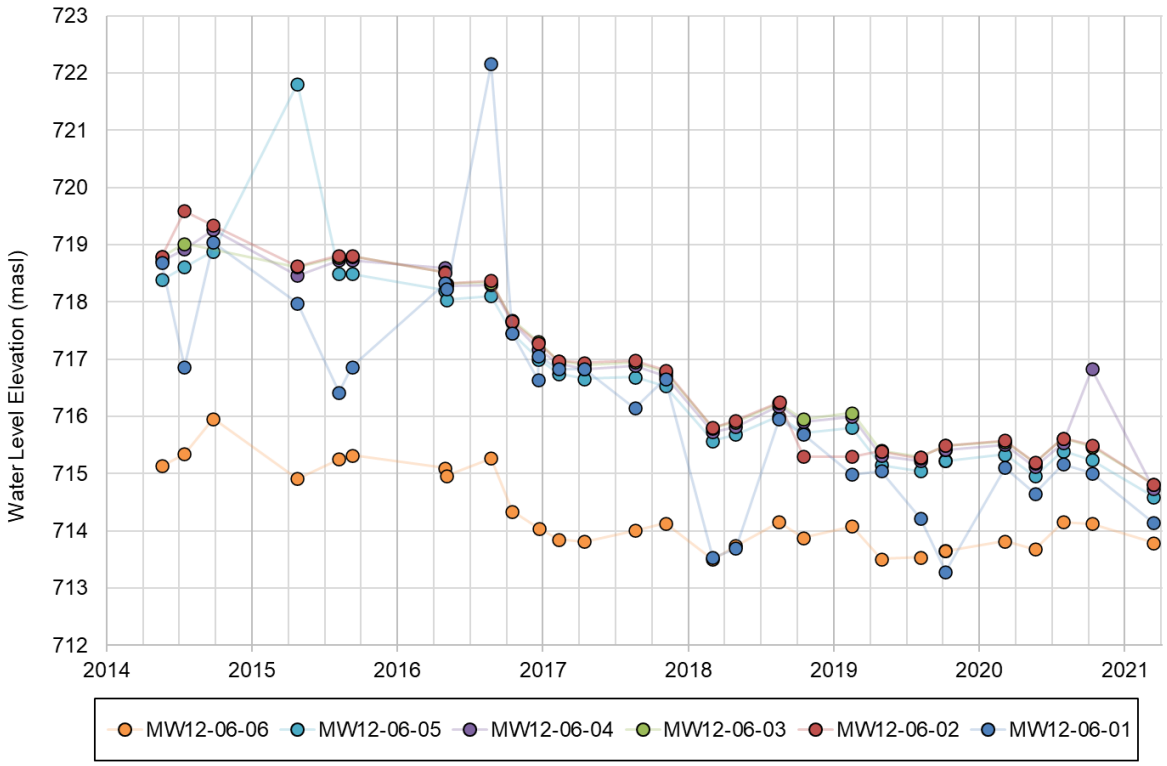
Job No: 1CM002.055
Filename: 1CM002-055_2021Q1_GWAMP_Response_Figures.pptx

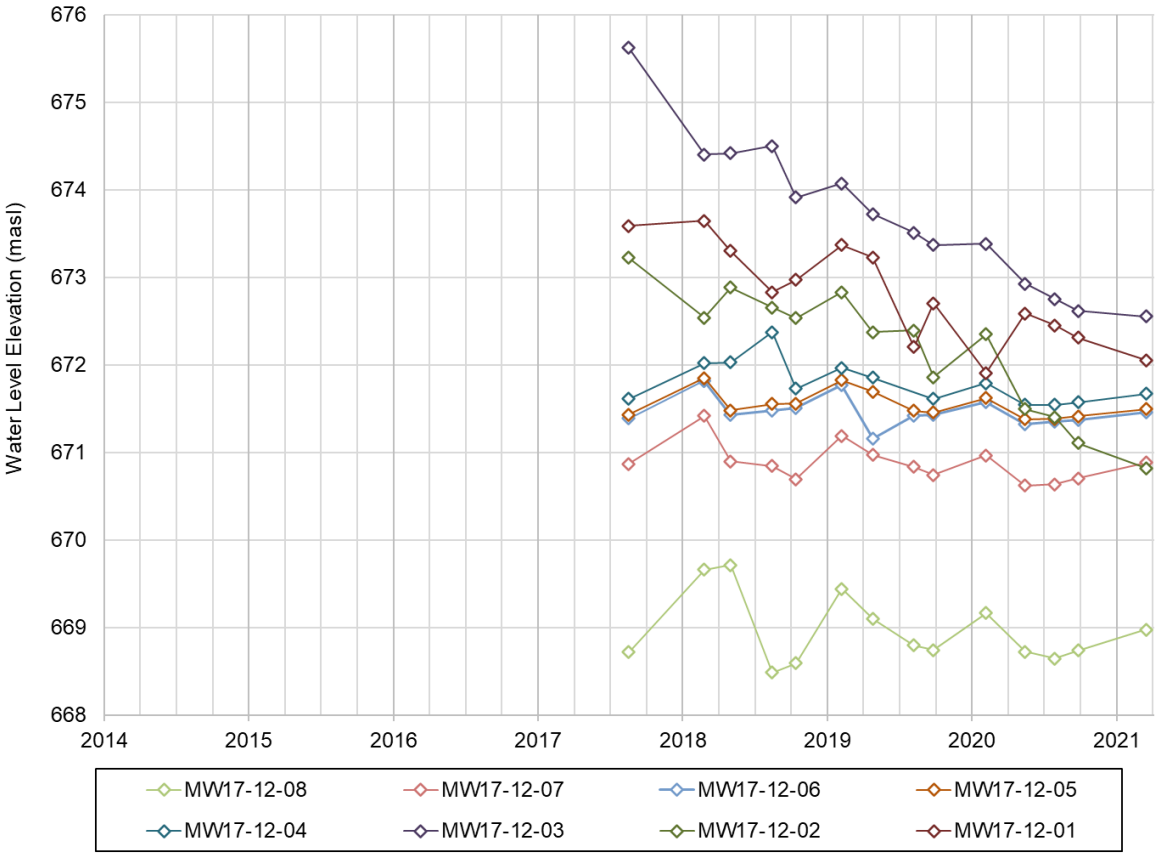
Minto Mine

Date: April 2022

Approved: MSi

Figure: B-2





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srk consulting

MINTO METALS

Minto Mine Adaptive Management

MW12-06 and MW17-12 Water Level Data

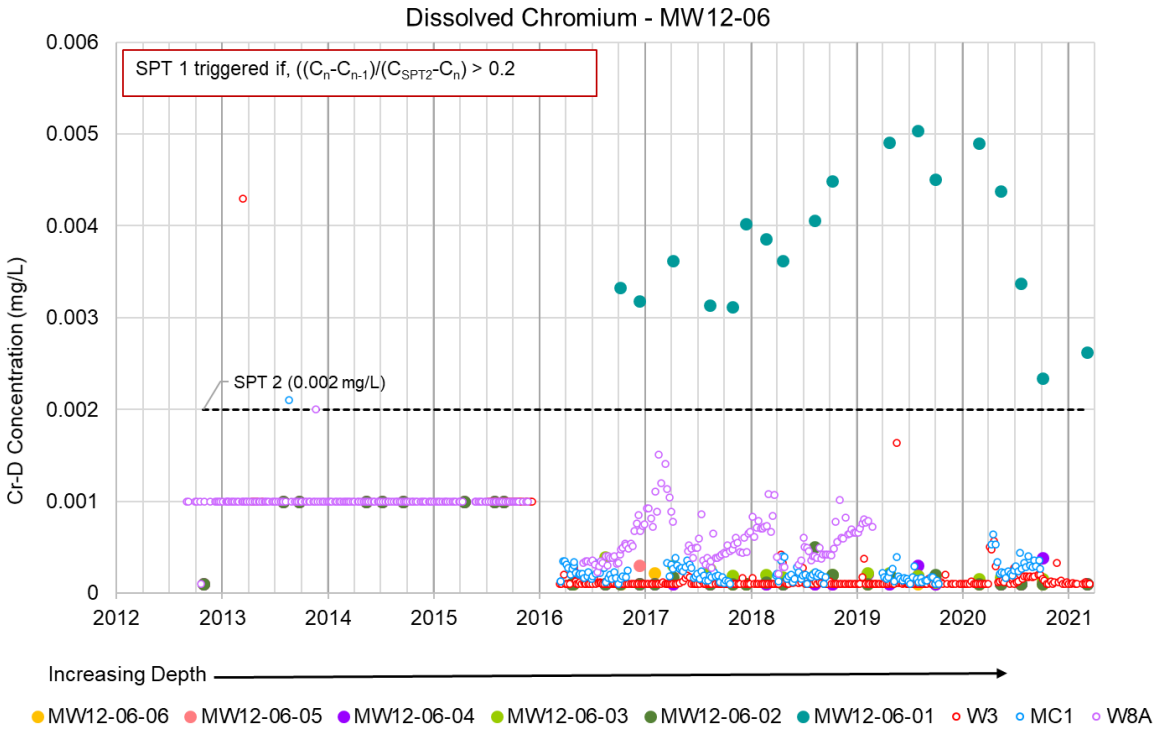
Job No: 1CM002.055
Filename: 1CM002-055_2021Q1_GWAMP_Response_Figures.pptx

Minto Mine

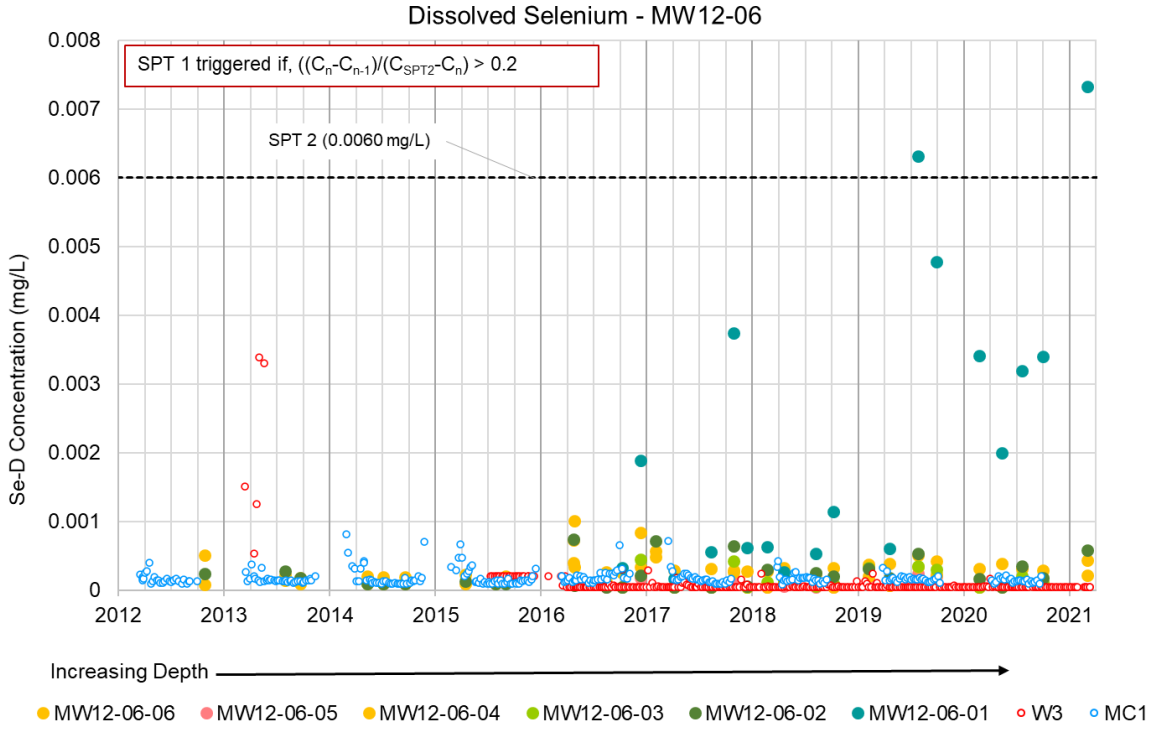
Date: April 2022

Approved: MSi

Figure: C-1



MW12-06-01 was the only sampling point to trigger a response
Only SPTs exceeded in Q1 of 2021 shown in graph (applies to MW12-06-01 only)
WC, W8A and MC1 are SW monitoring points in Minto Creek
W8A has been dry since 2019



MW12-06-01 was the only sampling point to trigger a response
Only SPTs exceeded in Q1 of 2021 shown in graph (applies to MW12-06-01 only)
WC and MC1 are SW monitoring points in Minto Creek

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220207_Dec_Q4_AMP_Review/02_Analysis%26Charts/Minto_AMPResponse_2021MintoCreek/Minto_AMPResponse_2021Q1_MintoCreekGW_MSi.xlsx?d=wbc3396fefeea46829cbb27705139 7c798&csf=1&web=1&e=OFdxFH

srk consulting

MINTO METALS

Minto Mine Adaptive Management

MW12-06 Cr-D and Se-D SPT Exceedances

Job No: 1CM002.055
Filename: 1CM002-055_2021Q1_GWAMP_Response_Figures.pptx

Minto Mine

Date: April 2022

Approved: MSi

Figure: C-2

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March 30, 2022
Project No: 1CM002.055

Minto Mine
Minto Explorations Ltd.
PO Box 11
Whitehorse, YT Y1A 5X9

Attention: Journey Paulus, Manager, Environment

Dear Journey:

Subject: 2021 Q2 (April – June) Groundwater AMP Events

The Minto Mine Operational Adaptive Management Plan was updated in 2018 for groundwater monitoring, with the review frequency for groundwater triggers changed from monthly to quarterly, at the recommendation of SRK Consulting (SRK) who is the qualified professional (QP). As per AMP2017-02, all data concerning trigger exceedances are sent to the QP within a week of discovery and included in the subsequent review.

As part of the Minto Mine Operational Adaptive Management Plan, Minto Mine has collected and reviewed groundwater quality data. Minto completed an initial review of data collected at the McGinty Creek groundwater monitoring station (MW09-03) and Minto Creek groundwater monitoring stations MW12-05 and MW12-06 for the second quarter of 2021 (April - June) and compared results to specific performance thresholds (SPT) defined in the Minto Mine Operations Adaptive Management Plan (MEL, 2017-02). McGinty Creek monitoring stations are required to be sampled monthly while the Minto Creek stations are sampled quarterly. For Minto Creek and McGinty Creek, MEL identified exceedances of certain thresholds for sampling rounds conducted in April, May, and June of 2021 and, as per the plan, has contracted a QP to review those data and provide recommendations. SRK Consulting (Canada) Inc. was contacted by Minto environmental staff to provide QP review. This letter presents results of that review and recommendations.

SRK compared data against the 2017-02 AMP thresholds, historical data, and data from surface water at station MN4.5 in lower McGinty Creek and surface water stations W3 and MC1 in Minto Creek. Table 1 summarizes exceedances, observations on the data, interpretation, and recommendations. Figures are included with this review to illustrate the current physical (i.e., water level) setting compared to the Minto North pit. Graphs are included for each parameter exceeding thresholds and includes the full range of data collected to date.

Key conclusions and recommendations are summarized below. Table 1 summarizes observations and recommendations for all parameters.

For MW09-03 (McGinty Creek):

- The Minto North Pit is not a source of water to the groundwater monitored at this station; water levels in the monitoring well are higher than the pit water level. Water levels in the pit have been increasing slowly but remain well below the monitoring well water levels. These data continue to show no hydraulic gradient from the pit towards the monitoring well.
- Water levels at this station have been affected by the mining of Minto North, but the groundwater divide between Minto North and McGinty Creek remains, somewhere in the vicinity of MW09-03.
- Water levels in MW17-11 are generally lower than in MW09-03, with the exception of zone 5, which is screened shallower than zones 1 and 2 in MW09-03 and has higher water level than all other monitoring points. Water levels in MW17-11 and MW09-03 indicate an overall downward gradient between the shallow-most zone and the remaining deeper zones. Differences in water level between deep zones are less pronounced, and a vertical gradient is not clear.
    - Recommendation: continue collecting water level/pressure profiles at this well according to the routine schedule.
- Concentrations of dissolved arsenic at MW09-03-01 have consistently exceeded SPT 1 since summer of 2016, and inconsistently exceeded thresholds in MW-09-02 in the same period. High variability is observed, but relatively recent data in MW09-03-01 exceeds thresholds more frequently than in the past. Anomalous values were detected in October 2018, September 2019, and June 2020 at nearly an order of magnitude more than recent average concentrations. In between the anomalous events, concentrations decreased to the historic range, suggesting these values are outliers. High concentrations do not correlate exactly with seasonal changes in groundwater level but may indicate an influence from seasonal variation (in recharge, flow, etc.). Vertical profiles and timing of peak concentrations suggest increased loading may be occurring during low flow periods or freshet, possibly suggesting greater mobilization of trace elements when higher volumes of water could infiltrate through the unsaturated zone and mobilize trace elements. Loading calculations included in the Minto Mine - 2019 Groundwater Review and Summary of OAMP SPT Exceedances (SRK 2020) indicate arsenic concentrations would need to increase by at least one order of magnitude for an exceedance in McGinty Creek at MN-4.5 to be observed. While there is some seasonal variability in McGinty Creek chemistry, surface water concentrations are not increasing and remain in the range of baseline data at MN-4.5.
- Concentrations of dissolved cadmium at MW09-03-01 and MW09-03-02 have inconsistently exceeded SPT 1 in he past with high variability in the observed data. Cadmium data exceed thresholds more frequently since 2017 and while average concentrations have increased beginning in 2017, there is no consistent increasing trend with many values in the last two years below the threshold. Seasonal variability seems to be present, with highest concentrations occurring in Q1 and Q2, potentially related to freshet. Cadmium concentrations in McGinty Creek remain low and stable, showing no impact from the groundwater and loading calculations presented in SRK 2020 indicate groundwater concentrations would need to increase by at least one order of magnitude for an exceedance in McGinty Creek at MN-4.5 to be observed.

- Concentrations of dissolved selenium in MW09-03-01 and MW09-03-02 have exceeded thresholds sporadically in the last few years, with increased variability in the data beginning in 2017. Average annual concentrations in MW09-03-02 have been higher in 2018 and 2019 than past years, but do not demonstrate a consistent increasing trend. Only one monitoring event in Q2 exceeded thresholds in MW09-03-01 and none in MW09-03-02. Peak concentrations in Q1 and Q2 of these years indicate a season variation may be present. Loading calculations presented in SRK 2020 are not applicable to selenium, as elevated concentrations are already being observed in McGinty Creek at MN-4.5. In a memo prepared by Minnow Environmental in 2019 (*Evaluation of Dissolved Copper and Selenium AMP Threshold Exceedances in McGinty Creek*) it was concluded that the source of elevated selenium concentrations was unrelated to the Minto Mine and values were consistent with historical concentrations before the Minto North Pit was operational.

- Concentrations of dissolved zinc at MW09-03-01 and MW09-03-02 have inconsistently exceeded SPT 1 and SPT 2 thresholds since the summer of 2016. High variability is observed in the data, but relatively recent data exceeds thresholds more frequently than in the past, MW09-03-02 appeared to show a potential year-to-year increasing trend but values in 2020 have been lower than the previous two years. High concentrations do not correlate exactly with seasonal changes in groundwater level but may indicate an influence from seasonal variation. Vertical profiles and timing of peak concentrations suggest increased loading may be occurring during freshet when higher volumes of water infiltrate through the unsaturated zone and mobilize trace elements. While there is some seasonal variability in McGinty Creek chemistry, surface water concentrations are not increasing and remain in the range of baseline data. Loading calculations presented in SRK 2020 indicate groundwater concentrations would need to increase by at least one order of magnitude for an exceedance in McGinty Creek at MN-4.5 to be observed.

    - Recommendations: due to the low potential loading of groundwater into McGinty Creek limited action is recommended at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road.

    - The load and accretion study, as recommended in the 2019 Review of OAMP Exceedances, was not conducted in 2021 due to unfavorable conditions with surface water flows which created conditions that would make loading from groundwater undetectable. It is recommended that the load and accretion study be conducted in 2022 if the conditions are appropriate.

- Concentrations of dissolved nitrate at MW09-03-02 have exceeded SPT 2 since the fall of 2016. Concentrations have shown a consistent increasing trend since October 2016 with potential seasonal effects producing higher concentrations in Q4 of each year. Loading calculations presented in SRK 2020 indicate groundwater concentrations would need to increase by a factor of 2 from the highest measurement for an exceedance in McGinty Creek at MN-4.5 to be observed. As the nitrate is likely sourced from blast rock used to construct the haul road, load is expected to flush over time and the increasing trend is not expected to persist indefinitely. Concentrations will continue to be closely monitored. A more detailed review of nitrate behavior is provided in the 2020 Review of OAMP Exceedances. While there is some seasonal variability in McGinty Creek chemistry, surface water concentrations are not increasing and remain in the range of baseline data.

    - Recommendation: due to the low potential loading of groundwater into McGinty Creek limited action is recommended at this time. Continue monitoring as per schedule. Continue to look for

seeps from the haul road that can be used for comparison. Compare vertical concentration profiles in MW09-03 and MW17-11 as more annual data becomes available from MW17-11. Conduct load accretion study as recommended in the 2019 Review of OAMP Exceedances, when conditions are appropriate to do so.

For MW12-05 and MW12-06 (Minto Creek):

- Water level data in the deepest zone of MW12-06 decreased sharply between November 2017 and March 2018, which coincides with development of the Minto East underground. Water levels in the deepest zone increased again between May and August 2018, when development of the underground stopped. More recently, the water level in the deepest zone, MW12-06-01, decreased between Q2 and Q4 2019 which changed the overall vertical gradient from upwards to downwards and then increased again in Q1 2020 reversing the gradient once again. The decrease in water level coincides with the re-start of underground development in September 2019, and while dewatering was continued throughout the temporary underground closure, the increased activity could potentially have influenced the deep groundwater levels. The same trend was not observed in MW12-05 or MW17-12, suggesting these wells are currently outside the area of groundwater affected by the development of the underground. Consistent vertical gradients cannot be identified and there exists a complex multidirectional vertical gradient between other zones. Seasonal fluctuations are apparent in MW12-05, with peak water levels occurring in Q2 of the past 2 years.
    - Recommendation: continue collecting water level/pressure profiles at this well according to the routine schedule. Continue to monitor changes in groundwater pressure as system equilibrates following the cessation of Minto East underground development. Continue to monitor complex multidirectional vertical gradient in MW12-06.
- Concentrations of dissolved chromium in MW12-06-01 have exceeded SPT 3 since October 2016 and while they are variable, average concentrations increased between Q4 2016 and Q1 2020. Concentrations have decreased throughout 2020 with the most recent sampling event below SPT 2 (the first time since monitoring began). Elevated Cr-D is isolated to MW12-06-01, the deepest zone in this well (142.3 meters below ground surface).

  In Q2 2021, MW12-05-02 triggered SPT 1, indicating a significant change had occurred since the previous monitoring event. The exceedance is isolated, well below SPT 2 and do not demonstrate an increasing trend. While there may be seasonal trends in Minto Creek, variability within the data is very low and shows no trends that can be clearly related to groundwater concentrations.
    - Recommendation: review potential Cr sources and update risk assessment of Cr loading to Minto Creek in the 2021 Review of OAMP Exceedances.
- Concentrations of dissolved selenium in MW12-05 and MW12-06 are mostly below thresholds with only sporadic exceedances occurring since 2016. The highest concentrations in the previous four years in MW12-05 have been observed in Q2, suggesting the elevated values are due to seasonal fluctuations, potentially regarding freshet. No observable trends exist in MW12-06 that can be related to seasonal variation. Concentrations in the deepest zone of MW12-06 have been variable and higher than other zones but no clear increasing trend is present. Surface water concentrations are not

increasing and remain in the range of baseline data suggesting no impacts related to groundwater concentrations are being observed.

- Concentrations of dissolved zinc have been stable below thresholds in MW12-06 in the past with some slight variability in the shallowest zone. The only exceedance to SPT 2 occurred in the most recent sampling event in MW12-06-06 but is well outside the range of historic conditions and may be an outlier. More data are required to assess the significance of this increase and determine if a trend is present.
    - Recommendation: continue monitoring as per routine schedule. Assess sources of potential contaminants and include in the 2021 Review of OAMP Exceedances.
- Concentrations of sulphate at MW12-05-01 and MW12-05-02 continue to be elevated above SPT 2. Concentrations at MW12-05-01 and MW12-05-02 were increasing historically but show signs of stabilization after August 2017. While concentrations are still increasing, data do not show the same rate of increase as was observed prior to 2017, with the exception of the Q4 2019 observation in MW12-05-02, which had a measured concentration of 2400 mg/L, nearly double the previous sampling event. As this magnitude of concentration is isolated to one sampling event, and values have since decreased to be consistent with previous trends, the datapoint is considered an outlier.

  Sulphate concentrations in MW12-06-01 have been increasing since Q1 2020 with the most recent events approaching SPT 2. These concentrations are isolated to the deepest zone in MW12-06, which has shown evidence of disruption (in water levels and chemical equilibrium) related to underground mining in the past. The cause of increasing sulphate concentrations in MW12-06-01 is unclear at this time, but trends will continue to be closely monitored.

  Previous investigations into the source of elevated sulphate in deep groundwater as observed at MW12-05 conclude it is unrelated to mining activities. Sulphate concentrations in MW17-12 exhibit an increasing gradient with depth but no increasing trend temporally. Minto Creek continues to indicate no trends in sulphate concentration that can clearly be related to changes in groundwater concentrations.
    - Recommendation: continue monitoring as per schedule and review/update investigations as to potential sources of SO_4 as part of the overall review of site groundwater quality.

Sincerely,

SRK Consulting (Canada) Inc.

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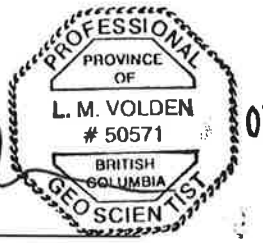

03/30/22

Laura Volden, MSc, PGeo
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Reviewed by

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The opinions expressed in this report have been based on the information available to SRK at the time of preparation. SRK has exercised all due care in reviewing information supplied by others for use on this project. Whilst SRK has compared key supplied data with expected values, the accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data. SRK does not accept responsibility for any errors or omissions in the supplied information, except to the extent that SRK was hired to verify the data

Appendix A: Tables

Table 1. Summary of Groundwater Quality Data, AMP Thresholds, Observations and Recommendations

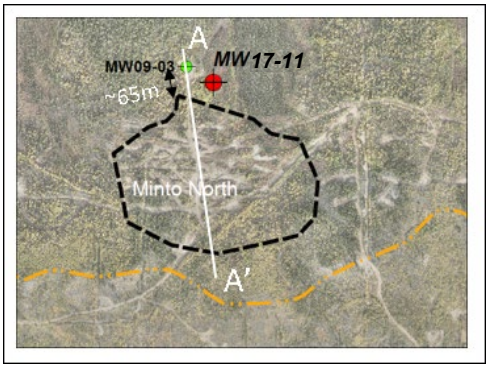
Location	Month	Parameter & Concentration Data		Threshold Exceeded	Observations	Trends	Risk Narrative	Recommendation
McGinty Creek Catchment								
MW09-03-01		As-D	mg/L		**Water Level (Figure A-1): Water levels in MW09-03 Zone 1 and Zone 2 started declining when mining started in Minto North. Declining trend decreased about 6 months after mining completed. Water levels remain higher than pit bottom. Water levels increased between July and September 2016 before returning to previous trend. Similar trend occurred in 2017 when water levels increased between April and September, declined until May 2018 and increased again until September. Water levels increased in Q3 2020, consistent with previous seasonal trends. Peak water levels in 2020 were higher than previous four years.** Minto North pit continues to act as a hydraulic sink, and has lowered groundwater levels. Water levels at MW09-03 suggest the presence of a groundwater divide somewhere north of the pit. Seasonal fluctuations indicate some influence from recharge. Loading to McGinty Creek could only occur from haul road material along the pit perimeter **Water Quality (Figure A-2):** Seasonal variations appear to be present, with highest values occurring in Q2 or Q3 (with the exception of outliers). Values during Q2 are in the range of historic data very near SPT 2. As-D values for MN-4.5 in McGinty Creek have been stable in the historic range.	While data from late summer 2015 to August 2017 showed signs of an increasing trend, values exhibit significant variability throughout the year. Peak values during Q2 and Q3 suggest a seasonal trend related to freshet may be present. Elevated values are isolated to October 2018, September 2019 and June 2020 and appear to be outliers. Concentrations from 2016 to 2018 showed potential seasonal variability, becoming relatively stable in 2019. Concentrations from 2016 thru 2020 remained relatively steady.	Lack of any clear upwards trend in McGinty Creek, as measured at MN-4.5, suggests currently no impact. Minto North represents only 0.4% of the McGinty Creek total watershed. Assuming that groundwater flows are proportional to surface water flows (load can only be coming from haul road, not pit leakage) groundwater concentrations would need to be at least 10x higher to result in MN-4.5 As concentrations reaching MN-4.5 SPT1.	Limited action at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road. Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
Figure A-1, A-2	April	2021-04-24	0.00089	0.00081 (SPT 2)				
	May	2021-05-12	0.00093	0.00081 (SPT 2)				
	June	2021-06-13	0.00093	0.00081 (SPT 2)				
MW09-03-01		Cd-D	mg/L		**Water Level (Figure A-1):** see previous section. Water Quality (Figure A-2): Concentrations beginning in 2019 have been more sporadic than the past, with the highest concentration measured in September 2020. Sampling events sporadically exceed thresholds, with the most recent measurement well below and in the range of baseline concentrations. Cd-D values have been stable in the historic range for MN-4.5 in McGinty Creek.	Highest concentrations measured to date have been in Q3 of 2020, but are not increasing consistently year-over-year, and show potential seasonal variability. While there is no consistent increasing trend, and variability is high, annual averages increased between 2016 and 2019.	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5, suggests no current impact to surface water. Load study done as part of the 2019 annual groundwater review indicates concentrations need to be at least an order of magnitude higher for threshold exceedances to occur at MN-4.5.	Limited action at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road. Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
Figure A-1, A-2	April	2021-04-24	0.000187	0.000031 (SPT 1)				
	May	2021-05-12	0.0000574	0.000031 (SPT 1)				
	June	2021-06-13	--	--				
MW09-03-01		Se-D	mg/L		**Water Level (Figure A-1):** see previous section. **Water Quality (Figure A-2):** Concentrations have high seasonal variability with the majority of values below the threshold and in the range of baseline conditions. Se-D values have been stable in the historic range for MN-4.5 in McGinty Creek.	There is no increasing trend in Se-D values. Exceedances are isolated and measurements have seasonal variability throughout each year. The majority of data are in the range of baseline conditions.	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5, suggests no current impact to surface water.	Limited action at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road. Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
Figure A-1, A-3	April	2021-04-24	--	--				
	May	2021-05-12	0.000139	0.0001 (SPT 1)				
	June	2021-06-13	--	--				
MW09-03-01		Zn-D	mg/L		**Water Level (Figure A-1):** see previous section. **Water Quality (Figure A-4):** Increased variability in measurements starting in August 2015. Majority of the data are below SPT 2 and seasonality appears to be present. Zn-D values have been stable in the historic range for MN-4.5 in McGinty Creek.	Concentrations are consistent with previous observations and while there is high variability seasonally throughout each year no increasing trend is present. Peak concentrations during late Q1 and early Q2 suggest a seasonal trend related to freshet may be present.	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5, suggests no current impact to surface water. Groundwater flux in this zone expected to be low based on low K. Load study done as part of the 2019 annual groundwater review indicates concentrations need to be at least an order of magnitude higher for threshold exceedances to occur at MN-4.5.	Limited action at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road. Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
Figure A-1, A-3	April	2021-04-24	0.0958	0.013 (SPT 1)				
	May	2021-05-12	0.033	0.013 (SPT 1)				
	June	2021-06-13	0.0801	0.013 (SPT 1)				
MW09-03-02		Cd-D	mg/L		**Water Level (Figure A-1):** see previous section. **Water Quality (Figure A-2):** Concentrations beginning in 2019 have been more sporadic than the past, with the highest concentration measured in September 2019. While most recent data points exceed thresholds, concentrations are lower in the last year as compared to previous years. Cd-D values have been stable in the historic range for MN-4.5 in McGinty Creek.	Highest concentrations measured to date have been in Q3 of 2019, but are not increasing consistently year-over-year, and show potential seasonal variability. While there is no consistent increasing trend, and variability is high, annual averages increased between 2016 and 2019 but have since seemed to decrease.	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5, suggests no current impact to surface water. Load study done as part of the 2019 annual groundwater review indicates concentrations need to be at least an order of magnitude higher for threshold exceedances to occur at MN-4.5.	Limited action at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road. Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
Figure A-1, A-2	April	2021-04-24	0.0000913	0.000031 (SPT 1)				
	May	2021-05-12	0.000429	0.000031 (SPT 1)				
	June	2021-06-13	--	--				
MW09-03-02		Zn-D	mg/L		**Water Level (Figure A-1):** see previous section. **Water Quality (Figure A-4):** Increased variability in measurements starting in August 2015. Concentrations in Q4 are lower than Q1 and the 2020 average value is lower than the previous two years. Values in Q2 2021 are in the range of observed values from the previous years. Zn-D values have been stable in the historic range for MN-4.5 in McGinty Creek.	Concentrations in Q2 are all above SPT 2 but on average but with no increasing trend over time. Peak concentrations during late Q1 and early Q2 suggest a seasonal trend related to freshet may be present.	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5, suggests no current impact to surface water. Groundwater flux in this zone expected to be low based on low K. Load study done as part of the 2019 annual groundwater review indicates concentrations need to be at least an order of magnitude higher for threshold exceedances to occur at MN-4.5.	Limited action at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road. Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
Figure A-1, A-3	April	2021-04-24	0.0528	0.015 (SPT 2)				
	May	2021-05-12	0.0408	0.015 (SPT 2)				
	June	2021-06-13	0.0428	0.015 (SPT 2)				
MW09-03-02		NO_3-D	mg/L		**Water Level (Figure A-1):** see previous section. Water Quality (Figure A-5): Overall increasing trend is present beginning in 2017. Variability increased drastically in Q3 2019 with sporadic elevated concentrations occuring outside the historic trend. While the May 2021 sampling event was the highest recorded, subseqent monitoring events were lower. NO_3-D values have been stable in the historic range for MN-4.5 in McGinty Creek.	Clear upward trend from May 2015-December 2020. Higher variability beginning in 2018, with highest value recorded occurring in May 2021. Overall trend is increasing.	McGinty Creek, as observed at MN-4.5, does not show increasing or decreasing trends similar to MW09-03-02. Considering the small catchment area for MW09-03-02, even if the well is affected by local recharge, potential loading to McGinty Creek via this groundwater is potentially low. Nitrate is expected to flush from the haul road construction material over time and not increase continuously.	Limited action at this time. Continue monitoring as per routine schedule, continue to look for opportunities to collect samples from surface seeps emanating from haul road and continue to compare data from MW09-03-02 and MN-4.5 to confirm low nitrate concentrations persist in McGinty Creek. Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
Figure A-1, A-4	April	2021-04-24	9.31	0.07 (SPT 2)				
	May	2021-05-12	19.6	0.07 (SPT 2)				
	June	2021-06-13	5.93	0.07 (SPT 2)				

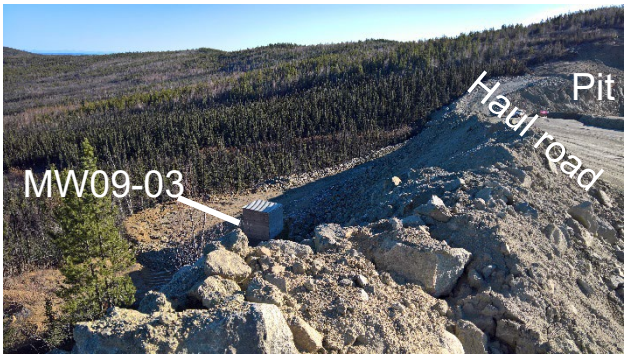
Table 1. Summary of Groundwater Quality Data, AMP Thresholds, Observations and Recommendations

Location	Month	Parameter & Concentration Data		Threshold Exceeded	Observations	Trends	Risk Narrative	Recommendation
Minto Creek Catchment								
MW12-05-01		SO_4^{2-}-D	mg/L		**Water Level (Figure B-1): Water levels show increasing trends in the fall to late winter seasons, followed by a decrease throughout the summer. These trends have occurred for four consecutive years and are likely due to a seasonal fluctuation. Overall vertical gradient remains downward.**	Previously observed upwards trend shows signs of stabilization after August 2017 with a slight increase again since Q4 2018. Concentrations have been consistent throughout 2020, suggesting concentrations are continuing to stabilize.	Minto Creek, as observed at W3 and MC1, do not show any upwards trend similar to MW12-05.	No further action at this time.
Figure B-1, B-2	April	N/A	N/A	N/A				
	May	N/A	N/A	N/A				Continue monitoring as per routine schedule.
	June	2021-06-06	1400	1000 (SPT 2)			Downwards gradient in MW12-05 and low flux (low hydraulic conductivity) suggest groundwater discharge not currently reaching creek or groundwater load small compared to surface water load.	Continue investigation into sulphate source and causes.
					Water Quality (Figure B-1): Concentrations linearly increased until August 2017, stabilizing between 1200 and 1500 mg/L beginning in 2018.	No upwards trend observed in Minto Creek. Seasonal variation evident at W8A, but much lower concentration than, and not considered likely to be connected to groundwater at MW12-05 as high concentrations at MW12-05 are at significant depth while W8A was a shallow DSTF monitoring point.		
					SO_4^{2-}-D values have been stable in the historic range at W3 and MC1 in Minto Creek.			
MW12-05-02		Cr-D	mg/L		**Water Level (Figure B-1): s**ee previous section.	Concentrations have been variablity in the past but no consistent increasing or decreasing trend is present. The most recent value is within the range of baseline conditions.	Minto Creek, as observed at W3 and MC1 so increased variability but no consistent upwards trend.	No further action at this time.
Figure B-1	April	N/A	N/A	N/A				
	May	N/A	N/A	N/A	**Water Quality (Figure B-1):** Chromium has consistently been below threholds in MW12-05 with isolated exceedances to SPT 1. While the Q2 concentration increased from the last monitoring event, it is within the range of baseline conditions and no increasing trend is present. Concentrations are still well below SPT 2.			Continue monitoring as per routine schedule.
	June	2021-06-06	0.001	0.25 (SPT 1)			Downwards gradient in MW12-05 and low flux (low hydraulic conductivity) suggest groundwater discharge not currently reaching creek or groundwater load small compared to surface water load.	
					Cr-D values are in the historic range at W3 and MC1 in Minto Creek. Some values in Q2 and Q3 2020 were elevated above groundwater concentrations, which is therefore not likely the source.	Increased variability in Minto Creek at MC1 and W3 has been present in 2020, but values at MC1 exceed those in groundwater, which is therefore not likely the cause of the observed variability.		
MW12-05-02		SO_4^{2-}-D	mg/L		**Water Level (Figure B-1): s**ee previous section.	Previously observed upwards trend shows signs of stabilization after August 2017 with higher varibaility since Q1 2018. One value from Q4 2019 was considerably higher (2400 mg/L) but has not occurred since, suggesting it was an outlier.	Minto Creek, as observed at W3 and MC1, do not show any upwards trend similar to MW12-05.	No further action at this time.
Figure B-1, B-2	April	N/A	N/A	N/A				
	May	N/A	N/A	N/A	**Water Quality (Figure B-1):** Concentrations linearly increased until August 2017, and have since stabilized around 1200 mg/L.			Continue monitoring as per routine schedule.
	June	2021-06-06	1260	1000 (SPT 2)			Downwards gradient in MW12-05 and low flux (low hydraulic conductivity) suggest groundwater discharge not currently reaching creek or groundwater load small compared to surface water load.	Continue investigation into sulphate source and causes.
						No upwards trend observed in Minto Creek. Seasonal variation evident at W8A, but not likely connected to groundwater at MW12-05.		
					SO_4^{2-}-D values have been stable in the historic range at W3 and MC1 in Minto Creek.			
MW12-05-03		SO_4^{2-}-D	mg/L		**Water Level (Figure B-1): s**ee previous section.	Previously observed upwards trend shows signs of stabilization after August 2017 with higher varibaility since Q1 2018. Seasonal trend may be present with highest concentrations in Q3 and Q4.	Minto Creek, as observed at W3 and MC1, do not show any upwards trend similar to MW12-05.	No further action at this time.
Figure B-1, B-2	April	N/A	N/A	N/A				
	May	N/A	N/A	N/A	**Water Quality (Figure B-1):** Concentrations linearly increased until August 2017, and have since stabilized around 700 mg/L. While the Q2 concentration increased from the previous monitoring event, it is still within the range of previously observed data.			Continue monitoring as per routine schedule.
	June	2021-06-06	863	1.0 (SPT 1)			Downwards gradient in MW12-05 and low flux (low hydraulic conductivity) suggest groundwater discharge not currently reaching creek or groundwater load small compared to surface water load.	Continue investigation into sulphate source and causes.
						No upwards trend observed in Minto Creek. Seasonal variation evident at W8A, but not likely connected to groundwater at MW12-05.		
					SO_4^{2-}-D values have been stable in the historic range at W3 and MC1 in Minto Creek.			
MW12-06-01		SO_4^{2-}-D	mg/L		**Water Level (Figure C-1):**Water Level (Figure C-1): Water level data show overall decreasing trend since March 2014. Deepest zone (1) shows steeper decrease in water level between November 2017 and March 2018. This drop is consistent with a decrease in water level in MW12-07 which coincides with development of the Minto East underground. Water level in the deepest zone, MW12-06-01, decreased between Q2 and Q4 2019 but instreased again in Q1 2020. Complex multi-directional gradient is present.	Concentrations were stable until Q2 2020 when they began to increase at a high rate. The increase is steady, although still at concentrations below SPT 2.	No exceedances to SPT 2 have been observed yet, but the rate of increase will need to be monitored.	No further action at this time.
Figure C-1, C-3	April	N/A	N/A					
	May	2021-05-29	612	0.374 (SPT 1)				Continue monitoring as per routine schedule.
	June	N/A	N/A					
					Water Quality (Figure B-1): Sulphate concentrations have been increasing in the deepest zone of MW12-06 since Q3 2020. Increases have been significant, but are still below SPT 2.			
					SO4-D values have been stable in the historic range at W3 and MC1 in Minto Creek.			
MW12-06-03		Se-D	mg/L		**Water Level (Figure C-1):** see previous section.	Concentrations have been stable at low concentrations with only isolated exceedances to SPT 1. No increasing trend is present.	Exceedances are isolated, concentrations are wel below SPT 2 and no impacts are observed at monitoring stations in Minto Creek.	No further action at this time.
Figure C-1, C-3	April	N/A	N/A					
	May	2021-05-29	0.00314	1.058 (SPT 1)	**Water Quality (Figure B-1):** Concentrations have consistently been below thresholds in the past with only isolated exceedances to SPT 1. No increasing trend is present and values are below SPT 2.			Continue monitoring as per routine schedule.
	June	N/A	N/A					
					Se-D values have been stable in the historic range at W3 and MC1 in Minto Creek.			
MW12-06-06		Zn-D	mg/L		**Water Level (Figure C-1):** see previous section.	Concentrations have been stable at low concentrations with only isolated exceedances to SPT 1 and the current exceedance to SPT 3. No increasing trend is present.	Exceedances are isolated and no impacts are observed at monitoring stations in Minto Creek.	No further action at this time.
Figure C-1, C-2	April	N/A	N/A					
	May	2021-05-29	0.189	0.13 (SPT 3)	**Water Quality (Figure B-1):** Concentrations have consistently been below thresholds in the past with only isolated exceedances to SPT 1. The most recent value exceeds SPT 3, but may be an outlier. More data are required to confirm.			Continue monitoring as per routine schedule.
	June	N/A	N/A					
					Zn-D values have been stable in the historic range at W3 and MC1 in Minto Creek.			

Notes:
'N/A' indicates no sample was taken for that month
'-' indicates value for that month did not trigger a response
Zones with no data or no exceedances: MW09-03-03 (dry), MW12-05-04, MW12-05-05, MW12-05-06, MW12-05-07, MW12-06-02, MW12-06-04, MW12-06-05

Appendix B: Figures





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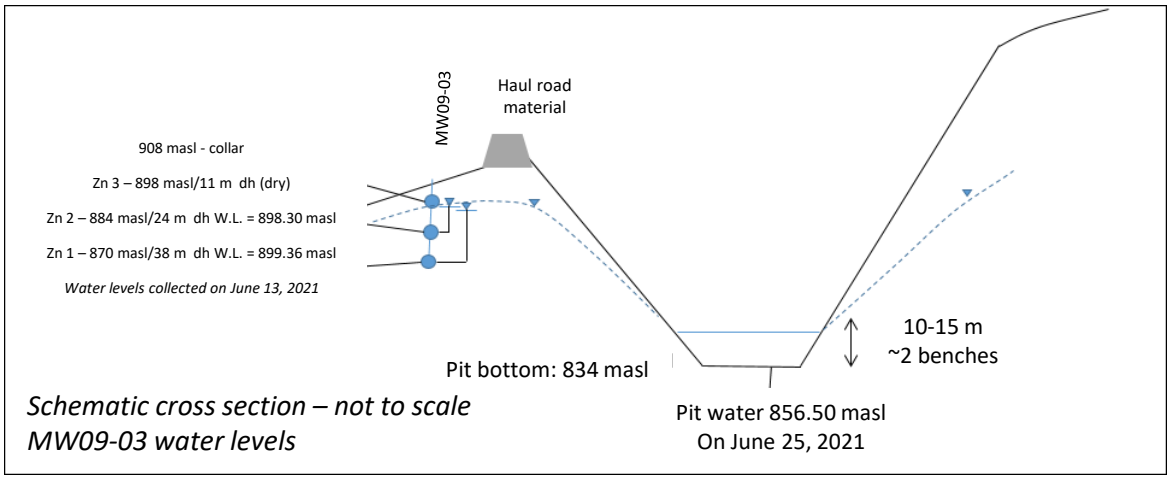
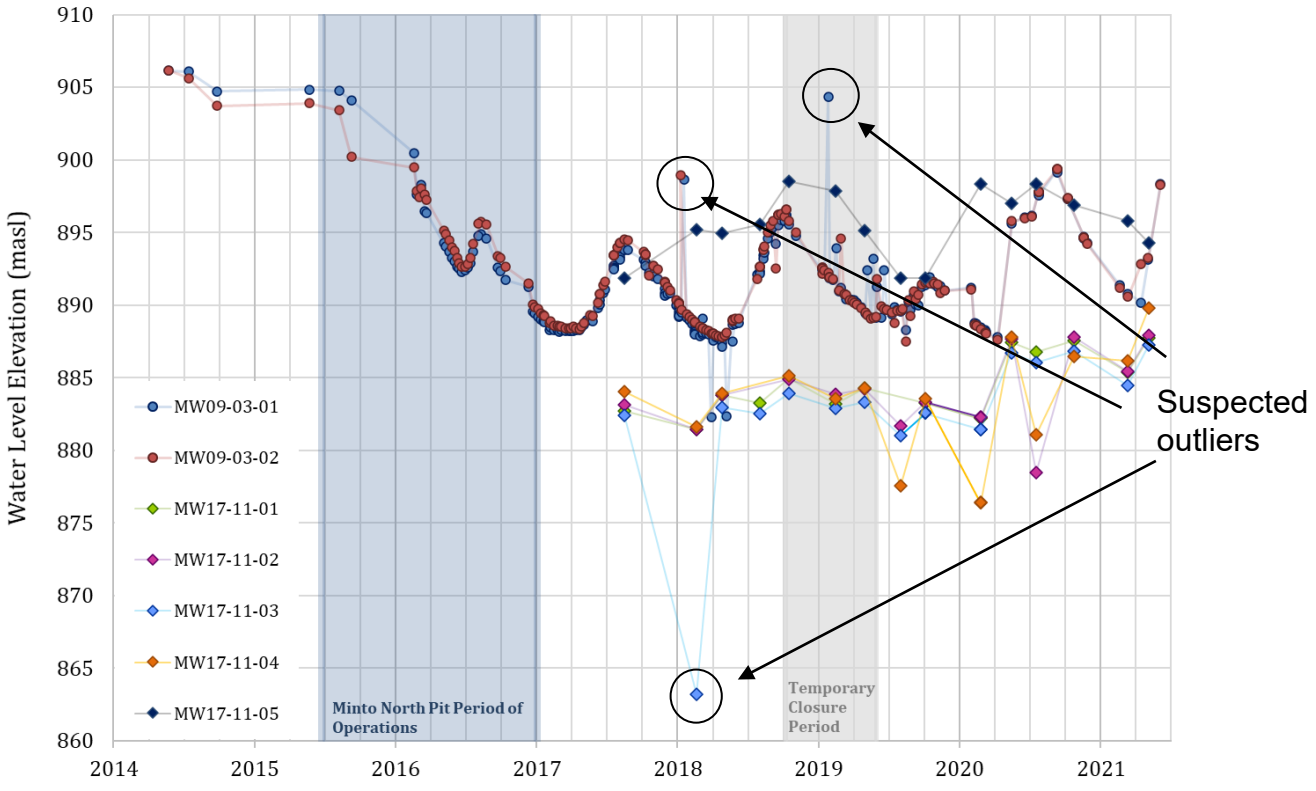


Schematic cross section – not to scale

MW09-03 water levels



https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220207_Dec_Q4_AMP_Review/02_Analysis%26Charts/Minto_AMPResponse_2021GWData_2012-2021/Minto_AMPResponse-2021Q2_GWData_2012-2021_MSi.xlsx?d=w10c1030e02e34b989f67a09cd6611a21&csf=1&web=1&e=bOC9zq

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MINTO METALS

Minto Mine Adaptive Management

Minto North Pit: Physical setting and water levels

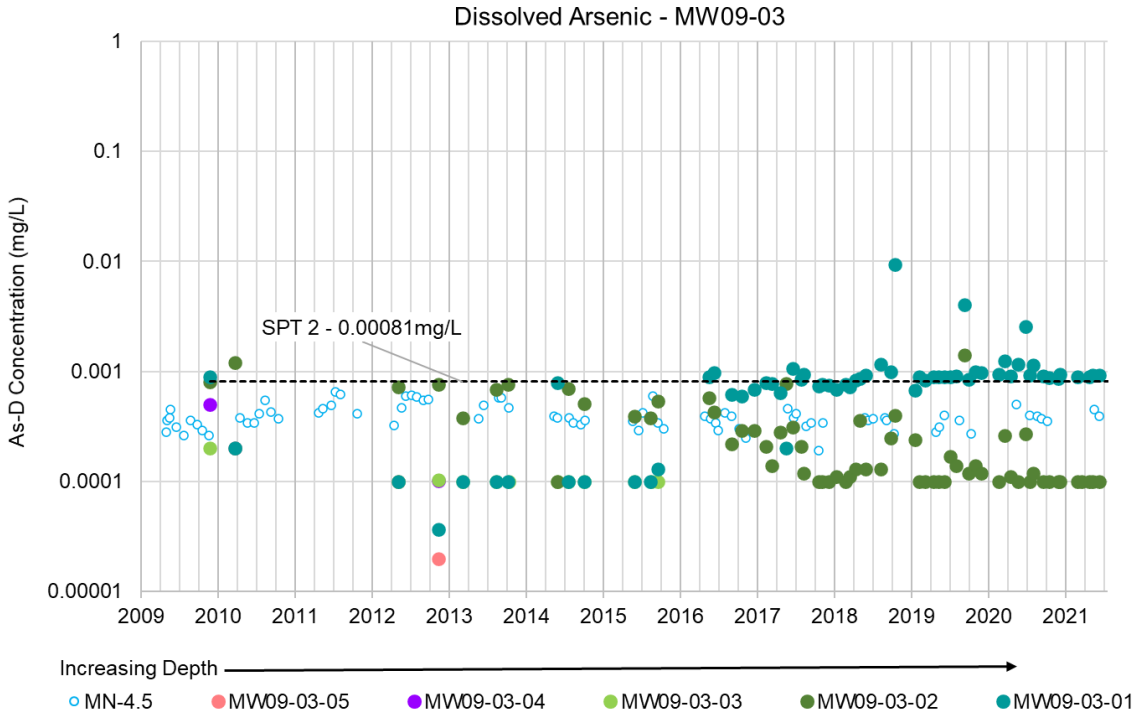
Job No: 1CM002.055
Filename: 1CM002-055_2021Q2_GWAMP_Response_Figures.pptx

Minto Mine

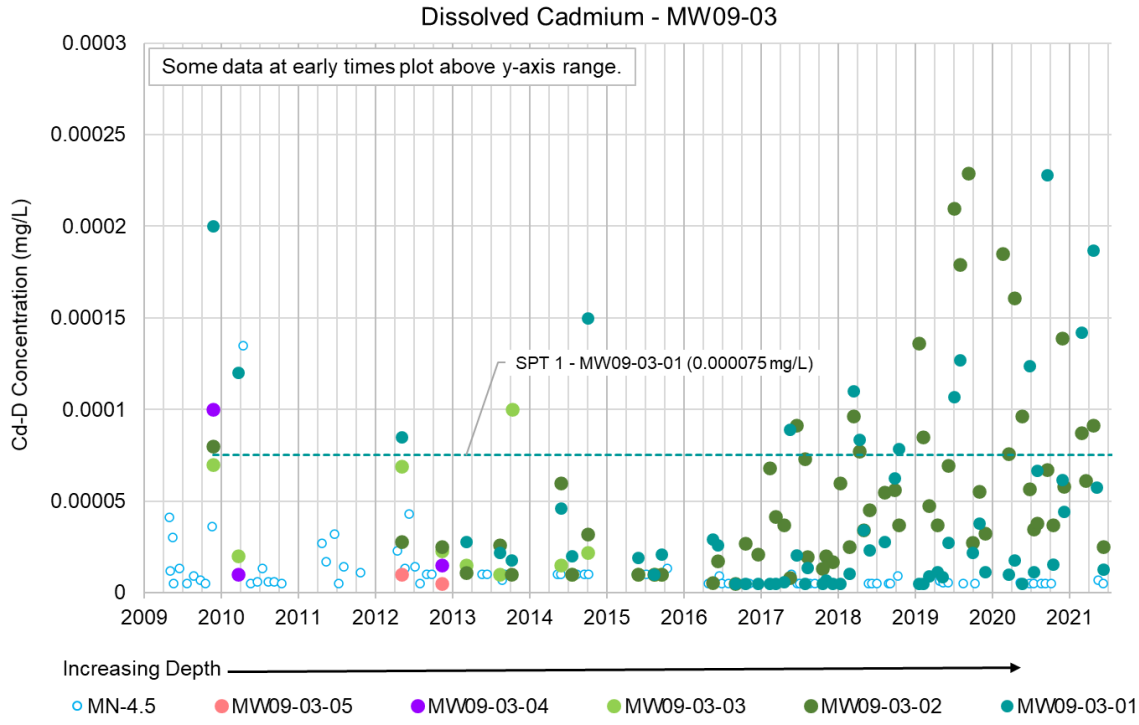
Date: April 2022

Approved: MSi

Figure: **A-1**



MW09-03-01 was the only sampling point to trigger a response
Only SPTs exceeded in Q2 of 2021 shown on graph (applies to MW09-03-01 only)
MN-4.5 is a SW monitoring point in McGinty Creek



MW09-03-01 and MW09-03-02 were the only sampling points to trigger a response
Only SPTs exceeded in Q2 of 2021 shown on graph (applies to MW09-03-01/02 only)
MN-4.5 is a SW monitoring point in McGinty Creek

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220207_Dec_Q4_AMP_Review/02_Analysis%26Charts/Minto_AMPResponse_2021McGintyCreek/Minto_AMPResponse-2021Q2_McGintyCreekGW_MSi.xlsx?d=w6826746a3a4e447f39d0257487822c984e&csf=1&web=1&e=BmFu6U

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MINTO METALS

Minto Mine Adaptive Management

MW09-03
As-D and Cd-D SPT Exceedances

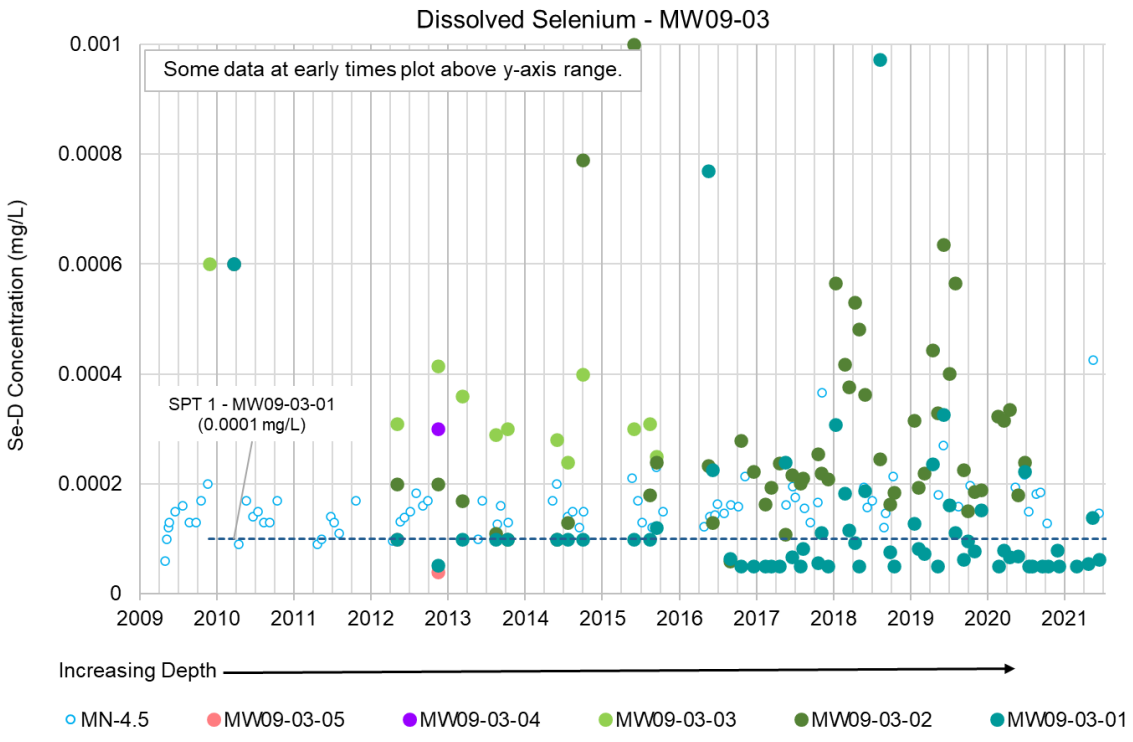
Job No: 1CM002.055
Filename: 1CM002-055_2021Q2_GWAMP_Response_Figures.pptx

Minto Mine

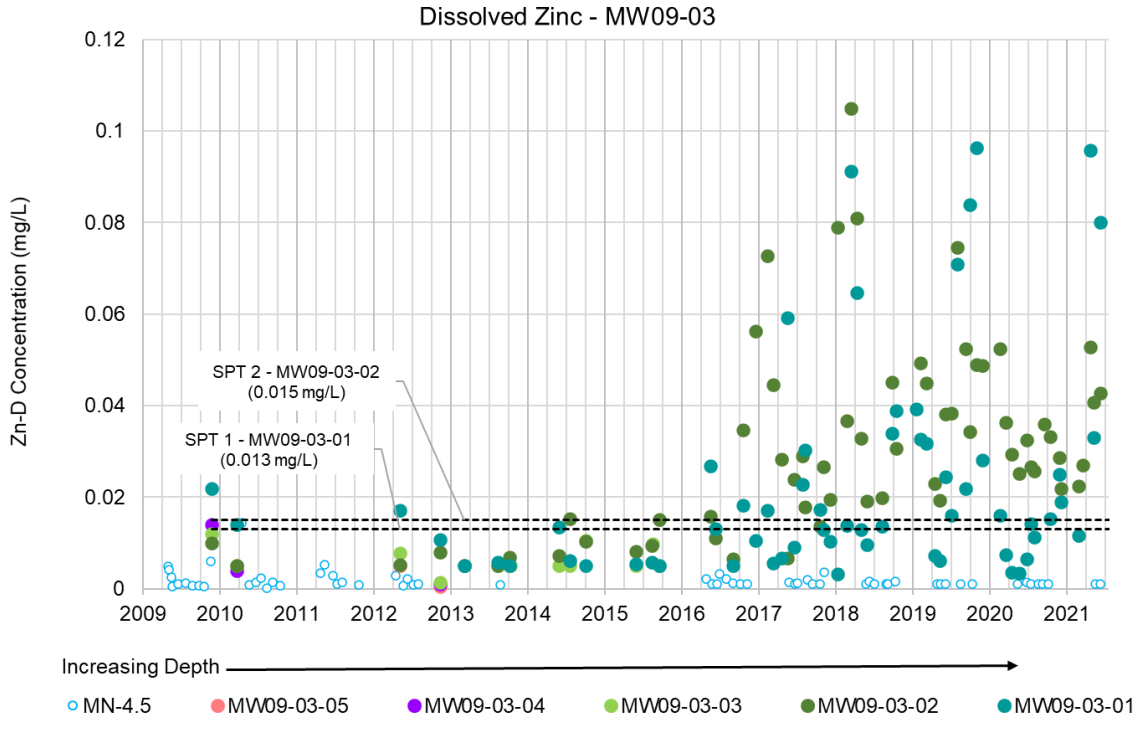
Date: April 2022

Approved: MSi

Figure: A-2



MW09-03-01 wasthe only sampling point to trigger a response
Only SPTs exceeded in Q2 of 2021 shown on graph (applies to MW09-03-01 only)
MN-4.5 is a SW monitoring point in McGinty Creek



MW09-03-01 and MW09-03-02 were the only sampling points to trigger a response
Only SPTs exceeded in Q2 of 2021 shown on graph (applies to MW09-03-01/MW09-03-02 only)
MN-4.5 is a SW monitoring point in McGinty Creek

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220207_Dec_Q4_AMP_Review/02_Analysis%26Charts/Minto_AMPResponse_2021McGintyCreek/Minto_AMPResponse-2021Q2_McGintyCreekGW_MSi.xlsx?d=w6826746a3a4e47f39d025748782c984e&csf=1&web=1&e=BmFu6U

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MINTO METALS

Minto Mine Adaptive Management

MW09-03
Se-D and Zn-D SPT Exceedances

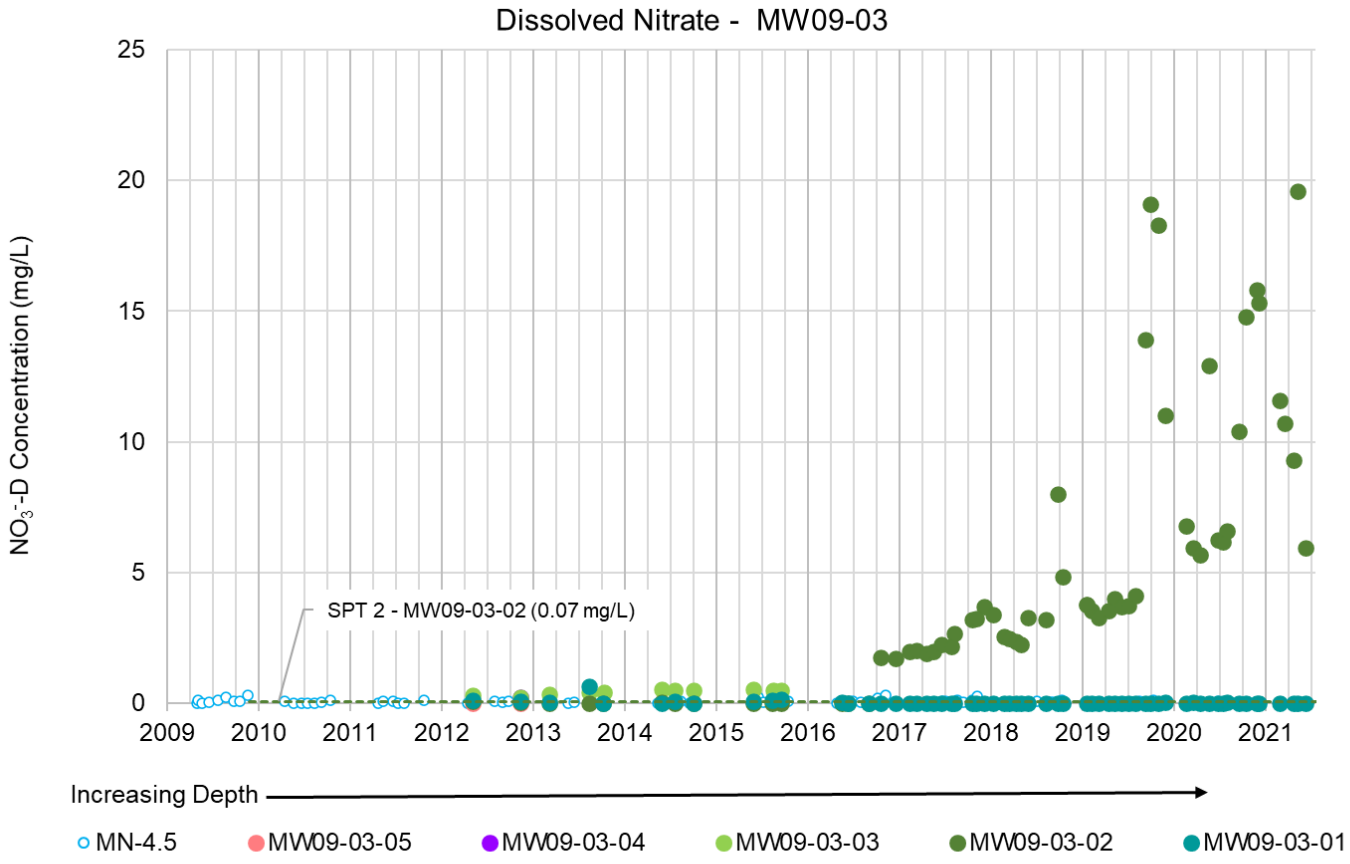
Job No: 1CM002.055
Filename: 1CM002-055_2021Q2_GWAMP_Response_Figures.pptx

Minto Mine

Date: April 2022

Approved: MSi

Figure: A-3



MW09-03-02 was the only sampling point to trigger a response
Only SPTs exceeded in Q2 of 2021 shown on graph (applies to MW09-03-02 only)
MN-4.5 is a SW monitoring point in McGinty Creek

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220207_Dec_Q4_AMP_Review/02_Analysis%26Charts/Minto_AMPResponse_2021McGintyCreek/Minto_AMPResponse_2021Q2_McGintyCreekGW_MSi.xlsx?d=w6826746a3a4e447f39d025748782c984e&csf=1&web=1&e=BmFu6U

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MINTO METALS

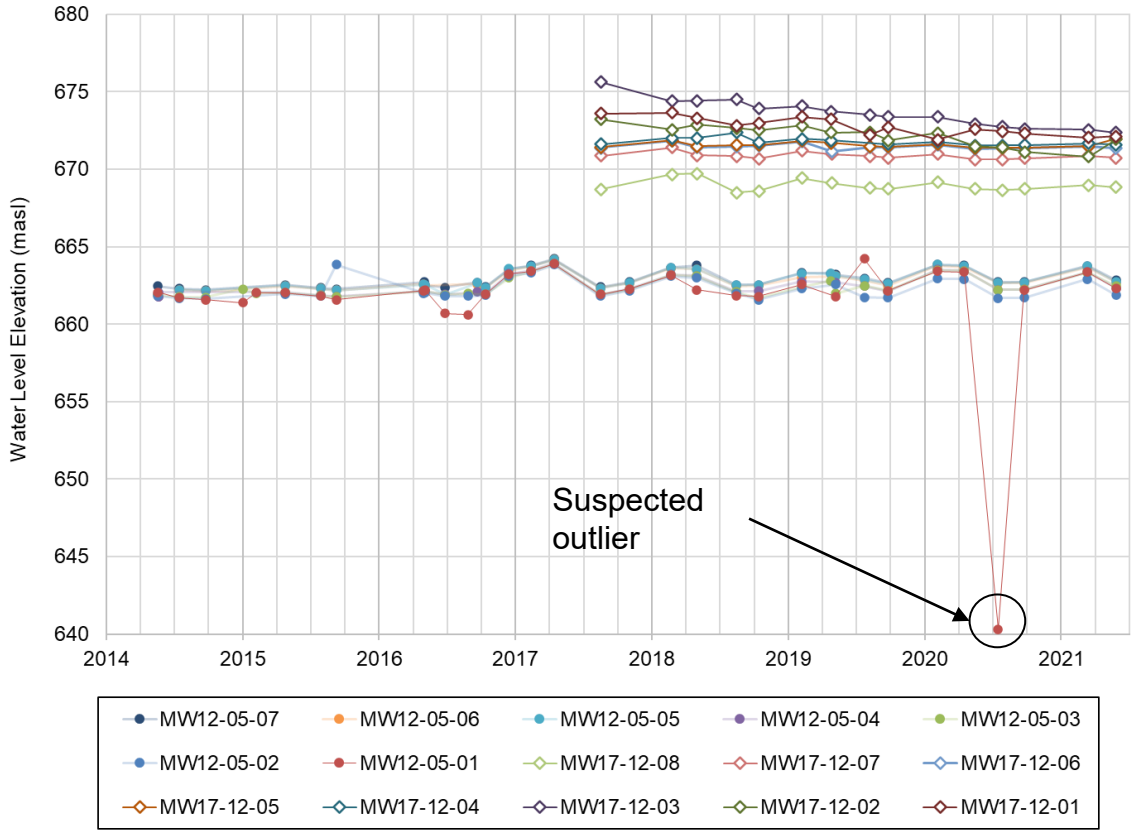
Minto Mine Adaptive Management

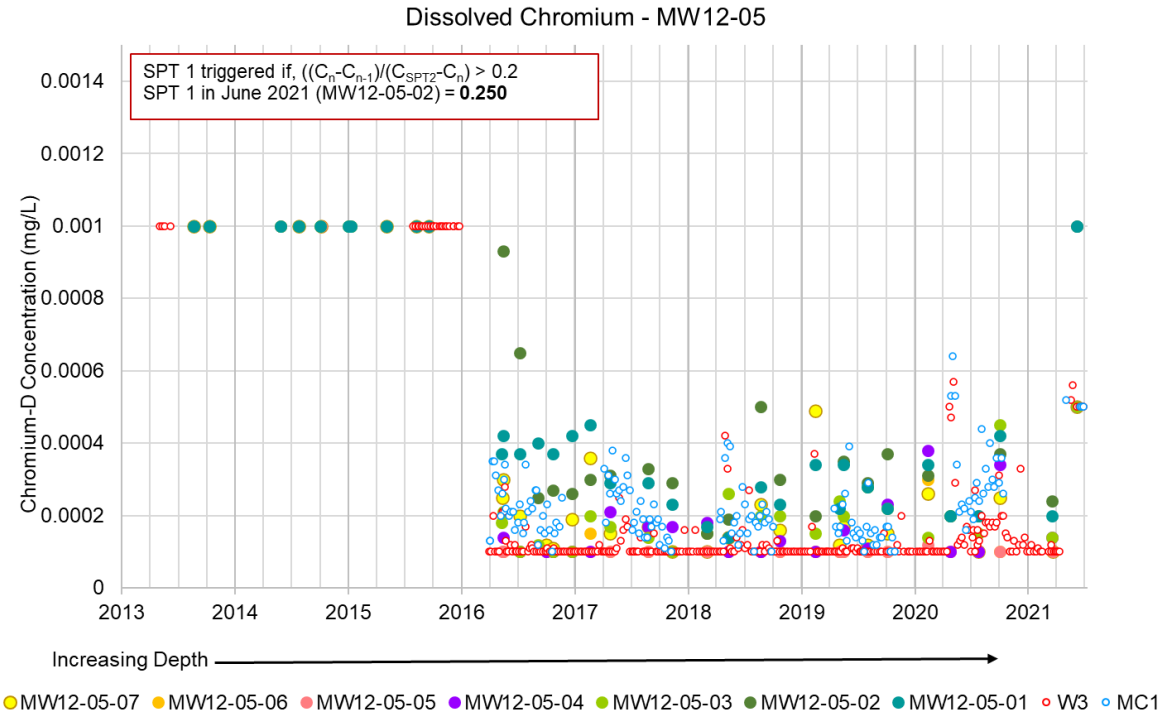
MW09-03
NO3- SPT Exceedances

Job No: 1CM002.055
Filename: 1CM002-055_2021Q2_GWAMP_Response_Figures.pptx

Minto Mine

Date:	Approved:	Figure:
April 2022	MSi	A-4





MW12-05-02 was the only sampling point to trigger a response
Only SPTs exceeded in Q2 of 2021 shown in graph (applies to MW12-05-01, MW12-05-02, MW12-05-04 only)
WC and MC1 are SW monitoring points in Minto Creek

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220207_Dec_Q4_AMP_Review/02_Analysis%26Charts/Minto_AMPResponse_2021GWData_2012-2021/Minto_AMPResponse-2021Q2_GWData_2012-2021_MSi.xlsx?d=w10c1030e02e34b9899f67a09cd66111a21&csf=1&web=1&e=bOC9zq

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220207_Dec_Q4_AMP_Review/02_Analysis%26Charts/Minto_AMPResponse_2021MintoCreek/Minto_AMPResponse_2021Q2_MintoCreekGW_MSi.xlsx?d=wf291037690 9b43e4bd92d0876426a28c&csf=1&web=1&e=7jt0hv

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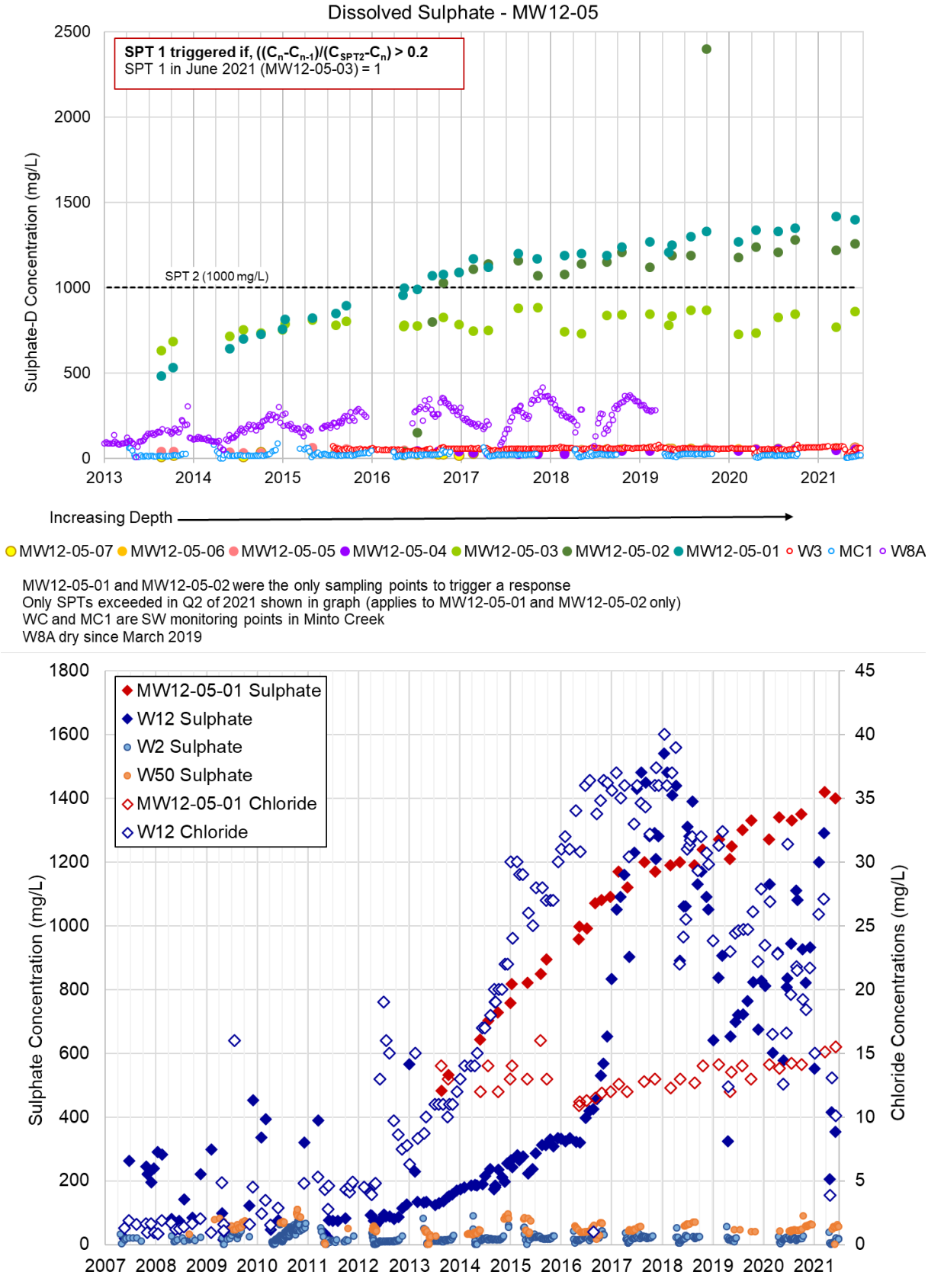
MINTO METALS

Minto Mine Adaptive Management

MW12-05 Water Level Data & Cr-D SPT Exceedances

Job No: 1CM002.055 Filename: 1CM002-055_2021Q2_GWAMP_Response_Figures.pptx	Minto Mine	Date: April 2022	Approved: MSi	Figure: **B-1**



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MINTO METALS

Minto Mine Adaptive Management

MW12-05 & MW12-05-01/W12 (Main Pit)
SO_4^{2-}-D and Cl-D Concentrations

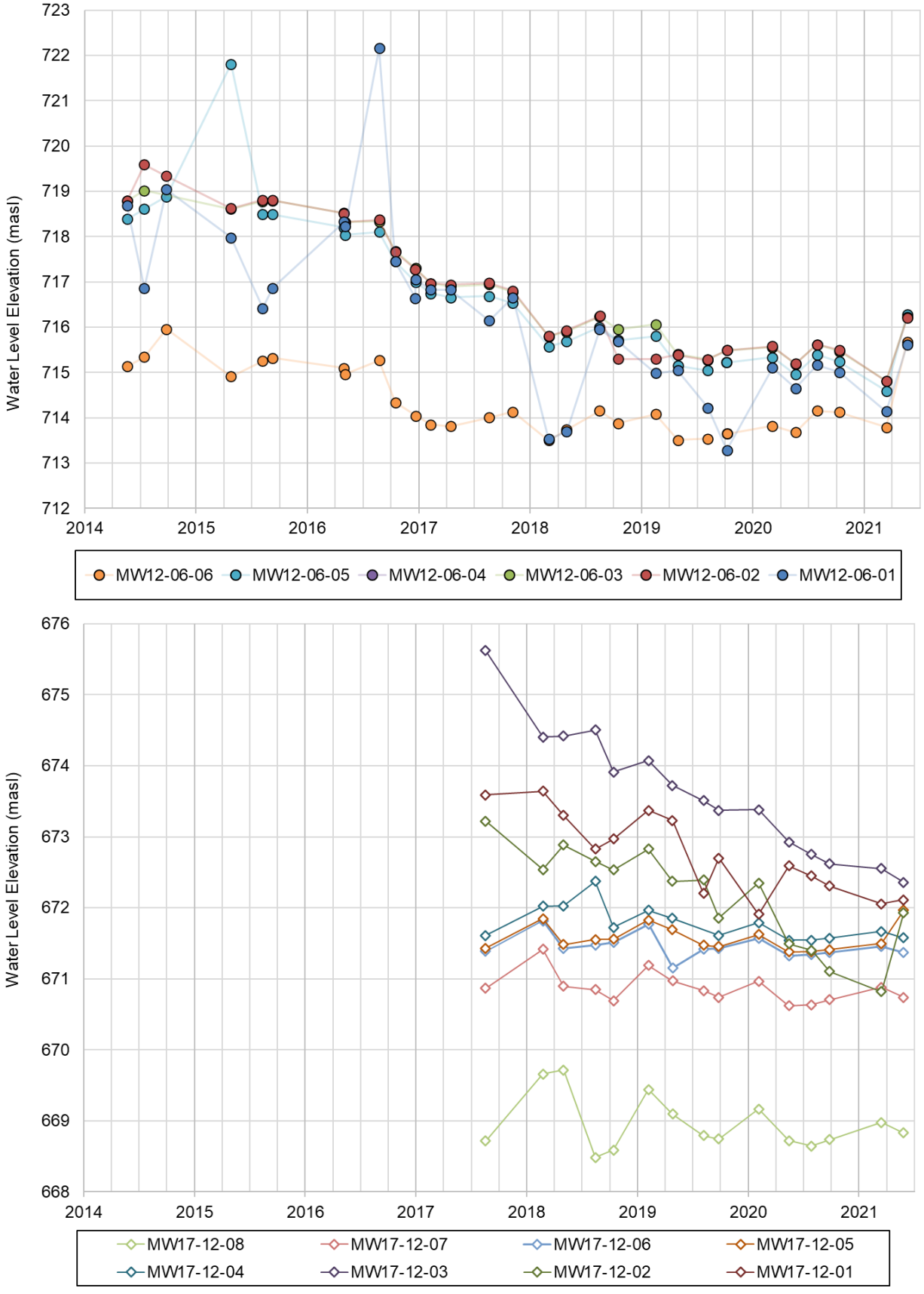
Job No: 1CM002.055
Filename: 1CM002-055_2021Q2_GWAMP_Response_Figures.pptx

Minto Mine

Date: April 2022

Approved: MSi

Figure: B-2



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Job No: 1CM002.055
Filename: 1CM002-055_2021Q2_GWAMP_Response_Figures.pptx

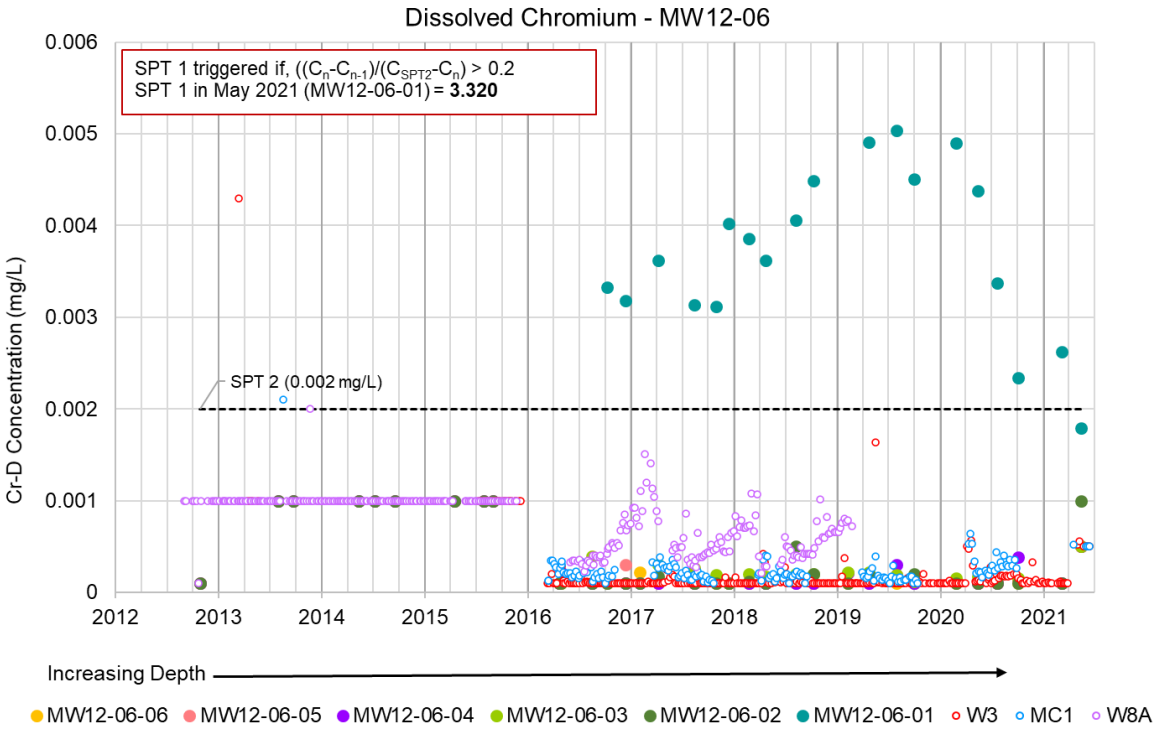
MINTO METALS

Minto Mine

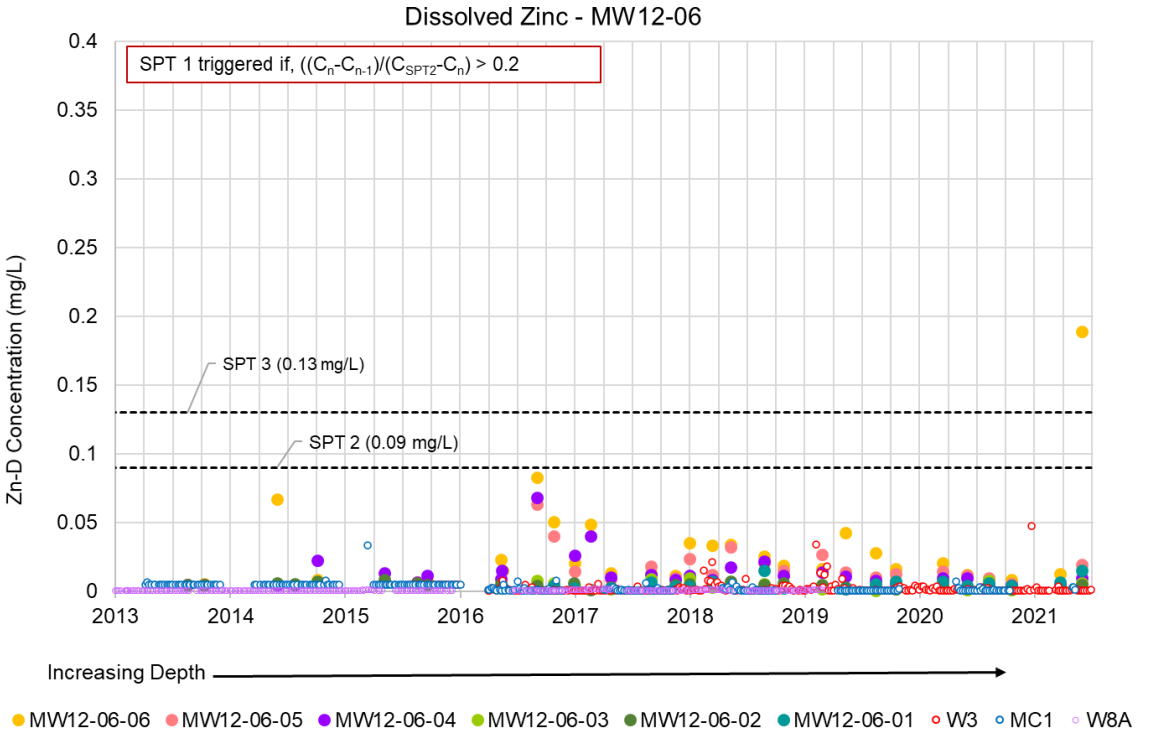
Minto Mine Adaptive Management

MW12-06 and MW17-12 Water Level Data

Date:	Approved:	Figure:
April 2022	MSi	C-1



MW12-06-01 was the only sampling point to trigger a response
Only SPTs exceeded in Q2 of 2021 shown in graph (applies to MW12-06-01)
WC, W8A and MC1 are SW monitoring points in Minto Creek
W8A has been dry since 2019



MW12-06-06 was the only sampling point to trigger a response
Only SPT's exceeded in Q2 of 2021 shown in graph (applies to MW12-06-06)
W3, W8A and MC1 are SW monitoring points in Minto Creek
W8A has been dry since 2019

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220207_Dec_Q4_AMP_Review/02_Analysis%26Charts/Minto_AMPResponse_2021MintoCreek/Minto_AMPResponse_2021Q2_MintoCreekGW_MSi.xlsx?d=wf2910376909b43e4bd92d0876426a28c&csf=1&web=1&e=7jt0hv

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MINTO METALS

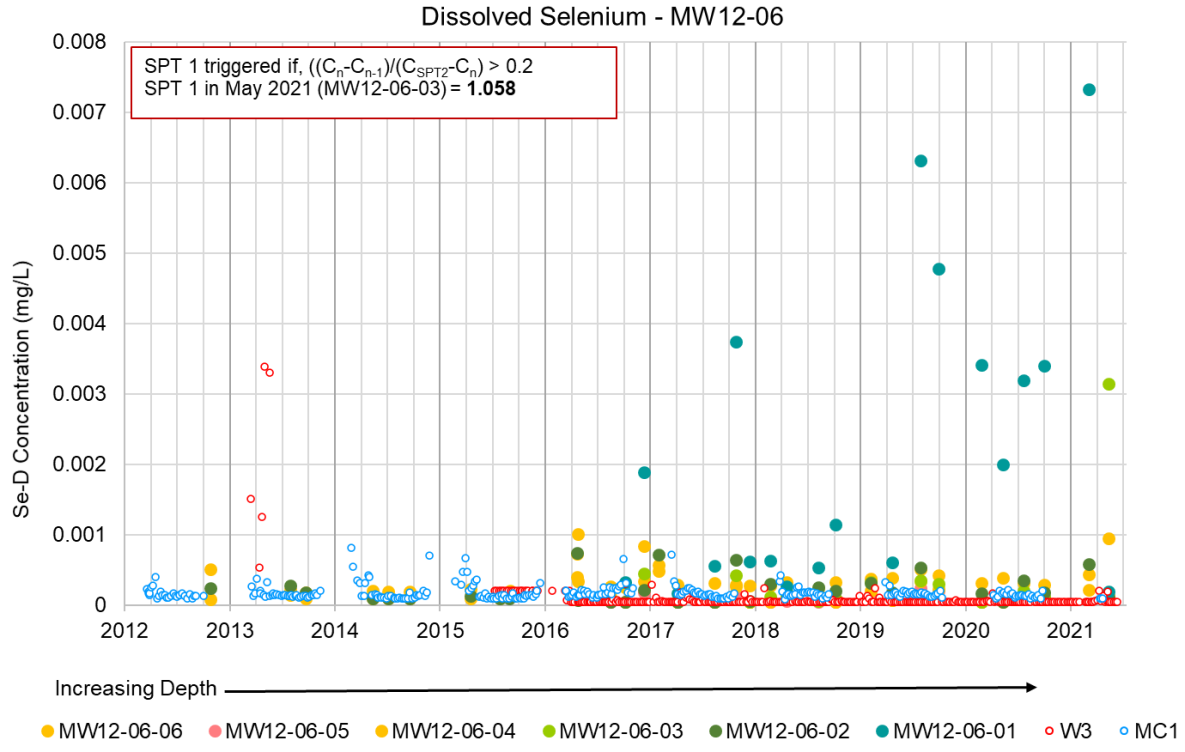
Minto Mine Adaptive Management

MW12-06 Cr-D and Zn-D
SPT Exceedances

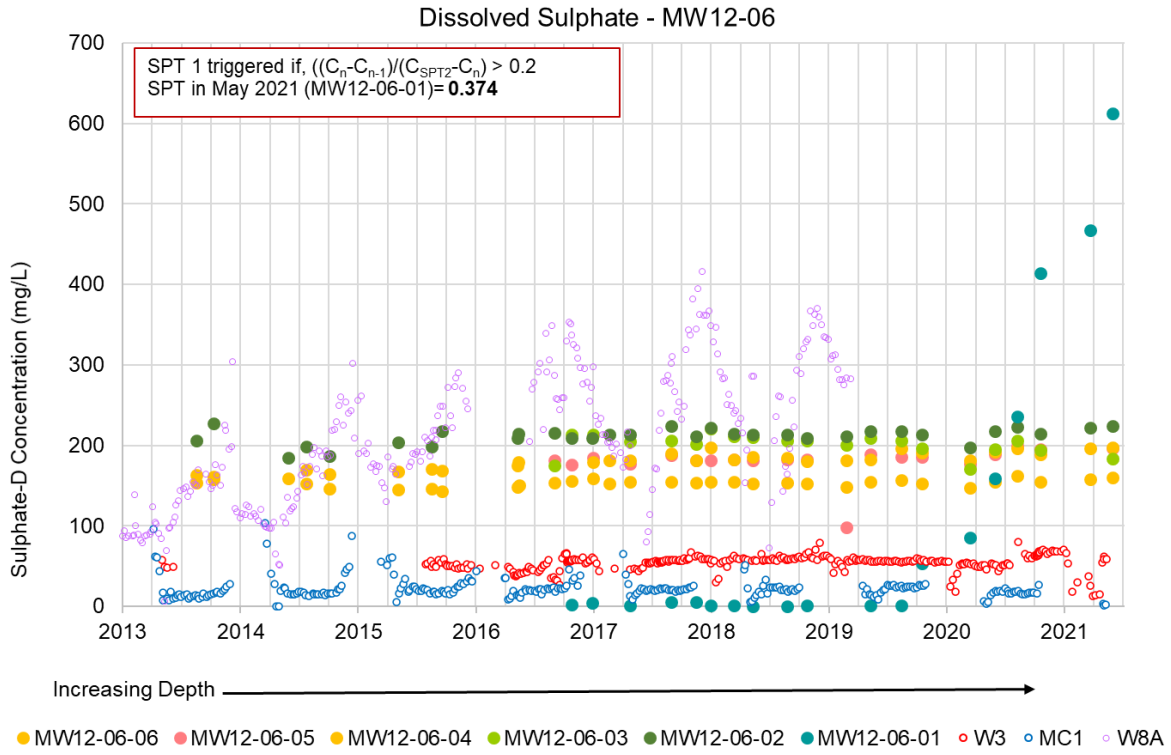
Job No: 1CM002.055
Filename: 1CM002-055_2021Q2_GWAMP_Response_Figures.pptx

Minto Mine

Date: April 2022
Approved: MSi
Figure: C-2



MW12-06-01 was the only sampling point to trigger a response
Only SPTs exceeded in Q2 of 2021 shown in graph (applies to MW12-06-03 only)
WC and MC1 are SW monitoring points in Minto Creek



MW12-06-01 was the only sampling point to trigger a response
Only SPT's exceeded in Q2 of 2021 shown in graph (applies to MW12-06-01)
W3, W8A and MC1 are SW monitoring points in Minto Creek
W8A has been dry since 2019

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220207_Dec_Q4_AMP_Review/02_Analysis%26Charts/Minto_AMPResponse_2021MintoCreek/Minto_AMPResponse_2021Q2_MintoCreekGW_MS i.xlsx?d=wf29110376909b43e4bd92d0876426a28c&csf=1&web=1&e=7jt0hv

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MINTO METALS

Minto Mine Adaptive Management

MW12-06 Se-D SPT Exceedances

Job No: 1CM002.055
Filename: 1CM002-055_2021Q2_GWAMP_Response_Figures.pptx

Minto Mine

Date: April 2022

Approved: MSi

Figure: C-3

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March 30, 2022
Project No: 1CM002.055

Minto Mine
Minto Explorations Ltd.
PO Box 11
Whitehorse, YT Y1A 5X9

Attention: Journey Paulus, Manager, Environment

Dear Journey:

Subject: 2021 Q3 (July - September) Groundwater AMP Events

The Minto Mine Operational Adaptive Management Plan was updated in 2018 for groundwater monitoring, with the review frequency for groundwater triggers changed from monthly to quarterly, at the recommendation of SRK Consulting (SRK) who is the qualified professional (QP). As per AMP2017-02, all data concerning trigger exceedances are sent to the QP within a week of discovery and included in the subsequent review.

As part of the Minto Mine Operational Adaptive Management Plan, Minto Mine has collected and reviewed groundwater quality data. Minto completed an initial review of data collected at the McGinty Creek groundwater monitoring station (MW09-03) and Minto Creek groundwater monitoring stations MW12-05 and MW12-06 for the third quarter of 2021 (July - September) and compared results to specific performance thresholds (SPT) defined in the Minto Mine Operations Adaptive Management Plan (MEL, 2017-02). McGinty Creek monitoring stations are required to be sampled monthly while the Minto Creek stations are sampled quarterly. Due to issues with sampling equipment and the presence of glycol in some sampling ports, samples were not obtained in Q3 in MW12-05-06, MW12-05-07 and MW12-06-01. For Minto Creek and McGinty Creek, MEL identified exceedances of certain thresholds for sampling rounds conducted in July, August, and September of 2021 and, as per the plan, has contracted a QP to review those data and provide recommendations. SRK Consulting (Canada) Inc. was contacted by Minto environmental staff to provide QP review. This letter presents results of that review and recommendations.

SRK compared data against the 2017-02 AMP thresholds, historical data, and data from surface water at station MN4.5 in lower McGinty Creek and surface water stations W3 and MC1 in Minto Creek. Table 1 summarizes exceedances, observations on the data, interpretation, and recommendations. Figures are included with this review to illustrate the current physical (i.e., water level) setting compared to the Minto North pit. Graphs are included for each parameter exceeding thresholds and includes the full range of data collected to date.

Key conclusions and recommendations are summarized below. Table 1 summarizes observations and recommendations for all parameters.

For MW09-03 (McGinty Creek):

- The Minto North Pit is not a source of water to the groundwater monitored at this station; water levels in the monitoring well are higher than the pit water level. Water levels in the pit have been increasing slowly but remain well below the monitoring well water levels. These data continue to show no hydraulic gradient from the pit towards the monitoring well.
- Water levels at this station have been affected by the mining of Minto North, but the groundwater divide between Minto North and McGinty Creek remains, somewhere in the vicinity of MW09-03.
- Water levels in MW17-11 are generally lower than in MW09-03, with the exception of zone 5, which is screened shallower than zones 1 and 2 in MW09-03 and has higher water levels than all other monitoring zones. Water levels in MW17-11 and MW09-03 indicate an overall downward gradient between the shallow-most zone and the remaining deeper zones. Differences in water level between deep zones are less pronounced, and a vertical gradient is not clear.
    - Recommendation: continue collecting water level/pressure profiles at this well according to the routine schedule.
- Concentrations of dissolved aluminum at MW09-03 have been generally stable and below SPT 1 since 2016. The value measured at MW09-03-02 in Q3 exceeded SPT 2 but was isolated as it was the only recorded exceedance in 2021. While variability has been present in the data, concentrations are consistently below thresholds. Concentrations in McGinty Creek at MN-4.5 are variable and often higher than groundwater concentrations with no increasing trend.
- Concentrations of dissolved silver at MW09-03 have been extremely stable below the laboratory detection limit. In Q3 2021, the laboratory had a higher detection limit (0.00002 mg/L), which exceeded STP 1. The measured concentration was still below laboratory detection. Concentrations in McGinty Creek at MN-4.5 are variable and often higher than groundwater concentrations with no increasing trend.
- Concentrations of dissolved arsenic at MW09-03-01 have consistently exceeded SPT 1 since summer of 2016, and inconsistently exceeded thresholds in MW-09-02 in the same period. High variability is observed, but relatively recent data in MW09-03-01 exceeds thresholds more frequently than in the past. Anomalous values were detected in October 2018, September 2019, and June 2020 at nearly an order of magnitude more than recent average concentrations. In between the anomalous events, concentrations decreased to the historic range, suggesting these values are outliers. High concentrations do not correlate exactly with seasonal changes in groundwater level but may indicate an influence from seasonal variation (in recharge, flow, etc.). Vertical profiles and timing of peak concentrations suggest increased loading may be occurring during low flow periods or freshet, possibly suggesting greater mobilization of trace elements when higher volumes of water could infiltrate through the unsaturated zone and mobilize trace elements. Loading calculations included in the Minto Mine - 2019 Groundwater Review and Summary of OAMP SPT Exceedances (SRK 2020) indicate arsenic concentrations would need to increase by at least one order of magnitude for an exceedance in McGinty Creek at MN-4.5 to be observed. While there is some seasonal variability in McGinty Creek chemistry, surface water concentrations are not increasing and remain in the range of baseline data at MN-4.5.

- Concentrations of dissolved cadmium at MW09-03-01 and MW09-03-02 have inconsistently exceeded SPT 1 in he past with high variability in the observed data. Cadmium data exceed thresholds more frequently since 2017 and while average concentrations have increased beginning in 2017, there is no consistent increasing trend with many values in the last two years below the threshold. Seasonal variability seems to be present, with highest concentrations occurring in Q1 and Q2, potentially related to freshet. Cadmium concentrations in McGinty Creek remain low and stable, showing no impact from the groundwater and loading calculations presented in SRK 2020 indicate groundwater concentrations would need to increase by at least one order of magnitude for an exceedance in McGinty Creek at MN-4.5 to be observed.

- Concentrations of dissolved copper have exceeded SPT 1 sporadically in MW09-03-02 since late 2016. One monitoring event exceeded thresholds in Q3 2021 but appears to be related to seasonal variation, as peak concentrations occur historically in Q2 or Q3. Dissolved copper values in McGinty Creek remain in the range of historic data, no evidence of surface water impacts are present and loading calculations presented in SRK 2020 indicate groundwater concentrations would need to increase by at least one order of magnitude for an exceedance in McGinty Creek at MN-4.5 to be observed.

- Concentrations of dissolved selenium in MW09-03-01 and MW09-03-02 have exceeded thresholds sporadically in the last few years, with increased variability in the data beginning in 2017. Average annual concentrations in MW09-03-02 have been higher in 2018 and 2019 than past years, but do not demonstrate a consistent increasing trend. Only one monitoring event in Q2 exceeded thresholds in MW09-03-01 and two in MW09-03-02. Peak concentrations in Q1 and Q2 of these years indicate a season variation may be present. Loading calculations presented in SRK 2020 are not applicable to selenium, as elevated concentrations are already being observed in McGinty Creek at MN-4.5. In a memo prepared by Minnow Environmental in 2019 (*Evaluation of Dissolved Copper and Selenium AMP Threshold Exceedances in McGinty Creek*) it was concluded that the source of elevated selenium concentrations was unrelated to the Minto Mine and values were consistent with historical concentrations before the Minto North Pit was operational.

- Concentrations of dissolved sulphate have been decreasing in MW09-03-01 and MW09-03-02 since 2016. The most recent concentrations measured in MW09-03-02 exceeded SPT 2 but are within the range of values observed in previous years. Sulfate appears to vary seasonally, with concentrations reaching their peak in the summer months each year. Sulphate concentrations in McGinty Creek are variable, but remain in the range of historic data, with no evidence of surface water impacts present.

- Concentrations of dissolved zinc at MW09-03-01 and MW09-03-02 have inconsistently exceeded SPT 1 and SPT 2 thresholds since the summer of 2016. High variability is observed in the data, but relatively recent data exceeds thresholds more frequently than in the past, MW09-03-02 appeared to show a potential year-to-year increasing trend but values in 2021 have been lower than the previous two years. High concentrations do not correlate exactly with seasonal changes in groundwater level but may indicate an influence from seasonal variation. Vertical profiles and timing of peak concentrations suggest increased loading may be occurring during freshet when higher volumes of water infiltrate through the unsaturated zone and mobilize trace elements. While there is some seasonal variability in McGinty Creek chemistry, surface water concentrations are not increasing and remain in the range of baseline data. Loading calculations presented in SRK 2020 indicate

groundwater concentrations would need to increase by at least one order of magnitude for an exceedance in McGinty Creek at MN-4.5 to be observed.

  - Recommendations: due to the low potential loading of groundwater into McGinty Creek limited action is recommended at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road.

  - The load and accretion study, as recommended in the 2019 Review of OAMP Exceedances, was not conducted in 2021 due to unfavorable conditions with surface water flows which created conditions that would make loading from groundwater undetectable. It is recommended that the load and accretion study be conducted in 2022 if the conditions are appropriate.

- Concentrations of dissolved nitrate at MW09-03-02 have exceeded SPT 2 since the fall of 2016. Concentrations have shown a consistent increasing trend since October 2016 with potential seasonal effects producing higher concentrations in Q4 of each year. Loading calculations presented in SRK 2020 indicate groundwater concentrations would need to increase by a factor of 2 from the highest measurement for an exceedance in McGinty Creek at MN-4.5 to be observed. As the nitrate is likely sourced from blast rock used to construct the haul road, load is expected to flush over time and the increasing trend is not expected to persist indefinitely. Concentrations will continue to be closely monitored. A more detailed review of nitrate behavior is provided in the 2020 Review of OAMP Exceedances. While there is some seasonal variability in McGinty Creek chemistry, surface water concentrations are not increasing and remain in the range of baseline data.

  - Recommendation: due to the low potential loading of groundwater into McGinty Creek limited action is recommended at this time. Continue monitoring as per schedule. Continue to look for seeps from the haul road that can be used for comparison. Compare vertical concentration profiles in MW09-03 and MW17-11 as more annual data becomes available from MW17-11. Conduct load accretion study as recommended in the 2019 Review of OAMP Exceedances, when conditions are appropriate to do so.

For MW12-05 and MW12-06 (Minto Creek):

- Water level data in the deepest zone of MW12-06 decreased sharply between November 2017 and March 2018, which coincides with development of the Minto East underground. Water levels in the deepest zone increased again between May and August 2018, when development of the underground stopped. More recently, the water level in the deepest zone, MW12-06-01, decreased between Q2 and Q4 2019 which changed the overall vertical gradient from upwards to downwards and then increased again in Q1 2020 reversing the gradient once again. The decrease in water level coincides with the re-start of underground development in September 2019, and while dewatering was continued throughout the temporary underground closure, the increased activity could potentially have influenced the deep groundwater levels. The same trend was not observed in MW12-05 or MW17-12, suggesting these wells are currently outside the area of groundwater affected by the development of the underground. Consistent vertical gradients cannot be identified and there exists a complex multidirectional vertical gradient between other zones. Seasonal fluctuations are apparent in MW12-05, with peak water levels occurring in Q2 of the past 2 years.

  - Recommendation: continue collecting water level/pressure profiles at this well according to the routine schedule. Continue to monitor changes in groundwater pressure as system equilibrates following the cessation of Minto East underground development. Continue to monitor complex multidirectional vertical gradient in MW12-06.

- Concentrations of dissolved selenium in MW12-05 and MW12-06 are mostly below thresholds with only sporadic exceedances occurring since 2016. The highest concentrations in the previous four years in MW12-05 have been observed in Q2, suggesting the elevated values are due to seasonal fluctuations, potentially regarding freshet. Only one monitoring event in MW12-05-04 exceeded SPT 1 in Q3 but concentrations are still well below STP 2. Surface water concentrations are not increasing and remain in the range of baseline data suggesting no impacts related to groundwater concentrations are being observed.

- Concentrations of dissolved zinc have been stable below thresholds in MW12-05 in the past with some slight variability. The only exceedance to SPT 1 occurred in the most recent sampling event in MW12-05-03 but is within the range of historic concentrations. Surface water concentrations are not increasing and remain in the range of baseline data suggesting no impacts related to groundwater concentrations are being observed.

  - Recommendation: continue monitoring as per routine schedule. Assess sources of potential contaminants and include in the 2021 Review of OAMP Exceedances.

- Concentrations of sulphate at MW12-05-01 and MW12-05-02 continue to be elevated above SPT 2. Concentrations at MW12-05-01 and MW12-05-02 were increasing historically but show signs of stabilization after August 2017. While concentrations are still increasing, data do not show the same rate of increase as was observed prior to 2017, with the exception of the Q4 2019 observation in MW12-05-02, which had a measured concentration of 2400 mg/L, nearly double the previous sampling event. As this magnitude of concentration is isolated to one sampling event, and values have since decreased to be consistent with previous trends, the datapoint is considered an outlier.

  Sulphate concentrations in MW12-06-01 have been increasing since Q1 2020 with the most recent events approaching SPT 2. These concentrations are isolated to the deepest zone in MW12-06, which has shown evidence of disruption (in water levels and chemical equilibrium) related to underground mining in the past. A sample was not obtained from MW12-06-01 in Q3 so additional data are needed to assess the trend. The cause of increasing sulphate concentrations in MW12-06-01 is unclear at this time, but trends will continue to be closely monitored.

  Previous investigations into the source of elevated sulphate in deep groundwater as observed at MW12-05 conclude it is unrelated to mining activities. Sulphate concentrations in MW17-12 exhibit an increasing gradient with depth but no increasing trend temporally. Minto Creek continues to indicate no trends in sulphate concentration that can clearly be related to changes in groundwater concentrations.

  - Recommendation: continue monitoring as per schedule and review/update investigations as to potential sources of SO_4 as part of the overall review of site groundwater quality.

Sincerely,

SRK Consulting (Canada) Inc.

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PROVINCE OF
L. M. VOLDEN
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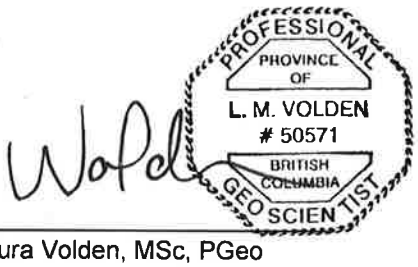

03/30/22

Laura Volden, MSc, PGeo
Senior Consultant (Hydrogeochemistry)

Reviewed by

This signature has been scanned
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its use in this consultant document
The original signature is held on file

Daniel Mackie, PGeo
Principal Consultant (Hydrogeology)

SRK Consulting (Canada) Inc Engineers and Geoscientist BC Permit to Practice No: 1003655

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The opinions expressed in this report have been based on the information available to SRK at the time of preparation. SRK has exercised all due care in reviewing information supplied by others for use on this project. Whilst SRK has compared key supplied data with expected values, the accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data. SRK does not accept responsibility for any errors or omissions in the supplied information, except to the extent that SRK was hired to verify the data

Appendix A: Tables

Table 1. Summary of Groundwater Quality Data, AMP Thresholds, Observations and Recommendations

Location	Month	Parameter & Concentration Data		Threshold Exceeded	Observations	Trends	Risk Narrative	Recommendation
McGinty Creek Catchment								
MW09-03-01		As-D	mg/L		**Water Level (Figure A-1):** see previous section. Water levels in MW09-03 Zone 1 and Zone 2 started declining when mining started in Minto North. Declining trend decreased about 6 months after mining completed. Water levels remain higher than pit bottom. Water levels increased between July and September 2016 before returning to previous trend. Similar trend occurred in 2017 when water levels increased between April and September, declined until May 2018 and increased again until September. Water levels increased in Q3 2020, consistent with previous seasonal trends. Peak water levels in 2020 were higher than previous four years. Minto North pit continues to act as a hydraulic sink, and has lowered groundwater levels. Water levels at MW09-03 suggest the presence of a groundwater divide somewhere north of the pit. Seasonal fluctuations indicate some influence from recharge. Loading to McGinty Creek could only occur from haul road material along the pit perimeter **Water Quality (Figure A-2):** Seasonal variations appear to be present, with highest values occurring the summer months the last 2 years (with the exception of outliers). Values during Q3 are in the range of historic data very near SPT 2. As-D values for MN-4.5 in McGinty Creek have been stable in the historic range.	While data from late summer 2015 to August 2017 showed signs of an increasing trend, values have since stabilized. Peak values during Q2 and Q3 suggest a seasonal trend related to freshet may be present. Elevated values are isolated to October 2018, September 2019 and June 2020 and appear to be outliers. Concentrations from 2016 to 2018 showed potential seasonal variability, becoming relatively stable in 2019. Concentrations from 2019 thru 2020 remained relatively steady.	Lack of any clear upwards trend in McGinty Creek, as measured at MN-4.5, suggests currently no impact. Minto North represents only 0.4% of the McGinty Creek total watershed. Assuming that groundwater flows are proportional to surface water flows (load can only be coming from haul road, not pit leakage) groundwater concentrations would need to be at least 10x higher to result in MN-4.5 As concentrations reaching MN-4.5 SPT1. Overall risk of arsenic loading to McGinty Creek from groundwater is low at this time.	Limited action at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road. Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
Figure A-1, A-3	July	2021-07-05	0.00097	0.00081 (SPT 2)				
	August	2021-08-13	0.00087	0.00081 (SPT 2)				
	September	2021-09-24	0.00095	0.00081 (SPT 2)				
MW09-03-01		Ag-D	mg/L		**Water Level (Figure A-1):** see previous section. **Water Quality (Figure A-4):** The concentration exceeds SPT 2, however this is caused by an increased detection limit of 0.00002 for this sampling event. The concentration is below the laboratory detection limit. Ag-D values have been stable in the historic range for MN-4.5 in McGinty Creek.	Concentrations are stable and below laboratory detection limits.	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5, suggests no current impact to surface water. Groundwater flux in this zone expected to be low based on low K. Load study done as part of the 2019 annual groundwater review indicates concentrations need to be at least an order of magnitude higher for threshold exceedances to occur at MN-4.5.	Limited action at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road. Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
Figure A-1, A-2	July	2021-07-05	-	-				
	August	2021-08-13	0.00002	0.000016 (SPT 2)				
	September	2021-09-24	-	-				
MW09-03-01		Se-D	mg/L		**Water Level (Figure A-1):** see previous section. **Water Quality (Figure A-4):** Increased variability observed beginning in 2017 with sporadic exceedances to SPT 1. The majority of values are below thresholds and within the range of background conditions. Q1 and Q2 values are higher than has been observed in the past, but may be outliers. Se-D values have been stable in the historic range for MN-4.5 in McGinty Creek.	Exceedances to SPT 1 occur during the peak concentrations of seasonal trends normally in Q1 or Q2 of each year. Peak concentrations during late Q1 and early Q2 suggest a seasonal trend related to freshet may be present.	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5, suggests no current impact to surface water. Groundwater flux in this zone expected to be low based on low K.	Limited action at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road. Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
Figure A-1, A-4	July	2021-07-05	-	-				
	August	2021-08-13	-	-				
	September	2021-09-24	0.000157	0.0001 (SPT1)				
MW09-03-01		Zn-D	mg/L		**Water Level (Figure A-1):** see previous section. **Water Quality (Figure A-4):** Increased variability in measurements starting in August 2015. Approximately half the data points fall below SPT 1 and exceedances occur seasonally. Zn-D values have been stable in the historic range for MN-4.5 in McGinty Creek.	Concentrations are consistent with previous observations with a high degree of seasonality. Peak concentrations during late Q1 and early Q2 suggest a seasonal trend related to freshet may be present.	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5, suggests no current impact to surface water. Groundwater flux in this zone expected to be low based on low K. Load study done as part of the 2019 annual groundwater review indicates concentrations need to be at least an order of magnitude higher for threshold exceedances to occur at MN-4.5.	Limited action at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road. Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
Figure A-1, A-5	July	2021-07-05	0.0556	0.022 (SPT2)				
	August	2021-08-13	0.0613	0.022 (SPT2)				
	September	2021-09-24	0.0156	0.013 (SPT1)				
MW09-03-01		NO_3-D	mg/L		**Water Level (Figure A-1):** see previous section. **Water Quality (Figure A-4):** Concentrations have been consistently below thresholds. The exceedance in Q3 2021 is isoalted and still at a low concentration. NO3-D values have been stable in the historic range for MN-4.5 in McGinty Creek.	Q3 2021 exceedance only slightly above previous measurements and has not occurred since 2013. No increasing trend present.	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5, suggests no current impact to surface water. Groundwater flux in this zone expected to be low based on low K.	Limited action at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road. Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
Figure A-1, A-6	July	2021-07-05	-	-				
	August	2021-08-13	-	-				
	September	2021-09-24	0.205	0.13 (SPT1)				
MW09-03-02		Al-D	mg/L		**Water Level (Figure A-1):** see previous section. Water Quality (Figure A-2): Concentrations have been more sporadic since the beginnig of 2018 with intermittent exceedances to SPT 2. The majority of sampling events are well below SPT 1, with exceedances sporadic and potential outliers. Al-D values have been stable in the historic range for MN-4.5 in McGinty Creek.	Potential, though inconsistent, seasonal trend related to increased loading due to either high infiltration and trace element mobilizing during freshet or low flow periods (Q1-Q2). Most recent data point is the highest recorded, but more data are needed to assess the presence of a trend.	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5, suggests no current impact to surface water. Load study done as part of the 2019 annual groundwater review indicates concentrations need to be at least an order of magnitude higher for threshold exceedances to occur at MN-4.5.	Limited action at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road. Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
Figure A-1, A-2	July	2021-07-05	-	-				
	August	2021-08-13	-	-				
	September	2021-09-24	0.017	0.0095 (SPT2)				

Table 1. Summary of Groundwater Quality Data, AMP Thresholds, Observations and Recommendations

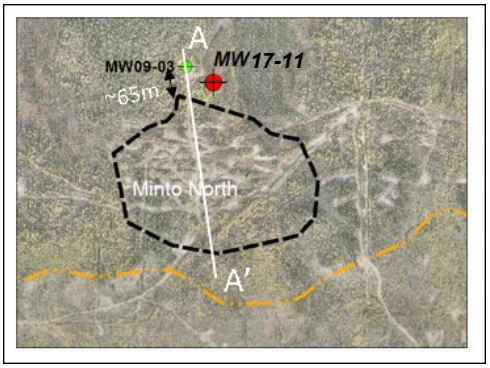
Location	Month	Parameter & Concentration Data		Threshold Exceeded	Observations	Trends	Risk Narrative	Recommendation
MW09-03-02		Cd-D	mg/L		**Water Level (Figure A-1):** see previous section.	Highest concentrations measured to date have been in Q3 of 2019, but are not increasing consistently year-over-year, and show potential seasonal variability.	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5, suggests no current impact to surface water.	Limited action at this time.
Figure A-1, A-3	July	2021-07-05	-	-	**Water Quality (Figure A-2):** Concentrations beginning in 2019 have been more sporadic than the past, with the highest concentration measured in September 2019. While most recent data points exceed thresholds, concentrations are lower than the previous year.	While there is no consistent increasing trend, and variability is high, annual averages increased between 2016 and 2019.	Load study done as part of the 2019 annual groundwater review indicates concentrations need to be at least an order of magnitude higher for threshold exceedances to occur at MN-4.5.	Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road.
	August	2021-08-13	0.00011	0.000031 (SPT 1)				Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
	September	2021-09-24	0.0000745	0.000031 (SPT 1)	Cd-D values have been stable in the historic range for MN-4.5 in McGinty Creek.			
MW09-03-02		Cu-D	mg/L		**Water Level (Figure A-1):** see previous section.	No consistent trend in Cu-D. Highest values were detected in the first half of 2018 and have been consistently lower since with the exception of Q3 and Q4 of 2019 and the Q1 datapoint from 2020.	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5, suggests no current impact to surface water.	Limited action at this time.
Figure A-1, A-4	July	2021-07-05	-	-	Water Quality (Figure A-4): Concentrations have been sporadically exceeding SPT 1 since late 2016. The March 2020 concentration was the highest recorded to date, but is currently isolated and may be an outlier. Concentrations in 2019 were lower on average than the previous year and more data are required to assess the presence of a trend.		Groundwater flux in this zone expected to be low based on low K.	Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road.
	August	2021-08-13	-	-			Load study done as part of the 2019 annual groundwater review indicates concentrations need to be at least an order of magnitude higher for threshold exceedances to occur at MN-4.5.	Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
	September	2021-09-24	0.00328	0.00263 (SPT1)	Cu-D values have been stable in the historic range for MN-4.5 in McGinty Creek.			
MW09-03-02		Se-D	mg/L		**Water Level (Figure A-1):** see previous section.	Concentrations in 2021 are less variable than previous years with no increasing trend. Exceedances of SPT 1 are not consistent. Elevated concentrations in Q2 suggest a seasonal trend related to freshet may be present.	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5, suggests no current impact to surface water.	Limited action at this time.
Figure A-1, A-4	July	2021-07-05	-	-	Water Quality (Figure A-4): Exceedances to SPT 1 have been occurring sporadically since 2016. Concentrations have been less variable in 2020 and 2021 compared to previous years.		Groundwater flux in this zone expected to be low based on low K.	Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road.
	August	2021-08-13	0.00141	0.0005 (SPT1)				Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
	September	2021-09-24	0.000745	0.0005 (SPT1)	Se-D values have been stable in the historic range for MN-4.5 in McGinty Creek.			
MW09-03-02		Zn-D	mg/L		**Water Level (Figure A-1):** see previous section.	Concentrations in Q4 are all above SPT 2 but are not increasing compared to previous years.	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5, suggests no current impact to surface water.	Limited action at this time.
Figure A-1, A-5	July	2021-07-05	0.0329	0.015 (SPT 2)	**Water Quality (Figure A-4):** Increased variability in measurements starting in August 2015. Concentrations are on average higher in 2021 than 2020, but vary seasonaly and show no increasing trend.	Peak concentrations during late Q1 and early Q2 suggest a seasonal trend related to freshet may be present.	Groundwater flux in this zone expected to be low based on low K.	Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road.
	August	2021-08-13	0.0429	0.015 (SPT 2)				
	September	2021-09-24	0.0537	0.015 (SPT 2)			Load study done as part of the 2019 annual groundwater review indicates concentrations need to be at least an order of magnitude higher for threshold exceedances to occur at MN-4.5.	Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
					Zn-D values have been stable in the historic range for MN-4.5 in McGinty Creek.			
MW09-03-02		SO_4^{2-}-D	mg/L		**Water Level (Figure A-1):** see previous section.	Concentrations in Q4 are all above SPT 1, but are potentially outliers. More data are needed to assess a trend.	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5, suggests no current impact to surface water.	Limited action at this time.
Figure A-1, A-5	July	2021-07-05	-	-	Water Quality (Figure A-4): Sulphate concentrations have been decreasing overall since 2017. The most recent sampling events exceeded SPT 1, but are the only points to do so in the last 2 years. More data are needed to assess the trend.	Peak concentrations in the first half of each year suggest a seasonal trend is present related to freshet.	Groundwater flux in this zone expected to be low based on low K.	Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road.
	August	2021-08-13	10.4	7 (SPT1)				Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
	September	2021-09-24	8.73	7 (SPT1)	SO4-D values have been stable in the historic range for MN-4.5 in McGinty Creek.			
MW09-03-02		NO_3^--D	mg/L		**Water Level (Figure A-1):** see previous section.	Clear upward trend from May 2015-December 2020. Higher variability beginning in 2018, with highest value recorded occurring in October 2019. Overall trend is increasing.	McGinty Creek, as observed at MN-4.5, does not show increasing or decreasing trends similar to MW09-03-02.	Limited action at this time.
Figure A-1, A-6	July	2021-07-05	8.09	0.07 (SPT 2)	**Water Quality (Figure A-5):** Overall increasing trend is present beginning in 2017. Variability increased drastically in Q3 2019 with sporadic elevated concentrations occuring outside the historic trend.		Considering the small catchment area for MW09-03-02, even if the well is affected by local recharge, potential loading to McGinty Creek via this groundwater is potentially low.	Continue monitoring as per routine schedule, continue to look for opportunities to collect samples from surface seeps emanating from haul road and continue to compare data from MW09-03-02 and MN-4.5 to confirm low nitrate concentrations persist in McGinty Creek.
	August	2021-08-13	7.11	0.07 (SPT 2)				
	September	2021-09-24	11.3	0.07 (SPT 2)	NO_3^--D values have been stable in the historic range for MN-4.5 in McGinty Creek.		Nitrate is expected to flush from the haul road construction material over time and not increase continuously.	Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are
Minto Creek Catchment								
MW12-05-01		SO_4^{2-}-D	mg/L		**Water Level (Figure B-1):** Water levels show increasing trends in the fall to late winter seasons, followed by a decrease throughout the summer. Water levels in Q3 are similar to levels at the same time of year in previous years. While more data is needed to be certain, the trends are likely due to a seasonal fluctuation. Overall vertical gradient remains downward.	Previously observed upwards trend shows signs of stabilization after August 2017 with a slight increase again since Q4 2018. Concentrations have been consistent throughout 2020, suggesting concentrations are continuing to stabilize.	Minto Creek, as observed at W3 and MC1, do not show any upwards trend similar to MW12-05.	No further action at this time.
Figure B-1, B-2	July	N/A	N/A				Downwards gradient in MW12-05 and low flux (low hydraulic conductivity) suggest groundwater discharge not currently reaching creek or groundwater load small compared to surface water load.	Continue monitoring as per routine schedule. Continue investigation into sulphate source and causes.
	August	2021-08-21	1390	1000 (SPT 2)	**Water Quality (Figure B-1):** Concentrations linearly increased until August 2017, stabilizing between 1200 and 1500 mg/L beginning in 2018.	No upwards trend observed in Minto Creek. Seasonal variation evident at W8A, but much lower concentration than, and not considered likely to be connected to groundwater at MW12-05 as high concentrations at MW12-05 are at significant depth while W8A was a shallow DSTF monitoring point.		
	September	N/A	N/A		SO_4^{2-}-D values have been stable in the historic range at W3 and MC1 in Minto Creek.			
MW12-05-02		SO_4^{2-}-D	mg/L		**Water Level (Figure B-1):** see previous section.	Previously observed upwards trend shows signs of stabilization after August 2017 with higher varibality since Q1 2018. One value from Q4 2019 was considerably higher (2400 mg/L) but has not occurred since, suggesting it was an outlier.	Minto Creek, as observed at W3 and MC1, do not show any upwards trend similar to MW12-05.	No further action at this time.
Figure B-1, B-2	July	N/A	N/A		**Water Quality (Figure B-1):** Concentrations linearly increased until August 2017, and have since stabilized around 1200 mg/L.		Downwards gradient in MW12-05 and low flux (low hydraulic conductivity) suggest groundwater discharge not currently reaching creek or groundwater load small compared to surface water load.	Continue monitoring as per routine schedule. Continue investigation into sulphate source and causes.
	August	2021-08-21	1220	1000 (SPT 2)				
	September	N/A	N/A		SO_4^{2-}-D values have been stable in the historic range at W3 and MC1 in Minto Creek.	No upwards trend observed in Minto Creek. Seasonal variation evident at W8A, but not likely connected to groundwater at MW12-05.		
MW12-05-04		Se-D	mg/L		**Water Level (Figure B-1):** see previous section.	Concentrations have been variablity in the past but no consistent increasing or decreasing trend is present. The most recent value is within the range of baseline conditions.	Minto Creek, as observed at W3 and MC1 so increased variability but no consistent upwards trend.	No further action at this time.
Figure B-1	July	N/A	N/A		**Water Quality (Figure B-1):** Selenium concentrations are consistently below SPT 2, with some variablity throughout each year. While the Q3 sampling event was higher than previous, triggering SPT 1, concentrations are still low and within the range of historic data.		Downwards gradient in MW12-05 and low flux (low hydraulic conductivity) suggest groundwater discharge not currently reaching creek or groundwater load small compared to surface water load.	Continue monitoring as per routine schedule.
	August	2021-08-23	0.00196	0.391 (SPT1)				
	September	N/A	N/A		Se-D values have been more variable in 2020 but generally in the historic range at W3 and MC1 in Minto Creek.	No upwards trend observed in Minto Creek. Seasonal variation evident at W8A, but not likely connected to groundwater at MW12-05.		
MW12-05-03		Zn-D	mg/L		**Water Level (Figure B-1):** see previous section.	Exceedances to SPT 1 have been isolated and sporadic in the past. No increasing trend is present.	Minto Creek, as observed at W3 and MC1 has no increasing trend or variability.	No further action at this time.
Figure B-1, B-2	July	N/A	N/A		**Water Quality (Figure B-1):** Zinc concentratoins have been low historically, with only sporadic exceedances to SPT 1. The Q3 concentration is well below SPT 2.			
	August	2021-08-23	0.0175	0.2166 (SPT1)			Downwards gradient in MW12-05 and	Continue monitoring as per routine schedule.
	September	N/A	N/A					

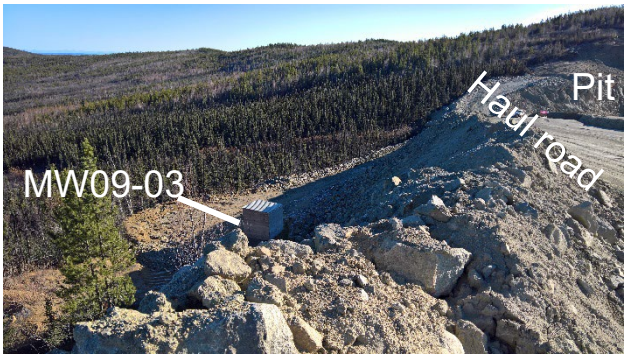
Table 1. Summary of Groundwater Quality Data, AMP Thresholds, Observations and Recommendations

Location	Month	Parameter & Concentration Data		Threshold Exceeded	Observations	Trends	Risk Narrative	Recommendation
					Zn-D values have been stable in the historic range at W3 and MC1 in Minto Creek.	No upwards trend observed in Minto Creek. Seasonal variation evident at W8A, but not likely connected to groundwater at MW12-05.	low flux (low hydraulic conductivity) suggest groundwater discharge not currently reaching creek or groundwater load small compared to surface water load.	

Notes:
'N/A' indicates no sample was taken for that month
'-' indicates value for that month did not trigger a response
Zones with no data or no exceedances: MW09-03-03 (dry), MW12-05-05, MW12-05-06, MW12-05-07,MW12-06-01, MW12-06-02, MW12-06-03, MW12-06-04, MW12-06-05, MW12-06-06

Appendix B: Figures



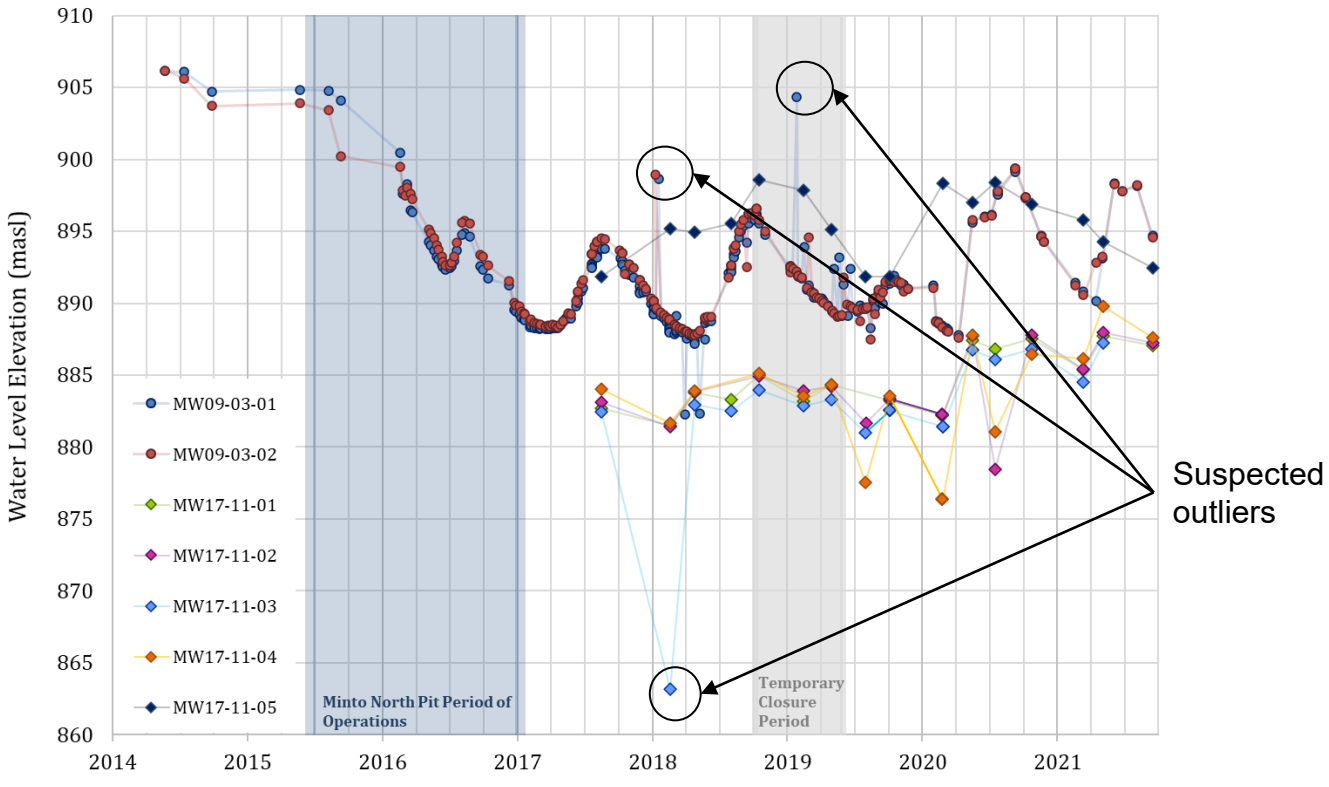


A A'

908 masl - collar
Zn 3 – 898 masl/11 m dh (dry)
Zn 2 – 884 masl/24 m dh W.L. = 894.56 masl
Zn 1 – 870 masl/38 m dh W.L. = 894.71 masl
Water levels collected on September 24, 2021

MW09-03
Haul road material
10-15 m
~2 benches
Pit bottom: 834 masl
Pit water 857.09 masl
On September 1, 2021

Schematic cross section – not to scale
MW09-03 water levels



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srk consulting

MINTO METALS

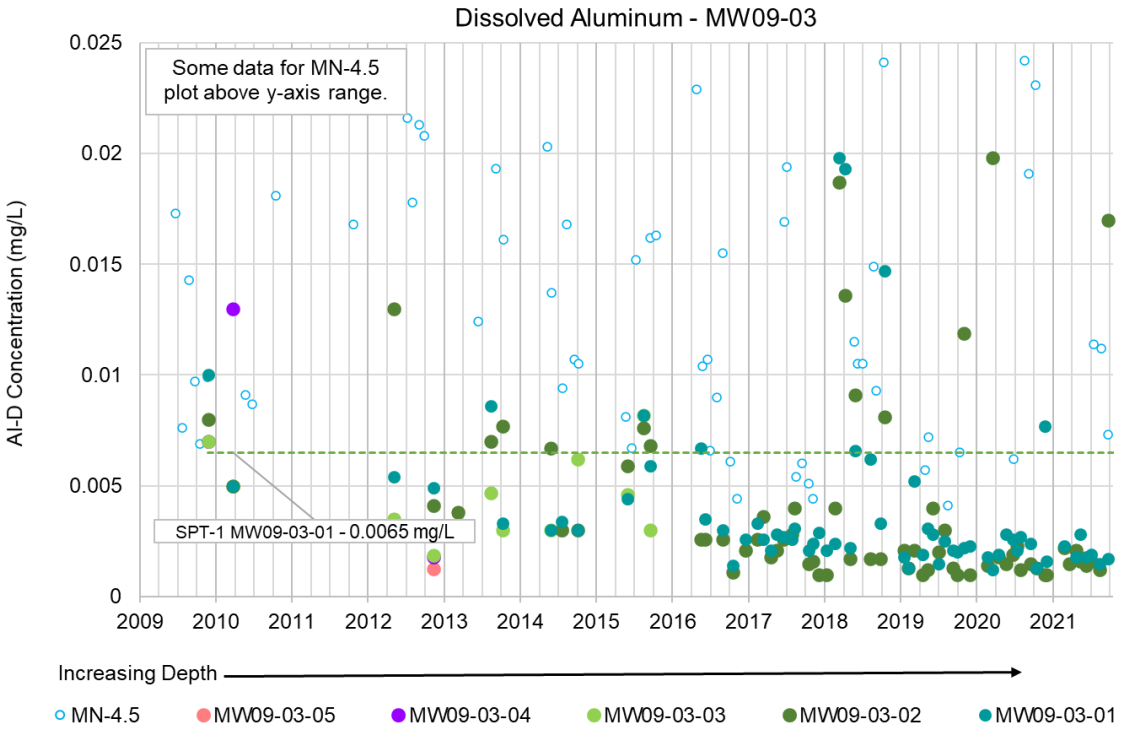
Minto Mine Adaptive Management

Minto North Pit: Physical setting and water levels

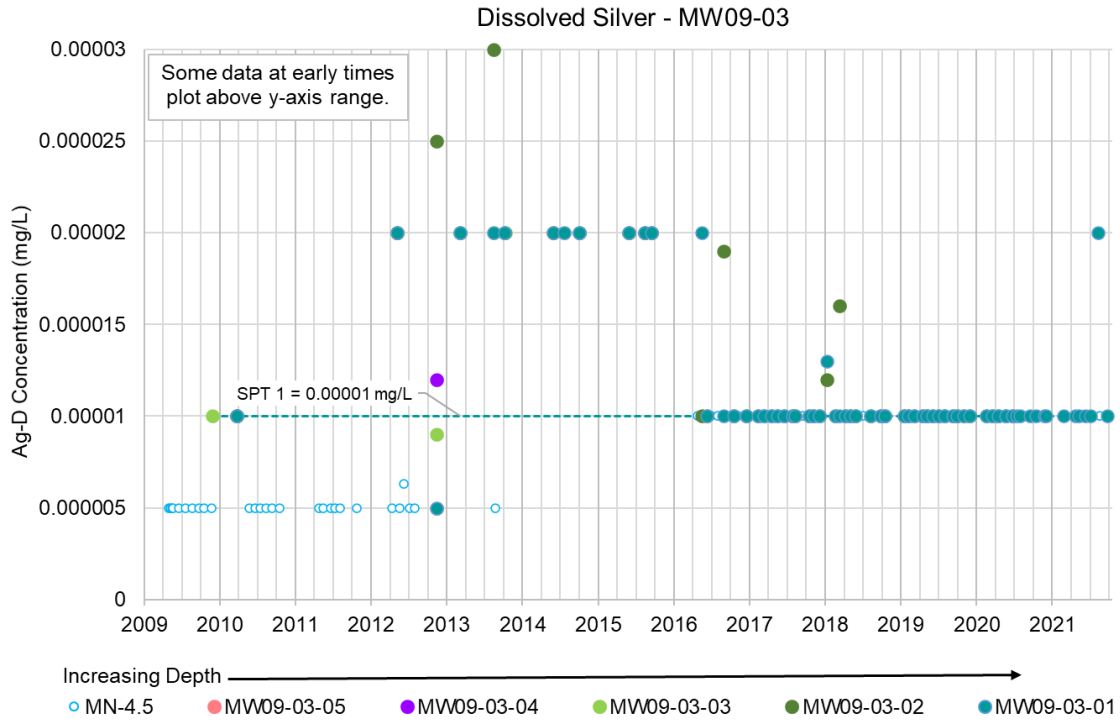
Job No: 1CM002.055
Filename: 1CM002-055_2021Q3_GWAMP_Response_Figures.pptx

Minto Mine

Date: April 2022
Approved: MSi
Figure: A-1



MW09-03-02 was the only sampling point to trigger a response
Only SPTs exceeded in Q3 of 2021 shown on graph (applies to MW09-03-02 only)
MN-4.5 is a SW monitoring point in McGinty Creek



MW09-03-01 was the only sampling point to trigger a response
Only SPT exceeded in Q3 of 2021 shown on graph (applies to MW09-03-01 only)
MN-4.5 is a SW monitoring point in McGinty Creek

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220207_Dec_Q4_AMP_Review/02_Analysis%26Charts/Minto_AMPResponse_2021McGintyCreek/Minto_AMPResponse-2021Q3_McGintyCreekGW_MSi.xlsx?d=wf9a5e97b38bd4b07b6dd6c9dfb4c36b08&csf=1&web=1&e=KuSjYL

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MINTO METALS

Minto Mine Adaptive Management

MW09-03
Al-D and Ag-D SPT Exceedances

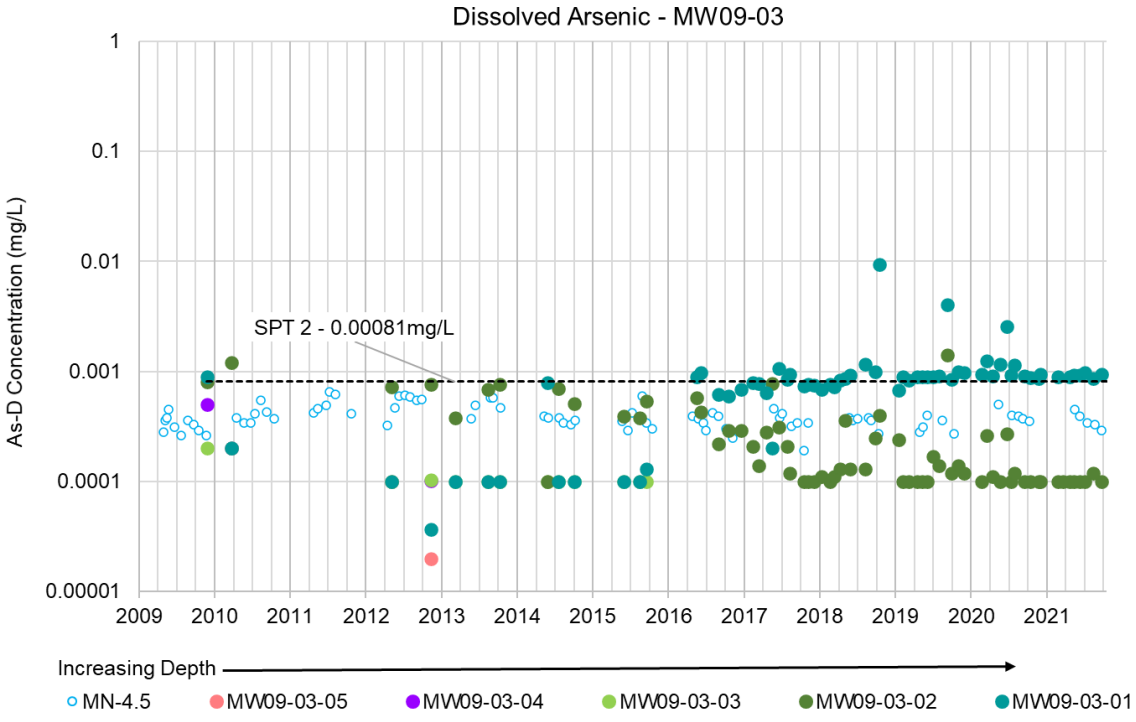
Job No: 1CM002.055
Filename: 1CM002-055_2021Q3_GWAMP_Response_Figures.pptx

Minto Mine

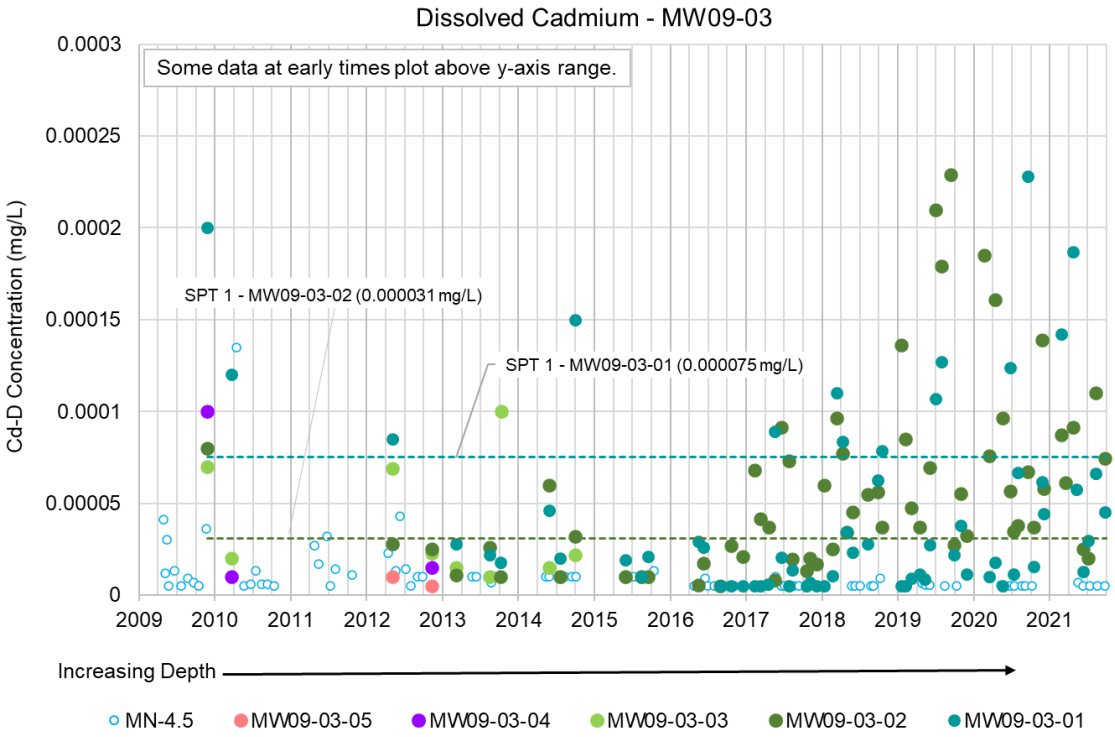
Date: April 2022

Approved: MSi

Figure: A-2



MW09-03-01 was the only sampling point to trigger a response
Only SPTs exceeded in Q3 of 2021 shown on graph (applies to MW09-03-01 only)
MN-4.5 is a SW monitoring point in McGinty Creek



MW09-03-02 was the only sampling point to trigger a response
Only SPTs exceeded in Q3 of 2021 shown on graph (applies to MW09-03-02 only)
MN-4.5 is a SW monitoring point in McGinty Creek

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MINTO METALS

Minto Mine Adaptive Management

MW09-03
As-D and Cd-D SPT Exceedances

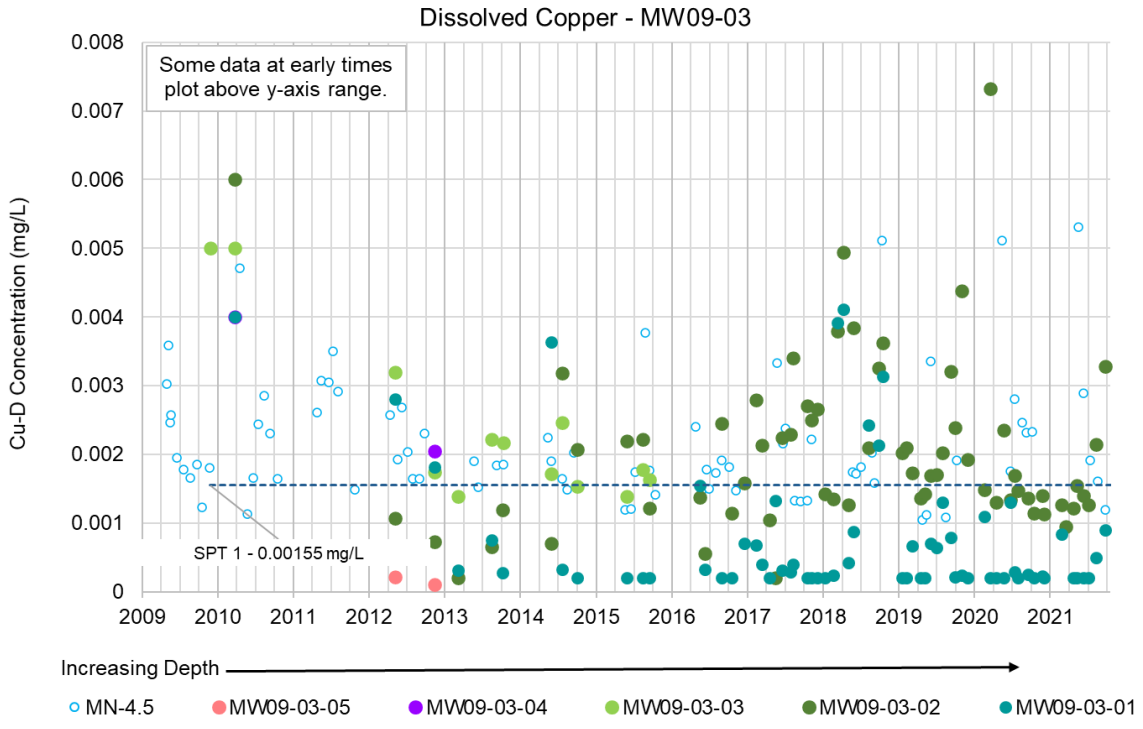
Job No: 1CM002.055
Filename: 1CM002-055_2021Q3_GWAMP_Response_Figures.pptx

Minto Mine

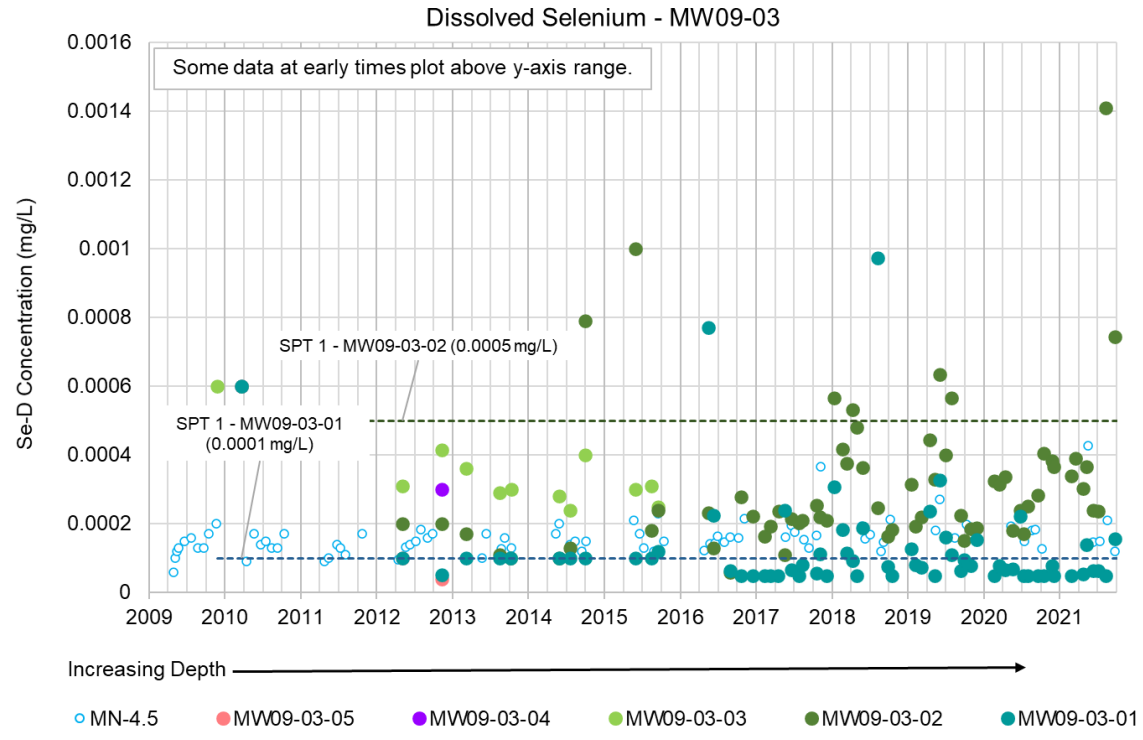
Date: April 2022

Approved: MSi

Figure: **A-3**



MW09-03-02 was the only sampling point to trigger a response
Only SPTs exceeded in Q3 of 2021 shown on graph (applies to MW09-03-02 only)
MN-4.5 is a SW monitoring point in McGinty Creek



MW09-03-01 and MW09-03-02 were the only sampling points to trigger a response
Only SPTs exceeded in Q3 of 2021 shown on graph (applies to MW09-03-01/MW09-03-02 only)
MN-4.5 is a SW monitoring point in McGinty Creek

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220207_Dec_Q4_AMP_Review/02_Analysis%26Charts/Minto_AMPResponse_2021McGintyCreek/Minto_AMPResponse-2021Q3_McGintyCreekGW_MSi.xlsx?d=wf9a5e97b38bd4b07b6dd6c9dfb4c36b0&csf=1&web=1&e=KuSjYL

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MINTO METALS

Minto Mine Adaptive Management

MW09-03
As-D and Cd-D SPT Exceedances

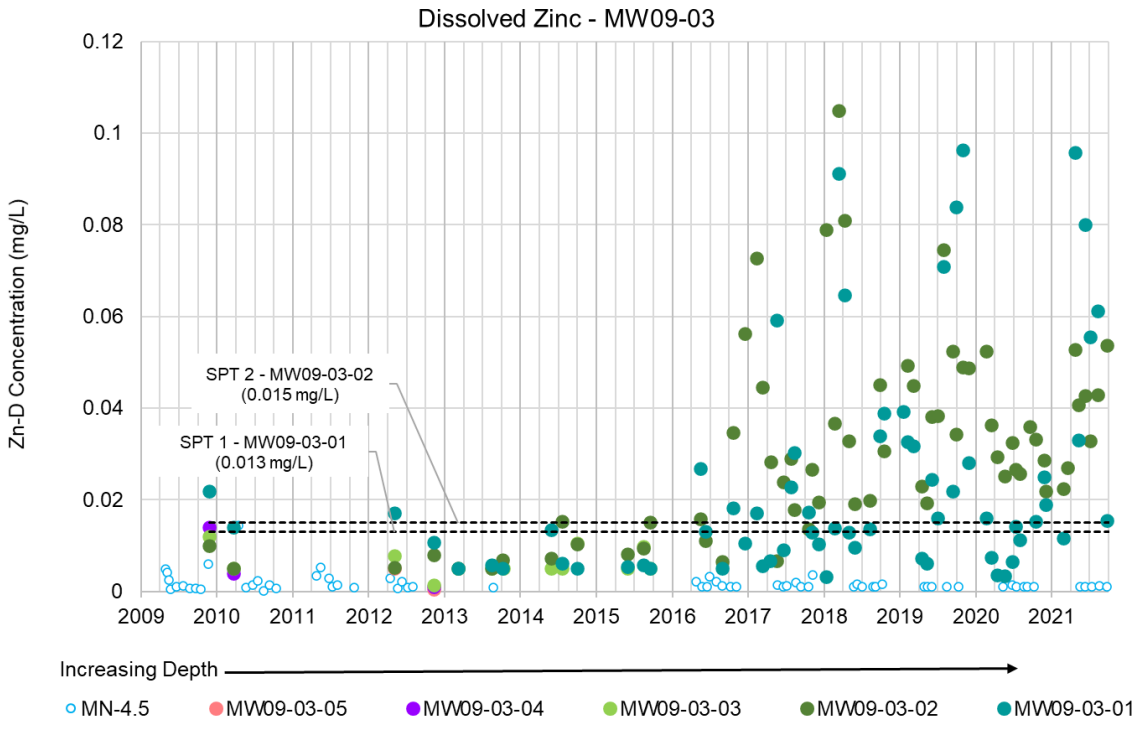
Job No: 1CM002.055
Filename: 1CM002-055_2021Q3_GWAMP_Response_Figures.pptx

Minto Mine

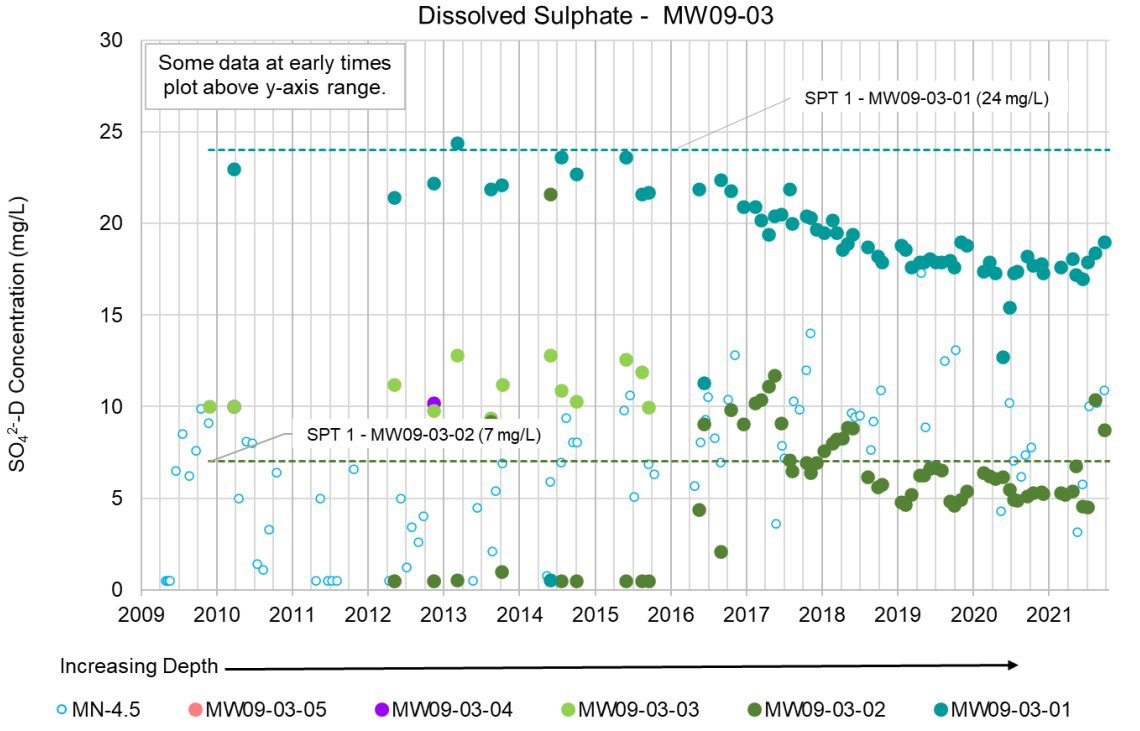
Date: April 2022

Approved: MSi

Figure: **A-4**



MW09-03-01 and MW09-03-02 were the only sampling points to trigger a response
Only SPTs exceeded in Q3 of 2021 shown on graph (applies to MW09-03-01/MW09-03-02 only)
MN-4.5 is a SW monitoring point in McGinty Creek



MW09-03-02 was the only sampling point to trigger a response
Only SPTs exceeded in Q3 of 2021 shown on graph (applies to MW09-03-02 only)
MN-4.5 is a SW monitoring point in McGinty Creek

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MINTO METALS

Minto Mine Adaptive Management

MW09-03
Zn-D and SO4 SPT Exceedances

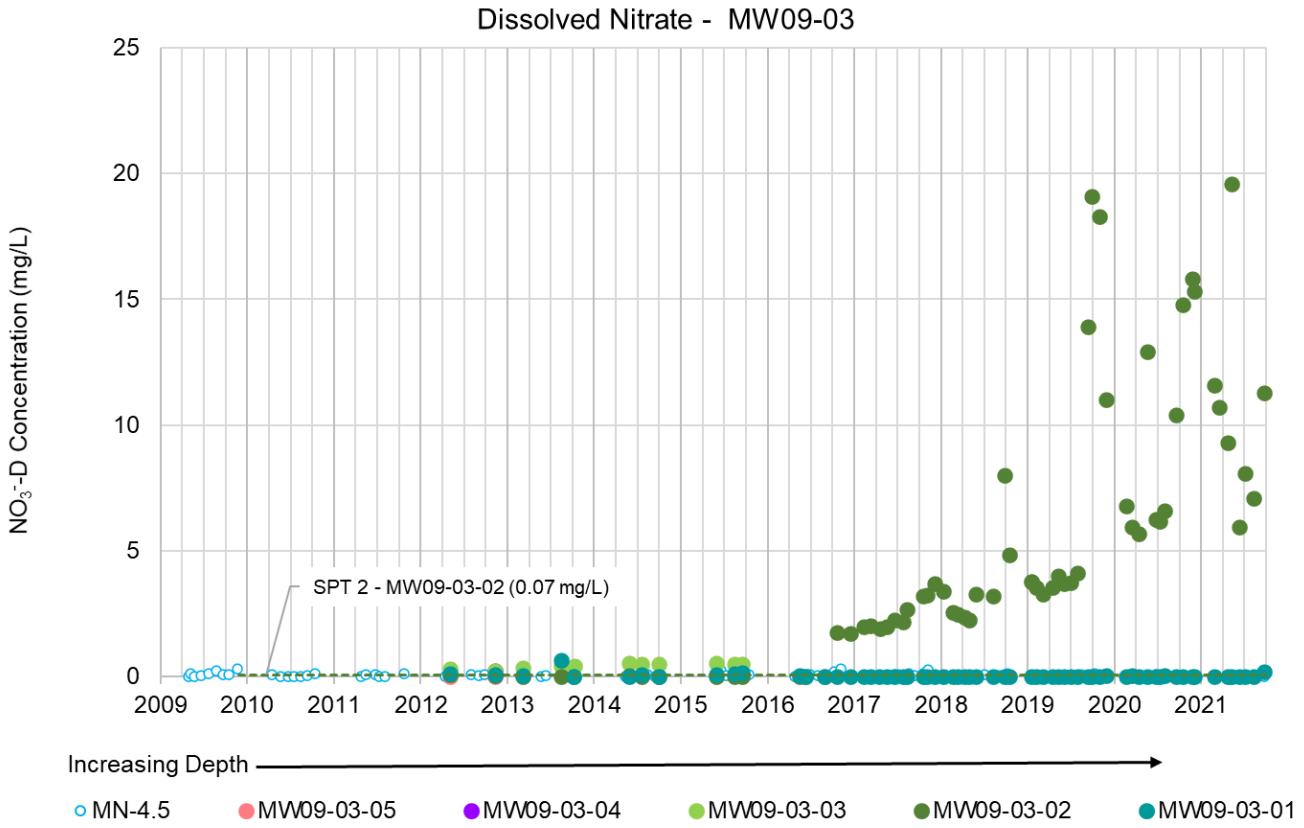
Job No: 1CM002.055
Filename: 1CM002-055_2021Q3_GWAMP_Response_Figures.pptx

Minto Mine

Date: April 2022

Approved: MSi

Figure: A-5



MW09-03-02 was the only sampling point to trigger a response
Only SPTs exceeded in Q3 of 2021 shown on graph (applies to MW09-03-02 only)
MN-4.5 is a SW monitoring point in McGinty Creek

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220207_Dec_Q4_AMP_Review/02_Analysis%26Charts/Minto_AMPResponse_2021McGintyCreek/Minto_AMPResponse-2021Q3_McGintyCreekGW_MSi.xlsx?d=wf9a5e97b38bd4b07b6dd6c9dfb4c36b0&csf=1&web=1&e=KuSjYL

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MINTO METALS

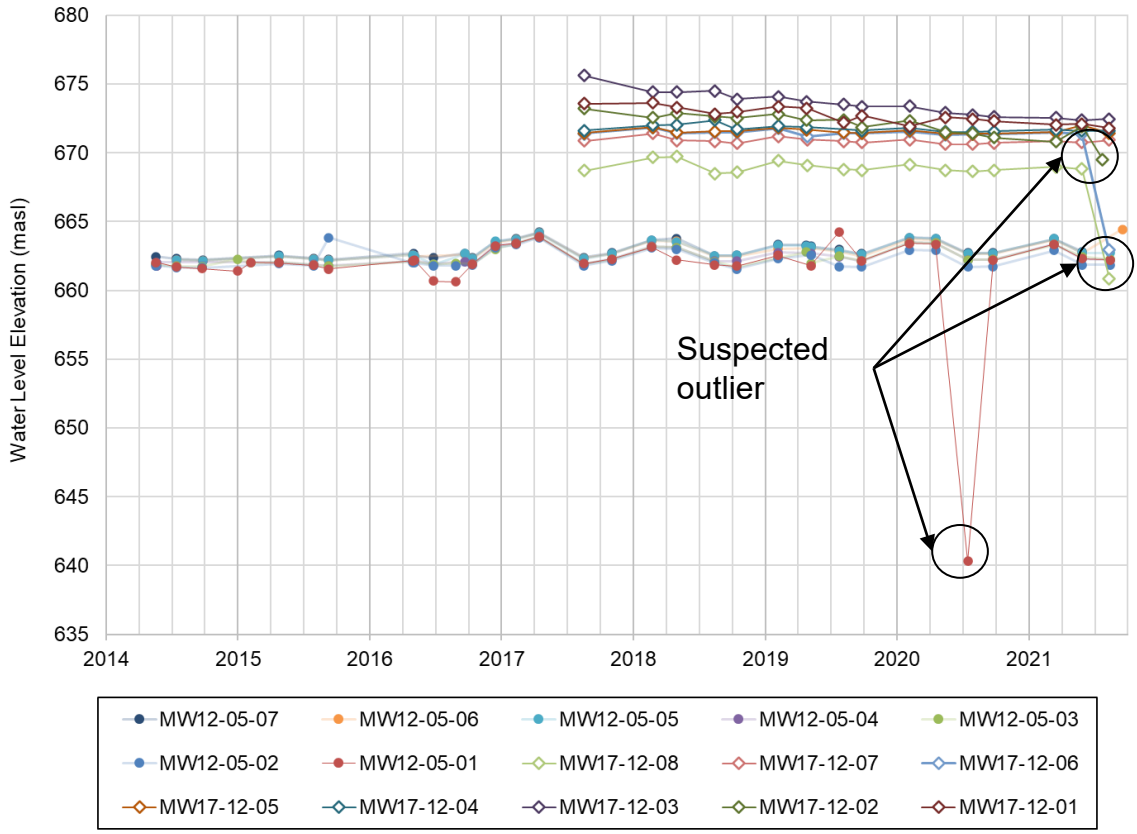
Minto Mine Adaptive Management

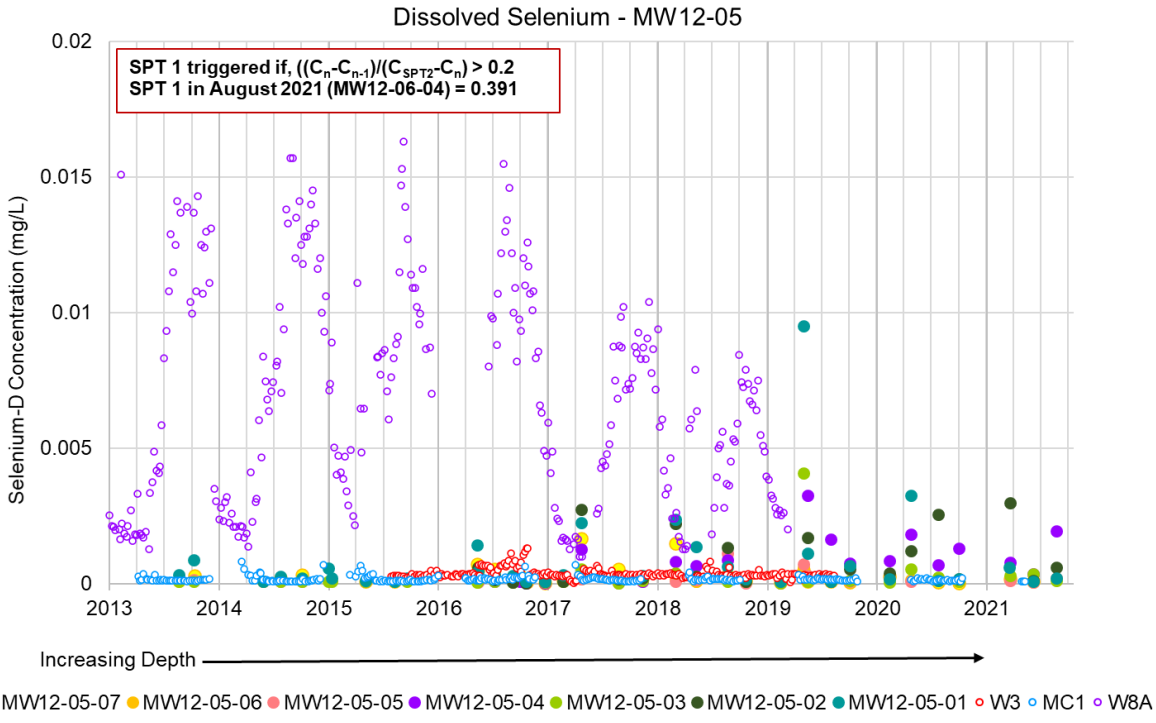
MW09-03
NO3- SPT Exceedances

Job No: 1CM002.055
Filename: 1CM002-055_2021Q3_GWAMP_Response_Figures.pptx

Minto Mine

Date:	Approved:	Figure:
April 2022	MSi	A-6



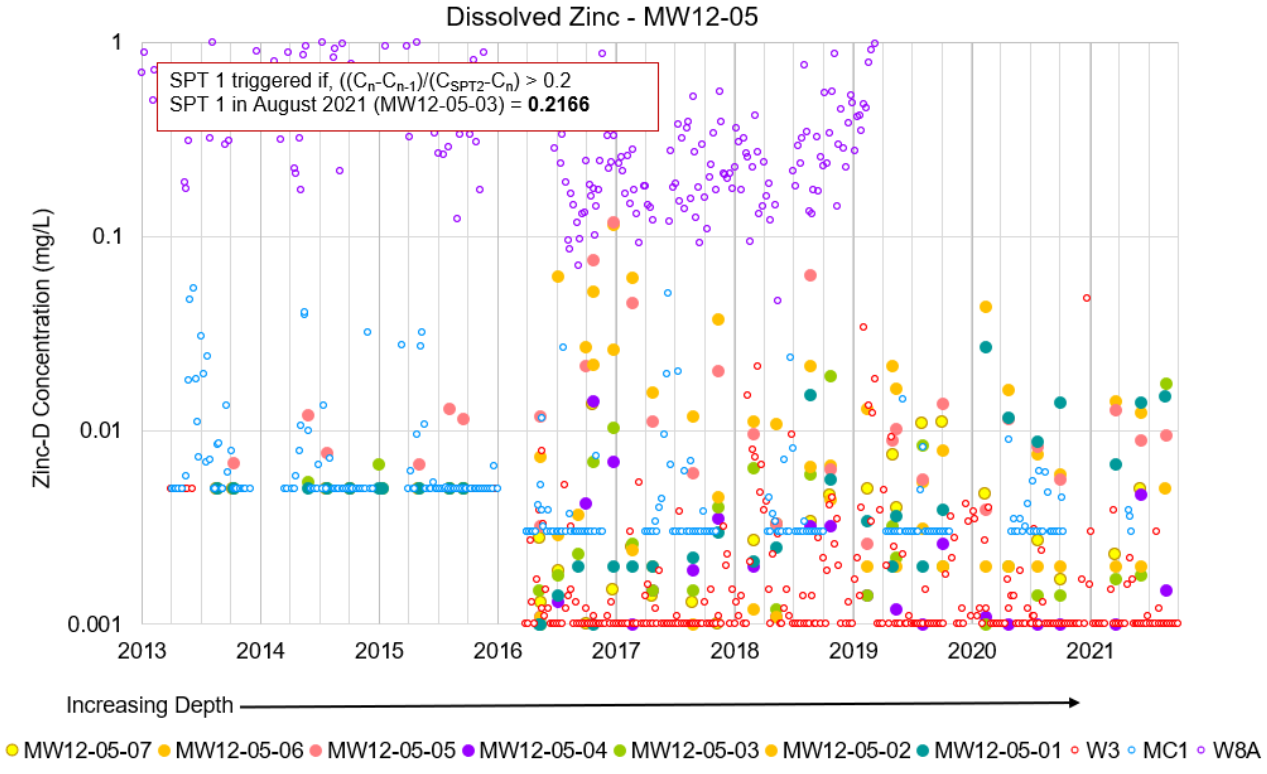


MW12-05-04 was the only sampling point to trigger a response (SPT 1)
Only SPTs exceeded in Q3 of 2021 shown in graph
WC and MC1 are SW monitoring points in Minto Creek
W8A dry since March 2019

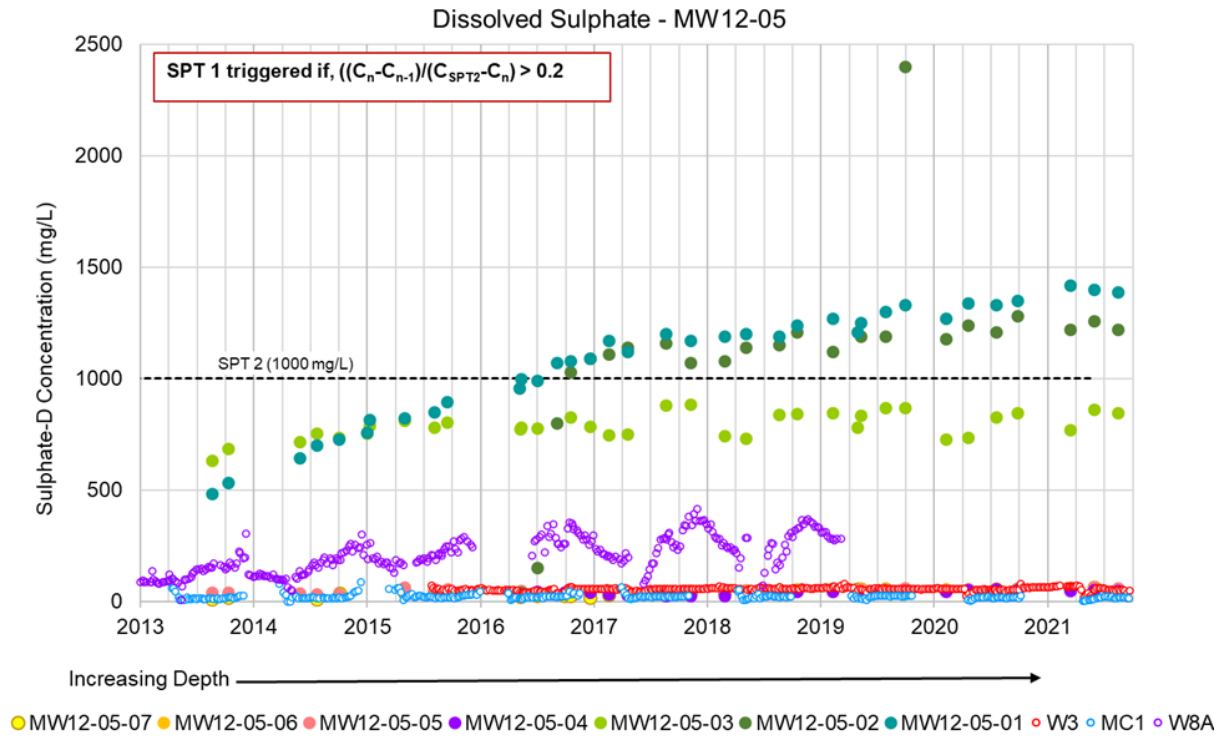
https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220207_Dec_Q4_AMP_Review/02_Analysis%26Charts/Minto_AMPResponse_2021MintoCreek/Minto_AMPResponse_2021Q3_MintoCreekGW_MSi.xlsx?d=wea3272e7133346feac1faed525095ee7&csf=1&web=1&e=SuhCpe

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220207_Dec_Q4_AMP_Review/02_Analysis%26Charts/Minto_AMPResponse_2021GWData_2012-2021/Minto_AMPResponse-2021Q3_GWData_2012-2021_MSi.xlsx?d=wb051110a9d244d9aa9ed9e1ea777b11a&csf=1&web=1&e=wYrCxY

srk consulting	MINTO METALS	Minto Mine Adaptive Management MW12-05 Water Level Data & Se SPT Exceedances
Job No: 1CM002.055 Filename: 1CM002-055_2021Q3_GWAMP_Response_Figures.pptx	Minto Mine	Date: April 2022 | Approved: MSi | Figure: B-1



MW12-05-05 were the only sampling points to trigger a response
Only SPTs exceeded in Q3 of 2021 shown in graph (applies to MW12-05-03 only)
WC and MC1 are SW monitoring points in Minto Creek



MW12-05-01 and MW12-05-02 were the only sampling points to trigger a response
Only SPTs exceeded in Q3 of 2021 shown in graph (applies to MW12-05-01 and MW12-05-02 only)
WC and MC1 are SW monitoring points in Minto Creek
W8A dry since March 2019

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220207_Dec_Q4_AMP_Review/02_Analysis%26Charts/Minto_AMPResponse_2021McGintyCreek/Minto_AMPResponse-2021Q3_McGintyCreekGW_MSi.xlsx?d=w9a5e97b38bd4b07b6dd6c9dfb4c36b0&csf=1&web=1&e=KuSjYL

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MINTO METALS

Minto Mine Adaptive Management

MW12-05
Zn-D and SO4 SPT Exceedances

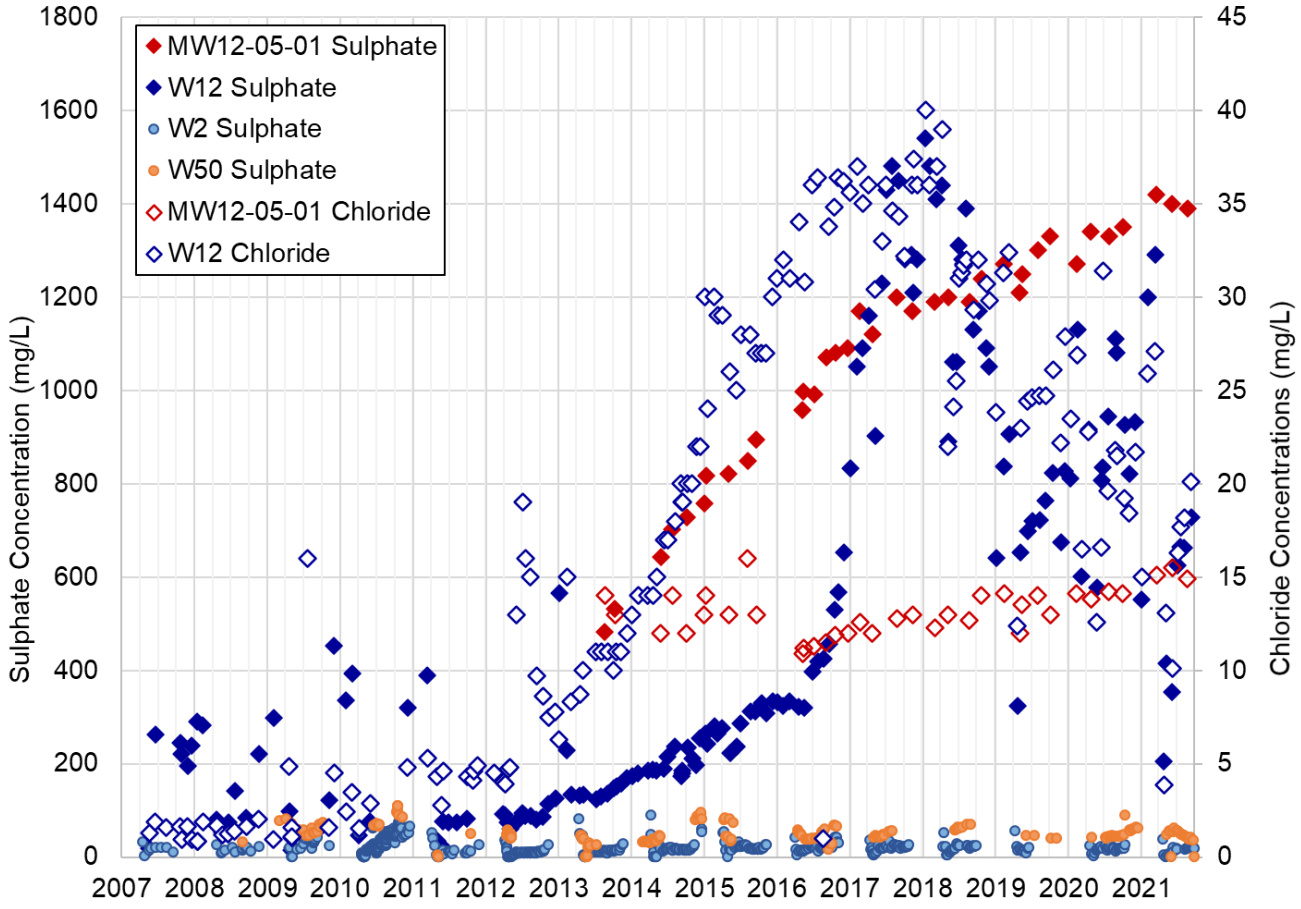
Job No: 1CM002.055
Filename: 1CM002-055_2021Q3_GWAMP_Response_Figures.pptx

Minto Mine

Date: April 2022

Approved: MSi

Figure: **B-2**



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MINTO METALS

Minto Mine Adaptive Management

MW12-05 & MW12-05-01/W12 (Main Pit)
SO_4^{2-}-D and Cl-D Concentrations

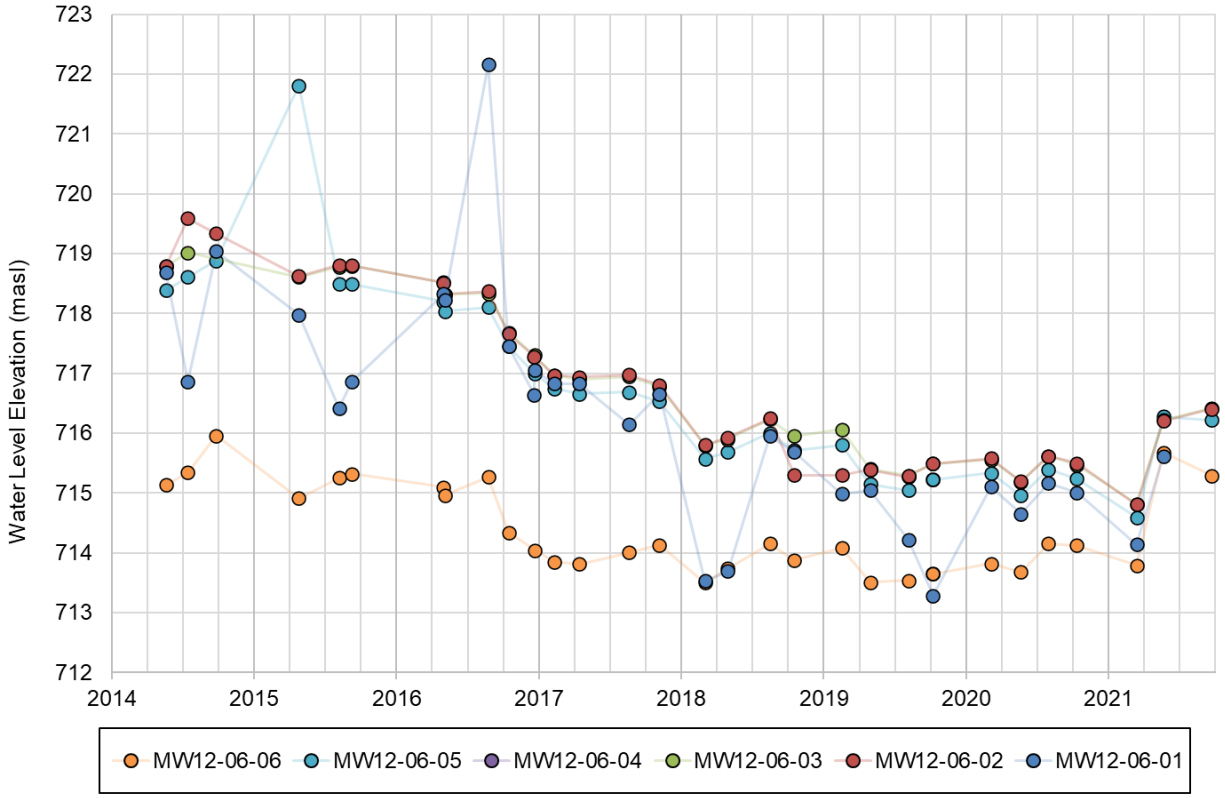
Job No: 1CM002.055
Filename: 1CM002-055_2021Q3_GWAMP_Response_Figures.pptx

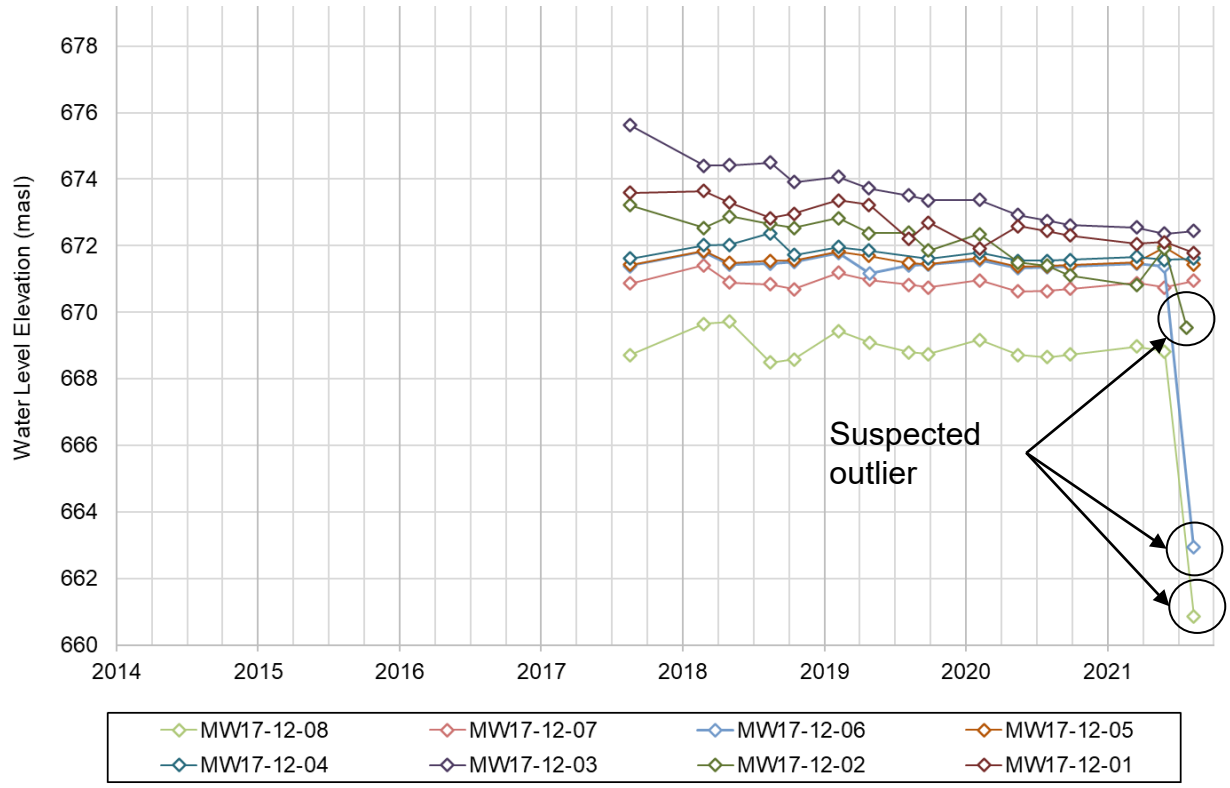
Minto Mine

Date: April 2022

Approved: MSi

Figure: **B-3**





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srk consulting

MINTO METALS

Minto Mine Adaptive Management

MW12-06 and MW17-12 Water Level Data

Job No: 1CM002.055
Filename: 1CM002-055_2021Q3_GWAMP_Response_Figures.pptx

Minto Mine

Date: April 2022

Approved: MSi

Figure: C-1

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March 30, 2022
Project No: 1CM002.055

Minto Mine
Minto Explorations Ltd.
PO Box 11
Whitehorse, YT Y1A 5X9

Attention: Journey Paulus, Manager, Environment

Dear Journey:

Subject: 2021 Q4 (October - December) Groundwater AMP Events

The Minto Mine Operational Adaptive Management Plan was updated in 2018 for groundwater monitoring, with the review frequency for groundwater triggers changed from monthly to quarterly, at the recommendation of SRK Consulting (SRK) who is the qualified professional (QP). As per AMP2017-02, all data concerning trigger exceedances are sent to the QP within a week of discovery and included in the subsequent review.

As part of the Minto Mine Operational Adaptive Management Plan, Minto Mine has collected and reviewed groundwater quality data. Minto completed an initial review of data collected at the McGinty Creek groundwater monitoring station (MW09-03) and Minto Creek groundwater monitoring stations MW12-05 and MW12-06 for the fourth quarter of 2021 (October - December) and compared results to specific performance thresholds (SPT) defined in the Minto Mine Operations Adaptive Management Plan (MEL, 2017-02). McGinty Creek monitoring stations are required to be sampled monthly while the Minto Creek stations are sampled quarterly. Due to issues with sampling equipment and the presence of glycol in some sampling ports, samples were not obtained in Q4 in MW12-05-04 and MW12-06-01. For Minto Creek and McGinty Creek, MEL identified exceedances of certain thresholds for sampling rounds conducted in October, November, and December of 2021 and, as per the plan, has contracted a QP to review those data and provide recommendations. SRK Consulting (Canada) Inc. was contacted by Minto environmental staff to provide QP review. This letter presents results of that review and recommendations.

SRK compared data against the 2017-02 AMP thresholds, historical data, and data from surface water at station MN4.5 in lower McGinty Creek and surface water stations W3 and MC1 in Minto Creek. Table 1 summarizes exceedances, observations on the data, interpretation, and recommendations. Figures are included with this review to illustrate the current physical (i.e., water level) setting compared to the Minto North pit. Graphs are included for each parameter exceeding thresholds and includes the full range of data collected to date.

Key conclusions and recommendations are summarized below. Table 1 summarizes observations and recommendations for all parameters.

For MW09-03 (McGinty Creek):

- The Minto North Pit is not a source of water to the groundwater monitored at this station; water levels in the monitoring well are higher than the pit water level. Water levels in the pit have been increasing slowly but remain well below the monitoring well water levels. These data continue to show no hydraulic gradient from the pit towards the monitoring well.
- Water levels at this station have been affected by the mining of Minto North, but the groundwater divide between Minto North and McGinty Creek remains, somewhere in the vicinity of MW09-03.
- Water levels in MW17-11 are generally lower than in MW09-03, with the exception of zone 5, which is screened shallower than zones 1 and 2 in MW09-03 and has higher water levels than the other monitoring zones. Water levels in MW17-11 and MW09-03 indicate an overall downward gradient between the shallow-most zone and the remaining deeper zones. Differences in water level between deep zones are less pronounced, and a vertical gradient is not clear.
    - Recommendation: continue collecting water level/pressure profiles at this well according to the routine schedule.
- Concentrations of dissolved aluminum at MW09-03 have been generally stable and below SPT 1 since 2016. The value measured at MW09-03-01 in Q4 exceeded SPT 1 but is out of the range of most values and may be an outlier. While variability has been present in the data, concentrations are consistently below thresholds. Concentrations in McGinty Creek at MN-4.5 are variable and often higher than groundwater concentrations with no increasing trend.
- Concentrations of dissolved arsenic at MW09-03-01 have consistently exceeded SPT 1 since summer of 2016, and inconsistently exceeded thresholds in MW-09-02 in the same period. High variability is observed, but relatively recent data in MW09-03-01 exceeds thresholds more frequently than in the past. Anomalous values were detected in October 2018, September 2019, and June 2020 at nearly an order of magnitude more than recent average concentrations. In between the anomalous events, concentrations decreased to the historic range, suggesting these values are outliers. High concentrations do not correlate exactly with seasonal changes in groundwater level but may indicate an influence from seasonal variation (in recharge, flow, etc.). Vertical profiles and timing of peak concentrations suggest increased loading may be occurring during low flow periods or freshet, possibly suggesting greater mobilization of trace elements when higher volumes of water could infiltrate through the unsaturated zone and mobilize trace elements. Loading calculations included in the Minto Mine - 2019 Groundwater Review and Summary of OAMP SPT Exceedances (SRK 2020) indicate arsenic concentrations would need to increase by at least one order of magnitude for an exceedance in McGinty Creek at MN-4.5 to be observed. While there is some seasonal variability in McGinty Creek chemistry, surface water concentrations are not increasing and remain in the range of baseline data at MN-4.5.
- Concentrations of dissolved cadmium at MW09-03-01 and MW09-03-02 have inconsistently exceeded SPT 1 in he past with high variability in the observed data. Cadmium data exceed thresholds more frequently since 2017 and while average concentrations have increased beginning in 2017, there is no consistent increasing trend with many values in the last two years below the threshold. Seasonal variability seems to be present, with highest concentrations occurring in Q1 and

Q2, potentially related to freshet. Cadmium concentrations in McGinty Creek remain low and stable, showing no impact from the groundwater and loading calculations presented in SRK 2020 indicate groundwater concentrations would need to increase by at least one order of magnitude for an exceedance in McGinty Creek at MN-4.5 to be observed.

- Concentrations of dissolved copper have exceeded SPT 1 sporadically in MW09-03-02 since late 2016. One monitoring event exceeded thresholds in Q4 2021 but appears to be related to seasonal variation, as peak concentrations occur historically in Q2 or Q3. Dissolved copper values in McGinty Creek remain in the range of historic data, no evidence of surface water impacts are present and loading calculations presented in SRK 2020 indicate groundwater concentrations would need to increase by at least one order of magnitude for an exceedance in McGinty Creek at MN-4.5 to be observed.

- Concentrations of dissolved selenium in MW09-03-01 and MW09-03-02 have exceeded thresholds sporadically in the last few years, with increased variability in the data beginning in 2017. Average annual concentrations in MW09-03-02 have been higher since 2018 than past years, but do not demonstrate a consistent increasing trend. Peak concentrations in Q1 and Q2 of these years indicate a season variation may be present. Loading calculations presented in SRK 2020 are not applicable to selenium, as elevated concentrations are already being observed in McGinty Creek at MN-4.5. In a memo prepared by Minnow Environmental in 2019 (*Evaluation of Dissolved Copper and Selenium AMP Threshold Exceedances in McGinty Creek*) it was concluded that the source of elevated selenium concentrations was unrelated to the Minto Mine and values were consistent with historical concentrations before the Minto North Pit was operational.

- Concentrations of dissolved sulphate have been decreasing in MW09-03-01 and MW09-03-02 since 2016. The most recent concentrations measured in MW09-03-02 exceeded SPT 2 but are within the range of values observed in previous years. Sulfate appears to vary seasonally, with concentrations reaching their peak in the summer months each year. While peak values in 2021 are higher than previous three years, concentrations are decreasing during Q4 similar to previous seasonal trends. Sulphate concentrations in McGinty Creek are variable, but remain in the range of historic data, with no evidence of surface water impacts present.

- Concentrations of dissolved zinc at MW09-03-01 and MW09-03-02 have inconsistently exceeded SPT 1 and SPT 2 thresholds since the summer of 2016. High variability is observed in the data, but relatively recent data exceeds thresholds more frequently than in the past, MW09-03-02 appeared to show a potential year-to-year increasing trend but values in 2021 have been lower than the previous two years. High concentrations do not correlate exactly with seasonal changes in groundwater level but may indicate an influence from seasonal variation. Vertical profiles and timing of peak concentrations suggest increased loading may be occurring during freshet when higher volumes of water infiltrate through the unsaturated zone and mobilize trace elements. While there is some seasonal variability in McGinty Creek chemistry, surface water concentrations are not increasing and remain in the range of baseline data. Loading calculations presented in SRK 2020 indicate groundwater concentrations would need to increase by at least one order of magnitude for an exceedance in McGinty Creek at MN-4.5 to be observed.

- Recommendations: due to the low potential loading of groundwater into McGinty Creek limited action is recommended at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road.

- The load and accretion study, as recommended in the 2019 Review of OAMP Exceedances, was not conducted in 2021 due to unfavorable conditions with surface water flows which created conditions that would make loading from groundwater undetectable. It is recommended that the load and accretion study be conducted in 2022 if the conditions are appropriate.

- Concentrations of dissolved nitrate at MW09-03-02 have exceeded SPT 2 since the fall of 2016. Concentrations have shown a consistent increasing trend since October 2016 with potential seasonal effects producing higher concentrations in Q4 of each year. Loading calculations presented in SRK 2020 indicate groundwater concentrations would need to increase by a factor of 2 from the most recent measurement for an exceedance in McGinty Creek at MN-4.5 to be observed. As the nitrate is likely sourced from blast rock used to construct the haul road, load is expected to flush over time and the increasing trend is not expected to persist indefinitely. Concentrations will continue to be closely monitored. A more detailed review of nitrate behavior is provided in the 2020 Review of OAMP Exceedances. While there is some seasonal variability in McGinty Creek chemistry, surface water concentrations are not increasing and remain in the range of baseline data.

  - Recommendation: due to the low potential loading of groundwater into McGinty Creek limited action is recommended at this time. Continue monitoring as per schedule. Continue to look for seeps from the haul road that can be used for comparison. Compare vertical concentration profiles in MW09-03 and MW17-11 as more annual data becomes available from MW17-11. Conduct load accretion study as recommended in the 2019 Review of OAMP Exceedances, when conditions are appropriate to do so.

For MW12-05 and MW12-06 (Minto Creek):

- Water level data in the deepest zone of MW12-06 decreased sharply between November 2017 and March 2018, which coincides with development of the Minto East underground. Water levels in the deepest zone increased again between May and August 2018, when development of the underground stopped. More recently, the water level in the deepest zone, MW12-06-01, decreased between Q2 and Q4 2019 which changed the overall vertical gradient from upwards to downwards and then increased again in Q1 2020 reversing the gradient once again. The decrease in water level coincides with the re-start of underground development in September 2019, and while dewatering was continued throughout the temporary underground closure, the increased activity could potentially have influenced the deep groundwater levels. The same trend was not observed in MW12-05 or MW17-12, suggesting these wells are currently outside the area of groundwater affected by the development of the underground. Consistent vertical gradients cannot be identified and there exists a complex multidirectional vertical gradient between other zones. Seasonal fluctuations are apparent in MW12-05, with peak water levels occurring in Q2 of the past 2 years.

  - Recommendation: continue collecting water level/pressure profiles at this well according to the routine schedule. Continue to monitor changes in groundwater pressure as system equilibrates following the cessation of Minto East underground development. Continue to monitor complex multidirectional vertical gradient in MW12-06.

- Concentrations of dissolved zinc have been stable below thresholds in MW12-05 in the past with some slight variability. The only exceedance to SPT 1 occurred in the most recent sampling event in MW12-05-06 but is within the range of historic concentrations. Surface water concentrations are not increasing and remain in the range of baseline data suggesting no impacts related to groundwater concentrations are being observed.

    - Recommendation: continue monitoring as per routine schedule. Assess sources of potential contaminants and include in the 2021 Review of OAMP Exceedances.

- Concentrations of sulphate at MW12-05-01 and MW12-05-02 continue to be elevated above SPT 2. Concentrations at MW12-05-01 and MW12-05-02 were increasing historically but show signs of stabilization after August 2017. While concentrations are still increasing, data do not show the same rate of increase as was observed prior to 2017, with the exception of the Q4 2019 observation in MW12-05-02, which had a measured concentration of 2400 mg/L, nearly double the previous sampling event. As this magnitude of concentration is isolated to one sampling event, and values have since decreased to be consistent with previous trends, the datapoint is considered an outlier.

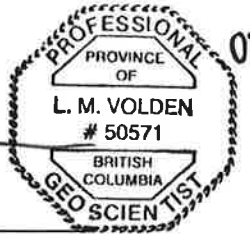
  Sulphate concentrations in MW12-06-01 have been increasing since Q1 2020 with the most recent events approaching SPT 2. These concentrations are isolated to the deepest zone in MW12-06, which has shown evidence of disruption (in water levels and chemical equilibrium) related to underground mining in the past. A sample was not obtained from MW12-06-01 in Q4 so additional data are needed to assess the trend. The cause of increasing sulphate concentrations in MW12-06-01 is unclear at this time, but trends will continue to be closely monitored.

  Previous investigations into the source of elevated sulphate in deep groundwater as observed at MW12-05 conclude it is unrelated to mining activities. Sulphate concentrations in MW17-12 exhibit an increasing gradient with depth but no increasing trend temporally. Minto Creek continues to indicate no trends in sulphate concentration that can clearly be related to changes in groundwater concentrations.

    - Recommendation: continue monitoring as per schedule and review/update investigations as to potential sources of SO_4 as part of the overall review of site groundwater quality.

Sincerely,

SRK Consulting (Canada) Inc.



03/30/22

Laura Volden, MSc, PGeo
Senior Consultant (Hydrogeochemistry)

Reviewed by

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Daniel Mackie, PGeo
Principal Consultant (Hydrogeology)

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The opinions expressed in this report have been based on the information available to SRK at the time of preparation. SRK has exercised all due care in reviewing information supplied by others for use on this project. Whilst SRK has compared key supplied data with expected values, the accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data. SRK does not accept responsibility for any errors or omissions in the supplied information, except to the extent that SRK was hired to verify the data

Appendix A: Tables

Table 1. Summary of Groundwater Quality Data, AMP Thresholds, Observations and Recommendations

Location	Month	Parameter & Concentration Data		Threshold Exceeded	Observations	Trends	Risk Narrative	Recommendation
McGinty Creek Catchment								
MW09-03-01		As-D	mg/L		**Water Level (Figure A-1): see previous section.see previous section.** Water levels in MW09-03 Zone 1 and Zone 2 started declining when mining started in Minto North. Declining trend decreased about 6 months after mining completed. Water levels remain higher than pit bottom. Water levels increased between July and September 2016 before returning to previous trend. Similar trend occurred in 2017 when water levels increased between April and September, declined until May 2018 and increased again until September. Water levels increased in Q3 2020, consistent with previous seasonal trends. Peak water levels in 2020 were higher than previous four years. Minto North pit continues to act as a hydraulic sink, and has lowered groundwater levels. Water levels at MW09-03 suggest the presence of a groundwater divide somewhere north of the pit. Seasonal fluctuations indicate some influence from recharge. Loading to McGinty Creek could only occur from haul road material along the pit perimeter **Water Quality (Figure A-2):** Seasonal variations appear to be present, with highest values occurring the summer months (with the exception of outliers). Values during Q4 are in the range of historic data very near SPT 2. As-D values for MN-4.5 in McGinty Creek have been stable in the historic range.	While data from late summer 2015 to August 2017 showed signs of an increasing trend, values exhibit significant variability throughout the year. Peak values during Q2 and Q3 suggest a seasonal trend related to freshet may be present. Elevated values are isolated to October 2018, September 2019 and June 2020 and appear to be outliers. Concentrations from 2016 to 2018 showed potential seasonal variability, becoming relatively stable in 2019. Concentrations from 2016 thru 2020 remained relatively steady.	Lack of any clear upwards trend in McGinty Creek, as measured at MN-4.5, suggests currently no impact. Minto North represents only 0.4% of the McGinty Creek total watershed. Assuming that groundwater flows are proportional to surface water flows (load can only be coming from haul road, not pit leakage) groundwater concentrations would need to be at least 10x higher to result in MN-4.5 As concentrations reaching MN-4.5 SPT1. Overall risk of arsenic loading to McGinty Creek from groundwater is low at this time.	Limited action at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road. Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
Figure A-1, A-2	October	2021-10-10	0.0009	0.00081 (SPT 2)				
	November	2021-11-07	0.00101	0.00081 (SPT 2)				
	December	2021-12-27	0.00089	0.00081 (SPT 2)				
MW09-03-01		Cd-D	mg/L		**Water Level (Figure A-1):** see previous section.	Highest concentrations measured to date have been in Q3 of 2020, but are not increasing consistently year-over-year, and show potential seasonal variability. While there is no consistent increasing trend, and variability is high, annual averages increased between 2016 and 2019.	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5, suggests no current impact to surface water. Load study done as part of the 2019 annual groundwater review indicates concentrations need to be at least an order of magnitude higher for threshold exceedances to occur at MN-4.5.	Limited action at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road. Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
Figure A-1, A-3	October	2021-10-10	0.0001	0.000075 (SPT 1)	**Water Quality (Figure A-2):** Concentrations beginning in 2019 have been more sporadic than the past, with the highest concentration measured in September 2020. Sampling events sporadically exceed thresholds, with the most recent measurement well below and in the range of baseline concentrations. Cd-D values have been stable in the historic range for MN-4.5 in McGinty Creek.			
	November	2021-11-07	-	-				
	December	2021-12-27	-	-				
MW09-03-01		Zn-D	mg/L		**Water Level (Figure A-1):** see previous section.	Concentrations are consistent with previous observations with high variability throughout each year. Peak concentrations during late Q1 and early Q2 suggest a seasonal trend related to freshet may be present.	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5, suggests no current impact to surface water. Groundwater flux in this zone expected to be low based on low K. Load study done as part of the 2019 annual groundwater review indicates concentrations need to be at least an order of magnitude higher for threshold exceedances to occur at MN-4.5.	Limited action at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road. Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
Figure A-1, A-4	October	2021-10-10	0.0380	0.022 (SPT 2)				
	November	2021-11-07	0.021	0.013 (SPT 1)	**Water Quality (Figure A-4):** Increased variability in measurements starting in August 2015. Exceedances tend to occur during seasonal peaks but approximately half the sampling events fall below thresholds. Zn-D values have been stable in the historic range for MN-4.5 in McGinty Creek.			
	December	2021-12-27	-	-				
MW09-03-02		Al-D	mg/L		**Water Level (Figure A-1):** see previous section.	Potential, though inconsistent, seasonal trend related to increased loading due to either high infiltration and trace element mobilizing during freshet or low flow periods (Q1-Q2). Most recent data point is near the threshold and lower than outliers in previous years.	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5, suggests no current impact to surface water. Load study done as part of the 2019 annual groundwater review indicates concentrations need to be at least an order of magnitude higher for threshold exceedances to occur at MN-4.5.	Limited action at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road. Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
Figure A-1, A-2	October	2021-10-10	-	-				
	November	2021-11-07	-	-	**Water Quality (Figure A-2):** Concentrations have been more sporadic since the beginning of 2018 with intermittent exceedances to SPT 2. The majority of sampling events are well below SPT 1, with exceedances sporadic and potential outliers. Al-D values have been stable in the historic range for MN-4.5 in McGinty Creek.			
	December	2021-12-27	0.0074	0.0073 (SPT1)				
MW09-03-02		Cd-D	mg/L		**Water Level (Figure A-1):** see previous section.	Highest concentrations measured to date have been in Q3 of 2019, but are not increasing consistently year-over-year, and show potential seasonal variability. While there is no consistent increasing trend, and variability is high, annual averages increased between 2016 and 2019.	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5, suggests no current impact to surface water. Load study done as part of the 2019 annual groundwater review indicates concentrations need to be at least an order of magnitude higher for threshold exceedances to occur at MN-4.5.	Limited action at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road. Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
Figure A-1, A-3	October	2021-10-10	0.000391	0.000272 (SPT2)	**Water Quality (Figure A-2):** Concentrations beginning in 2019 have been more sporadic than the past, with the highest concentration measured in September 2019. While most recent data points exceed thresholds, concentrations are lower than previous two years. Cd-D values have been stable in the historic range for MN-4.5 in McGinty Creek.			
	November	2021-11-07	0.000119	0.000031 (SPT 1)				
	December	2021-12-27	0.0000502	0.000031 (SPT 1)				
MW09-03-02		Cu-D	mg/L		**Water Level (Figure A-1):** see previous section.	No consistent trend in Cu-D. Highest values were detected in the first half of 2018 and have been consistently lower since with the exception of peak seasonal concentrations in 2021.	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5, suggests no current impact to surface water. Groundwater flux in this zone expected to be low based on low K. Load study done as part of the 2019 annual groundwater review indicates concentrations need to be at least an order of magnitude higher for threshold exceedances to occur at MN-4.5.	Limited action at this time. Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road. Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
Figure A-1, A-3	October	2021-10-10	0.0028	0.00263 (SPT1)	**Water Quality (Figure A-4):** Concentrations have been sporadically exceeding SPT 1 since late 2016. The March 2020 concentration was the highest recorded to date, but is currently isolated and may be an outlier. Concentrations in 2021 are within the range of values observed historically. Cu-D values have been stable in the historic range for MN-4.5 in McGinty Creek.			
	November	2021-11-07	-	-				
	December	2021-12-27	-	-				
MW09-03-02		Se-D	mg/L		**Water Level (Figure A-1):** see previous section.	Concentrations in 2021 are more variable than previous years with higher seasonal peaks than previous three years. It is	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5,	Limited action at this time.
Figure A-1, A-4	October	2021-10-10	0.0006	0.0005 (SPT1)	**Water Quality (Figure A-4):** Exceedances to SPT 1 have been occurring sporadically since 2016. Concentrations in 2021 are	unclear if a consistent increasing trend is	suggests no current impact to surface	Continue monitoring as per routine schedule. Continue to look

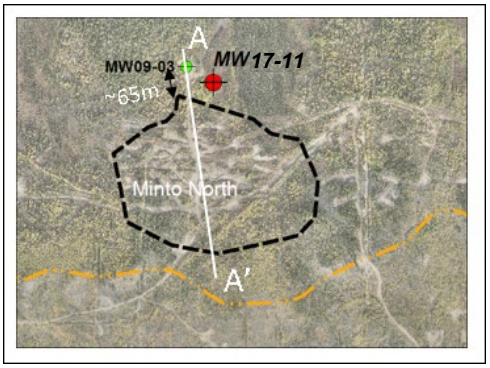
Table 1. Summary of Groundwater Quality Data, AMP Thresholds, Observations and Recommendations

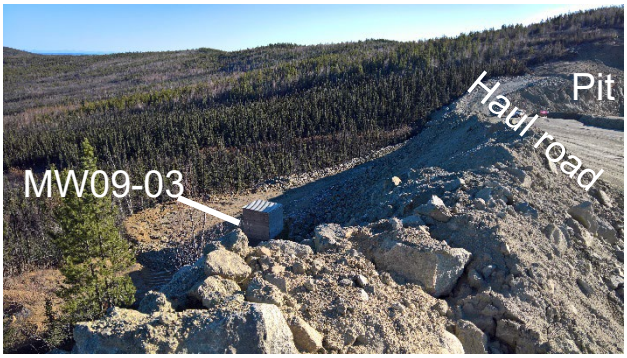
Location	Month	Parameter & Concentration Data		Threshold Exceeded	Observations	Trends	Risk Narrative	Recommendation
	November	2021-11-07	0.000708	0.0005 (SPT1)	consistently higher than in previous years.	unclear if a consistent, increasing trend is present at this point.	waste.	for opportunities to collect samples from surface seeps emanating from haul road.
	December	2021-12-27	0.000589	0.0005 (SPT1)			Groundwater flux in this zone expected to be low based on low K.	Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
					Se-D values have been stable in the historic range for MN-4.5 in McGinty Creek.	Elevated concentrations in Q2 suggest a seasonal trend related to freshet may be present.		
MW09-03-02		Zn-D	mg/L		**Water Level (Figure A-1):** see previous section.	Concentrations in Q4 are all above SPT 2 but within the range of historic concentrations.	Lack of any upwards trend in McGinty Creek, as measured at MN-4.5, suggests no current impact to surface water.	Limited action at this time.
Figure A-1, A-4	October	2021-10-10	0.0859	0.015 (SPT 2)	**Water Quality (Figure A-4):** Increased variability in measurements starting in August 2015. Concentrations in 2021 are higher than 2020, but in the range of previous four years.	Peak concentrations during late Q1 and early Q2 suggest a seasonal trend related to freshet may be present.	Groundwater flux in this zone expected to be low based on low K.	Continue monitoring as per routine schedule. Continue to look for opportunities to collect samples from surface seeps emanating from haul road.
	November	2021-11-07	0.0925	0.015 (SPT 2)			Load study done as part of the 2019 annual groundwater review indicates concentrations need to be at least an order of magnitude higher for threshold exceedances to occur at MN-4.5.	Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
	December	2021-12-27	0.0984	0.015 (SPT 2)				
					Zn-D values have been stable in the historic range for MN-4.5 in McGinty Creek.			
MW09-03-02		SO_4^{2-}-D	mg/L		**Water Level (Figure A-1):** see previous section.	Concentrations in Q4 are all above SPT 1, but are potentially outliers. More data are needed to assess a trend.	McGinty Creek, as observed at MN-4.5, does not show increasing or decreasing trends similar to MW09-03-02.	Limited action at this time.
Figure A-1, A-5	October	2021-10-10	7.95	7 (SPT1)				Continue monitoring as per routine schedule, continue to look for opportunities to collect samples from surface seeps emanating from haul road.
	November	2021-11-07	7.68	7 (SPT1)	**Water Quality (Figure A-5):** Sulphate concentrations have been decreasing overall since 2017. The most recent sampling events exceeded SPT 1, but are the only points to do so in the last 2 years. More data are needed to assess the trend.	Peak concentrations in the first half of each year suggest a seasonal trend is present related to freshet.	Considering the small catchment area for MW09-03-02, even if the well is affected by local recharge, potential loading to McGinty Creek via this groundwater is potentially low.	
	December	2021-12-27	7.54	7 (SPT1)				Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
					$SO4^{-}$-D values have been stable in the historic range for MN-4.5 in McGinty Creek.			
MW09-03-02		NO_3^--D	mg/L		**Water Level (Figure A-1):** see previous section.	Clear upward trend from May 2015-December 2021. Higher variability beginning in 2018, with highest value recorded occurring in October 2019. Overall trend is increasing.	McGinty Creek, as observed at MN-4.5, does not show increasing or decreasing trends similar to MW09-03-02.	Limited action at this time.
Figure A-1, A-5	October	2021-10-10	9.32	0.07 (SPT 2)				Continue monitoring as per routine schedule, continue to look for opportunities to collect samples from surface seeps emanating from haul road and continue to compare data from MW09-03-02 and MN-4.5 to confirm low nitrate concentrations persist in McGinty Creek.
	November	2021-11-07	11.5	0.07 (SPT 2)	**Water Quality (Figure A-5):** Overall increasing trend is present beginning in 2017. Variability increased drastically in Q3 2019 with sporadic elevated concentrations occuring outside the historic trend.		Considering the small catchment area for MW09-03-02, even if the well is affected by local recharge, potential loading to McGinty Creek via this groundwater is low.	
	December	2021-12-27	10.1	0.07 (SPT 2)				
					NO_3^--D values have been stable in the historic range for MN-4.5 in McGinty Creek.		Nitrate is expected to flush from the haul road construction material over time and not increase continuously.	Conduct load and accretion survey of McGinty Creek as recommended in the 2019 GW Review (when conditions are suitable).
Minto Creek Catchment								
MW12-05-01		SO_4^{2-}-D	mg/L		**Water Level (Figure B-1):** Water levels show increasing trends in the fall to late winter seasons, followed by a decrease throughout the summer. These trends have occurred for four consecutive years and are likely due to a seasonal fluctuation. Overall vertical gradient remains downward.	Previously observed upwards trend shows signs of stabilization after August 2017 with a slight increase again since Q4 2018. Concentrations have been consistent throughout 2020, suggesting concentrations are continuing to stabilize.	Minto Creek, as observed at W3 and MC1, do not show any upwards trend similar to MW12-05.	No further action at this time.
Figure B-1	October	N/A	N/A				Downwards gradient in MW12-05 and low flux (low hydraulic conductivity) suggest groundwater discharge not currently reaching creek or groundwater load small compared to surface water load.	Continue monitoring as per routine schedule.
	November	2021-11-15	1360	1000 (SPT 2)				Continue investigation into sulphate source and causes.
	December	N/A	N/A					
					Water Quality (Figure B-1): Concentrations linearly increased until August 2017, stabilizing between 1200 and 1500 mg/L beginning in 2018.	No upwards trend observed in Minto Creek. Seasonal variation evident at W8A, but much lower concentration than, and not considered likely to be connected to groundwater at MW12-05 as high concentrations at MW12-05 are at significant depth while W8A was a shallow DSTF monitoring point.		
					SO_4^{2-}-D values have been stable in the historic range at W3 and MC1 in Minto Creek.			
MW12-05-02		SO_4^{2-}-D	mg/L		**Water Level (Figure B-1):** see previous section.	Previously observed upwards trend shows signs of stabilization after August 2017 with higher varibaility since Q1 2018. One value from Q4 2019 was considerably higher (2400 mg/L) but has not occurred since, suggesting it was an outlier.	Minto Creek, as observed at W3 and MC1, do not show any upwards trend similar to MW12-05.	No further action at this time.
Figure B-1	October	N/A	N/A				Downwards gradient in MW12-05 and low flux (low hydraulic conductivity) suggest groundwater discharge not currently reaching creek or groundwater load small compared to surface water load.	Continue monitoring as per routine schedule. Continue investigation into sulphate source and causes.
	November	2021-11-15	1230	1000 (SPT 2)	**Water Quality (Figure B-1):** Concentrations linearly increased until August 2017, and have since stabilized around 1200 mg/L.			
	December	N/A	N/A					
					SO_4^{2-}-D values have been stable in the historic range at W3 and MC1 in Minto Creek.	No upwards trend observed in Minto Creek. Seasonal variation evident at W8A, but not likely connected to groundwater at MW12-05.		
MW12-06-06		Zn-D	mg/L		**Water Level (Figure C-1):** see previous section.	Concentrations have been stable at low concentrations with only isolated exceedances to SPT 1. No increasing trend is present.	Exceedances are isolated, concentrations are wel below SPT 2 and no impacts are observed at monitoring stations in Minto Creek.	No further action at this time.
Figure C-1, C-2	October	N/A	N/A		**Water Quality (Figure B-1):** Concentrations have consistently been below thresholds in the past with only isolated exceedances to SPT 1. No increasing trend is present and values are well below SPT 2.			Continue monitoring as per routine schedule.
	November	N/A	N/A					
	December	2021-12-29	0.0364	0.263 (SPT1)				
					Zn-D values have been stable in the historic range at W3 and MC1 in Minto Creek.			

Notes:

'N/A' indicates no sample was taken for that month
'-' indicates value for that month did not trigger a response
Zones with no data or no exceedances: MW09-03-03 (dry), MW12-05-03, MW12-05-04, MW12-05-05, MW12-05-06, MW12-05-07, MW12-06-01, MW12-06-02, MW12-06-03, MW12-06-04, MW12-06-05

Appendix B: Figures





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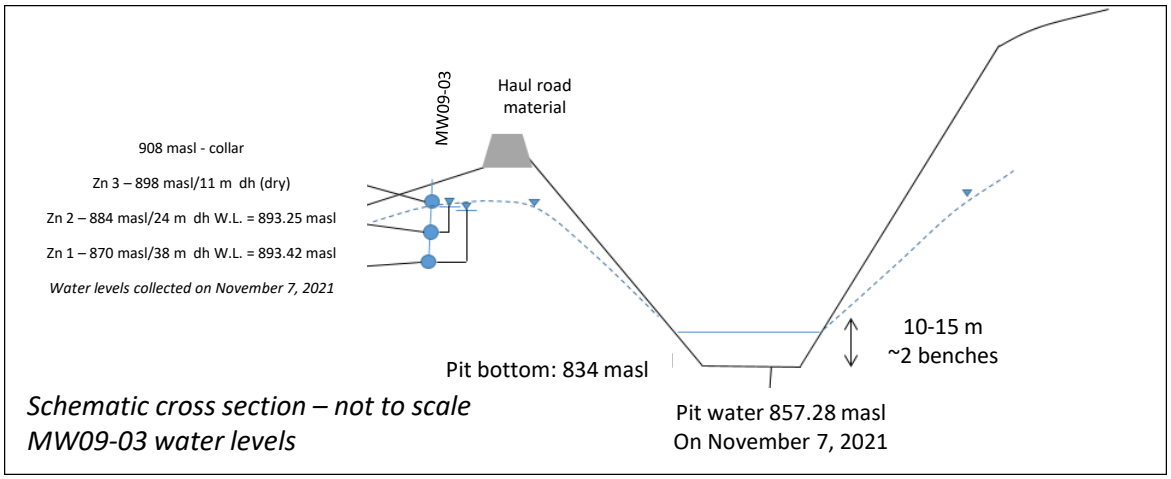
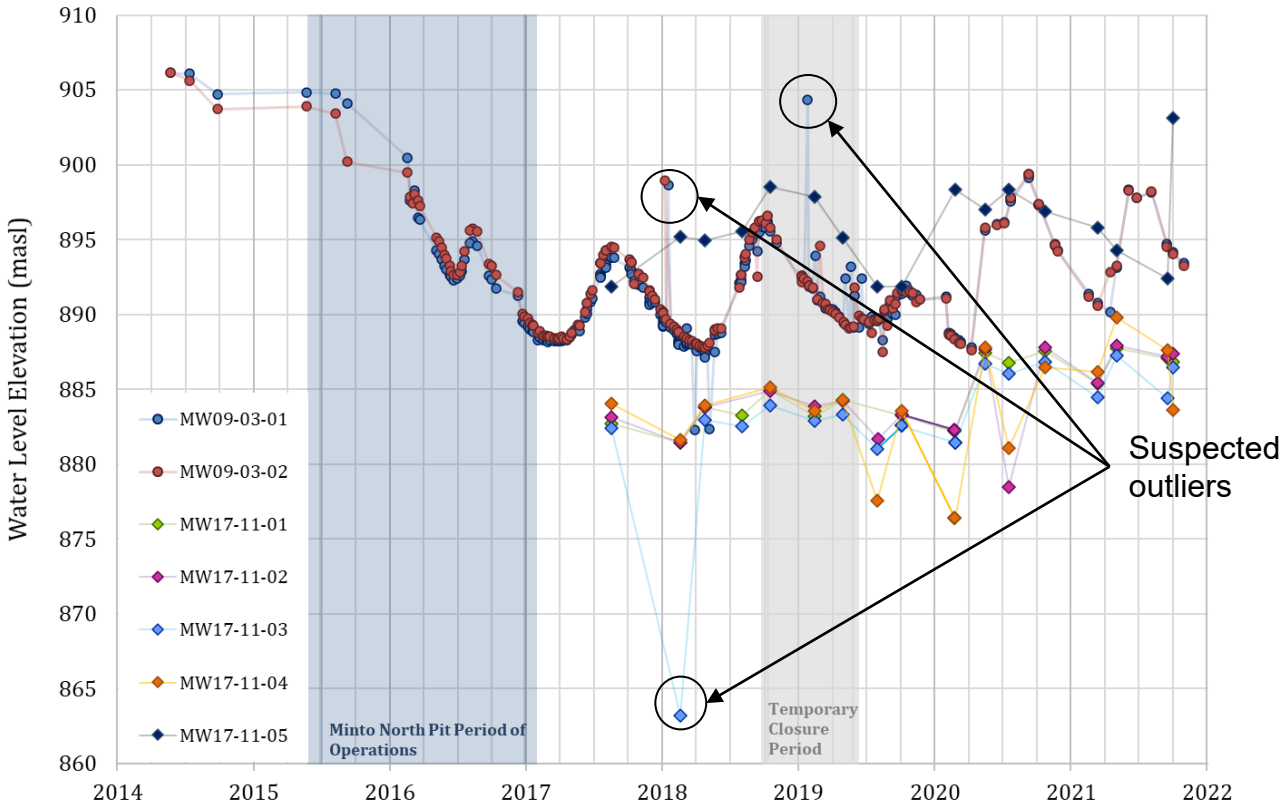


Schematic cross section – not to scale
MW09-03 water levels



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MINTO METALS

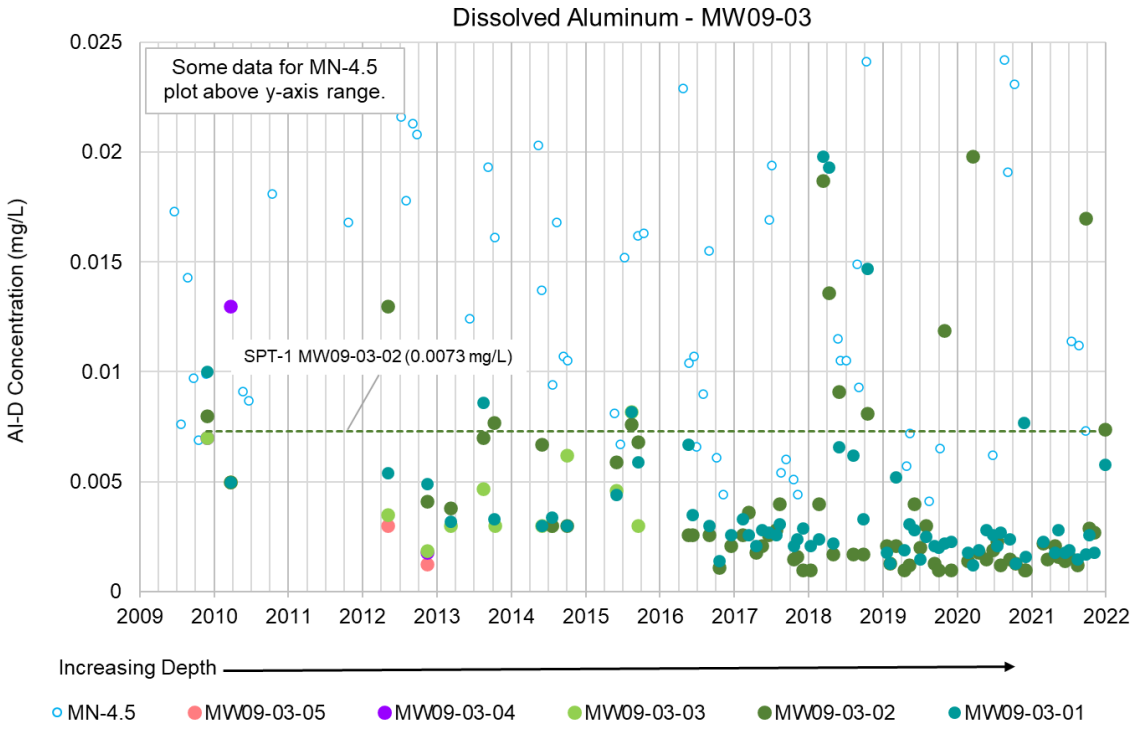
Minto Mine Adaptive Management

Minto North Pit: Physical setting and water levels

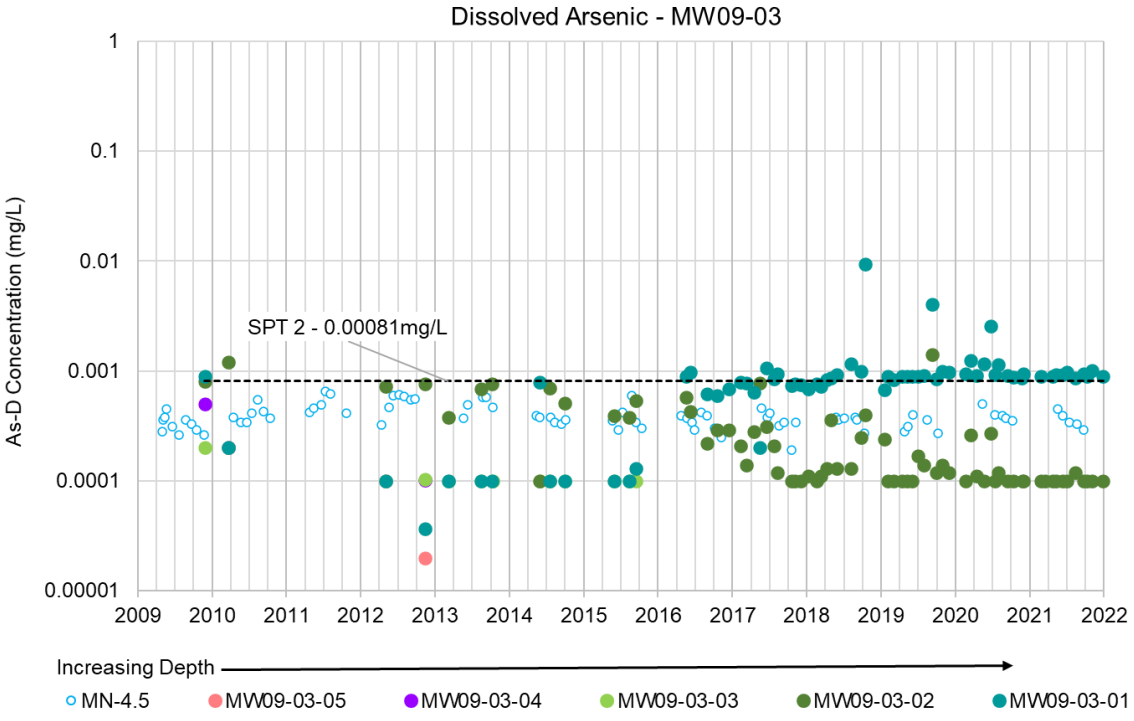
Job No: 1CM002.055
Filename: 1CM002-055_2021Q4_GWAMP_Response_Figures.pptx

Minto Mine

Date: April 2022 | Approved: MSi | Figure: A-1



MW09-03-02 as the only sampling point to trigger a response
Only SPTs exceeded in Q4 of 2021 shown on graph (applies to MW09-03-02 only)
MN-4.5 is a SW monitoring point in McGinty Creek



MW09-03-01 was the only sampling point to trigger a response
Only SPTs exceeded in Q4 of 2021 shown on graph (applies to MW09-03-01 only)
MN-4.5 is a SW monitoring point in McGinty Creek

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MINTO METALS

Minto Mine Adaptive Management

MW09-03
Al-D and As-D SPT Exceedances

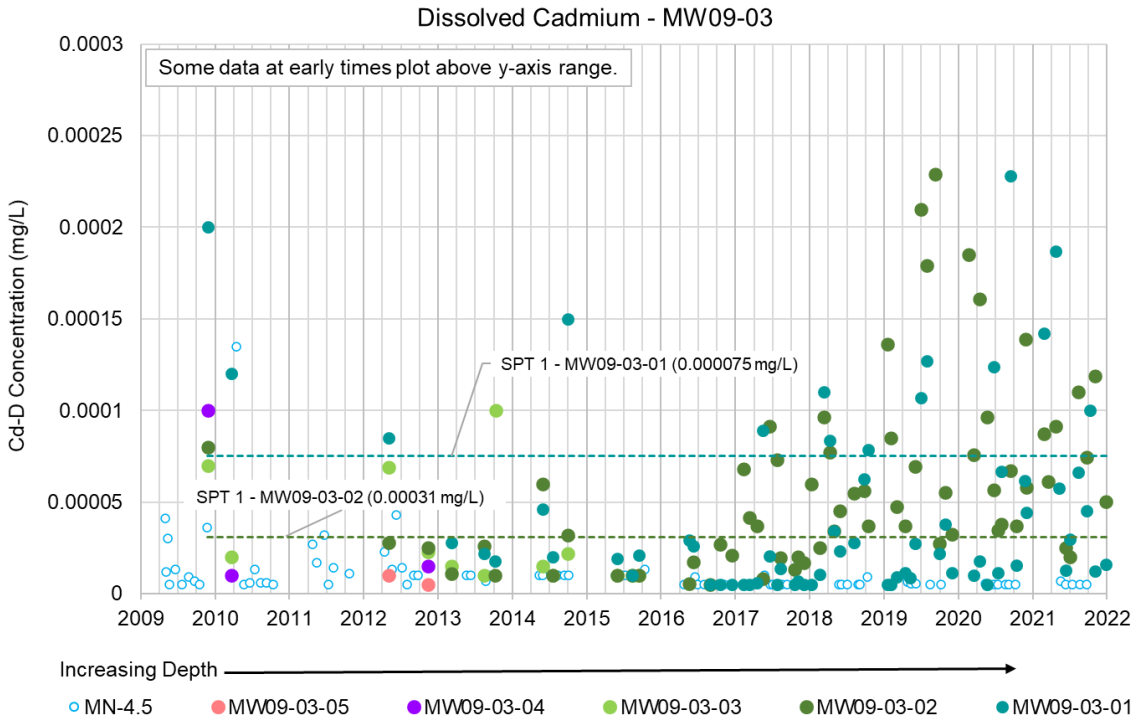
Job No: 1CM002.055
Filename: 1CM002-055_2021Q4_GWAMP_Response_Figures.pptx

Minto Mine

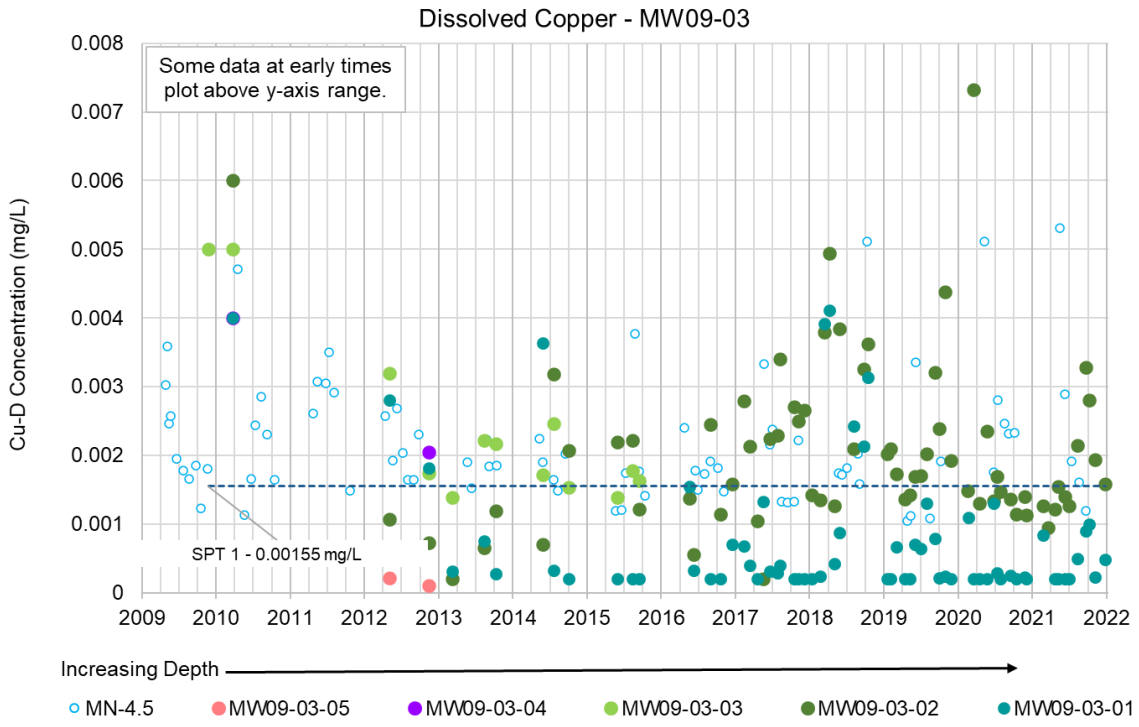
Date: April 2022

Approved: MSi

Figure: A-2



MW09-03-01 and MW09-03-02 were the only sampling points to trigger a response
Only SPTs exceeded in Q4 of 2021 shown on graph (applies to MW09-03-01/02 only)
MN-4.5 is a SW monitoring point in McGinty Creek



MW09-03-02 was the only sampling point to trigger a response
Only SPTs exceeded in Q4 of 2021 shown on graph (applies to MW09-03-02 only)
MN-4.5 is a SW monitoring point in McGinty Creek

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MINTO METALS

Minto Mine Adaptive Management

MW09-03
Cd-D and Cu-D SPT Exceedances

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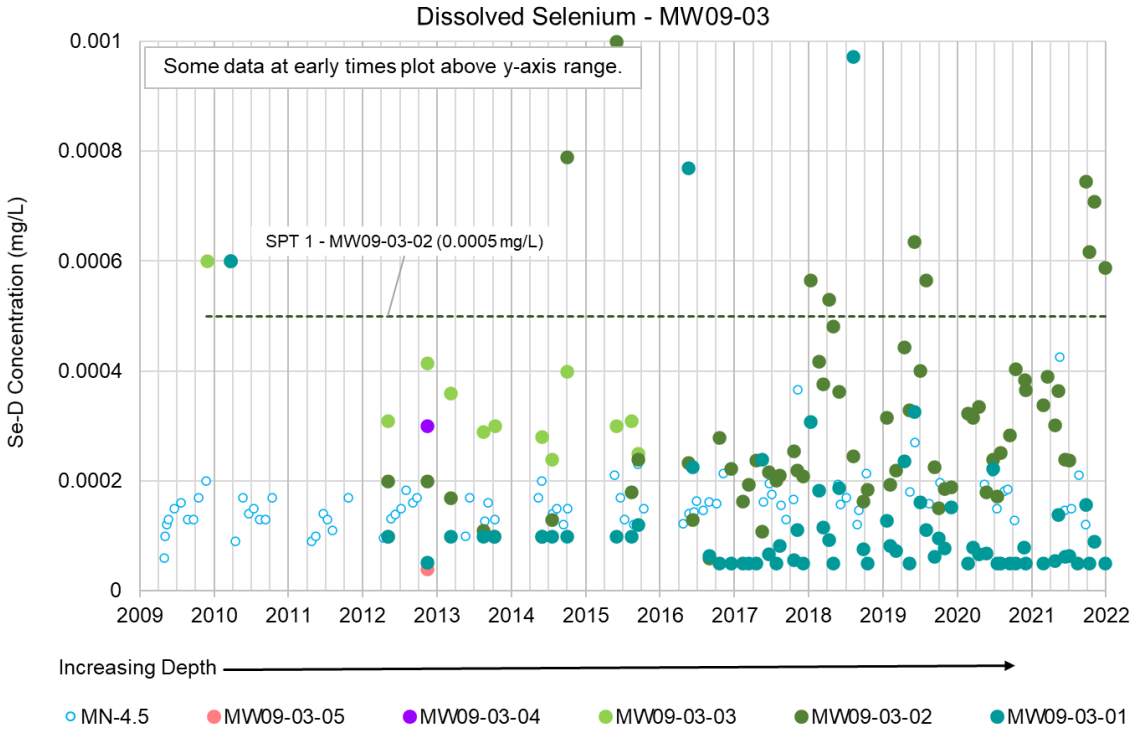
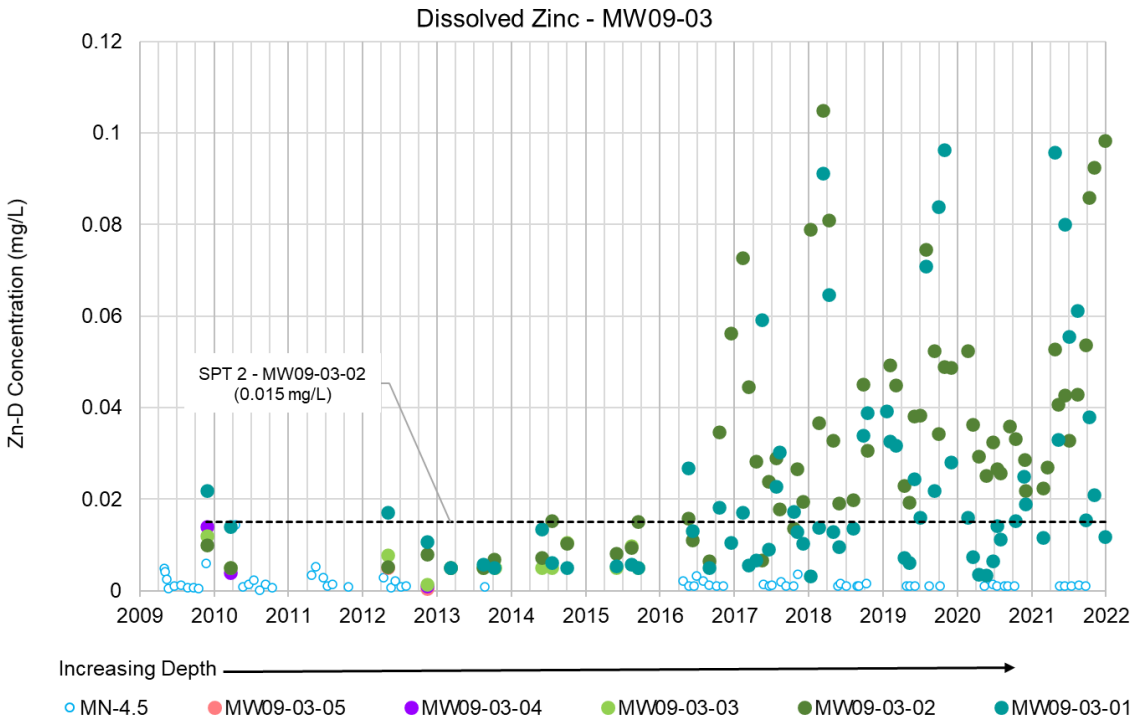
Minto Mine

Date:	Approved:	Figure:
April 2022	MSi	A-3



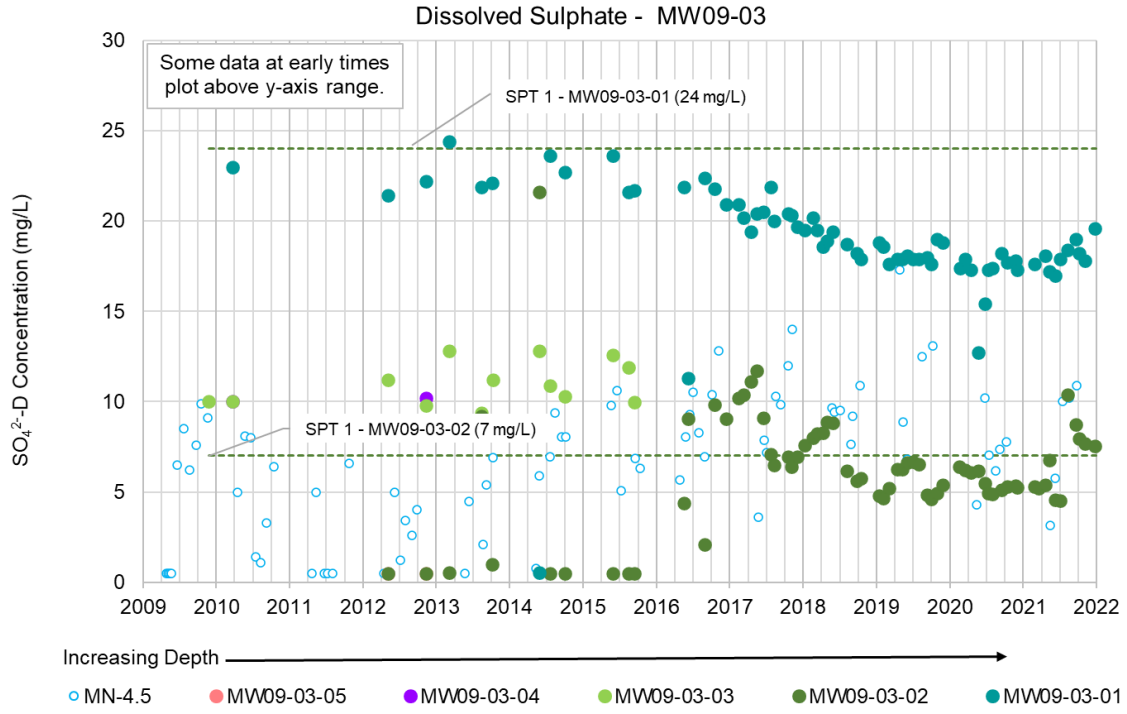
MW09-03-02 wasthe only sampling point to trigger a response
Only SPTs exceeded in Q4 of 2021 shown on graph (applies to MW09-03-02 only)
MN-4.5 is a SW monitoring point in McGinty Creek



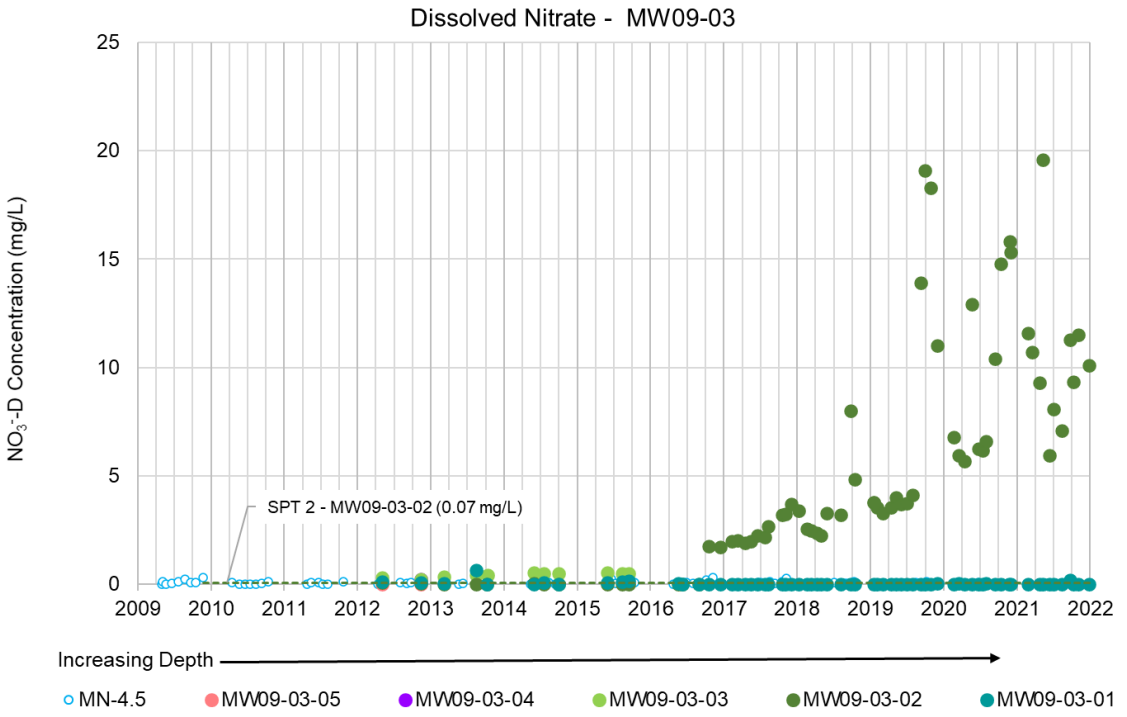
MW09-03-01 and MW09-03-02 were the only sampling points to trigger a response
Only SPTs exceeded in Q4 of 2021 shown on graph (applies to MW09-03-01/MW09-03-02 only)
MN-4.5 is a SW monitoring point in McGinty Creek

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220207_Dec_Q4_AMP_Review/02_Analysis%26Charts/Minto_AMPResponse_2021McGintyCreek/Minto_AMPResponse-2021Q4_McGintyCreekGW_MSi.xlsx?d=w2f9c6414aee1487c8b371c7e42adee8b&csf=1&web=1&e=XOw8I7

srk consulting	MINTO METALS	Minto Mine Adaptive Management MW09-03 Se-D and Zn-D SPT Exceedances
Job No: 1CM002.055 Filename: 1CM002-055_2021Q4_GWAMP_Response_Figures.pptx	Minto Mine	Date: April 2022 | Approved: MSi | Figure: A-4



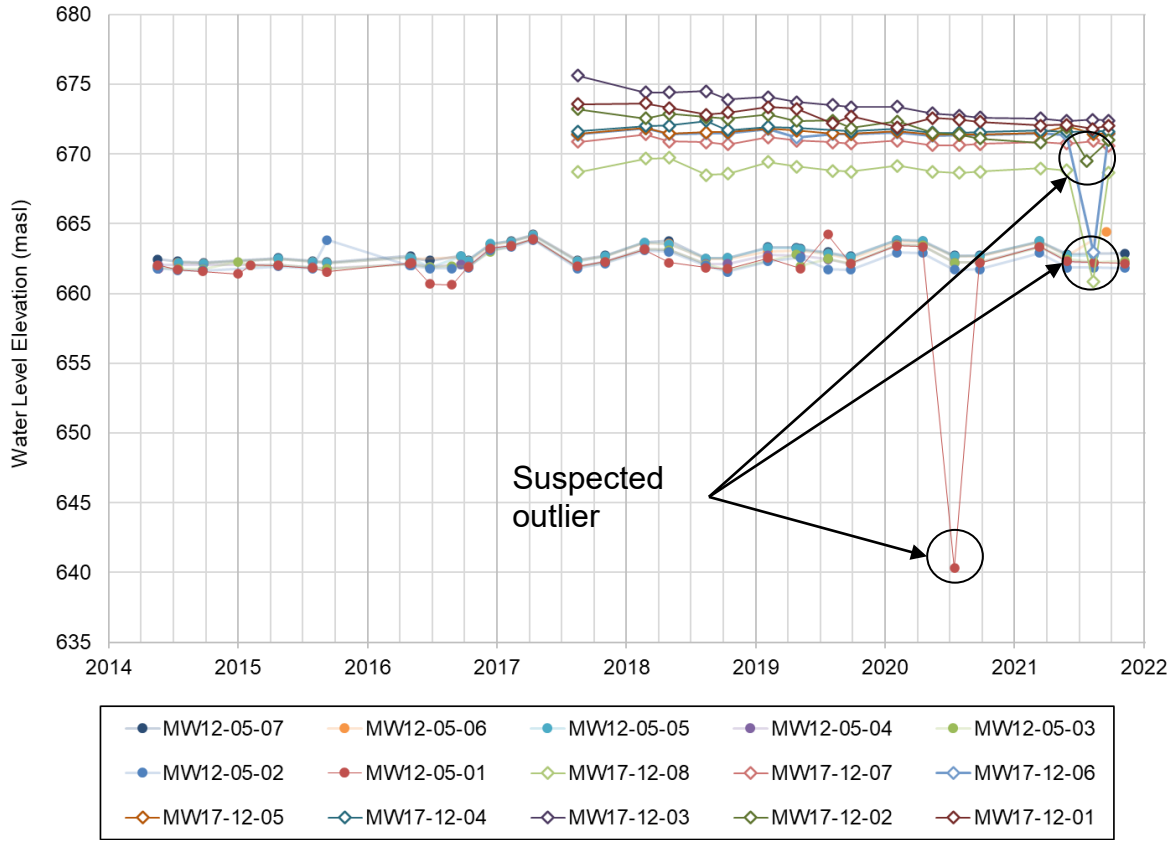
MW09-03-02 was the only sampling point to trigger a response
Only SPTs exceeded in Q4 of 2021 shown on graph (applies to MW09-03-02 only)
MN-4.5 is a SW monitoring point in McGinty Creek

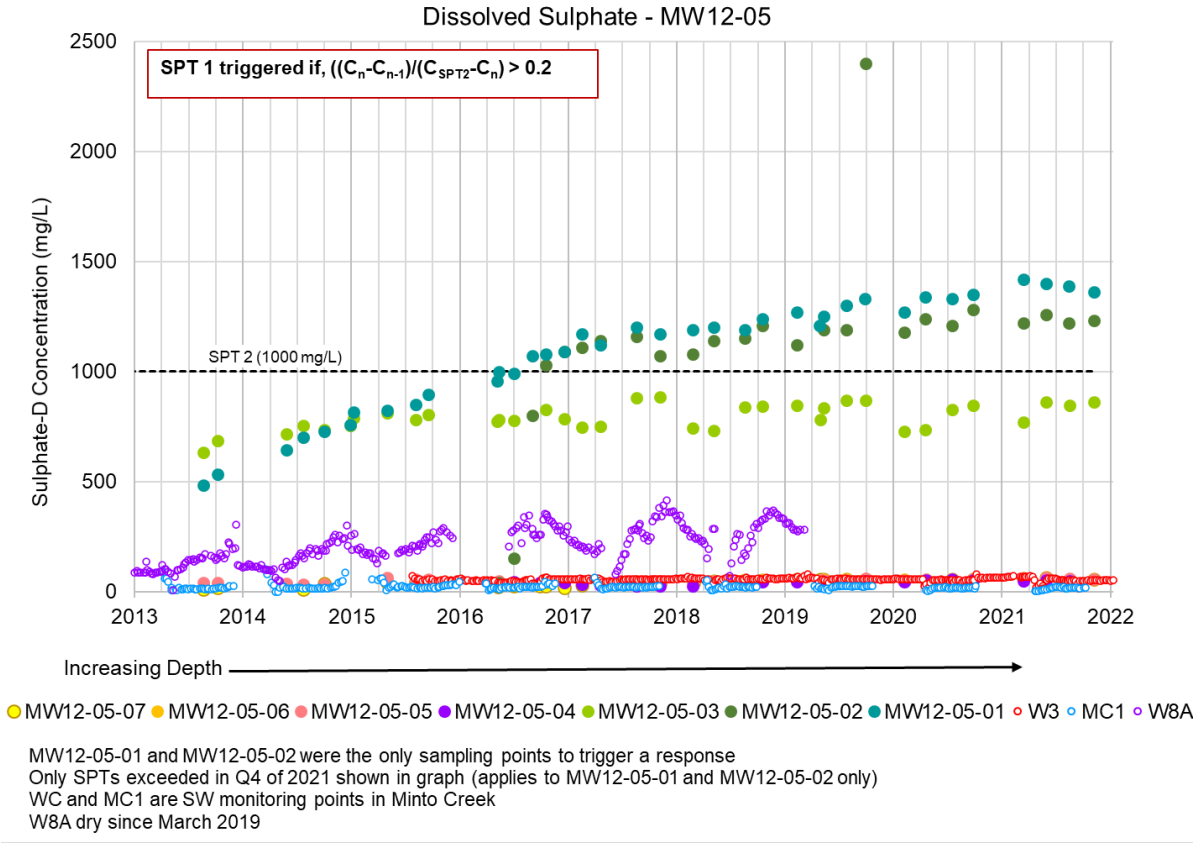


MW09-03-02 was the only sampling point to trigger a response
Only SPTs exceeded in Q4 of 2021 shown on graph (applies to MW09-03-02 only)
MN-4.5 is a SW monitoring point in McGinty Creek

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220207_Dec_Q4_AMP_Review/02_Analysis%26Charts/Minto_AMPResponse_2021McGintyCreek/Minto_AMPResponse-2021Q4_McGintyCreekGW_MSi.xlsx?d=w2f9c6414aee1487c8b3171c7e42adee8b&csf=1&web=1&e=XOw8t7

srk consulting	MINTO METALS	Minto Mine Adaptive Management MW09-03 SO4 and NO3- SPT Exceedances		
Job No: 1CM002.055 Filename: 1CM002-055_2021Q4_GWAMP_Response_Figures.pptx	Minto Mine	Date: April 2022	Approved: MSi	Figure: A-5





MW12-05-01 and MW12-05-02 were the only sampling points to trigger a response
Only SPTs exceeded in Q4 of 2021 shown in graph (applies to MW12-05-01 and MW12-05-02 only)
WC and MC1 are SW monitoring points in Minto Creek
W8A dry since March 2019

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220207_Dec_Q4_AMP_Review/02_Analysis%26Charts/Minto_AMPResponse_2021MintoCreek/Minto_AMPResponse_2021Q4_MintoCreekGW_MSi.xlsx?d=w19a0eaaa9e2f4b7180f5db3d72f7c01f&csf=1&web=1&e=2yyZ34
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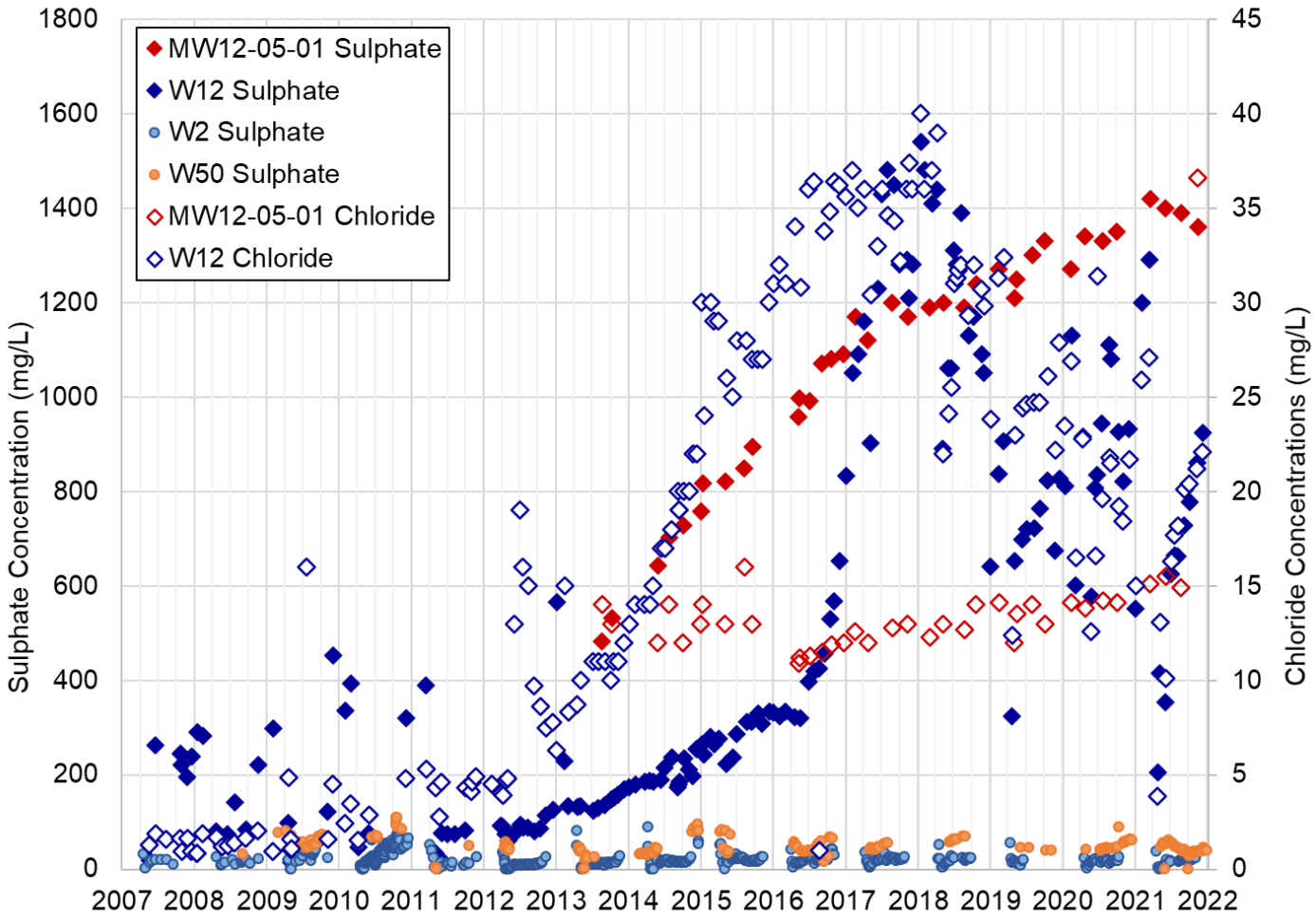
srk consulting	MINTO METALS	Minto Mine Adaptive Management MW12-05 Water Level Data & SO4 SPT Exceedances
Job No: 1CM002.055 Filename: 1CM002-055_2021Q4_GWAMP_Response_Figures.pptx	Minto Mine	Date: April 2022 | Approved: MSi | Figure: B-1



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srk consulting

MINTO METALS

Minto Mine Adaptive Management

MW12-05 & MW12-05-01/W12 (Main Pit)
SO_4^{2-}-D and Cl-D Concentrations

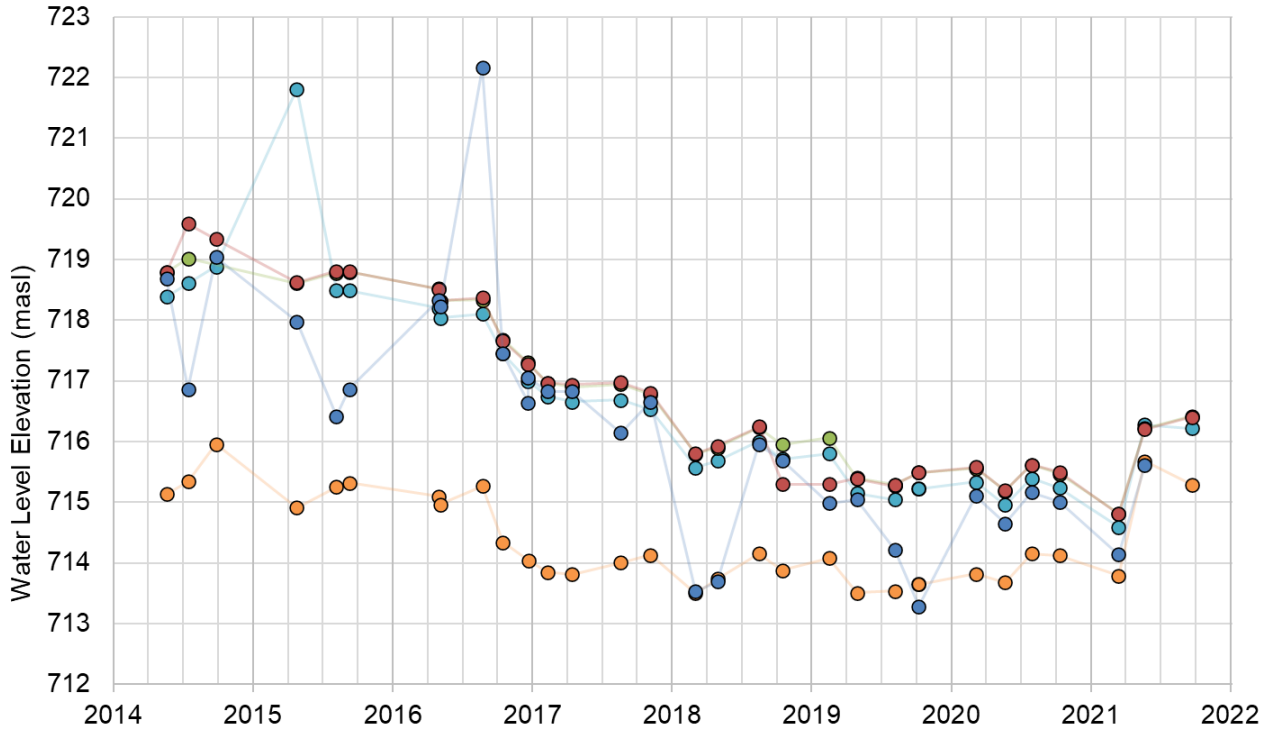
Job No: 1CM002.055
Filename: 1CM002-055_2021Q4_GWAMP_Response_Figures.pptx

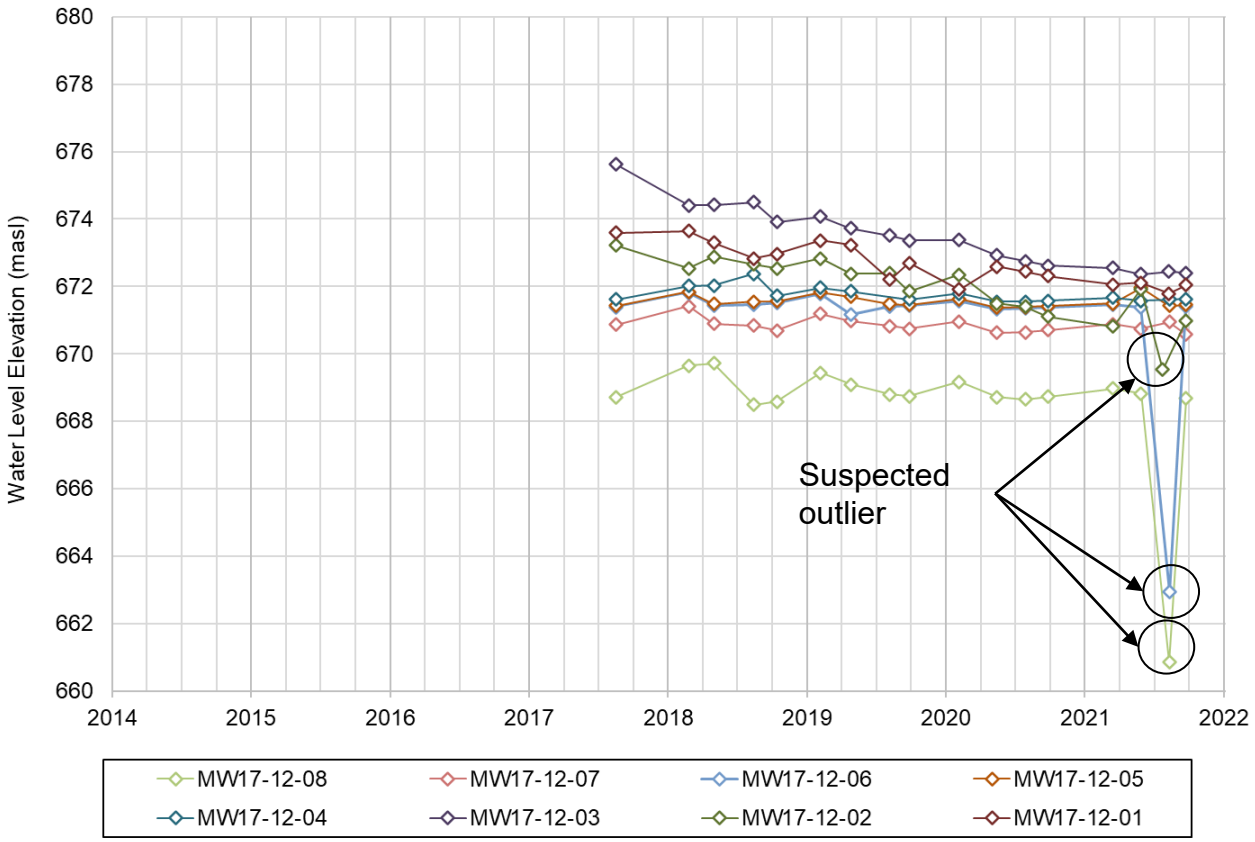
Minto Mine

Date: April 2022

Approved: MSi

Figure: **B-2**





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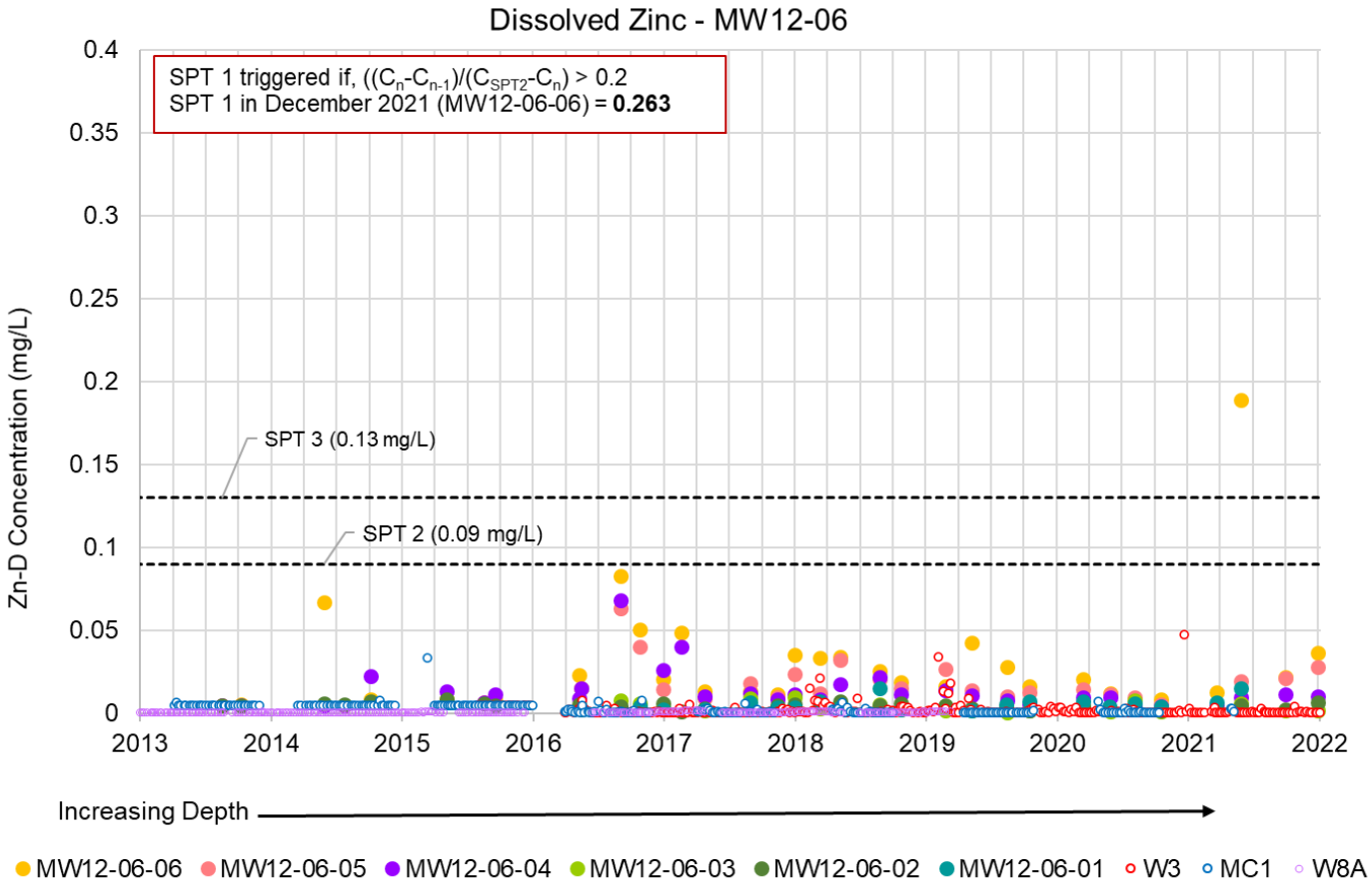
srk consulting	MINTO METALS	Minto Mine Adaptive Management
		MW12-06 and MW17-12 Water Level Data
Job No: 1CM002.055 Filename: 1CM002-055_2021Q4_GWAMP_Response_Figures.pptx	Minto Mine	Date: April 2022 / Approved: MSi / Figure: C-1



MW12-06-06 was the only sampling point to trigger a response
W3, W8A and MC1 are SW monitoring points in Minto Creek

https://srk.sharepoint.com/:x:/r/sites/NA1CM002.055/Internal/20220207_Dec_Q4_AMP_Review/02_Analysis%26Charts/Minto_AMPResponse_2021GWData_2012-2021/Minto_AMPResponse-2021Q4_GWData_2012-2021_MSi.xlsx?d=wb6fd04da12444d6db1d261e196dd003b&csf=1&web=1&e=3ZjktK

srk consulting	MINTO METALS	Minto Mine Adaptive Management		
		MW12-06 Zn-D SPT exceedances		
Job No: 1CM002.055 Filename: 1CM002-055_2021Q4_GWAMP_Response_Figures.pptx	Minto Mine	Date: April 2022	Approved: MSi	Figure: C-2

Appendix J – Minto Creek Sediment, Periphyton and Benthic Invertebrate Community Assessment – 2021

Minto Creek Sediment, Periphyton, and Benthic Invertebrate Community Assessment – 2021

Prepared for:
Minto Metals Corporation
Whitehorse, Yukon

Prepared by:
Minnow Environmental Inc.
Victoria, British Columbia

March 2022

Minto Creek Sediment, Periphyton, and Benthic Invertebrate Community Assessment

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ACRONYMS AND ABBREVIATIONS

AMP - Adaptive Management Plan
AEMP - Aquatic Effects Monitoring Program
ANOVA - Analysis of Variance
BCWQG - British Columbia Water Quality Guideline
CA - Correspondence Analysis
CSQG - Canadian Sediment Quality Guideline
CVAFS - Cold Vapor Generation Atomic Fluorescence Spectrometry
CWQG - Canadian Water Quality Guidelines
dbRDA - Distance-Based Redundancy Analysis
DOC - Dissolved Organic Carbon
DQR - Data Quality Review
DSTSF - Dry Stack Tailing Storage Facility
EEM - Environmental Effects Monitoring
EMSRP - Environmental Monitoring, Surveillance, and Reporting Plan
EPT – Ephemeroptera (mayflies), Plecoptera (stoneflies), and Trichoptera (caddisflies)
GPS - Global Positioning System
ICP-MS - Inductively Coupled Plasma Mass Spectrometry
ISQG - Interim Sediment Quality Guideline
K-M - Kaplan-Meier
LBC - Lower Big Creek
LMC - Lower Minto Creek
LOI - Loss on Ignition
LPL - Lowest Practicable Level or Lowest Practical Level
LRL - Laboring Reporting Limits
LWC - Lower Wolverine Creek
MAD - Median Absolute Deviation
MCT - Measure of Central Tendency
MDMER - Metal and Diamond Mining Effluent Regulations
MOD - Magnitude of Difference
MVFE - Mill Valley Fill Extension
PEL - Probable Effect Level
QA/QC - Quality Assurance/Quality Control
SD - Standard Deviation
SFN - Selkirk First Nation

SQG - Sediment Quality Guidelines

SSWQO - Site Specific Water Quality Objectives

TOC - Total Organic Carbon

UMC - Upper Minto Creek

URC - Upper McGinty Creek

UTM - Universal Transverse Mercator

WSP - Water Storage Pond

WUL - Water Use Licence

YSI - Yellow Springs Instruments

1 INTRODUCTION

1.1 Site Description

The Minto Mine is a high-grade copper mine owned and operated by Minto Metals Corp. and is located within Selkirk First Nation (SFN) Category A Settlement Land Parcel R-6A approximately 240 km northwest of Whitehorse, Yukon Territory (62°37'N latitude and 137°15'W longitude; Figure 1.1). Development of the Minto Mine was initiated in 1997 and commercial operations started in October 2007. The mine was in continuous production from October 2007 to October 2018 when it was placed on temporary care and maintenance. Operations recommenced in October 2019. The facility was permitted to conduct open pit and underground mining with milling at a rate of 4,200 tonnes per day of copper/gold/silver ore. Minto Mine produced 26.0 million pounds of copper in 2021. Copper reserves are approximately 15 million tonnes (measured and indicated). Mill tailings are stored in the Main Pit, Area 2 Pit, and the Dry Stack Tailing Storage Facility (DSTSF; Figure 1.2). Mine-impacted seepage from the DSTSF and under the Mill Valley Fill Extension (MVFE) is collected at the toe of the MVFE and pumped to the Main Pit (Figure 1.2). Non-impacted water and treated mine-impacted water are collected in a Water Storage Pond (WSP; Figure 1.2).

Effluent from the WSP is periodically discharged to Minto Creek under conditions specified in Water Use Licence (WUL; QZ14-031; Yukon Water Board 2015). Minto Creek, in turn, discharges to the Yukon River approximately 7.7 km south-east of the WSP (Figure 1.2).

1.2 Overview of Aquatic Environmental Monitoring

Under Minto Mine's WUL, the Minto Mine implements an Environmental Monitoring, Surveillance, and Reporting Plan (EMSRP). The EMSRP is completed by the mine and includes routine water quality monitoring during the ice-free period (typically from April to October or November) in Minto Creek and reference tributaries at sampling frequencies varying from weekly to monthly.

In accordance with the WUL, the Minto Mine submits water quality data to the Yukon Water Board as original laboratory reports and monthly summary reports within 30 days of month end. In addition to effluent discharge limits and volumes, the WUL includes site specific water quality objectives (SSWQO) which were developed for Minto Creek based on background geological conditions, bioavailability considerations, and behavioral impact studies (Minnow 2009; Kennedy et al. 2012). These SSWQO are used to evaluate water quality from the EMSRP and the Aquatic Effects Monitoring Program (AEMP), and act as triggers under the operational Adaptive Management Plan (AMP).

Map of Canada

Location of the Minto Mine

0 100 200 400 km

Projection: North American Datum 1983 UTM Zone 8V

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N W E S

Date March 2022
Project 217202.0092

minnow environmental inc.

Figure 1.1

Document Path: C:\Users\MLaPalme\Trinity Consultants, Inc\Pembridge Resources - 217202.0092 - Minto AEMP 2021\D - GIS\Report\21-92 Figure 1.1 Minto Mine Location.mxd

LEGEND

- Final Effluent Discharge Point
- Water Retention Dam
- Building

0 0.275 0.55 1.1
km

N
W E
S

Projection: North American Datum 1983 UTM Zone 8V
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Minto Mine Site Layout and Receiving Environment

Date March 2022
Project 217202.0092

minnow environmental inc.

Figure 1.2

Document Path: C:\Users\MLaPalme\Trinity Consultants, Inc\Pembridge Resources - 217202.0092 - Minto AEMP 2021\D - GIS\Report\21-92 Figure 1.2 Minto Mine Site Layout and Recieving Env.mxd

Biological monitoring is implemented under the EMSRP and includes the AEMP and Environmental Effects Monitoring (EEM) which is required under the federal *Fisheries Act*. The AEMP evaluates potential mine-related effects to Minto Creek, with sampling areas located in upper Minto Creek and lower Minto Creek. These Minto Creek areas are evaluated in comparison to matching reference areas: upper McGinty Creek as reference for upper Minto Creek and lower Wolverine Creek and lower Big Creek as references for lower Minto Creek. The annual AEMP includes monitoring of water, sediment, periphyton, benthic invertebrates, fish, and fish habitat[1]. Data from 1994 (baseline; HKP 1994) and 2006 to 2020 have been reported previously, including annually since 2006 (e.g., Minnow 2021a), with some program modifications over time.

EEM is required by the mine under the federal Metal and Diamond Mining Effluent Regulations (MDMER; Environment Canada 2012) and includes effluent characterization, sublethal toxicity testing and additional biological monitoring in Minto Creek. Biological monitoring under EEM is implemented every three years. Monitoring associated with the Phase 5 EEM was completed in the fall of 2019, with an Interpretive Report submitted in January 2021 (Minnow 2021b). Monitoring for the Phase 6 EEM is scheduled for late August or early September 2022.

1.3 Overview of Previous Findings

The Minto Mine has implemented the AEMP annually since 2006. Under the most recent AEMP report (Minnow 2021a), Minnow collected the following samples: water quality (*in situ* field measures and water chemistry), sediment quality (chemistry and toxicity testing), periphyton (chlorophyll-a productivity [indicator of primary productivity], community, and tissue chemistry), and benthic invertebrates (community and tissue chemistry). These samples were collected from Minto Creek and reference creeks for evaluation of Minto Creek relative to reference and previous data.

In September 2020, water quality was noted as good in Minto Creek. As observed in previous years, higher specific conductance, and pH at Minto Creek compared to reference suggested a potential influence of Minto Mine effluent. All water quality measures met WUL objectives and Canadian Water Quality Guidelines for the protection of aquatic life (CWQG; CCME 1999) except for total copper. Total copper exceeded the short-term CWQG guideline for both upper Minto and lower Minto creeks and all reference areas, except lower Big Creek. Concentrations of total copper in water at upper Minto Creek were higher than concentrations in water at the upper McGinty Creek reference while total copper concentrations in water at lower Minto Creek were higher than concentrations in water at the lower Big Creek reference but lower than

[1] Fish and fish habitat monitoring is conducted by Minto Mine. Results are reported under a different cover.

concentrations in water at the lower Wolverine Creek reference. Concentrations of dissolved copper in water remained below the SSWQO[2] in all water samples, as observed in all previous years of monitoring. Based on concentrations of chlorophyll-a, Minto Creek was classified as oligotrophic in 2020, which differed from 2018 when it was classified as mesotrophic (Minnow 2021a).

Concentrations of metals in upper Minto Creek sediments were generally higher than those in upper McGinty Creek sediment but lower than the SQGs for the protection of aquatic life (CCME 1999). Exceptions were arsenic which exceeded the Interim Sediment Quality Guideline (ISQG) and copper which exceeded the ISQG and the Probable Effect Level (PEL) in three samples. Metal concentrations in lower Minto Creek sediments were generally similar to those in lower Wolverine Creek with the exception of arsenic, copper, and manganese (of which arsenic and copper were greater than ISQG but lower than PEL). Concentration of copper in sediments from Minto Creek have consistently been greater than guidelines and those measured in sediments from reference areas (including occasional exceedance of the PEL), but concentrations have been stable over time (Minnow 2021a). Sediment toxicity testing in 2020 indicated that survival of *Hyalella azteca* was adversely affected by exposure to sediment from Minto Creek, but the effect varied spatially, with > 60% morality observed in sediments collected from two of the five lower Minto Creek stations, and no morality observed at the remaining three stations. There was a lack of effects on *H. azteca* growth or the survival and growth of *Chironomus dilutus*.

A lower density and biomass of periphyton was observed in lower Minto Creek compared to lower Wolverine Creek in 2020. Substantial temporal variability has been observed in periphyton community composition in both creeks, but the differences were within the range of natural variability and do not provide resolution of potential mine influence (Minnow 2021a). Benthic invertebrate community structure at lower Minto Creek differed from both reference communities (lower Wolverine and Big creeks) on the basis of Bray-Curtis index and percent Ephemeroptera only, indicating only subtle differences in community composition, namely higher proportion of chironomids and a lower proportion of EPT (Ephemeroptera [mayflies], Plecoptera [stoneflies], Trichoptera [caddisflies]) taxa. High temporal variability in benthic invertebrate community density, richness, and composition has been observed at the exposed and reference areas, presumably due to inter-annual variability in environmental conditions (e.g., flow, ice scour, water levels; Minnow 2021a). Benthic invertebrate densities in 2020 were the highest they have been over the 2012 to 2020 period. There was a significant increase since

[2] SSWQO for dissolved copper are modified by dissolved organic carbon. For DOC > 10 mg/L, SSWQO is 0.02 mg/L. For DOC ≤ 10, SSWQO is 0.013 mg/L.

2018 in chironomid proportion and decrease in EPT proportion at lower Minto Creek. This community shift could be a residual effect of the dry conditions at lower Minto Creek in 2019. As the mine had not discharged since 2018 and water quality was correspondingly good in 2019 and 2020, differences in community composition were considered to be the result of other factors (i.e., not mine influence).

Concentrations of copper and selenium in periphyton tissue samples collected from lower Minto Creek were significantly higher than samples collected from both reference areas. The same was not observed in benthic invertebrate tissue. Furthermore, selenium concentrations in benthic invertebrate tissue were lower than the British Columbia water quality guideline for the protection of aquatic life (BCMOE 2014) indicating that no associated effects would be expected.

2 METHODS

2.1 Aquatic Effects Monitoring Program Components and Objectives

The AEMP implemented by Minto Mine on an annual basis is more comprehensive than the requirements identified under the WUL (QZ14-031; August 2015). In 2020, a review of the AEMP was conducted in accordance with Clause 102 of the WUL, during which Minnow was asked to provide Minto Mine with recommendations. As a result of those recommendations, periphyton community monitoring was dropped completely from the AEMP[3] and the frequency of sediment toxicity sampling was reduced from annually to once every three years, with the next sampling event scheduled to occur in 2023[4].

Minnow Environmental Inc. (Minnow) conducts the following monitoring as part of the AEMP (as reported herein):

1. sediment quality;
2. periphyton (chlorophyll-a and tissue chemistry); and,
3. benthic invertebrate (community and tissue chemistry).

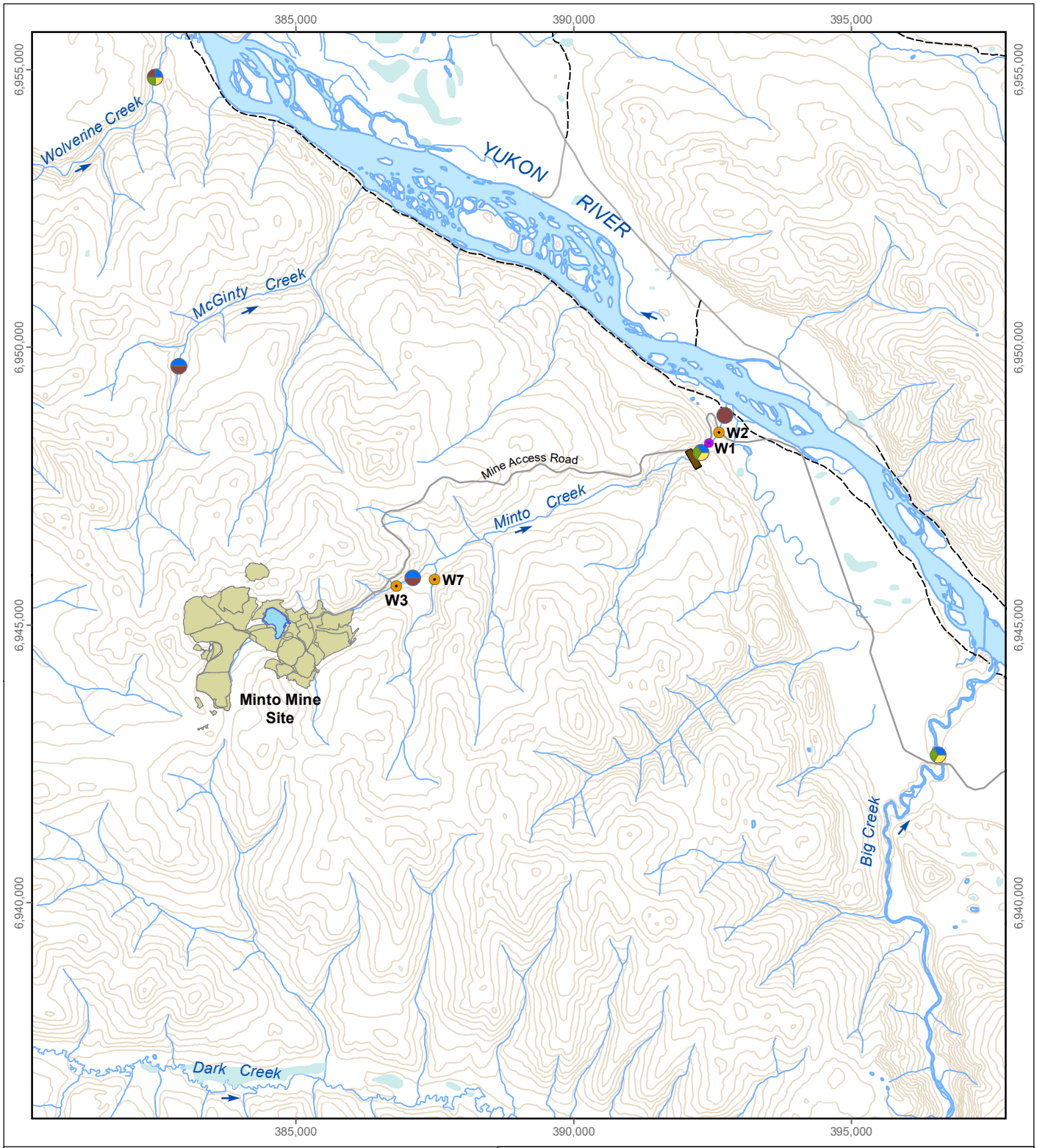
This program is conducted annually in September. Samples (i.e., *in situ* water quality, water chemistry samples, depth, flow, and habitat observations) and the supporting measures described in Section 2.2 are collected from all sampling areas (Figure 2.1, Table 2.1). Under the WUL, the AEMP program design is reviewed every three years and refined through annual recommendations. Separate monitoring of the use of Minto Creek (and a reference creek) by fish is completed by the Minto Mine.

The objectives of this AEMP study and report are to characterize and interpret current (2021) sediment quality, benthic invertebrate community structure, and tissue chemistry (periphyton and benthic invertebrates) samples from Minto Creek relative to those from nearby reference areas, and relative to results from and previous surveys.

The Minto Creek AEMP was implemented from September 9 to 15, 2021. At the time of the sampling, Minto Mine was not discharging. The last date of discharge was June 1, 2021, and the mine did not resume discharging until September 20, 2021. The study was completed in

[3] Recommendation made based on the highly variable nature of periphyton community results and their ineffectiveness in determining potential mine-related effects.

[4] Recommendation that sediment toxicity testing be completed at a three-year frequency or in response to meaningful increase in concentrations of copper (or other mine-related analytes) identified in annual reporting.



LEGEND

Samples Collected

- Water
- Sediment
- Periphyton
- Benthos

- Routine Water Station
- Staff Gauge Location
- Fish Barrier
- Main Pit Lake
- Mine Footprint

Mine infrastructure data provided by Access Mining Consultants Inc. Mine site contours derived from 2012 aerial imagery otained from Challenger Geomatics.

Water, Sediment, Periphyton, and Benthic Invertebrate Monitoring Areas, September 2021

0 1.75 3.5 7 km

Datum: NAD 83 Map Projection: UTM Zone 8V Data Source: National Topographic Data Base (NTDB) compiled by Department of Natural Resources Canada at a scale of 1:50,000. All rights reserved.

N W E S

Date March 2022
Project 217202.0092

minnow environmental inc.

Figure 2.1

Document Path: C:\Users\MLaPalme\Trinity Consultants, Inc\Pembridge Resources - 217202.0092 - Minto AEMP 2021\D - GIS\Report\21-92 Figure 1.3 Monitoring Areas for the Minto Mine.mxd

Table 2.1: Minto Mine AEMP Sediment, Periphyton, and Benthic Invertebrate Monitoring Program Overview, September 2021

Area Type	Area	Station	Minto Mine AEMP						
			Water	Sediment by Spoon[a]	Sediment by Hand Corer/ Petite Ponar[b]	Periphyton Chlorophyll-a	Periphyton Tissue[c]	Benthic Community by Surber Sampler[d]	Benthic Invertebrate Tissue[c]
Upper Creek Areas	Upper McGinty Creek (Reference)	URC-1	✓	✓	-	-	-	-	-
		URC-2		✓	-	-	-	-	-
		URC-3		✓	-	-	-	-	-
		URC-4		✓	-	-	-	-	-
		URC-5		✓	-	-	-	-	-
	Upper Minto Creek (Exposed)	UMC-1	✓	✓	-	-	-	-	-
		UMC-2		✓	-	-	-	-	-
		UMC-3		✓	-	-	-	-	-
		UMC-4		✓	-	-	-	-	-
		UMC-5		✓	-	-	-	-	-
Lower Creek Areas	Lower Wolverine Creek (Reference)	LWC-1	✓	-	✓	✓	✓	✓	✓
		LWC-2		-	✓	✓	✓	✓	✓
		LWC-3		-	✓	✓	✓	✓	✓
		LWC-4		-	✓	✓	✓	✓	✓
		LWC-5		-	✓	✓	✓	✓	✓
	Lower Big Creek (Reference)	LBC-1	✓	-	-	-	✓	✓	✓
		LBC-2		-	-	-	✓	✓	✓
		LBC-3		-	-	-	✓	✓	✓
		LBC-4		-	-	-	✓	✓	✓
		LBC-5		-	-	-	✓	✓	✓
	Lower Minto Creek (Exposed)	LMC-1	✓	✓	-	✓	✓	✓	✓
		LMC-2		✓	-	✓	✓	✓	✓
		LMC-3		✓	-	✓	✓	✓	✓
		LMC-4		✓	-	✓	✓	✓	✓
		LMC-5		✓	-	✓	✓	✓	✓

Notes: AEMP = Aquatic Environmental Monitoring Program. ✓ = included in monitoring program, - = not included in monitoring program. Following recommendations from the 2020 AEMP, periphyton community sampling was discontinued and sediment toxicity sampling frequency was reduced to every 3 years.

[a] Top 2 centimeters collected; minimum 3-grab composite.

[b] Top 2 centimeters collected; 3-grab composite.

[c] Productivity permitting; in some cases, replication (of 5) may not be achieved with reasonable effort.

[d] 500 µm mesh; 3-grab composite.

accordance with specifications of the Minto Mine WUL (QZ14 031; Table 2.1, Figure 2.1). Sediment sampling was undertaken in upper and lower Minto Creek and corresponding reference areas. Benthic invertebrate (community and tissue) and periphyton (chlorophyll-a and tissue) sampling were undertaken in erosional habitat of lower Minto Creek and their corresponding reference areas in lower Wolverine Creek and lower Big Creek. Supporting measures (i.e*., in situ* water quality measurements, water chemistry samples, depth, flow, and habitat observations) were collected from all biological sampling areas. Hydrology data (staff gage height, flows) was collected by the Minto Mine staff from ice-off (April 25, 2021) to freeze up (October 12, 2021; Figure 2.1; Minto Mine 2021b).[5]

2.2 Supporting Measures

2.2.1 Field Collection

Supporting measures collected concurrent with sediment sampling (i.e., at depositional areas) included core penetration depth (lower creek areas only), sample texture, and the presence or absence of organic detritus. *In situ* water quality measurements including temperature, dissolved oxygen, specific conductance, and pH were taken at each station using a YSI field meter (Yellow Springs Instruments, Yellow Springs, OH). The location of each station was recorded using a handheld Global Positioning System (GPS) with coordinates recorded in Universal Transverse Mercator (UTM) units, using the North American Datum of 1983 (NAD83).

At periphyton and benthic invertebrate sampling stations, *in situ* water quality measurements (by field meter as described above), water depth (by meter stick) and water velocity (by HACH handheld flow meter [HACH Company, Loveland, CO]) were measured. Habitat was characterized at each periphyton and benthic invertebrate sampling area and included documentation of gradient (clinometer), creek wetted and bankfull widths (by tape measure or range finder), depth (cm), geomorphic type, water appearance, creek morphology, bank condition, substrate texture, instream cover and features, overhead canopy, aquatic vegetation, riparian vegetation, and surrounding land use.

Water samples for chemical analysis were collected at each sampling area (Table 2.1, Figure 2.1). Samples were collected using a master bottle from which the collected water was poured into pre-labeled sample bottles and preservatives were added, as required. A field duplicate was collected from one area using a split sample method; water from the master bottle was poured into one bottle and then into a duplicate bottle. Water samples for dissolved

[5] Hydrology data was first included in the 2019 AEMP report (Minnow 2020), following dry conditions at lower Minto Creek. Supporting meteorological data (precipitation, temperature) and flow data help provide context for biological results.

organic carbon (DOC) and for dissolved metals were filtered in the field using 0.45 micrometre (µm) polypropylene filters. One field blank sample was collected to assess contamination from field conditions. The same collection methods (filtration, sampling location, sampling time) were applied, but the bottle set was filled with distilled water instead of creek water. Immediately after collection, water samples were placed in a cooler with ice packs and refrigerated at approximately 4 degrees Celsius (°C) until submission to ALS Environmental in Whitehorse, YT, for analysis (refer to Appendix C for analytical methods).

The productivity of lower Minto and lower Wolverine creeks was evaluated using measurements of chlorophyll-a in periphyton. Five stations from each sampling area were sampled and from each station, a total of five rocks having representative periphyton coverage were selected. The sampling area was standardized by positioning a thin acetate template, with a 2x2 cm (4 cm²) opening, in the middle of each selected rock. The periphyton was scraped off the rock using a stainless-steel razor blade or scalpel. Sample material from each rock was transferred from the razor blade or scalpel to a Whatman Mixed Cellulose Ester (MCE) filter paper until a single composite sample was obtained per station. All samples were maintained in coolers with ice packs during transport and then kept frozen until submission to ALS Environmental (Whitehorse, YT).

2.2.2 Data Analysis

A formal data quality review (DQR) was completed to assess data quality and by extension, the confidence with which the data can be used to derive conclusions relative to the program objectives (Appendix A). The DQR included an examination of data completeness, the laboratory reporting limits (LRLs) achieved, and field blank results (water samples only). The quality of the data was evaluated by comparing LRLs to applicable federal/provincial guidelines, and SSWQOs (where applicable), observing relative percent differences of field duplicates, and reviewing field blanks for potential contamination during sampling or transport. The accredited laboratory conducted their own Quality Assurance/Quality Control (QA/QC) analysis, including method blanks, laboratory duplicates, matrix spikes, and spiked blanks.

Water quality from Minto Creek was evaluated relative to applicable Canadian Water Quality Guidelines (CWQG; CCME 1999), WUL SSWQOs, concentrations measured at reference areas, and historical water quality conditions. Sample-specific toxicity modifying factors, such as hardness, alkalinity, pH, DOC and temperature were used to calculate environmental quality guidelines for the protection of aquatic health where required. Seasonal summary statistics for mine related indicators in upper Minto Creek were also reviewed for context.

Periphyton chlorophyll-a (mg/m^2) from Minto Creek was evaluated relative to British Columbia Water Quality Guideline (BC WQG) for streams (100 mg/m^2; BCMOE 1985), as well as concentrations measured at reference areas and historical chlorophyll-a concentrations.

2.2.2.1 Water Chemistry

Supporting *in situ* measures (temperature, dissolved oxygen, pH, specific conductance, mean depth, and mean velocity) collected at sediment sampling locations at upper Minto Creek and reference (upper McGinty Creek), and lower Minto Creek and reference (lower Wolverine Creek). The assumption of normality was assessed using the Shapiro Wilks' test (α = 0.05) and homogeneity of variance was assessed using Levene's Test (α = 0.05). If variances were unequal, then the two-sample t-test for unequal variances was conducted (Ruxton 2006). Data that could not be normalized were $\log_{10}$-transformed. If data could not be normalized after transformation, a nonparametric Mann-Whitney test was applied. Statistical comparisons were conducted using R (R Core Team 2020). A magnitude of difference (MOD) was calculated for each metric as:

$$MOD = \frac{\left(MCT_{Exp} - MCT_{Ref}\right)}{MCT_{Ref}} \times 100\%$$

Where the measures of central tendency (MCT) were means (untransformed), geometric means ($\log_{10}$-transformed), or medians (Mann-Whitney test).

In cases where there was a value below the reported detection limit, the value was replaced with the detection limit and a non-parametric Mann-Whitney test was conducted. If all values for a parameter were below the detection limit, no statistical analysis was conducted.

Supporting *in situ* measures (temperature, dissolved oxygen, pH, specific conductance, mean depth, and mean velocity) collected at benthic invertebrate monitoring locations were tested for differences between lower Minto Creek and reference areas (lower Wolverine and lower Big creeks) using a one-way ANOVA. The assumption of normality was assessed using the Shapiro Wilks' test (α = 0.05) and homogeneity of variance was assessed using Levene's Test (α = 0.05). Data were $\log_{10}$-transformed when required to meet the assumption of normality. When the assumption of normality could not be met, a non-parametric Kruskal-Wallis test was used. A significance level (α) of 0.05 was used for all statistical tests. *Post hoc* pairwise contrasts were conducted to compare each area, using Tukey's honestly significant differences to correct for multiple comparisons. Statistical comparisons were conducted in R Studio version 1.2.5001 (2020). A magnitude of difference (MOD) was reported for statistical comparisons that were significant as:

$$MOD = \frac{(MCT_{Exp} - MCT_{Ref})}{MCT_{Ref}} \times 100\%$$

where *MCT* is the measure of central tendency (i.e., mean for untransformed data, median for log_{10}-transformed data and median for rank transformed data).

Summary statistics (means and standard deviations) were calculated using R and the Kaplan-Meier (K-M) method to accommodate analytes with values at the LRL value (non-detections). This method was applied to avoid bias introduced by substitution methods (Helsel 2012, Lee 2017). The K-M method involves transforming the left censored (i.e., < value) dataset to a right censored (i.e., > value) dataset, and then using the K-M estimator (used to estimate the mean survival time in survival analysis) to estimate the mean. The calculation was conducted using the survfit function in the survival package (Therneau 2017) in R and involves calculating the area under the K-M survival curve. The K-M method is non-parametric and can accommodate multiple LRLs. This method of estimating the mean is equivalent to using the distribution of detectable values below the LRL to represent values that are < LRL. When a standard deviation could not be estimated (e.g., when all data were below the LRL), it was not reported. When a value was reported below a poor LRL (defined as a LRL that exceeded the maximum detected value), it was removed from the dataset.

2.2.2.2 Chlorophyll-a

Chlorophyll-a in periphyton was compared to the British Columbia Water Quality Guideline for streams. Statistical analyses were conducted using chlorophyll-a (mg/m^2) from lower Minto Creek (exposed) and the reference area, lower Wolverine Creek. Analyses were used to determine whether chlorophyll-a (mg/m^2), an indicator of primary productivity, have changed at these areas over time and/or the differences from reference have changed over time. Spatial and temporal statistical comparisons were conducted using Analysis of Variance (ANOVA) with factors *Year* and *Area* and their interaction. ANOVA analyses were assessed using a significance level ($\alpha = 0.1$). Residuals of the ANOVA were tested for normality using the Shapiro Wilks' test ($\alpha = 0.05$) and homogeneity of variance was assessed using a Levene's Test ($\alpha = 0.05$). Periphyton chlorophyll-a (mg/m^2) were log_{10}-transformed as required to meet the assumptions of normality and homogeneity of variances or rank-transformed when these assumptions could not be met. The significance of the main effects and interaction terms were assessed, and the results determined the *post hoc* comparisons that were conducted.

When the interaction between *Year* and *Area* was significant, it suggested that the differences between the stations changed in each year and *post hoc* comparisons were conducted to test for differences between the first year of sampling and all other years for both stations individually, and test for differences between the stations in each year.

When the interaction between *Year* and *Area* was insignificant, it suggested that differences between the stations were consistent among years and *post hoc* comparisons were conducted to:

1. to test for differences between the first year of sampling and all other years for both stations combined; and
2. to test for differences between the stations for all years combined

Post hoc comparisons were corrected for the number of comparisons using Tukey's honestly significant differences method. For all significant comparisons between reference and exposed stations, a magnitude of difference (MOD) was calculated as:

$$MOD = \frac{\left(MCT_{Exp} - MCT_{Ref}\right)}{MCT_{Ref}} \times 100\%$$

where MCT is back-transformed estimated marginal means (or medians for rank-transformation).

2.3 Sediment Quality

2.3.1 Sample Collection and Laboratory Analysis

Sediment samples were collected for particle size and chemical analysis at depositional areas within Minto Creek and reference creeks (Figure 2.1, Table 2.1,). At upper Minto and upper McGinty creeks, sediment deposits were rare and typically very shallow (i.e., deposits were less than 1 centimeter in depth). Sediment was therefore collected using a stainless-steel spoon instead of a ponar or coring equipment and only one composite sample was collected for particle size analysis (versus five samples for all other analytes). At locations of sediment deposition, surficial sediment was carefully collected by slowly spooning the sediment into pre-labeled plastic bags, with care taken to avoid the loss of fine material. In order to be as consistent as possible with the sediment collected in the lower creek areas, samples included no more than the top 2 cm of deposited sediment.

Prior to sampling in 2020, sediment samples at lower Minto Creek had been collected using a petite ponar and hand coring equipment. Due to relatively shallow sediment deposits in 2020, sediment collection was completed using a stainless-steel spoon (the same sampling technique applied to the upper creek areas). Sampling in 2021 was conducted using the same methods used in 2020. Low flow conditions in 2021 resulted in stagnant (standing) water and dried out sections of the creek in locations that had previously been identified as sediment sampling stations. Sediment sampling locations were moved further upstream to sections of the creek that had visible and continuous flow in order to sample locations where sediment chemistry and particle size would be more representative of sediment transport and deposition in Minto Creek.

At lower Wolverine Creek, sediment samples for particle size analysis were collected using a 15.24 centimetre (cm) x 15.24 cm (6 inches [“] x 6”) stainless steel petite ponar grab sampler (0.023 square metres [m^2] sampling area). A composite sample was created by collecting the surficial 2 cm of sediment from each of three acceptable grabs (i.e., full to each edge of the sampler) using a stainless-steel spoon. Each sample that formed the composite was added to a plastic bin and mixed together. The mixed composite samples were placed into pre-labeled glass sampling jars. Sediment samples for chemical analyses were collected by carefully inserting a 4.7 cm (2”; inside diameter) Lexan™ core tube into sediment deposits, capping the end with a fitted plastic cap, and retrieving by hand. From each acceptable core (i.e., each core containing an intact, representative sediment-water interface), the surficial 2 cm of sediment was manually extruded upwards into a graded core collar, cut with a stainless-steel core knife, and placed into a pre-labeled glass sampling jar. Samples from three cores were composited to form a single sample from each station.

Immediately after collection, sediment samples were placed in a cooler with ice packs and later into a refrigerator at approximately 4°C. They were later submitted to ALS Environmental in Whitehorse, YT for analysis of particle size by dry and wet sieving, followed by the pipette sedimentation method, total organic carbon and loss on ignition by combustion, inorganic carbon derived from a calculation, metals by collision/reaction cell inductively coupled plasma mass spectrometry (CRC ICP-MS), mercury by Cold Vapor Generation Atomic Fluorescence Spectrometry (CVAFS), total Kjeldahl nitrogen by colorimetric analysis, and pH by probe (refer to Appendix C for methods, laboratory certificates, and field notes).

2.3.2 Data Analysis

A formal DQR was completed to assess sediment data quality (Appendix A),which included an examination of data completeness and the LRLs achieved relative to applicable provincial/ federal guidelines. In addition, laboratory precision, and laboratory accuracy were assessed relative to laboratory DQOs. A field duplicate was collected and compared to its parent sample to assess the relative percent difference as a measure of field precision. Laboratory QA/QC analysis included method blanks, laboratory duplicates, spiked blanks, and certified reference materials (Appendix A).

Sediment chemistry data were summarized by reporting mean, standard deviation, minimum, and maximum for each area. Sediment quality data were evaluated relative to sediment quality guidelines (SQGs) for the protection of aquatic life (e.g., CCME 1999) and reference concentrations to identify metals with the potential to adversely affect aquatic life and/or that could be elevated due to mine activity. Sediment chemistry data were also compared to historical data for analytes of interest (1994, and 2006 to 2019). Interpretation was focused on results using the

whole sediment data collection methods (described above in Section 2.3.1) used in the program from 2010 to 2020 and SQGs for the protection of aquatic life (e.g., CCME 1999) apply to whole sediment. Sediment collection methods prior to 2010 were either not specified (1994) or only focused on the fraction of sediment that passed through a mesh sieve (< 63 µm; silt and clay).

2.3.2.1 2021 Spatial Comparisons

Differences between sediment samples from Minto Creek and reference areas were tested using a two-sample t-test, with a p-value < 0.05. The assumption of normality was assessed using the Shapiro Wilks' test (α = 0.05) and homogeneity of variance was assessed using Levene's Test (α = 0.05). If variances were unequal, then the two-sample t-test for unequal variances was conducted (Ruxton 2006). Data that could not be normalized were $\log_{10}$-transformed. If data could not be normalized after transformation, a nonparametric Mann-Whitney test was applied. Statistical comparisons were conducted using R (R Core Team 2020). A magnitude of difference (MOD) was calculated for each metric as:

$$MOD = \frac{(MCT_{Exp} - MCT_{Ref})}{MCT_{Ref}} \times 100\%$$

Where the measures of central tendency (MCT) were means (untransformed), geometric means ($\log_{10}$-transformed), or medians (Mann-Whitney test).

In cases where there was a value below the LRL, the value was replaced with the LRL and a non-parametric Mann-Whitney test was conducted. If all values for a parameter were below the LRL, no statistical analysis was conducted.

2.3.2.2 Temporal Comparisons

Statistical analyses of sediments from upper Minto Creek (exposed) and upper McGinty Creek (reference) areas, as well as lower Minto Creek (exposed) and lower Wolverine Creek (reference) areas, were conducted to evaluate whether concentrations of copper, an analyte of interest, have changed at these areas over time and/or the differences from reference have changed over time. Spatial and temporal statistical comparisons were conducted using Analysis of Variance (ANOVA) with factors *Year* and *Area* and their interaction and *post hoc* comparisons using the same approach as described for Chlorophyll-a in Section 2.2.2.2, with the minor change of α = 0.05. For all significant spatial comparisons, a magnitude of difference (MOD) was calculated a percent difference to reference MCT using the same approach as described for Chlorophyll-a in Section 2.2.2.2.

2.4 Benthic Invertebrate Community

2.4.1 Sample Collection and Laboratory Analysis

Benthic invertebrate community samples were collected in erosional habitat of lower Minto, lower Wolverine, and lower Big creeks (Figure 2.1, Table 2.1). Benthic invertebrate community samples were collected from riffle/run habitat with cobble and gravel substrate using a Surber sampler (0.093 m^2) outfitted with 500 µm mesh. Three grab composites (0.279 m^2 area in total) were collected at five replicate stations within each sampling area. For each grab, the substrate within the sampler was disturbed and scrubbed (by hand rake and nail brush) with care taken to ensure that all dislodged organic material was swept into the sampler collection net. The substrate was disturbed to a depth of approximately 3 cm over a period of approximately four to seven minutes. This procedure was repeated at new subsampling locations for the second and third grab, following which all of the material contained in the collection net was carefully transferred to a pre-labeled 1 litre (L) wide-mouth plastic jar using a stainless-steel spoon and a wash bottle while working over a plastic bin to avoid any potential loss of organisms. Any organisms that adhered to the sieve bag were removed by hand and added to the sample. All samples were labeled internally (using wooden sticks) and externally with the station number, area identifier, Minnow project number, date, and field personnel in order to ensure correct identification at the laboratory. Samples were preserved within six hours of collection using buffered formalin solution to a nominal concentration of 10% in ambient water.

Taxonomic identification of the benthic invertebrate community samples was completed by Cordillera Consulting (lead taxonomist Scott Finlayson), in Summerland BC, using standard methods that incorporate QA/QC measures (e.g., Environment Canada 2012b, 2014). Each sample was elutriated to remove sand, gravel, and clay. The remaining organic material was preserved in 70% ethanol. Elutriate was examined for any mollusc or Trichoptera cases, then each sample was examined to estimate the total number of invertebrates. If the estimated number of organisms was greater than 600 and the sample was fine and non-clumping, a subsample was taken using a Folsom Plankton Splitter (Motodo 1959, Van Guelpen et al. 1982). Empty snail or bivalve shells, empty caddisfly cases, and invertebrate fragments such as legs, gills, antennae etc. were kept but excluded from the count. When organism fragments were encountered, only the heads were counted towards the total. Larval and pupal exuviae were excluded while terrestrial stages and terrestrial drop-ins were indicated as such but excluded from the total counts. Organisms were identified to the lowest practicable level (LPL; which in most cases was genus) and counted. Following identification and counting, representative specimens of each new taxon were preserved in a museum quality vial with a polyseal lid and added to the

Minto Mine voucher collection. Internal labels were used to identify the taxa, the client, date collected, site code, and the project.

Laboratory QA/QC included an assessment of sub-sampling error, sorting efficiency, and taxonomic quality control on at least 10% of the samples (Environment Canada 2012b, 2014). Data were entered into proprietary software (INSTAR1), which was also used to calculate benthic invertebrate community metrics and to generate the taxonomic report. Data were provided to Minnow as a Microsoft Excel spreadsheet along with a methods and QA/QC report as an Adobe Acrobat PDF file (Appendix C).

2.4.2 Data Analysis

A formal DQR was completed to assess the benthic invertebrate community data quality (Appendix A). Laboratory QA/QC included an assessment of sub-sampling error and sorting efficiency on at least 10% of the samples (Appendix A). Benthic invertebrate communities were evaluated using summary metrics, including invertebrate density (number of organisms per m^2, calculated based on a sample area of 0.279 m^2), number of taxa, Simpson's Diversity and Evenness, and Bray-Curtis index.

One consequence of the LPL of taxonomic resolution is that the "species list" from any site contains a mixture of taxonomic resolutions, some as low as species, others at the family, order or class level, resulting in some redundant or "ambiguous" taxa. Redundant or "ambiguous" taxa occur when the same taxon is identified to different levels of resolution, for instance, some specimens may be identified to a higher or *parent* level (e.g., *Baetis*) while others are identified to a lower or child level (e.g., *Baetis tricaudatus*). Such instances can occur when complete taxonomic keys only exist for certain life stages, damaged specimens are present, or when limited resources result in only a subset of a sample being fully identified to species. The presence of these ambiguous taxa may result in inflated estimates of richness or distorted patterns of diversity across sites (Cuffney et al. 2007, Meredith et al. 2019). If ambiguous taxa are not resolved, then the coarser-resolution taxon (i.e., the parent, *Baetis*) is counted as a unique taxon when it may actually be the same species as one of the lower-level taxa (i.e., the child, *B. tricaudatus*). Two commonly applied solutions for dealing with ambiguous taxa are:

1. apportion them among the identified organisms according to the ratio of abundances (i.e., distribute parent taxa among children); or
2. sum them to the lowest consistently identified taxon (i.e., merge children with parent taxa).

The preferred option for analysis depends on the distribution of the organisms among taxa. For instance, with option two, *B. tricaudatus* and *B. bicaudatus* might be lumped together and analyzed as *Baetis*. If identified specimens in the two species constitute only 10% of the total

abundance, it may be most appropriate to lump them together with the other 90% in the unidentified *Baetis*. Conversely, if 90% of the identified organisms fall into the two species, it is more parsimonious to apportion the remainder among them. A decision key was implemented for resolving ambiguously identified taxa that uses abundance and richness criteria for when options 1 (roll-down) and 2 (roll-up) are applied for each level in the taxonomic hierarchy. This method preserves as much detailed taxonomic information as possible, while addressing issues of taxonomic ambiguities. The decision key was modified from Weakland et al. (2018).

Total organism density (individuals/m^2) were calculated for benthic invertebrate community samples. The diversity metric "number of taxa" (also known as taxon richness) included all separate taxa identified to the LPL. Simpson's Diversity and Evenness indices were computed according to formulae presented by Smith and Wilson (1996) and recommended by Environment Canada (2012). These indices consider the relative abundance of taxa and number of taxa, with values ranging from 0 (low diversity or evenness) to 1 (high diversity or evenness). The Bray-Curtis index was also calculated according to Borcard and Legendre (2013). This metric considers the abundance of each taxon at each station compared to the median reference abundance (in this case, lower Wolverine Creek), to compute an index of the relative "dissimilarity" of each station from the hypothetical reference median station. Larger Bray-Curtis index values indicate greater dissimilarity from reference. It was noted that in previous years, the calculated total organism density did not always properly account for area sampled (2013 to 2017).[6] All density samples were re-calculated to include area and total organism density now represents individuals/m^2. Bray-Curtis dissimilarity was compared against each reference area at the LPL using Mantel and distance-based Redundancy Analysis (dbRDA), as outlined in Borcard and Legendre (2013).

The relative proportions of the most abundant taxa were calculated relative to the total number of organisms in the sample. Dominant taxon groups were defined as groups representing greater than 10% of total organism abundance in one or more areas or any groups considered important indicators of environmental stress. In this study, relative proportions of the major groups, such as chironomids, EPT taxa, and Oligochaetes (worms) were examined. It is often possible to relate low relative abundance of sensitive taxonomic groups (e.g., EPT taxa) to environmental stress (e.g., Taylor and Bailey 1997). Similarly, high relative abundance of tolerant taxonomic groups (e.g., oligochaetes) may also indicate higher environmental stress (Chapman et al. 1982a,b).

[6] Area sampled was recorded when collecting benthic invertebrate community samples, but the area-based densities were not calculated until a later date.

2.4.2.1 2021 Spatial Comparisons

Differences between lower Minto Creek (exposed) and two reference areas lower Wolverine and Lower Big creeks were tested using ANOVA with α = 0.1 as per EEM guidelines (Environment Canada 2012). Prior to ANOVA, all data were log_{10}-transformed as necessary to meet assumptions of normality (Shapiro Wilks' test; α = 0.05) and homogeneity of variance (Levene's test; α = 0.05). If values of zero were present in the data set, a value of 1 was added before taking the logarithm. If these assumptions were not met, a non-parametric Kruskal-Wallis test was conducted. *Post hoc* contrasts following the ANOVA were conducted between the exposed area and each reference area using the contrast methods described in Oehlert (2010). Contrasts following the Kruskal-Wallis test were conducted using Dunn's test using the *dunn.test* package in R (Dinno 2017, R Core Team 2020). A magnitude of difference (MOD) was calculated for each community metric as:

$$MOD = \frac{\left(MCT_{Exp} - MCT_{Ref}\right)}{SD}$$

where MCT is the mean for untransformed data, geometric mean log_{10}-transformed, and median for rank-transformed data. The SD is an estimate of the pooled reference standard deviation (pooled SD) for untransformed and log_{10}-transformed data, or the pooled median absolute deviation (pooled MAD) for rank transformation. The MAD is calculated as the median of the absolute values of the differences between each observation and the median observation for that area (and corrected by a factor of 1.4826 to scale the MAD to the magnitude to the SD). A study design with three areas and n = 5 samples per area has an approximate power of 0.9 to detect a two standard deviation difference between areas using α = 0.1 (Environment Canada 2012).

Correspondence Analyses (CA; a multivariate ordination method) was used to further examine the 2021 benthic invertebrate community structure at the lower areas. CA is a multivariate ordination method that is used to reduce complex multivariate data into a smaller number of independent variables (Gauch 1984, Pielou 1984). The analysis extracts theoretical values (CA axis scores) that capture the variation in the abundance of benthic taxa. The CA ordination produces axis scores for each station. Taxa scores are also produced as the sum of weighted averages of their abundances across stations. The structure of the data can then be depicted in scatter plots of one CA axis against another, showing both taxa and station scores. Taxa that tend to co-occur plot together and those that rarely co-occur plot farther apart. Thus, CA can be used to describe which benthic invertebrate taxa best account for observed differences in the overall benthic invertebrate community between stations. The CA analysis was conducted at the LPL of taxonomic organization using $ln_{(x+1)}$-transformed density data. CA is sensitive to the

presence of rare taxa (Legendre and Legendre 1983, Poos and Jackson 2012). Therefore, taxa occurring in two or fewer samples or those that made up less than 15% of the total abundance of the dataset were excluded from the analysis (Dolédec and Chessel 1991). The ordination was conducted using the cca() function in the vegan package (Oksanen et al. 2020) of R statistical software (R Core Team 2020). Results of the CA were summarized by sampling area in 2021. Taxa with the highest magnitude weights on the CA axes were identified and used in interpretation of the separation of areas on the CA axes.

Spearman rank correlations were conducted between benthic invertebrate community endpoints that differed among areas and *in situ* habitat conditions that differed among areas. Benthic community endpoints of density, % EPT, % Ephemeroptera, % Plecoptera, % Chironomidae, % Oligochaeta, CA1, and CA2 were evaluated relative to *in situ* parameters of water depth, % cobble, % gravel, temperature, specific conductivity, and dissolved oxygen (mg/L). Significance was determined by comparing p-values against an unadjusted p-value (p=0.05) and a Bonferroni-corrected p-value for 48 tests (p= 0.00104).

2.4.2.2 Temporal Comparisons

Benthic invertebrate community data were also evaluated in comparison to results obtained in previous years of sampling (2012 to 2018, 2020 and 2021). Statistical analyses were conducted on benthic community endpoints from lower Minto Creek and reference areas lower Wolverine Creek and lower Big Creek to evaluate whether community composition has changed at these areas over time and/or the differences from reference have changed over time. Spatial and temporal statistical comparisons were conducted using Analysis of Variance (ANOVA) with factors *Year* and *Area* and their interaction using the same approach as described for chlorophyll-a in Section 2.2.2.2. For all significant comparisons, a magnitude of difference (MOD) was calculated in number of reference standard deviations using:

$$MOD = \frac{\left(MCT_{Exp} - MCT_{Ref}\right)}{SD}$$

where MCTs were back-transformed estimated marginal means when data was untransformed or $\log_{10}$-transformed, or medians when data was rank transformed. The SD is an estimate of the reference area standard deviation, or MAD for rank transformation.

2.5 Tissue Chemistry

2.5.1 Sample Collection and Laboratory Analysis

Periphyton and benthic invertebrate tissue samples were collected from lower Minto Creek and lower Wolverine Creek and lower Big creeks reference areas (Figure 2.1, Table 2.1).

Periphyton samples were collected by scraping submerged cobble-size rocks with a stainless-steel razor blade. Benthic invertebrate tissue samples were collected in areas with cobble substrate using a kick-net, and by overturning rocks and collecting organisms by hand. Periphyton and benthic invertebrate tissue samples were placed into pre-labeled Nalgene™ cryovials. A total of five periphyton and five benthic invertebrate tissue samples were collected at each area. One duplicate sample was collected for each tissue type, using the same methods as above. For the benthic tissue samples, efforts were made to split taxa evenly among the parent and duplicate samples whenever possible. For periphyton tissue samples, both the original and duplicate samples were collected from the same rocks. Immediately after collection, all tissue samples were placed in a cooler with ice packs, and later in a freezer until they were submitted to ALS Environmental in Whitehorse, YT for analysis of metals by CRC-ICP-MS (USEPA Method 6020B; USEPA 2014), mercury by CVAAS (USEPA Method 245.7; USEPA 2005), and moisture content.

2.5.2 Data Analysis

A formal DQR was completed to assess tissue chemistry data quality (Appendix A) which included an examination of data completeness and the LRLs achieved relative to applicable provincial/ federal guidelines. In addition, laboratory precision, and laboratory accuracy were assessed relative to laboratory DQOs.

Summary statistics were calculated for each metal by area and tissue type (periphyton and benthic invertebrates). The following summary statistics were reported: sample size, percent of values below the LRL, mean, standard deviation, minimum value, median, and maximum value. Commonly used substitution methods (e.g., substituting values < LRL with half the LRL) for censored data introduces bias in summary statistics (Helsel 2012). Means and standard deviations were therefore estimated used the Kaplan-Meier (K-M) method. This method involves transforming the left censored (i.e., < value) dataset to a right censored (i.e., > value) dataset, and then using the K-M estimator (used to estimate the mean survival time in survival analysis) to estimate the mean. The calculation was conducted using the *survfit* function in the *survival* package (Therneau 2017) in R and involves calculating the area under the K-M survival curve. The K-M method is non-parametric and can accommodate multiple LRLs. When a standard deviation could not be estimated (e.g., when all data were below the LRL), it was not reported. When a value was reported below a poor LRL (defined as a LRL that exceeded the maximum detected value), the value was removed from the dataset.

2.5.2.1 2021 Spatial Comparisons

The primary objective of tissue collection was to support a selenium assessment reported under separate cover. Accordingly, data are reported herein for future reference with limited interpretation. Tissue metal concentrations for periphyton and benthic invertebrates from lower Minto Creek (exposed) were compared to lower Wolverine and lower Big Creeks, reference areas using analysis of variance (ANOVA) with α = 0.05 on untransformed or log_{10}-transformed data (whichever best fit the data identified using Shapiro Wilk's test). When assumptions of normality and homogeneity of variances were not met (Shapiro Wilk's test and Levene's test on the median, respectively), the Kruskal-Wallis test was used. *Post hoc* contrasts following the ANOVA were conducted between the exposed area and each reference area using the contrast methods described in Oehlert (2010). *Post hoc* contrasts following the Kruskal-Wallis test were conducted using Dunn's test using the *dunn.test* package in R (Dinno 2017, R Core Team 2020). *Post hoc* p-values for the contrasts were corrected for the number of comparisons using Tukey's honestly significant differences method.

A magnitude of difference (MOD) was reported for statistical comparisons that were significant as:

$$MOD = \frac{(MCT_{Exp} - MCT_{Ref})}{MCT_{Ref}} \times 100\%$$

where MCT is the measure of central tendency (i.e., mean for untransformed data, geometric mean for log_{10}-transformed data, and median for rank transformation). In cases where there was a value below the reported detection limit, the value was replaced with the detection limit and a non-parametric Mann-Whitney test was conducted.

2.5.2.2 Temporal Comparisons

Statistical analyses of metal concentrations in tissue samples collected at lower Minto Creek (exposed) and reference areas, lower Wolverine Creek and lower Big Creek, were conducted to evaluate whether concentrations of copper and selenium have changed at these areas over time and/or become more similar to reference over time. Spatial and temporal statistical comparisons were conducted using Analysis of Variance (ANOVA) with factors *Year* and *Area* and their interaction using the same approach as described for Chlorophyll-a in Section 2.2.2.2, with the minor change of α = 0.05. For all significant spatial comparisons, a magnitude of difference (MOD) was calculated a percent difference to reference MCT using the same approach as described for Chlorophyll-a in Section 2.2.2.2.

3 SUPPORTING MEASURES

3.1 Hydrology and Climate

Flow and gauge height decreased significantly at Station W1 (Figure 2.1) after spring freshet, with a maximum of 0.893 m^3/s on May 4, 2021, which had dropped to 0.178 m^3/s by May 31, 2021 (Appendix Table B.1). Flow was intermittent between July 4 and July 25, 2021, and between August 16, 2021 (0.0108 m^3/s) and October 12, 2021 (0.0154 m^3/s), there were small fluctuations in flow. Water levels and flows were low during the sampling completed in September 2021. Compared to the Climate Normals collected from 1981 to 2010 (Government of Canada 2022), 2021 temperatures were similar except for January, which was much milder than Climate Normals (Appendix Table B.2a). Precipitation in 2021 was generally lower than Climate Normals from June to September, and November (Figure 3.1; Appendix Table B.2b). Relatively low precipitation preceding the September 2021 field campaign may have contributed to lower flows and noticeably low water levels at several of the sampling areas, but especially at lower Minto Creek.

3.2 Field Measures

In support of benthic invertebrate community sampling, habitat characterization and supporting information documenting conditions at the time of sample collection were recorded (Table B.3 and B.4, respectively). Mean specific conductance and temperature at the sediment sampling area of upper Minto Creek (469 microSiemens per centimeter [µS/cm] and 3.6 degrees Celsius [°C], respectively) was significantly higher than in upper McGinty Creek (143 µS/cm and 1.8 °C). Mean pH and dissolved oxygen were not statistically different between upper Minto Creek and upper McGinty Creek (Figure 3.2, Table 3.1; Appendix Table B.5).

Mean temperature at the sediment sampling area of lower Minto Creek (5.58°C) was significantly lower than in lower Wolverine Creek (7.22°C; Figure 3.2, Table 3.2; Appendix Table B.5). Specific conductance and pH at lower Minto Creek (314 µS/cm, 7.69) were significantly higher compared to lower Wolverine Creek (226 µS/cm, 7.27). Mean dissolved oxygen at the sediment sampling area of lower Minto Creek (85.5% saturation and 10.8 mg/L) was also significantly higher compared to lower Wolverine Creek (31.3% saturation and 3.78 mg/L; Figure 3.2, Table 3.2; Appendix Table B.5). Lower dissolved oxygen at lower Wolverine Creek could be attributed to sampling in side-channel areas, which were the only areas that support sediment deposition (but receive less flow and have consequent lower dissolved oxygen concentrations). Differences in temperature could be attributed to the time of day that sampling was conducted and volume / size of watercourse and are therefore not considered biologically relevant.

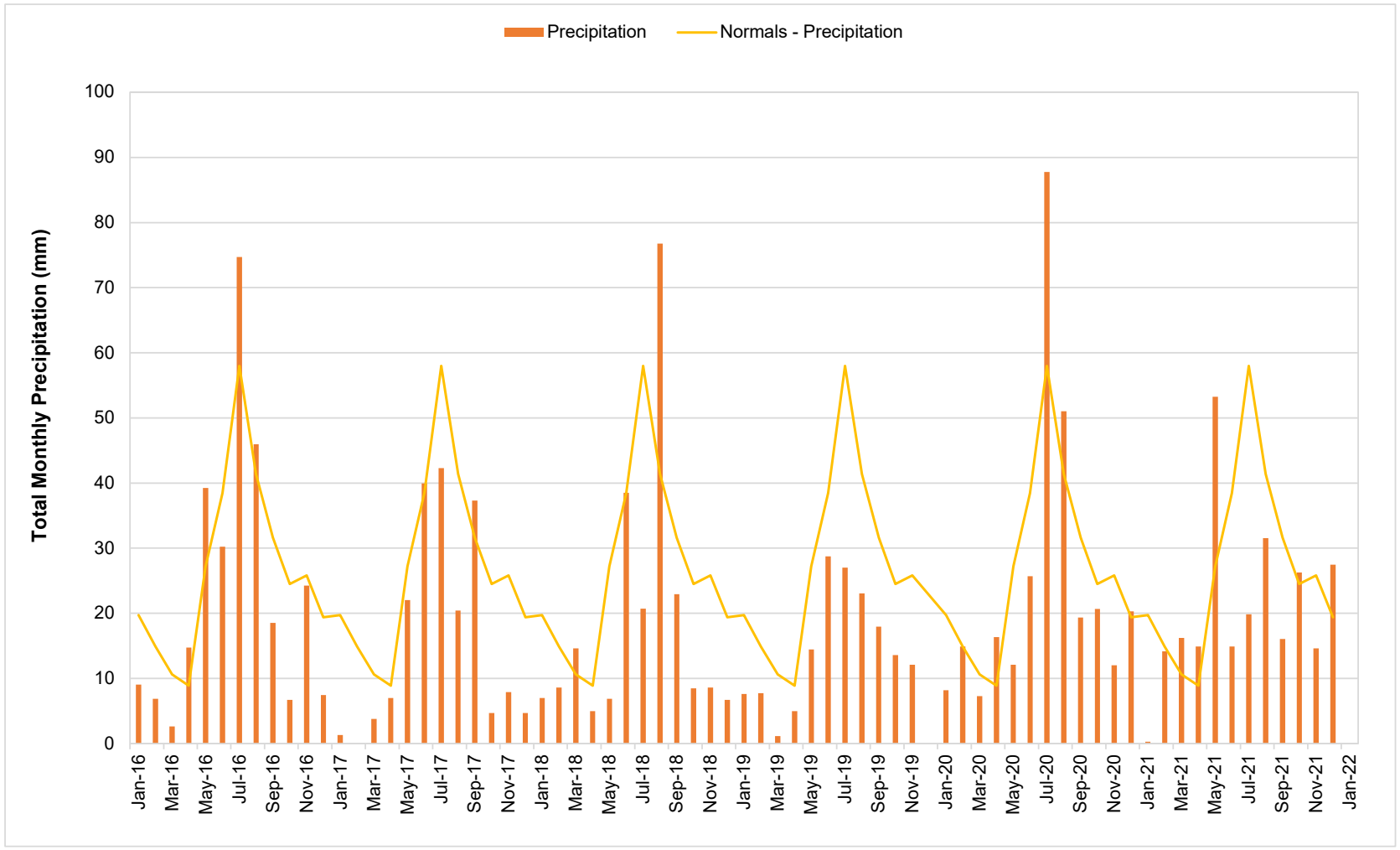


Figure 3.1: Total Monthly Precipitation at Minto Mine Compared to Canada Climate Normals, 2012 to 2021

Notes: Canada Climate Normals from 1981 to 2010 (Government of Canada 2022). Climate normals are from the Pelly Ranch weather station.

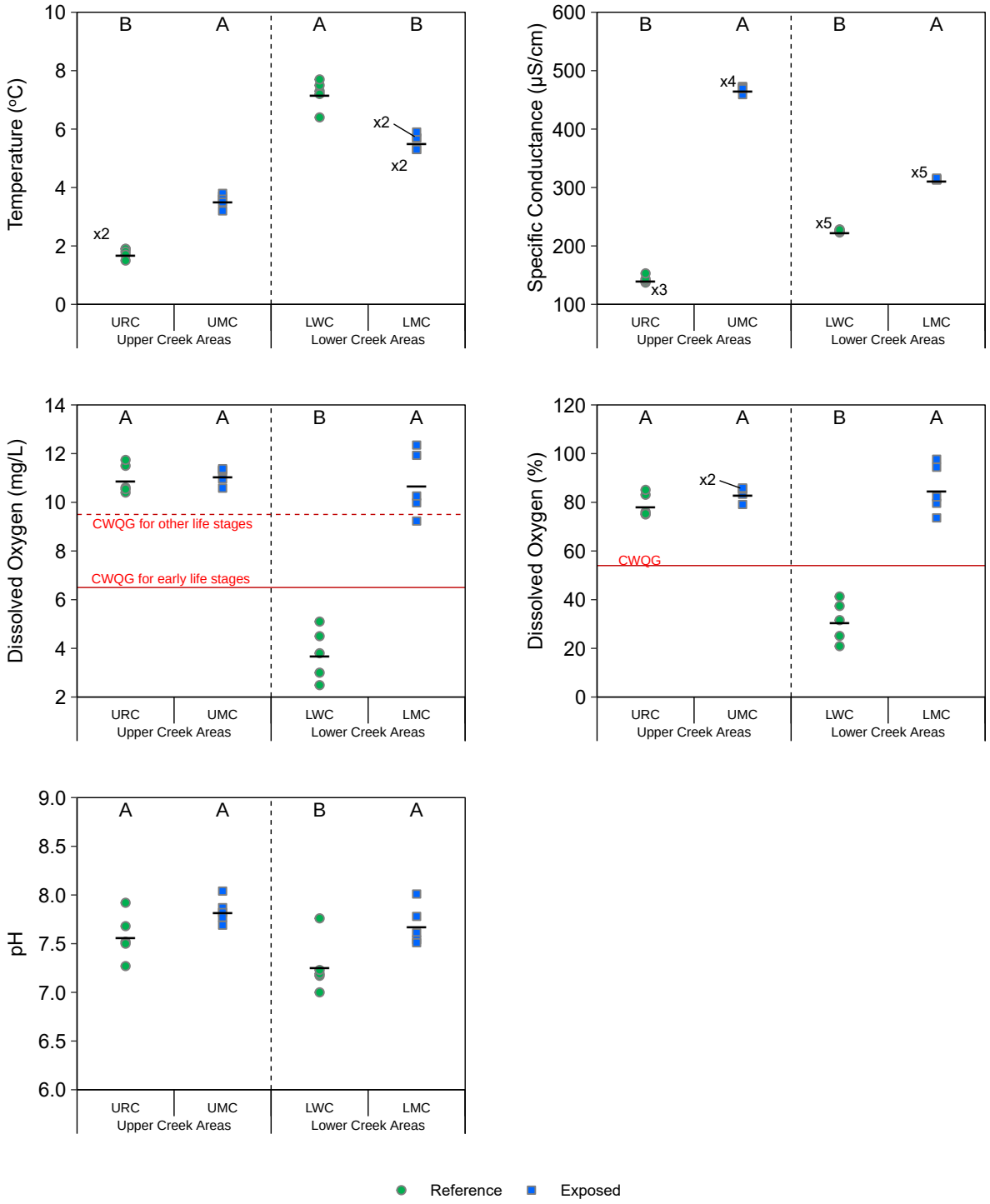


Figure 3.2: Physico−chemical Measurements in Sediment Sampling Areas of Upper and Lower Minto Creek Relative to Reference Areas, Minto Mine AEMP, 2021

Notes: Different letters indicate areas are significantly different ($p < 0.05$) between exposed and reference areas. Horizontal bars indicate the measure of central tendency (MCT). MCT is the mean for parameters where statistics were conducted on the raw scale, the geometric mean when statistics were $\log_{10}$ transformed to meet the assumptions of normality, and the median when rank transformed. Numbers indicate the number of overlapping points. URC = upper McGinty Creek. UMC = upper Minto Creek. LWC = lower Wolverine Creek. LMC = lower Minto Creek. CWQG = Canadian Water Quality Guidelines (CCME 1999).

Table 3.1: Statistical Comparisons of *In Situ* Water Quality taken with Sediment Samples in Upper Areas, Minto Mine AEMP, 2021

Endpoint	Data Transformation	Test	Test P-Value	MCT[a]		MOD (%)[b]
				URC (Reference)	UMC (Exposed)	
Temperature (°C)	none	tequal	0.001	1.76	3.56	102
Specific Conductance (µS/cm)	none	tequal	0.001	143	469	228
Dissolved Oxygen (mg/L)	none	tequal	0.641	11.0	11.1	ns
Dissolved Oxygen (%)	none	tequal	0.084	78.9	83.8	ns
pH	none	tequal	0.067	7.58	7.84	ns

P-value < 0.05

P-value < 0.05 and MOD > 0

P-value < 0.05 and MOD < 0

Notes: URC = Upper McGinty Creek, UMC = Upper Minto Creek, M-W = Mann-Whitney test, tequal = t-test for equal variance, tunequal = t-test for unequal variance, ns = not significant.

[a] Measure of Central Tendency (MCT) is the mean for parameters where statistics were conducted on the raw scale, the geometric mean when statistics were $\log_{10}$ transformed to meet the assumptions of normality, and the median when rank transformed.

[b] MOD= magnitude of difference. MOD = $(MCT_{exp} - MCT_{ref})/ MCT_{ref}*100$.

Table 3.2: Statistical Comparisons of *In Situ* Water Quality taken with Sediment Samples in Lower Areas, Minto Mine AEMP, 2021

Endpoint	Data Transformation	Test	Test P-Value	MCT[a]		MOD (%)[b]
				LWC (Reference)	LMC (Exposed)	
Temperature (°C)	none	tequal	0.001	7.22	5.58	-23
Specific Conductance (µS/cm)	none	tequal	0.001	226	314	39
Dissolved Oxygen (mg/L)	none	tequal	0.001	3.78	10.8	185
Dissolved Oxygen (%)	none	tequal	0.001	31.3	85.5	174
pH	none	tequal	0.029	7.27	7.69	5.8

P-value < 0.05

P-value < 0.05 and MOD > 0

P-value < 0.05 and MOD < 0

Notes: LWC = Lower Wolverine Creek, LMC = Lower Minto Creek, M-W = Mann-Whitney test, tequal = t-test for equal variance, tunequal = t-test for unequal variance, ns = not significant.

[a] Measure of Central Tendency (MCT) is the mean for parameters where statistics were conducted on the raw scale, the geometric mean when statistics were $\log_{10}$ transformed to meet the assumptions of normality, and the median when rank transformed.

[b] MOD= magnitude of difference. MOD = $(MCT_{exp} - MCT_{ref})/MCT_{ref}*100$.

Physico-chemical measurements were also taken in erosional areas of lower Minto, lower Wolverine, and lower Big creeks in support of benthic invertebrate community sampling. Mean temperature and sampling depth were significantly lower at lower Minto Creek (3.60°C, 7.24 cm) compared to both reference areas, lower Wolverine (5.82°C, 9.28 cm) and lower Big Creek (6.94°C, 8.68 cm; Figure 3.3, Table 3.3; Appendix Table B.6). Specific conductance at lower Minto Creek (314 µS/cm) was significantly higher compared to lower Wolverine Creek (230 µS/cm) and lower Big Creek (215 µS/cm). Mean dissolved oxygen (mg/L) was significantly higher at lower Minto Creek (11.9 mg/L) compared to lower Wolverine Creek (11.1 mg/L), but not lower Big Creek (11.6 mg/L). No significant differences were observed between lower Minto Creek and reference creeks for dissolved oxygen percent saturation (Figure 3.3, Table 3.3). Condition at all benthic invertebrate sampling areas were within the range of the CWQG guidelines and WUL objectives for mean pH and mean dissolved oxygen (mg/L).

3.3 Water Chemistry and Periphyton Chlorophyll-a

The quality of water chemistry data was assessed prior to data analysis and interpretation and was judged as good based on good analyte detectability, precision, and accuracy, and an absence of contamination (Appendix A). All analytes were below the CWQGs except for fluoride, which also exceeded the CWQG during baseline sampling (HKP 1994).[7] All analytes were well below the SSWQO as set out in the WUL (Table 3.4; Appendix Table B.8). Chloride and fluoride concentrations at Minto Creek were greater than 2x higher than corresponding reference areas and total alkalinity was greater than 2x higher at upper Minto Creek compared to upper McGinty reference (Table 3.4; Appendix Table B.8).

Hardness and total dissolved solids were generally higher in upper Minto Creek than in Upper McGinty Creek (Table 3.4). This was also true for lower Minto Creek compared to both lower Wolverine Creek and lower Big Creek reference areas. Dissolved organic carbon (DOC) ranged from 7.21 to 14.3 mg/L across areas. Hardness, DOC, and alkalinity can modify (reduce) the toxicity of certain metals (e.g., copper).

Chlorophyll-a data quality was assessed prior to data analysis and interpretation and was judged as good based on good analyte detectability, precision, and accuracy, and an absence of contamination (Appendix A). Chlorophyll-a is the primary photosynthetic pigment of all oxygen evolving photosynthetic organisms (Wetzel 2001) and therefore provides an indicator of the standing stock of photosynthetic organisms representing the lowest trophic level. Minto Creek is a lotic system, so measuring chlorophyll-a in periphyton is more representative of productivity

[7] See Table B.7 for details on guideline values that are dependent on physicochemical modifiers.

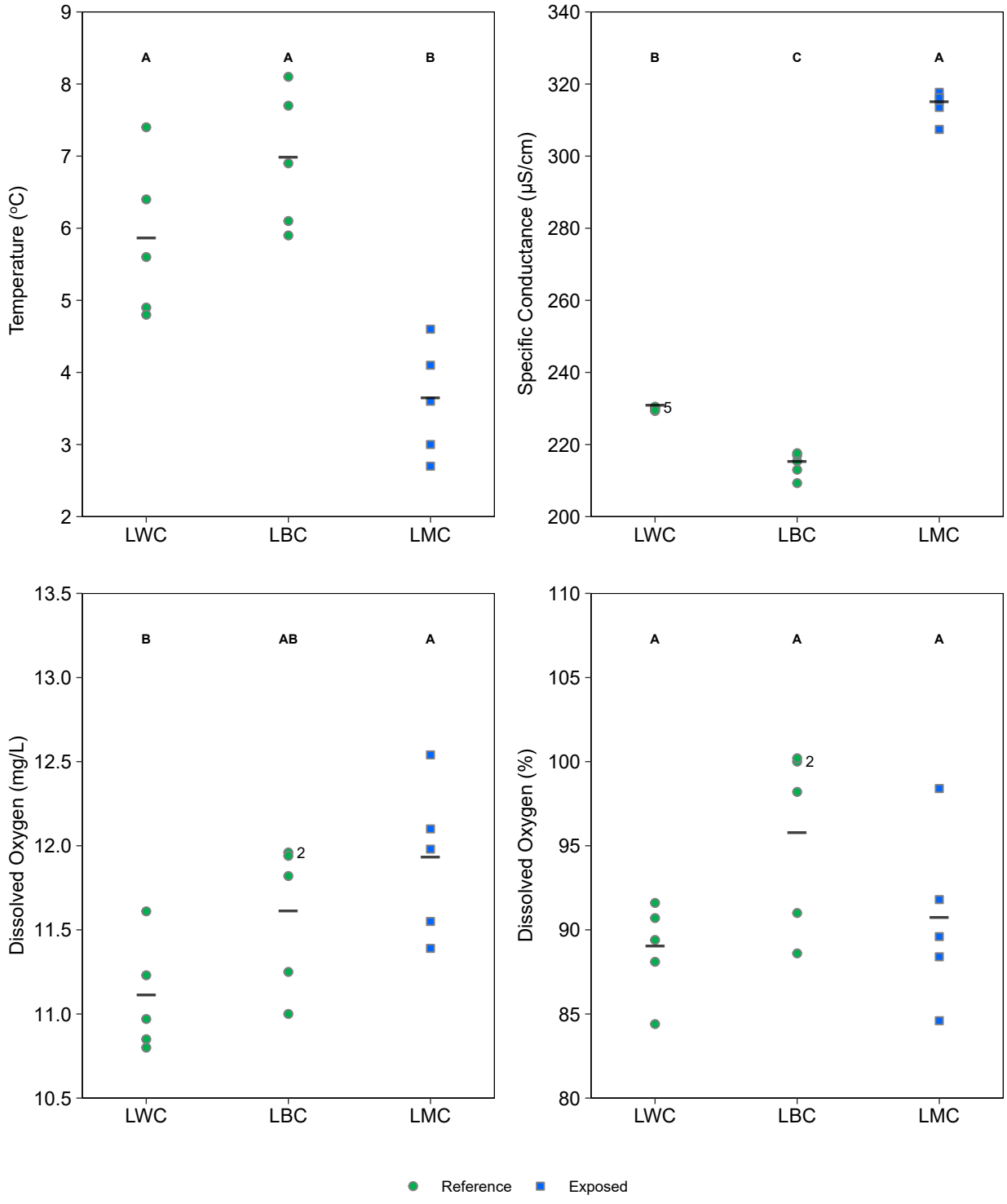


Figure 3.3: Physico−chemical Measurements in Benthic Invertebrate Sampling Areas in Lower Minto Creek and Reference Creeks, Minto Mine AEMP, 2021

Notes: Different letters indicate areas are significantly different (p−value <0.05). Horizontal bars indicate the measure of central tendency. MCT is the mean for parameters where statistics were conducted on the raw scale, the geometric mean when statistics were $\log_{10}$ transformed to meet the assumptions of normality, and the median when rank transformed. Numbers indicate the number of overlapping points. LWC = lower Wolverine Creek. LBC = lower Big Creek. LMC = lower Minto Creek.

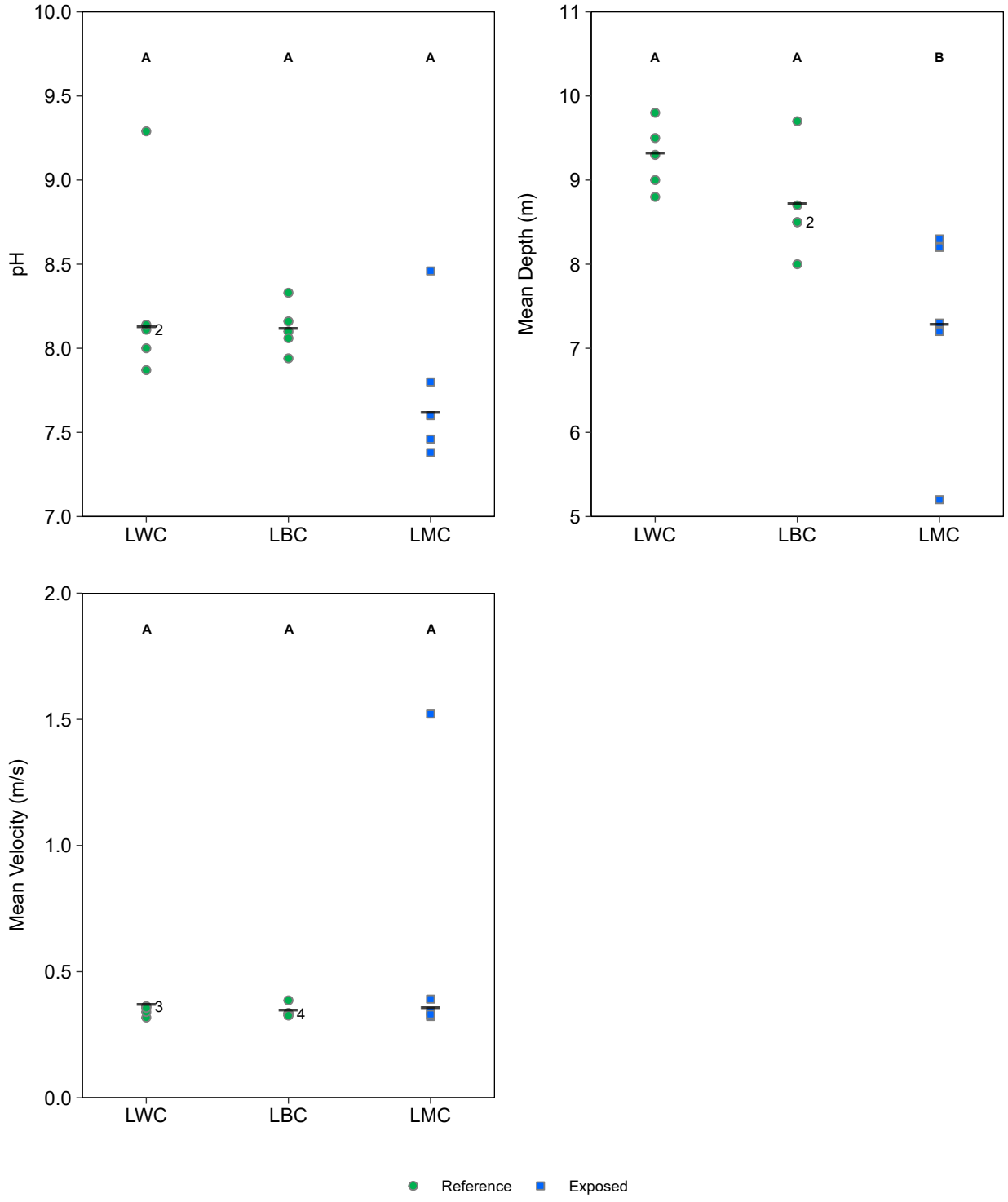


Figure 3.3: Physico−chemical Measurements in Benthic Invertebrate Sampling Areas in Lower Minto Creek and Reference Creeks, Minto Mine AEMP, 2021

Notes: Different letters indicate areas are significantly different (p−value <0.05). Horizontal bars indicate the measure of central tendency. MCT is the mean for parameters where statistics were conducted on the raw scale, the geometric mean when statistics were $\log_{10}$ transformed to meet the assumptions of normality, and the median when rank transformed. Numbers indicate the number of overlapping points. LWC = lower Wolverine Creek. LBC = lower Big Creek. LMC = lower Minto Creek.

Table 3.3: Statistical Comparisons of *In Situ* Water Quality taken with Benthic Invertebrate Samples in Lower Areas, Minto Mine AEMP, 2021

Endpoint	Data Transformation	Test	Test P-Value	MCT[a]			MOD (%)[b]		
				LWC (Reference)	LBC (Reference)	LMC (Exposed)	LWC vs. LBC	LMC vs. LWC	LMC vs. LBC
Temperature (°C)	none	ANOVA	0.001	5.82	6.94	3.60	ns	-38	-48
Specific Conductance (µS/cm)	none	ANOVA	0.001	230	214	314	-6.7	37	46
Dissolved Oxygen (mg/L)	none	ANOVA	0.027	11.1	11.6	11.9	ns	7.4	ns
Dissolved Oxygen (%)	none	ANOVA	0.092	88.8	95.6	90.6	ns	ns	ns
pH	rank	K-W	0.147	8.11	8.10	7.60	ns	ns	ns
Mean Depth (m)	none	ANOVA	0.007	9.28	8.68	7.24	ns	-22	-17
Mean Velocity (m/s)	rank	K-W	0.677	0.356	0.334	0.342	ns	ns	ns

P-value < 0.05.

P-value < 0.05 and MOD > 0

P-value < 0.05 and MOD < 0

Notes: ANOVA = Analysis of Variance, K-W = Kruskal-Wallis, ns = not significant, LWC = Lower Wolverine Creek, LBC = Lower Big Creek, LMC = Lower Minto Creek.

[a] MCT Measure of Central Tendency is the mean for parameters where statistics were conducted on the raw scale and the geometric mean when statistics were log $_{10}$ transformed to meet the assumptions of normality, and the median when rank transformed.

[b] MOD= magnitude of difference. MOD = $(MCT_{exp} - MCT_{ref}) / MCT_{ref} * 100$.

Table 3.4: Water Quality Results at Exposed and Reference Areas, Minto Mine AEMP, September 2021

	Analyte	Units	CCME Water Quality Guidelines[a]		WUL Objectives at W2	Upper McGinty Creek	Upper Minto Creek	Lower Wolverine Creek	Lower Big Creek	Lower Minto Creek
			Long-term	Short-term		Reference	Exposed	Reference	Reference	Exposed
Physical Tests	Total Hardness (as $CaCO_3$)	mg/L	-	-	-	75.8	274	124	112	176
	pH (Field)	pH	6.5 to 9.0	-	6.0 to 9.0	7.50	7.70	7.89	7.94	7.70
	Temperature (Field)	°C	-	-	-	1.80	1.20	4.00	4.50	2.50
	Total Suspended Solids	mg/L	-	-	-	<3.0	<3.0	<3.0	<3.0	<3.0
	Total Dissolved Solids	mg/L	-	-	-	128	332	194	161	238
Anions , Nutrients, Other	Total Alkalinity as $CaCO_3$	mg/L	-	-	-	58.2	220	111	104	157
	Total Ammonia (as N)	mg/L	1.23 to 6.0	-	0.25	<0.0050	0.00560	<0.0050	<0.0050	<0.0050
	Bromide	mg/L	-	-	-	<0.050	<0.050	<0.050	<0.050	<0.050
	Chloride	mg/L	120	640	-	<0.050	5.03	<0.050	<0.050	1.83
	Fluoride	mg/L	0.12	-	-	0.210	0.480	0.128	0.121	0.337
	Nitrate	mg/L	3.0	124	9.1	0.0106	0.137	<0.0050	0.0100	<0.0050
	Nitrite	mg/L	0.060	-	0.060	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Sulphate	mg/L	-	-	-	16.5	48.5	24.3	16.4	20.8
	Dissolved Organic Carbon	mg/L	-	-	-	14.3	8.16	13.9	7.21	9.30
	Total Inorganic Carbon	mg/L	-	-	-	14.8	58.4	27.7	26.9	44.4
	Total Organic Carbon	mg/L	-	-	-	14.8	8.10	13.6	7.04	8.43
Total Metals	Aluminum	mg/L	0.1	-	-	0.0406	0.00630	0.0257	0.0123	0.0193
	Antimony	mg/L	-	-	-	<0.00010	<0.00010	<0.00010	0.000140	<0.00010
	Arsenic	mg/L	0.0050	-	-	0.000450	0.000270	0.000440	0.000700	0.000460
	Barium	mg/L	-	-	-	0.0359	0.0554	0.0428	0.0674	0.0656
	Beryllium	mg/L	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Bismuth	mg/L	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Boron	mg/L	1.5	29	-	<0.010	0.0210	<0.010	<0.010	<0.010
	Cadmium	mg/L	0.00012 to 0.00036	0.0015 to 0.0058	-	0.00000580	<0.000010	0.00000870	<0.0000050	0.00000510
	Calcium	mg/L	-	-	-	18.7	60.8	24.4	24.6	48.5
	Cesium	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Chromium	mg/L	0.0010[b]	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Cobalt	mg/L	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Copper	mg/L	0.0020 to 0.0040	-	-	0.00155	0.00279	0.00225	0.00164	0.00199
	Iron	mg/L	0.30	-	-	0.221	0.0300	0.0790	0.0290	0.0520
	Lead	mg/L	0.0021 to 0.0070	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Lithium	mg/L	-	-	-	<0.0010	0.00260	0.00180	0.00140	0.00200
	Magnesium	mg/L	-	-	-	6.48	28.6	14.3	11.2	16.4
	Manganese	mg/L	-	-	-	0.0215	0.0687	0.00378	0.0108	0.0115
	Mercury	mg/L	0.000026	-	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Molybdenum	mg/L	0.073	-	-	0.000695	0.00510	0.000679	0.00140	0.00137
	Nickel	mg/L	0.076 to 0.15	-	-	0.00106	0.00127	0.00144	0.000810	0.000850
	Phosphorus	mg/L	-	-	-	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium	mg/L	-	-	-	0.509	2.43	0.967	0.958	1.66
	Rubidium	mg/L	-	-	-	0.000230	0.000280	0.000600	0.000760	0.000680
	Selenium	mg/L	0.0010	-	-	0.000280	0.000234	0.000106	0.0000820	0.000152
	Silicon	mg/L	-	-	-	6.61	6.94	5.49	6.08	6.66
	Silver	mg/L	0.00025	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Sodium	mg/L	-	-	-	4.69	17.5	10.1	8.33	10.7
	Strontium	mg/L	-	-	-	0.147	0.769	0.257	0.312	0.497
	Sulphur	mg/L	-	-	-	5.87	18.3	9.15	6.08	7.54
	Tellurium	mg/L	-	-	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
	Thallium	mg/L	0.00080	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Thorium	mg/L	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Tin	mg/L	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium	mg/L	-	-	-	0.00115	0.000340	0.000820	<0.00030	0.000730
	Tungsten	mg/L	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Uranium	mg/L	0.015	0.033	-	0.000260	0.00208	0.00106	0.00298	0.00168
	Vanadium	mg/L	-	-	-	<0.00050	<0.00050	0.000940	0.000600	<0.00050
	Zinc	mg/L	-	-	-	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
	Zirconium	mg/L	-	-	-	0.000340	<0.00020	0.000410	<0.00020	<0.00020
Dissolved Metals	Aluminum	mg/L	-	-	0.10	0.0229	0.00330	0.0138	0.0106	0.00400
	Antimony	mg/L	-	-	-	<0.00010	<0.00010	<0.00010	0.000160	<0.00010
	Arsenic	mg/L	-	-	0.0050	0.000420	0.000300	0.000420	0.000690	0.000400
	Barium	mg/L	-	-	-	0.0364	0.0619	0.0440	0.0740	0.0659
	Beryllium	mg/L	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Bismuth	mg/L	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Boron	mg/L	-	-	-	<0.010	0.0220	<0.010	<0.010	<0.010
	Cadmium	mg/L	-	-	0.00017 to 0.00044	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Calcium	mg/L	-	-	-	19.7	62.7	26.5	27.1	45.8
	Cesium	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Chromium	mg/L	-	-	0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Cobalt	mg/L	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Copper	mg/L	-	-	0.013 to 0.020	0.00156	0.00287	0.00198	0.00168	0.00184
	Iron	mg/L	-	-	1.1	0.141	0.0290	0.0600	0.0300	0.0350
	Lead	mg/L	-	-	0.0040	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Lithium	mg/L	-	-	-	<0.0010	0.00270	0.00180	0.00140	0.00200
	Magnesium	mg/L	-	-	-	6.47	28.6	14.1	10.8	15.0
	Manganese	mg/L	0.37 to 0.56	5.1 to 16	-	0.0136	0.0737	0.00278	0.0111	0.0107
	Mercury	mg/L	-	-	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Molybdenum	mg/L	-	-	0.073	0.000682	0.00547	0.000613	0.00146	0.00147
	Nickel	mg/L	-	-	0.11	0.00107	0.00140	0.00139	0.000820	0.000830
	Phosphorus	mg/L	-	-	-	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium	mg/L	-	-	-	0.542	2.62	0.964	1.00	1.69
	Rubidium	mg/L	-	-	-	<0.00020	0.000300	0.000570	0.000790	0.000740
	Selenium	mg/L	-	-	0.0020	0.000233	0.000305	0.000123	0.0000690	0.000145
	Silicon	mg/L	-	-	-	6.53	6.99	5.26	5.98	6.37
	Silver	mg/L	-	-	0.00010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Sodium	mg/L	-	-	-	4.56	18.0	9.78	8.46	10.1
	Strontium	mg/L	-	-	-	0.140	0.780	0.240	0.328	0.494
	Sulphur	mg/L	-	-	-	5.27	17.3	7.90	5.64	7.38
	Tellurium	mg/L	-	-	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
	Thallium	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Thorium	mg/L	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Tin	mg/L	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium	mg/L	-	-	-	0.000500	<0.00030	0.000410	0.000500	<0.00030
	Tungsten	mg/L	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Uranium	mg/L	-	-	-	0.000272	0.00229	0.00108	0.00306	0.00173
	Vanadium	mg/L	-	-	-	<0.00050	<0.00050	0.000910	0.000660	<0.00050
	Zinc	mg/L	0.029 to 0.089	0.11 to 0.28	0.030	<0.0010	<0.0010	0.00100	<0.0010	<0.0010
	Zirconium	mg/L	-	-	-	0.000370	<0.00020	0.000370	0.000210	<0.00020

Exceeds CCME long-term Water Quality Guideline.
Exceeds CCME short-term Water Quality Guideline.
Exceeds Water Use Licence objective.
Exceeds both Water Quality Guideline (short- or long-term) and Water Use Licence objectives.

Notes: "-" = no guideline available / no data available.

[a] CCME (Canadian Council of Ministers of the Environment; 1999). See Appendix Table B.7 for values and explanatory notes on selected water quality guidelines.

[b] Total chromium guideline is for hexavalent chromium, Cr(VI).

than measuring chlorophyll-a in water. In 2021, mean periphyton chlorophyll-a (mg/m^2) were significantly higher at lower Minto Creek (45.8 mg/m^2) than at lower Wolverine Creek (20.1 mg/m^2; Appendix Figure B.1, Appendix Tables B.9 and B.10).

When comparing periphyton chlorophyll-a (mg/m^2) over the years, lower Minto Creek had significantly higher chlorophyll-a than lower Wolverine Creek in 2014, 2015, 2017, 2018, and 2021, while results were not significantly different in 2013 and 2016 (Appendix Table B.10). Since monitoring commenced in 2012, periphyton chlorophyll-a has been statistically lower at Minto Creek than Wolverine Creek in only two years: 2012 and 2020 (Appendix Table B.10). Overall, the absence of consistent differences over time suggests no mine-related influence beyond natural variability.

In 2021 periphyton chlorophyll-a (mg/m^2) at lower Minto Creek was higher than in 2020 results and were well below the BCWQG of 100 mg/m^2 for the protection of aquatic life (BCMOE 1985), except for one sample at lower Minto Creek (106 mg/m^2 at LMC-5; Appendix Table B.9). The classification system laid out in Dodds et al. (1998) sets the trophic status of lower Minto Creek (mean; 45.8 mg/m^2) and lower Wolverine Creek (mean; 20.1 mg/m^2) as mesotrophic.

3.4 Summary

Precipitation from June to September 2021 was slightly lower than long-term normal. Relatively low precipitation preceding the September 2021 field campaign likely have contributed to lower flows and noticeable low water levels at several of the sampling areas, but especially at lower Minto Creek.

Supporting measures collected in September 2021 indicated good water quality in Minto Creek. Influence of the Minto Mine was evident through higher specific conductance and pH in Minto Creek in comparison to in the reference creeks. Water quality met CWQGs and SSWQOs, except for fluoride, which exceeded the CWQG at all areas and was greater than CWQG during baseline sampling. Total copper and dissolved copper concentrations have historically exceeded the CWQG, but were below the CWQG at all sites in 2021, with dissolved copper concentrations falling below the SSWQO as well.

Mean periphyton chlorophyll-a (mg/m^2) was significantly different between areas and were below BCWQG except for one sample at lower Minto Creek. Temporal variability in chlorophyll-a was evident among samples taken from Minto Creek and the reference. Historically, periphyton chlorophyll-a (mg/m^2) values have been below the BCWQG of 100 mg/m^2 and results have been (generally) higher at Minto Creek than the reference. Chlorophyll-a (mg/m^2) in 2021 was higher than 2020. Production classification at both lower Minto Creek (exposed) and lower Wolverine Creek (reference) was mesotrophic.

4 SEDIMENT QUALITY

4.1 Sediment Particle Size and Chemistry

Sediment data quality was assessed prior to data analysis and interpretation and was judged as good based on analyte detectability, precision, and accuracy for metals and other analytes (Appendix A). For lower creek areas, particle size composition is expressed as the mean of five replicates. At upper creek areas, particle size composition is expressed as a single composite sample.

Sediments collected in 2021 were largely composed of sand at the upper areas (>45%) and fine particles of silt/clay at the lower areas (>60%; Figure 4.1; Appendix Table C.1). There were relatively more fine particles (silt and clay category) at the upper Minto Creek depositional area than at the upper reference area, upper McGinty Creek (54.6% vs. 40.6%; Figure 4.1; Appendix Table C.1). Lower Minto Creek and lower Wolverine Creek reference area had similar mean proportions of fine particles (63.5% vs. 60.6%; Figure 4.1; Appendix Table C.1).

Mean total organic carbon (TOC) content, loss on ignition (LOI), and total carbon content of sediment collected from upper Minto Creek were slightly lower than at the upper McGinty Creek reference area, but the differences were not significant (Table 4.1).

Concentrations of several metals were significantly higher in upper Minto Creek than in upper McGinty Creek sediments (Table 4.1). Sediment concentrations of copper, potassium, and nickel had the highest magnitude of difference between the upper creeks (583%, 91%, and 69%, respectively; Table 4.1).

Mean arsenic concentration in upper Minto Creek was above the Interim Sediment Quality Guideline (ISQG; 5.9 mg/kg) but below the Probable Effect Level (PEL; 17 mg/kg) and lower than 2x the mean at upper McGinty Creek reference area (Table 4.1). Mean copper concentration in upper Minto Creek was above the ISQG (36 mg/kg) and 2x times higher than reference but below the PEL (197 mg/kg). One of the five sediment samples collected at upper Minto Creek had a copper concentration above the PEL (Table 4.1; Appendix Table C.1); the PEL is considered a level above which adverse biological effects are likely to occur.[8] However, due to the predominantly erosional habitat in upper Minto Creek, there are few areas of deposited sediment which may have only occurred in small quantities that likely washed away each year during freshet. Therefore, elevated copper in fine sediment in the upper reaches of Minto Creek may be of limited importance in terms of exposure and potential effects to biota

[8] It is recognized that guideline exceedances, even of probable effect levels, can occur naturally in highly mineralized areas.

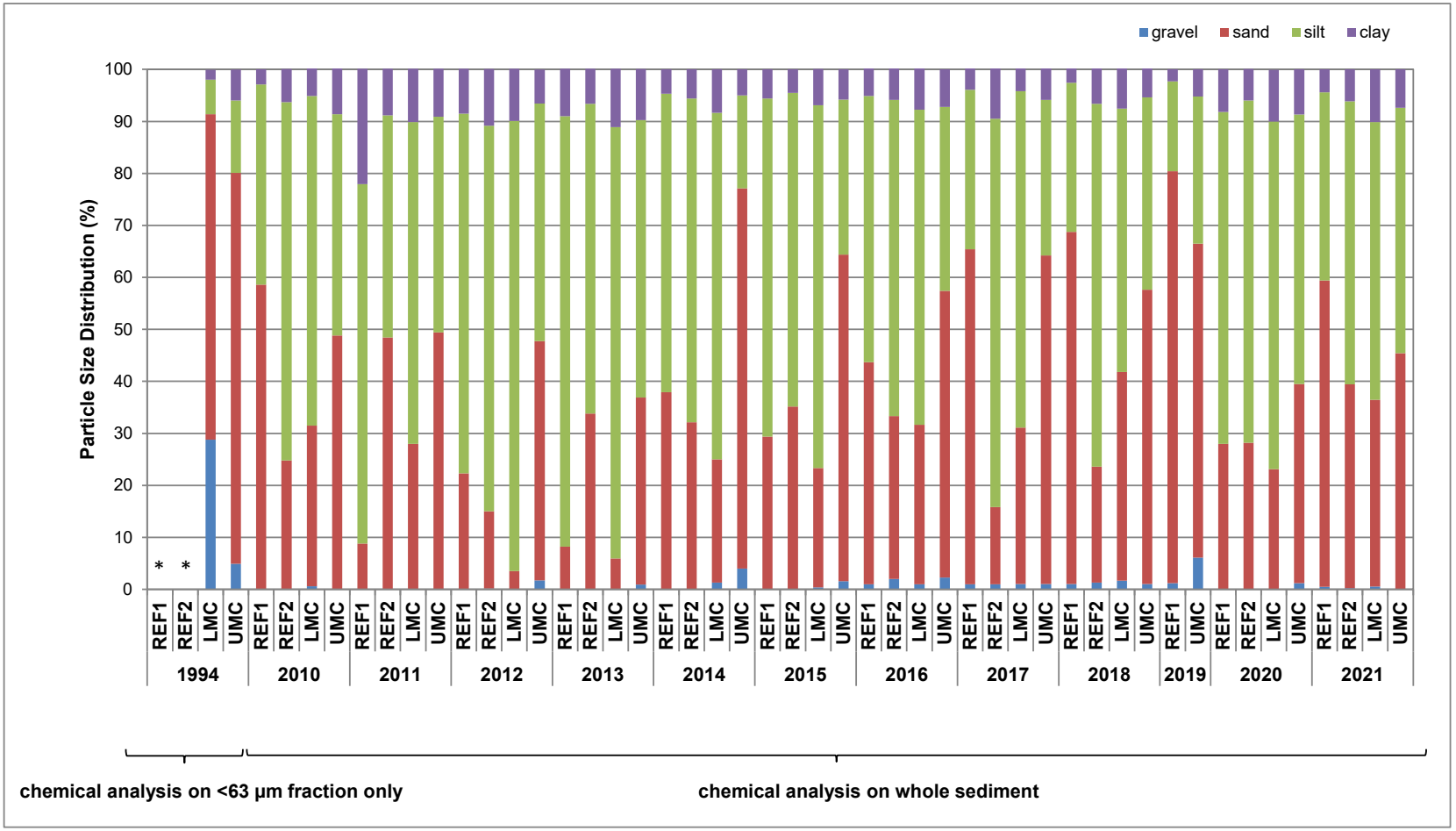


Figure 4.1: Particle Size Distribution of Sediment Collected in Minto Creek and Reference Locations, 1994 to 2021[a,b]

Notes: Methods used in 1994 were not specified, fine sediment was collected in triplicate in the mainstem of Minto Creek (HKP 1994), * = no data. No sampling was conducted in lower areas in 2019, as lower Minto Creek was dry.

[a] REF1 = Station W6 (south-flowing tributary) in 2006 to 2008 and McGinty Creek in 2010 to 2021; UMC = Upper Minto Creek.

[b] REF2 = Station W7 (north-flowing tributary) in 2006 to 2009 and Wolverine Creek in 2010 to 2021; LMC = Lower Minto Creek.

Table 4.1: Statistical Comparisons Between Upper McGinty Creek (Reference) and Upper Minto Creek (Mine-Exposed) Sediment Chemistry, Minto Mine AEMP, 2021

Analyte	CSQG[a]		Upper McGinty Creek (Reference)				Upper Minto Creek (Exposed)				Statistical Test					
														MCT[b]		
	ISQG	PEL	Mean	Standard Deviation	Minimum	Maximum	Mean	Standard Deviation	Minimum	Maximum	Data Transformation	Test	Test P-value	Upper McGinty Creek (Reference)	Upper Minto Creek (Exposed)	MOD[c] (%)
Loss on Ignition	-	-	14.3	5.97	7.50	19.0	9.80	4.00	5.10	15.4	none	tequal	0.201	14.3	9.80	ns
ph 1:2 Soil:Water Ratio	-	-	7.12	0.190	6.91	7.40	7.84	0.310	7.32	8.09	none	tequal	0.002	7.12	7.84	10
Total Inorganic Carbon (%)	-	-	0.130	0.0504	0.0750	0.207	0.154	0.0824	0.0750	0.291	none	tequal	0.600	0.130	0.154	ns
Total Inorganic Carbon, as $CaCO_3$ (%)	-	-	1.09	0.417	0.630	1.72	1.28	0.690	0.620	2.43	none	tequal	0.605	1.09	1.28	ns
Total Organic Carbon (%)	-	-	4.58	1.90	2.52	6.22	3.36	1.80	1.60	6.21	none	tequal	0.330	4.58	3.36	ns
Total Carbon (%)	-	-	4.71	1.94	2.60	6.43	3.52	1.88	1.67	6.50	none	tequal	0.353	4.71	3.52	ns
Organic Matter (%)	-	-	7.88	3.27	4.34	10.7	5.79	3.10	2.76	10.7	none	tequal	0.331	7.88	5.79	ns
Total Kjeldahl Nitrogen (%)	-	-	0.402	0.132	0.251	0.564	0.323	0.121	0.211	0.517	none	tequal	0.353	0.402	0.323	ns
Aluminum (mg/kg)	-	-	9,814	1,642	7,510	11,300	10,868	1,601	8,840	13,100	none	tequal	0.334	9,814	10,868	ns
Antimony (mg/kg)	-	-	0.418	0.0912	0.300	0.520	0.436	0.0764	0.380	0.550	none	tequal	0.744	0.418	0.436	ns
Arsenic (mg/kg)	5.9	17	8.97	1.99	7.74	12.4	5.91	1.30	5.15	8.20	rank	M-W	0.056	7.94	5.34	ns
Barium (mg/kg)	-	-	259	67.4	188	368	429	409	177	1,130	log10	tequal	0.550	253	320	ns
Beryllium (mg/kg)	-	-	0.348	0.0740	0.260	0.460	0.388	0.0661	0.280	0.460	none	tequal	0.394	0.348	0.388	ns
Boron (mg/kg)	-	-	<5	-	<5	<5	5.48	-	<5	7.40	rank	M-W	0.424	5.00	5.00	ns
Cadmium (mg/kg)	0.6	3.5	0.208	0.0562	0.130	0.267	0.309	0.232	0.134	0.702	log10	tequal	0.492	0.201	0.255	ns
Calcium (mg/kg)	-	-	9,820	2,026	6,960	11,700	9,386	3,165	6,170	14,600	none	tequal	0.803	9,820	9,386	ns
Chromium (mg/kg)	37.3	90	21.0	2.89	16.4	23.7	25.3	1.11	23.5	26.4	none	tequal	0.014	21.0	25.3	21
Cobalt (mg/kg)	-	-	8.87	2.14	7.49	12.6	11.0	4.14	8.18	18.1	rank	M-W	0.222	7.80	8.98	ns
Copper (mg/kg)	35.7	197	21.9	4.34	15.2	26.7	172	107	67.5	340	log10	tunequal	0.001	21.5	147	583
Iron (mg/kg)	-	-	24,300	4,865	20,400	32,400	22,880	3,248	19,900	27,900	none	tequal	0.602	24,300	22,880	ns
Lead (mg/kg)	35	91.3	4.32	0.560	3.41	4.83	5.29	0.528	4.59	6.05	none	tequal	0.022	4.32	5.29	23
Lithium (mg/kg)	-	-	6.08	0.887	4.80	7.00	7.22	0.973	5.90	8.60	none	tequal	0.089	6.08	7.22	ns
Magnesium (mg/kg)	-	-	4,160	482	3,370	4,620	6,278	906.1	5,220	7,710	none	tequal	0.002	4,160	6,278	51
Manganese (mg/kg)	-	-	1,248	777	604	2,510	7,595	11,209	495	26,900	log10	tequal	0.248	1,080	2,819	ns
Mercury (mg/kg)	0.17	0.486	0.0370	0.00853	0.0278	0.0482	0.0293	0.0103	0.0163	0.0448	none	tequal	0.234	0.0370	0.0293	ns
Molybdenum (mg/kg)	-	-	1.36	1.36	0.580	3.78	3.91	4.65	0.920	11.9	log10	tequal	0.189	1.03	2.37	ns
Nickel (mg/kg)	-	-	17.2	2.46	13.6	20.4	29.0	8.40	22.1	42.9	none	tequal	0.017	17.2	29.0	69
Phosphorus (mg/kg)	-	-	791	140	664	998	834	35.3	801	882	none	tequal	0.523	791	834	ns
Potassium (mg/kg)	-	-	700	67.5	590	760	1,338	286	1,020	1,760	none	tequal	0.001	700	1,338	91
Selenium (mg/kg)	2	-	1.10	0.703	0.720	2.35	0.670	0.382	0.290	1.30	log10	tequal	0.172	0.975	0.593	ns
Silver (mg/kg)	-	-	<0.1	-	<0.1	<0.1	0.114	0.0286	<0.1	0.160	rank	M-W	0.180	0.100	0.100	ns
Sodium (mg/kg)	-	-	193	27.7	152	222	318	30.5	293	371	none	tequal	0.001	193	318	65
Strontium (mg/kg)	-	-	89.7	18.1	65.6	105	127	79.7	67.2	262	log10	tequal	0.410	88.2	111	ns
Sulphur (mg/kg)	-	-	1,080	-	<1000	1,400	<1000	-	<1000	<1000	rank	M-W	0.424	1,000	1,000	ns
Thallium (mg/kg)	-	-	0.0602	0.00448	<0.05	0.0660	0.0852	0.0211	0.0600	0.117	rank	M-W	0.056	0.0630	0.0840	ns
Titanium (mg/kg)	-	-	594	84.2	508	702	682	80.9	584	808	none	tequal	0.132	594	682	ns
Uranium (mg/kg)	-	-	2.40	0.811	1.75	3.66	0.949	0.345	0.666	1.34	none	tequal	0.006	2.40	0.949	-60
Vanadium (mg/kg)	-	-	46.1	3.45	40.9	50.4	52.4	6.87	43.0	60.3	none	tequal	0.102	46.1	52.4	ns
Zinc (mg/kg)	123	315	42.7	5.69	35.7	50.1	61.1	15.3	46.3	84.9	none	tequal	0.036	42.7	61.1	43
Zirconium (mg/kg)	-	-	2.52	0.634	1.80	3.50	2.42	0.544	1.90	3.00	rank	M-W	1.000	2.30	2.40	ns

P-value < 0.05.
Magnitude of Difference (MOD) > 0.
Magnitude of Difference (MOD) < 0.
Indicates sediment concentration exceeding CSQG ISQG.
Indicates sediment concentration exceeding CSQG PEL.

Notes: ns = non-significant.

[a] Canadian Sediment Quality Guidelines: ISQG = interim sediment quality guideline; PEL = probable effect level (CCME 2014)

[b] Measure of Central Tendency is the mean for parameters where statistics were conducted on the raw scale, the geometric mean when statistics were log_{10} transformed to meet the assumptions of normality, and the median when rank transformed.

[c] MOD = magnitude of difference = $(MCT_{exp}-MCT_{ref})/MCT_{ref}*100\%$.

(i.e., sediment copper is of limited importance as an exposure route in this erosional environment where sediment is sparsely distributed).

Mean TOC content, LOI, and total carbon content of sediment collected from lower Minto Creek were slightly lower TOC, LOI, and total carbon than the lower Wolverine Creek reference area but the difference was not significant (Table 4.2).

Concentrations of several metals were found to be significantly higher in lower Minto Creek than lower Wolverine Creek sediments (Table 4.2). Sediment concentrations of manganese, copper, and arsenic had the highest magnitude of difference between the upper creeks (168%, 139%, and 39%, respectively).

Mean arsenic and copper concentrations in lower Minto Creek were above the ISQG but below the Probable Effect Level (PEL). Mean concentrations of arsenic in lower Minto Creek were less than 2x the mean at lower Wolverine Creek but mean copper concentration in sediment was 2x higher at lower Minto Creek compared to lower Wolverine Creek (Table 4.2). In lower Minto Creek, fine sediment deposits were somewhat more common (compared to upper Minto Creek) and therefore more relevant to aquatic life.

With progression from upper to lower Minto Creek, sediment copper concentrations decreased from a mean of 172 to 59 milligram per kilogram (mg/kg), respectively, indicating improvement with distance downstream. As aforementioned, fine sediment deposits were considered of limited importance as a route for exposure and potential effects of mine-related metals to biota, and more relevant to aquatic life at lower Minto Creek, where sediment deposits were somewhat more common.

4.2 Temporal Comparisons

Particle size distribution in 2021 indicated similar proportions of fine particles in the silt and clay category compared to previous years and higher proportions of sand than 2020 (Figure 4.1). Sand was generally the dominant particle size in upper Minto Creek as observed over the more recent historical data (post-2010). Particle size distribution observed from 2010 onwards was notably different from data collected prior to 2010, which employed different sampling methodology (described in Minnow 2019a). Upper McGinty particle distribution is noticeably more variable in clay and sand percentages (Figure 4.1), perhaps reflecting the very sparse distribution and heterogeneity of sediment in this system.

Mean concentrations of copper at upper Minto Creek have not changed significantly since 2011 but has been significantly higher than upper McGinty Creek since 2011 (Figure 4.2, Table 4.3). The magnitude of difference between upper Minto Creek and upper McGinty Creek in 2021 was the lowest it has been since 2015, and results were within the range observed since 2011

Table 4.2: **Statistical Comparisons Between Lower Wolverine Creek (Reference) and Lower Minto Creek (Mine-Exposed) Sediment Chemistry, Minto Mine AEMP, 2021**

Analyte	CSQG[a]		Summary Statistics								Statistical Test					
			Lower Wolverine Creek (Reference)				Lower Minto Creek (Exposed)				Data Transformation	Test	Test P-value	MCT[b]		MOD[c] (%)
	ISQG	PEL	Mean	Standard Deviation	Minimum	Maximum	Mean	Standard Deviation	Minimum	Maximum				Lower Wolverine Creek (Reference)	Lower Minto Creek (Exposed)	
Loss on Ignition	-	-	13.4	7.54	5.40	25.7	6.66	1.51	4.90	8.80	log10	tequal	0.059	11.9	6.53	ns
ph 1:2 Soil:Water Ratio	-	-	6.85	0.0552	6.78	6.89	8.04	0.0840	7.95	8.14	none	tequal	0.001	6.85	8.04	17
Total Inorganic Carbon (%)	-	-	0.123	0.0256	0.0820	0.149	0.163	0.0528	0.110	0.247	none	tequal	0.166	0.123	0.163	ns
Total Inorganic Carbon, as $CaCO_3$ (%)	-	-	1.02	0.213	0.680	1.24	1.36	0.439	0.920	2.06	none	tequal	0.162	1.02	1.36	ns
Total Organic Carbon (%)	-	-	5.22	2.87	1.97	9.62	2.60	0.786	1.57	3.64	none	tequal	0.086	5.22	2.60	ns
Total Carbon (%)	-	-	5.34	2.90	2.05	9.77	2.77	0.827	1.68	3.82	none	tequal	0.093	5.34	2.77	ns
Organic Matter (%)	-	-	8.99	4.96	3.40	16.6	4.49	1.36	2.71	6.28	none	tequal	0.086	8.99	4.49	ns
Total Kjeldahl Nitrogen (%)	-	-	0.238	0.0710	0.119	0.302	0.184	0.0505	0.124	0.245	none	tequal	0.203	0.238	0.184	ns
Aluminum (mg/kg)	-	-	14,380	1,524	11,900	15,800	13,300	2,200	10,700	16,300	none	tequal	0.393	14,380	13,300	ns
Antimony (mg/kg)	-	-	0.420	0.0731	0.310	0.500	0.482	0.0870	0.380	0.610	none	tequal	0.257	0.420	0.482	ns
Arsenic (mg/kg)	5.9	17	5.42	1.27	4.32	7.06	7.54	1.02	6.15	8.90	none	tequal	0.020	5.42	7.54	39
Barium (mg/kg)	-	-	200	34.8	147	238	234	40.6	176	287	none	tequal	0.188	200	234	ns
Beryllium (mg/kg)	-	-	0.688	0.130	0.510	0.850	0.408	0.0614	0.340	0.500	none	tequal	0.002	0.688	0.408	-41
Cadmium (mg/kg)	0.6	3.5	0.193	0.0594	0.105	0.262	0.176	0.0401	0.144	0.230	none	tequal	0.606	0.193	0.176	ns
Calcium (mg/kg)	-	-	9,314	1,724	6,850	11,500	10,218	2,240	7,850	13,700	none	tequal	0.495	9,314	10,218	ns
Chromium (mg/kg)	37.3	90	45.2	3.44	39.1	47.1	31.3	3.69	26.9	36.5	none	tequal	0.001	45.2	31.3	-31
Cobalt (mg/kg)	-	-	12.5	1.22	10.7	13.7	10.3	1.28	8.73	12.0	none	tequal	0.027	12.5	10.3	-17
Copper (mg/kg)	35.7	197	24.7	5.20	16.2	30.0	59.0	21.5	37.5	93.8	none	tequal	0.008	24.7	59.0	139
Iron (mg/kg)	-	-	26,240	1,240	24,700	27,700	26,400	2,637	23,200	29,600	none	tequal	0.905	26,240	26,400	ns
Lead (mg/kg)	35	91.3	5.78	0.644	4.70	6.29	5.66	0.780	4.73	6.72	none	tequal	0.797	5.78	5.66	ns
Lithium (mg/kg)	-	-	9.72	0.996	8.10	10.8	9.96	1.68	8.10	12.4	none	tequal	0.790	9.72	9.96	ns
Magnesium (mg/kg)	-	-	9,110	523	8,230	9,470	6,948	1,061	5,880	8,490	none	tequal	0.004	9,110	6,948	-24
Manganese (mg/kg)	-	-	397	177	243	687	1,064	204	758	1,280	none	tequal	0.001	397	1,064	168
Mercury (mg/kg)	0.17	0.486	0.0325	0.0115	0.0150	0.0446	0.0338	0.0102	0.0206	0.0451	none	tequal	0.853	0.0325	0.0338	ns
Molybdenum (mg/kg)	-	-	0.676	0.199	0.560	1.03	0.722	0.0968	0.630	0.850	rank	M-W	0.151	0.590	0.670	ns
Nickel (mg/kg)	-	-	35.7	2.67	31.0	37.6	25.2	3.28	21.6	29.5	none	tequal	0.001	35.7	25.2	-29
Phosphorus (mg/kg)	-	-	1,035	47.1	986	1,090	859	51.2	794	921	none	tequal	0.001	1,035	859	-17
Potassium (mg/kg)	-	-	1,080	82.2	970	1,180	1,406	284	1,110	1,830	none	tequal	0.039	1,080	1,406	30
Selenium (mg/kg)	2	-	0.312	0.0831	<0.2	0.470	0.420	0.143	0.220	0.620	rank	M-W	0.310	0.300	0.420	ns
Silver (mg/kg)	-	-	0.104	-	<0.1	0.120	0.104	-	<0.1	0.120	rank	M-W	1.000	0.100	0.100	ns
Sodium (mg/kg)	-	-	455	16.2	435	477	324	43.1	278	371	none	tequal	0.001	455	324	-29
Strontium (mg/kg)	-	-	96.0	19.5	71.2	124	95.1	16.8	74.4	118	none	tequal	0.940	96.0	95.1	ns
Sulphur (mg/kg)	-	-	1,040	-	<1000	1,200	<1000	-	<1000	<1000	rank	M-W	0.424	1,000	1,000	ns
Thallium (mg/kg)	-	-	0.0792	0.0125	0.0600	0.0950	0.0962	0.0186	0.0750	0.122	none	tequal	0.129	0.0792	0.0962	ns
Titanium (mg/kg)	-	-	954.8	43.3	885	999	790	98.0	704	911	none	tequal	0.009	955	790	-17
Uranium (mg/kg)	-	-	2.46	0.871	1.22	3.61	0.941	0.139	0.784	1.11	none	tequal	0.005	2.46	0.941	-62
Vanadium (mg/kg)	-	-	68.3	4.18	64.4	73.2	60.4	4.05	55.2	64.8	none	tequal	0.016	68.3	60.4	-12
Zinc (mg/kg)	123	315	59.7	5.00	51.5	64.1	58.3	8.58	49.0	70.8	none	tequal	0.754	59.7	58.3	ns
Zirconium (mg/kg)	-	-	4.68	0.661	3.70	5.40	2.32	0.205	2.10	2.50	none	tequal	0.001	4.68	2.32	-50

P-value < 0.05.
Magnitude of Difference (MOD) > 0.
Magnitude of Difference (MOD) < 0.
Indicates sediment concentration exceeding CSQG ISQG.
Indicates sediment concentration exceeding CSQG PEL.

Note: ns = non-significant.

[a] Canadian Sediment Quality Guidelines: ISQG = interim sediment quality guideline; PEL = probable effect level (CCME 2014).

[a] Measure of Central Tendency is the mean for parameters where statistics were conducted on the raw scale, the geometric mean when statistics were $\log_{10}$ transformed to meet the assumptions of normality, and the median when rank transformed.

[b] MOD = magnitude of difference = $(MCT_{exp}-MCT_{ref})/MCT_{ref}*100\%$.

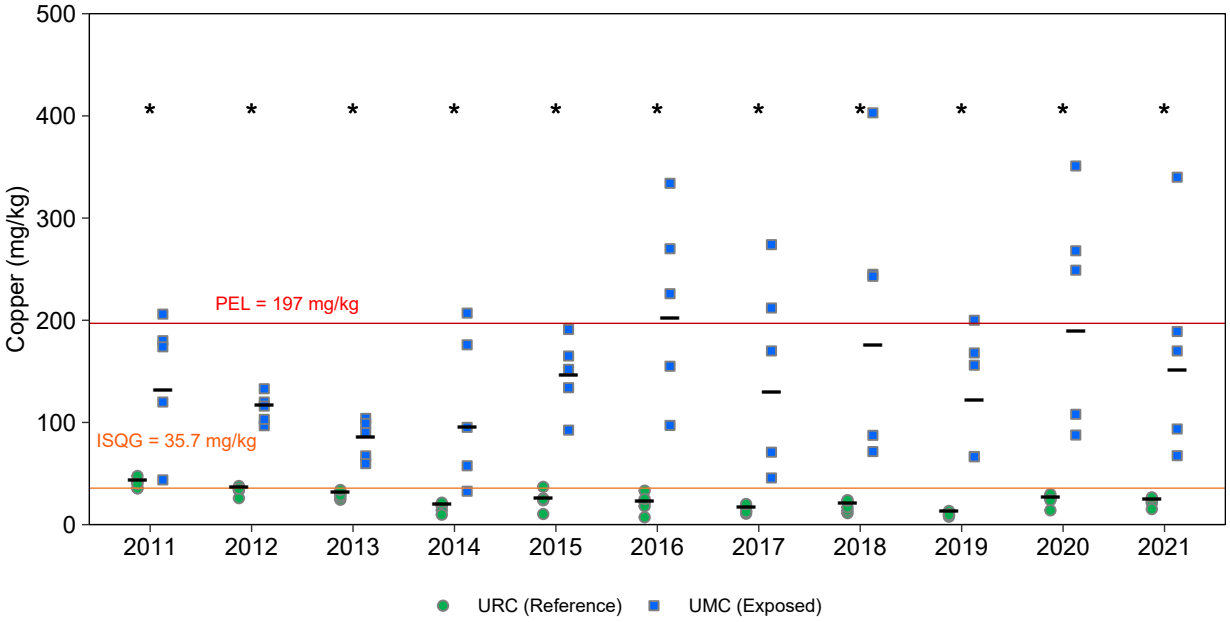


Figure 4.2: Sediment Copper Concentrations Over Time for Upper Areas, 2011 to 2021

Notes: URC = Upper McGinty Creek, UMC = Upper Minto Creek. Black horizontal bars indicate the Measure of Central Tendency (MCT). The MCT is the mean for non− transformed data, geometric mean for $\log_{10}$ transformed data and median for rank transformed data. An * indicates stations were significantly different for that year. Interim Sediment Quality Guideline (ISQG) = 35.7 mg/kg is shown in orange and Probable Effect Limit (PEL) = 197 mg/kg is shown in red.

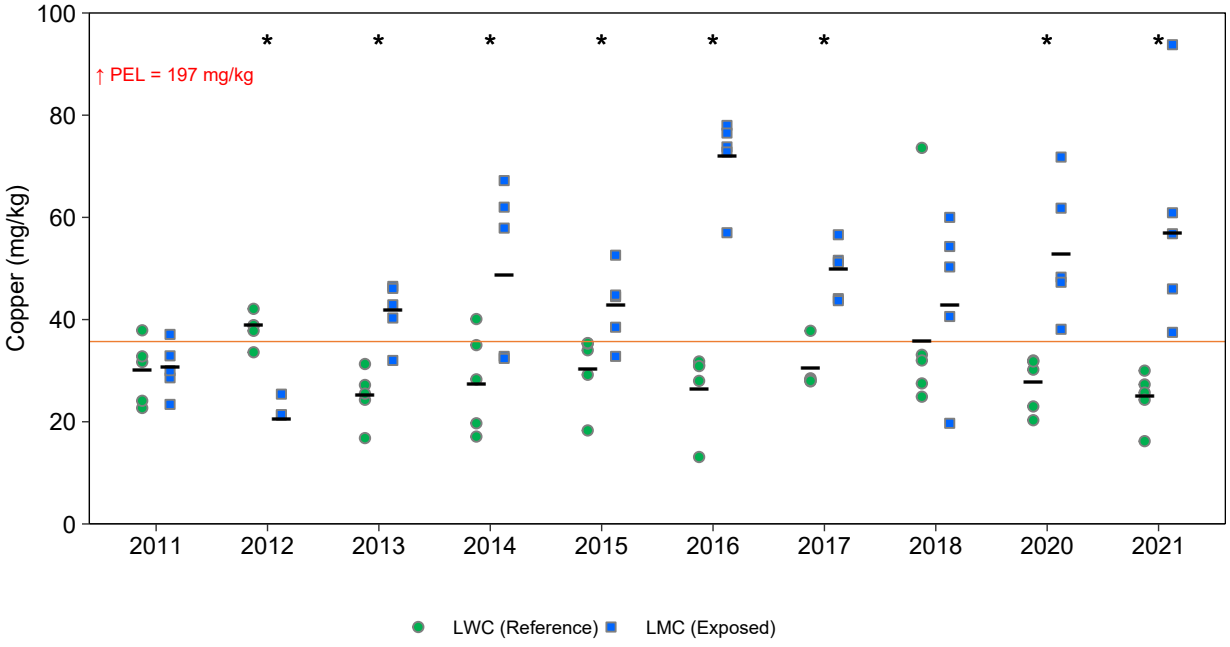


Figure 4.3: Sediment Copper Concentrations Over Time for Lower Areas, 2011 to 2021[a]

Notes: LWC = Lower Wolverine Creek. LMC = Lower Minto Creek. Black horizontal bars indicate the Measure of Central Tendency (MCT). The MCT is the mean for non− transformed data, geometric mean for $\log_{10}$ transformed data and median for rank transformed data. An * indicates stations were significantly different for that year. Interim Sediment Quality Guideline (ISQG) = 35.7 mg/kg is shown in orange and Probable Effect Limit (PEL) = 197 mg/kg is shown in red.

[a] Sampling was not completed in 2019 due to dry conditions.

Table 4.3: Statistical Comparison of Sediment Copper Concentrations in Over Time in Upper Creek Areas, Minto Mine AEMP, 2011 to 2021

Endpoint	ANOVA Model				Year	Do Concentrations Differ Among Years for Each Area?[a]		Do Concentrations Differ Between Areas?
	Transformation	Area	Year	Area x Year		URC (Reference)	UMC (Exposed)	MOD (%)[b]
Copper (mg/kg)	log10	<0.001	0.009	0.002	2011	A	A	220
					2012	AB	A	242
					2013	AB	A	187
					2014	ABC	A	472
					2015	ABC	A	533
					2016	ABC	A	953
					2017	BC	A	819
					2018	ABC	A	899
					2019	C	A	1,097
					2020	ABC	A	708
					2021	ABC	A	583

P-value < 0.05.
Magnitude of Difference (MOD) > 0.
Magnitude of Difference (MOD) < 0.

Notes: ANOVA = analysis of variance, URC = upper McGinty Creek, UMC = upper Minto Creek, MOD = magnitude of difference.

[a] Years that do not share a letter were significantly different in a Tukey's Honestly Significant Difference post-hoc test (α = 0.05).

[b] MOD = $(MCT_{UMC}-MCT_{URC})/MCT_{URC}$ *100; where the measures of central tendency (MCT) were geometric means because the data was log_{10} transformed.

(Figure 4.2, Table 4.3).

Mean concentrations of copper in lower Minto Creek have fluctuated over the years but have not changed significantly since 2013. Concentrations in lower Wolverine Creek have not changed significantly since 2011 (Figure 4.3, Table 4.4). The mean concentration of copper at lower Minto Creek has been significantly higher than lower Wolverine Creek since 2013, except in 2018 (Figure 4.3, Table 4.4). The highest magnitude of difference (MOD) between lower Minto and lower Wolverine was observed in 2016.

Though copper concentrations in 2021 were high relative to reference concentrations and CSQGs, they were within historic range for both upper and lower Minto Creek sediments (Figures 4.2 and 4.3; Minnow 2019a). Mean copper concentrations have been historically greater than the ISGQ in lower Minto Creek sediment in all years since 2011 (Figures 4.2 and 4.3, Table 4.1) and have generally been stable since 2011. Mean copper concentrations in upper Minto Creek last exceeded the PEL in 2016, while mean copper concentrations at lower Minto Creek have never exceeded the PEL (Figures 4.2 and 4.3, Table 4.1).

4.3 Summary

Overall, the mean concentrations of metals in upper Minto Creek sediments were generally higher than those in McGinty Creek but were only significantly higher for a small subset of metals. Mean metal concentrations were lower than the SQGs for the protection of aquatic life (CCME 1999), except for arsenic and copper, which exceeded ISQG. Copper also exceeded the PEL for one sample. Copper at upper Minto Creek also exceeded the reference mean concentration by more than two times.

Overall, the mean concentrations of metals in lower Minto Creek sediments were generally similar to those in lower Wolverine Creek with the exception of arsenic, copper, and manganese (of which arsenic and copper were greater than ISQG but lower than PEL). Copper at lower Minto Creek also exceeded the reference mean concentration by more than two times.

Copper concentrations at both upper Minto and lower Minto Creek have been statistically higher than their respective reference areas since 2011 and 2013, respectively (there was no significant differences between lower Minto and lower Wolverine creeks in 2018). Although concentrations of arsenic and copper in both upper and lower Minto Creek exceeded sediment quality guidelines, temporal analyses of copper concentrations since 2011 indicate that there has not been a significant increase in copper over the years at either upper or lower Minto Creek. This suggests that the Minto Mine has not adversely influenced sediment copper concentrations over this time frame. However, definite evaluation of the potential mine influence is impaired by the absence of good baseline data.

Table 4.4: Statistical Comparison of Sediment Copper Concentrations Over Time in Lower Creek Areas, Minto Mine AEMP, 2011 to 2021

Endpoint	ANOVA Model				Year	Do Concentrations Differ Among Years for Each Area?[a]		Do Concentrations Differ Between Areas?
	Transformation	Area	Year	Area x Year		LWC (Reference)	LMC (Exposed)	MOD (%)[b]
Copper (mg/kg)	log10	<0.001	0.014	<0.001	2011	A	BC	ns
					2012	A	C	-48
					2013	A	AB	68
					2014	A	AB	81
					2015	A	AB	42
					2016	A	A	177
					2017	A	AB	65
					2018	A	AB	ns
					2020	A	A	93
					2021	A	A	132

P-value < 0.05

Magnitude of Difference (MOD) > 0

Magnitude of Difference (MOD) < 0

Notes: ANOVA = analysis of variance, LWC = lower Wolverine Creek, LMC = lower Minto Creek, MOD = magnitude of difference, ns = non-significant post-hoc contrast.

[a] Years that do not share a letter were significantly different in a Tukey's Honestly Significant Difference post-hoc test ($\alpha = 0.05$)

[b] MOD = $(MCT_{LMC}-MCT_{LWC})/MCT_{LWC}$ *100; where the measures of central tendency (MCT) were geometric means because the data was $\log_{10}$ transformed.

5 BENTHIC INVERTEBRATE COMMUNITY

5.1 Primary Metrics and Community

Benthic invertebrate density was significantly lower at lower Minto Creek compared to lower Wolverine Creek reference area but not lower Big Creek reference area (Table 5.1). There were no significant differences in richness (number of taxa), Simpson's Evenness, or Simpson's Diversity among areas (Table 5.1). Bray-Curtis index was the only primary metric that differed significantly for the benthic invertebrate community from lower Minto Creek relative to those from the reference areas (Table 5.2; Appendix Figure D.1).

The dominant taxonomic group at all stations in lower Minto Creek was Chironomidae (chironomids; non-biting midges; Appendix Table D.1). The dominant taxonomic group was variable across stations in lower Wolverine Creek, with Oligochaetes, chironomids, and Plecoptera (stoneflies), while the dominant taxonomic group in lower Big Creek was Plecoptera (Appendix Table D.1). Percent chironomids was significantly higher in lower Minto Creek than both lower Wolverine Creek and lower Big Creek reference areas, while the opposite was true for percent EPT and percent Plecoptera (Table 5.1). Percent Ephemeroptera (mayflies) was lower at lower Minto Creek compared to lower Wolverine Creek but not lower Big Creek. Higher percent chironomids and lower percent EPT in the benthic invertebrate community of lower Minto Creek may be indicative of mine influence (Chapman et al. 1982b, Rosenberg and Resh 1993, Taylor and Bailey 1997). However, low flow conditions in July 2021 may also have influenced the differences in benthic invertebrate community in lower Minto Creek.

Correspondence Analysis (CA) explained 59.0% of the total community variance in the first two CA axes (Appendix Table D.2). The first CA axis explained 40.9% of the total variation in the original benthic abundance data and significantly separated lower Minto Creek from lower Wolverine and lower Big creeks (Figure 5.1; Appendix Table D.2). Lower Minto Creek stations had negative scores on CA Axis-1 and stations were separated from lower Wolverine and lower Big creeks by *Nemoura* and *Ostrocerca* (both stoneflies), Tubificinae (Family Naididae; oligochaete), *Limnophyes*, and *Eukiefferiella* (both Family Chironomidae; Figure 5.1, Appendix Tables D.2 and D.3). The two reference areas, lower Wolverine and lower Big creeks, had strong positive CA Axis-1 scores that were separated from lower Minto Creek by *Isoperla* (stonefly), *Rhyacophila* (caddisfly), *Zapada cinctipes* (stonefly), Perlodidae (stonefly), and *Baetis* (mayfly; Figure 5.1; Appendix Tables D.2 and D.3). Lower reference areas were separated on CA Axis-2 (which explained 18.1% of the total variation) and lower Minto Creek had significantly lower CA Axis-2 scores compared to lower Big Creek but significantly higher scores compared to lower

Table 5.1: Statistical Comparisons of Benthic Invertebrate Community Characteristics Among Areas, Minto Mine AEMP, 2021

Endpoint	Overall 3-group Comparison			Post-hoc comparisons[b]			Magnitude of Difference (Group 1 - Group 2) /Pooled SD
	Data Transformation	Test[a]	Test p-value	Groups		Test P-value	
				Group 1	Group 2		
Density (organisms/m^2)	none	ANOVA	0.028	LMC	LWC	0.023	2.0
					LBC	0.164	ns
				LBC	LWC	0.513	ns
Richness (# of Taxa)	none	ANOVA	0.437	LMC	LWC	-	-
					LBC	-	-
				LBC	LWC	-	-
Simpson's Diversity	rank	K-W	0.613	LMC	LWC	-	-
					LBC	-	-
				LBC	LWC	-	-
Simpson's Evenness	log10	ANOVA	0.174	LMC	LWC	-	-
					LBC	-	-
				LBC	LWC	-	-
EPT (%)	none	ANOVA	<0.001	LMC	LWC	0.066	-1.6
					LBC	<0.001	-3.3
				LBC	LWC	0.050	1.7
Ephemeroptera (%)	none	ANOVA	0.006	LMC	LWC	0.004	-2.6
					LBC	0.108	ns
				LBC	LWC	0.201	ns
Plecoptera (%)	log10	ANOVA	0.002	LMC	LWC	0.094	-1.5
					LBC	0.002	-2.9
				LBC	LWC	0.092	1.5
Trichoptera (%)	log10(x+1)	ANOVA	0.431	LMC	LWC	-	-
					LBC	-	-
				LBC	LWC	-	-
Chironomidae (%)	none	ANOVA	<0.001	LMC	LWC	<0.001	4.4
					LBC	<0.001	3.7
				LBC	LWC	0.464	ns
Oligochaeta (%)	log10	ANOVA	0.014	LMC	LWC	0.055	-1.7
					LBC	0.756	ns
				LBC	LWC	0.015	-2.1
Arachnida (%)	rank	K-W	0.915	LMC	LWC	-	-
					LBC	-	-
				LBC	LWC	-	-
CA1 (40.9%)	none	ANOVA	<0.001	LMC	LWC	<0.001	-12
					LBC	<0.001	-11
				LBC	LWC	0.217	ns
CA2 (18.1%)	none	ANOVA	<0.001	LMC	LWC	0.038	1.8
					LBC	<0.001	-3.3
				LBC	LWC	<0.001	5.1

P-value < 0.1.
P-value < 0.1 and MOD < -2.
P-value < 0.1 and MOD > 2.

Notes: SD = standard deviation, LMC = lower Minto Creek (exposed), LWC = lower Wolverine Creek (reference), LBC = lower Big Creek (reference), EPT = Ephemeroptera, Plecoptera, Trichoptera, ns = non-significant. Magnitude of Difference = (group 1 mean - group 2 mean)/pooled standard deviation. Test p-values and MODs are only displayed for endpoints that had a 3 group comparison p-value < 0.1.

[a] ANOVA= Analysis of Variance, K-W = Kruskal-Wallis.
[b] Pairwise comparisons calculated using Least-squares means with Tukey's adjustment for multiple comparisons for ANOVAs and Dunn's Test with no adjustment for K-W.

Table 5.2: Statistical Comparison of Bray-Curtis Index at Lowest Practical Level for Lower Minto Creek and Reference Areas, Minto Mine AEMP, 2021

Comparison	Sample Size		Betadisper P-Value	Mantel Test			dbRDA			
	Reference	Exposed		r	R^2	P-Value	F-Value	R^2	R^2_{adj}	P-Value
LMC vs LWC	5	5	0.577	0.932	0.868	0.008	0.566	0.512	10.4	0.008
LMC vs LBC	5	5	0.217	0.918	0.842	0.008	0.532	0.473	9.09	0.002

P-Value < 0.1

Notes: LWC = lower Wolverine Creek (Reference), LMC = lower Minto Creek (Exposed), LBC = lower Big Creek (Reference), dbRDA = distance-based redundancy analysis. See Section 2.5.2 for statistical analysis details.

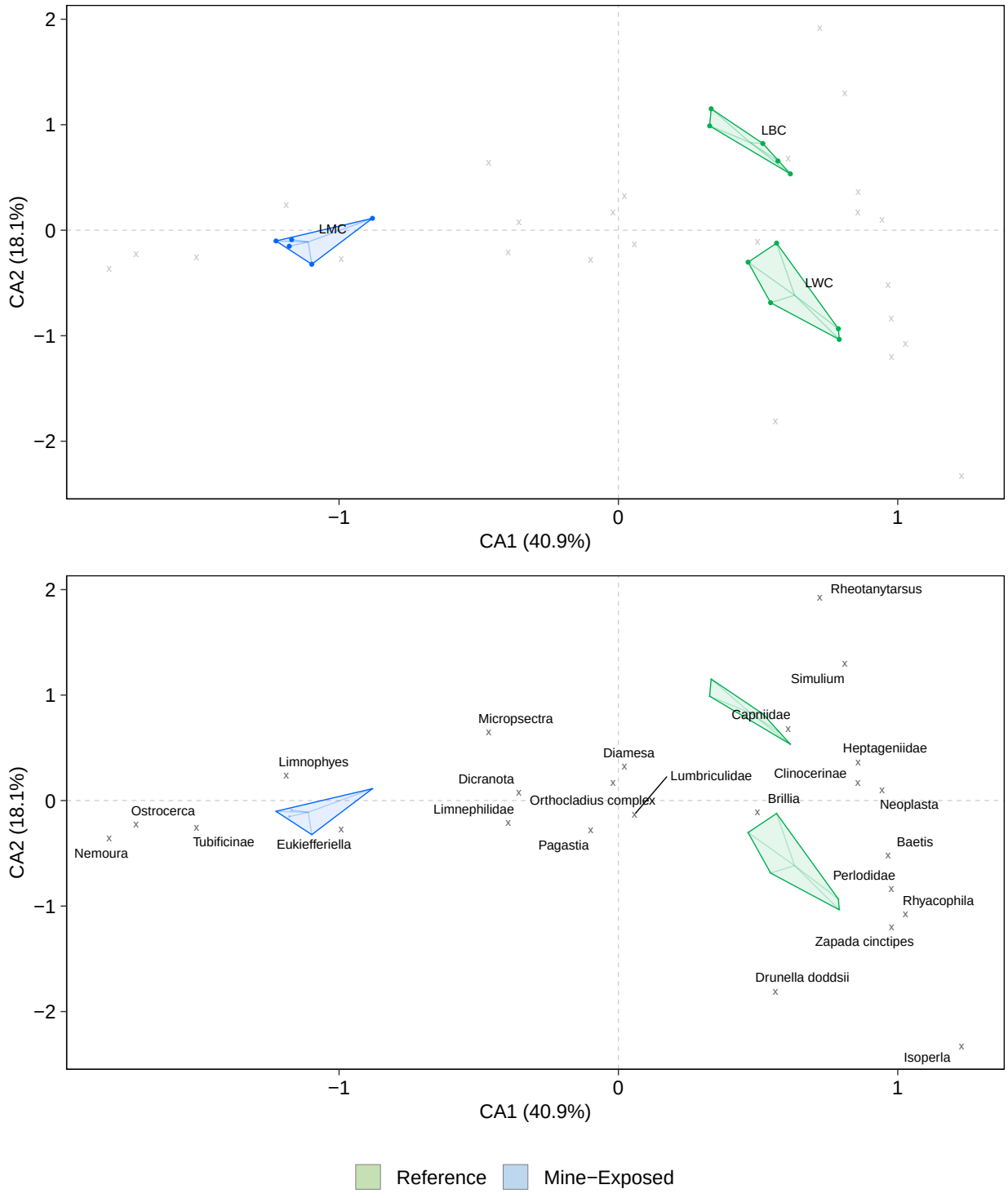


Figure 5.1: Correspondence Analysis (CA) Scatterplot for Benthic Invertebrate Relative Densities at Lower Minto Creek and Associated Reference Areas, Minto Mine AEMP, 2021

Notes: LWC = lower Wolverine Creek (reference), LBC = lower Big Creek (reference), LMC = lower Minto Creek (exposed). Taxa densities were $\ln_{(x+1)}$−transformed before CA calculations. Taxa present at two or fewer samples or accounted for less than 15% of the total abundance at any station were removed from the analysis.

Wolverine Creek (Table 5.1). The CA does not always reflect taxa abundance, so much as presence/absence. For example, both lower Minto Creek and lower Wolverine Creek had Nemourid stoneflies, but the genera found in each area were distinct. As previously indicated, chironomids are considered to be tolerant taxa, while family Nemouridae (stonefly) is considered to be sensitive (Mandaville 2002).

5.2 Correlation Analysis

Correlation analysis between eight benthic invertebrate community indices and six supporting physical and chemical measurements (those for which significant differences among areas were observed) resulted in 19 significant correlations at a p-level of 0.05 and an r-value of > 0.6 (Table 5.3). It is important to note that correlation between two variables does not necessarily imply a cause-and-effect relationship, although it may be considered a basis for further investigation and consideration of known biological responses to environmental differences.

Of the 19 significant correlations, six were associated with the proportion of cobble and gravel in the substrate[9] (Table 5.3). Positive relationships were observed between percent cobble and the proportion of EPT taxa, Ephemeroptera, Plecoptera, and CA Axis-1 (Table 5.3; Appendix Figure D.2). These relationships are generally consistent with the preference of EPT taxa for cobble substrate. Negative relationships were found between percent cobble and percent chironomids, as well as percent gravel and percent Ephemeroptera (Table 5.3; Appendix Figure D.2). Positive relationships were observed between water depth and percent Ephemeroptera and CA Axis 1, whereas a negative relationship was apparent between water depth and percent chironomids (Table 5.3; Appendix Figure D.2). Positive correlations were also observed between water temperature and percent EPT, percent Ephemeroptera, and percent Plecoptera, while a negative relationship was found relative to percent chironomids (Table 5.3; Appendix Figure D.2). The opposite was observed for specific conductivity in water which had a positive relationship with percent chironomids, and a negative relationship with percent EPT, percent Ephemeroptera, and percent Plecoptera (Table 5.3; Appendix Figure D.2). Finally, a positive relationship was observed between the concentration of dissolved oxygen in water and organism density, while a negative relationship was found between dissolved oxygen and percent Ephemeroptera (Table 5.3; Appendix Figure D.2). The relationships between specific conductivity and both percent chironomid and EPT could possibly be attributed to mine influence; however, the differences in community composition appear to be more strongly associated with habitat condition and substrate than specific conductivity. Overall, it appears that habitat quality

[9] See Appendix Table D.4 and Appendix Figure D.3 for details on the substrate count data collected in support of benthic invertebrate monitoring stations.

Table 5.3: Spearman Rank Correlations Between Benthic Community Endpoints and Physiochemical Parameters, Minto Mine AEMP, 2021

Endpoints	Statistic	Water Depth (m)	% Cobble	% Gravel	*In Situ* Water Quality		
					Temperature (°C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)
Density (# organisms/m²)	r_s	-0.488	-0.338	0.330	-0.271	0.389	0.611
	p-value	0.0650	0.218	0.229	0.327	0.152	0.0179
EPT (%)	r_s	0.284	0.621	-0.158	0.732	-0.782	-0.457
	p-value	0.305	0.0136	0.573	0.00273	0.000902	0.0888
Ephemeroptera (%)	r_s	0.610	0.690	-0.702	0.604	-0.613	-0.602
	p-value	0.0158	0.00442	0.00352	0.0172	0.0152	0.0176
Plecoptera (%)	r_s	0.284	0.621	-0.136	0.725	-0.775	-0.461
	p-value	0.305	0.0136	0.630	0.00313	0.00108	0.0861
Chironomidae (%)	r_s	-0.633	-0.710	0.336	-0.604	0.636	0.589
	p-value	0.0114	0.00301	0.221	0.0195	0.0129	0.0232
Oligochaeta (%)	r_s	0.493	0.00230	-0.107	0.0464	0.0750	-0.211
	p-value	0.0617	0.994	0.705	0.873	0.793	0.450
CA1 (40.9%)	r_s	0.668	0.621	-0.462	0.568	-0.521	-0.496
	p-value	0.00644	0.0136	0.0830	0.0298	0.0488	0.0623
CA2 (18.1%)	rs	-0.347	0.0896	0.433	0.346	-0.471	0.329
	p-value	0.205	0.751	0.107	0.206	0.0783	0.232

P-Value < 0.05.

P-Value < 0.05/48 = 0.00104 (Bonferroni Corrected for 48 independent tests).

abs(r_s) > 0.6.

Note: Correlations only conducted with endpoints and physiochemical parameters that were significantly different among areas.

(independent of mine influence) may be contributing to observed differences in benthic invertebrate community structure among the study areas.

5.3 Temporal Comparisons

Mean benthic organism density in lower Minto Creek in 2021 was the second highest observed over the 2012 to 2021 period (the highest density was observed in 2020). Densities have remained similar at lower Minto Creek since 2017 (Figure 5.2, Table 5.4). Mean organism density lower Wolverine Creek increased from 2018 to 2020 but remained similar between 2020 and 2021. Organism densities in lower Big Creek have remained similar since 2017 (Figure 5.2, Table 5.4). Mean richness, Simpson's Evenness, and Simpson's Diversity in lower Minto Creek have not changed significantly over the 2012 to 2021 period. Richness has not differed significantly between lower Minto Creek and lower Wolverine Creek since 2012. Simpson's Evenness and Diversity have not differed significantly between lower Minto Creek and either reference area since 2015 (except for lower Big Creek in 2018; Figure 5.2, Table 5.4).

Percent EPT increased at all areas in 2021 compared to 2020. However, this increase was not significant in lower Minto Creek but was significant in both reference creeks (Figure 5.3, Table 5.4). Historically, percent EPT in lower Minto Creek has not been significantly different compared to both reference creeks. Percent EPT at lower Minto Creek compared to lower Big Creek either did not differ (2015 to 2018) or was significantly lower (2020 and 2021). Percent EPT at lower Minto Creek compared to lower Wolverine Creek either did not differ (2012, 2015, 2016, 2020) or was significantly higher (2013, 2014, 2017, 2018) except in 2021 (Figure 5.3, Table 5.4). Though percent EPT in lower Minto Creek did not change between 2020 and 2021, percent Plecoptera in lower Minto Creek increased significantly from 2020 (Figure 5.3, Table 5.4).

Mean percent chironomids remained similar in lower Minto Creek between 2020 and 2021, and was similar to historical observations values in 2012, 2013, and 2016 (Figure 5.3, Table 5.4). The proportion of chironomids in lower Big Creek has remained similar since 2015, while the proportion of chironomids in lower Wolverine Creek in 2021 was the lowest it has been since 2017 (Figure 5.3, Table 5.4).

5.4 Summary

The 2021 benthic invertebrate community at lower Minto Creek showed no significant difference in richness (number of taxa), Simpson's Evenness, or Simpson's Diversity when compared to either lower Wolverine Creek or lower Big Creek. Density at lower Minto Creek was significantly higher compared to lower Wolverine Creek but there was no significant difference between lower Minto Creek and lower Big Creek. Bray-Curtis index was the only primary endpoint that differed significantly between the lower Minto Creek and both reference areas. Community composition

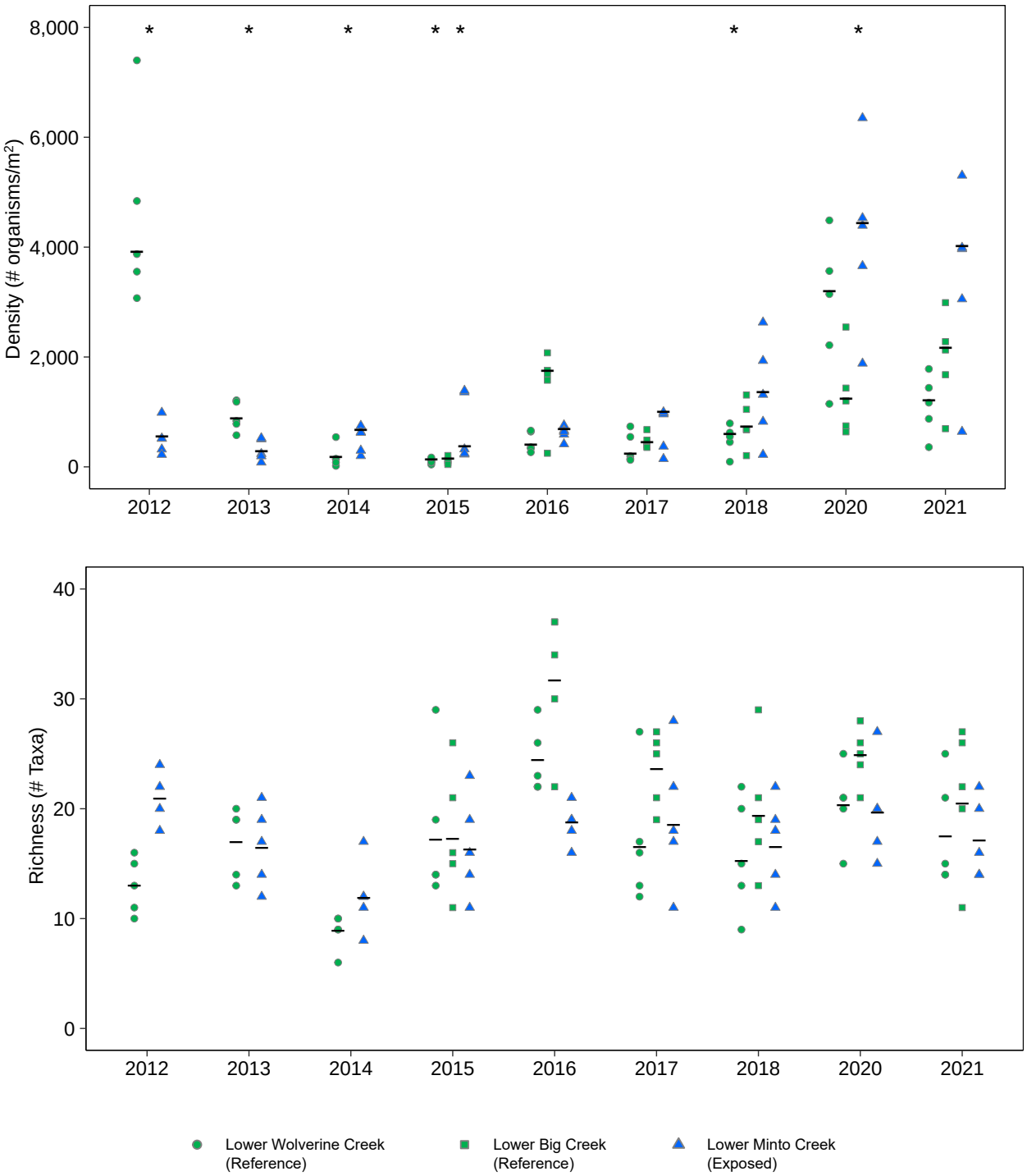


Figure 5.2: Benthic Invertebrate Community Primary Endpoints at Lower Minto Creek and Reference Areas, 2012 to 2021

Notes: Black horizontal bars indicate the Measure of Central Tendency (MCT). The MCT is the mean for non−transformed data, geometric mean for log−10 transformed data and median for rank transformed data. An * indicates the reference station was significantly different from the exposed station for that year. All endpoints were calculated at the lowest practicable level (LPL).

[a] Sampling not conducted in 2019 due to dry conditions.

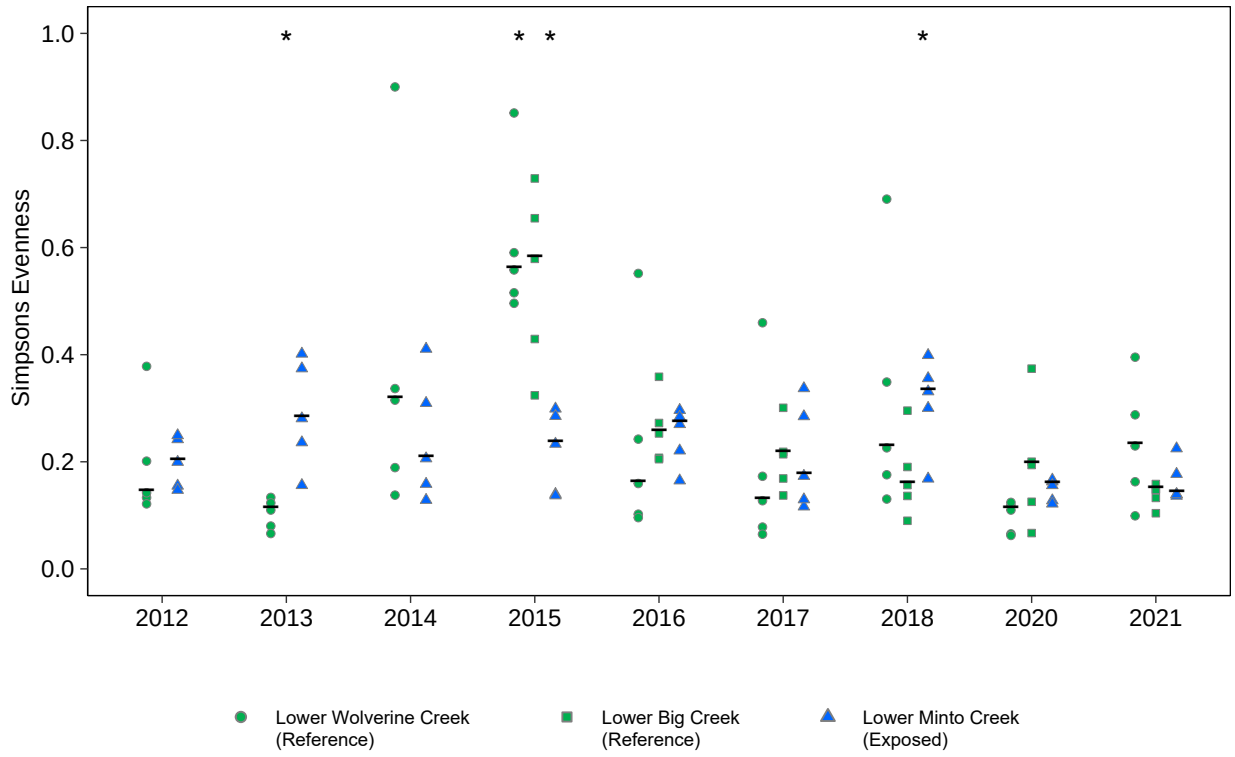


Figure 5.2: Benthic Invertebrate Community Primary Endpoints at Lower Minto Creek and Reference Areas, 2012 to 2021

Notes: Black horizontal bars indicate the Measure of Central Tendency (MCT). The MCT is the mean for non−transformed data, geometric mean for log−10 transformed data and median for rank transformed data. An * indicates the reference station was significantly different from the exposed station for that year. All endpoints were calculated at the lowest practicable level (LPL).

[a] Sampling not conducted in 2019 due to dry conditions.

Table 5.4: Statistical Comparison of Benthic Invertebrate Community Endpoints, Minto Mine AEMP, 2012 to 2021

Endpoint	ANOVA Model				Year	Do Values Differ Among Years for Each Area?[a]			Do Values Differ Between Reference and Exposed Areas?	
									MOD[b]	
	Transformation	Area	Year	Area x Year		LWC (Reference)	LBC (Reference)	LMC (Exposed)	LWC	LBC
Density (# organisms/m²)	rank	0.223	<0.001	<0.001	2012	A	-	BC	-2.8	-
					2013	BC	-	C	-1.6	-
					2014	D	-	BC	5.6	-
					2015	D	C	BC	9.9	4.3
					2016	CD	A	BC	ns	ns
					2017	D	BC	BC	ns	ns
					2018	CD	AB	AB	5.1	ns
					2020	AB	AB	A	ns	4.7
					2021	BC	A	A	ns	ns
Richness (# Taxa)	log10	<0.001	<0.001	0.137	2012	BC	-	A	ns	-0.61
					2013	AB	-	AB		
					2014	C	-	B		
					2015	AB	B	AB		
					2016	A	A	A		
					2017	AB	AB	AB		
					2018	B	B	AB		
					2020	AB	AB	A		
					2021	AB	AB	AB		
Simpson's Evenness	rank	0.286	<0.001	<0.001	2012	BC	-	AB	ns	-
					2013	C	-	AB	4.9	-
					2014	AB	-	AB	ns	-
					2015	A	A	AB	-5.1	-1.6
					2016	BC	AB	AB	ns	ns
					2017	BC	AB	AB	ns	ns
					2018	AB	B	A	ns	3.5
					2020	C	B	B	ns	ns
					2021	AB	B	AB	ns	ns
Simpson's Diversity	rank	0.005	<0.001	<0.001	2012	BCD	-	A	0.99	-
					2013	D	-	A	3.2	-
					2014	BCD	-	A	ns	-
					2015	A	A	A	-6.9	-3.0
					2016	AB	A	A	ns	ns
					2017	BCD	AB	A	ns	ns
					2018	AB	B	A	ns	ns
					2020	CD	AB	A	ns	ns
					2021	BC	B	A	ns	ns
EPT (%)	rank	<0.001	<0.001	<0.001	2012	CD	-	CD	ns	-
					2013	D	-	BCD	16	-
					2014	BCD	-	A	5.0	-
					2015	A	ABC	AB	ns	ns
					2016	AB	BC	BCD	ns	ns
					2017	BC	AB	ABC	13	ns
					2018	BCD	ABC	ABC	4.7	ns
					2020	CD	C	E	ns	-3.3
					2021	AB	A	DE	-0.98	-3.6
Ephemeroptera (%)	rank	<0.001	<0.001	<0.001	2012	CDE	-	BC	-7.0	-
					2013	E	-	B	ns	-
					2014	BCD	-	C	-1.8	-
					2015	A	A	C	-2.5	-2.5
					2016	BC	AB	C	-1.3	-1.6
					2017	BCD	BC	C	-1.2	-2.0
					2018	AB	A	A	ns	-3.4
					2020	DE	BC	BC	-5.4	-4.8
					2021	BCD	C	C	-4.2	-2.1
Plecoptera (%)	rank	<0.001	<0.001	<0.001	2012	BCD	-	BC	8.2	-
					2013	D	-	BC	28	-
					2014	BCD	-	A	15	-
					2015	AB	B	AB	5.5	7.3
					2016	AB	B	ABC	ns	6.7
					2017	ABC	A	AB	9.9	ns
					2018	CD	B	AB	27	16
					2020	CD	B	D	ns	-2.2
					2021	A	A	C	-1.2	-8.9
Trichoptera (%)	rank	0.03	0.021	0.003	2012	C	-	A	ns	-
					2013	BC	-	A	12	-
					2014	BC	-	A	ns	-
					2015	AB	A	A	ns	ns
					2016	A	A	A	-0.68	ns
					2017	BC	A	A	ns	positive[c]
					2018	ABC	A	A	ns	ns
					2020	AB	A	A	-14	ns
					2021	AB	A	A	ns	ns
Oligochaeta (%)	rank	<0.001	0.007	<0.001	2012	BC	-	A	ns	-
					2013	ABC	-	A	ns	-
					2014	AB	-	A	-1.2	-
					2015	C	AB	A	ns	-1.6
					2016	AB	A	A	-3.0	-1.9
					2017	A	AB	A	-8.9	-4.3
					2018	BC	C	A	ns	ns
					2020	BC	ABC	A	ns	ns
					2021	AB	BC	A	-0.57	ns
Chironomidae (%)	none	0.002	<0.001	<0.001	2012	A	-	BCD	-1.7	-
					2013	A	-	ABC	ns	-
					2014	BC	-	D	ns	-
					2015	CD	C	CD	ns	1.6
					2016	CD	ABC	ABC	6.1	1.3
					2017	D	BC	D	9.4	ns
					2018	AB	A	D	-1.4	-4.0
					2020	A	AB	A	ns	1.3
					2021	CD	ABC	AB	3.5	3.6
Arachnida (%)	rank	<0.001	<0.001	<0.001	2012	A	-	AB	positive[c]	-
					2013	A	-	AB	13	-
					2014	A	-	AB	ns	-
					2015	A	AB	AB	ns	ns
					2016	A	A	AB	ns	ns
					2017	A	B	A	14	13
					2018	A	AB	A	ns	ns
					2020	A	A	B	ns	-1.2
					2021	A	B	B	ns	ns

P-value < 0.1
Magnitude of Difference (MOD) <-2
Magnitude of Difference (MOD) >2

Notes: "-" indicates no data for comparison, "ns" indicates a non-significant post-hoc contrast.

[a] Years that do not share a letter were significantly different in a Tukey's Honestly Significant Difference post-hoc test ($\alpha = 0.05$).

[b] MOD = $(MCT_{EXP}-MCT_{REF})/SD_{REF}$; where the measure of central tendency (MCT) were back-transformed least estimated marginal-squares means (untransformed), geometric means (log10 transformed), or medians (rank transformation) and the SD is an estimate of the reference area standard deviation, or MAD for rank transformations.

[c] MOD was positive but the magnitude could not be calculated as the standard deviation for the reference area was 0.

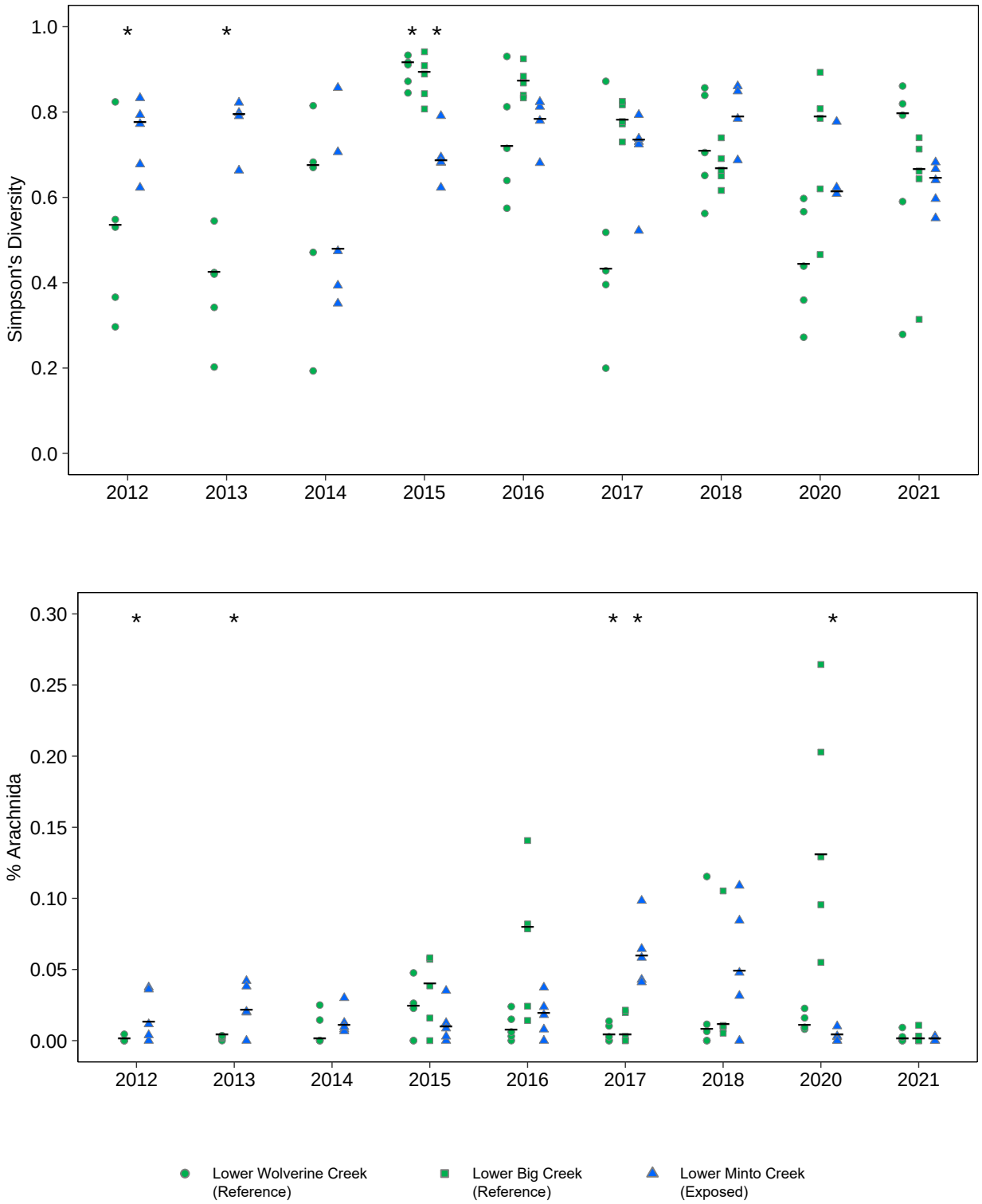


Figure 5.3: Benthic Invertebrate Community Supporting Endpoints at Lower Minto Creek and Reference Areas, 2012 to 2021

Notes: Black horizontal bars indicate the Measure of Central Tendency (MCT). The MCT is the mean for non−transformed data, geometric mean for log_{10}-transformed data and median for rank transformed data. An * indicates the reference station was significantly different from the exposed station for that year. All metrics were calculated at the lowest practicable level (LPL).

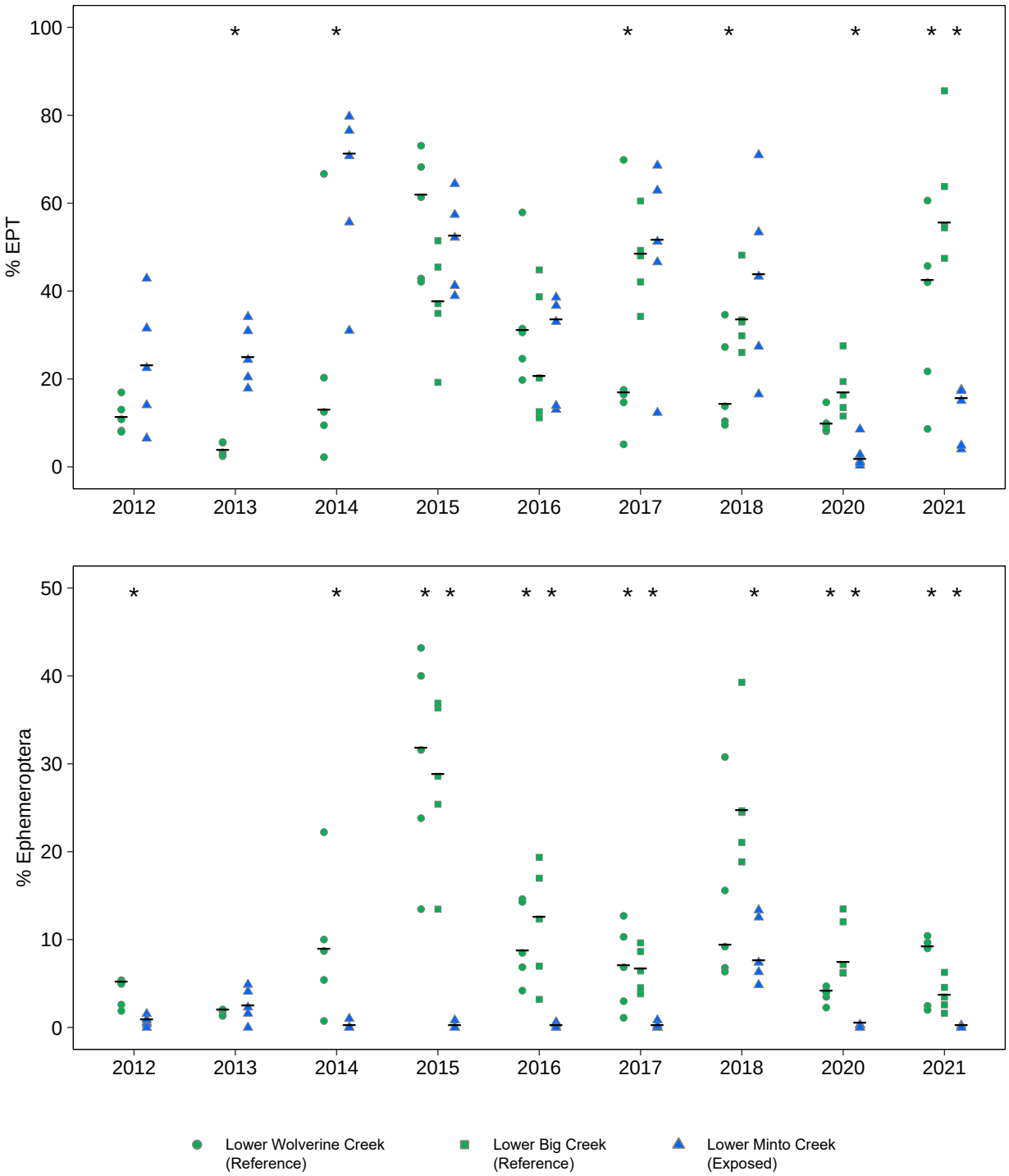


Figure 5.3: Benthic Invertebrate Community Supporting Endpoints at Lower Minto Creek and Reference Areas, 2012 to 2021

Notes: Black horizontal bars indicate the Measure of Central Tendency (MCT). The MCT is the mean for non−transformed data, geometric mean for log_{10}-transformed data and median for rank transformed data. An * indicates the reference station was significantly different from the exposed station for that year. All metrics were calculated at the lowest practicable level (LPL).

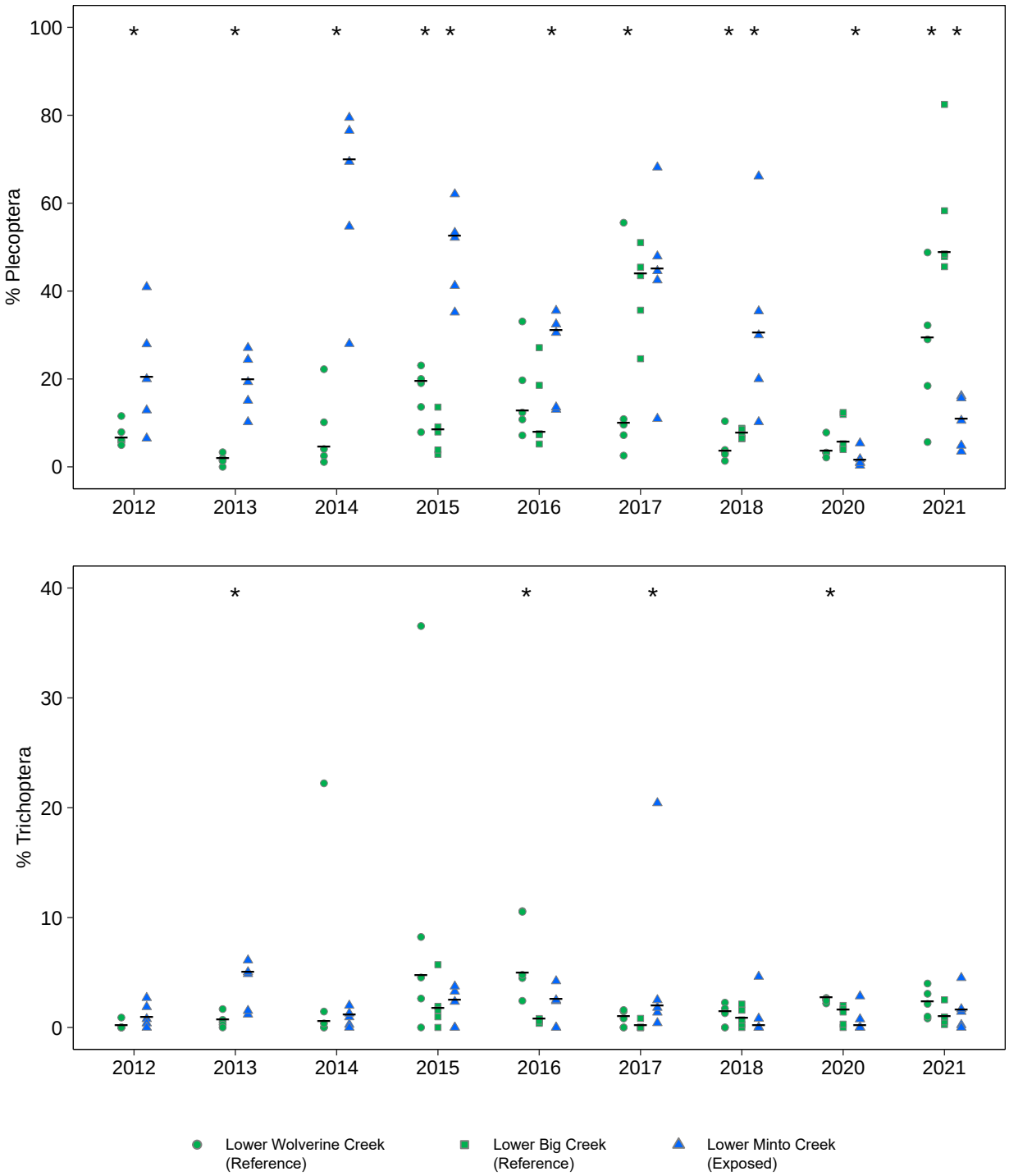


Figure 5.3: Benthic Invertebrate Community Supporting Endpoints at Lower Minto Creek and Reference Areas, 2012 to 2021

Notes: Black horizontal bars indicate the Measure of Central Tendency (MCT). The MCT is the mean for non−transformed data, geometric mean for log_{10}-transformed data and median for rank transformed data. An * indicates the reference station was significantly different from the exposed station for that year. All metrics were calculated at the lowest practicable level (LPL).

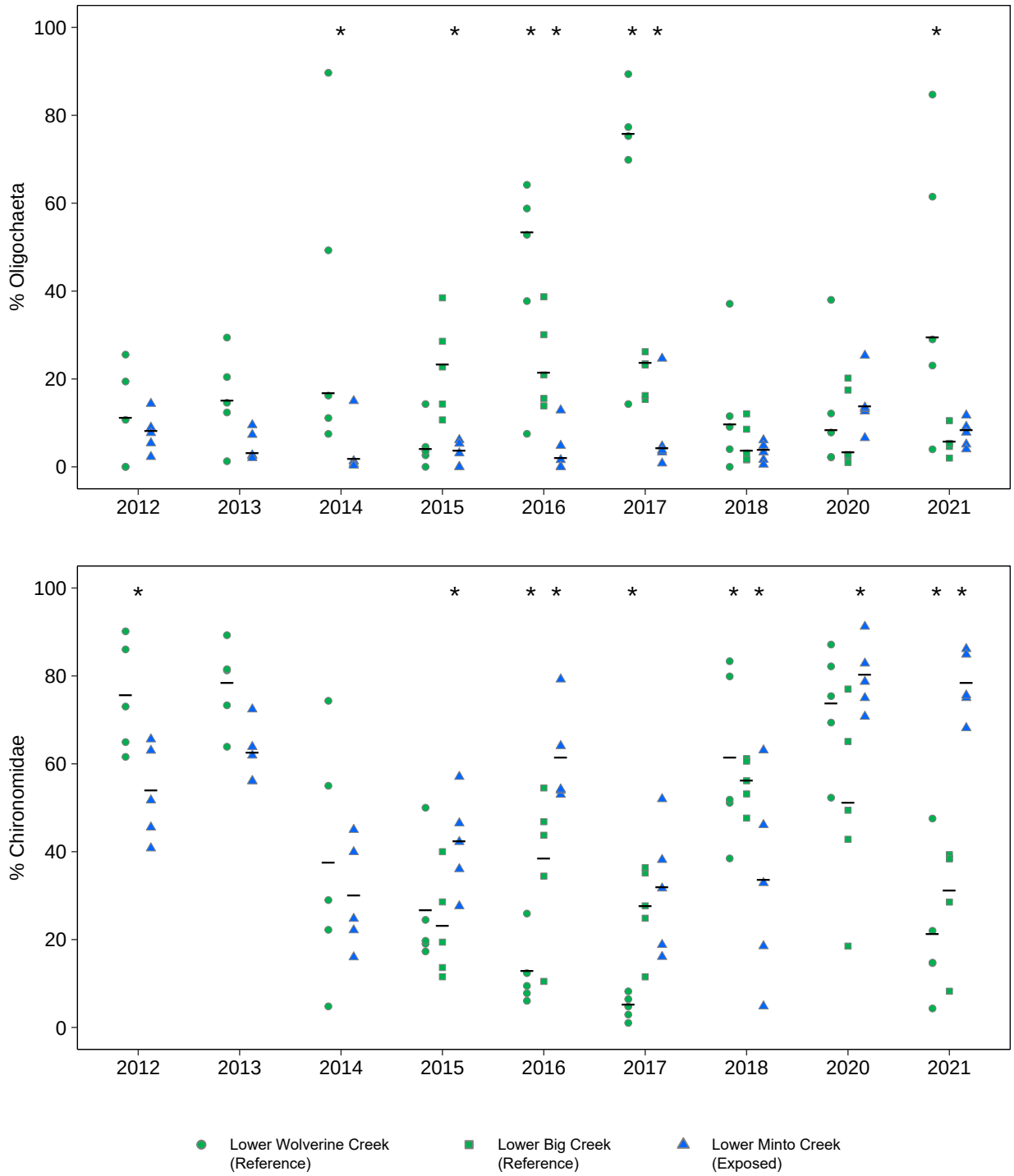


Figure 5.3: Benthic Invertebrate Community Supporting Endpoints at Lower Minto Creek and Reference Areas, 2012 to 2021

Notes: Black horizontal bars indicate the Measure of Central Tendency (MCT). The MCT is the mean for non−transformed data, geometric mean for log_{10}-transformed data and median for rank transformed data. An * indicates the reference station was significantly different from the exposed station for that year. All metrics were calculated at the lowest practicable level (LPL).

at lower Minto Creek was dominated by chironomids, while lower Wolverine Creek dominance was variable, and lower Big Creek was dominated by Plecoptera. Percent chironomids in 2021 was significantly higher at lower Minto Creek compared to both reference areas, while the opposite was seen for percent EPT, and percent Plecoptera. Lower Minto Creek had significantly lower percent Ephemeroptera compared to lower Big Creek, but not lower Wolverine Creek.

Correlation analysis indicated a relationship between specific conductivity and both percent chironomid and EPT, and a relationship between substrate size) and percent chironomid and EPT. These relationships suggested that community composition could be more likely influenced by habitat condition and substrate than specific conductivity. The fact that the last date of discharge was June 1, 2021 and that water quality met CWQGs and SSWQOs (except for fluoride which was greater than CWQG at all areas and in Minto Creek during baseline sampling) further suggests that differences may not have been related to the mine.

High temporal variability in benthic invertebrate community density, richness, and composition has been observed at the exposed and reference areas, presumably due to inter-annual variability in environmental conditions (e.g., flow, ice scour, water levels). Benthic invertebrate densities in 2021 at lower Minto Creek and lower Big Creek were some of the highest they have been over the 2012 to 2021 period. Chironomid proportion in 2021 at lower Minto Creek remained high compared to previous years but was not significantly different from 2020. Percent EPT at lower Minto Creek remained low compared to prior years and was higher than in 2020. Overall, the benthic invertebrate community of lower Minto Creek was generally similar to reference in 2021 (based on density, richness, Simpson's Evenness, and Simpson's diversity). However, the high proportion of chironomids and low proportion of EPT taxa at lower Minto Creek relative to reference and previous years suggests subtle mine influence may have occurred over time in combination with habitat conditions and low water flows.

6 TISSUE CHEMISTRY

6.1 Overview

As indicated in Section 2.6, tissue chemistry data are provided here simply to report the ancillary data collected along with the selenium data reported separately. Data interpretation was therefore limited to basic comparisons of metal concentrations in tissue collected at the exposure area (lower Minto Creek) to those collected at reference creeks (lower Wolverine and lower Big creeks).

6.2 Periphyton Tissue

The quality of periphyton tissue chemistry data, assessed prior to data analysis and interpretation, was assessed as good based on analyte detectability, precision, and accuracy (Appendix A). Concentrations of selenium were significantly greater at lower Minto Creek than at lower Wolverine Creek and lower Big Creek reference areas (Figure 6.1, Table 6.1; Appendix Table C.2). Concentrations of copper and manganese were significantly greater at lower Minto Creek than lower Wolverine Creek but not lower Big Creek (Table 6.1; Appendix Table C.2). Beryllium, vanadium, and zirconium were significantly lower at Minto Creek compared to both reference areas.

Selenium concentrations in periphyton tissue in 2021 were lower than those in 2020 at lower Minto Creek. Over the 2013 to 2021 period, periphyton selenium concentrations were significantly greater than both reference areas for all years except for 2013 (greater than lower Wolverine Creek only) and 2017 (greater than lower Big Creek only; Figure 6.1, Table 6.2). Selenium concentrations in periphyton tissue have varied over the years but have not changed significantly since 2013 for lower Minto Creek and 2017 for lower Wolverine Creek (Table 6.2). Significantly higher concentrations of selenium at lower Minto Creek compared to both reference areas over the last three years could suggest an influence of the mine on Minto Creek. However, the last discharge from the mine was June 1, 2021 (i.e., over three months before the AEMP field campaign), and benthic invertebrate tissue metals analysis did not reflect the same effects. This suggests that selenium concentrations in periphyton tissue are likely influenced by other factors.

6.3 Benthic Invertebrate Tissue

Benthic invertebrate tissue data quality, assessed prior to data analysis and interpretation, were judged to be of good quality based on analyte detectability, precision, and accuracy (Appendix A). Rubidium, selenium, and zinc concentrations were significantly lower at Minto Creek than lower Wolverine and Big creeks. Calcium was significantly higher at lower Minto Creek than lower Wolverine Creek, but not lower Big Creek (Table 6.1, Appendix Table C.3). Concentrations of

Table 6.1: Statistical Comparison of Benthic Invertebrate and Periphyton Metal Concentrations, Minto Mine AEMP, 2021

Endpoint	Periphyton								Benthic Invertebrates							
	Data Transformation	Test	MCT[a]			Area P-Value	MOD (%)[b]		Data Transformation	Test	MCT[a]			Area P-Value	MOD (%)[b]	
			LWC (Reference)	LBC (Reference)	LMC (Exposed)		LMC vs. LWC	LMC vs. LBC			LWC (Reference)	LBC (Reference)	LMC (Exposed)		LMC vs. LWC	LMC vs. LBC
Moisture (%)	none	ANOVA	76.7	75.4	68.9	0.55	ns	ns	none	ANOVA	84.6	85.7	85.3	0.872	ns	ns
Aluminum (mg/kg)	rank	K-W	17,900	14,900	12,500	0.089	-30	ns	none	ANOVA	721	798	827	0.866	ns	ns
Antimony (mg/kg)	rank	K-W	0.0520	0.165	0.0850	0.028	ns	ns	rank	K-W	0.0260	0.102	0.0410	0.006	ns	-60
Arsenic (mg/kg)	none	ANOVA	7.41	21.5	9.44	0.001	ns	-56	none	ANOVA	1.46	4.33	1.74	0.001	ns	-60
Barium (mg/kg)	none	ANOVA	244	270	249	0.562	ns	ns	none	ANOVA	37.9	34.8	26.0	0.507	ns	ns
Beryllium (mg/kg)	none	ANOVA	0.789	0.668	0.418	0.001	-47	-38	none	ANOVA	0.0498	0.0452	0.0290	0.236	ns	ns
Bismuth (mg/kg)	log10	ANOVA	0.0878	0.419	0.0965	0.001	ns	-77	rank	K-W	0.0100	0.0260	0.0100	0.001	ns	-62
Boron (mg/kg)	rank	K-W	5.00	10.3	5.00	0.080	ns	-52	rank	K-W	1.00	1.80	1.70	0.151	ns	ns
Cadmium (mg/kg)	none	ANOVA	0.209	0.291	0.238	0.105	ns	ns	rank	K-W	0.627	2.20	0.302	0.003	ns	-86
Calcium (mg/kg)	none	ANOVA	10,144	10,008	10,908	0.668	ns	ns	none	ANOVA	1,412	2,010	2,130	0.024	51	ns
Cesium (mg/kg)	none	ANOVA	1.32	2.53	0.824	0.001	ns	-67	none	ANOVA	0.0728	0.184	0.0817	0.001	ns	-56
Chromium (mg/kg)	none	ANOVA	79.7	48.2	44.8	0.099	ns	ns	none	ANOVA	3.68	4.20	3.16	0.576	ns	ns
Cobalt (mg/kg)	none	ANOVA	14.1	11.6	10.8	0.003	-24	ns	none	ANOVA	1.52	1.72	0.944	0.032	ns	-45
Copper (mg/kg)	rank	K-W	24.7	34.5	44.8	0.011	81	ns	none	ANOVA	20.9	27.0	16.6	0.001	ns	-39
Iron (mg/kg)	none	ANOVA	30,220	25,120	22,500	0.001	-26	ns	none	ANOVA	1,535	1,640	1,788	0.829	ns	ns
Lead (mg/kg)	rank	K-W	6.25	11.2	5.01	0.005	ns	-55	log10	ANOVA	0.268	0.605	0.375	0.007	ns	ns
Lithium (mg/kg)	rank	K-W	13.6	11.6	9.69	0.097	-29	ns	rank	K-W	0.500	0.560	0.610	0.597	ns	ns
Magnesium (mg/kg)	none	ANOVA	10,592	8,426	7,412	0.003	-30	ns	none	ANOVA	1,534	1,426	1,258	0.053	-18	ns
Manganese (mg/kg)	none	ANOVA	1,143	1,201	2,102	0.033	84	ns	none	ANOVA	179	309	293	0.064	ns	ns
Mercury (mg/kg)	rank	K-W	0.0366	0.0451	0.0380	0.827	ns	ns	none	ANOVA	0.0418	0.0514	0.0236	0.043	ns	-54
Molybdenum (mg/kg)	none	ANOVA	0.628	0.891	0.765	0.102	ns	ns	none	ANOVA	0.889	0.708	0.765	0.221	ns	ns
Nickel (mg/kg)	none	ANOVA	54.8	35.2	31.1	0.04	-43	ns	none	ANOVA	4.33	4.25	2.83	0.061	ns	ns
Phosphorus (mg/kg)	rank	K-W	1,470	1,190	1,260	0.084	ns	ns	none	ANOVA	9,278	8,348	7,980	0.075	ns	ns
Potassium (mg/kg)	none	ANOVA	2,138	1,822	3,988	0.268	ns	ns	none	ANOVA	9,092	7,296	8,012	0.041	ns	ns
Rubidium (mg/kg)	none	ANOVA	13.9	14.8	11.4	0.052	ns	ns	none	ANOVA	4.74	5.93	2.71	0.001	-43	-54
Selenium (mg/kg)	rank	K-W	0.570	0.500	1.17	0.004	105	134	none	ANOVA	3.34	3.28	1.58	0.001	-53	-52
Sodium (mg/kg)	rank	K-W	497	506	312	0.164	ns	ns	log10	ANOVA	3,362	3,259	4,012	0.233	ns	ns
Strontium (mg/kg)	none	ANOVA	101	102	104	0.957	ns	ns	none	ANOVA	17.4	23.5	20.7	0.033	ns	ns
Tellurium (mg/kg)	rank	K-W	0.100	0.100	0.100	0.581	ns	ns	-	-	-	-	-	-	-	-
Thallium (mg/kg)	none	ANOVA	0.0879	0.133	0.0924	0.002	ns	-31	none	ANOVA	0.00874	0.0168	0.00776	0.001	ns	-54
Tin (mg/kg)	rank	K-W	0.500	0.500	0.500	0.584	ns	ns	-	-	-	-	-	-	-	-
Uranium (mg/kg)	none	ANOVA	1.31	1.72	0.883	0.001	ns	-49	rank	K-W	0.200	0.378	0.214	0.03	ns	ns
Vanadium (mg/kg)	none	ANOVA	63.5	55.7	46.6	0.001	-27	-16	none	ANOVA	3.63	3.81	3.82	0.98	ns	ns
Zinc (mg/kg)	none	ANOVA	66.3	76.5	62.8	0.085	ns	ns	none	ANOVA	111	123	80.2	0.003	-28	-35
Zirconium (mg/kg)	none	ANOVA	16.3	12.5	9.24	0.001	-43	-26	none	ANOVA	1.13	1.03	0.772	0.406	ns	ns

P-value < 0.05.
MOD > 0.
MOD < 0.

Notes: "-" indicates analysis was not completed because all data was below the LRL. ns = not significant. ANOVA = analysis of variance. K-W = Kruskal-Wallis test. All values are expressed in mg/kg dry weight. LWC = lower Wolverine Creek, LBC = lower Big Creek, LMC = lower Minto Creek.

[a] Measure of Central Tendency is the mean for parameters where statistics were conducted on the raw scale, the geometric mean when statistics were $\log_{10}$ transformed to meet the assumptions of normality, and the median when rank transformed.

[b] Magnitude of difference (MOD) = $(MCT_{EXP}-MCT_{REF})/MCT_{REF}$ *100.

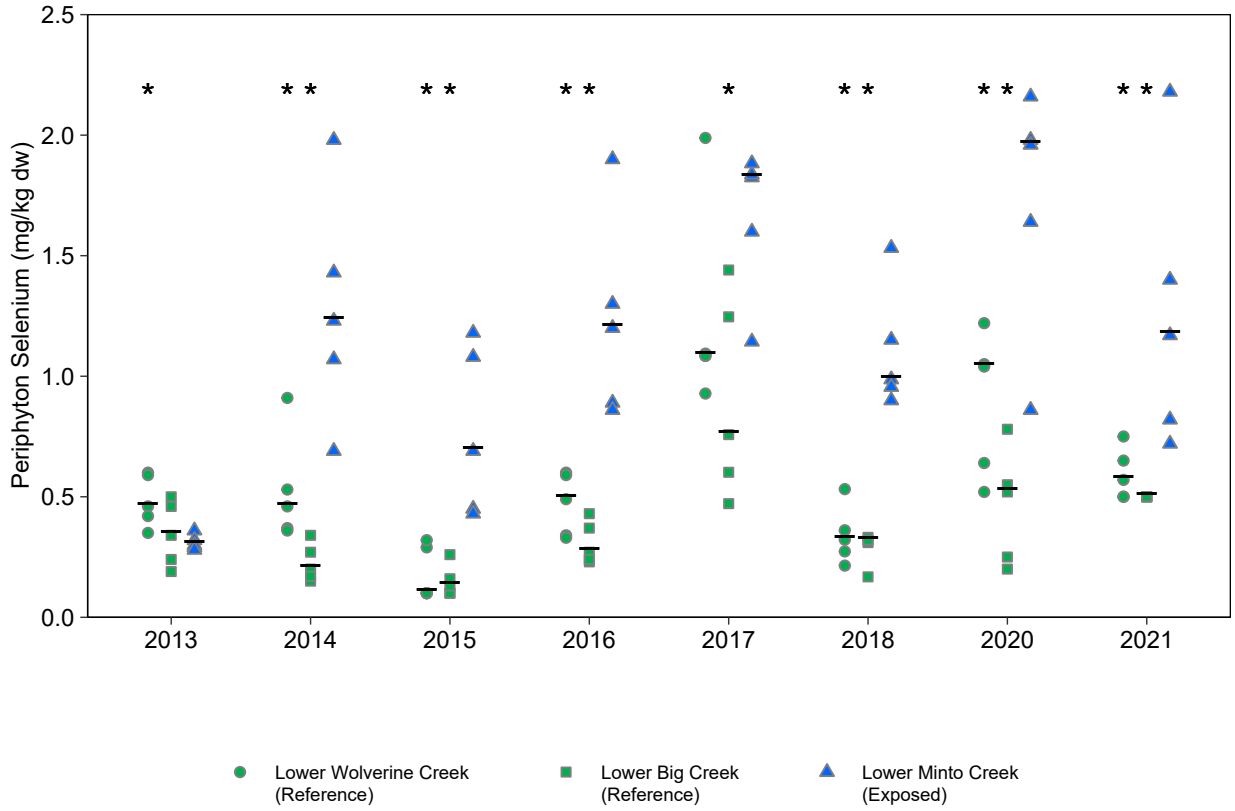


Figure 6.1: Periphyton Tissue Selenium Concentrations Over Time, Minto Mine AEMP, 2013 to 2021[a]

Notes: dw = dry weight. Black horizontal bars indicate the Measure of Central Tendency (MCT). The MCT is the mean for non-transformed data, geometric mean for $\log_{10}$ transformed data and median for rank transformed data. An * indicates the reference station was significantly different from the exposed station for that year. All 2021 results at Lower Big Creek were below the laboratory reporting limit (0.5 mg/kg).

[a] Due to dry conditions at lower Minto Creek in 2019, sampling was not conducted.

Table 6.2: Statistical Comparison of Periphyton and Benthic Tissue Metal Concentrations, Minto Mine AEMP, 2013 to 2021

Endpoint	ANOVA Model				Year	Do Endpoints Differ Between Years for Each Area?[a]			Do Endpoints Differ Between Areas?	
	Transformation	Area	Year	Area x Year		LWC	LBC	LMC	MOD (%)[b] LMC vs. LWC	MOD (%)[b] LMC vs. LBC
Periphyton Selenium (mg/kg dw)	rank	<0.001	<0.001	<0.001	2013	BC	BCD	C	-35	ns
					2014	BC	CD	AB	167	515
					2015	D	D	B	590	431
					2016	C	BCD	AB	145	344
					2017	A	A	A	ns	141
					2018	CD	BCD	AB	206	213
					2020	AB	BC	A	88	277
					2021	BC	AB	AB	105	134
Benthic Copper (mg/kg dw)	log10	<0.001	<0.001	<0.001	2013	ABC	D	BC	55	ns
					2014	AB	ABC	BC	ns	-29
					2015	A	A	AB	45	-33
					2016	C	CD	CD	53	ns
					2017	BC	D	A	167	117
					2018	A	BCD	CD	ns	ns
					2020	AB	AB	CD	ns	-45
					2021	ABC	CD	D	ns	-39
Benthic Selenium (mg/kg dw)	rank	<0.001	<0.001	<0.001	2013	B	D	C	ns	73
					2014	B	CD	C	ns	ns
					2015	B	CD	ABC	57	105
					2016	A	CD	ABC	-58	73
					2017	C	D	ABC	567	780
					2018	B	BC	AB	ns	38
					2020	A	AB	A	ns	ns
					2021	A	A	BC	-60	-55

P-value < 0.05.
Magnitude of Difference (MOD) > 0.
Magnitude of Difference (MOD) < 0.

Notes: "-" indicates no data for comparison, "ns" indicates a non-significant contrast.

[a] Years that do not share a letter were significantly different in a Tukey's Honestly Significant Difference post-hoc test ($\alpha = 0.05$).

[b] MOD = $(MCT_{LMC}-MCT_{LWC})/MCT_{LWC}$ *100; where the measures of central tendency (MCT) were medians for rank-transformed and back-transformed estimated marginal means for log_{10} transformed data.

copper, another analyte of interest, were significantly lower at lower Minto Creek compared to concentrations at lower Big Creek in 2021 (Table 6.1).

Selenium concentrations at the reference areas were higher in 2021 than those in 2018 (Figure 6.2, Appendix Table C.3), but not significantly different than those in 2020 (Table 6.2). Over the 2013 to 2021 period, selenium concentrations in benthic invertebrate tissue at lower Minto Creek have not changed significantly, with the exception of higher concentrations in 2020. Historically, selenium concentrations at lower Minto Creek have been significantly higher than lower Big Creek, with the exception of 2014 and 2020, when there were no significant differences between lower Minto Creek and lower Big Creek. Concentrations of selenium in benthic invertebrate tissue from lower Minto Creek have only been statistically different than selenium concentrations in lower Wolverine Creek from 2015 to 2017 and 2021 (Figure 6.2, Table 6.2). With the exception of one sample (LWC-4), selenium concentrations were below the interim guideline (4 mg/kg dry weight; BCMOE 2014). Since concentrations of selenium in benthic invertebrate tissue collected from lower Minto Creek were lower than at both reference areas, and were below the BCMOE interim guideline, mine influence, if any, is limited and not ecologically meaningful.

In 2021, the mean copper concentration in benthic invertebrate tissue from lower Minto Creek was not significantly different from that at lower Wolverine Creek and was significantly lower when compared to lower Big Creek (Figure 6.2, Table 6.1). Since 2013, mean copper concentrations at lower Minto Creek have varied, with the highest result in 2017 and lowest value in 2021. Copper concentrations in 2021 were similar to those in 2016, 2018, and 2020. Copper concentrations at lower Wolverine have not changed significantly since 2013, while concentrations at lower Big Creek have decreased from since 2020 but remain comparable to results in 2013, 2014, and 2016 to 2018 (Figure 6.2, Table 6.2). Variability in concentrations of copper in benthic invertebrate tissue has been high over the years. In 2013 and 2015 to 2017, copper was significantly higher in benthic invertebrates from lower Minto Creek compared to lower Wolverine Creek. However, in 2014 and 2018 to 2021, copper was not significantly different between areas (Figure 6.2, Table 6.2). Copper concentrations at lower Minto Creek compared to lower Big Creek were significantly lower in 2014, 2015, 2020, and 2021, significantly higher in 2017, and nonsignificant in 2013, 2016, and 2018 (Figure 6.2). This lack of consistency suggests that observed differences primarily represent natural variability.

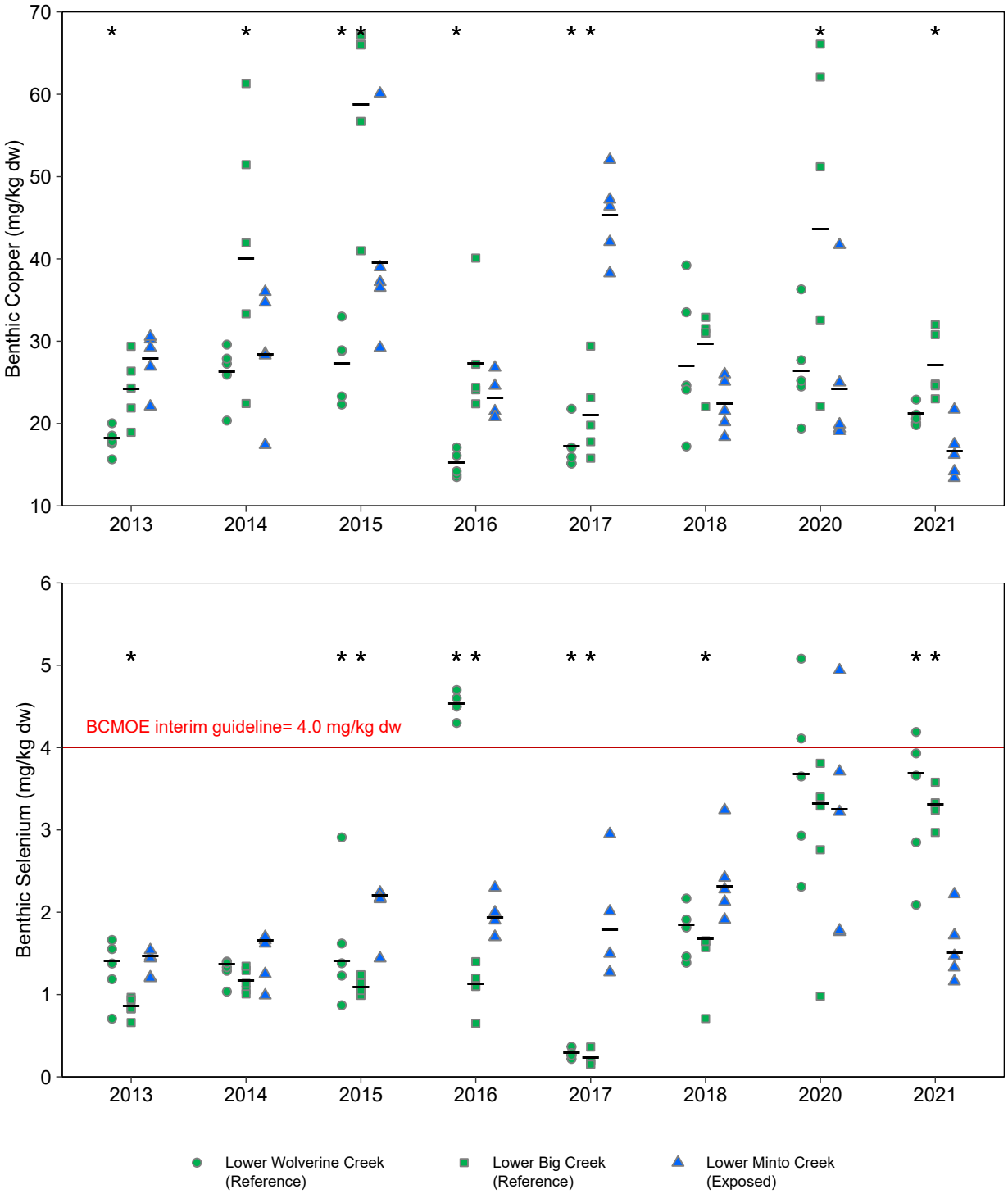


Figure 6.2: Benthic Tissue Copper and Selenium Concentrations, Minto Mine AEMP, 2013 to 2021[a]

Notes: dw = dry weight. British Columbia (BC) Benthic Invertebrate Tissue Guideline for Selenium is shown with a red line (4 µg/g dw BCMOE 2014). Black horizontal bars indicate the Measure of Central Tendency (MCT). The MCT is the mean for non−transformed data, geometric mean for log_{10} transformed data and median for rank transformed data. An * indicates the reference station was significantly different from the exposed station for that year.

[a] Due to dry conditions at lower Minto Creek in 2019, sampling was not conducted.

7 CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

The Sediment, Periphyton, and Benthic Assessment component of the Minto Mine AEMP evaluated potential mine related effects to Minto Creek. Water quality (field measures and chemistry), sediment quality (chemistry), periphyton tissue chemistry, and benthic invertebrates (community and tissue chemistry) of Minto Creek were evaluated relative to reference creeks and previous data.

Supporting *in situ* field measures collected in September 2021 indicated relatively good Minto Creek water quality. Higher conductance and pH values were observed in Minto Creek compared to reference areas, suggesting a minor influence from the Minto Mine not associated with active discharge. All water quality measures met CWQGs and WUL objectives for the protection of aquatic life except for fluoride. Fluoride was above the CCME long term water quality guideline at all areas and was also higher at the exposed areas relative to reference areas. Alkalinity and chloride concentrations at exposed areas were more than 2x the concentrations found in reference areas. Total copper, which has historically exceeded the CWQG at upper and lower exposed areas (upper Minto Creek and lower Minto Creek) and at two of three reference areas (upper McGinty Creek and lower Wolverine Creek, but not lower Big Creek), was below the CWQG in 2021. Copper concentrations decreased with distance from the mine (from upper Minto Creek to lower Minto Creek). Dissolved copper concentrations were well below the WUL SSWQO, as observed in all previous years of monitoring.

In 2021, both lower Minto Creek and lower Wolverine Creek were mesotrophic based on periphyton chlorophyll-a (mg/m^2; Dodds et al. 1998). Trophic status has varied between oligotrophic and mesotrophic over time at both lower Minto Creek and lower Wolverine Creek (Minnow 2019a, Minnow 2021a).

Concentrations of metals in upper Minto Creek sediments were generally higher than those in McGinty Creek sediments but lower than the SQGs for the protection of aquatic life (CCME 1999), with the exception of arsenic (which exceeded ISQG) and copper (which exceeded ISQG [and PEL for one sample]). Copper concentrations at upper Minto Creek remained less than 2x the concentration at Upper McGinty Creek. Metal concentrations in lower Minto Creek sediments were generally similar to those in lower Wolverine Creek with the exception of arsenic, copper, and manganese (of which arsenic and copper were greater than ISQG but lower than PEL). Copper concentrations at both upper Minto and lower Minto Creek have been statistically higher than their respective reference areas since 2011 and 2013, respectively. Although concentrations of arsenic and copper in both upper and lower Minto Creek exceeded

sediment quality guidelines, temporal analyses of copper concentrations indicate that there has not been a significant increase in copper over the years at either upper or lower Minto Creek.

The erosional benthic invertebrate community of lower Minto Creek showed no significant difference in richness (number of taxa), Simpson's Evenness, or Simpson's Diversity when compared to either lower Wolverine Creek or lower Big Creek. Density at lower Minto Creek was significantly higher compared to lower Wolverine Creek but there was no significant difference between lower Minto Creek and lower Big Creek. Bray-Curtis index was the only primary endpoint that differed significantly between lower Minto Creek and both reference areas. Examination of taxon proportions indicated significant differences in percent chironomids (higher), percent EPT (lower), and percent Plecoptera (lower) of Minto Creek relative to reference. Although there were differences in the proportions of chironomids and EPT taxa between lower Minto Creek and both reference areas, correlation analysis suggested that this was likely due to a combination of factors, including habitat differences among areas and Minto Mine influence on water quality, and possibly low flow conditions in July (that would have affected lower Minto Creek more than the larger reference creeks).

High temporal variability in benthic invertebrate community density, richness, and composition has been observed at the exposed and reference areas, presumably due to inter-annual variability in environmental conditions (e.g., flow, ice scour, water levels). Benthic invertebrate densities in 2021 at lower Minto Creek and lower Big Creek were some of the highest over the 2012 to 2021 period. Chironomid proportion in 2021 at lower Minto Creek remained high compared to previous years but was not significantly different from 2020. Percent EPT at lower Minto Creek remained low compared to prior years and was higher than in 2020. Overall, the benthic invertebrate community of lower Minto Creek was generally similar to reference in 2021 (based on density, richness, Simpson's Evenness, and Simpson's diversity). However, the high proportion of chironomids and low proportion of EPT taxa at lower Minto Creek relative to reference and previous years suggests a subtle mine influence in combination with an influence of habitat conditions and low water flows.

Mean concentrations of selenium in periphyton tissue collected at lower Minto Creek were significantly higher than at both reference areas while mean concentrations of copper were only significantly higher compared to lower Wolverine Creek. Selenium concentrations in benthic invertebrate tissue at lower Minto Creek were lower than both reference areas, while mean copper concentrations were lower than lower Big Creek and not significantly different than lower Wolverine Creek. All benthic invertebrate tissue selenium results were below the guideline for the protection of aquatic life, except for one sample at Lower Wolverine Creek reference. Since concentrations of selenium in benthic invertebrate tissue collected from lower Minto Creek

were lower than at both reference areas and were below the BCMOE interim guideline, mine influence, if any, is limited and not ecologically meaningful.

7.2 Recommendations

Based on the results and conclusions of the 2021 Minto Mine Sediment, Periphyton, and Benthic Assessment, it is recommended that the program is repeated in 2022. It is also recommended that flow conditions are monitored and communicated prior to fall field work such that program adjustment can be made as early as possible if drying is observed (as in 2019).

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APPENDIX A

DATA QUALITY REVIEW

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A1 INTRODUCTION

A1.1 Background

A variety of factors can influence the physical, chemical, and biological measurements made in an environmental study and thus affect the accuracy and/or precision of the data. Depending on their magnitude, both inaccuracy and imprecision have the potential to affect the reliability of conclusions made from the data. Therefore, it is important to ensure that programs incorporate appropriate steps to control the non-natural sources of data variability (i.e., minimize the variability that does not reflect natural spatial and/or temporal variability in the environment).

Data quality, as a concept, is meaningful only when it relates to the intended use of the data. That is, one must know the context in which the data will be interpreted to establish a relevant basis for judging whether the data set is adequate. A Data Quality Review (DQR) involves comparisons of field and laboratory measurement performance to Data Quality Objectives (DQOs) established for a particular study, such as evaluation of Laboratory Reporting Limits (LRLs), blank sample data, data precision (based on field and laboratory duplicate samples), and data accuracy (based on matrix spike recoveries and/or analysis of standards or certified reference materials [CRM]).

Trusted analytical laboratories certified by Canadian Association for Laboratory Accreditation (CALA) with a rigorous internal quality assurance program were selected to ensure the highest possible data quality. DQOs were established *a priori* to reflect reasonable and achievable performance expectations. Programs involving many samples and analytes often yield some results that exceed DQOs. This is particularly so for multi-element scans because the analytical conditions are not necessarily optimal for every element included in the scan.

This DQR was conducted on laboratory data reported in 2021 for samples collected in support of the 2021 Minto Aquatic Effects Monitoring Program (AEMP). The objective of the DQR was to define the overall quality of the data, and, by extension, the confidence with which the data can be used to derive conclusions. The intent of the DQR is not to reject measurements that did not meet a DQO, but to ensure that questionable data received more scrutiny to determine what effects, if any, were had on interpretation of results within the context of the project.

A1.2 Laboratory Reporting Limits

A LRL is the lowest concentration of an analyte that can be reported with a reasonable degree of accuracy and precision and is ideally synonymous with the lower limit of quantitation (LLOQ). The LLOQ is the lowest concentration of an analyte that can be reliably measured within specific limits of precision and accuracy during routine operating conditions, as opposed to being detected

which, in most cases, is the lowest concentration on the calibration curve. The LRL is typically three to ten times the method detection limit (MDL); however, some guidelines are so low the LRL is equal to the MDL to meet the guideline. Achieving satisfactory LRLs is important when comparing concentrations to guidelines for that medium. If the LRL is above the guideline, the data cannot be accurately interpreted. Consistency is also important for LRLs when taking consecutive samples. Changes in LRLs between laboratory reports can affect summary calculations and introduce confounding factors when assessing trends. For the present study, LRLs were screened against guidelines as appropriate.

A1.3 Quality Control Samples

Typically, a DQR involves the examination of analytical results associated with several types of Quality Control (QC) samples collected (or prepared) in the field and laboratory. Quality control samples collected for this project, and a description of each QC sample type, are as follows:

- **Blanks** are samples of de-ionized water and/or appropriate reagent(s) that are handled and analyzed in the same way as regular samples. These samples reflect contamination of samples occurring in the field (in the case of field or travel blanks) or in the laboratory (in the case of laboratory or method blanks). Concentrations of analytes should be below the LRL.
- **Laboratory Duplicates** are replicate sub-samples created in the laboratory from randomly selected field samples which are sub-sampled and then analyzed independently using identical analytical methods. The laboratory duplicate sample results reflect variability introduced during laboratory sample handling and analysis and thus provide a measure of laboratory precision.
- **Field Duplicates** are samples collected from a randomly selected field station that are homogenized to the extent possible, split, and analyzed separately in the laboratory. The duplicate samples are handled and analyzed in an identical manner in the laboratory. These samples reflect variability introduced during the handling of field samples (e.g., during homogenization), both in the field and laboratory, and therefore provide a measure of field sampling and laboratory precision.
- **Matrix Spike Recovery Samples (MS)** are created in the laboratory by adding a known amount/concentration of a given analyte (or mixture of analytes) to a randomly selected field sample previously divided to create two sub-samples. The spiked and regular sub-samples are then analyzed in an identical manner. The spike recovery represents the difference between the measured spike amount (total amount in the spiked sample minus the amount in the original sample) relative to the known spike amount

(as a percentage). The analysis of spiked samples provides an indication of the accuracy of analytical results.

- **RM** are commercially-prepared (or commercially-homogenized) reference materials containing known chemical concentrations that are processed and analyzed along with batches of environmental samples. The sample results are then compared to target results to provide a measure of analytical accuracy. The results are reported as the percent of the known concentration that was recovered in the analysis.
- **LCS** are laboratory control samples created in the laboratory to have a known analyte concentration in a matrix free of interferences, such as deionized water or reference sand, and processed in a method identical to test samples. The sample results are compared to the target results to confirm that the analytical method is accurate in a purified reference sample. The results are reported as the percent of the known concentration that was recovered in the analysis.
- **Organism Recovery Checks** for benthic invertebrate community samples involves the reprocessing of previously sorted material from a randomly selected sample to determine the number of invertebrates that were not recovered during the original sample processing. The reprocessing is conducted by an analyst not involved during the original processing to reduce bias. This check allows the determination of accuracy through assessment of recovery efficiency.
- **Sub-sampling error** is assessed for studies in which benthic invertebrate community samples require sub-sampling (due to excessive sample volume and/or invertebrate density). By comparing the numbers of benthic invertebrates recovered between at least two sub-samples, this measure provides an evaluation of how effective the sub-sampling method was in evenly dividing the original sample. Therefore, sub-sampling error provides a measure of analytical accuracy and precision. The processing of entire benthic invertebrate community samples in representative sample fractions also allows an evaluation of sub-sampling accuracy.

A2 WATER CHEMISTRY

A2.1 Laboratory Reporting Limits

The analytical reports for water chemistry from ALS Environmental (ALS; see laboratory report WR2101263 in Appendix C) were examined to assess LRLs relative to analyte concentrations and applicable guidelines (Table A.1). The LRLs for water quality analytes were assessed relative to Canadian Council of Ministers of the Environment Water Quality Guidelines (CCME 1999) and Water Use License (WUL) Objectives.

Several analytes were reported at concentrations below the LRL in 100% of samples (Table A.1). For those analytes with one or more results below the LRL, achieved LRLs were consistently lower than the CCME water quality guidelines and WUL Objectives. Overall, the achieved LRLs were appropriate for this study.

A2.2 Laboratory and Field Blanks

A total of 17 method blank samples for water chemistry were analyzed by ALS (see laboratory report WR2101263 in Appendix C). Of the 96 individual analyte results, all were below the LRL except for conductivity and total alkalinity. Conductivity was within ALS' DQO and was considered acceptable. Total alkalinity exceeded the ALS DQO, but associated samples were considered acceptable as they were > 5x blank levels (1.5 mg/L).

One field blank sample was submitted for water chemistry analyses to assess the potential for field sampling contamination (Table A.2). The same DQOs that were used for laboratory blanks were also used for field blanks (i.e., concentrations should be < LRL). Analyte results for the field blank were below the LRL except for total aluminum, barium, iron, magnesium, manganese, and strontium (Table A.2). The laboratory verified these results with repeat analysis and results that were greater than the LRL were less than 5-times the LRL (except for manganese [less than 10-times]), suggesting minimal field contamination of samples.

A2.3 Data Accuracy and Precision

Data accuracy for water chemistry analyses were evaluated based on results for 18 laboratory control samples (LCS), four matrix spike (MS) samples, and one reference material (RM) sample (see laboratory report WR2101263 in Appendix C). All 99 LCS individual analyte results, 82 (of 93) MS analyte results (out of 93), and all (1) RM result met the laboratory DQO. Eleven MS results could be determined due to background levels >= 1x spike level for the following analytes: total organic carbon, total inorganic carbon, dissolved organic carbon, and total barium, calcium, magnesium, manganese, potassium, sodium, strontium, and sulfur.

Table A.1: Laboratory Reporting Limit (LRL) Evaluation for Water Chemistry Analyses

Parameter	Units	CCME WQG[a]		WUL Objectives at W2	Range of LRLs	No. LRLs >Guideline	No. Sample Results < LRL
		Long-term	Short-term				
Physical Tests							
Total Suspended Solids	mg/L	-	-	-	3	-	6 (100%)
Anions and Nutrients							
Ammonia, Total (as N)	mg/L	1.23 to 6.0	-	0.25	0.005	0	5 (83.3%)
Bromide (Br)	mg/L	-	-	-	0.05	-	6 (100%)
Chloride (Cl)	mg/L	120	640	-	0.5	0	4 (66.7%)
Nitrate (as N)	mg/L	3.0	124	9.1	0.005	0	2 (33.3%)
Nitrite (as N)	mg/L	0.06	-	0.060	0.001	0	6 (100%)
Phosphorus (P) - Total	mg/L	-	-	-	0.002	-	6 (100%)
Phosphorus (P) - Dissolved	mg/L	-	-	-	0.002	-	6 (100%)
Total Metals							
Antimony	mg/L	-	-	-	0.0001	-	4 (66.7%)
Beryllium	mg/L	-	-	-	0.0001	-	6 (100%)
Bismuth	mg/L	-	-	-	0.00005	-	6 (100%)
Boron	mg/L	1.5	29	-	0.01	0	5 (83.3%)
Cadmium	mg/L	0.00012 to 0.00036	0.0015 to 0.0058	-	0.000005 to 0.00001	0	2 (33.3%)
Cesium	mg/L		-	-	0.00001	-	6 (100%)
Chromium	mg/L	0.0010[b]	-	-	0.0005	-	6 (100%)
Cobalt	mg/L	-	-	-	0.0001	0	6 (100%)
Lead	mg/L	0.0021 to 0.0070	-	-	0.00005	0	6 (100%)
Lithium	mg/L	-	-	-	0.001	0	1 (16.7%)
Mercury	mg/L	0.000026	-	-	0.000005	-	6 (100%)
Potassium	mg/L	-	-	-	0.05	-	6 (100%)
Silver	mg/L	0.00025	-	-	0.00001	0	6 (100%)
Tellurium	mg/L	-	-	-	0.0002	-	6 (100%)
Thallium	mg/L	0.0008	-	-	0.00001	0	6 (100%)
Thorium	mg/L	-	-	-	0.0001	-	6 (100%)
Tin	mg/L	-	-	-	0.0001	-	6 (100%)
Titanium	mg/L	-	-	-	0.0003	-	1 (16.7%)
Tungsten	mg/L	-	-	-	0.0001	-	6 (100%)
Vanadium	mg/L	-	-	-	0.0005	-	3 (50%)
Zinc	mg/L	-	-	-	0.003	-	6 (100%)
Zirconium	mg/L	-	-	-	0.0002	-	4 (66.7%)
Dissolved Metals							
Antimony	mg/L	-	-	-	0.0001	-	4 (66.7%)
Beryllium	mg/L	-	-	-	0.0001	-	6 (100%)
Bismuth	mg/L	-	-	-	0.00005	-	6 (100%)
Boron	mg/L	-	-		0.01	-	5 (83.3%)
Cadmium	mg/L	-	-	0.00017 to 0.00044	0.000005	0	5 (83.3%)
Cesium	mg/L	-	-	-	0.00001	-	6 (100%)
Chromium	mg/L	-	-	0.0010	0.0005	0	6 (100%)
Cobalt	mg/L	-	-	-	0.0001	-	6 (100%)
Lead	mg/L	-	-	0.004	0.00005	0	6 (100%)
Lithium	mg/L	-	-	-	0.001	-	1 (16.7%)
Mercury	mg/L	-	-	-	0.000005	-	6 (100%)
Phosphorus	mg/L	-	-	-	0.05	-	6 (100%)
Rubidium	mg/L	-	-	-	0.0002	-	1 (16.7%)
Silver	mg/L	-	-	0.00010	0.00001	0	6 (100%)
Tellurium	mg/L	-	-	-	0.0002	-	6 (100%)
Thallium	mg/L	-	-	-	0.00001	-	6 (100%)
Thorium	mg/L	-	-	-	0.0001	-	6 (100%)
Tin	mg/L	-	-	-	0.0001	-	6 (100%)
Titanium	mg/L	-	-	-	0.0003	-	3 (50%)
Tungsten	mg/L	-	-	-	0.0001	-	6 (100%)
Vanadium	mg/L	-	-	-	0.0005	-	3 (50%)
Zinc	mg/L	0.029 to 0.089	0.11 to 0.28	0.030	0.001	0	5 (83.3%)
Zirconium	mg/L	-	-	-	0.0002	-	3 (50%)

Notes: Only analytes with one or more sample results below the LRL, or with an LRL greater than guidelines are displayed. The total number of samples in 2021 (n) was six, which includes one field duplicate sample. "-" indicates where no applicable guideline exists.

[a] CCME (Canadian Council of Ministers of the Environment). 1999. Canadian Environmental Quality Guidelines. 1999 (plus updates), Canadian Council of Ministers of the Environment, Winnipeg. See Appendix Table B.7 for explanatory notes on selected water quality guidelines.

Table A.2: Field Blank Evaluation for Water Chemistry Analyses

Parameter	Units	Range of LRLs	No. Field Blank Results > LRL
Physical Tests			
Conductivity (@ 25°C)	µS/cm	2.0	0
Alkalinity, total (as $CaCO_3$)	mg/L	1.0	0
Hardness (as $CaCO_3$)	mg/L	0.60	0
Hardness (as $CaCO_3$), from total Ca/Mg	mg/L	0.60	0
pH	pH	0.10	1 (100%)
Total Suspended Solids	mg/L	3.0	0
Total Dissolved Solids	mg/L	10	0
Turbidity	NTU	0.10	0
Anions and Nutrients			
Ammonia, Total (as N)	mg/L	0.005	0
Bromide (Br)	mg/L	0.05	0
Chloride (Cl)	mg/L	0.5	0
Fluoride	mg/L	0.02	0
Nitrate (as N)	mg/L	0.005	0
Nitrite (as N)	mg/L	0.001	0
Phosphorus (P) - Total	mg/L	0.002	0
Phosphorus (P) - Dissolved	mg/L	0.002	0
Sulfate	mg/L	0.3	0
Organic / Inorganic Carbon			
Dissolved Organic Carbon	mg/L	0.50	0
Total Inorganic Carbon	mg/L	0.50	0
Total Organic Carbon	mg/L	0.50	0
Total Metals			
Aluminum	mg/L	0.0030	1 (100%)
Antimony	mg/L	0.00010	0
Arsenic	mg/L	0.00010	0
Barium	mg/L	0.00010	1 (100%)
Beryllium	mg/L	0.000100	0
Bismuth	mg/L	0.000050	0
Boron	mg/L	0.010	0
Cadmium	mg/L	0.0000050	0
Calcium	mg/L	0.050	0
Cesium	mg/L	0.000010	0
Chromium	mg/L	0.00050	0
Cobalt	mg/L	0.00010	0
Copper	mg/L	0.00050	0
Iron	mg/L	0.010	1 (100%)
Lead	mg/L	0.000050	0
Lithium	mg/L	0.0010	0
Magnesium	mg/L	0.0050	1 (100%)
Manganese	mg/L	0.00010	1 (100%)
Mercury	mg/L	0.0000050	0
Molybdenum	mg/L	0.000050	0
Nickel	mg/L	0.00050	0
Phosphorus	mg/L	0.050	0
Potassium	mg/L	0.050	0
Rubidium	mg/L	0.00020	0
Selenium	mg/L	0.000050	0
Silicon	mg/L	0.10	0
Silver	mg/L	0.000010	0
Sodium	mg/L	0.050	0
Strontium	mg/L	0.00020	1 (100%)
Sulphur	mg/L	0.50	0
Tellurium	mg/L	0.00020	0
Thallium	mg/L	0.000010	0
Thallium	mg/L	0.00010	0
Tin	mg/L	0.00010	0
Titanium	mg/L	0.00030	0
Tungsten	mg/L	0.00010	0
Uranium	mg/L	0.000010	0
Vanadium	mg/L	0.00050	0
Zinc	mg/L	0.0030	0
Zirconium	mg/L	0.00020	0
Dissolved Metals			
Aluminum	mg/L	0.0010	0
Antimony	mg/L	0.00010	0
Arsenic	mg/L	0.00010	0
Barium	mg/L	0.00010	0
Beryllium	mg/L	0.000100	0
Bismuth	mg/L	0.000050	0
Boron	mg/L	0.010	0
Cadmium	mg/L	0.0000050	0
Calcium	mg/L	0.050	0
Cesium	mg/L	0.000010	0
Chromium	mg/L	0.00050	0
Cobalt	mg/L	0.00010	0
Copper	mg/L	0.00020	0
Iron	mg/L	0.010	0
Lead	mg/L	0.000050	0
Lithium	mg/L	0.0010	0
Magnesium	mg/L	0.0050	0
Manganese	mg/L	0.00010	0
Mercury	mg/L	0.0000050	0
Molybdenum	mg/L	0.000050	0
Nickel	mg/L	0.00050	0
Phosphorus	mg/L	0.050	0
Potassium	mg/L	0.050	0
Rubidium	mg/L	0.00020	0
Selenium	mg/L	0.000050	0
Silicon	mg/L	0.050	0
Silver	mg/L	0.000010	0
Sodium	mg/L	0.050	0
Strontium	mg/L	0.00020	0
Sulphur	mg/L	0.50	0
Tellurium	mg/L	0.00020	0
Thallium	mg/L	0.000010	0
Thorium	mg/L	0.00010	0
Tin	mg/L	0.00010	0
Titanium	mg/L	0.00030	0
Tungsten	mg/L	0.00010	0
Uranium	mg/L	0.000010	0
Vanadium	mg/L	0.00050	0
Zinc	mg/L	0.0010	0
Zirconium	mg/L	0.00020	0

Notes: One field blank sample was collected in 2021. LRL = Laboratory Reporting Limit.

None of the analytes that were non-detect in the MS were analytes of concern. Therefore, the overall accuracy achieved by the laboratory was considered suitable for the project.

Analytical precision of water chemistry analyses was evaluated by examining a total of 17 laboratory duplicate samples for a total of 100 comparisons (see laboratory report WR2101263 in Appendix C). For all paired samples, concentration comparisons were within the DQO set by the analytical laboratory.

One set of field duplicate samples was collected to assess field sampling precision of water chemistry (Table A.3). Relative percent differences (RPDs) between field duplicate samples for most analytes (95.0%) was below 30%. RPDs between samples for dissolved phosphorus, total cadmium and phosphorus, and dissolved selenium and titanium were greater than 30%. In the cases of total cadmium and phosphorus and dissolved titanium, higher RPDs between paired results were due to one concentration being below the LRL, where greater variability among paired results is anticipated. However, neither concentration for dissolved selenium was below the LRL, suggesting significant variability in dissolved selenium concentrations between samples that could be compensated for in future studies by a greater degree of replication. Overall, as only 5.0% of all sample RPDs exceeded 30%, field sampling precision for water chemistry was considered acceptable for the purposes of this study.

A2.4 Hold Times

Recommended hold times for pH were exceeded for all water chemistry samples prior to receipt of samples by ALS (see laboratory report WR2101263 in Appendix C) but was expected as the hold times was 0.25 h which is not feasible to meet while working in the field. Field measures of pH were used in all analyses, so hold time exceedances does not affect the interpretability of results. The recommended hold times for turbidity, nitrate, and nitrite were exceeded in two samples (URC and LWC) by one day. Exceedances for hold times for this subset of constituents is not expected to affect data interpretation. All other recommended hold times were met for all samples.

A2.5 Data Quality Statement

Water chemistry data collected for the 2021 Minto AEMP were of acceptable quality as characterized by good detectability, concentrations were below LRLs in a majority of method blank samples, good laboratory precision and accuracy, and acceptable field sampling precision. Recommended hold times were met for most analytes in most samples. Therefore, the associated data are considered acceptable for this study.

Table A.3: Field Duplicate Results for Water Chemistry Analyses

Parameter	Units	LBC	LBC-X	RPD (%)
Physical Tests				
Conductivity (@ 25°C)	µS/cm	240	234	2.53
Alkalinity, total (as $CaCO_3$)	mg/L	104	105	0.957
Hardness (as $CaCO_3$)	mg/L	112	113	0.889
Hardness (as $CaCO_3$), from total Ca/Mg	mg/L	108	107	0.93
pH	pH	8.26	8.25	0.121
Total Suspended Solids	mg/L	161	171	6.02
Total Dissolved Solids	mg/L	<3.0	<3.0	-
Turbidity	NTU	0.25	0.22	12.8
Anions and Nutrients				
Ammonia, Total (as N)	mg/L	<0.0050	<0.0050	-
Bromide (Br)	mg/L	<0.050	<0.050	-
Chloride (Cl)	mg/L	<0.50	<0.50	-
Fluoride	mg/L	0.121	0.119	1.67
Nitrate (as N)	mg/L	0.01	0.0095	5.13
Nitrite (as N)	mg/L	<0.0010	<0.0010	-
Phosphorus (P) - Total	mg/L	0.0053	0.0053	0
Phosphorus (P) - Dissolved	mg/L	0.0021	0.0064	101
Sulfate (as SO_4)	mg/L	16.4	16.4	0
Organic / Inorganic Carbon				
Dissolved Organic Carbon	mg/L	7.21	7.31	1.38
Total Inorganic Carbon	mg/L	26.9	26.9	0
Total Organic Carbon	mg/L	7.04	7.09	0.708
Total Metals				
Aluminum	mg/L	0.0123	0.0132	7.06
Antimony	mg/L	0.00014	0.00014	0
Arsenic	mg/L	0.0007	0.0007	0
Barium	mg/L	0.0674	0.0684	1.47
Beryllium	mg/L	<0.000100	<0.000100	-
Bismuth	mg/L	<0.000050	<0.000050	-
Boron	mg/L	<0.010	<0.010	-
Cadmium	mg/L	<0.0000050	0.0000068	30.5
Calcium	mg/L	24.6	24.7	0.406
Cesium	mg/L	<0.000010	<0.000010	-
Chromium	mg/L	<0.00050	<0.00050	-
Cobalt	mg/L	<0.00010	<0.00010	-
Copper	mg/L	0.00164	0.00162	1.23
Iron	mg/L	0.029	0.033	12.9
Lead	mg/L	<0.000050	<0.000050	-
Lithium	mg/L	0.0014	0.0014	0
Magnesium	mg/L	11.2	11	1.8
Manganese	mg/L	0.0108	0.0109	0.922
Mercury	mg/L	<0.0000050	<0.0000050	-
Molybdenum	mg/L	0.0014	0.00145	3.51
Nickel	mg/L	0.00081	0.0008	1.24
Phosphorus	mg/L	<0.050	0.0053	162
Potassium	mg/L	0.958	0.965	0.728
Rubidium	mg/L	0.00076	0.00074	2.67
Selenium	mg/L	0.000082	0.000072	13
Silicon	mg/L	6.08	6.09	0.164
Silver	mg/L	<0.000010	<0.000010	-
Sodium	mg/L	8.33	8.38	0.598
Strontium	mg/L	0.312	0.32	2.53
Sulphur	mg/L	6.08	5.94	2.33
Tellurium	mg/L	<0.00020	<0.00020	-
Thallium	mg/L	<0.000010	<0.000010	-
Thorium	mg/L	<0.00010	<0.00010	-
Tin	mg/L	<0.00010	<0.00010	-
Titanium	mg/L	<0.00030	0.0004	28.6
Tungsten	mg/L	<0.00010	<0.00010	-
Uranium	mg/L	0.00298	0.00288	3.41
Vanadium	mg/L	0.0006	0.00065	8
Zinc	mg/L	<0.0030	<0.0030	-
Zirconium	mg/L	<0.00020	<0.00020	-
Dissolved Metals				
Aluminum	mg/L	0.0106	0.009	16.3
Antimony	mg/L	0.00016	0.00014	13.3
Arsenic	mg/L	0.00069	0.00078	12.2
Barium	mg/L	0.074	0.0789	6.41
Beryllium	mg/L	<0.000100	<0.000100	-
Bismuth	mg/L	<0.000050	<0.000050	-
Boron	mg/L	<0.010	<0.010	-
Cadmium	mg/L	<0.0000050	0.0000067	29.1
Calcium	mg/L	27.1	26.1	3.76
Cesium	mg/L	<0.000010	<0.000010	-
Chromium	mg/L	<0.00050	<0.00050	-
Cobalt	mg/L	<0.00010	<0.00010	-
Copper	mg/L	0.00168	0.00182	8
Iron	mg/L	0.03	0.026	14.3
Lead	mg/L	<0.000050	<0.000050	-
Lithium	mg/L	0.0014	0.0014	-
Magnesium	mg/L	10.8	11.6	7.14
Manganese	mg/L	0.0111	0.0113	1.79
Mercury	mg/L	<0.0000050	<0.0000050	-
Molybdenum	mg/L	0.00146	0.00136	7.09
Nickel	mg/L	0.00082	0.00085	3.59
Phosphorus	mg/L	<0.050	<0.050	-
Potassium	mg/L	1	1.06	5.83
Rubidium	mg/L	0.00079	0.0008	1.26
Selenium	mg/L	0.000069	0.000111	46.7
Silicon	mg/L	5.98	6.1	1.99
Silver	mg/L	<0.000010	<0.000010	-
Sodium	mg/L	8.46	8.82	4.17
Strontium	mg/L	0.328	0.295	10.6
Sulphur	mg/L	5.64	5.81	2.97
Tellurium	mg/L	<0.00020	<0.00020	-
Thallium	mg/L	<0.000010	<0.000010	-
Thorium	mg/L	<0.00010	<0.00010	-
Tin	mg/L	<0.00010	<0.00010	-
Titanium	mg/L	0.0005	<0.00030	50
Tungsten	mg/L	<0.00010	<0.00010	-
Uranium	mg/L	0.00306	0.00297	2.99
Vanadium	mg/L	0.00066	0.00064	3.08
Zinc	mg/L	<0.0010	<0.0010	-
Zirconium	mg/L	0.00021	<0.00020	4.88

Indicates RPD exceeded 30%.

Notes: RPD = relative percent difference. LRL = laboratory reporting limits. Where one of the values was <LRL, the RPD was calculated using the value of the LRL. The RPD was not calculated if both results were < LRL. "-" = no data/not calculated.

A3 SEDIMENT CHEMISTRY

A3.1 Laboratory Reporting Limits

The analytical reports for sediment chemistry from ALS (see laboratory report WR2101265 in Appendix C) were examined to assess LRLs relative to applicable guidelines (Table A.4). The LRLs for these analytes were assessed relative to existing Canadian Sediment Quality Guidelines (CCME 1999). The LRL for zirconium in one sample was raised due to sample matrix effects, such as chemical interference. Three analytes were reported below the LRL in 100% of samples (bismuth, tin, and tungsten; Table A.4). However, there are no applicable guidelines for sediment quality for the three analytes listed above (CCME 1999). For analytes with applicable guidelines, all LRLs were below guidelines. Therefore, LRLs were overall appropriate for the present study.

A3.2 Laboratory Blanks

A total of 10 method blank samples for sediment chemistry were analyzed by ALS (see laboratory report WR2101265 in Appendix C), consisting of 78 individual analyte results. All reported method blank results were within the laboratory DQO. Thus, the method blank results for this study indicated no inadvertent contamination of sediment samples within the laboratory during analysis.

A3.3 Data Accuracy and Precision

Data accuracy for sediment chemistry analyses completed by ALS was evaluated based on the analysis of 10 RM samples and 10 LCS samples (see laboratory report WR2101265 in Appendix C). All 68 RM and 78 LCS results met the laboratory DQO. Therefore, the accuracy achieved by the laboratory was considered excellent.

Analytical precision of sediment chemistry analyses completed by ALS was evaluated by examining two laboratory duplicate samples for metals and four laboratory duplicate samples for physical tests and organic/inorganic carbon (see laboratory report WR2101265 in Appendix C). Relative percent differences (RPDs) between laboratory duplicate samples failed to meet the laboratory DQO in 20% of samples due to sample heterogeneity. As ALS believed the significant differences between laboratory duplicates were due to sample heterogeneity rather than differences in analytical precision in recovery, laboratory precision was considered good.

One set of field duplicate samples was collected to assess the precision of field sampling of sediment chemistry (Table A.5). Samples were collected as split samples (i.e., a larger sample was homogenized and then split into two duplicate sub-samples), and as such some variability

Table A.4: Laboratory Reporting Limit (LRL) for Sediment Chemistry Analyses

Parameter	Units	CSQG		No. LRLs > ISQG	No. LRLs > PEL	Range of LRLs	No. Sample Results < LRL
		ISQG	PEL				
Physical Tests							
% Gravel (>2mm)	%	-	-	-	-	1.0	11 (92%)
Total Metals							
Bismuth	mg/kg	-	-	-	-	0.20	20 (100%)
Boron	mg/kg	-	-	-	-	5.0	19 (95%)
Selenium	mg/kg	-	-	-	-	0.20	1 (5%)
Silver	mg/kg	-	-	-	-	0.10	15 (75%)
Sulphur	mg/kg	-	-	-	-	1000	18 (90%)
Thallium	mg/kg	-	-	-	-	0.050	1 (5%)
Tin	mg/kg	-	-	-	-	2.0	20 (100%)
Tungsten	mg/kg	-	-	-	-	0.50	20 (100%)
Zirconium	mg/kg	-	-	-	-	1.0 to 2.0	1 (5%)

Notes: Only analytes with one or more sample results < LRLs or with an LRL greater than guidelines are displayed. The total number of samples was n = 20, except particle size (% gravel), which was n = 5. CSQG = Canadian Sediment Quality Guidelines; ISQG = interim sediment quality guideline; PEL = probable effect level (CCME 2014). LRL = Laboratory Reporting Limit; "-" = no applicable guideline exists.

Table A.5: Field Duplicate Results for Sediment Chemistry Analyses

Parameter	Units	LWC-3	LWC-3X	RPD (%)
Physical Tests				
Loss on Ignition @ 420°C	%	25.7	13.8	60.3
pH (1:2 soil:water)	pH	6.78	6.76	0.295
% Gravel (>2mm)	%	<1.0	<1.0	-
% Sand (2.00 mm - 0.200 mm)	%	3.70	4.30	15.0
% Sand (2.00 mm - 0.063 mm)	%	30.3	30.4	0.329
% Sand (0.2 mm - 0.063 mm)	%	26.6	26.1	1.90
% Silt (0.063 mm - 0.004 mm)	%	63.0	62.8	0.318
% Clay (<4 um)	%	6.70	6.80	1.48
Organic / Inorganic Carbon				
Inorganic Carbon (IC)	%	0.149	0.162	8.36
Total Carbon (TC)	%	9.77	6.35	42.4
Total Organic Carbon (TOC)	%	9.62	6.19	43.4
Inorganic Carbon (IC), (as CaCO3 equivalent)	%	1.24	1.35	8.49
Organic Matter	%	16.6	10.7	43.2
Leachable Anions and Nutrients				
Total Kjeldahl Nitrogen (TKN)	%	0.302	0.302	0
Total Metals				
Aluminum	mg/kg	14,200	13,100	8.06
Antimony	mg/kg	0.500	0.450	10.5
Arsenic	mg/kg	7.06	7.37	4.30
Barium	mg/kg	238	224	6.06
Beryllium	mg/kg	0.850	0.760	11.2
Bismuth	mg/kg	<0.20	<0.20	-
Boron	mg/kg	<5.0	<5.0	-
Cadmium	mg/kg	0.262	0.228	13.9
Calcium	mg/kg	11,500	10,000	14.0
Chromium	mg/kg	47.1	42.8	9.57
Cobalt	mg/kg	13.7	13.2	3.72
Copper	mg/kg	30.0	27.4	9.06
Iron	mg/kg	27,300	27,400	0.366
Lead	mg/kg	6.29	5.98	5.05
Lithium	mg/kg	9.70	9.20	5.29
Magnesium	mg/kg	9,030	8,800	2.58
Manganese	mg/kg	687	553	21.6
Mercury	mg/kg	0.0446	0.0381	15.7
Molybdenum	mg/kg	0.590	0.560	5.22
Nickel	mg/kg	37.2	36.3	2.45
Phosphorus	mg/kg	1,090	985	10.1
Potassium	mg/kg	1,050	950	10.0
Selenium	mg/kg	0.470	0.400	16.1
Silver	mg/kg	0.120	<0.10	18.2
Sodium	mg/kg	435	398	8.88
Strontium	mg/kg	124	109	12.9
Sulphur	mg/kg	<1000	<1000	-
Thallium	mg/kg	0.0800	0.0710	11.9
Tin	mg/kg	<2.0	<2.0	-
Titanium	mg/kg	885	756	15.7
Tungsten	mg/kg	<0.50	<0.50	-
Uranium	mg/kg	3.61	3.06	16.5
Vanadium	mg/kg	72.2	68.3	5.55
Zinc	mg/kg	58.9	58.7	0.340
Zirconium	mg/kg	5.40	5.10	5.71

Indicates RPD exceeded 30%.

Notes: RPD = relative percent difference. LRL = laboratory reporting limits. Where one of the values was <LRL, the RPD was calculated using the value of the LRL. The RPD was not calculated if both results were < LRL. "-" = no data/not calculated.

was expected based on the inherent heterogeneity of sediments. Relative percent differences (RPDs) were greater than 30% for 8.2% of comparisons (loss on ignition, total carbon, total organic carbon, and organic matter). Where the RPD exceeded 30%, the laboratory reporting limit was not a cause (i.e., all results were above the LRL). Disagreement between these samples could be a resultant of clumps of organic matter that were not split evenly between the two field samples. Additionally, the transfer of sample material from one container (i.e., the bin in which the samples were homogenized) to another (i.e., the sample jar or bag) may introduce variability (Weiner 2013). Overall, the overall precision of field sampling was considered good.

A3.4 Hold Times

Recommended hold times were met for all sediment samples.

A3.5 Data Quality Statement

Sediment chemistry data collected for the present study were of acceptable quality as characterized by appropriate LRLs, negligible analyte concentrations in method blanks, good laboratory precision and accuracy, and good field sampling precision. Overall, the associated data were considered acceptable for this study.

A4 BENTHIC INVERTEBRATE COMMUNITY

A4.1 Sub-sampling

The analytical laboratory reports for benthic invertebrate community structure from Cordillera Consulting Inc. (see Appendix D for laboratory reports) were examined to assess sub-sampling accuracy. Canadian Aquatic Biomonitoring Network (CABIN) protocols were followed for sub-sampling (i.e., a minimum count of 300 invertebrates). Five benthic invertebrate community structure samples were analyzed in entirety. The remaining 10 benthic invertebrate community samples were subsampled, with percent of total sample volume subsampled ranging from 25 to 75% (Table A.6).

A4.2 Organism Sorting Efficiency

To measure the effectiveness of the sorters, at least 10% of samples were selected at random for resorting analysis by a different sorter (n = 2). Sorting efficiency (i.e., percent recovery) of benthic invertebrate samples was excellent, achieving an average of 95.5% for the community structure samples assessed (Table A.7). Recovery in quality control samples was above the laboratory's DQO (≥ 90%), so organism sorting efficiency was considered good.

A4.3 Subsampling Precision and Accuracy

One sample was randomly chosen for sub-sample assessment to evaluate the consistency of organism recovery between subsamples. Both the precision and accuracy of the sub-sample met the DQO in all cases (< 20% average divergence in organism counts between subsamples; Table A.8). Thus, the precision and accuracy for sub-sampling of the benthic invertebrate community samples was considered good.

A4.4 Taxonomic Identification Accuracy

The laboratory performed an internal audit of taxonomic identification for roughly 10% of all samples (n = 2; Table A.9). The analysts reported total identification error rate (TIR) of 0% in both samples, percent difference in enumeration (PDE) of 0.117 to 0.204%, percent taxonomic disagreement (PTD) of 0.408 to 0.468%, and Bray Curtis Dissimilarity Index (BCDI, a measure of the differences in identifications between different analysts) of 0.002 to 0.004; Table A.9). The laboratory DQO was based on TIR as per CABIN laboratory methods (< 5% TIR; Environment Canada 2014). Since TIR was below 5% for all samples, the taxonomic accuracy of the analysis was considered excellent.

Table A.6: Sub-Sampling Percentages and Total Organism Recovery for Benthic Invertebrate Community Samples

Sample ID	Date	Laboratory ID	% Sampled	# Invertebrates
LMC-1	10-Sep-21	CC221139	50.0	426
LMC-2	9-Sep-21	CC221140	30.0	332
LMC-3	9-Sep-21	CC221141	31.3	348
LMC-4	9-Sep-21	CC221142	100	179
LMC-5	9-Sep-21	CC221143	25.0	370
LWC-1	12-Sep-21	CC221144	100	244
LWC-2	12-Sep-21	CC221145	100	100
LWC-3	12-Sep-21	CC221146	75.0	301
LWC-4	12-Sep-21	CC221147	100	326
LWC-5	11-Sep-21	CC221148	75.0	373
LBC-1	14-Sep-21	CC221149	62.5	371
LBC-2	14-Sep-21	CC221150	75.0	351
LBC-3	14-Sep-21	CC221151	50.0	318
LBC-4	14-Sep-21	CC221152	100	194
LBC-5	14-Sep-21	CC221153	50.0	417

Table A.7: Organism Recovery Results for Benthic Invertebrate Community Samples

Sample ID	Laboratory ID	Number of Organisms Recovered (Initial Sort)	Taxon	Number of Organisms in Re-sort	% Efficiency
LBC-2	CC221150	351	Chironomidae	4	95.0
			Ephemeroptera	4	
			Diptera	1	
			Plecoptera	3	
			Trichoptera	2	
			Oligochaeta	2	
LMC-4	CC221142	179	Plecoptera	1	96.0
			Chironomidae	6	
				Average Recovery	**95.5**

Notes: As sorting progressed, 10% of samples were randomly chosen by senior members of the sorting team for resorting. All sorters working on a project had at least one sample resorted by another sorter. An efficiency of 90% was expected. If 90/ 95% efficiency was not met, samples from that sorter were re-sorted. To calculate sorting efficiency the following formula was used: (# organisms missed / total organisms found) x 100.

Table A.8: Sub-sampling Precision and Accuracy Error for Benthic Invertebrate Community Samples

Laboratory ID	Sample ID	# of Organisms in Subsample		Total # of Organisms	Precision Error (%)	Accuracy Error (%)
Subsample #		1	2			
CC221139	LMC-1	416	428	844	2.80	1.42

Table A.9: Taxonomic Quality Control Results for Benthic Invertebrate Community Samples[a]

Sample ID	Laboratory ID	Taxa Identified	TIR	PDE	PTD	BCDI
LMC-1	CC221139	427	0	0.117	0.468	0.004
LWC-1	CC221144	245	0	0.204	0.408	0.002

Notes: TIR = Total Identification Error Rate, PDE = Percent Difference in Enumeration, PTD = Percent Taxonomic Disagreement, BCDI = Bray Curtis Dissimilarity Index to quantify differences in identifications.

[a] For error rationale and calculations, refer to laboratory report (Appendix D).

A4.5 Data Quality Statement

Benthic invertebrate community structure data were of acceptable quality as characterized by good sorting efficiency, subsampling precision and accuracy, and excellent taxonomic identification accuracy. Therefore, the associated data can be used with a high level of confidence in the derivation of conclusions.

A5 BENTHIC INVERTEBRATE TISSUE CHEMISTRY

A5.1 Laboratory Reporting Limits

Analytical reports of benthic invertebrate tissue moisture and metal concentrations from ALS (see laboratory report WR2101266 in Appendix C) were examined to provide an inventory of analyte results below the LRL and to compare LRLs available benchmarks (Table A.10). Six analytes had results below the LRL including antimony, bismuth, boron, lithium, tellurium, and tin. Only tellurium and tin (dry and wet weight) were below detection in all samples. However, the only analyte with a guideline, selenium (BCMOE 2014), was detectable in all samples. Therefore, despite some results being below the LRL, LRLs were overall appropriate for the present study.

A5.2 Laboratory Blanks

Two method blank samples for benthic invertebrate tissue chemistry were analyzed by ALS (see laboratory report WR2101266 in Appendix C), consisting of 69 individual analyte results. All reported method blank results were within the laboratory DQO. Thus, the method blank results for this study indicated no inadvertent contamination of sediment samples within the laboratory during analysis.

A5.3 Data Accuracy and Precision

Data accuracy and precision were evaluated based on the analysis of one RM sample and two LCS samples (see laboratory report WR2101266 in Appendix C). All 56 results for the RM sample and 69 results for LCS samples met the laboratory DQO. Therefore, laboratory accuracy and precision can be considered excellent.

One set of field duplicate samples was collected to assess the precision of field sampling of benthic invertebrate tissue chemistry (Table A.11). Relative percent differences (RPDs) were greater than 30% for 59.3% of all dry weight comparisons. Lithium was the only comparison that had one concentration below the LRL, where greater variability among paired results is anticipated. These differences are likely due to heterogeneity in sampling and highlight the need for replication at a sampling location.

A5.4 Hold Times

Recommended hold times were met for all benthic invertebrate tissue samples.

Table A.10: Laboratory Reporting Limit (LRL) Evaluation for Benthic Invertebrate Tissue Chemistry Analyses

Parameter	Units	Range of LRLs	No. Sample Results < LRL
Metals			
Antimony	mg/kg dw	0.02	1 (6.67%)
Bismuth	mg/kg dw	0.01	10 (66.7%)
Boron	mg/kg dw	1	3 (20%)
Lithium	mg/kg dw	0.5	6 (40%)
Tellurium	mg/kg dw	0.02	15 (100%)
Tin	mg/kg dw	0.1	15 (100%)

Notes: LRL = Laboratory Reporting Limit. mg/kg dw = milligrams per killogram dry weight. Only analytes with one or more sample results < LRL are displayed. The total number of samples analyzed (n) was 15. LRLs were below applicable guidelines for selenium.

Table A.11: Field Duplicate Results for Benthic Invertebrate Tissue Analyses

Parameter	Units	LWC-3-BIT	LWC-3X-BIT	RPD (%)
Physical Tests				
Moisture	%	87.5	85.2	2.70
Metals				
Aluminum	mg/kg dw	436	1030	81.0
Antimony	mg/kg dw	0.022	0.04	58.1
Arsenic	mg/kg dw	0.909	1.66	58.5
Barium	mg/kg dw	19.6	62.9	105
Beryllium	mg/kg dw	0.026	0.084	105
Bismuth	mg/kg dw	<0.010	<0.010	-
Boron	mg/kg dw	1	1.5	40.0
Cadmium	mg/kg dw	0.668	0.539	21.4
Calcium	mg/kg dw	1290	1590	20.8
Cesium	mg/kg dw	0.0484	0.106	74.6
Chromium	mg/kg dw	2.41	6.18	87.8
Cobalt	mg/kg dw	1.22	2.62	72.9
Copper	mg/kg dw	19.8	21.1	6.4
Iron	mg/kg dw	952	2880	101
Lead	mg/kg dw	0.169	0.433	87.7
Lithium	mg/kg dw	<0.50	0.74	38.7
Magnesium	mg/kg dw	1370	2520	59.1
Manganese	mg/kg dw	158	294	60.2
Mercury	mg/kg dw	0.027	0.025	7.69
Molybdenum	mg/kg dw	0.942	1.02	7.95
Nickel	mg/kg dw	4.29	11	87.8
Phosphorus	mg/kg dw	9950	9290	6.86
Potassium	mg/kg dw	8970	9540	6.16
Rubidium	mg/kg dw	5.28	4.82	9.11
Selenium	mg/kg dw	3.93	3.12	23.0
Sodium	mg/kg dw	3770	3160	17.6
Strontium	mg/kg dw	15.6	18.1	14.8
Tellurium	mg/kg dw	<0.020	<0.020	-
Thallium	mg/kg dw	0.0076	0.011	36.6
Tin	mg/kg dw	<0.10	<0.10	-
Uranium	mg/kg dw	0.099	0.464	130
Vanadium	mg/kg dw	2.05	5.22	87.2
Zinc	mg/kg dw	98.8	102	3.19
Zirconium	mg/kg dw	0.64	1.92	100

Indicates RPD exceeded 30%.

Notes: RPD = relative percent difference. LRL = laboratory reporting limits. mg/kg dw = milligrams per kilogram dry weight. Where one of the values was <LRL, the RPD was calculated using the value of the LRL. The RPD was not calculated if both results were < LRL. "-" = no data/not calculated.

A5.5 Data Quality Statement

Benthic invertebrate tissue data collected for the present study were of good quality as characterized by good detectability, appropriate LRLs, no inadvertent contamination, and good laboratory precision and accuracy. The poor field sampling precision observed in the differences between one set of duplicate samples was likely compensated for by replication of field samples. Overall, the associated data can be used with a good level of confidence in the derivation of conclusions for this study.

A6 PERIPHYTON TISSUE CHEMISTRY

A6.1 Laboratory Reporting Limits

Analytical reports from ALS of periphyton tissue metal and moisture concentrations, as well as chlorophyll-a content (see laboratory reports WR2101264 and WR2101267 in Appendix C) were examined to provide an inventory of analyte results below the LRL (Table A.12). All chlorophyll-a results were above the LRL and below the BC guideline of 100 mg/m^2. Several periphyton tissue metal concentrations were below detection in several samples. Guidelines do not exist for any analytes in periphyton tissue, and none of the analytes had results that were below detection in 100% of samples. Despite some results being below the LRL, LRLs were overall appropriate for the present study.

A6.2 Laboratory Blanks

Four method blank samples for periphyton tissue moisture and metals, and one method blank sample for periphyton tissue chlorophyll-a content were analyzed by ALS (see laboratory report WR2101264 and WR2101267 in Appendix C). These samples resulted in 140 individual analyte results, all of which were within the laboratory DQO. Thus, the method blank results for this study indicated no inadvertent contamination of sediment samples within the laboratory during analysis.

A6.3 Data Accuracy and Precision

Laboratory accuracy was evaluated based on the analysis of two RM samples for metals, four LCS samples for moisture and metals, and one LCS sample for chlorophyll-a content (see laboratory reports WR2101264and WR2101267 in Appendix C). All 109 individual analyte results for RM samples and 139 individual analyte results for LCS samples met the laboratory DQO. Analytical precision of periphyton tissue chemistry analyses was evaluated by examining one laboratory duplicate sample for moisture and metals (see laboratory report WR2101264 in Appendix C). The RPDs between laboratory duplicate samples met the laboratory DQO for all 33 individual analyte comparisons. Laboratory duplicate samples were not analyzed for periphyton chlorophyll-a content. Overall, laboratory accuracy and precision were considered excellent.

One set of field duplicate samples for each periphyton tissue chemistry and chlorophyll-a to assess the precision of field sampling (Tables A.13 and A.14). Relative percent differences (RPDs) were greater than 30% for 2.9% of all dry weight comparisons. Where the RPD exceeded 30%, the laboratory reporting limit was not a cause (i.e., all results were above the LRL). Overall, analysis of field duplicates for periphyton tissue chemistry indicates good field sampling precision.

Table A.12: Laboratory Reporting Limit (LRL) Evaluation for Periphyton Tissue Chemistry Analyses

Parameter	Units	Range of LRLs	No. Sample Results < LRL
Metals			
Antimony	mg/kg	0.01 to 0.1	5 (33.3%)
Boron	mg/kg	1 to 5	5 (33.3%)
Selenium	mg/kg	0.1 to 0.5	7 (46.7%)
Tellurium	mg/kg	0.02 to 0.1	14 (93.3%)
Tin	mg/kg	0.1 to 0.5	13 (86.7%)

Notes: LRL = Laboratory Reporting Limit. mg/kg dw = milligrams per kilogram dry weight. Only analytes with one or more sample results < LRL are displayed. The total number of samples analyzed was n=15.

Table A.13: Field Duplicate Results for Periphyton Tissue Analyses

Parameter	Units	LMC-5-PERT	LMC-5-PERT-X	RPD (%)
Physical Tests				
Moisture	%	87.7	83.5	4.91
Metals				
Aluminum	mg/kg dw	10,200	9,570	6.37
Antimony	mg/kg dw	0.0850	0.0820	3.59
Arsenic	mg/kg dw	12.7	10.0	23.8
Barium	mg/kg dw	198	179	10.1
Beryllium	mg/kg dw	0.342	0.330	3.57
Bismuth	mg/kg dw	0.109	0.112	2.71
Boron	mg/kg dw	3.50	3.40	2.90
Cadmium	mg/kg dw	0.258	0.201	24.8
Calcium	mg/kg dw	14,800	13,300	10.7
Cesium	mg/kg dw	1.01	1.06	4.83
Chromium	mg/kg dw	23.0	24.9	7.93
Cobalt	mg/kg dw	8.58	8.57	0.117
Copper	mg/kg dw	123	134	8.56
Iron	mg/kg dw	20,300	20,000	1.49
Lead	mg/kg dw	4.52	4.79	5.80
Lithium	mg/kg dw	9.31	8.74	6.32
Magnesium	mg/kg dw	8,060	7,040	13.5
Manganese	mg/kg dw	1,640	1,290	23.9
Mercury	mg/kg dw	0.0710	0.0550	25.4
Molybdenum	mg/kg dw	0.784	0.744	5.24
Nickel	mg/kg dw	17.9	17.7	1.12
Phosphorus	mg/kg dw	2,640	2,250	16.0
Potassium	mg/kg dw	8,860	5,190	52.2
Rubidium	mg/kg dw	13.8	13.7	0.727
Selenium	mg/kg dw	1.40	1.07	26.7
Sodium	mg/kg dw	306	326	6.33
Strontium	mg/kg dw	98.7	83.0	17.3
Tellurium	mg/kg dw	0.0240	0.0230	4.26
Thallium	mg/kg dw	0.101	0.0943	6.86
Tin	mg/kg dw	0.300	0.350	15.4
Uranium	mg/kg dw	0.807	0.745	7.99
Vanadium	mg/kg dw	44.1	44.6	1.13
Zinc	mg/kg dw	64.2	56.0	13.6
Zirconium	mg/kg dw	7.25	7.01	3.37

Indicates RPD exceeded 30%.

Notes: RPD = relative percent difference. LRL = laboratory reporting limits. mg/kg dw = milligrams per kilogram dry weight. Where one of the values was <LRL, the RPD was calculated using the value of the LRL. The RPD was not calculated if both results were < LRL.

Table A.14: Field Duplicate Results for Periphyton Tissue Chlorophyll-a Analyses

Parameter	Units	LMC-1	LMC-1X	RPD (%)
Plant Pigments				
Chlorophyll a	µg	131	80.4	47.9

Indicates RPD exceeded 30%.

Notes: RPD = relative percent difference. LRL = laboratory reporting limits. Where one of the values was <LRL, the RPD was calculated using the value of the LRL. The RPD was not calculated if both results were < LRL.

A6.4 Hold Times

Recommended hold times were met for all periphyton tissue samples.

A6.5 Data Quality Statement

Periphyton tissue metal, moisture, and chlorophyll-a data collected for the 2021 Minto AEMP were of good quality as characterized by good detectability, appropriate LRLs, no inadvertent contamination, and excellent laboratory precision and accuracy, good field sampling precision, and appropriate hold times. Overall, the associated data can be used with a good level of confidence in the derivation of conclusions for this study.

A7 DATA QUALITY STATEMENT

Overall, the quality of the data collected for this project was considered acceptable for the derivation of conclusions associated with the objectives of the 2021 Minto AEMP.

A7 REFERENCES

BCMOE (British Columbia Ministry of Environment). 2014. Ambient Water Quality Guidelines for Selenium. Technical Report Update. Water Protection and Sustainability Branch. April 2014.

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APPENDIX B

SUPPORTING INFORMATION AND DATA

Figures and Tables

Laboratory Reports

APPENDIX B

SUPPORTING INFORMATION AND DATA

Figures and Tables

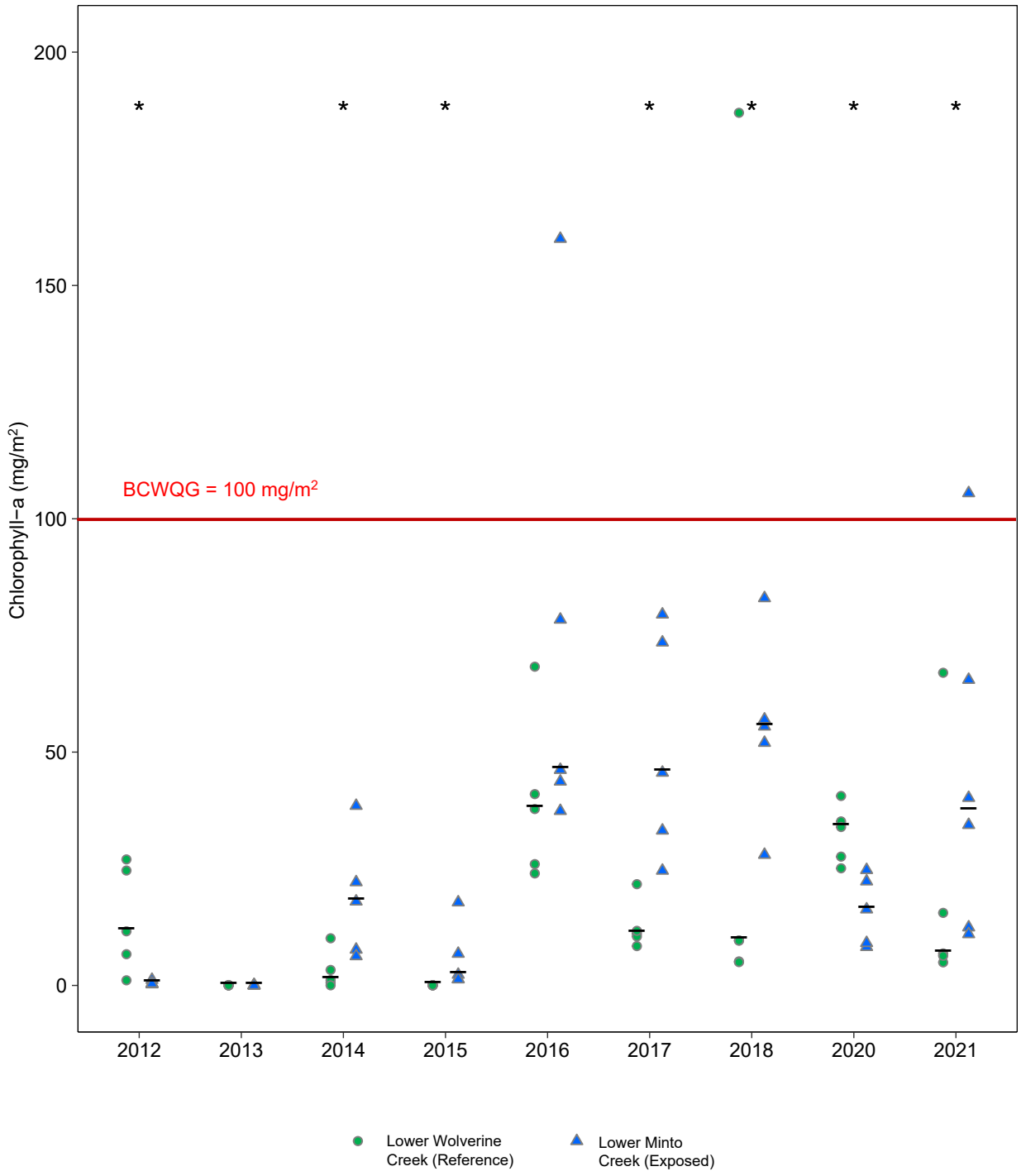

Figure B.1: Periphyton Chlorophyll−a Measured in Lower Minto Creek and Lower Wolverine Creek (Reference), Minto AEMP, 2012 to 2021[a]

Notes: Black horizontal bars indicate the Measure of Central Tendency (MCT). The MCT is the mean for non−transformed data, geometric mean for log−10 transformed data and median for rank transformed data. An * indicates stations were significantly different for that year.

[a] Sampling was not completed in 2019 due to dry conditions at Lower Minto Creek.

Table B.1: Stage Height and Total Discharge at Station W1 on Minto Creek, 2021[a]

Year	Date	Time	Total Discharge (m^3/s)	Staff Gauge/Stage (m)
2021	25-Apr-21	13:40	0.227	0.325
	29-Apr-21	11:10	0.183	0.278
	04-May-21	09:05	0.893	0.728
	10-May-21	08:20	0.490	0.490
	10-May-21	08:33	0.499	0.490
	18-May-21	06:46	0.118	0.240
	25-May-21	15:40	0.497	0.455
	31-May-21	08:15	0.178	0.280
	08-Jun-21	14:49	0.0687	0.200
	08-Jun-21	15:00	0.0611	0.200
	15-Jun-21	15:20	0.0263	0.160
	28-Jun-21	09:50	0.00810	0.130
	10-Aug-21	14:07	0.0226	0.150
	16-Aug-21	09:55	0.0108	0.140
	24-Aug-21	09:10	0.00432	0.150
	24-Aug-21	09:20	0.0653	0.150
	29-Aug-21	08:51	0.00708	0.140
	07-Sep-21	14:55	0.0104	0.150
	13-Sep-21	11:00	0.00525	0.130
	20-Sep-21	08:40	0.00378	0.110
	26-Sep-21	09:20	0.0167	0.150
	08-Oct-21	14:25	0.0187	0.150
	12-Oct-21	15:28	0.0152	0.140

Note: Data for 2021 provided by Minto Mine (Smith 2022).

[a] Discharge data was not collected for the month of July due to intermittent flow and/or low water levels.

Table B.2a: Monthly Temperature at Minto Mine Compared to Climate Normals

Month	Daily Average Temperature (°C)																			
	Canada Climate Normals	2012		2013		2014		2015		2016		2017		2018		2019		2020		2021	
		Minto Mine	Difference from Normals	Minto Mine	Difference from Normals	Minto Mine	Difference from Normals	Minto Mine	Difference from Normals	Minto Mine	Difference from Normals	Minto Mine	Difference from Normals	Minto Mine	Difference from Normals	Minto Mine	Difference from Normals	Minto Mine	Difference from Normals	Minto Mine	Difference from Normals
January	-24.9	-21.3	3.58	-16.9	8.05	-9.28	15.6	-15.8	9.10	-9.39	15.5	-17.8	7.10	-15.1	9.81	-17.0	7.89	-23.8	1.13	-11.6	13.3
February	-19.5	-7.64	11.9	-10.2	9.28	-17.3	2.22	-13.7	5.79	-7.99	11.5	-11.5	8.02	-17.8	1.67	-17.2	2.34	-16.1	3.39	-20.3	-0.766
March	-10.6	-8.84	1.76	-9.63	0.974	-8.13	2.47	-6.34	4.26	-1.75	8.85	-13.5	-2.88	-7.47	3.13	-1.21	9.39	-11.5	-0.916	-11.1	-0.486
April	0.700	3.16	2.46	-5.18	-5.88	0.889	0.189	2.03	1.33	4.68	3.98	2.24	1.54	-0.576	-1.28	1.79	1.09	0.241	-0.459	-1.398	-2.10
May	8.30	6.51	-1.79	7.17	-1.13	9.60	1.30	13.1	4.84	10.1	1.82	8.26	-0.038	8.49	0.193	11.0	2.68	9.38	1.08	7.11	-1.19
June	13.9	12.8	-1.12	15.8	1.88	12.1	-1.83	13.5	-0.405	14.1	0.204	13.0	-0.879	12.9	-0.955	14.8	0.933	11.6	-2.26	14.4	0.515
July	15.8	13.6	-2.23	15.4	-0.447	14.8	-1.02	14.2	-1.59	14.8	-1.03	15.8	0.00675	16.4	0.583	16.9	1.05	13.2	-2.62	16.2	0.408
August	12.8	12.8	0.0386	14.5	1.74	12.5	-0.284	10.8	-2.02	13.5	0.722	13.9	1.10	11.8	-0.973	11.8	-1.03	11.4	-1.44	12.7	-0.0834
September	6.50	7.18	0.676	6.73	0.233	5.94	-0.561	5.10	-1.40	7.32	0.825	8.57	2.07	6.17	-0.331	9.02	2.52	6.97	0.470	5.44	-1.06
October	-2.50	-5.50	-3.00	1.35	3.85	-1.79	0.713	0.0920	2.59	-4.86	-2.36	-1.23	1.27	1.06	3.56	-1.35	1.15	-4.29	-1.79	-1.22	1.28
November	-16.3	-19.0	-2.73	-14.3	1.99	-13.2	3.06	-11.5	4.80	-10.2	6.12	-18.3	-1.98	-10.5	5.80	-12.5	3.80	-14.5	1.81	-13.9	2.41
December	-21.9	-23.4	-1.51	-21.0	0.934	-12.2	9.69	-14.4	7.52	-18.7	3.22	-11.2	10.7	-12.4	9.50	-	-	-12.7	9.22	-20.3	1.61

Notes: Canada Climate Normals from 1981 to 2010 (Government of Canada 2022). Climate normals are from the Pelly Ranch weather station.

Table B2.b: Monthly Precipitation at Minto Mine Compared to Canada Climate Normals

Month	Total Precipitation (mm)																			
	Canada Climate Normals	2012		2013		2014		2015		2016		2017		2018		2019		2020		2021	
		Minto Mine	Difference from Normals	Minto Mine	Difference from Normals	Minto Mine	Difference from Normals	Minto Mine	Difference from Normals	Minto Mine	Difference from Normals	Minto Mine	Difference from Normals	Minto Mine	Difference from Normals	Minto Mine	Difference from Normals	Minto Mine	Difference from Normals	Minto Mine	Difference from Normals
January	19.7	9.05	-10.7	4.38	-15.3	16.9	-2.77	9.05	-10.7	9.05	-10.6	1.31	-18.4	7.01	-12.7	7.15	-12.5	8.18	-11.5	0.292	-19.4
February	14.9	9.92	-4.98	73.8	58.9	49.2	34.3	6.86	-8.04	6.86	-8.04	0	-14.9	8.61	-6.29	7.74	-7.17	14.9	0	14.2	-0.748
March	10.6	34.9	24.3	7.44	-3.16	0	-10.6	3.06	-7.54	2.63	-7.97	3.80	-6.80	14.6	4.00	1.17	-9.43	7.30	-3.30	16.2	5.60
April	8.90	0	-8.90	0	-8.90	3.79	-5.11	3.80	-5.11	14.7	5.84	7.01	-1.89	4.96	-3.94	4.96	-3.94	16.4	7.50	14.9	5.99
May	27.2	0.146	-27.1	7.88	-19.3	15.0	-12.2	6.28	-20.9	39.3	12.1	22.0	-5.17	6.86	-20.3	17.2	-10.0	12.1	-15.1	53.3	26.1
June	38.5	31.1	-7.42	21.0	-17.5	12.0	-26.5	18.7	-19.8	30.2	-8.29	40.0	1.48	38.5	0.0200	26.0	-12.5	25.7	-12.8	14.9	-23.6
July	58.0	44.8	-13.2	114	55.5	50.5	-7.52	35.3	-22.7	74.7	16.7	42.3	-15.7	20.7	-37.3	27.0	-31.0	85.9	27.9	19.8	-38.2
August	41.4	20.6	-20.8	46.8	5.44	13.4	-28.0	79.7	38.3	46.0	4.57	20.4	-21.0	76.8	35.4	23.1	-18.3	50.5	9.10	31.5	-9.88
September	31.6	26.1	-5.49	59.7	28.1	30.5	-1.10	19.0	-12.6	18.5	-13.1	37.4	5.75	22.9	-8.69	18.0	-13.7	19.0	-12.6	16.1	-15.5
October	24.5	16.5	-8.01	13.6	-10.9	22.0	-2.47	14.7	-9.76	6.71	-17.8	4.67	-19.8	8.47	-16.0	13.6	-10.9	20.3	-4.20	26.3	1.77
November	25.8	17.1	-8.73	36.6	10.8	2.92	-22.9	33.0	7.17	24.2	-1.57	7.88	-17.9	8.61	-17.2	12.1	-13.7	11.8	-14.0	14.6	-11.2
December	19.4	18.4	-1.01	37.9	18.5	19.4	0.0120	9.49	-9.91	7.45	-12.0	4.67	-14.7	6.71	-12.7	-	-	20.3	0.900	27.4	8.03
Annual Total:	320.5	228.5		422.7		235.7		238.9		280.4		191.5		224.7		157.9		292.4		249.4	

Notes: Canada Climate Normals from 1981 to 2010 (Government of Canada 2022). Climate normals are from the Pelly Ranch weather station.

Table B.3: Habitat Characteristics for Benthic Invertebrate Areas, Minto Mine AEMP, September 2021

Characteristics		Lower Wolverine Creek (Reference)	Lower Big Creek (Reference)	Lower Minto Creek (Exposed)
UTM (NAD83, Zone 8V)	Easting	382475	396414	392261
	Northing	6954829	6942225	6948065
Approximate Length of Reach Assessed (m)		174	75	11
Gradient (%)		2.5	1.0	2.0
Velocity (m/s)	Mean (min-max)	0.347 (0.300 - 0.403)	0.342 (0.295 - 0.403)	0.354 (0.297 - 0.411)
Depth (cm)	Mean	27	23	6
	Maximum	73	28	37
Width (m)	Wetted	9	28	1.70
	Bankfull	17	42	1.9
General Morphology	% pool	5	0	10
	% riffle	40	50	40
	% run	55	50	50
Bank Condition		Moderate	Moderate. More erosion on left upstream bank.	Moderate
Substrate Coverage	% bedrock	0	0	0
	% boulder	0	0	0
	% cobble	75	85	70
	% gravel	15	10	20
	% sand and finer	10	5	10
Instream Cover (% total surface)	undercut banks	5	20	30
	boulder	0	0	0
	woody debris	10	10	20
	deep pool	5	0	10
	macrophytes	0	0	0
	other	0	0	0
Overhead Canopy (% surface)	Dense	0	0	95
	Partially Open	2	0	5
	Open	98	100	0
Aquatic Vegetation (% areal coverage)	Emergent	0	0	0
	Submergent	0	0	0
	Floating	0	0	0
	Attached Algae	0	0	0
Riparian vegetation		Willow, poplar, spruce, grasses	Willow, poplar, spruce	Poplar, alder, grasses
Surrounding Land Use		Forest	Mining access road downstream (upstream of LBC-4 and LBC-5)	Mine
Evidence of Anthropogenic Disturbance		None	None. Any evidence of disturbance is downstream of area assessed.	Access road nearby. Mine has cleared trees compared to previous years and there are more rose bushes

Table B.4: Supporting Information for Erosional Benthic Invertebrate Surber Sample Collections, Minto Mine AEMP, September 2021

Characteristics		Lower Wolverine Creek (Reference)				
		LWC-1	LWC-2	LWC-3	LWC-4	LWC-5
Date		12-Sep-21	12-Sep-21	12-Sep-21	12-Sep-21	11-Sep-21
Time		15:51	14:20	11:23	9:15	17:02
UTM (NAD83, Zone 8V)	Easting	382411	382435	382475	382560	382557
	Northing	6954644	6954765	6954829	6955040	6955111
Sampling Device		Surber	Surber	Surber	Surber	Surber
Sampler Size (m^2)	Single Grab	0.093 m^2	0.093 m^2	0.093 m^2	0.093 m^2	0.093 m^2
	Total Sample	0.279 m^2	0.279 m^2	0.279 m^2	0.279 m^2	0.279 m^2
Mesh Size (µm)		500	500	500	500	500
Grabs in Composite		3	3	3	3	3
Water Velocity (m/s)		0.363	0.318	0.360	0.340	0.356
Depth (m)		8.8	9.0	9.8	9.3	9.5
Number of Jars		1	1	1	1	1
Average Depth (cm) (Sampler pushed into substrate)		1	1	1	1	1
Average Depth (cm) (Substrate is sampled/cleaned)		3	3	3	3	3
Average Sampling Time per Grab (min)		5	6	6	6	6
Macrophytes (in sample)		none	none	none	none	none
Algae (in sample)		none	sparse	common	sparse	none
Sample Texture	% cobble	80	80	80	80	80
	% gravel	15	10	10	10	10
	% sand and finer	5	10	10	10	10
	% organic	0	0	0	0	0

Table B.4: Supporting Information for Erosional Benthic Invertebrate Surber Sample Collections, Minto Mine AEMP, September 2021

Characteristics		Lower Big Creek (Reference)				
		LBC-1	LBC-2	LBC-3	LBC-4	LBC-5
Date		14-Sep-21	14-Sep-21	14-Sep-21	14-Sep-21	14-Sep-21
Time		17:03	15:04	13:13	11:36	9:35
UTM (NAD83, Zone 8V)	Easting	396414	396675	396638	396631	396575
	Northing	6942225	6942324	6942462	6942541	6942611
Sampling Device		Surber	Surber	Surber	Surber	Surber
Sampler Size (m^2)	Single Grab	0.093 m^2	0.093 m^2	0.093 m^2	0.093 m^2	0.093 m^2
	Total Sample	0.279 m^2	0.279 m^2	0.279 m^2	0.279 m^2	0.279 m^2
Mesh Size (µm)		500	500	500	500	500
Grabs in Composite		3	3	3	3	3
Water Velocity (m/s)		0.334	0.336	0.386	0.331	0.326
Depth (m)		9.7	8.5	8.5	8.0	8.7
Number of Jars		1	1	1	1	1
Average Depth (cm) (Sampler pushed into substrate)		1	1	1	1	1
Average Depth (cm) (Substrate is sampled/cleaned)		3	3	3	3	3
Average Sampling Time per Grab (min)		6	5	5	5	6
Macrophytes (in sample)		none	none	none	none	none
Algae (in sample)		common	common	common	common	common
Sample Texture	% cobble	80	80	80	80	80
	% gravel	15	10	15	15	15
	% sand and finer	5	10	5	5	5
	% organic	0	0	0	0	0

Table B.4: Supporting Information for Erosional Benthic Invertebrate Surber Sample Collections, Minto Mine AEMP, September 2021

Characteristics		Lower Minto Creek (Exposed)				
		LMC-1	LMC-2	LMC-3	LMC-4	LMC-5
Date		10-Sep-21	9-Sep-21	9-Sep-21	9-Sep-21	9-Sep-21
Time		9:08	16:01	14:01	12:29	10:31
UTM (NAD83, Zone 8V)	Easting	392196	392235	392261	392348	392374
	Northing	6948020	6948024	6948065	6948146	6948177
Sampling Device		Surber	Surber	Surber	Surber	Surber
Sampler Size (m^2)	Single Grab	0.093 m^2	0.093 m^2	0.093 m^2	0.093 m^2	0.093 m^2
	Total Sample	0.279 m^2	0.279 m^2	0.279 m^2	0.279 m^2	0.279 m^2
Mesh Size (µm)		500	500	500	500	500
Grabs in Composite		3	3	3	3	3
Water Velocity (m/s)		0.322	0.391	0.342	0.330	0.384
Depth (m)		8.2	7.0	5.7	8.3	5.2
Number of Jars		1	1	2	1	1
Average Depth (cm) (Sampler pushed into substrate)		1	1	1	1	1
Average Depth (cm) (Substrate is sampled/cleaned)		3	3	3	3	3
Average Sampling Time per Grab (min)		4	5	5	5	7
Macrophytes (in sample)		none	none	none	none	none
Algae (in sample)		sparse	none	none	none	sparse
Sample Texture	% cobble	70	80	70	60	60
	% gravel	10	15	25	30	35
	% sand and finer	20	5	5	10	5
	% organic	0	0	0	0	0

Table B.5: *In Situ* Water Quality Measures at Sediment Sampling Stations, Minto Mine AEMP, September 2021

Area	Variable	Temperature	Specific Conductance	Dissolved Oxygen	Dissolved Oxygen	pH
	Unit	°C	µS/cm	mg/L	%	pH units
	CCME Water Quality Guidelines	-	-	6.5 - 9.5	-	6.5 - 9.0[a]
Upper McGinty Creek (Reference)	URC-1	1.9	137.2	11.50	83.1	7.52
	URC-2	1.9	139.9	10.40	75.0	7.27
	URC-3	1.8	140.4	11.74	85.1	7.50
	URC-4	1.7	143.5	10.61	76.1	7.92
	URC-5	1.5	153.1	10.54	75.3	7.68
	Mean	1.8	142.8	10.96	78.9	7.58
	Standard Deviation	0.17	6.2	0.61	4.8	0.24
Upper Minto Creek (Exposed)	UMC-1	3.7	459.0	11.30	85.5	7.87
	UMC-2	3.8	473.0	10.96	83.3	8.04
	UMC-3	3.6	471.7	11.33	85.4	7.82
	UMC-4	3.5	470.9	11.38	85.9	7.69
	UMC-5	3.2	469.0	10.58	79.1	7.77
	Mean	3.6	468.7	11.11	83.8	7.84
	Standard Deviation	0.23	5.62	0.339	2.84	0.131
Lower Wolverine Creek (Reference)	LWC-1	7.3	225.7	4.50	37.4	7.17
	LWC-2	7.2	228.4	3.80	31.6	7.19
	LWC-3	6.4	223.0	5.10	41.3	7.76
	LWC-4	7.5	225.3	2.49	20.9	7.23
	LWC-5	7.7	227.5	3.00	25.1	7.00
	Mean	7.2	226.0	3.78	31.3	7.27
	Standard Deviation	0.50	2.10	1.06	8.42	0.288
Lower Minto Creek (Exposed)	LMC-1	5.3	312.8	11.93	94.4	7.78
	LMC-2	5.3	313.4	12.35	97.7	7.61
	LMC-3	5.7	314.6	9.23	73.6	8.01
	LMC-4	5.7	314.1	9.98	79.6	7.54
	LMC-5	5.9	316.1	10.26	82.2	7.51
	Mean	5.6	314.2	10.75	85.5	7.69
	Standard Deviation	0.27	1.26	1.33	10.2	0.207

Value does not meet the water quality guideline.

[a] Range for the Water Use Licence is 6.0 to 9.0.

Table B.6: *In Situ* Water Quality and Supporting Measures at Benthic Invertebrate Sampling Stations, Minto Mine AEMP, September 2021

Area	Parameter	Temperature	Specific Conductance	Dissolved Oxygen	Dissolved Oxygen	pH	Mean Depth	Mean Velocity
	Units	°C	µS/cm	mg/L	%	pH units	m	m/s
	CCME Water Quality Guidelines	-	-	6.5 - 9.5	-	6.5 - 9.0[a]	-	-
Lower Wolverine Creek (Reference)	LWC-1	6.4	230.3	10.85	88.1	8.11	8.8	0.363
	LWC-2[b]	5.6	229.3	11.23	89.4	9.29	9.0	0.318
	LWC-3	4.9	230.0	11.61	90.7	8.00	9.8	0.360
	LWC-4	4.8	230.5	10.80	84.4	7.87	9.3	0.340
	LWC-5	7.4	229.5	10.97	91.6	8.14	9.5	0.356
	Mean	5.8	229.9	11.09	88.8	8.28	9.3	0.347
	Standard Deviation	1.1	0.51	0.33	2.8	0.57	0.396	0.019
Lower Big Creek (Reference)	LBC-1	8.1	215.4	11.82	100.0	8.33	9.7	0.334
	LBC-2	7.7	213.0	11.96	100.2	8.10	8.5	0.336
	LBC-3	6.9	217.0	11.94	98.2	8.16	8.5	0.386
	LBC-4	6.1	209.3	11.25	91.0	8.06	8.0	0.327
	LBC-5	5.9	217.6	11.00	88.6	7.94	8.7	0.326
	Mean	6.9	214.5	11.59	95.6	8.12	8.7	0.342
	Standard Deviation	0.96	3.39	0.44	5.4	0.14	0.626	0.025
Lower Minto Creek (Exposed)	LMC-1	4.1	307.4	12.54	98.4	8.46	8.2	0.322
	LMC-2	4.6	313.5	11.55	89.6	7.80	7.2	0.391
	LMC-3	3.6	317.7	12.10	91.8	7.60	7.3	0.342
	LMC-4	3.0	315.5	11.39	84.6	7.38	8.3	0.330
	LMC-5	2.7	316.2	11.98	88.4	7.46	5.2	1.521
	Mean	3.6	314.1	11.91	90.6	7.74	7.2	0.581
	Standard Deviation	0.78	4.0	0.46	5.1	0.43	1.246	0.526

Value does not meet the water quality guideline.

Note: CCME = Canadian Council of Ministers of the Environment (1999). "-" = no applicable guideline.

[a] Range for the Water Use Licence is 6.0 to 9.0.

Table B.7: Explanatory Notes for Selected Water Quality Guidelines, Minto Mine AEMP, 2021

				Upper McGinty Creek	Upper Minto Creek	Lower Wolverine Creek	Lower Big Creek	Lower Minto Creek
			Area					
			Station ID	**URC-3**	**UMC-1**	**LWC-4**	**LBC-3**	**LMC-1[a]**
			Exposure Type	**Reference**	**Exposed**	**Reference**	**Reference**	**Exposed**
Modifying Parameters			**Field Temperature (°C)**	1.8	1.2	4.0	4.5	2.5
			Hardness (mg/L $CaCO_3$)	73.4	270	120	108	189
			Field pH (pH units)	7.50	7.70	7.89	7.94	7.70
			Dissolved Organic Carbon (DOC; mg/L)	14.3	8.2	13.9	7.2	9.3
Analyte		**Guideline Type**	**Equation**	**Guideline Values (mg/L)**				
Nutrients	Total Ammonia	CWQG long-term guideline	Long-term guideline is calculated using CCME look-up table. The CCME guideline table displays guidelines for the ammonia ion, which is converted to Ammonia (as N) by multiplying by 0.8224.	6.02	1.92	1.27	1.27	1.92
Total Metals	Aluminum	CWQG long-term guideline	pH < 6.5 = 5 µg/L and if pH ≥ 6 = 100 µg/L	0.100				
	Cadmium	CWQG long-term guideline	At hardness ≥ 17 to ≤ 280 mg/L $CaCO_3$, the equation is CWQG (µg/L) = $10^{\{0.83(\log[\text{hardness}]) - 2.46\}}$	0.123	0.361	0.184	0.169	0.269
		CWQG short-term guideline	At hardness ≥ 5.3 to ≤ 360 mg/L $CaCO_3$ the equation is CWQG (µg/L) = $10^{\{1.016(\log[\text{hardness}]) - 1.71\}}$	0.00153	0.00576	0.00253	0.00227	0.00401
	Copper	CWQG long-term guideline	CWQG (µg/L) = $0.2 \times e^{\{0.8545[\ln(\text{hardness})]-1.465\}}$	2.0	4.0	0.00276	0.00253	4.0
	Lead	CWQG long-term guideline	At hardness 0 to ≤ 60 mg/L $CaCO_3$, the CWQG is 1 µg/L. At hardness ≥ 60 to ≤ 180 mg/L the equation is CWQG (µg/L)= $e^{[(1.273\{\ln[\text{hardness}]\}-4.705)]}$. At hardness >180 mg/L $CaCO_3$, the CWQG is 7 µg/L	0.00215	0.00700	0.00401	0.00351	0.00700
	Nickel	CWQG long-term guideline	At hardness 0 to ≤ 60 mg/L $CaCO_3$ the CWQG is 25 µg/L. At hardness > 60 to ≤ 180 mg/L $CaCO_3$ the CWQG is calculated using the equation CWQG (µg/L) = $e^{\{0.76[\ln(\text{hardness})]+1.06\}}$. At hardness >180 mg/L $CaCO_3$, the CWQG is 150 µg/L.	0.0756	0.150	0.110	0.101	0.150
Dissolved Metals	Cadmium	WUL Objective	WUL objective = $e^{(0.736(\ln(\text{hardness}))-4.943).}$	0.168	0.439	0.242	0.224	0.338
	Copper	WUL Objective	DOC is > 10 mg/L, objective is 0.02 mg/L Cu. If DOC ≤ 10 mg/L, objective is 0.013 mg/L Cu	0.020	0.013	0.020	0.013	0.013
	Manganese	CWQG long-term guideline	Long-term guideline is calculated using CCME benchmark calculator or look-up table. Values dependent on hardness and field pH	0.43	0.56	0.37	0.37	0.54
		CWQG short-term guideline	CWQG (µg/L) = $e^{(0.878[\ln(\text{hardness})] + 4.76)}$	5.07	15.9	7.81	7.12	11.6
	Zinc	CWQG long-term guideline	For hardness 23.4 to 399 mg/L $CaCO_3$, pH 6.5 to 8.13, and DOC 0.3 to 22.9 mg/L, the equation is CWQG (µg/L) = $e^{(0.947[\ln(\text{hardness mg/L})] - 0.815[\text{pH}] + 0.398[\ln(\text{DOC mg/L})] + 4.625)}$	0.0381	0.089	0.0436	0.0292	0.0668
		CWQG short-term guideline[b]	For hardness 13.8 to 250.5 mg/L $CaCO_3$ and DOC 0.3 and 17.3 mg/L, the equation is CWQG (µg/L) = $e^{(0.833[\ln(\text{hardness mg/L})] + 0.240[\ln(\text{DOC mg/L})] + 0.526)}$	0.115	0.279	0.172	0.134	0.228

Notes: CWQG = Canadian Water Quality Guideline. CCME = Canadian Council of Ministers of the Environment. WUL = water use licence.

[a] Water quality sample at lower Minto Creek was collected close the sediment station LMC-1.

[b] Hardness at upper Minto Creek was outside of the validity range for calculation of dissolved zinc long-term guideline. As such, the maximum value for the guideline equation were applied (hardness of 250.5 mg/L $CaCO_{3).}$

Table B.8: Water Quality Results at Exposed and Reference Areas, Minto Mine AEMP, 2020 to 2021

	Analyte	Units	CCME Water Quality Guidelines[a]		WUL Objectives at W2	2020					2021				
			Long-term	Short-term		Upper McGinty Creek	Upper Minto Creek	Lower Wolverine Creek	Lower Big Creek	Lower Minto Creek	Upper McGinty Creek	Upper Minto Creek	Lower Wolverine Creek	Lower Big Creek	Lower Minto Creek
						Reference	Exposed	Reference	Reference	Exposed	Reference	Exposed	Reference	Reference	Exposed
Physical Tests	Total Hardness (as $CaCO_3$)	mg/L	-	-	-	54.2	256	151	89.9	83.8	75.8	274	124	112	176
	pH (Field)	pH	6.5 to 9.0	-	6.0 to 9.0	7.63	7.36	7.74	7.93	7.87	7.50	7.70	7.89	7.94	7.70
	Temperature (Field)	°C	-	-	-	0.700	0.900	3.80	2.90	2.80	1.80	1.20	4.00	4.50	2.50
	Total Suspended Solids	mg/L	-	-	-	<3.0	<3.0	<3.0	5.10	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
	Total Dissolved Solids	mg/L	-	-	-	96.4	326	210	131	126	128	332	194	161	238
Anions , Nutrients, Other	Total Alkalinity as $CaCO_3$	mg/L	-	-	-	42.0	234	166	86.7	75.4	58.2	220	111	104	157
	Total Ammonia (as N)	mg/L	1.23 to 6.00	-	0.25	<0.0050	<0.0050	0.00590	<0.0050	0.00630	<0.0050	0.00560	<0.0050	<0.0050	<0.0050
	Bromide	mg/L	-	-	-	-	-	-	-	-	<0.050	<0.050	<0.050	<0.050	<0.050
	Chloride	mg/L	120	640	-	0.130	4.49	1.39	0.430	0.200	<0.50	5.03	<0.50	<0.50	1.83
	Fluoride	mg/L	0.12	-	-	-	-	-	-	-	0.210	0.480	0.128	0.121	0.337
	Nitrate	mg/L	3.0	124	9.1	0.0225	0.0437	0.00960	0.0465	<0.0050	0.0106	0.137	<0.0050	0.0100	<0.0050
	Nitrite	mg/L	0.060	-	0.060	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Sulphate	mg/L	-	-	-	7.50	49.4	17.0	11.9	11.7	16.5	48.5	24.3	16.4	20.8
	Dissolved Organic Carbon	mg/L	-	-	-	23.0	10.8	13.2	11.1	19.5	14.3	8.16	13.9	7.21	9.30
	Total Inorganic Carbon	mg/L	-	-	-	-	-	-	-	-	14.8	58.4	27.7	26.9	44.4
	Total Organic Carbon	mg/L	-	-	-	-	-	-	-	-	14.8	8.10	13.6	7.04	8.43
Total Metals	Aluminum	mg/L	0.10	-	-	0.0913	0.00960	0.0458	0.142	0.0818	0.0406	0.00630	0.0257	0.0123	0.0193
	Antimony	mg/L	-	-	-	<0.00010	<0.00010	<0.00010	0.000180	0.000110	<0.00010	<0.00010	<0.00010	0.000140	<0.00010
	Arsenic	mg/L	0.0050	-	-	0.000550	0.000360	0.000630	0.000960	0.000540	0.000450	0.000270	0.000440	0.000700	0.000460
	Barium	mg/L	-	-	-	0.0337	0.0616	0.0612	0.0660	0.0345	0.0359	0.0554	0.0428	0.0674	0.0656
	Beryllium	mg/L	-	-	-	<0.000020	<0.000020	<0.000020	<0.000020	0.0000260	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Bismuth	mg/L	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Boron	mg/L	1.5	29	-	<0.010	0.0210	<0.010	<0.010	<0.010	<0.010	0.0210	<0.010	<0.010	<0.010
	Cadmium	mg/L	0.000099 to 0.00036	0.0012 to 0.0058	-	0.00000770	<0.000010	<0.0000050	0.0000142	0.00000540	0.00000580	<0.000010	0.00000870	<0.0000050	0.00000510
	Calcium	mg/L	-	-	-	15.3	60.7	40.2	22.8	19.6	18.7	60.8	24.4	24.6	48.5
	Cesium	mg/L	-	-	-	-	-	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Chromium	mg/L	0.0010[b]	-	-	0.000710	0.000320	0.000500	0.000670	0.000850	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Cobalt	mg/L	-	-	-	<0.00010	<0.00010	<0.00010	0.000140	0.000110	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Copper	mg/L	0.0020 to 0.0040	-	-	0.00317	0.00444	0.00266	0.00290	0.00261	0.00155	0.00279	0.00225	0.00164	0.00199
	Iron	mg/L	0.30	-	-	0.263	0.0310	0.135	0.220	0.225	0.221	0.0300	0.0790	0.0290	0.0520
	Lead	mg/L	0.0010 to 0.0070	-	-	<0.000050	<0.000050	<0.000050	0.0000930	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Lithium	mg/L	-	-	-	<0.0010	0.00300	0.00170	0.00160	0.00170	<0.0010	0.00260	0.00180	0.00140	0.00200
	Magnesium	mg/L	-	-	-	4.44	27.4	13.8	9.40	9.86	6.48	28.6	14.3	11.2	16.4
	Manganese	mg/L	-	-	-	0.00934	0.0580	0.00733	0.0147	0.00858	0.0215	0.0687	0.00378	0.0108	0.0115
	Mercury	mg/L	0.000026	-	-	-	-	-	-	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Molybdenum	mg/L	0.073	-	-	0.000618	0.00518	0.00141	0.00124	0.000459	0.000695	0.00510	0.000679	0.00140	0.00137
	Nickel	mg/L	0.025 to 0.15	-	-	0.00145	0.00154	0.00120	0.00150	0.00201	0.00106	0.00127	0.00144	0.000810	0.000850
	Phosphorus	mg/L	-	-	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium	mg/L	-	-	-	0.302	2.32	1.18	0.742	0.533	0.509	2.43	0.967	0.958	1.66
	Rubidium	mg/L	-	-	-	-	-	-	-	-	0.000230	0.000280	0.000600	0.000760	0.000680
	Selenium	mg/L	0.0010	-	-	0.000261	0.000312	0.000143	0.0000980	0.000161	0.000280	0.000234	0.000106	0.0000820	0.000152
	Silicon	mg/L	-	-	-	7.16	6.56	6.77	7.18	5.92	6.61	6.94	5.49	6.08	6.66
	Silver	mg/L	0.00025	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Sodium	mg/L	-	-	-	3.75	17.4	9.29	7.16	6.64	4.69	17.5	10.1	8.33	10.7
	Strontium	mg/L	-	-	-	0.104	0.784	0.412	0.264	0.191	0.147	0.769	0.257	0.312	0.497
	Sulphur	mg/L	-	-	-	3.17	18.4	7.22	4.59	4.45	5.87	18.3	9.15	6.08	7.54
	Tellurium	mg/L	-	-	-	-	-	-	-	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
	Thallium	mg/L	0.00080	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Thorium	mg/L	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Tin	mg/L	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium	mg/L	-	-	-	0.00296	0.000480	<0.0024	0.00599	0.00231	0.00115	0.000340	0.000820	<0.00030	0.000730
	Tungsten	mg/L	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Uranium	mg/L	0.015	0.033	-	0.000199	0.00245	0.00136	0.00222	0.000682	0.000260	0.00208	0.00106	0.00298	0.00168
	Vanadium	mg/L	-	-	-	0.00104	0.000640	0.00113	0.00172	0.00152	<0.00050	<0.00050	0.000940	0.000600	<0.00050
	Zinc	mg/L	-	-	-	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
	Zirconium	mg/L	-	-	-	0.000730	<0.00020	0.000230	0.000410	0.000580	0.000340	<0.00020	0.000410	<0.00020	<0.00020

Water quality guideline not met.

Water use licence objectives not met.

Notes: "-" = no guideline available / no data available, WUL = Water Use Licence. CCME guideline ranges reflect both 2020 and 2021. For guidelines from 2020, see Minnow 2021a. For guidelines for 2021, see Appendix Table B.7.

[a] Guidelines derived from the Canadian Council of Ministers of the Environment (CCME; 1999) outlined in Appendix Table B.7.

[b] Total chromium guideline is for hexavalent chromium, Cr(VI).

Table B.8: Water Quality Results at Exposed and Reference Areas, Minto Mine AEMP, 2020 to 2021

	Analyte	Units	CCME Water Quality Guidelines[a]		WUL Objectives at W2	2020					2021				
						Upper McGinty Creek	Upper Minto Creek	Lower Wolverine Creek	Lower Big Creek	Lower Minto Creek	Upper McGinty Creek	Upper Minto Creek	Lower Wolverine Creek	Lower Big Creek	Lower Minto Creek
			Long-term	Short-term		Reference	Exposed	Reference	Reference	Exposed	Reference	Exposed	Reference	Reference	Exposed
Dissolved Metals	Aluminum	mg/L	-	-	0.10	0.0693	0.00450	0.00810	0.0326	0.0401	0.0229	0.00330	0.0138	0.0106	0.00400
	Antimony	mg/L	-	-	-	<0.00010	<0.00010	<0.00010	0.000140	<0.00010	<0.00010	<0.00010	<0.00010	0.000160	<0.00010
	Arsenic	mg/L	-	-	0.0050	0.000410	0.000270	0.000510	0.000730	0.000420	0.000420	0.000300	0.000420	0.000690	0.000400
	Barium	mg/L	-	-	-	0.0292	0.0577	0.0565	0.0586	0.0322	0.0364	0.0619	0.0440	0.0740	0.0659
	Beryllium	mg/L	-	-	-	<0.000020	<0.000020	<0.000020	<0.000020	0.0000300	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Bismuth	mg/L	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Boron	mg/L	-	-	-	<0.010	0.0260	<0.010	<0.010	<0.010	<0.010	0.0220	<0.010	<0.010	<0.010
	Cadmium	mg/L	-	-	0.00014 to 0.00044	<0.0000050	<0.0000050	<0.0000050	0.00000610	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Calcium	mg/L	-	-	-	14.3	57.4	37.7	21.3	18.1	19.7	62.7	26.5	27.1	45.8
	Cesium	mg/L	-	-	-	-	-	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Chromium	mg/L	-	-	0.0010	0.000580	0.000230	0.000280	0.000380	0.000620	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Cobalt	mg/L	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Copper	mg/L	-	-	0.013 to 0.020	0.00276	0.00384	0.00215	0.00226	0.00222	0.00156	0.00287	0.00198	0.00168	0.00184
	Iron	mg/L	-	-	1.1	0.194	0.0230	0.0740	0.0640	0.148	0.141	0.0290	0.0600	0.0300	0.0350
	Lead	mg/L	-	-	0.0040	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Lithium	mg/L	-	-	-	<0.0010	0.00270	0.00140	0.00130	0.00150	<0.0010	0.00270	0.00180	0.00140	0.00200
	Magnesium	mg/L	-	-	-	4.46	27.3	13.7	8.93	9.39	6.47	28.6	14.1	10.8	15.0
	Manganese	mg/L	0.35 to 0.64	4.0 to 16	-	0.00874	0.0528	0.00620	0.00949	0.00592	0.0136	0.0737	0.00278	0.0111	0.0107
	Mercury	mg/L	-	-	-	-	-	-	-	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Molybdenum	mg/L	-	-	0.073	0.000544	0.00486	0.00129	0.00111	0.000432	0.000682	0.00547	0.000613	0.00146	0.00147
	Nickel	mg/L	-	-	0.11	0.00130	0.00140	0.00111	0.00118	0.00177	0.00107	0.00140	0.00139	0.000820	0.000830
	Phosphorus	mg/L	-	-	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium	mg/L	-	-	-	0.297	2.32	1.22	0.717	0.527	0.542	2.62	0.964	1.00	1.69
	Rubidium	mg/L	-	-	-	-	-	-	-	-	<0.00020	0.000300	0.000570	0.000790	0.000740
	Selenium	mg/L	-	-	0.0020	0.000202	0.000258	0.000147	0.0000730	0.000117	0.000233	0.000305	0.000123	0.0000690	0.000145
	Silicon	mg/L	-	-	-	6.46	6.32	6.16	6.41	5.45	6.53	6.99	5.26	5.98	6.37
	Silver	mg/L	-	-	0.00010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Sodium	mg/L	-	-	-	3.55	16.7	9.15	6.70	6.29	4.56	18.0	9.78	8.46	10.1
	Strontium	mg/L	-	-	-	0.0934	0.706	0.374	0.238	0.176	0.140	0.780	0.240	0.328	0.494
	Sulphur	mg/L	-	-	-	2.66	17.3	6.42	4.24	4.18	5.27	17.3	7.90	5.64	7.38
	Tellurium	mg/L	-	-	-	-	-	-	-	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
	Thallium	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Thorium	mg/L	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Tin	mg/L	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium	mg/L	-	-	-	0.00128	<0.00030	0.000390	0.000610	0.000820	0.000500	<0.00030	0.000410	0.000500	<0.00030
	Tungsten	mg/L	-	-	-	-	-	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Uranium	mg/L	-	-	-	0.000178	0.00214	0.00119	0.00194	0.000623	0.000272	0.00229	0.00108	0.00306	0.00173
	Vanadium	mg/L	-	-	-	0.000560	<0.00050	0.000640	0.000930	0.000980	<0.00050	<0.00050	0.000910	0.000660	<0.00050
	Zinc	mg/L	0.029 to 0.13	0.097 to 0.30	0.030	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.00100	<0.0010	<0.0010
	Zirconium	mg/L	-	-	-	0.000710	<0.00020	0.000220	0.000400	0.000570	0.000370	<0.00020	0.000370	0.000210	<0.00020

Water quality guideline not met.

Water use licence objectives not met.

Notes: "-" = no guideline available / no data available, WUL = Water Use Licence. CCME guideline ranges reflect both 2020 and 2021. For guidelines from 2020, see Minnow 2021a. For guidelines for 2021, see Appendix Table B.7.

[a] Guidelines derived from the Canadian Council of Ministers of the Environment (CCME; 1999) outlined in Appendix Table B.7.

[b] Total chromium guideline is for hexavalent chromium, Cr(VI).

Table B.9: Periphyton Chlorophyll-a (mg/m^2) Collected at Benthic Stations in Lower Minto Creek (LMC; exposed) and Lower Wolverine Creek (LWC; reference) , Minto Mine AEMP, 2021

Lower Wolverine Creek (Reference)		Lower Minto Creek (Exposed)	
Station	**mg/m^2**	**Station**	**mg/m^2**
LWC-1	15.6	LMC-1	65.5
LWC-2	6.85	LMC-2	34.4
LWC-3	4.94	LMC-3	12.5
LWC-4	67.0	LMC-4	11.0
LWC-5	6.35	LMC-5	106
Mean	20.1	Mean	45.8
Standard Deviation	26.5	Standard Deviation	40.0
Standard Error	11.9	Standard Error	17.9

Chlorophyll-a exceeded the BCWQG of 100 mg/m^2.

Table B.10: Statistical Comparison on Periphyton Chlorophyll-a (mg/m^2), Minto Mine AEMP, 2012 to 2021[a]

Endpoint	ANOVA Model				Year	Do Endpoints Differ Between Years For Each Area?[b]		Do Endpoints Differ Between Areas?
	Transformation	Area	Year	Area x Year		LWC (Reference)	LMC (Exposed)	MOD (%)[c]
Chlorophyll-a	rank	<0.001	<0.001	<0.001	2012	BC	DE	-97
					2013	D	E	ns
					2014	CD	BC	1,473
					2015	D	CD	8,352
					2016	A	A	ns
					2017	ABC	A	311
					2018	ABC	A	478
					2020	AB	BC	-52
					2021	BC	AB	402

P-value < 0.1

Magnitude of Difference (MOD) < 0

Magnitude of Difference (MOD) > 0

Notes: "ns" indicates a non-significant contrast, LWC = lower Wolverine Creek (reference), LMC = lower Minto Creek (exposed).

[a] Sampling was not completed in 2019 due to dry conditions.

[b] Years that do not share a letter were significantly different from each other in a Tukey's Honestly Significant Difference post-hoc test (α = 0.1).

[c] MOD = $(MCT_{LMC}-MCT_{LWC})/MCT_{LWC}*100$; where the measures of central tendency (MCT) were medians because data were rank-transformed.

APPENDIX B

SUPPORTING INFORMATION AND DATA

Laboratory Reports

CERTIFICATE OF ANALYSIS

Work Order	: **WR2101263**	Page	: 1 of 10
Amendment	: **1**		
Client	: **Minnow Environmental Inc.**	Laboratory	: Whitehorse - Environmental
Contact	: Pierre Stecko	Account Manager	: Can Dang
Address	: 204 – 1006 Fort Street Victoria BC Canada V8V 3K4	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: 250 595 1627	Telephone	: +1 867 668 6689
Project	: Minnow Environmental Inc Project for Minto MInes WUL Program	Date Samples Received	: 15-Sep-2021 15:15
PO	: AEMP is 21-92	Date Analysis Commenced	: 17-Sep-2021
C-O-C number	: ----	Issue Date	: 07-Oct-2021 11:57
Sampler	: LBO, SLA		
Site	: ----		
Quote number	: Q79833 - Minnow/Minto		
No. of samples received	: 7		
No. of samples analysed	: 7		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Angela Ren	Team Leader - Metals	Metals, Burnaby, British Columbia
Jay Jang	Lab Assistant	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Shaneel Dayal	Analyst	Metals, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
µS/cm	Microsiemens per centimetre
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

Amendment (07/10/2021): This report has been amended as a result of changes to the billing account and contacts for the distribution of the report. All analysis results are as per the previous report.

Qualifiers

Qualifier	*Description*
DLM	*Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).*
RRV	*Reported result verified by repeat analysis.*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	UMC	LMC	LBC	URC	LWC
					Client sampling date / time	15-Sep-2021 09:40	15-Sep-2021 10:22	15-Sep-2021 11:05	13-Sep-2021 12:25	13-Sep-2021 08:55
						WR2101263-001	WR2101263-002	WR2101263-003	WR2101263-004	WR2101263-005
						Result	Result	Result	Result	Result
Physical Tests										
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		220	157	104	58.2	111
conductivity	----	E100	2.0	µS/cm		533	358	240	157	261
hardness (as CaCO3), dissolved	----	EC100	0.60	mg/L		274	176	112	75.8	124
hardness (as CaCO3), from total Ca/Mg	----	EC100A	0.60	mg/L		270	189	108	73.4	120
pH	----	E108	0.10	pH units		8.42	8.36	8.26	7.94	8.25
solids, total dissolved [TDS]	----	E162	10	mg/L		332	238	161	128	194
solids, total suspended [TSS]	----	E160-H	3.0	mg/L		<3.0	<3.0	<3.0	<3.0	<3.0
turbidity	----	E121	0.10	NTU		0.14	0.29	0.25	0.56	0.28
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.0056	<0.0050	<0.0050	<0.0050	<0.0050
bromide	24959-67-9	E235.Br-L	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
chloride	16887-00-6	E235.Cl	0.50	mg/L		5.03	1.83	<0.50	<0.50	<0.50
fluoride	16984-48-8	E235.F	0.020	mg/L		0.480	0.337	0.121	0.210	0.128
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L		0.137	<0.0050	0.0100	0.0106	<0.0050
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L		0.0064	0.0077	0.0053	0.0133	0.0075
phosphorus, total dissolved	7723-14-0	E375-T	0.0020	mg/L		0.0050	0.0059	0.0021	0.0098	0.0068
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		48.5	20.8	16.4	16.5	24.3
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L		8.16	9.30	7.21	14.3	13.9
carbon, total inorganic [TIC]	----	E354-L	0.50	mg/L		58.4	44.4	26.9	14.8	27.7
carbon, total organic [TOC]	----	E355-L	0.50	mg/L		8.10	8.43	7.04	14.8	13.6
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L		0.0063	0.0193	0.0123	0.0406	0.0257
antimony, total	7440-36-0	E420	0.00010	mg/L		<0.00010	<0.00010	0.00014	<0.00010	<0.00010
arsenic, total	7440-38-2	E420	0.00010	mg/L		0.00027	0.00046	0.00070	0.00045	0.00044
barium, total	7440-39-3	E420	0.00010	mg/L		0.0554	0.0656	0.0674	0.0359	0.0428
beryllium, total	7440-41-7	E420	0.000100	mg/L		<0.000100	<0.000100	<0.000100	<0.000100	<0.000100
bismuth, total	7440-69-9	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	7440-42-8	E420	0.010	mg/L		0.021	<0.010	<0.010	<0.010	<0.010

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	UMC	LMC	LBC	URC	LWC
					Client sampling date / time	15-Sep-2021 09:40	15-Sep-2021 10:22	15-Sep-2021 11:05	13-Sep-2021 12:25	13-Sep-2021 08:55
						WR2101263-001	WR2101263-002	WR2101263-003	WR2101263-004	WR2101263-005
						Result	Result	Result	Result	Result
Total Metals										
cadmium, total	7440-43-9	E420	0.0000050	mg/L		<0.0000100 DLM	0.0000051	<0.0000050	0.0000058	0.0000087
calcium, total	7440-70-2	E420	0.050	mg/L		60.8	48.5	24.6	18.7	24.4
cesium, total	7440-46-2	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
chromium, total	7440-47-3	E420	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
cobalt, total	7440-48-4	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
copper, total	7440-50-8	E420	0.00050	mg/L		0.00279	0.00199	0.00164	0.00155	0.00225
iron, total	7439-89-6	E420	0.010	mg/L		0.030	0.052	0.029	0.221	0.079
lead, total	7439-92-1	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
lithium, total	7439-93-2	E420	0.0010	mg/L		0.0026	0.0020	0.0014	<0.0010	0.0018
magnesium, total	7439-95-4	E420	0.0050	mg/L		28.6	16.4	11.2	6.48	14.3
manganese, total	7439-96-5	E420	0.00010	mg/L		0.0687	0.0115	0.0108	0.0215	0.00378
mercury, total	7439-97-6	E508	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
molybdenum, total	7439-98-7	E420	0.000050	mg/L		0.00510	0.00137	0.00140	0.000695	0.000679
nickel, total	7440-02-0	E420	0.00050	mg/L		0.00127	0.00085	0.00081	0.00106	0.00144
phosphorus, total	7723-14-0	E420	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, total	7440-09-7	E420	0.050	mg/L		2.43	1.66	0.958	0.509	0.967
rubidium, total	7440-17-7	E420	0.00020	mg/L		0.00028	0.00068	0.00076	0.00023	0.00060
selenium, total	7782-49-2	E420	0.000050	mg/L		0.000234	0.000152	0.000082	0.000280	0.000106
silicon, total	7440-21-3	E420	0.10	mg/L		6.94	6.66	6.08	6.61	5.49
silver, total	7440-22-4	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, total	17341-25-2	E420	0.050	mg/L		17.5	10.7	8.33	4.69	10.1
strontium, total	7440-24-6	E420	0.00020	mg/L		0.769	0.497	0.312	0.147	0.257
sulfur, total	7704-34-9	E420	0.50	mg/L		18.3	7.54	6.08	5.87	9.15
tellurium, total	13494-80-9	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
thallium, total	7440-28-0	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
thorium, total	7440-29-1	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
tin, total	7440-31-5	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, total	7440-32-6	E420	0.00030	mg/L		0.00034	0.00073	<0.00030	0.00115	0.00082
tungsten, total	7440-33-7	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
uranium, total	7440-61-1	E420	0.000010	mg/L		0.00208	0.00168	0.00298	0.000260	0.00106
vanadium, total	7440-62-2	E420	0.00050	mg/L		<0.00050	<0.00050	0.00060	<0.00050	0.00094

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	UMC	LMC	LBC	URC	LWC
					Client sampling date / time	15-Sep-2021 09:40	15-Sep-2021 10:22	15-Sep-2021 11:05	13-Sep-2021 12:25	13-Sep-2021 08:55
						WR2101263-001	WR2101263-002	WR2101263-003	WR2101263-004	WR2101263-005
						Result	Result	Result	Result	Result
Total Metals										
zinc, total	7440-66-6	E420	0.0030	mg/L		<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
zirconium, total	7440-67-7	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	0.00034	0.00041
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0033	0.0040	0.0106	0.0229	0.0138
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	<0.00010	0.00016	<0.00010	<0.00010
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00030	0.00040	0.00069	0.00042	0.00042
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.0619	0.0659	0.0740	0.0364	0.0440
beryllium, dissolved	7440-41-7	E421	0.000100	mg/L		<0.000100	<0.000100	<0.000100	<0.000100	<0.000100
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, dissolved	7440-42-8	E421	0.010	mg/L		0.022	<0.010	<0.010	<0.010	<0.010
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
calcium, dissolved	7440-70-2	E421	0.050	mg/L		62.7	45.8	27.1	19.7	26.5
cesium, dissolved	7440-46-2	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.00287	0.00184	0.00168	0.00156	0.00198
iron, dissolved	7439-89-6	E421	0.010	mg/L		0.029	0.035	0.030	0.141	0.060
lead, dissolved	7439-92-1	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		0.0027	0.0020	0.0014	<0.0010	0.0018
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L		28.6	15.0	10.8	6.47	14.1
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.0737	0.0107	0.0111	0.0136	0.00278
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		0.00547	0.00147	0.00146	0.000682	0.000613
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		0.00140	0.00083	0.00082	0.00107	0.00139
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, dissolved	7440-09-7	E421	0.050	mg/L		2.62	1.69	1.00	0.542	0.964
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L		0.00030	0.00074	0.00079	<0.00020	0.00057
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.000305	0.000145	0.000069	0.000233	0.000123
silicon, dissolved	7440-21-3	E421	0.050	mg/L		6.99	6.37	5.98	6.53	5.26
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, dissolved	17341-25-2	E421	0.050	mg/L		18.0	10.1	8.46	4.56	9.78

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID: UMC	LMC	LBC	URC	LWC
					Client sampling date / time: 15-Sep-2021 09:40	15-Sep-2021 10:22	15-Sep-2021 11:05	13-Sep-2021 12:25	13-Sep-2021 08:55
					WR2101263-001	WR2101263-002	WR2101263-003	WR2101263-004	WR2101263-005
					Result	Result	Result	Result	Result
Dissolved Metals									
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.780	0.494	0.328	0.140	0.240
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	17.3	7.38	5.64	5.27	7.90
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0.00050	0.00050	0.00041
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00229	0.00173	0.00306	0.000272	0.00108
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0.00066	<0.00050	0.00091
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	0.0010
zirconium, dissolved	7440-67-7	E421	0.00020	mg/L	<0.00020	<0.00020	0.00021	0.00037	0.00037
dissolved mercury filtration location	----	EP509	-	-	Field	Field	Field	Field	Field
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	Field	Field

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LBCX	FB	----	----	----
					Client sampling date / time	15-Sep-2021 11:05	15-Sep-2021 11:05	----	----	----
						WR2101263-006	WR2101263-007	--------	--------	--------
						Result	Result	----	----	----
Physical Tests										
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		105	<1.0	----	----	----
conductivity	----	E100	2.0	µS/cm		234	<2.0	----	----	----
hardness (as CaCO3), dissolved	----	EC100	0.60	mg/L		113	<0.60	----	----	----
hardness (as CaCO3), from total Ca/Mg	----	EC100A	0.60	mg/L		107	<0.60	----	----	----
pH	----	E108	0.10	pH units		8.25	5.26	----	----	----
solids, total dissolved [TDS]	----	E162	10	mg/L		171	<10	----	----	----
solids, total suspended [TSS]	----	E160-H	3.0	mg/L		<3.0	<3.0	----	----	----
turbidity	----	E121	0.10	NTU		0.22	<0.10	----	----	----
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		<0.0050	<0.0050	----	----	----
bromide	24959-67-9	E235.Br-L	0.050	mg/L		<0.050	<0.050	----	----	----
chloride	16887-00-6	E235.Cl	0.50	mg/L		<0.50	<0.50	----	----	----
fluoride	16984-48-8	E235.F	0.020	mg/L		0.119	<0.020	----	----	----
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L		0.0095	<0.0050	----	----	----
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L		<0.0010	<0.0010	----	----	----
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L		0.0053	<0.0020	----	----	----
phosphorus, total dissolved	7723-14-0	E375-T	0.0020	mg/L		0.0064	<0.0020	----	----	----
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		16.4	<0.30	----	----	----
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L		7.31	<0.50	----	----	----
carbon, total inorganic [TIC]	----	E354-L	0.50	mg/L		26.9	<0.50	----	----	----
carbon, total organic [TOC]	----	E355-L	0.50	mg/L		7.09	<0.50	----	----	----
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L		0.0132	0.0146 RRV	----	----	----
antimony, total	7440-36-0	E420	0.00010	mg/L		0.00014	<0.00010	----	----	----
arsenic, total	7440-38-2	E420	0.00010	mg/L		0.00070	<0.00010	----	----	----
barium, total	7440-39-3	E420	0.00010	mg/L		0.0684	0.00033 RRV	----	----	----
beryllium, total	7440-41-7	E420	0.000100	mg/L		<0.000100	<0.000100	----	----	----
bismuth, total	7440-69-9	E420	0.000050	mg/L		<0.000050	<0.000050	----	----	----
boron, total	7440-42-8	E420	0.010	mg/L		<0.010	<0.010	----	----	----
cadmium, total	7440-43-9	E420	0.0000050	mg/L		0.0000068	<0.0000050	----	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LBCX	FB	----	----	----
					Client sampling date / time	15-Sep-2021 11:05	15-Sep-2021 11:05	----	----	----
						WR2101263-006	WR2101263-007	--------	--------	--------
						Result	Result	----	----	----
Total Metals										
calcium, total	7440-70-2	E420	0.050	mg/L		24.7	<0.050	----	----	----
cesium, total	7440-46-2	E420	0.000010	mg/L		<0.000010	<0.000010	----	----	----
chromium, total	7440-47-3	E420	0.00050	mg/L		<0.00050	<0.00050	----	----	----
cobalt, total	7440-48-4	E420	0.00010	mg/L		<0.00010	<0.00010	----	----	----
copper, total	7440-50-8	E420	0.00050	mg/L		0.00162	<0.00050	----	----	----
iron, total	7439-89-6	E420	0.010	mg/L		0.033	0.031 RRV	----	----	----
lead, total	7439-92-1	E420	0.000050	mg/L		<0.000050	<0.000050	----	----	----
lithium, total	7439-93-2	E420	0.0010	mg/L		0.0014	<0.0010	----	----	----
magnesium, total	7439-95-4	E420	0.0050	mg/L		11.0	0.0198 RRV	----	----	----
manganese, total	7439-96-5	E420	0.00010	mg/L		0.0109	0.00098 RRV	----	----	----
mercury, total	7439-97-6	E508	0.0000050	mg/L		<0.0000050	<0.0000050	----	----	----
molybdenum, total	7439-98-7	E420	0.000050	mg/L		0.00145	<0.000050	----	----	----
nickel, total	7440-02-0	E420	0.00050	mg/L		0.00080	<0.00050	----	----	----
phosphorus, total	7723-14-0	E420	0.050	mg/L		<0.050	<0.050	----	----	----
potassium, total	7440-09-7	E420	0.050	mg/L		0.965	<0.050	----	----	----
rubidium, total	7440-17-7	E420	0.00020	mg/L		0.00074	<0.00020	----	----	----
selenium, total	7782-49-2	E420	0.000050	mg/L		0.000072	<0.000050	----	----	----
silicon, total	7440-21-3	E420	0.10	mg/L		6.09	<0.10	----	----	----
silver, total	7440-22-4	E420	0.000010	mg/L		<0.000010	<0.000010	----	----	----
sodium, total	17341-25-2	E420	0.050	mg/L		8.38	<0.050	----	----	----
strontium, total	7440-24-6	E420	0.00020	mg/L		0.320	0.00025 RRV	----	----	----
sulfur, total	7704-34-9	E420	0.50	mg/L		5.94	<0.50	----	----	----
tellurium, total	13494-80-9	E420	0.00020	mg/L		<0.00020	<0.00020	----	----	----
thallium, total	7440-28-0	E420	0.000010	mg/L		<0.000010	<0.000010	----	----	----
thorium, total	7440-29-1	E420	0.00010	mg/L		<0.00010	<0.00010	----	----	----
tin, total	7440-31-5	E420	0.00010	mg/L		<0.00010	<0.00010	----	----	----
titanium, total	7440-32-6	E420	0.00030	mg/L		0.00040	<0.00030	----	----	----
tungsten, total	7440-33-7	E420	0.00010	mg/L		<0.00010	<0.00010	----	----	----
uranium, total	7440-61-1	E420	0.000010	mg/L		0.00288	<0.000010	----	----	----
vanadium, total	7440-62-2	E420	0.00050	mg/L		0.00065	<0.00050	----	----	----
zinc, total	7440-66-6	E420	0.0030	mg/L		<0.0030	<0.0030	----	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID: LBCX	FB	----	----	----
					Client sampling date / time: 15-Sep-2021 11:05	15-Sep-2021 11:05	----	----	----
					WR2101263-006	WR2101263-007	--------	--------	--------
					Result	Result	----	----	----
Total Metals									
zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	----	----	----
Dissolved Metals									
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0090	<0.0010	----	----	----
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00014	<0.00010	----	----	----
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00078	<0.00010	----	----	----
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0789	<0.00010	----	----	----
beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.000100	<0.000100	----	----	----
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	----	----	----
boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	----	----	----
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000067	<0.0000050	----	----	----
calcium, dissolved	7440-70-2	E421	0.050	mg/L	26.1	<0.050	----	----	----
cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	----	----	----
chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	----	----	----
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	----	----	----
copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00182	<0.00020	----	----	----
iron, dissolved	7439-89-6	E421	0.010	mg/L	0.026	<0.010	----	----	----
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	----	----	----
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0014	<0.0010	----	----	----
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	11.6	<0.0050	----	----	----
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0113	<0.00010	----	----	----
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00136	<0.000050	----	----	----
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00085	<0.00050	----	----	----
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	----	----	----
potassium, dissolved	7440-09-7	E421	0.050	mg/L	1.06	<0.050	----	----	----
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00080	<0.00020	----	----	----
selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000111	<0.000050	----	----	----
silicon, dissolved	7440-21-3	E421	0.050	mg/L	6.10	<0.050	----	----	----
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	----	----	----
sodium, dissolved	17341-25-2	E421	0.050	mg/L	8.82	<0.050	----	----	----
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.295	<0.00020	----	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID: LBCX	FB	----	----	----
					Client sampling date / time: 15-Sep-2021 11:05	15-Sep-2021 11:05	----	----	----
					WR2101263-006	WR2101263-007	--------	--------	--------
					Result	Result	----	----	----
Dissolved Metals									
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	5.81	<0.50	----	----	----
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	----	----	----
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	----	----	----
thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	----	----	----
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	----	----	----
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	----	----	----
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	----	----	----
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00297	<0.000010	----	----	----
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00064	<0.00050	----	----	----
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	----	----	----
zirconium, dissolved	7440-67-7	E421	0.00020	mg/L	<0.00020	<0.00020	----	----	----
dissolved mercury filtration location	----	EP509	-	-	Field	Field	----	----	----
dissolved metals filtration location	----	EP421	-	-	Field	Field	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2101263**	Page	: 1 of 27
Amendment	: 1		
Client	: **Minnow Environmental Inc.**	Laboratory	: Whitehorse - Environmental
Contact	: Pierre Stecko	Account Manager	: Can Dang
Address	: 204 – 1006 Fort Street Victoria BC Canada V8V 3K4	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minnow Environmental Inc Project for Minto MInes WUL Program	Date Samples Received	: 15-Sep-2021 15:15
PO	: AEMP is 21-92	Issue Date	: 07-Oct-2021 11:57
C-O-C number	: ----		
Sampler	: LBO, SLA		
Site	: ----		
Quote number	: Q79833 - Minnow/Minto		
No. of samples received	: 7		
No. of samples analysed	: 7		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- Method Blank value outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Method Blank (MB) Values								
Physical Tests	QC-MRG2-2947450 01	----	alkalinity, total (as CaCO3)	----	E290	1.5 mg/L [B]	1.5 mg/L	Blank result exceeds permitted value

Result Qualifiers

Qualifier	Description
B	*Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.*

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
FB	E298	15-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
LBC	E298	15-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
LBCX	E298	15-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
LMC	E298	15-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
UMC	E298	15-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
LWC	E298	13-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	28 days	4 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
URC	E298	13-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	28 days	4 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE FB	E235.Br-L	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE LBC	E235.Br-L	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE LBCX	E235.Br-L	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE LMC	E235.Br-L	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE UMC	E235.Br-L	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE LWC	E235.Br-L	13-Sep-2021	----	----	----		17-Sep-2021	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE URC	E235.Br-L	13-Sep-2021	----	----	----		17-Sep-2021	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE FB	E235.Cl	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE LBC	E235.Cl	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE LBCX	E235.Cl	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE LMC	E235.Cl	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE UMC	E235.Cl	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE LWC	E235.Cl	13-Sep-2021	----	----	----		17-Sep-2021	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE URC	E235.Cl	13-Sep-2021	----	----	----		17-Sep-2021	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE FB	E235.F	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE LBC	E235.F	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE LBCX	E235.F	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE LMC	E235.F	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE UMC	E235.F	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE LWC	E235.F	13-Sep-2021	----	----	----		17-Sep-2021	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE URC	E235.F	13-Sep-2021	----	----	----		17-Sep-2021	28 days	4 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE FB	E235.NO3-L	15-Sep-2021	----	----	----		17-Sep-2021	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE LBC	E235.NO3-L	15-Sep-2021	----	----	----		17-Sep-2021	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE LBCX	E235.NO3-L	15-Sep-2021	----	----	----		17-Sep-2021	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE LMC	E235.NO3-L	15-Sep-2021	----	----	----		17-Sep-2021	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE UMC	E235.NO3-L	15-Sep-2021	----	----	----		17-Sep-2021	3 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE LWC	E235.NO3-L	13-Sep-2021	----	----	----		17-Sep-2021	3 days	4 days	× EHT

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE URC	E235.NO3-L	13-Sep-2021	----	----	----		17-Sep-2021	3 days	4 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE FB	E235.NO2-L	15-Sep-2021	----	----	----		17-Sep-2021	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE LBC	E235.NO2-L	15-Sep-2021	----	----	----		17-Sep-2021	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE LBCX	E235.NO2-L	15-Sep-2021	----	----	----		17-Sep-2021	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE LMC	E235.NO2-L	15-Sep-2021	----	----	----		17-Sep-2021	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE UMC	E235.NO2-L	15-Sep-2021	----	----	----		17-Sep-2021	3 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE LWC	E235.NO2-L	13-Sep-2021	----	----	----		17-Sep-2021	3 days	4 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE URC	E235.NO2-L	13-Sep-2021	----	----	----		17-Sep-2021	3 days	4 days	× EHT
Anions and Nutrients : Sulfate in Water by IC										
HDPE FB	E235.SO4	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE LBC	E235.SO4	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE LBCX	E235.SO4	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE LMC	E235.SO4	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE UMC	E235.SO4	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE LWC	E235.SO4	13-Sep-2021	----	----	----		17-Sep-2021	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE URC	E235.SO4	13-Sep-2021	----	----	----		17-Sep-2021	28 days	4 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (Trace Level)										
Amber glass dissolved (sulfuric acid) FB	E375-T	15-Sep-2021	19-Sep-2021	----	----		20-Sep-2021	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (Trace Level)										
Amber glass dissolved (sulfuric acid) LBC	E375-T	15-Sep-2021	19-Sep-2021	----	----		20-Sep-2021	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (Trace Level)										
Amber glass dissolved (sulfuric acid) LBCX	E375-T	15-Sep-2021	19-Sep-2021	----	----		20-Sep-2021	28 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (Trace Level)										
Amber glass dissolved (sulfuric acid)										
LMC	E375-T	15-Sep-2021	19-Sep-2021	----	----		20-Sep-2021	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (Trace Level)										
Amber glass dissolved (sulfuric acid)										
UMC	E375-T	15-Sep-2021	19-Sep-2021	----	----		20-Sep-2021	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (Trace Level)										
Amber glass dissolved (sulfuric acid)										
LWC	E375-T	13-Sep-2021	19-Sep-2021	----	----		20-Sep-2021	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (Trace Level)										
Amber glass dissolved (sulfuric acid)										
URC	E375-T	13-Sep-2021	19-Sep-2021	----	----		20-Sep-2021	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (Ultra Trace)										
Amber glass total (sulfuric acid)										
FB	E372-U	15-Sep-2021	17-Sep-2021	----	----		18-Sep-2021	28 days	3 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (Ultra Trace)										
Amber glass total (sulfuric acid)										
LBC	E372-U	15-Sep-2021	17-Sep-2021	----	----		18-Sep-2021	28 days	3 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (Ultra Trace)										
Amber glass total (sulfuric acid)										
LBCX	E372-U	15-Sep-2021	17-Sep-2021	----	----		18-Sep-2021	28 days	3 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (Ultra Trace)										
Amber glass total (sulfuric acid)										
LMC	E372-U	15-Sep-2021	17-Sep-2021	----	----		18-Sep-2021	28 days	3 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (Ultra Trace)										
Amber glass total (sulfuric acid)										
UMC	E372-U	15-Sep-2021	17-Sep-2021	----	----		18-Sep-2021	28 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Phosphorus by Colourimetry (Ultra Trace)										
Amber glass total (sulfuric acid)										
LWC	E372-U	13-Sep-2021	17-Sep-2021	----	----		18-Sep-2021	28 days	5 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (Ultra Trace)										
Amber glass total (sulfuric acid)										
URC	E372-U	13-Sep-2021	17-Sep-2021	----	----		18-Sep-2021	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
FB	E509	15-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	28 days	2 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
LBC	E509	15-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	28 days	2 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
LBCX	E509	15-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	28 days	2 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
LMC	E509	15-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	28 days	2 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
UMC	E509	15-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	28 days	2 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
LWC	E509	13-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	28 days	4 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
URC	E509	13-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	28 days	4 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
FB	E421	15-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
LBC	E421	15-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
LBCX	E421	15-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
LMC	E421	15-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
UMC	E421	15-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
LWC	E421	13-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	180 days	4 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
URC	E421	13-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	180 days	4 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
FB	E358-L	15-Sep-2021	19-Sep-2021	----	----		19-Sep-2021	28 days	4 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
LBC	E358-L	15-Sep-2021	19-Sep-2021	----	----		19-Sep-2021	28 days	4 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
LBCX	E358-L	15-Sep-2021	19-Sep-2021	----	----		19-Sep-2021	28 days	4 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
LMC	E358-L	15-Sep-2021	19-Sep-2021	----	----		19-Sep-2021	28 days	4 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
UMC	E358-L	15-Sep-2021	19-Sep-2021	----	----		19-Sep-2021	28 days	4 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
LWC	E358-L	13-Sep-2021	19-Sep-2021	----	----		19-Sep-2021	28 days	6 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
URC	E358-L	13-Sep-2021	19-Sep-2021	----	----		19-Sep-2021	28 days	6 days	✓
Organic / Inorganic Carbon : Total Inorganic Carbon by Combustion (Low Level)										
HDPE										
FB	E354-L	15-Sep-2021	----	----	----		17-Sep-2021	14 days	2 days	✓
Organic / Inorganic Carbon : Total Inorganic Carbon by Combustion (Low Level)										
HDPE										
LBC	E354-L	15-Sep-2021	----	----	----		17-Sep-2021	14 days	2 days	✓
Organic / Inorganic Carbon : Total Inorganic Carbon by Combustion (Low Level)										
HDPE										
LBCX	E354-L	15-Sep-2021	----	----	----		17-Sep-2021	14 days	2 days	✓
Organic / Inorganic Carbon : Total Inorganic Carbon by Combustion (Low Level)										
HDPE										
LMC	E354-L	15-Sep-2021	----	----	----		17-Sep-2021	14 days	2 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Total Inorganic Carbon by Combustion (Low Level)										
HDPE UMC	E354-L	15-Sep-2021	----	----	----		17-Sep-2021	14 days	2 days	✓
Organic / Inorganic Carbon : Total Inorganic Carbon by Combustion (Low Level)										
HDPE LWC	E354-L	13-Sep-2021	----	----	----		17-Sep-2021	14 days	4 days	✓
Organic / Inorganic Carbon : Total Inorganic Carbon by Combustion (Low Level)										
HDPE URC	E354-L	13-Sep-2021	----	----	----		17-Sep-2021	14 days	4 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) FB	E355-L	15-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	28 days	2 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) LBC	E355-L	15-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	28 days	2 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) LBCX	E355-L	15-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	28 days	2 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) LMC	E355-L	15-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	28 days	2 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) UMC	E355-L	15-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	28 days	2 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) LWC	E355-L	13-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	28 days	4 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid)										
URC	E355-L	13-Sep-2021	17-Sep-2021	----	----		17-Sep-2021	28 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
FB	E290	15-Sep-2021	----	----	----		17-Sep-2021	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
LBC	E290	15-Sep-2021	----	----	----		17-Sep-2021	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
LBCX	E290	15-Sep-2021	----	----	----		17-Sep-2021	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
LMC	E290	15-Sep-2021	----	----	----		17-Sep-2021	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
UMC	E290	15-Sep-2021	----	----	----		17-Sep-2021	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
LWC	E290	13-Sep-2021	----	----	----		17-Sep-2021	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
URC	E290	13-Sep-2021	----	----	----		17-Sep-2021	14 days	4 days	✓
Physical Tests : Conductivity in Water										
HDPE										
FB	E100	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE LBC	E100	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓
Physical Tests : Conductivity in Water										
HDPE LBCX	E100	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓
Physical Tests : Conductivity in Water										
HDPE LMC	E100	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓
Physical Tests : Conductivity in Water										
HDPE UMC	E100	15-Sep-2021	----	----	----		17-Sep-2021	28 days	2 days	✓
Physical Tests : Conductivity in Water										
HDPE LWC	E100	13-Sep-2021	----	----	----		17-Sep-2021	28 days	4 days	✓
Physical Tests : Conductivity in Water										
HDPE URC	E100	13-Sep-2021	----	----	----		17-Sep-2021	28 days	4 days	✓
Physical Tests : pH by Meter										
HDPE FB	E108	15-Sep-2021	----	----	----		17-Sep-2021	0.25 hrs	47 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE LBC	E108	15-Sep-2021	----	----	----		17-Sep-2021	0.25 hrs	47 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE LBCX	E108	15-Sep-2021	----	----	----		17-Sep-2021	0.25 hrs	47 hrs	× EHTR-FM

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE LMC	E108	15-Sep-2021	----	----	----		17-Sep-2021	0.25 hrs	48 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE UMC	E108	15-Sep-2021	----	----	----		17-Sep-2021	0.25 hrs	48 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE URC	E108	13-Sep-2021	----	----	----		17-Sep-2021	0.25 hrs	94 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE LWC	E108	13-Sep-2021	----	----	----		17-Sep-2021	0.25 hrs	97 hrs	× EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE FB	E162	15-Sep-2021	----	----	----		17-Sep-2021	7 days	3 days	✓
Physical Tests : TDS by Gravimetry										
HDPE LBC	E162	15-Sep-2021	----	----	----		17-Sep-2021	7 days	3 days	✓
Physical Tests : TDS by Gravimetry										
HDPE LBCX	E162	15-Sep-2021	----	----	----		17-Sep-2021	7 days	3 days	✓
Physical Tests : TDS by Gravimetry										
HDPE LMC	E162	15-Sep-2021	----	----	----		17-Sep-2021	7 days	3 days	✓
Physical Tests : TDS by Gravimetry										
HDPE UMC	E162	15-Sep-2021	----	----	----		17-Sep-2021	7 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE URC	E162	13-Sep-2021	----	----	----		17-Sep-2021	7 days	4 days	✓
Physical Tests : TDS by Gravimetry										
HDPE LWC	E162	13-Sep-2021	----	----	----		17-Sep-2021	7 days	5 days	✓
Physical Tests : TSS by Gravimetry										
HDPE FB	E160-H	15-Sep-2021	----	----	----		17-Sep-2021	7 days	3 days	✓
Physical Tests : TSS by Gravimetry										
HDPE LBC	E160-H	15-Sep-2021	----	----	----		17-Sep-2021	7 days	3 days	✓
Physical Tests : TSS by Gravimetry										
HDPE LBCX	E160-H	15-Sep-2021	----	----	----		17-Sep-2021	7 days	3 days	✓
Physical Tests : TSS by Gravimetry										
HDPE LMC	E160-H	15-Sep-2021	----	----	----		17-Sep-2021	7 days	3 days	✓
Physical Tests : TSS by Gravimetry										
HDPE UMC	E160-H	15-Sep-2021	----	----	----		17-Sep-2021	7 days	3 days	✓
Physical Tests : TSS by Gravimetry										
HDPE URC	E160-H	13-Sep-2021	----	----	----		17-Sep-2021	7 days	4 days	✓
Physical Tests : TSS by Gravimetry										
HDPE LWC	E160-H	13-Sep-2021	----	----	----		17-Sep-2021	7 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Turbidity by Nephelometry										
HDPE FB	E121	15-Sep-2021	----	----	----		18-Sep-2021	3 days	3 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE LBC	E121	15-Sep-2021	----	----	----		18-Sep-2021	3 days	3 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE LBCX	E121	15-Sep-2021	----	----	----		18-Sep-2021	3 days	3 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE LMC	E121	15-Sep-2021	----	----	----		18-Sep-2021	3 days	3 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE UMC	E121	15-Sep-2021	----	----	----		18-Sep-2021	3 days	3 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE LWC	E121	13-Sep-2021	----	----	----		17-Sep-2021	3 days	4 days	× EHT
Physical Tests : Turbidity by Nephelometry										
HDPE URC	E121	13-Sep-2021	----	----	----		17-Sep-2021	3 days	4 days	× EHT
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) FB	E508	15-Sep-2021	----	----	----		18-Sep-2021	28 days	3 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) LBC	E508	15-Sep-2021	----	----	----		18-Sep-2021	28 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) LBCX	E508	15-Sep-2021	----	----	----		18-Sep-2021	28 days	3 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) LMC	E508	15-Sep-2021	----	----	----		18-Sep-2021	28 days	3 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) UMC	E508	15-Sep-2021	----	----	----		18-Sep-2021	28 days	3 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) LWC	E508	13-Sep-2021	----	----	----		18-Sep-2021	28 days	5 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) URC	E508	13-Sep-2021	----	----	----		18-Sep-2021	28 days	5 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) FB	E420	15-Sep-2021	----	----	----		17-Sep-2021	180 days	2 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) LBC	E420	15-Sep-2021	----	----	----		17-Sep-2021	180 days	2 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) LBCX	E420	15-Sep-2021	----	----	----		17-Sep-2021	180 days	2 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) LMC	E420	15-Sep-2021	----	----	----		17-Sep-2021	180 days	3 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
UMC	E420	15-Sep-2021	----	----	----		17-Sep-2021	180 days	3 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
URC	E420	13-Sep-2021	----	----	----		17-Sep-2021	180 days	4 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
LWC	E420	13-Sep-2021	----	----	----		17-Sep-2021	180 days	5 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	294746	1	7	14.2	5.0	✓
Ammonia by Fluorescence	E298	294967	1	10	10.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	294752	1	7	14.2	5.0	✓
Chloride in Water by IC	E235.Cl	294748	1	10	10.0	5.0	✓
Conductivity in Water	E100	294745	1	8	12.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	294779	2	31	6.4	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	295420	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	296814	1	8	12.5	5.0	✓
Fluoride in Water by IC	E235.F	294749	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	294753	1	7	14.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	294750	1	8	12.5	5.0	✓
pH by Meter	E108	294744	1	11	9.0	5.0	✓
Sulfate in Water by IC	E235.SO4	294751	1	8	12.5	5.0	✓
TDS by Gravimetry	E162	295703	1	20	5.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (Trace Level)	E375-T	296815	1	18	5.5	5.0	✓
Total Inorganic Carbon by Combustion (Low Level)	E354-L	295633	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	295750	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	295523	1	16	6.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	294968	1	7	14.2	5.0	✓
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U	294966	1	9	11.1	5.0	✓
TSS by Gravimetry	E160-H	295706	1	17	5.8	5.0	✓
Turbidity by Nephelometry	E121	295542	2	39	5.1	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	294746	1	7	14.2	5.0	✓
Ammonia by Fluorescence	E298	294967	1	10	10.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	294752	1	7	14.2	5.0	✓
Chloride in Water by IC	E235.Cl	294748	1	10	10.0	5.0	✓
Conductivity in Water	E100	294745	1	8	12.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	294779	2	31	6.4	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	295420	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	296814	1	8	12.5	5.0	✓
Fluoride in Water by IC	E235.F	294749	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	294753	1	7	14.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	294750	1	8	12.5	5.0	✓
pH by Meter	E108	294744	1	11	9.0	5.0	✓
Sulfate in Water by IC	E235.SO4	294751	1	8	12.5	5.0	✓
TDS by Gravimetry	E162	295703	1	20	5.0	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Total Dissolved Phosphorus by Colourimetry (Trace Level)	E375-T	296815	1	18	5.5	5.0	✓
Total Inorganic Carbon by Combustion (Low Level)	E354-L	295633	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	295750	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	295523	1	16	6.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	294968	1	7	14.2	5.0	✓
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U	294966	1	9	11.1	5.0	✓
TSS by Gravimetry	E160-H	295706	1	17	5.8	5.0	✓
Turbidity by Nephelometry	E121	295542	2	39	5.1	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	294746	1	7	14.2	5.0	✓
Ammonia by Fluorescence	E298	294967	1	10	10.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	294752	1	7	14.2	5.0	✓
Chloride in Water by IC	E235.Cl	294748	1	10	10.0	5.0	✓
Conductivity in Water	E100	294745	1	8	12.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	294779	2	31	6.4	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	295420	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	296814	1	8	12.5	5.0	✓
Fluoride in Water by IC	E235.F	294749	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	294753	1	7	14.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	294750	1	8	12.5	5.0	✓
Sulfate in Water by IC	E235.SO4	294751	1	8	12.5	5.0	✓
TDS by Gravimetry	E162	295703	1	20	5.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (Trace Level)	E375-T	296815	1	18	5.5	5.0	✓
Total Inorganic Carbon by Combustion (Low Level)	E354-L	295633	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	295750	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	295523	1	16	6.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	294968	1	7	14.2	5.0	✓
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U	294966	1	9	11.1	5.0	✓
TSS by Gravimetry	E160-H	295706	1	17	5.8	5.0	✓
Turbidity by Nephelometry	E121	295542	2	39	5.1	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	294967	1	10	10.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	294752	1	7	14.2	5.0	✓
Chloride in Water by IC	E235.Cl	294748	1	10	10.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	294779	2	31	6.4	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	295420	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	296814	1	8	12.5	5.0	✓
Fluoride in Water by IC	E235.F	294749	1	8	12.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	294753	1	7	14.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	294750	1	8	12.5	5.0	✓

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Sulfate in Water by IC	E235.SO4	294751	1	8	12.5	5.0	✓
Total Dissolved Phosphorus by Colourimetry (Trace Level)	E375-T	296815	1	18	5.5	5.0	✓
Total Inorganic Carbon by Combustion (Low Level)	E354-L	295633	1	20	5.0	5.0	✓
Total Mercury in Water by CVAAS	E508	295750	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	295523	1	16	6.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	294968	1	7	14.2	5.0	✓
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U	294966	1	9	11.1	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Vancouver - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Vancouver - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Vancouver - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160-H Vancouver - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Vancouver - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfate in Water by IC	E235.SO4 Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 Vancouver - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Vancouver - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).
Total Inorganic Carbon by Combustion (Low Level)	E354-L Vancouver - Environmental	Water	APHA 5310 B (mod)	Total Inorganic Carbon is determined by the high temperature combustion method with measurement by an infrared detector, where the sample is acidified in a reaction chamber to convert all inorganic carbons (carbonates) to carbon dioxide for analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Vancouver - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO_2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Vancouver - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO_2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U Vancouver - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (Trace Level)	E375-T Vancouver - Environmental	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourimetrically using a discrete analyzer after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Total Metals in Water by CRC ICPMS	E420 Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Hardness (Calculated) from Total Ca/Mg	EC100A Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO3), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations. Hardness from total Ca/Mg is normally comparable to Dissolved Hardness in non-turbid waters.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Vancouver - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Preparation for Total Organic Carbon by Combustion	EP355 Vancouver - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 Vancouver - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 Vancouver - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375 Vancouver - Environmental	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **WR2101263**	Page	: 1 of 18
Amendment	: **1**		

Client	: Minnow Environmental Inc.	Laboratory	: Whitehorse - Environmental
Contact	: Pierre Stecko	Account Manager	: Can Dang
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minnow Environmental Inc Project for Minto MInes WUL Program	Date Samples Received	: 15-Sep-2021 15:15
PO	: AEMP is 21-92	Date Analysis Commenced	: 17-Sep-2021
C-O-C number	: ----	Issue Date	: 07-Oct-2021 11:57
Sampler	: LBO, SLA		
Site	: ----		
Quote number	: Q79833 - Minnow/Minto		
No. of samples received	: 7		
No. of samples analysed	: 7		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Angela Ren	Team Leader - Metals	Metals, Burnaby, British Columbia
Jay Jang	Lab Assistant	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Shaneel Dayal	Analyst	Metals, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 294744)											
WR2101263-003	LBC	pH	----	E108	0.10	pH units	8.26	8.26	0.00%	4%	----
Physical Tests (QC Lot: 294745)											
WR2101263-003	LBC	conductivity	----	E100	2.0	µS/cm	240	236	1.68%	10%	----
Physical Tests (QC Lot: 294746)											
WR2101263-003	LBC	alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	104	105	0.287%	20%	----
Physical Tests (QC Lot: 295542)											
KS2102949-001	Anonymous	turbidity	----	E121	0.10	NTU	1.08	1.11	0.03	Diff <2x LOR	----
Physical Tests (QC Lot: 295703)											
VA21B9984-003	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	1490	1410	5.90%	20%	----
Physical Tests (QC Lot: 295706)											
WR2101261-003	Anonymous	solids, total suspended [TSS]	----	E160-H	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 296125)											
VA21C0197-003	Anonymous	turbidity	----	E121	0.10	NTU	0.19	0.17	0.02	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 294748)											
WR2101263-001	UMC	chloride	16887-00-6	E235.Cl	0.50	mg/L	5.03	5.03	0.0103%	20%	----
Anions and Nutrients (QC Lot: 294749)											
WR2101263-001	UMC	fluoride	16984-48-8	E235.F	0.020	mg/L	0.480	0.478	0.462%	20%	----
Anions and Nutrients (QC Lot: 294750)											
WR2101263-001	UMC	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 294751)											
WR2101263-001	UMC	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	48.5	48.5	0.152%	20%	----
Anions and Nutrients (QC Lot: 294752)											
WR2101263-001	UMC	bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 294753)											
WR2101263-001	UMC	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.137	0.139	1.51%	20%	----
Anions and Nutrients (QC Lot: 294966)											
FJ2100938-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0160	0.0164	0.0004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 294967)											
FJ2100938-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.236	0.236	0.262%	20%	----
Anions and Nutrients (QC Lot: 296815)											
VA21B9727-001	Anonymous	phosphorus, total dissolved	7723-14-0	E375-T	0.0200	mg/L	0.136	0.130	0.0061	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Organic / Inorganic Carbon (QC Lot: 294968)											
WR2101263-001	UMC	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	8.10	8.17	0.879%	20%	----
Organic / Inorganic Carbon (QC Lot: 295633)											
KS2102975-001	Anonymous	carbon, total inorganic [TIC]	----	E354-L	0.50	mg/L	17.0	17.2	1.25%	20%	----
Organic / Inorganic Carbon (QC Lot: 296814)											
VA21B9837-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	5.20	5.55	6.43%	20%	----
Total Metals (QC Lot: 295523)											
VA21C0204-001	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00019	0.00017	0.00001	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0659	0.0676	2.57%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.049	0.049	0.0003	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000244	0.0000306	0.0000062	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	113	112	0.612%	20%	----
		cesium, total	7440-46-2	E420	0.000010	mg/L	0.000056	0.000056	0.0000002	Diff <2x LOR	----
		chromium, total	7440-47-3	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	0.00054	0.00058	0.00004	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	0.00107	0.00112	0.00005	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000050	mg/L	0.000130	0.000134	0.000004	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0014	0.0014	0.000005	Diff <2x LOR	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	5.90	6.18	4.62%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.134	0.135	0.914%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000110	0.000107	0.000003	Diff <2x LOR	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.00886	0.00895	0.982%	20%	----
		phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.050	mg/L	12.0	12.3	1.84%	20%	----
		rubidium, total	7440-17-7	E420	0.00020	mg/L	0.0200	0.0200	0.0315%	20%	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	0.000095	0.000098	0.000003	Diff <2x LOR	----
		silicon, total	7440-21-3	E420	0.10	mg/L	5.85	6.10	4.03%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	17341-25-2	E420	0.050	mg/L	6.41	6.33	1.21%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.276	0.276	0.0361%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	61.5	62.6	1.81%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 295523) - continued											
VA21C0204-001	Anonymous	tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	0.0246	0.0242	0.0004	Diff <2x LOR	----
		zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Total Metals (QC Lot: 295750)											
WR2101261-002	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 294779)											
CG2103999-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 294780)											
WR2101263-006	LBCX	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 295420)											
FJ2100938-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0028	0.0026	0.0002	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00196	0.00197	0.375%	20%	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00045	0.00043	0.00002	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0667	0.0667	0.0865%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.168	0.172	2.74%	20%	----
		cadmium, dissolved	7440-43-9	E421	0.0000150	mg/L	<0.0000150	<0.0000150	0	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	154	152	1.11%	20%	----
		cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.000054	0.000054	0.0000006	Diff <2x LOR	----
		chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00036	0.00038	0.00002	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00127	0.00131	0.00004	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.285	0.275	3.47%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	72.4	71.1	1.81%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00259	0.00240	7.88%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 295420) - continued											
FJ2100938-001	Anonymous	molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00678	0.00662	2.34%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.0205	0.0203	1.06%	20%	----
		phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	4.06	4.07	0.212%	20%	----
		rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00374	0.00367	1.86%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.0530	0.0522	1.62%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.63	2.53	4.00%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	17341-25-2	E421	0.050	mg/L	199	201	0.668%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.274	0.274	0.313%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	205	199	2.66%	20%	----
		tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000026	0.000026	0.0000001	Diff <2x LOR	----
		thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.0141	0.0136	3.58%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00067	0.00067	0.000001	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 294745)						
conductivity	----	E100	1	µS/cm	1.1	----
Physical Tests (QCLot: 294746)						
alkalinity, total (as CaCO3)	----	E290	1	mg/L	# 1.5	B
Physical Tests (QCLot: 295542)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 295703)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 295706)						
solids, total suspended [TSS]	----	E160-H	3	mg/L	<3.0	----
Physical Tests (QCLot: 296125)						
turbidity	----	E121	0.1	NTU	<0.10	----
Anions and Nutrients (QCLot: 294748)						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 294749)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 294750)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 294751)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 294752)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 294753)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 294966)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 294967)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 296815)						
phosphorus, total dissolved	7723-14-0	E375-T	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 294968)						
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 296814)						
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 295523)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
sodium, total	17341-25-2	E420	0.05	mg/L	<0.050	----
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 295523) - continued						
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 295750)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 294779)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 294780)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 295420)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 295420) - continued						
sodium, dissolved	17341-25-2	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----

Qualifiers

Qualifier	Description
B	*Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.*

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 294744)									
pH	----	E108	----	pH units	7 pH units	99.6	98.0	102	----
Physical Tests (QCLot: 294745)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	106	90.0	110	----
Physical Tests (QCLot: 294746)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	96.9	85.0	115	----
Physical Tests (QCLot: 295542)									
turbidity	----	E121	0.1	NTU	200 NTU	102	85.0	115	----
Physical Tests (QCLot: 295703)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	105	85.0	115	----
Physical Tests (QCLot: 295706)									
solids, total suspended [TSS]	----	E160-H	3	mg/L	150 mg/L	96.0	85.0	115	----
Physical Tests (QCLot: 296125)									
turbidity	----	E121	0.1	NTU	200 NTU	105	85.0	115	----
Anions and Nutrients (QCLot: 294748)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 294749)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	96.4	90.0	110	----
Anions and Nutrients (QCLot: 294750)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	95.6	90.0	110	----
Anions and Nutrients (QCLot: 294751)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 294752)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	99.3	85.0	115	----
Anions and Nutrients (QCLot: 294753)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 294966)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	99.4	80.0	120	----
Anions and Nutrients (QCLot: 294967)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	105	85.0	115	----
Anions and Nutrients (QCLot: 296815)									
phosphorus, total dissolved	7723-14-0	E375-T	0.002	mg/L	0.05 mg/L	95.1	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Organic / Inorganic Carbon (QCLot: 294968)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	106	80.0	120	----
Organic / Inorganic Carbon (QCLot: 296814)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	102	80.0	120	----
Total Metals (QCLot: 295523)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	110	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	109	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	107	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	108	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	99.2	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	118	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	97.4	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	107	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	98.7	80.0	120	----
cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	106	80.0	120	----
chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	108	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	108	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	105	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	96.4	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	102	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	96.3	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	107	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	105	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	108	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	107	80.0	120	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	120	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	110	80.0	120	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	110	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	110	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	109	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	106	80.0	120	----
sodium, total	17341-25-2	E420	0.05	mg/L	50 mg/L	113	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	106	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	107	80.0	120	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	111	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	104	80.0	120	----
thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	93.9	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 295523) - continued									
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	106	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	100	80.0	120	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	105	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	103	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	109	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	105	80.0	120	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	103	80.0	120	----
Total Metals (QCLot: 295750)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	95.6	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	95.0	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	97.8	80.0	120	----
Dissolved Metals (QCLot: 295420)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	109	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	114	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	105	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	109	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	106	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	118	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	97.7	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	106	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	104	80.0	120	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	110	80.0	120	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	106	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	106	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	104	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	101	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	106	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	103	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	104	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	109	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	112	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	105	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	109	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	111	80.0	120	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	110	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	107	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 295420) - continued									
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	105	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	105	80.0	120	----
sodium, dissolved	17341-25-2	E421	0.05	mg/L	50 mg/L	108	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	110	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	98.7	80.0	120	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	107	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	107	80.0	120	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	97.9	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	107	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	99.4	80.0	120	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	108	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	106	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	107	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	108	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	105	80.0	120	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 294748)										
WR2101263-002	LMC	chloride	16887-00-6	E235.Cl	100 mg/L	100 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 294749)										
WR2101263-002	LMC	fluoride	16984-48-8	E235.F	0.984 mg/L	1 mg/L	98.4	75.0	125	----
Anions and Nutrients (QCLot: 294750)										
WR2101263-002	LMC	nitrite (as N)	14797-65-0	E235.NO2-L	0.472 mg/L	0.5 mg/L	94.4	75.0	125	----
Anions and Nutrients (QCLot: 294751)										
WR2101263-002	LMC	sulfate (as SO4)	14808-79-8	E235.SO4	99.8 mg/L	100 mg/L	99.8	75.0	125	----
Anions and Nutrients (QCLot: 294752)										
WR2101263-002	LMC	bromide	24959-67-9	E235.Br-L	0.471 mg/L	0.5 mg/L	94.2	75.0	125	----
Anions and Nutrients (QCLot: 294753)										
WR2101263-002	LMC	nitrate (as N)	14797-55-8	E235.NO3-L	2.52 mg/L	2.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 294966)										
FJ2100938-002	Anonymous	phosphorus, total	7723-14-0	E372-U	0.0560 mg/L	0.05 mg/L	112	70.0	130	----
Anions and Nutrients (QCLot: 294967)										
FJ2100938-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.101 mg/L	0.1 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 296815)										
VA21B9821-001	Anonymous	phosphorus, total dissolved	7723-14-0	E375-T	0.0489 mg/L	0.05 mg/L	97.9	70.0	130	----
Organic / Inorganic Carbon (QCLot: 294968)										
WR2101263-002	LMC	carbon, total organic [TOC]	----	E355-L	ND mg/L	5 mg/L	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 295633)										
KS2102975-002	Anonymous	carbon, total inorganic [TIC]	----	E354-L	ND mg/L	5 mg/L	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 296814)										
WR2101263-001	UMC	carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	5 mg/L	ND	70.0	130	----
Total Metals (QCLot: 295523)										
VA21C0204-002	Anonymous	aluminum, total	7429-90-5	E420	0.241 mg/L	0.2 mg/L	121	70.0	130	----
		antimony, total	7440-36-0	E420	0.0236 mg/L	0.02 mg/L	118	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0229 mg/L	0.02 mg/L	114	70.0	130	----
		barium, total	7440-39-3	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 295523) - continued										
VA21C0204-002	Anonymous	beryllium, total	7440-41-7	E420	0.0440 mg/L	0.04 mg/L	110	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0106 mg/L	0.01 mg/L	106	70.0	130	----
		boron, total	7440-42-8	E420	0.103 mg/L	0.1 mg/L	103	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00453 mg/L	0.004 mg/L	113	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		cesium, total	7440-46-2	E420	0.0116 mg/L	0.01 mg/L	116	70.0	130	----
		chromium, total	7440-47-3	E420	0.0472 mg/L	0.04 mg/L	118	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0220 mg/L	0.02 mg/L	110	70.0	130	----
		copper, total	7440-50-8	E420	0.0213 mg/L	0.02 mg/L	106	70.0	130	----
		iron, total	7439-89-6	E420	2.20 mg/L	2 mg/L	110	70.0	130	----
		lead, total	7439-92-1	E420	0.0214 mg/L	0.02 mg/L	107	70.0	130	----
		lithium, total	7439-93-2	E420	0.113 mg/L	0.1 mg/L	113	70.0	130	----
		magnesium, total	7439-95-4	E420	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0232 mg/L	0.02 mg/L	116	70.0	130	----
		nickel, total	7440-02-0	E420	0.0443 mg/L	0.04 mg/L	111	70.0	130	----
		phosphorus, total	7723-14-0	E420	11.8 mg/L	10 mg/L	118	70.0	130	----
		potassium, total	7440-09-7	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		rubidium, total	7440-17-7	E420	0.0230 mg/L	0.02 mg/L	115	70.0	130	----
		selenium, total	7782-49-2	E420	0.0464 mg/L	0.04 mg/L	116	70.0	130	----
		silicon, total	7440-21-3	E420	10.1 mg/L	10 mg/L	101	70.0	130	----
		silver, total	7440-22-4	E420	0.00411 mg/L	0.004 mg/L	103	70.0	130	----
		sodium, total	17341-25-2	E420	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	ND mg/L	20 mg/L	ND	70.0	130	----
		tellurium, total	13494-80-9	E420	0.0441 mg/L	0.04 mg/L	110	70.0	130	----
		thallium, total	7440-28-0	E420	0.00430 mg/L	0.004 mg/L	107	70.0	130	----
		thorium, total	7440-29-1	E420	0.0250 mg/L	0.02 mg/L	125	70.0	130	----
		tin, total	7440-31-5	E420	0.0231 mg/L	0.02 mg/L	116	70.0	130	----
		titanium, total	7440-32-6	E420	0.0445 mg/L	0.04 mg/L	111	70.0	130	----
		tungsten, total	7440-33-7	E420	0.0231 mg/L	0.02 mg/L	116	70.0	130	----
		uranium, total	7440-61-1	E420	0.00443 mg/L	0.004 mg/L	111	70.0	130	----
		vanadium, total	7440-62-2	E420	0.118 mg/L	0.1 mg/L	118	70.0	130	----
		zinc, total	7440-66-6	E420	0.460 mg/L	0.4 mg/L	115	70.0	130	----
		zirconium, total	7440-67-7	E420	0.0458 mg/L	0.04 mg/L	115	70.0	130	----
Total Metals (QCLot: 295750)										

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 295750) - continued										
WR2101261-003	Anonymous	mercury, total	7439-97-6	E508	0.0000962 mg/L	0.0001 mg/L	96.2	70.0	130	----
Dissolved Metals (QCLot: 294779)										
CG2103999-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000973 mg/L	0.0001 mg/L	97.3	70.0	130	----
Dissolved Metals (QCLot: 294780)										
WR2101263-007	FB	mercury, dissolved	7439-97-6	E509	0.0000990 mg/L	0.0001 mg/L	99.0	70.0	130	----
Dissolved Metals (QCLot: 295420)										
FJ2100938-002	Anonymous	aluminum, dissolved	7429-90-5	E421	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0201 mg/L	0.02 mg/L	101	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0194 mg/L	0.02 mg/L	97.0	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.0199 mg/L	0.02 mg/L	99.7	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0415 mg/L	0.04 mg/L	104	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00975 mg/L	0.01 mg/L	97.5	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00394 mg/L	0.004 mg/L	98.6	70.0	130	----
		calcium, dissolved	7440-70-2	E421	3.82 mg/L	4 mg/L	95.5	70.0	130	----
		cesium, dissolved	7440-46-2	E421	0.00960 mg/L	0.01 mg/L	96.0	70.0	130	----
		chromium, dissolved	7440-47-3	E421	0.0396 mg/L	0.04 mg/L	99.0	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0192 mg/L	0.02 mg/L	96.2	70.0	130	----
		iron, dissolved	7439-89-6	E421	1.92 mg/L	2 mg/L	95.9	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0199 mg/L	0.02 mg/L	99.5	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.105 mg/L	0.1 mg/L	105	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	0.990 mg/L	1 mg/L	99.0	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0189 mg/L	0.02 mg/L	94.6	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0398 mg/L	0.04 mg/L	99.5	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	10.0 mg/L	10 mg/L	100	70.0	130	----
		potassium, dissolved	7440-09-7	E421	4.13 mg/L	4 mg/L	103	70.0	130	----
		rubidium, dissolved	7440-17-7	E421	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0420 mg/L	0.04 mg/L	105	70.0	130	----
		silicon, dissolved	7440-21-3	E421	9.33 mg/L	10 mg/L	93.3	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00384 mg/L	0.004 mg/L	96.0	70.0	130	----
		sodium, dissolved	17341-25-2	E421	2.01 mg/L	2 mg/L	100	70.0	130	----
		strontium, dissolved	7440-24-6	E421	0.0191 mg/L	0.02 mg/L	95.4	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	19.6 mg/L	20 mg/L	97.9	70.0	130	----
		tellurium, dissolved	13494-80-9	E421	0.0407 mg/L	0.04 mg/L	102	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 295420) - continued										
FJ2100938-002	Anonymous	thallium, dissolved	7440-28-0	E421	0.00399 mg/L	0.004 mg/L	99.6	70.0	130	----
		thorium, dissolved	7440-29-1	E421	0.0214 mg/L	0.02 mg/L	107	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0190 mg/L	0.02 mg/L	95.1	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0386 mg/L	0.04 mg/L	96.4	70.0	130	----
		tungsten, dissolved	7440-33-7	E421	0.0197 mg/L	0.02 mg/L	98.7	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.00393 mg/L	0.004 mg/L	98.3	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.0986 mg/L	0.1 mg/L	98.6	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.423 mg/L	0.4 mg/L	106	70.0	130	----
		zirconium, dissolved	7440-67-7	E421	0.0385 mg/L	0.04 mg/L	96.3	70.0	130	----

Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix: **Water**

					Reference Material (RM) Report				
					RM Target	Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Concentration	RM	Low	High	Qualifier
Organic / Inorganic Carbon (QCLot: 295633)									
QC-295633-002	RM	carbon, total inorganic [TIC]	----	E354-L	8 mg/L	104	80.0	120	----

ALS Environmental WATER

Chain of Custody / Analytical Request Form
Canada Toll Free: 1 800 668 9878
www.alsglobal.com

Environmental Division Whitehorse
Work Order Reference
WR2101263

Telephone : +1 867 668 6689

Report To		Report Format / Distribution		Service Requested (Rush for rou
Company:	Minnow Environmental Inc.	☑ Standard ☐ Other		○ ~~Regular (Standard Turnaround Times~~
Contact:	Pierre Stecko	☑ PDF ☑ Excel ☐ Digit ☐ Fax		◉ ~~Priority (2-4 Business Days) - 50% Su~~
Address:	204-1006 Fort Street	Email 1: pstecko@minnow.ca		○ Emergency (1-2 Bus. Days) - 100% Su
	Victoria, BC	Email 2: slatimer@minnow.ca		○ Same Day or Weekend Emergency - C
Phone:	(250)595-1627 x24 Fax: (250) 595-1625	Email 3: lbowron@minnow.ca		Analysi
Invoice To	Same as Report ? ☐ Yes ☑ No	Client / Project Information		Please indicate below Filtered,
Hardcopy of Invoice with Report?	☑ Yes ☐ No	Job #: Minnow Project 21-92		
Company:	Minto Explorations Ltd	PO / AFE:		
Contact:	Ian Smith	LSD:		
Address:	61 Wasson Place, Whitehorse, Yukon Y1A 0H7			
Phone:	867.332.0620 Fax:	Quote #: VA21MINN100-05		
Lab Work Order # (lab use only)		ALS Contact: Can Dang	Sampler: LBO, SLA	

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total Metals by CCMS & ICPOES	Total Mercury by CVAFS (Low)	Alkalinity by Auto Titration	Phosphorus in water by colour	Organic/Inorganic Carbon	Dissolved ~~Cyanide~~ metals	Conductivity, Hardness and pH	TDS & TSS by Gravimetric	Turbidity by Meter	Anions by Ion Chromatography	Ammonia by Fluorescence	Dissolved mercury	Number of Containers	Total Organic Carbon	Dissolved Organic Carbon
					P	P			P	F/P						F/P			
	UMC	~~Aug~~ 15-Sep-21	9:40	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	7	✓	✓
	~~URC~~			~~Water~~															
	LMC	15-Sep-21	10:22	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	7	✓	✓
	~~LWC~~			~~Water~~															
	LBC	15-Sep-21	11:05	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	7	✓	✓
	URC	13-Sep-21	12:25	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	7	✓	✓
	LWC	13-Sep-21	08:55	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	7	✓	✓
	LBCX	15-Sep-21	11:05	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	7	✓	✓
	FB	15-Sep-21	11:05	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	7	✓	✓

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details

~~Small samples. The critical analyte of interest is selenium; please ensure best possible MDLs.~~

P2 RUSH

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIB

By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a

Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / hold

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
Sarah Lahmer Lisa Bowron	15-Sep-21		(2)	Sept 15/21	15:15	2° °C				

GENF 20.00 Front

ALS Environmental WATER

Chain of Custody / Analytical Request Form
Canada Toll Free: 1 800 668 9878
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Environmental Division Whitehorse
Work Order Reference
WR2101263

Telephone : +1 867 668 8689

Report To		Report Format / Distribution		Service Requested (Rush for rou
Company:	Minnow Environmental Inc.	☑ Standard ☐ Other		○ ~~Regular (Standard Turnaround Times~~
Contact:	Pierre Stecko	☑ PDF ☑ Excel ☐ Digit ☐ Fax		◉ Priority (2-4 Business Days) - 50% Su
Address:	204-1006 Fort Street	Email 1: pstecko@minnow.ca		○ Emergency (1-2 Bus. Days) - 100% S
	Victoria, BC	Email 2: slatimer@minnow.ca		○ Same Day or Weekend Emergency -
Phone:	(250)595-1627 x24 Fax: (250) 595-1625	Email 3: lbowron@minnow.ca		Analysi
Invoice To	Same as Report ? ☐ Yes ☑ No	Client / Project Information		Please indicate below Filtered,
Hardcopy of Invoice with Report?	☑ Yes ☐ No	Job #: Minnow Project 21-92		
Company:	Minto Explorations Ltd	PO / AFE:		
Contact:	Ian Smith	LSD:		
Address:	61 Wasson Place, Whitehorse, Yukon Y1A 0H7			
Phone:	867.332.0620 Fax:	Quote #: VA21MINN100-05		
Lab Work Order # (lab use only)		ALS Contact: Can Dang	Sampler: LBO, SLA	

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total Metals by CCMS & ICPOES	Total Mercury by CVAFS (Low)	Alkalinity by Auto Titration	Phosphorus in water by colour	Organic/Inorganic Carbon	Dissolved ~~cyanide~~ metals	Conductivity, Hardness and pH	TDS & TSS by Gravimetric	Turbidity by Meter	Anions by Ion Chromatography	Ammonia by Fluorescence	Dissolved mercury	Number of Containers	Total Organic Carbon F/P	Dissolved Organic Carbon F/P
	UMC	~~15~~ 15-Sep-21	9:40	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	7	✓	✓
	~~URC~~			~~Water~~															
	LMC	15-Sep-21	10:22	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	7	✓	✓
	~~LWC~~			~~Water~~															
	LBC	15-Sep-21	11:05	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	7	✓	✓
	URC	13-Sep-21	12:25	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	7	✓	✓
	LWC	13-Sep-21	08:55	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	7	✓	✓
	LBCX	15-Sep-21	11:05	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	7	✓	✓
	EB	15-Sep-21	11:05	Water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	7	✓	✓

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details

~~Small samples. The critical analyte of interest is selenium; please ensure best possible MDLs.~~

P2 RUSH

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIE

By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a

Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / hol

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by: Sarah Lahmer Lisa Bowron	Date (dd-mmm-yy) 15-Sep-21	Time (hh-mm)	Received by: (2)	Date: Sept 15/21	Time: 15:15	Temperature: 2° °C	Verified by: JA	Date: 16/09/2021	Time: 5pm	Observations: Yes / No ? If Yes add SIF

GENF 20.00 Front

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2101267**	Page	: 1 of 3
Amendment	: **1**		
Client	: **Minnow Environmental Inc.**	Laboratory	: Whitehorse - Environmental
Contact	: Pierre Stecko	Account Manager	: Can Dang
Address	: 204 – 1006 Fort Street Victoria BC Canada V8V 3K4	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: 250 595 1627	Telephone	: +1 867 668 6689
Project	: Minnow Environmental Inc Project for Minto MInes WUL Program	Date Samples Received	: 15-Sep-2021 15:14
PO	: AEMP is 21-92	Date Analysis Commenced	: 23-Sep-2021
C-O-C number	: ----	Issue Date	: 07-Oct-2021 12:03
Sampler	: LBO, SLA		
Site	: ----		
Quote number	: Q79833 - Minnow/Minto		
No. of samples received	: 11		
No. of samples analysed	: 11		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
µg	micrograms

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

Amendment (07/10/2021): This report has been amended as a result of changes to the billing account and contacts for the distribution of the report. All analysis results are as per the previous report.

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LWC-1	LWC-2	LWC-3	LWC-4	LWC-5
					Client sampling date / time	12-Sep-2021	12-Sep-2021	12-Sep-2021	12-Sep-2021	11-Sep-2021
						WR2101267-001	WR2101267-002	WR2101267-003	WR2101267-004	WR2101267-005
						Result	Result	Result	Result	Result
Plant Pigments										
chlorophyll a	479-61-8	E870	0.010	µg		31.1	13.7	9.88	134	12.7

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LMC-1	LMC-2	LMC-3	LMC-4	LMC-5
					Client sampling date / time	10-Sep-2021	09-Sep-2021	09-Sep-2021	09-Sep-2021	09-Sep-2021
						WR2101267-006	WR2101267-007	WR2101267-008	WR2101267-009	WR2101267-010
						Result	Result	Result	Result	Result
Plant Pigments										
chlorophyll a	479-61-8	E870	0.010	µg		131	68.8	24.9	22.0	211

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LMC-1X	----	----	----	----
					Client sampling date / time	10-Sep-2021	----	----	----	----
						WR2101267-011	--------	--------	--------	--------
						Result	----	----	----	----
Plant Pigments										
chlorophyll a	479-61-8	E870	0.010	µg		80.4	----	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2101267**	Page	: 1 of 5
Amendment	: 1		
Client	: **Minnow Environmental Inc.**	Laboratory	: Whitehorse - Environmental
Contact	: Pierre Stecko	Account Manager	: Can Dang
Address	: 204 – 1006 Fort Street Victoria BC Canada V8V 3K4	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minnow Environmental Inc Project for Minto MInes WUL Program	Date Samples Received	: 15-Sep-2021 15:14
PO	: AEMP is 21-92	Issue Date	: 07-Oct-2021 12:03
C-O-C number	: ----		
Sampler	: LBO, SLA		
Site	: ----		
Quote number	: Q79833 - Minnow/Minto		
No. of samples received	: 11		
No. of samples analysed	: 11		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Biota**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Plant Pigments : Chlorophyll-a by Fluorometry										
Opaque HDPE tube LWC-1	E870	12-Sep-2021	23-Sep-2021	28 days	12 days	✓	23-Sep-2021	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry										
Opaque HDPE tube LWC-2	E870	12-Sep-2021	23-Sep-2021	28 days	12 days	✓	23-Sep-2021	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry										
Opaque HDPE tube LWC-3	E870	12-Sep-2021	23-Sep-2021	28 days	12 days	✓	23-Sep-2021	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry										
Opaque HDPE tube LWC-4	E870	12-Sep-2021	23-Sep-2021	28 days	12 days	✓	23-Sep-2021	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry										
Opaque HDPE tube LWC-5	E870	11-Sep-2021	23-Sep-2021	28 days	13 days	✓	23-Sep-2021	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry										
Opaque HDPE tube LMC-1	E870	10-Sep-2021	23-Sep-2021	28 days	14 days	✓	23-Sep-2021	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry										
Opaque HDPE tube LMC-1X	E870	10-Sep-2021	23-Sep-2021	28 days	14 days	✓	23-Sep-2021	28 days	0 days	✓

Matrix: **Biota**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Plant Pigments : Chlorophyll-a by Fluorometry										
Opaque HDPE tube LMC-2	E870	09-Sep-2021	23-Sep-2021	28 days	15 days	✓	23-Sep-2021	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry										
Opaque HDPE tube LMC-3	E870	09-Sep-2021	23-Sep-2021	28 days	15 days	✓	23-Sep-2021	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry										
Opaque HDPE tube LMC-4	E870	09-Sep-2021	23-Sep-2021	28 days	15 days	✓	23-Sep-2021	28 days	0 days	✓
Plant Pigments : Chlorophyll-a by Fluorometry										
Opaque HDPE tube LMC-5	E870	09-Sep-2021	23-Sep-2021	28 days	15 days	✓	23-Sep-2021	28 days	0 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Biota**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS)							
Chlorophyll-a by Fluorometry	E870	300842	1	11	9.0	5.0	✓
Method Blanks (MB)							
Chlorophyll-a by Fluorometry	E870	300842	1	11	9.0	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Chlorophyll-a by Fluorometry	E870 Vancouver - Environmental	Biota	EPA 445.0 (mod)	Chlorophyll-a is determined by solvent extraction followed with analysis by fluorometry using the non-acidification procedure.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Chlorophyll-a Extraction	EP870 Vancouver - Environmental	Biota	EPA 445.0 (mod)	Chlorophyll-a solvent extraction.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **WR2101267**	Page	: 1 of 2
Amendment	: **1**		

Client	: Minnow Environmental Inc.	Laboratory	: Whitehorse - Environmental
Contact	: Pierre Stecko	Account Manager	: Can Dang
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minnow Environmental Inc Project for Minto MInes WUL Program	Date Samples Received	: 15-Sep-2021 15:14
PO	: AEMP is 21-92	Date Analysis Commenced	: 23-Sep-2021
C-O-C number	: ----	Issue Date	: 07-Oct-2021 12:03
Sampler	: LBO, SLA		
Site	: ----		
Quote number	: Q79833 - Minnow/Minto		
No. of samples received	: 11		
No. of samples analysed	: 11		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Biota**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Plant Pigments (QCLot: 300842)						
chlorophyll a	479-61-8	E870	0.01	µg	<0.010	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Biota**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Plant Pigments (QCLot: 300842)									
chlorophyll a	479-61-8	E870	0.01	µg	1 µg	109	80.0	120	----

ALS Environmental

Chain of Custody / Analytical Request Form
Canada Toll Free: 1 800 668 9878
www.alsglobal.com

CHL-A

COC #

Report To		Report Format / Distribution				Service Requested (R
Company:	Minnow Environmental Inc.	☑ Standard	☐ Other			◉ Regular (Standard Turnai
Contact:	Pierre Stecko	☑ PDF	☑ Excel	☐ Digital	☐ Fax	○ Priority (2-4 Business Da
Address:	204-1006 Fort Street	Email 1:	pstecko@minnow.ca			○ Emergency (1-2 Bus. Da
	Victoria, BC	Email 2:	slatimer@minnow.ca			○ Same Day or Weekend E
Phone:	(250)595-1627 x24 Fax: (250) 595-1625	Email 3:	lbowron@minnow.ca			
Invoice To	Same as Report ? ☐ Yes ☑ No	Client / Project Information				Please indicate belo
Hardcopy of Invoice with Report?	☑ Yes ☐ No	Job #:	Minnow Project 21-92			
Company:	Minto Explorations Ltd	PO / AFE:				
Contact:	Ian Smith	LSD:				
Address:	61 Wasson Place, Whitehorse, Yukon Y1A 0H7					
Phone:	867.332.0620 Fax:	Quote #:	VA21MINN100-05			
Lab Work Order # (lab use only)		ALS Contact:	Can Dang	Sampler:	LBO, SLA	

Environmental Division
Whitehorse
Work Order Reference
WR2101267

Telephone : +1 867 668 6689

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Chlorophyll a	**See Complete Qu	Number of Containers
	LWC-1	12 -Sept-21		Tissue	X		1
	LWC-2	12 -Sept-21		Tissue	X		1
	LWC-3	12 -Sept-21		Tissue	X		1
	LWC-4	12 -Sept-21		Tissue	X		1
	LWC-5	11 -Sept-21		Tissue	X		1
	LMC-1	10 -Sept-21		Tissue	X		1
	LMC-2	9 -Sept-21		Tissue	X		1
	LMC-3	9 -Sept-21		Tissue	X		1
	LMC-4	9 -Sept-21		Tissue	X		1
	LMC-5	9 -Sept-21		Tissue	X		1
	→ LMC-1X	10 -Sept-21		Tissue	X		1

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details

Small samples. The critical analyte of interest is selenium; please ensure best possible MDLs. Periphyton samples.

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.

By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab.

Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
Sarah Latimer Lisa Bowron	15-Sep-21	15:01		Sept 16	5:14	9 °C				

ALS Environmental

Chain of Custody / Analytical Request Form
Canada Toll Free: 1 800 668 9878
www.alsglobal.com

CHL-A

COC #

Page 1 of 1

Report To		Report Format / Distribution		Service Requested (R
Company:	Minnow Environmental Inc.	☑ Standard ☐ Other		◉ Regular (Standard Turnar
Contact:	Pierre Stecko	☑ PDF ☑ Excel ☐ Digital ☐ Fax		○ Priority (2-4 Business Da
Address:	204-1006 Fort Street	Email 1: pstecko@minnow.ca		○ Emergency (1-2 Bus. Da
	Victoria, BC	Email 2: slatimer@minnow.ca		○ Same Day or Weekend E
Phone:	(250)595-1627 x24 Fax: (250) 595-1625	Email 3: lbowron@minnow.ca		
Invoice To	Same as Report ? ☐ Yes ☑ No	Client / Project Information		Please indicate belo
Hardcopy of Invoice with Report?	☑ Yes ☐ No	Job #: Minnow Project 21-92		
Company:	Minto Explorations Ltd	PO / AFE:		
Contact:	Ian Smith	LSD:		
Address:	61 Wasson Place, Whitehorse, Yukon Y1A 0H7			
Phone:	867.332.0620 Fax:	Quote #: VA21MINN100-05		
Lab Work Order # (lab use only)		ALS Contact: Can Dang	Sampler: LBO, SLA	

Environmental Division
Whitehorse
Work Order Reference
WR2101267

Telephone : +1 867 668 6689

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Chlorophyll a	**See Complete Qu	Number of Containers
	LWC-1	12 -Sept-21		Tissue	X		1
	LWC-2	12 -Sept-21		Tissue	X		1
	LWC-3	12 -Sept-21		Tissue	X		1
	LWC-4	12 -Sept-21		Tissue	X		1
	LWC-5	11 -Sept-21		Tissue	X		1
	LMC-1	10 -Sept-21		Tissue	X		1
	LMC-2	9 -Sept-21		Tissue	X		1
	LMC-3	9 -Sept-21		Tissue	X		1
	LMC-4	9 -Sept-21		Tissue	X		1
	LMC-5	9 -Sept-21		Tissue	X		1
	~~LmC-1~~ X	10 -Sept-21		Tissue	X		1

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details

Small samples. The critical analyte of interest is selenium; please ensure best possible MDLs. Periphyton samples.

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.
By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab.
Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by: Sarah Latimer Lisa Bowron	Date (dd-mmm-yy) 15-Sep-21	Time (hh-mm) 15:01	Received by:	Date: Aug 15	Time: 3/4	Temperature: 9 °C	Verified by: JA	Date: 16/09/2021	Time: 5pm	Observations: Yes / No ? If Yes add SIF

APPENDIX C

SEDIMENT QUALITY, PERIPHYTON TISSUE, AND BENTHIC INVERTEBRATE TISSUE DATA

Tables

Laboratory Reports

APPENDIX C

SEDIMENT QUALITY, PERIPHYTON TISSUE, AND BENTHIC INVERTEBRATE TISSUE DATA

Tables

Table C.1: Sediment Chemistry Data Collected at Reference and Exposed Areas, Minto Mine AEMP, 2021

Analyte		Units	CSQG [a]		Upper McGinty Creek (Reference)					Upper Minto Creek (Exposed)				
					URC-1	URC-2	URC-3	URC-4	URC-5	UMC-1	UMC-2	UMC-3	UMC-4	UMC-5
			ISQG	PEL	13-Sep-21	13-Sep-21	13-Sep-21	13-Sep-21	13-Sep-21	13-Sep-21	13-Sep-21	13-Sep-21	13-Sep-21	13-Sep-21
Particle size, TKN, carbon analytes and pH	Loss on Ignition @ 550 °C	%	-	-	19.0	18.7	18.2	8.00	7.50	8.00	8.40	15.4	12.1	5.10
	pH (1:2 soil:water)	pH units	-	-	7.17	6.91	6.98	7.40	7.13	7.32	8.06	7.89	8.09	7.82
	Gravel (> 2 mm)	%	-	-	<1.0	-	-	-	-	<1.0	-	-	-	-
	Sand (2.0mm - 0.063mm)	%	-	-	58.9	-	-	-	-	45.4	-	-	-	-
	Silt (0.063 mm - 4 µm)	%	-	-	36.2	-	-	-	-	47.2	-	-	-	-
	Clay (< 4 µm)	%	-	-	4.40	-	-	-	-	7.40	-	-	-	-
	Passing (0.075 mm)	%	-	-	10.7	9.28	10.7	4.38	4.34	4.14	4.58	10.7	6.79	2.76
	Total Kjeldahl Nitrogen (TKN)	%	-	-	0.365	0.513	0.564	0.317	0.251	0.256	0.270	0.517	0.360	0.211
	Inorganic Carbon	%	-	-	0.207	0.132	0.141	0.0970	0.0750	0.109	0.145	0.291	0.150	0.0750
	Inorganic Carbon (as $CaCO_3$ Equivalent)	%	-	-	1.72	1.10	1.18	0.810	0.630	0.910	1.20	2.43	1.25	0.620
	Total Carbon by Combustion	%	-	-	6.43	5.51	6.36	2.64	2.60	2.51	2.81	6.50	4.09	1.67
	Total Organic Carbon	%	-	-	6.22	5.38	6.22	2.54	2.52	2.40	2.66	6.21	3.94	1.60
Total Metals	Aluminum (Al)	mg/kg	-	-	11,200	11,300	10,300	7,510	8,760	11,500	10,900	13,100	10,000	8,840
	Antimony (Sb)	mg/kg	-	-	0.380	0.390	0.520	0.300	0.500	0.480	0.380	0.550	0.390	0.380
	Arsenic (As)	mg/kg	5.9	17	12.4	7.94	9.01	7.74	7.76	5.34	5.72	8.20	5.15	5.16
	Barium (Ba)	mg/kg	-	-	368	235	270	188	236	192	457	1,130	191	177
	Beryllium (Be)	mg/kg	-	-	0.370	0.320	0.330	0.260	0.460	0.400	0.390	0.460	0.410	0.280
	Bismuth (Bi)	mg/kg	-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
	Boron (B)	mg/kg	-	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	7.40	<5.0	<5.0
	Cadmium (Cd)	mg/kg	0.60	3.5	0.249	0.173	0.220	0.130	0.267	0.253	0.310	0.702	0.145	0.134
	Calcium (Ca)	mg/kg	-	-	11,700	8,640	11,600	6,960	10,200	7,940	8,730	14,600	9,490	6,170
	Chromium (Cr)	mg/kg	37	90	23.0	23.7	21.6	16.4	20.2	25.9	25.2	26.4	25.6	23.5
	Cobalt (Co)	mg/kg	-	-	12.6	7.69	7.80	7.49	8.76	8.51	11.1	18.1	8.98	8.18
	Copper (Cu)	mg/kg	36	197	24.5	21.1	22.1	15.2	26.7	170	189	340	93.6	67.5
	Iron (Fe)	mg/kg	-	-	32,400	24,600	23,400	20,700	20,400	21,800	24,200	27,900	20,600	19,900
	Lead (Pb)	mg/kg	35	91	4.66	4.50	4.18	3.41	4.83	5.44	5.23	6.05	5.14	4.59
	Lithium (Li)	mg/kg	-	-	6.70	7.00	6.30	4.80	5.60	7.40	7.30	8.60	6.90	5.90
	Magnesium (Mg)	mg/kg	-	-	4,620	4,390	4,340	3,370	4,080	6,010	6,360	7,710	6,090	5,220
	Manganese (Mn)	mg/kg	-	-	2,510	616	1,310	1,200	604	495	7,980	26,900	1,180	1,420
	Mercury (Hg)	mg/kg	0.17	0.49	0.0482	0.0417	0.0278	0.0294	0.0379	0.0273	0.0264	0.0448	0.0316	0.0163
	Molybdenum (Mo)	mg/kg	-	-	0.760	0.580	3.78	0.860	0.800	1.21	4.18	11.9	0.920	1.36
	Nickel (Ni)	mg/kg	-	-	20.4	16.5	17.9	13.6	17.4	23.3	30.2	42.9	26.3	22.1
	Phosphorus (P)	mg/kg	-	-	998.0	868	692	664	734	801	861	882	816	811
	Potassium (K)	mg/kg	-	-	700	750	760	590	700	1,380	1,400	1,760	1,130	1,020
	Selenium (Se)	mg/kg	2.0	-	0.890	0.720	2.35	0.750	0.780	0.680	0.610	1.30	0.470	0.290
	Silver (Ag)	mg/kg	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	0.100	0.110	0.160	<0.10	<0.10
	Sodium (Na)	mg/kg	-	-	189	222	215	152	186	314	293	371	303	311
	Strontium (Sr)	mg/kg	-	-	105	75.0	100	65.6	103	68.4	119	262	118	67.2
	Sulfur	mg/kg	-	-	<1,000	<1,000	1,400	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000
	Thallium (Tl)	mg/kg	-	-	0.0630	0.0650	0.0660	<0.050	0.0570	0.0900	0.0840	0.117	0.0750	0.0600
	Tin (Sn)	mg/kg	-	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
	Titanium (Ti)	mg/kg	-	-	508	702	660	526	576	808	667	689	584	662
	Tungsten (W)	mg/kg	-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	Uranium (U)	mg/kg	-	-	2.78	1.87	3.66	1.75	1.96	1.31	0.684	1.34	0.745	0.666
	Vanadium (V)	mg/kg	-	-	50.4	45.2	47.0	40.9	46.8	54.6	56.1	60.3	43.0	48.0
	Zinc (Zn)	mg/kg	123	315	50.1	44.5	44.9	35.7	38.5	58.0	66.2	84.9	50.1	46.3
	Zirconium (Zr)	mg/kg	-	-	2.30	2.30	2.70	1.80	3.50	2.90	1.90	<2.0	3.00	2.40

Indicates sediment concentration exceeding CSQG ISQG.

Indicates sediment concentration exceeding CSQG PEL.

Notes: "-" = no data available. Only one composite particle size sample was collected at upper creek areas due to limited deposition.

[a] Canadian Sediment Quality Guidelines: ISQG = interim sediment quality guideline; PEL = probable effect level (CCME 1999).

Table C.1: Sediment Chemistry Data Collected at Reference and Exposed Areas, Minto Mine AEMP, 2021

Analyte		Units	CSQG [a]		Lower Wolverine Creek (Reference)					Lower Minto Creek (Exposed)				
					LWC-1	LWC-2	LWC-3	LWC-4	LWC-5	LMC-1	LMC-2	LMC-3	LMC-4	LMC-5
			ISQG	PEL	11-Sep-21	11-Sep-21	11-Sep-21	11-Sep-21	11-Sep-21	10-Sep-21	10-Sep-21	10-Sep-21	10-Sep-21	10-Sep-21
Particle size, TKN, carbon analytes and pH	Loss on Ignition @ 550 °C	%	-	-	5.40	13.3	25.7	12.7	10.0	5.90	7.50	8.80	4.90	6.20
	pH (1:2 soil:water)	pH units	-	-	6.89	6.89	6.78	6.80	6.89	7.96	7.95	8.05	8.14	8.10
	Gravel (> 2 mm)	%	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.20	<1.0	<1.0
	Sand (2.0mm - 0.063mm)	%	-	-	60.8	57.6	30.3	28.2	19.2	28.5	22.4	28.2	56.3	44.2
	Silt (0.063 mm - 4 µm)	%	-	-	35.1	37.3	63.0	63.4	73.2	62.5	64.1	58.8	35.6	46.1
	Clay (< 4 µm)	%	-	-	3.90	5.00	6.70	7.60	7.60	9.00	13.5	11.8	7.40	8.90
	Passing (0.075 mm)	%	-	-	3.40	9.96	16.6	8.91	6.10	4.08	5.29	6.28	2.71	4.07
	Total Kjeldahl Nitrogen (TKN)	%	-	-	0.119	0.266	0.302	0.271	0.234	0.165	0.228	0.245	0.124	0.160
	Inorganic Carbon	%	-	-	0.0820	0.137	0.149	0.128	0.117	0.141	0.247	0.177	0.110	0.138
	Inorganic Carbon (as $CaCO_3$ Equivalent)	%	-	-	0.680	1.14	1.24	1.06	0.980	1.18	2.06	1.47	0.920	1.15
	Total Carbon by Combustion	%	-	-	2.05	5.92	9.77	5.30	3.66	2.51	3.32	3.82	1.68	2.50
	Total Organic Carbon	%	-	-	1.97	5.78	9.62	5.17	3.54	2.37	3.07	3.64	1.57	2.36
Total Metals	Aluminum (Al)	mg/kg	-	-	11,900	15,400	14,200	15,800	14,600	14,300	16,300	13,500	10,700	11,700
	Antimony (Sb)	mg/kg	-	-	0.310	0.460	0.500	0.440	0.390	0.480	0.610	0.510	0.380	0.430
	Arsenic (As)	mg/kg	5.9	17	4.32	6.52	7.06	4.65	4.55	7.37	8.90	8.05	6.15	7.22
	Barium (Ba)	mg/kg	-	-	147	217	238	210	186	236	287	250	176	221
	Beryllium (Be)	mg/kg	-	-	0.510	0.770	0.850	0.680	0.630	0.400	0.500	0.430	0.340	0.370
	Bismuth (Bi)	mg/kg	-	-	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
	Boron (B)	mg/kg	-	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	Cadmium (Cd)	mg/kg	0.60	3.5	0.105	0.223	0.262	0.206	0.170	0.148	0.230	0.208	0.144	0.150
	Calcium (Ca)	mg/kg	-	-	6,850	9,970	11,500	9,640	8,610	10,200	13,700	10,600	7,850	8,740
	Chromium (Cr)	mg/kg	37	90	39.1	46.8	47.1	47.1	45.8	32.4	36.5	32.1	26.9	28.8
	Cobalt (Co)	mg/kg	-	-	10.7	13.5	13.7	12.4	12.0	10.4	12.0	11.0	8.73	9.44
	Copper (Cu)	mg/kg	36	197	16.2	27.3	30.0	25.7	24.3	56.8	93.8	60.9	37.5	46.0
	Iron (Fe)	mg/kg	-	-	24,700	27,700	27,300	25,900	25,600	25,500	29,600	28,600	23,200	25,100
	Lead (Pb)	mg/kg	35	91	4.70	6.04	6.29	6.18	5.70	5.72	6.72	6.03	4.73	5.11
	Lithium (Li)	mg/kg	-	-	8.10	9.90	9.70	10.8	10.1	10.3	12.4	10.3	8.10	8.70
	Magnesium (Mg)	mg/kg	-	-	8,230	9,460	9,030	9,470	9,360	7,160	8,490	7,200	5,880	6,010
	Manganese (Mn)	mg/kg	-	-	243	434	687	290	331	1,040	1,280	1,220	758	1,020
	Mercury (Hg)	mg/kg	0.17	0.49	0.0150	0.0405	0.0446	0.0337	0.0288	0.0451	0.0405	0.0369	0.0206	0.0261
	Molybdenum (Mo)	mg/kg	-	-	0.560	0.620	0.590	1.03	0.580	0.660	0.850	0.800	0.630	0.670
	Nickel (Ni)	mg/kg	-	-	31.0	37.6	37.2	36.4	36.1	25.8	29.5	26.7	21.6	22.2
	Phosphorus (P)	mg/kg	-	-	986.0	1,070	1,090	988.0	1,040	921.0	898	851	794	830
	Potassium (K)	mg/kg	-	-	970.0	1,180	1,050	1,140	1,060	1,540	1,830	1,320	1,110	1,230
	Selenium (Se)	mg/kg	2.0	-	<0.20	0.310	0.470	0.300	0.280	0.420	0.620	0.390	0.220	0.450
	Silver (Ag)	mg/kg	-	-	<0.10	<0.10	0.120	<0.10	<0.10	<0.10	0.120	<0.10	<0.10	<0.10
	Sodium (Na)	mg/kg	-	-	446	477	435	464	454	368	371	294	308	278
	Strontium (Sr)	mg/kg	-	-	71.2	101	124	97.2	86.4	96.9	118	102	74.4	84.0
	Sulfur	mg/kg	-	-	<1,000	<1,000	<1,000	1,200	<1,000	<1,000	<1,000	<1,000	<1,000	<1,000
	Thallium (Tl)	mg/kg	-	-	0.0600	0.0820	0.0800	0.0950	0.0790	0.106	0.122	0.0950	0.0750	0.0830
	Tin (Sn)	mg/kg	-	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
	Titanium (Ti)	mg/kg	-	-	980.0	999.0	885	960.0	950.0	911.0	882	704	725	729
	Tungsten (W)	mg/kg	-	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
	Uranium (U)	mg/kg	-	-	1.22	2.76	3.61	2.52	2.18	0.948	1.11	1.04	0.784	0.823
	Vanadium (V)	mg/kg	-	-	64.4	73.2	72.2	67.0	64.6	59.3	64.8	64.2	55.2	58.5
	Zinc (Zn)	mg/kg	123	315	51.5	61.0	58.9	64.1	63.0	58.3	70.8	61.4	49.0	51.8
	Zirconium (Zr)	mg/kg	-	-	3.70	4.80	5.40	5.10	4.40	2.40	2.50	2.50	2.10	2.10

Indicates sediment concentration exceeding CSQG ISQG.

Indicates sediment concentration exceeding CSQG PEL.

Notes: "-" = no data available. Only one composite particle size sample was collected at upper creek areas due to limited deposition.

[a] Canadian Sediment Quality Guidelines: ISQG = interim sediment quality guideline; PEL = probable effect level (CCME 1999).

Table C.2: Periphyton Tissue Chemistry Results at lower Minto Creek and Reference Areas, Minto Mine AEMP, 2021

Analyte		Units	Lower Wolverine Creek (Reference)							Lower Big Creek (Reference)							Lower Minto Creek (Exposed)						
			LWC-1	LWC-2	LWC-3	LWC-4	LWC-5	Mean	Standard Deviation	LBC-1	LBC-2	LBC-3	LBC-4	LBC-5	Mean	Standard Deviation	LMC-1	LMC-2	LMC-3	LMC-4	LMC-5	Mean	Standard Deviation
Physical Tests	Moisture	%	78.7	80.2	68.0	90.3	66.1	76.7	9.86	65.0	77.0	74.9	79.2	81.1	75.4	6.28	86.4	55.5	54.3	60.5	87.7	68.9	16.8
Total Metals	Aluminum (Al)	mg/kg dw	20,000	18,500	17,900	9,410	17,600	16,682	4,169	13,900	16,000	14,900	17,100	12,200	14,820	1,891	12,800	13,900	12,200	12,500	10,200	12,320	1,348
	Antimony (Sb)	mg/kg dw	0.0520	0.0550	<0.050	0.0860	<0.050	0.0586	0.0164	0.0740	0.165	0.126	0.182	0.193	0.148	0.0486	0.112	<0.050	<0.050	<0.10	0.0850	0.0717	0.0153
	Arsenic (As)	mg/kg dw	6.35	6.06	5.27	14.0	5.39	7.41	3.71	15.6	23.5	21.3	26.4	20.9	21.5	3.98	12.3	7.17	6.98	8.03	12.7	9.44	2.83
	Barium (Ba)	mg/kg dw	270	262	225	253	212	244	24.8	232	293	276	322	229	270	40.0	322	233	214	278	198	249	50.6
	Beryllium (Be)	mg/kg dw	0.975	0.882	0.815	0.489	0.782	0.789	0.183	0.604	0.707	0.705	0.778	0.548	0.668	0.0915	0.431	0.461	0.432	0.424	0.342	0.418	0.0448
	Bismuth (Bi)	mg/kg dw	0.108	0.0980	0.0870	0.0660	0.0860	0.0890	0.0157	0.315	0.441	0.418	0.508	0.438	0.424	0.0697	0.100	0.0960	0.0840	0.0950	0.109	0.0968	0.00904
	Boron (B)	mg/kg dw	8.60	7.70	<5.0	2.60	<5.0	4.82	3.35	5.80	10.3	7.30	12.4	30.1	13.2	9.80	10.9	<5.0	<5.0	<5.0	3.50	4.98	4.19
	Cadmium (Cd)	mg/kg dw	0.220	0.195	0.178	0.276	0.178	0.209	0.0410	0.221	0.288	0.292	0.352	0.304	0.291	0.0469	0.358	0.180	0.176	0.219	0.258	0.238	0.0748
	Calcium (Ca)	mg/kg dw	11,600	10,700	10,300	8,020	10,100	10,144	1,320	8,730	10,200	10,400	10,900	9,810	10,008	815	11,800	9,980	8,860	9,100	14,800	10,908	2,463
	Cesium (Cs)	mg/kg dw	1.55	1.58	1.24	0.926	1.29	1.32	0.266	1.89	2.90	2.50	3.03	2.33	2.53	0.458	0.990	0.689	0.684	0.745	1.01	0.824	0.163
	Chromium (Cr)	mg/kg dw	124	101	63.9	35.6	74.0	79.7	34.1	44.4	43.7	53.2	53.7	46.0	48.2	4.87	92.8	38.5	43.0	26.8	23.0	44.8	28.0
	Cobalt (Co)	mg/kg dw	15.1	14.5	14.2	12.6	14.3	14.1	0.929	10.8	12.0	12.0	13.4	9.66	11.6	1.41	12.3	10.8	10.4	11.7	8.58	10.8	1.43
	Copper (Cu)	mg/kg dw	29.5	27.1	24.0	24.7	22.9	25.6	2.65	25.9	31.9	34.5	43.6	43.4	35.9	7.64	44.8	36.4	31.8	48.5	123	56.9	37.5
	Iron (Fe)	mg/kg dw	31,400	29,500	27,500	34,900	27,800	30,220	3,044	23,100	26,100	25,600	28,500	22,300	25,120	2,482	24,500	23,600	21,700	22,400	20,300	22,500	1,636
	Lead (Pb)	mg/kg dw	6.75	6.51	6.19	3.29	6.25	5.80	1.42	9.33	11.6	11.1	12.6	11.2	11.2	1.19	5.37	5.40	5.01	4.91	4.52	5.04	0.363
	Lithium (Li)	mg/kg dw	14.0	12.8	13.6	6.86	13.7	12.2	3.01	11.1	11.6	11.8	12.3	9.52	11.3	1.07	9.69	11.1	9.69	9.58	9.31	9.87	0.703
	Magnesium (Mg)	mg/kg dw	11,800	11,400	10,800	7,860	11,100	10,592	1,571	8,030	8,830	8,600	9,350	7,320	8,426	779	8,880	7,200	6,550	6,370	8,060	7,412	1,055
	Manganese (Mn)	mg/kg dw	1,150	1,100	783	1,900	782	1,143	457	833	1,310	1,240	1,600	1,020	1,201	292	3,210	1,390	1,570	2,700	1,640	2,102	804
	Mercury (Hg)	mg/kg dw	0.0422	0.0352	0.0292	0.140	0.0366	0.0566	0.0468	0.0286	0.0451	0.0490	0.0492	0.0330	0.0410	0.00956	0.0391	0.0288	0.0276	0.0380	0.0710	0.0409	0.0176
	Molybdenum (Mo)	mg/kg dw	0.708	0.689	0.453	0.782	0.506	0.628	0.141	0.670	1.06	0.918	0.994	0.815	0.891	0.154	1.14	0.580	0.614	0.708	0.784	0.765	0.224
	Nickel (Ni)	mg/kg dw	79.1	70.3	46.9	22.8	55.0	54.8	21.9	36.0	31.6	37.9	34.5	35.9	35.2	2.34	38.4	34.4	38.6	26.0	17.9	31.1	8.95
	Phosphorus (P)	mg/kg dw	1,470	1,430	1,370	3,970	1,510	1,950	1,130	1,190	1,300	1,170	1,190	1,170	1,204	54.6	2,910	1,120	1,150	1,260	2,640	1,816	882
	Potassium (K)	mg/kg dw	1,790	1,870	1,350	4,180	1,500	2,138	1,161	1,370	1,830	1,750	2,070	2,090	1,822	293	6,680	1,380	1,390	1,630	8,860	3,988	3,539
	Rubidium (Rb)	mg/kg dw	15.5	15.3	14.0	10.6	13.9	13.9	1.96	12.5	16.0	15.0	17.5	12.8	14.8	2.12	12.9	10.7	9.39	10.2	13.8	11.4	1.87
	Selenium (Se)	mg/kg dw	0.650	0.570	<0.50	0.750	<0.50	0.594	0.0871	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	2.18	0.720	0.820	1.17	1.40	1.26	0.583
	Sodium (Na)	mg/kg dw	499	551	414	497	460	484	50.9	431	506	472	523	612	509	67.6	669	312	325	278	306	378	164
	Strontium (Sr)	mg/kg dw	116	109	100	85.9	95.0	101	11.8	87.8	108	106	118	92.5	102	12.2	134	102	88.8	95.7	98.7	104	17.5
	Tellurium (Te)	mg/kg dw	<0.10	<0.10	<0.10	<0.020	<0.10	<0.020	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10	<0.10	0.0240	0.0240	-
	Thallium (Tl)	mg/kg dw	0.106	0.0977	0.0900	0.0553	0.0906	0.0879	0.0194	0.112	0.146	0.138	0.157	0.114	0.133	0.0198	0.101	0.0947	0.0806	0.0848	0.101	0.0924	0.00936
	Tin (Sn)	mg/kg dw	<0.50	<0.50	<0.50	0.300	<0.50	0.300	-	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<0.50	<0.50	<0.50	<0.50	0.300	0.300	-
	Uranium (U)	mg/kg dw	1.09	1.10	1.24	1.97	1.14	1.31	0.375	1.46	1.77	1.92	2.01	1.42	1.72	0.267	0.958	0.947	0.781	0.920	0.807	0.883	0.0826
	Vanadium (V)	mg/kg dw	67.2	65.2	62.9	58.6	63.4	63.5	3.20	52.4	57.9	55.3	61.6	51.2	55.7	4.21	50.0	48.2	44.5	46.0	44.1	46.6	2.51
	Zinc (Zn)	mg/kg dw	73.2	70.0	69.4	48.8	70.2	66.3	9.90	68.2	79.4	77.1	87.4	70.3	76.5	7.66	78.7	59.2	54.6	57.4	64.2	62.8	9.54
	Zirconium (Zr)	mg/kg dw	18.7	17.0	15.5	15.5	14.7	16.3	1.59	11.2	13.0	12.2	14.8	11.4	12.5	1.46	10.0	10.3	9.46	9.21	7.25	9.24	1.19

Indicates periphyton tissue concentration exceeding the higher reference mean by more than two times.

Notes: "-" = standard deviation not calculated, as all results were below the laboratory reporting limit. mg/kg dw = milligrams per kilogram dry weight.

Table C.3: Benthic Tissue Chemistry Results at lower Minto Creek and Reference Areas, Minto Mine AEMP, 2021

Analyte		Units	Lower Wolverine Creek (Reference)							Lower Big Creek (Reference)							Lower Minto Creek (Exposed)						
			LWC-1	LWC-2	LWC-3	LWC-4	LWC-5	Mean	Standard Deviation	LBC-1	LBC-2	LBC-3	LBC-4	LBC-5	Mean	Standard Deviation	LMC-1	LMC-2	LMC-3	LMC-4	LMC-5	Mean	Standard Deviation
Physical Tests	Moisture	%	87.2	82.0	87.5	86.2	80.2	84.6	3.31	87.3	84.2	87.2	81.9	88.0	85.7	2.59	85.9	89.9	87.6	83.1	79.8	85.3	3.93
Total Metals	Aluminum (Al)	mg/kg dw	383	880	436	496	1,410	721	432	700	657	1,330	813	492	798	319	653	984.0	733	812	952.0	827	141
	Antimony (Sb)	mg/kg dw	<0.020	0.0360	0.0220	0.0260	0.0480	0.0304	0.0116	0.0850	0.102	0.132	0.125	0.0970	0.108	0.0197	0.0350	0.0460	0.0350	0.0410	0.0500	0.0414	0.00666
	Arsenic (As)	mg/kg dw	0.881	2.22	0.909	0.930	2.38	1.46	0.765	3.95	2.94	5.98	3.95	4.81	4.33	1.14	1.25	2.07	1.58	2.04	1.75	1.74	0.341
	Barium (Ba)	mg/kg dw	14.0	63.4	19.6	22.1	70.3	37.9	26.7	39.0	26.8	45.8	33.7	28.7	34.8	7.76	23.4	28.0	23.6	31.3	23.9	26.0	3.50
	Beryllium (Be)	mg/kg dw	0.0270	0.0650	0.0260	0.0360	0.0950	0.0498	0.0298	0.0370	0.0500	0.0650	0.0440	0.0300	0.0452	0.0134	0.0220	0.0340	0.0240	0.0340	0.0310	0.0290	0.00566
	Bismuth (Bi)	mg/kg dw	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	-	0.0250	0.0190	0.0370	0.0260	0.0270	0.0268	0.00650	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	-
	Boron (B)	mg/kg dw	<1.0	1.20	1.00	<1.0	1.70	1.18	0.332	1.30	1.00	2.80	2.60	1.80	1.90	0.787	2.20	1.40	1.70	1.70	<1.0	1.60	0.338
	Cadmium (Cd)	mg/kg dw	0.627	0.483	0.668	0.659	0.303	0.548	0.156	2.43	1.03	2.35	2.20	1.98	2.00	0.568	0.157	0.455	0.198	0.342	0.302	0.291	0.119
	Calcium (Ca)	mg/kg dw	1,220	1,240	1,290	1,480	1,830	1,412	255	1,570	2,500	2,620	1,870	1,490	2,010	523	1,810	2,060	2,000	2,170	2,610	2,130	298
	Cesium (Cs)	mg/kg dw	0.0435	0.0859	0.0484	0.0571	0.129	0.0728	0.0355	0.165	0.141	0.275	0.194	0.143	0.184	0.0554	0.0621	0.0940	0.0783	0.0768	0.0974	0.0817	0.0143
	Chromium (Cr)	mg/kg dw	1.85	5.09	2.41	3.29	5.75	3.68	1.69	3.46	3.27	7.68	3.81	2.76	4.20	1.98	2.69	3.47	2.65	3.56	3.42	3.16	0.449
	Cobalt (Co)	mg/kg dw	1.00	1.72	1.22	1.42	2.22	1.52	0.474	1.53	1.19	2.50	1.47	1.91	1.72	0.506	0.742	1.12	0.810	1.19	0.859	0.944	0.198
	Copper (Cu)	mg/kg dw	20.1	21.1	19.8	20.6	22.9	20.9	1.22	24.8	23.0	30.8	24.6	32.0	27.0	4.06	13.4	16.2	14.2	17.5	21.7	16.6	3.28
	Iron (Fe)	mg/kg dw	832	1,850	952.0	1,090	2,950	1,535	885	1,440	1,240	2,730	1,740	1,050	1,640	661	1,430	2,020	1,670	1,860	1,960	1,788	240
	Lead (Pb)	mg/kg dw	0.164	0.347	0.169	0.287	0.502	0.294	0.140	0.580	0.488	0.946	0.614	0.495	0.625	0.188	0.291	0.455	0.367	0.361	0.422	0.379	0.0629
	Lithium (Li)	mg/kg dw	<0.50	0.590	<0.50	<0.50	0.950	0.608	0.204	0.570	<0.50	0.910	0.560	<0.50	0.608	0.170	<0.50	0.760	0.570	0.610	0.800	0.648	0.113
	Magnesium (Mg)	mg/kg dw	1,360	1,660	1,370	1,460	1,820	1,534	200	1,440	1,370	1,720	1,230	1,370	1,426	181	1,210	1,320	1,200	1,230	1,330	1,258	62.2
	Manganese (Mn)	mg/kg dw	97.7	258	158	146	236	179	66.4	331	217	332	297	368	309	57.2	284	266	288	478	149	293	118
	Mercury (Hg)	mg/kg dw	0.0250	0.0250	0.0270	0.0690	0.0630	0.0418	0.0222	0.0650	0.0280	0.0550	0.0550	0.0540	0.0514	0.0138	0.0150	0.0200	0.0250	0.0320	0.0260	0.0236	0.00643
	Molybdenum (Mo)	mg/kg dw	0.897	0.974	0.942	0.745	0.886	0.889	0.0878	0.530	1.02	0.665	0.795	0.530	0.708	0.206	0.793	0.719	0.680	1.02	0.615	0.765	0.156
	Nickel (Ni)	mg/kg dw	2.50	5.40	4.29	3.76	5.69	4.33	1.29	3.53	4.81	5.88	3.72	3.29	4.25	1.08	2.65	3.34	2.50	3.15	2.49	2.83	0.393
	Phosphorus (P)	mg/kg dw	10,000	8,900	9,950	9,860	7,680	9,278	1,001	8,870	8,480	7,880	7,080	9,430	8,348	906.6	7,140	7,960	8,300	8,420	8,080	7,980	503
	Potassium (K)	mg/kg dw	8,740	10,200	8,970	8,280	9,270	9,092	717	8,160	7,160	7,090	5,590	8,480	7,296	1,131	9,870	7,660	7,730	7,470	7,330	8,012	1,051
	Rubidium (Rb)	mg/kg dw	4.83	4.39	5.28	5.04	4.18	4.74	0.454	5.81	4.24	6.92	5.63	7.05	5.93	1.14	1.84	2.96	3.20	3.56	1.98	2.71	0.761
	Selenium (Se)	mg/kg dw	3.66	2.85	3.93	4.19	2.09	3.34	0.862	3.58	3.28	2.97	3.33	3.24	3.28	0.218	1.16	1.47	1.33	1.72	2.22	1.58	0.412
	Sodium (Na)	mg/kg dw	3,900	3,130	3,770	3,560	2,620	3,396	523	3,480	3,410	3,270	2,440	3,880	3,296	529	6,140	3,790	3,610	3,630	3,410	4,116	1,139
	Strontium (Sr)	mg/kg dw	12.2	14.9	15.6	23.4	20.9	17.4	4.60	22.4	26.4	24.1	22.5	21.9	23.5	1.84	16.9	21.9	20.2	22.1	22.5	20.7	2.31
	Tellurium (Te)	mg/kg dw	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	-
	Thallium (Tl)	mg/kg dw	0.00730	0.00870	0.00760	0.00940	0.0107	0.00874	0.00138	0.0160	0.0105	0.0220	0.0189	0.0166	0.0168	0.00424	0.00650	0.00840	0.00610	0.00890	0.00890	0.00776	0.00136
	Tin (Sn)	mg/kg dw	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-
	Uranium (U)	mg/kg dw	0.0862	0.209	0.0990	0.200	0.247	0.168	0.0714	0.232	2.04	0.378	0.381	0.236	0.653	0.779	0.222	0.214	0.152	0.263	0.109	0.192	0.0611
	Vanadium (V)	mg/kg dw	1.85	4.27	2.05	2.52	7.44	3.63	2.34	3.20	3.28	6.47	3.87	2.23	3.81	1.60	2.81	4.26	3.55	3.87	4.59	3.82	0.686
	Zinc (Zn)	mg/kg dw	108	111	98.8	130	107	111	11.6	144	90.5	116	126	137	123	20.9	64.9	89.4	88.8	91.2	66.9	80.2	13.1
	Zirconium (Zr)	mg/kg dw	0.610	1.56	0.640	0.810	2.04	1.13	0.638	0.900	0.840	1.60	1.06	0.770	1.03	0.334	0.640	0.980	0.700	0.760	0.780	0.772	0.129

Indicates benthic tissue concentration exceeding the higher reference mean by more than two times.

Indicates benthic tissue concentration exceeding the British Columbia guideline for selenium (4 mg/kg dw; BCMOE 2014).

Notes: "-" = not applicable. Standard deviation was not calculated as all values were below the laboratory reporting limit (LRL). mg/kg dw = milligrams per kilogram dry weight.

APPENDIX C

SEDIMENT QUALITY, PERIPHYTON TISSUE, AND BENTHIC INVERTEBRATE TISSUE DATA

Laboratory Reports

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2101264**	Page	: 1 of 16
Client	: **Minnow Environmental Inc.**	Laboratory	: Whitehorse - Environmental
Contact	: Pierre Stecko	Account Manager	: Can Dang
Address	: 204 – 1006 Fort Street Victoria BC Canada V8V 3K4	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: 250 595 1627	Telephone	: +1 867 668 6689
Project	: Minnow Environmental Inc Project for Minto MInes WUL Program	Date Samples Received	: 15-Sep-2021 15:14
PO	: ----	Date Analysis Commenced	: 12-Nov-2021
C-O-C number	: ----	Issue Date	: 09-Dec-2021 12:59
Sampler	: LBO, SLA		
Site	: ----		
Quote number	: Q79833 - Minnow/Minto		
No. of samples received	: 16		
No. of samples analysed	: 16		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Caleb Deroche	Lab Analyst	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Ragini Saini	Lab Assistant	Metals, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
%	percent
mg/kg	milligrams per kilogram
mg/kg wwt	milligrams per kilogram wet weight

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
DLA	*Detection Limit adjusted for required dilution.*

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LWC-1-PERT	LWC-2-PERT	LWC-3-PERT	LWC-4-PERT	LWC-5-PERT
					Client sampling date / time	12-Sep-2021	12-Sep-2021	12-Sep-2021	12-Sep-2021	11-Sep-2021
						WR2101264-001	WR2101264-002	WR2101264-003	WR2101264-004	WR2101264-005
						Result	Result	Result	Result	Result
Physical Tests										
moisture	----	E144-H	2.0	%		78.7	80.2	68.0	90.3	66.1
Metals										
aluminum	7429-90-5	E472	5.0	mg/kg		20000	18500	17900	9410	17600
aluminum	7429-90-5	E472A	1.0	mg/kg wwt		4250	3670	5720	910	5990
antimony	7440-36-0	E472	0.010	mg/kg		0.052	0.055	<0.050 DLA	0.086	<0.050 DLA
antimony	7440-36-0	E472A	0.0020	mg/kg wwt		0.0111	0.0109	<0.0100 DLA	0.0084	0.0107
arsenic	7440-38-2	E472	0.030	mg/kg		6.35	6.06	5.27	14.0	5.39
arsenic	7440-38-2	E472A	0.0060	mg/kg wwt		1.35	1.20	1.68	1.35	1.83
barium	7440-39-3	E472	0.050	mg/kg		270	262	225	253	212
barium	7440-39-3	E472A	0.010	mg/kg wwt		57.4	52.0	72.1	24.4	72.0
beryllium	7440-41-7	E472	0.010	mg/kg		0.975	0.882	0.815	0.489	0.782
beryllium	7440-41-7	E472A	0.0020	mg/kg wwt		0.208	0.175	0.260	0.0473	0.265
bismuth	7440-69-9	E472	0.010	mg/kg		0.108	0.098	0.087	0.066	0.086
bismuth	7440-69-9	E472A	0.0020	mg/kg wwt		0.0229	0.0195	0.0280	0.0063	0.0294
boron	7440-42-8	E472	1.0	mg/kg		8.6	7.7	<5.0 DLA	2.6	<5.0 DLA
boron	7440-42-8	E472A	0.20	mg/kg wwt		1.82	1.52	1.41	0.25	1.41
cadmium	7440-43-9	E472	0.010	mg/kg		0.220	0.195	0.178	0.276	0.178
cadmium	7440-43-9	E472A	0.0020	mg/kg wwt		0.0469	0.0386	0.0569	0.0267	0.0606
calcium	7440-70-2	E472	20	mg/kg		11600	10700	10300	8020	10100
calcium	7440-70-2	E472A	4.0	mg/kg wwt		2460	2130	3300	776	3420
cesium	7440-46-2	E472	0.0050	mg/kg		1.55	1.58	1.24	0.926	1.29
cesium	7440-46-2	E472A	0.0010	mg/kg wwt		0.331	0.314	0.397	0.0896	0.436
chromium	7440-47-3	E472	0.20	mg/kg		124	101	63.9	35.6	74.0
chromium	7440-47-3	E472A	0.040	mg/kg wwt		26.5	20.0	20.4	3.44	25.1
cobalt	7440-48-4	E472	0.020	mg/kg		15.1	14.5	14.2	12.6	14.3
cobalt	7440-48-4	E472A	0.0040	mg/kg wwt		3.22	2.88	4.56	1.22	4.86
copper	7440-50-8	E472	0.20	mg/kg		29.5	27.1	24.0	24.7	22.9
copper	7440-50-8	E472A	0.040	mg/kg wwt		6.28	5.38	7.66	2.39	7.76
iron	7439-89-6	E472	5.0	mg/kg		31400	29500	27500	34900	27800
iron	7439-89-6	E472A	1.0	mg/kg wwt		6680	5850	8800	3380	9450
lead	7439-92-1	E472	0.050	mg/kg		6.75	6.51	6.19	3.29	6.25

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LWC-1-PERT	LWC-2-PERT	LWC-3-PERT	LWC-4-PERT	LWC-5-PERT
					Client sampling date / time	12-Sep-2021	12-Sep-2021	12-Sep-2021	12-Sep-2021	11-Sep-2021
						WR2101264-001	WR2101264-002	WR2101264-003	WR2101264-004	WR2101264-005
						Result	Result	Result	Result	Result
Metals										
lead	7439-92-1	E472A	0.010	mg/kg wwt		1.44	1.29	1.98	0.318	2.12
lithium	7439-93-2	E472	0.50	mg/kg		14.0	12.8	13.6	6.86	13.7
lithium	7439-93-2	E472A	0.10	mg/kg wwt		2.97	2.54	4.36	0.66	4.65
magnesium	7439-95-4	E472	2.0	mg/kg		11800	11400	10800	7860	11100
magnesium	7439-95-4	E472A	0.40	mg/kg wwt		2520	2260	3470	760	3780
manganese	7439-96-5	E472	0.050	mg/kg		1150	1100	783	1900	782
manganese	7439-96-5	E472A	0.010	mg/kg wwt		244	219	250	184	265
mercury	7439-97-6	E511	0.0050	mg/kg		0.0422	0.0352	0.0292	0.140	0.0366
mercury	7439-97-6	E511A	0.0010	mg/kg wwt		0.0090	0.0070	0.0093	0.0136	0.0124
molybdenum	7439-98-7	E472	0.040	mg/kg		0.708	0.689	0.453	0.782	0.506
molybdenum	7439-98-7	E472A	0.0080	mg/kg wwt		0.151	0.137	0.145	0.0756	0.172
nickel	7440-02-0	E472	0.20	mg/kg		79.1	70.3	46.9	22.8	55.0
nickel	7440-02-0	E472A	0.040	mg/kg wwt		16.8	13.9	15.0	2.20	18.7
phosphorus	7723-14-0	E472	10	mg/kg		1470	1430	1370	3970	1510
phosphorus	7723-14-0	E472A	2.0	mg/kg wwt		312	284	438	384	512
potassium	7440-09-7	E472	20	mg/kg		1790	1870	1350	4180	1500
potassium	7440-09-7	E472A	4.0	mg/kg wwt		382	372	431	404	510
rubidium	7440-17-7	E472	0.050	mg/kg		15.5	15.3	14.0	10.6	13.9
rubidium	7440-17-7	E472A	0.010	mg/kg wwt		3.30	3.03	4.46	1.02	4.72
selenium	7782-49-2	E472	0.10	mg/kg		0.65	0.57	<0.50 DLA	0.75	<0.50 DLA
selenium	7782-49-2	E472A	0.020	mg/kg wwt		0.139	0.113	0.127	0.072	0.137
sodium	7440-23-5	E472	20	mg/kg		499	551	414	497	460
sodium	7440-23-5	E472A	4.0	mg/kg wwt		106	109	132	48.1	156
strontium	7440-24-6	E472	0.10	mg/kg		116	109	100	85.9	95.0
strontium	7440-24-6	E472A	0.020	mg/kg wwt		24.8	21.6	32.1	8.30	32.2
tellurium	13494-80-9	E472	0.020	mg/kg		<0.100 DLA	<0.100 DLA	<0.100 DLA	<0.020	<0.100 DLA
tellurium	13494-80-9	E472A	0.0040	mg/kg wwt		<0.0200 DLA	<0.0200 DLA	<0.0200 DLA	<0.0040	<0.0200 DLA
thallium	7440-28-0	E472	0.0020	mg/kg		0.106	0.0977	0.0900	0.0553	0.0906
thallium	7440-28-0	E472A	0.00040	mg/kg wwt		0.0225	0.0194	0.0288	0.00535	0.0307
tin	7440-31-5	E472	0.10	mg/kg		<0.50 DLA	<0.50 DLA	<0.50 DLA	0.30	<0.50 DLA
tin	7440-31-5	E472A	0.020	mg/kg wwt		<0.100 DLA	<0.100 DLA	<0.100 DLA	0.029	<0.100 DLA
uranium	7440-61-1	E472	0.0020	mg/kg		1.09	1.10	1.24	1.97	1.14

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LWC-1-PERT	LWC-2-PERT	LWC-3-PERT	LWC-4-PERT	LWC-5-PERT
					Client sampling date / time	12-Sep-2021	12-Sep-2021	12-Sep-2021	12-Sep-2021	11-Sep-2021
						WR2101264-001	WR2101264-002	WR2101264-003	WR2101264-004	WR2101264-005
						Result	Result	Result	Result	Result
Metals										
uranium	7440-61-1	E472A	0.00040	mg/kg wwt		0.232	0.218	0.395	0.190	0.386
vanadium	7440-62-2	E472	0.10	mg/kg		67.2	65.2	62.9	58.6	63.4
vanadium	7440-62-2	E472A	0.020	mg/kg wwt		14.3	12.9	20.1	5.66	21.5
zinc	7440-66-6	E472	1.0	mg/kg		73.2	70.0	69.4	48.8	70.2
zinc	7440-66-6	E472A	0.20	mg/kg wwt		15.6	13.9	22.2	4.72	23.8
zirconium	7440-67-7	E472	0.20	mg/kg		18.7	17.0	15.5	15.5	14.7
zirconium	7440-67-7	E472A	0.040	mg/kg wwt		3.98	3.38	4.95	1.50	5.00

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LBC-1-PERT	LBC-2-PERT	LBC-3-PERT	LBC-4-PERT	LBC-5-PERT
					Client sampling date / time	14-Sep-2021	14-Sep-2021	14-Sep-2021	14-Sep-2021	14-Sep-2021
						WR2101264-006	WR2101264-007	WR2101264-008	WR2101264-009	WR2101264-010
						Result	Result	Result	Result	Result
Physical Tests										
moisture	----	E144-H	2.0	%		65.0	77.0	74.9	79.2	81.1
Metals										
aluminum	7429-90-5	E472	5.0	mg/kg		13900	16000	14900	17100	12200
aluminum	7429-90-5	E472A	1.0	mg/kg wwt		4860	3700	3730	3550	2310
antimony	7440-36-0	E472	0.010	mg/kg		0.074	0.165	0.126	0.182	0.193
antimony	7440-36-0	E472A	0.0020	mg/kg wwt		0.0261	0.0381	0.0315	0.0378	0.0364
arsenic	7440-38-2	E472	0.030	mg/kg		15.6	23.5	21.3	26.4	20.9
arsenic	7440-38-2	E472A	0.0060	mg/kg wwt		5.46	5.42	5.34	5.49	3.95
barium	7440-39-3	E472	0.050	mg/kg		232	293	276	322	229
barium	7440-39-3	E472A	0.010	mg/kg wwt		81.1	67.4	69.3	66.9	43.2
beryllium	7440-41-7	E472	0.010	mg/kg		0.604	0.707	0.705	0.778	0.548
beryllium	7440-41-7	E472A	0.0020	mg/kg wwt		0.211	0.163	0.177	0.162	0.103
bismuth	7440-69-9	E472	0.010	mg/kg		0.315	0.441	0.418	0.508	0.438
bismuth	7440-69-9	E472A	0.0020	mg/kg wwt		0.110	0.102	0.105	0.106	0.0827
boron	7440-42-8	E472	1.0	mg/kg		5.8	10.3	7.3	12.4	30.1
boron	7440-42-8	E472A	0.20	mg/kg wwt		2.02	2.36	1.84	2.58	5.68
cadmium	7440-43-9	E472	0.010	mg/kg		0.221	0.288	0.292	0.352	0.304
cadmium	7440-43-9	E472A	0.0020	mg/kg wwt		0.0773	0.0664	0.0732	0.0731	0.0575
calcium	7440-70-2	E472	20	mg/kg		8730	10200	10400	10900	9810
calcium	7440-70-2	E472A	4.0	mg/kg wwt		3050	2350	2600	2270	1850
cesium	7440-46-2	E472	0.0050	mg/kg		1.89	2.90	2.50	3.03	2.33
cesium	7440-46-2	E472A	0.0010	mg/kg wwt		0.662	0.668	0.628	0.630	0.440
chromium	7440-47-3	E472	0.20	mg/kg		44.4	43.7	53.2	53.7	46.0
chromium	7440-47-3	E472A	0.040	mg/kg wwt		15.5	10.1	13.4	11.2	8.68
cobalt	7440-48-4	E472	0.020	mg/kg		10.8	12.0	12.0	13.4	9.66
cobalt	7440-48-4	E472A	0.0040	mg/kg wwt		3.78	2.77	3.02	2.77	1.82
copper	7440-50-8	E472	0.20	mg/kg		25.9	31.9	34.5	43.6	43.4
copper	7440-50-8	E472A	0.040	mg/kg wwt		9.07	7.35	8.66	9.06	8.20
iron	7439-89-6	E472	5.0	mg/kg		23100	26100	25600	28500	22300
iron	7439-89-6	E472A	1.0	mg/kg wwt		8100	6020	6420	5930	4200
lead	7439-92-1	E472	0.050	mg/kg		9.33	11.6	11.1	12.6	11.2
lead	7439-92-1	E472A	0.010	mg/kg wwt		3.26	2.68	2.79	2.62	2.11

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LBC-1-PERT	LBC-2-PERT	LBC-3-PERT	LBC-4-PERT	LBC-5-PERT
					Client sampling date / time	14-Sep-2021	14-Sep-2021	14-Sep-2021	14-Sep-2021	14-Sep-2021
						WR2101264-006	WR2101264-007	WR2101264-008	WR2101264-009	WR2101264-010
						Result	Result	Result	Result	Result
Metals										
lithium	7439-93-2	E472	0.50	mg/kg		11.1	11.6	11.8	12.3	9.52
lithium	7439-93-2	E472A	0.10	mg/kg wwt		3.87	2.68	2.95	2.56	1.80
magnesium	7439-95-4	E472	2.0	mg/kg		8030	8830	8600	9350	7320
magnesium	7439-95-4	E472A	0.40	mg/kg wwt		2810	2030	2160	1940	1380
manganese	7439-96-5	E472	0.050	mg/kg		833	1310	1240	1600	1020
manganese	7439-96-5	E472A	0.010	mg/kg wwt		292	302	312	334	193
mercury	7439-97-6	E511	0.0050	mg/kg		0.0286	0.0451	0.0490	0.0492	0.0330
mercury	7439-97-6	E511A	0.0010	mg/kg wwt		0.0100	0.0104	0.0123	0.0102	0.0062
molybdenum	7439-98-7	E472	0.040	mg/kg		0.670	1.06	0.918	0.994	0.815
molybdenum	7439-98-7	E472A	0.0080	mg/kg wwt		0.234	0.245	0.230	0.207	0.154
nickel	7440-02-0	E472	0.20	mg/kg		36.0	31.6	37.9	34.5	35.9
nickel	7440-02-0	E472A	0.040	mg/kg wwt		12.6	7.28	9.52	7.17	6.78
phosphorus	7723-14-0	E472	10	mg/kg		1190	1300	1170	1190	1170
phosphorus	7723-14-0	E472A	2.0	mg/kg wwt		416	299	294	248	221
potassium	7440-09-7	E472	20	mg/kg		1370	1830	1750	2070	2090
potassium	7440-09-7	E472A	4.0	mg/kg wwt		479	421	438	430	394
rubidium	7440-17-7	E472	0.050	mg/kg		12.5	16.0	15.0	17.5	12.8
rubidium	7440-17-7	E472A	0.010	mg/kg wwt		4.38	3.68	3.77	3.64	2.43
selenium	7782-49-2	E472	0.10	mg/kg		<0.50 DLA	<0.50 DLA	<0.50 DLA	<0.50 DLA	<0.50 DLA
selenium	7782-49-2	E472A	0.020	mg/kg wwt		<0.100 DLA	<0.100 DLA	0.106	0.102	<0.100 DLA
sodium	7440-23-5	E472	20	mg/kg		431	506	472	523	612
sodium	7440-23-5	E472A	4.0	mg/kg wwt		151	116	118	109	116
strontium	7440-24-6	E472	0.10	mg/kg		87.8	108	106	118	92.5
strontium	7440-24-6	E472A	0.020	mg/kg wwt		30.7	24.9	26.5	24.5	17.4
tellurium	13494-80-9	E472	0.020	mg/kg		<0.100 DLA	<0.100 DLA	<0.100 DLA	<0.100 DLA	<0.100 DLA
tellurium	13494-80-9	E472A	0.0040	mg/kg wwt		<0.0200 DLA	<0.0200 DLA	<0.0200 DLA	<0.0200 DLA	<0.0200 DLA
thallium	7440-28-0	E472	0.0020	mg/kg		0.112	0.146	0.138	0.157	0.114
thallium	7440-28-0	E472A	0.00040	mg/kg wwt		0.0392	0.0337	0.0345	0.0326	0.0215
tin	7440-31-5	E472	0.10	mg/kg		<0.50 DLA	<0.50 DLA	<0.50 DLA	<0.50 DLA	<0.50 DLA
tin	7440-31-5	E472A	0.020	mg/kg wwt		<0.100 DLA	<0.100 DLA	<0.100 DLA	<0.100 DLA	<0.100 DLA
uranium	7440-61-1	E472	0.0020	mg/kg		1.46	1.77	1.92	2.01	1.42
uranium	7440-61-1	E472A	0.00040	mg/kg wwt		0.511	0.407	0.483	0.418	0.267

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LBC-1-PERT	LBC-2-PERT	LBC-3-PERT	LBC-4-PERT	LBC-5-PERT
					Client sampling date / time	14-Sep-2021	14-Sep-2021	14-Sep-2021	14-Sep-2021	14-Sep-2021
						WR2101264-006	WR2101264-007	WR2101264-008	WR2101264-009	WR2101264-010
						Result	Result	Result	Result	Result
Metals										
vanadium	7440-62-2	E472	0.10	mg/kg		52.4	57.9	55.3	61.6	51.2
vanadium	7440-62-2	E472A	0.020	mg/kg wwt		18.3	13.3	13.9	12.8	9.66
zinc	7440-66-6	E472	1.0	mg/kg		68.2	79.4	77.1	87.4	70.3
zinc	7440-66-6	E472A	0.20	mg/kg wwt		23.8	18.3	19.3	18.2	13.3
zirconium	7440-67-7	E472	0.20	mg/kg		11.2	13.0	12.2	14.8	11.4
zirconium	7440-67-7	E472A	0.040	mg/kg wwt		3.92	3.00	3.06	3.06	2.14

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LMC-1-PERT	LMC-2-PERT	LMC-3-PERT	LMC-4-PERT	LMC-5-PERT
					Client sampling date / time	10-Sep-2021	09-Sep-2021	09-Sep-2021	09-Sep-2021	09-Sep-2021
						WR2101264-011	WR2101264-012	WR2101264-013	WR2101264-014	WR2101264-015
						Result	Result	Result	Result	Result
Physical Tests										
moisture	----	E144A	2.0	%		----	----	----	60.5	87.7
moisture	----	E144-H	2.0	%		86.4	55.5	54.3	----	----
Metals										
aluminum	7429-90-5	E475	5.0	mg/kg		----	----	----	12500	10200
aluminum	7429-90-5	E472	5.0	mg/kg		12800	13900	12200	----	----
aluminum	7429-90-5	E475A	1.0	mg/kg wwt		----	----	----	4950	1250
aluminum	7429-90-5	E472A	1.0	mg/kg wwt		1740	6200	5560	----	----
antimony	7440-36-0	E472	0.010	mg/kg		0.112	<0.050 DLA	<0.050 DLA	----	----
antimony	7440-36-0	E475	0.020	mg/kg		----	----	----	<0.100 DLA	0.085
antimony	7440-36-0	E472A	0.0020	mg/kg wwt		0.0153	0.0151	0.0170	----	----
antimony	7440-36-0	E475A	0.0040	mg/kg wwt		----	----	----	<0.0200 DLA	0.0104
arsenic	7440-38-2	E472	0.030	mg/kg		12.3	7.17	6.98	----	----
arsenic	7440-38-2	E475	0.050	mg/kg		----	----	----	8.03	12.7
arsenic	7440-38-2	E472A	0.0060	mg/kg wwt		1.68	3.19	3.19	----	----
arsenic	7440-38-2	E475A	0.010	mg/kg wwt		----	----	----	3.17	1.56
barium	7440-39-3	E475	0.050	mg/kg		----	----	----	278	198
barium	7440-39-3	E472	0.050	mg/kg		322	233	214	----	----
barium	7440-39-3	E475A	0.010	mg/kg wwt		----	----	----	110	24.3
barium	7440-39-3	E472A	0.010	mg/kg wwt		43.9	104	97.8	----	----
beryllium	7440-41-7	E475	0.010	mg/kg		----	----	----	0.424	0.342
beryllium	7440-41-7	E472	0.010	mg/kg		0.431	0.461	0.432	----	----
beryllium	7440-41-7	E475A	0.0020	mg/kg wwt		----	----	----	0.167	0.0421
beryllium	7440-41-7	E472A	0.0020	mg/kg wwt		0.0589	0.205	0.197	----	----
bismuth	7440-69-9	E475	0.010	mg/kg		----	----	----	0.095	0.109
bismuth	7440-69-9	E472	0.010	mg/kg		0.100	0.096	0.084	----	----
bismuth	7440-69-9	E475A	0.0020	mg/kg wwt		----	----	----	0.0376	0.0134
bismuth	7440-69-9	E472A	0.0020	mg/kg wwt		0.0136	0.0426	0.0383	----	----
boron	7440-42-8	E475	1.0	mg/kg		----	----	----	<5.0 DLA	3.5
boron	7440-42-8	E472	1.0	mg/kg		10.9	<5.0 DLA	<5.0 DLA	----	----
boron	7440-42-8	E475A	0.20	mg/kg wwt		----	----	----	1.61	0.44
boron	7440-42-8	E472A	0.20	mg/kg wwt		1.49	1.49	1.53	----	----
cadmium	7440-43-9	E475	0.010	mg/kg		----	----	----	0.219	0.258

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LMC-1-PERT	LMC-2-PERT	LMC-3-PERT	LMC-4-PERT	LMC-5-PERT
					Client sampling date / time	10-Sep-2021	09-Sep-2021	09-Sep-2021	09-Sep-2021	09-Sep-2021
						WR2101264-011	WR2101264-012	WR2101264-013	WR2101264-014	WR2101264-015
						Result	Result	Result	Result	Result
Metals										
cadmium	7440-43-9	E472	0.010	mg/kg		0.358	0.180	0.176	----	----
cadmium	7440-43-9	E475A	0.0020	mg/kg wwt		----	----	----	0.0866	0.0318
cadmium	7440-43-9	E472A	0.0020	mg/kg wwt		0.0489	0.0802	0.0806	----	----
calcium	7440-70-2	E475	20	mg/kg		----	----	----	9100	14800
calcium	7440-70-2	E472	20	mg/kg		11800	9980	8860	----	----
calcium	7440-70-2	E475A	4.0	mg/kg wwt		----	----	----	3600	1830
calcium	7440-70-2	E472A	4.0	mg/kg wwt		1620	4440	4040	----	----
cesium	7440-46-2	E475	0.0050	mg/kg		----	----	----	0.745	1.01
cesium	7440-46-2	E472	0.0050	mg/kg		0.990	0.689	0.684	----	----
cesium	7440-46-2	E475A	0.0010	mg/kg wwt		----	----	----	0.294	0.124
cesium	7440-46-2	E472A	0.0010	mg/kg wwt		0.135	0.307	0.312	----	----
chromium	7440-47-3	E475	0.20	mg/kg		----	----	----	26.8	23.0
chromium	7440-47-3	E472	0.20	mg/kg		92.8	38.5	43.0	----	----
chromium	7440-47-3	E475A	0.040	mg/kg wwt		----	----	----	10.6	2.83
chromium	7440-47-3	E472A	0.040	mg/kg wwt		12.7	17.1	19.6	----	----
cobalt	7440-48-4	E475	0.020	mg/kg		----	----	----	11.7	8.58
cobalt	7440-48-4	E472	0.020	mg/kg		12.3	10.8	10.4	----	----
cobalt	7440-48-4	E475A	0.0040	mg/kg wwt		----	----	----	4.63	1.06
cobalt	7440-48-4	E472A	0.0040	mg/kg wwt		1.68	4.80	4.76	----	----
copper	7440-50-8	E475	0.20	mg/kg		----	----	----	48.5	123
copper	7440-50-8	E472	0.20	mg/kg		44.8	36.4	31.8	----	----
copper	7440-50-8	E475A	0.040	mg/kg wwt		----	----	----	19.2	15.2
copper	7440-50-8	E472A	0.040	mg/kg wwt		6.12	16.2	14.5	----	----
iron	7439-89-6	E475	5.0	mg/kg		----	----	----	22400	20300
iron	7439-89-6	E472	5.0	mg/kg		24500	23600	21700	----	----
iron	7439-89-6	E475A	1.0	mg/kg wwt		----	----	----	8870	2500
iron	7439-89-6	E472A	1.0	mg/kg wwt		3340	10500	9910	----	----
lead	7439-92-1	E475	0.050	mg/kg		----	----	----	4.91	4.52
lead	7439-92-1	E472	0.050	mg/kg		5.37	5.40	5.01	----	----
lead	7439-92-1	E475A	0.010	mg/kg wwt		----	----	----	1.94	0.557
lead	7439-92-1	E472A	0.010	mg/kg wwt		0.733	2.40	2.29	----	----
lithium	7439-93-2	E475	0.50	mg/kg		----	----	----	9.58	9.31

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LMC-1-PERT	LMC-2-PERT	LMC-3-PERT	LMC-4-PERT	LMC-5-PERT
					Client sampling date / time	10-Sep-2021	09-Sep-2021	09-Sep-2021	09-Sep-2021	09-Sep-2021
						WR2101264-011	WR2101264-012	WR2101264-013	WR2101264-014	WR2101264-015
						Result	Result	Result	Result	Result
Metals										
lithium	7439-93-2	E472	0.50	mg/kg		9.69	11.1	9.69	----	----
lithium	7439-93-2	E475A	0.10	mg/kg wwt		----	----	----	3.78	1.15
lithium	7439-93-2	E472A	0.10	mg/kg wwt		1.32	4.94	4.43	----	----
magnesium	7439-95-4	E475	2.0	mg/kg		----	----	----	6370	8060
magnesium	7439-95-4	E472	2.0	mg/kg		8880	7200	6550	----	----
magnesium	7439-95-4	E475A	0.40	mg/kg wwt		----	----	----	2520	992
magnesium	7439-95-4	E472A	0.40	mg/kg wwt		1210	3200	2990	----	----
manganese	7439-96-5	E475	0.050	mg/kg		----	----	----	2700	1640
manganese	7439-96-5	E472	0.050	mg/kg		3210	1390	1570	----	----
manganese	7439-96-5	E475A	0.010	mg/kg wwt		----	----	----	1070	202
manganese	7439-96-5	E472A	0.010	mg/kg wwt		439	621	718	----	----
mercury	7439-97-6	E511	0.0050	mg/kg		0.0391	0.0288	0.0276	----	----
mercury	7439-97-6	E512	0.010	mg/kg		----	----	----	0.038	0.071
mercury	7439-97-6	E511A	0.0010	mg/kg wwt		0.0053	0.0128	0.0126	----	----
mercury	7439-97-6	E512A	0.0020	mg/kg wwt		----	----	----	0.0151	0.0088
molybdenum	7439-98-7	E475	0.040	mg/kg		----	----	----	0.708	0.784
molybdenum	7439-98-7	E472	0.040	mg/kg		1.14	0.580	0.614	----	----
molybdenum	7439-98-7	E475A	0.0080	mg/kg wwt		----	----	----	0.280	0.0964
molybdenum	7439-98-7	E472A	0.0080	mg/kg wwt		0.155	0.258	0.280	----	----
nickel	7440-02-0	E475	0.20	mg/kg		----	----	----	26.0	17.9
nickel	7440-02-0	E472	0.20	mg/kg		38.4	34.4	38.6	----	----
nickel	7440-02-0	E475A	0.040	mg/kg wwt		----	----	----	10.3	2.20
nickel	7440-02-0	E472A	0.040	mg/kg wwt		5.24	15.3	17.6	----	----
phosphorus	7723-14-0	E472	10	mg/kg		2910	1120	1150	----	----
phosphorus	7723-14-0	E475	20	mg/kg		----	----	----	1260	2640
phosphorus	7723-14-0	E472A	2.0	mg/kg wwt		398	497	525	----	----
phosphorus	7723-14-0	E475A	4.0	mg/kg wwt		----	----	----	498	326
potassium	7440-09-7	E475	20	mg/kg		----	----	----	1630	8860
potassium	7440-09-7	E472	20	mg/kg		6680	1380	1390	----	----
potassium	7440-09-7	E475A	4.0	mg/kg wwt		----	----	----	644	1090
potassium	7440-09-7	E472A	4.0	mg/kg wwt		911	617	637	----	----
rubidium	7440-17-7	E475	0.050	mg/kg		----	----	----	10.2	13.8

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LMC-1-PERT	LMC-2-PERT	LMC-3-PERT	LMC-4-PERT	LMC-5-PERT
					Client sampling date / time	10-Sep-2021	09-Sep-2021	09-Sep-2021	09-Sep-2021	09-Sep-2021
						WR2101264-011	WR2101264-012	WR2101264-013	WR2101264-014	WR2101264-015
						Result	Result	Result	Result	Result
Metals										
rubidium	7440-17-7	E472	0.050	mg/kg		12.9	10.7	9.39	----	----
rubidium	7440-17-7	E475A	0.010	mg/kg wwt		----	----	----	4.05	1.70
rubidium	7440-17-7	E472A	0.010	mg/kg wwt		1.76	4.77	4.29	----	----
selenium	7782-49-2	E475	0.10	mg/kg		----	----	----	1.17	1.40
selenium	7782-49-2	E472	0.10	mg/kg		2.18	0.72	0.82	----	----
selenium	7782-49-2	E475A	0.020	mg/kg wwt		----	----	----	0.462	0.172
selenium	7782-49-2	E472A	0.020	mg/kg wwt		0.298	0.319	0.373	----	----
sodium	7440-23-5	E475	20	mg/kg		----	----	----	278	306
sodium	7440-23-5	E472	20	mg/kg		669	312	325	----	----
sodium	7440-23-5	E475A	4.0	mg/kg wwt		----	----	----	110	37.7
sodium	7440-23-5	E472A	4.0	mg/kg wwt		91.3	139	148	----	----
strontium	7440-24-6	E475	0.10	mg/kg		----	----	----	95.7	98.7
strontium	7440-24-6	E472	0.10	mg/kg		134	102	88.8	----	----
strontium	7440-24-6	E475A	0.020	mg/kg wwt		----	----	----	37.8	12.2
strontium	7440-24-6	E472A	0.020	mg/kg wwt		18.4	45.4	40.5	----	----
tellurium	13494-80-9	E475	0.020	mg/kg		----	----	----	<0.100 DLA	0.024
tellurium	13494-80-9	E472	0.020	mg/kg		<0.100 DLA	<0.100 DLA	<0.100 DLA	----	----
tellurium	13494-80-9	E475A	0.0040	mg/kg wwt		----	----	----	<0.0200 DLA	<0.0040
tellurium	13494-80-9	E472A	0.0040	mg/kg wwt		<0.0200 DLA	<0.0200 DLA	<0.0200 DLA	----	----
thallium	7440-28-0	E475	0.0020	mg/kg		----	----	----	0.0848	0.101
thallium	7440-28-0	E472	0.0020	mg/kg		0.101	0.0947	0.0806	----	----
thallium	7440-28-0	E475A	0.00040	mg/kg wwt		----	----	----	0.0335	0.0125
thallium	7440-28-0	E472A	0.00040	mg/kg wwt		0.0138	0.0421	0.0368	----	----
tin	7440-31-5	E475	0.10	mg/kg		----	----	----	<0.50 DLA	0.30
tin	7440-31-5	E472	0.10	mg/kg		<0.50 DLA	<0.50 DLA	<0.50 DLA	----	----
tin	7440-31-5	E475A	0.020	mg/kg wwt		----	----	----	<0.100 DLA	0.036
tin	7440-31-5	E472A	0.020	mg/kg wwt		<0.100 DLA	<0.100 DLA	<0.100 DLA	----	----
uranium	7440-61-1	E475	0.0020	mg/kg		----	----	----	0.920	0.807
uranium	7440-61-1	E472	0.0020	mg/kg		0.958	0.947	0.781	----	----
uranium	7440-61-1	E475A	0.00040	mg/kg wwt		----	----	----	0.364	0.0993
uranium	7440-61-1	E472A	0.00040	mg/kg wwt		0.131	0.422	0.356	----	----
vanadium	7440-62-2	E475	0.10	mg/kg		----	----	----	46.0	44.1

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LMC-1-PERT	LMC-2-PERT	LMC-3-PERT	LMC-4-PERT	LMC-5-PERT
					Client sampling date / time	10-Sep-2021	09-Sep-2021	09-Sep-2021	09-Sep-2021	09-Sep-2021
						WR2101264-011	WR2101264-012	WR2101264-013	WR2101264-014	WR2101264-015
						Result	Result	Result	Result	Result
Metals										
vanadium	7440-62-2	E472	0.10	mg/kg		50.0	48.2	44.5	----	----
vanadium	7440-62-2	E475A	0.020	mg/kg wwt		----	----	----	18.2	5.42
vanadium	7440-62-2	E472A	0.020	mg/kg wwt		6.83	21.4	20.3	----	----
zinc	7440-66-6	E475	1.0	mg/kg		----	----	----	57.4	64.2
zinc	7440-66-6	E472	1.0	mg/kg		78.7	59.2	54.6	----	----
zinc	7440-66-6	E475A	0.20	mg/kg wwt		----	----	----	22.7	7.90
zinc	7440-66-6	E472A	0.20	mg/kg wwt		10.7	26.4	24.9	----	----
zirconium	7440-67-7	E475	0.20	mg/kg		----	----	----	9.21	7.25
zirconium	7440-67-7	E472	0.20	mg/kg		10.0	10.3	9.46	----	----
zirconium	7440-67-7	E475A	0.040	mg/kg wwt		----	----	----	3.64	0.892
zirconium	7440-67-7	E472A	0.040	mg/kg wwt		1.36	4.58	4.32	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LMC-5-PERT-X	----	----	----	----
					Client sampling date / time	09-Sep-2021	----	----	----	----
						WR2101264-016	--------	--------	--------	--------
						Result	----	----	----	----
Physical Tests										
moisture	----	E144A	2.0	%		83.5	----	----	----	----
Metals										
aluminum	7429-90-5	E475	5.0	mg/kg		9570	----	----	----	----
aluminum	7429-90-5	E475A	1.0	mg/kg wwt		1580	----	----	----	----
antimony	7440-36-0	E475	0.020	mg/kg		0.082	----	----	----	----
antimony	7440-36-0	E475A	0.0040	mg/kg wwt		0.0135	----	----	----	----
arsenic	7440-38-2	E475	0.050	mg/kg		10.0	----	----	----	----
arsenic	7440-38-2	E475A	0.010	mg/kg wwt		1.65	----	----	----	----
barium	7440-39-3	E475	0.050	mg/kg		179	----	----	----	----
barium	7440-39-3	E475A	0.010	mg/kg wwt		29.5	----	----	----	----
beryllium	7440-41-7	E475	0.010	mg/kg		0.330	----	----	----	----
beryllium	7440-41-7	E475A	0.0020	mg/kg wwt		0.0544	----	----	----	----
bismuth	7440-69-9	E475	0.010	mg/kg		0.112	----	----	----	----
bismuth	7440-69-9	E475A	0.0020	mg/kg wwt		0.0185	----	----	----	----
boron	7440-42-8	E475	1.0	mg/kg		3.4	----	----	----	----
boron	7440-42-8	E475A	0.20	mg/kg wwt		0.55	----	----	----	----
cadmium	7440-43-9	E475	0.010	mg/kg		0.201	----	----	----	----
cadmium	7440-43-9	E475A	0.0020	mg/kg wwt		0.0332	----	----	----	----
calcium	7440-70-2	E475	20	mg/kg		13300	----	----	----	----
calcium	7440-70-2	E475A	4.0	mg/kg wwt		2190	----	----	----	----
cesium	7440-46-2	E475	0.0050	mg/kg		1.06	----	----	----	----
cesium	7440-46-2	E475A	0.0010	mg/kg wwt		0.174	----	----	----	----
chromium	7440-47-3	E475	0.20	mg/kg		24.9	----	----	----	----
chromium	7440-47-3	E475A	0.040	mg/kg wwt		4.11	----	----	----	----
cobalt	7440-48-4	E475	0.020	mg/kg		8.57	----	----	----	----
cobalt	7440-48-4	E475A	0.0040	mg/kg wwt		1.41	----	----	----	----
copper	7440-50-8	E475	0.20	mg/kg		134	----	----	----	----
copper	7440-50-8	E475A	0.040	mg/kg wwt		22.1	----	----	----	----
iron	7439-89-6	E475	5.0	mg/kg		20000	----	----	----	----
iron	7439-89-6	E475A	1.0	mg/kg wwt		3310	----	----	----	----
lead	7439-92-1	E475	0.050	mg/kg		4.79	----	----	----	----
lead	7439-92-1	E475A	0.010	mg/kg wwt		0.790	----	----	----	----

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LMC-5-PERT-X	----	----	----	----
					Client sampling date / time	09-Sep-2021	----	----	----	----
						WR2101264-016	--------	--------	--------	--------
						Result	----	----	----	----
Metals										
lithium	7439-93-2	E475	0.50	mg/kg		8.74	----	----	----	----
lithium	7439-93-2	E475A	0.10	mg/kg wwt		1.44	----	----	----	----
magnesium	7439-95-4	E475	2.0	mg/kg		7040	----	----	----	----
magnesium	7439-95-4	E475A	0.40	mg/kg wwt		1160	----	----	----	----
manganese	7439-96-5	E475	0.050	mg/kg		1290	----	----	----	----
manganese	7439-96-5	E475A	0.010	mg/kg wwt		212	----	----	----	----
mercury	7439-97-6	E512	0.010	mg/kg		0.055	----	----	----	----
mercury	7439-97-6	E512A	0.0020	mg/kg wwt		0.0091	----	----	----	----
molybdenum	7439-98-7	E475	0.040	mg/kg		0.744	----	----	----	----
molybdenum	7439-98-7	E475A	0.0080	mg/kg wwt		0.123	----	----	----	----
nickel	7440-02-0	E475	0.20	mg/kg		17.7	----	----	----	----
nickel	7440-02-0	E475A	0.040	mg/kg wwt		2.92	----	----	----	----
phosphorus	7723-14-0	E475	20	mg/kg		2250	----	----	----	----
phosphorus	7723-14-0	E475A	4.0	mg/kg wwt		372	----	----	----	----
potassium	7440-09-7	E475	20	mg/kg		5190	----	----	----	----
potassium	7440-09-7	E475A	4.0	mg/kg wwt		857	----	----	----	----
rubidium	7440-17-7	E475	0.050	mg/kg		13.7	----	----	----	----
rubidium	7440-17-7	E475A	0.010	mg/kg wwt		2.27	----	----	----	----
selenium	7782-49-2	E475	0.10	mg/kg		1.07	----	----	----	----
selenium	7782-49-2	E475A	0.020	mg/kg wwt		0.177	----	----	----	----
sodium	7440-23-5	E475	20	mg/kg		326	----	----	----	----
sodium	7440-23-5	E475A	4.0	mg/kg wwt		53.8	----	----	----	----
strontium	7440-24-6	E475	0.10	mg/kg		83.0	----	----	----	----
strontium	7440-24-6	E475A	0.020	mg/kg wwt		13.7	----	----	----	----
tellurium	13494-80-9	E475	0.020	mg/kg		0.023	----	----	----	----
tellurium	13494-80-9	E475A	0.0040	mg/kg wwt		<0.0040	----	----	----	----
thallium	7440-28-0	E475	0.0020	mg/kg		0.0943	----	----	----	----
thallium	7440-28-0	E475A	0.00040	mg/kg wwt		0.0156	----	----	----	----
tin	7440-31-5	E475	0.10	mg/kg		0.35	----	----	----	----
tin	7440-31-5	E475A	0.020	mg/kg wwt		0.057	----	----	----	----
uranium	7440-61-1	E475	0.0020	mg/kg		0.745	----	----	----	----
uranium	7440-61-1	E475A	0.00040	mg/kg wwt		0.123	----	----	----	----

Analytical Results

Sub-Matrix: **Tissue** (Matrix: **Biota**)					Client sample ID	**LMC-5-PERT-X**	----	----	----	----
					Client sampling date / time	09-Sep-2021	----	----	----	----
Analyte	*CAS Number*	*Method*	*LOR*	*Unit*		**WR2101264-016**	--------	--------	--------	--------
						Result	----	----	----	----
Metals										
vanadium	7440-62-2	E475	0.10	mg/kg		44.6	----	----	----	----
vanadium	7440-62-2	E475A	0.020	mg/kg wwt		7.35	----	----	----	----
zinc	7440-66-6	E475	1.0	mg/kg		56.0	----	----	----	----
zinc	7440-66-6	E475A	0.20	mg/kg wwt		9.23	----	----	----	----
zirconium	7440-67-7	E475	0.20	mg/kg		7.01	----	----	----	----
zirconium	7440-67-7	E475A	0.040	mg/kg wwt		1.16	----	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2101264**	Page	: 1 of 14
Client	: **Minnow Environmental Inc.**	Laboratory	: Whitehorse - Environmental
Contact	: Pierre Stecko	Account Manager	: Can Dang
Address	: 204 – 1006 Fort Street Victoria BC Canada V8V 3K4	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minnow Environmental Inc Project for Minto MInes WUL Program	Date Samples Received	: 15-Sep-2021 15:14
PO	: ----	Issue Date	: 09-Dec-2021 12:59
C-O-C number	: ----		
Sampler	: LBO, SLA		
Site	: ----		
Quote number	: Q79833 - Minnow/Minto		
No. of samples received	: 16		
No. of samples analysed	: 16		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Biota**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Mercury in Biota by CVAAS (DRY units, Biopsy)										
LDPE bag LMC-4-PERT	E512	09-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	84 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Biopsy)										
LDPE bag LMC-5-PERT	E512	09-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	84 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Biopsy)										
LDPE bag LMC-5-PERT-X	E512	09-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	84 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Micro)										
LDPE bag LBC-1-PERT	E511	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	78 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Micro)										
LDPE bag LBC-2-PERT	E511	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	78 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Micro)										
LDPE bag LBC-3-PERT	E511	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	78 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Micro)										
LDPE bag LBC-4-PERT	E511	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	78 days	✓

Matrix: **Biota**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Mercury in Biota by CVAAS (DRY units, Micro)										
LDPE bag LBC-5-PERT	E511	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	78 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Micro)										
LDPE bag LWC-1-PERT	E511	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	80 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Micro)										
LDPE bag LWC-2-PERT	E511	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	80 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Micro)										
LDPE bag LWC-3-PERT	E511	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	80 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Micro)										
LDPE bag LWC-4-PERT	E511	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	80 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Micro)										
LDPE bag LWC-5-PERT	E511	11-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	81 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Micro)										
LDPE bag LMC-1-PERT	E511	10-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	82 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Micro)										
LDPE bag LMC-2-PERT	E511	09-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	83 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Micro)										
LDPE bag LMC-3-PERT	E511	09-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	83 days	✓

Matrix: **Biota**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Mercury in Biota by CVAAS (WET units, Biopsy)										
LDPE bag LMC-4-PERT	E512A	09-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	84 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Biopsy)										
LDPE bag LMC-5-PERT	E512A	09-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	84 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Biopsy)										
LDPE bag LMC-5-PERT-X	E512A	09-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	84 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Micro)										
LDPE bag LBC-1-PERT	E511A	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	78 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Micro)										
LDPE bag LBC-2-PERT	E511A	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	78 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Micro)										
LDPE bag LBC-3-PERT	E511A	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	78 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Micro)										
LDPE bag LBC-4-PERT	E511A	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	78 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Micro)										
LDPE bag LBC-5-PERT	E511A	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	78 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Micro)										
LDPE bag LWC-1-PERT	E511A	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	80 days	✓

Matrix: **Biota**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Mercury in Biota by CVAAS (WET units, Micro)										
LDPE bag LWC-2-PERT	E511A	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	80 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Micro)										
LDPE bag LWC-3-PERT	E511A	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	80 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Micro)										
LDPE bag LWC-4-PERT	E511A	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	80 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Micro)										
LDPE bag LWC-5-PERT	E511A	11-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	81 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Micro)										
LDPE bag LMC-1-PERT	E511A	10-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	82 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Micro)										
LDPE bag LMC-2-PERT	E511A	09-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	83 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Micro)										
LDPE bag LMC-3-PERT	E511A	09-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	365 days	83 days	✓
Metals : Metals by CRC ICPMS (DRY units, Biopsy)										
LDPE bag LMC-4-PERT	E475	09-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	83 days	✓
Metals : Metals by CRC ICPMS (DRY units, Biopsy)										
LDPE bag LMC-5-PERT	E475	09-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	83 days	✓

Matrix: **Biota**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Metals by CRC ICPMS (DRY units, Biopsy)										
LDPE bag LMC-5-PERT-X	E475	09-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	83 days	✓
Metals : Metals in Biota by CRC ICPMS (DRY units, Micro)										
LDPE bag LBC-1-PERT	E472	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	78 days	✓
Metals : Metals in Biota by CRC ICPMS (DRY units, Micro)										
LDPE bag LBC-2-PERT	E472	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	78 days	✓
Metals : Metals in Biota by CRC ICPMS (DRY units, Micro)										
LDPE bag LBC-3-PERT	E472	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	78 days	✓
Metals : Metals in Biota by CRC ICPMS (DRY units, Micro)										
LDPE bag LBC-4-PERT	E472	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	78 days	✓
Metals : Metals in Biota by CRC ICPMS (DRY units, Micro)										
LDPE bag LBC-5-PERT	E472	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	78 days	✓
Metals : Metals in Biota by CRC ICPMS (DRY units, Micro)										
LDPE bag LWC-1-PERT	E472	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	80 days	✓
Metals : Metals in Biota by CRC ICPMS (DRY units, Micro)										
LDPE bag LWC-2-PERT	E472	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	80 days	✓
Metals : Metals in Biota by CRC ICPMS (DRY units, Micro)										
LDPE bag LWC-3-PERT	E472	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	80 days	✓

Matrix: **Biota**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Metals in Biota by CRC ICPMS (DRY units, Micro)										
LDPE bag LWC-4-PERT	E472	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	80 days	✓
Metals : Metals in Biota by CRC ICPMS (DRY units, Micro)										
LDPE bag LWC-5-PERT	E472	11-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	81 days	✓
Metals : Metals in Biota by CRC ICPMS (DRY units, Micro)										
LDPE bag LMC-1-PERT	E472	10-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	82 days	✓
Metals : Metals in Biota by CRC ICPMS (DRY units, Micro)										
LDPE bag LMC-2-PERT	E472	09-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	83 days	✓
Metals : Metals in Biota by CRC ICPMS (DRY units, Micro)										
LDPE bag LMC-3-PERT	E472	09-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	83 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Biopsy)										
LDPE bag LMC-4-PERT	E475A	09-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	83 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Biopsy)										
LDPE bag LMC-5-PERT	E475A	09-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	83 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Biopsy)										
LDPE bag LMC-5-PERT-X	E475A	09-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	83 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Micro)										
LDPE bag LBC-1-PERT	E472A	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	78 days	✓

Matrix: **Biota**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Metals in Biota by CRC ICPMS (WET units, Micro)										
LDPE bag LBC-2-PERT	E472A	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	78 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Micro)										
LDPE bag LBC-3-PERT	E472A	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	78 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Micro)										
LDPE bag LBC-4-PERT	E472A	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	78 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Micro)										
LDPE bag LBC-5-PERT	E472A	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	78 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Micro)										
LDPE bag LWC-1-PERT	E472A	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	80 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Micro)										
LDPE bag LWC-2-PERT	E472A	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	80 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Micro)										
LDPE bag LWC-3-PERT	E472A	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	80 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Micro)										
LDPE bag LWC-4-PERT	E472A	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	80 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Micro)										
LDPE bag LWC-5-PERT	E472A	11-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	81 days	✓

Matrix: **Biota**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Metals in Biota by CRC ICPMS (WET units, Micro)										
LDPE bag LMC-1-PERT	E472A	10-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	82 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Micro)										
LDPE bag LMC-2-PERT	E472A	09-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	83 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Micro)										
LDPE bag LMC-3-PERT	E472A	09-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	83 days	✓
Physical Tests : Moisture Content by Gravimetry (Biopsy)										
LDPE bag LMC-4-PERT	E144A	09-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Biopsy)										
LDPE bag LMC-5-PERT	E144A	09-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Biopsy)										
LDPE bag LMC-5-PERT-X	E144A	09-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Micro)										
LDPE bag LBC-1-PERT	E144-H	14-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Micro)										
LDPE bag LBC-2-PERT	E144-H	14-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Micro)										
LDPE bag LBC-3-PERT	E144-H	14-Sep-2021	----	----	----		12-Nov-2021	----	----	

Matrix: **Biota**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Moisture Content by Gravimetry (Micro)										
LDPE bag LBC-4-PERT	E144-H	14-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Micro)										
LDPE bag LBC-5-PERT	E144-H	14-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Micro)										
LDPE bag LMC-1-PERT	E144-H	10-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Micro)										
LDPE bag LMC-2-PERT	E144-H	09-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Micro)										
LDPE bag LMC-3-PERT	E144-H	09-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Micro)										
LDPE bag LWC-1-PERT	E144-H	12-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Micro)										
LDPE bag LWC-2-PERT	E144-H	12-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Micro)										
LDPE bag LWC-3-PERT	E144-H	12-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Micro)										
LDPE bag LWC-4-PERT	E144-H	12-Sep-2021	----	----	----		12-Nov-2021	----	----	

Matrix: **Biota**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Moisture Content by Gravimetry (Micro)										
LDPE bag										
LWC-5-PERT	E144-H	11-Sep-2021	----	----	----		12-Nov-2021	----	----	

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Biota**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Mercury in Biota by CVAAS (DRY units, Micro)	E511	343588	1	13	7.6	5.0	✓
Mercury in Biota by CVAAS (WET units, Micro)	E511A	343589	1	13	7.6	5.0	✓
Metals in Biota by CRC ICPMS (DRY units, Micro)	E472	343590	1	13	7.6	5.0	✓
Metals in Biota by CRC ICPMS (WET units, Micro)	E472A	343587	1	13	7.6	5.0	✓
Moisture Content by Gravimetry (Micro)	E144-H	343603	1	13	7.6	5.0	✓
Laboratory Control Samples (LCS)							
Mercury in Biota by CVAAS (DRY units, Biopsy)	E512	343578	2	19	10.5	10.0	✓
Mercury in Biota by CVAAS (DRY units, Micro)	E511	343588	2	13	15.3	10.0	✓
Mercury in Biota by CVAAS (WET units, Biopsy)	E512A	343579	2	19	10.5	10.0	✓
Mercury in Biota by CVAAS (WET units, Micro)	E511A	343589	2	13	15.3	10.0	✓
Metals by CRC ICPMS (DRY units, Biopsy)	E475	343581	2	19	10.5	10.0	✓
Metals in Biota by CRC ICPMS (DRY units, Micro)	E472	343590	2	13	15.3	10.0	✓
Metals in Biota by CRC ICPMS (WET units, Biopsy)	E475A	343580	2	19	10.5	10.0	✓
Metals in Biota by CRC ICPMS (WET units, Micro)	E472A	343587	2	13	15.3	10.0	✓
Moisture Content by Gravimetry (Biopsy)	E144A	343601	1	19	5.2	5.0	✓
Moisture Content by Gravimetry (Micro)	E144-H	343603	1	13	7.6	5.0	✓
Method Blanks (MB)							
Mercury in Biota by CVAAS (DRY units, Biopsy)	E512	343578	1	19	5.2	5.0	✓
Mercury in Biota by CVAAS (DRY units, Micro)	E511	343588	1	13	7.6	5.0	✓
Mercury in Biota by CVAAS (WET units, Biopsy)	E512A	343579	1	19	5.2	5.0	✓
Mercury in Biota by CVAAS (WET units, Micro)	E511A	343589	1	13	7.6	5.0	✓
Metals by CRC ICPMS (DRY units, Biopsy)	E475	343581	1	19	5.2	5.0	✓
Metals in Biota by CRC ICPMS (DRY units, Micro)	E472	343590	1	13	7.6	5.0	✓
Metals in Biota by CRC ICPMS (WET units, Biopsy)	E475A	343580	1	19	5.2	5.0	✓
Metals in Biota by CRC ICPMS (WET units, Micro)	E472A	343587	1	13	7.6	5.0	✓
Moisture Content by Gravimetry (Biopsy)	E144A	343601	1	19	5.2	5.0	✓
Moisture Content by Gravimetry (Micro)	E144-H	343603	1	13	7.6	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Moisture Content by Gravimetry (Biopsy)	E144A Vancouver - Environmental	Biota	Puget Sound Water Quality Authority/CCME PHC in Soil - Tier 1	This analysis is carried out gravimetrically by drying the sample at < 60 deg. C for a minimum of three days.
Moisture Content by Gravimetry (Micro)	E144-H Vancouver - Environmental	Biota	Puget Sound Water Quality Authority/BC MOE Lab Manual	Moisture is measured gravimetrically by drying the sample at < 60°C for a minimum of 3 days to constant weight. Moisture content is calculated as the weight loss (due to water) divided by the wet weight of soil, expressed as a percentage.
Metals in Biota by CRC ICPMS (DRY units, Micro)	E472 Vancouver - Environmental	Biota	EPA 200.3/6020B (mod)	Tissue samples are homogenized and sub-sampled prior to hotblock digestion with HNO3, HCl, and H2O2. Analysis is by Collision/Reaction Cell ICPMS. Method Limitation: This method employs a strong acid/peroxide digestion, and is intended to provide a conservative estimate of bio-available metals. Near complete recoveries are achieved for most toxicologically important metals, but elements associated with recalcitrant minerals may be only partially recovered.
Metals in Biota by CRC ICPMS (WET units, Micro)	E472A Vancouver - Environmental	Biota	EPA 200.3/6020B (mod)	Tissue samples are homogenized and sub-sampled prior to hotblock digestion with HNO3, HCl, and H2O2. Analysis is by Collision/Reaction Cell ICPMS. Method Limitation: This method employs a strong acid/peroxide digestion, and is intended to provide a conservative estimate of bio-available metals. Near complete recoveries are achieved for most toxicologically important metals, but elements associated with recalcitrant minerals may be only partially recovered.
Metals by CRC ICPMS (DRY units, Biopsy)	E475 Vancouver - Environmental	Biota	EPA 200.3/6020B (mod)	Samples are digested with nitric acid, hydrochloric acid, and hydrogen peroxide. Analysis is by Collision/Reaction Cell ICPMS: This method employs a strong acid/peroxide digestion, and is intended to provide a conservative estimate of bio-available metals. Near complete recoveries are achieved for most toxicologically important metals, but elements associated with recalcitrant minerals may be only partially recovered.
Metals in Biota by CRC ICPMS (WET units, Biopsy)	E475A Vancouver - Environmental	Biota	EPA 200.3/6020B (mod)	Samples are digested with nitric acid, hydrochloric acid, and hydrogen peroxide. Analysis is by Collision/Reaction Cell ICPMS. Method Limitation: This method employs a strong acid/peroxide digestion, and is intended to provide a conservative estimate of bio-available metals. Near complete recoveries are achieved for most toxicologically important metals, but elements associated with recalcitrant minerals may be only partially recovered.
Mercury in Biota by CVAAS (DRY units, Micro)	E511 Vancouver - Environmental	Biota	EPA 200.3/1631E (mod)	Samples are homogenized and sub-sampled prior to hotblock digestion with nitric acid, hydrochloric acid, and hydrogen peroxide. Analysis is by CVAAS.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Mercury in Biota by CVAAS (WET units, Micro)	E511A Vancouver - Environmental	Biota	EPA 200.3/1631E (mod)	Samples are homogenized and sub-sampled prior to hotblock digestion with nitric acid, hydrochloric acid, and hydrogen peroxide. Analysis is by CVAAS.
Mercury in Biota by CVAAS (DRY units, Biopsy)	E512 Vancouver - Environmental	Biota	EPA 200.3/1631E (mod)	Samples are digested with nitric acid, hydrochloric acid, and hydrogen peroxide. Analysis is by CVAAS.
Mercury in Biota by CVAAS (WET units, Biopsy)	E512A Vancouver - Environmental	Biota	EPA 200.3/1631E (mod)	Samples are homogenized digested with nitric acid, hydrochloric acid, and hydrogen peroxide. Analysis is by CVAAS.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Metals and Mercury Biota Digestion (Micro)	EP472 Vancouver - Environmental	Biota	EPA 200.3	This method, designed for small sample amounts, uses a heated strong acid digestion with HNO3, HCl, and H2O2 and is intended to provide a conservative estimate of bio-available metals.
Metals and Mercury Biota Digestion (Biopsy)	EP475 Vancouver - Environmental	Biota	EPA 200.3/200.8 (mod)	Samples are digested with nitric acid, hydrochloric acid, and hydrogen peroxide. Method Limitation: This method employs a strong acid/peroxide digestion, and is intended to provide a conservative estimate of bio-available metals. Near complete recoveries are achieved for most toxicologically important metals, but elements associated with recalcitrant minerals may be only partially recovered.

QUALITY CONTROL REPORT

Work Order	: **WR2101264**	Page	: 1 of 19
Client	: Minnow Environmental Inc.	Laboratory	: Whitehorse - Environmental
Contact	: Pierre Stecko	Account Manager	: Can Dang
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minnow Environmental Inc Project for Minto MInes WUL Program	Date Samples Received	: 15-Sep-2021 15:14
PO	: ----	Date Analysis Commenced	: 12-Nov-2021
C-O-C number	: ----	Issue Date	: 09-Dec-2021 12:59
Sampler	: LBO, SLA		
Site	: ----		
Quote number	: Q79833 - Minnow/Minto		
No. of samples received	: 16		
No. of samples analysed	: 16		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Caleb Deroche	Lab Analyst	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Ragini Saini	Lab Assistant	Metals, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: **Biota**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 343603)											
WR2101264-001	LWC-1-PERT	moisture	----	E144-H	2.0	%	78.7	78.4	0.431%	20%	----
Metals (QC Lot: 343587)											
WR2101264-001	LWC-1-PERT	aluminum	7429-90-5	E472A	5.0	mg/kg wwt	4250	4350	2.43%	40%	----
		antimony	7440-36-0	E472A	0.0100	mg/kg wwt	0.0111	0.0110	0.0001	Diff <2x LOR	----
		arsenic	7440-38-2	E472A	0.0300	mg/kg wwt	1.35	1.44	5.99%	40%	----
		barium	7440-39-3	E472A	0.050	mg/kg wwt	57.4	60.5	5.29%	40%	----
		beryllium	7440-41-7	E472A	0.0100	mg/kg wwt	0.208	0.216	3.92%	40%	----
		bismuth	7440-69-9	E472A	0.0100	mg/kg wwt	0.0229	0.0228	0.0001	Diff <2x LOR	----
		boron	7440-42-8	E472A	1.00	mg/kg wwt	1.82	1.88	0.06	Diff <2x LOR	----
		cadmium	7440-43-9	E472A	0.0100	mg/kg wwt	0.0469	0.0470	0.0001	Diff <2x LOR	----
		calcium	7440-70-2	E472A	20.0	mg/kg wwt	2460	2570	4.38%	60%	----
		cesium	7440-46-2	E472A	0.0050	mg/kg wwt	0.331	0.335	1.24%	40%	----
		cobalt	7440-48-4	E472A	0.0200	mg/kg wwt	3.22	3.36	4.21%	40%	----
		copper	7440-50-8	E472A	0.200	mg/kg wwt	6.28	6.51	3.53%	40%	----
		iron	7439-89-6	E472A	5.0	mg/kg wwt	6680	6880	2.94%	40%	----
		lead	7439-92-1	E472A	0.050	mg/kg wwt	1.44	1.47	2.17%	40%	----
		lithium	7439-93-2	E472A	0.50	mg/kg wwt	2.97	3.12	4.80%	40%	----
		magnesium	7439-95-4	E472A	2.00	mg/kg wwt	2520	2550	1.46%	40%	----
		manganese	7439-96-5	E472A	0.050	mg/kg wwt	244	250	2.55%	40%	----
		molybdenum	7439-98-7	E472A	0.0400	mg/kg wwt	0.151	0.157	0.0060	Diff <2x LOR	----
		phosphorus	7723-14-0	E472A	10.0	mg/kg wwt	312	337	7.62%	40%	----
		potassium	7440-09-7	E472A	20.0	mg/kg wwt	382	400	4.64%	40%	----
		rubidium	7440-17-7	E472A	0.050	mg/kg wwt	3.30	3.41	3.28%	40%	----
		selenium	7782-49-2	E472A	0.100	mg/kg wwt	0.139	0.131	0.008	Diff <2x LOR	----
		sodium	7440-23-5	E472A	20.0	mg/kg wwt	106	113	6.07%	40%	----
		strontium	7440-24-6	E472A	0.100	mg/kg wwt	24.8	25.6	3.18%	60%	----
		tellurium	13494-80-9	E472A	0.0200	mg/kg wwt	<0.0200	<0.0200	0	Diff <2x LOR	----
		thallium	7440-28-0	E472A	0.00200	mg/kg wwt	0.0225	0.0224	0.392%	40%	----
		tin	7440-31-5	E472A	0.100	mg/kg wwt	<0.100	<0.100	0	Diff <2x LOR	----
		uranium	7440-61-1	E472A	0.00200	mg/kg wwt	0.232	0.238	2.62%	40%	----
		vanadium	7440-62-2	E472A	0.100	mg/kg wwt	14.3	15.0	4.47%	40%	----
		zinc	7440-66-6	E472A	1.00	mg/kg wwt	15.6	16.3	4.33%	40%	----

Sub-Matrix: **Biota**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Metals (QC Lot: 343587) - continued											
WR2101264-001	LWC-1-PERT	zirconium	7440-67-7	E472A	0.200	mg/kg wwt	3.98	4.18	5.04%	40%	----
Metals (QC Lot: 343588)											
WR2101264-001	LWC-1-PERT	mercury	7439-97-6	E511	0.0050	mg/kg	0.0422	0.0392	7.46%	40%	----
Metals (QC Lot: 343589)											
WR2101264-001	LWC-1-PERT	mercury	7439-97-6	E511A	0.0010	mg/kg wwt	0.0090	0.0083	7.46%	40%	----
Metals (QC Lot: 343590)											
WR2101264-001	LWC-1-PERT	aluminum	7429-90-5	E472	25.0	mg/kg	20000	20400	2.43%	40%	----
		antimony	7440-36-0	E472	0.050	mg/kg	0.052	0.052	0.0005	Diff <2x LOR	----
		arsenic	7440-38-2	E472	0.150	mg/kg	6.35	6.74	5.99%	40%	----
		barium	7440-39-3	E472	0.250	mg/kg	270	284	5.29%	40%	----
		beryllium	7440-41-7	E472	0.050	mg/kg	0.975	1.01	3.92%	40%	----
		bismuth	7440-69-9	E472	0.050	mg/kg	0.108	0.107	0.0005	Diff <2x LOR	----
		boron	7440-42-8	E472	5.0	mg/kg	8.6	8.8	0.3	Diff <2x LOR	----
		cadmium	7440-43-9	E472	0.050	mg/kg	0.220	0.221	0.0005	Diff <2x LOR	----
		calcium	7440-70-2	E472	100	mg/kg	11600	12100	4.38%	60%	----
		cesium	7440-46-2	E472	0.0250	mg/kg	1.55	1.57	1.24%	40%	----
		cobalt	7440-48-4	E472	0.100	mg/kg	15.1	15.8	4.21%	40%	----
		copper	7440-50-8	E472	1.00	mg/kg	29.5	30.6	3.53%	40%	----
		iron	7439-89-6	E472	25.0	mg/kg	31400	32300	2.94%	40%	----
		lead	7439-92-1	E472	0.250	mg/kg	6.75	6.89	2.17%	40%	----
		lithium	7439-93-2	E472	2.50	mg/kg	14.0	14.6	4.80%	40%	----
		magnesium	7439-95-4	E472	10.0	mg/kg	11800	12000	1.46%	40%	----
		manganese	7439-96-5	E472	0.250	mg/kg	1150	1180	2.55%	40%	----
		molybdenum	7439-98-7	E472	0.200	mg/kg	0.708	0.736	0.028	Diff <2x LOR	----
		phosphorus	7723-14-0	E472	50	mg/kg	1470	1580	7.62%	40%	----
		potassium	7440-09-7	E472	100	mg/kg	1790	1880	4.64%	40%	----
		rubidium	7440-17-7	E472	0.250	mg/kg	15.5	16.0	3.28%	40%	----
		selenium	7782-49-2	E472	0.50	mg/kg	0.65	0.62	0.04	Diff <2x LOR	----
		sodium	7440-23-5	E472	100	mg/kg	499	530	6.07%	40%	----
		strontium	7440-24-6	E472	0.50	mg/kg	116	120	3.18%	60%	----
		tellurium	13494-80-9	E472	0.100	mg/kg	<0.100	<0.100	0	Diff <2x LOR	----
		thallium	7440-28-0	E472	0.0100	mg/kg	0.106	0.105	0.392%	40%	----
		tin	7440-31-5	E472	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		uranium	7440-61-1	E472	0.0100	mg/kg	1.09	1.12	2.62%	40%	----
		vanadium	7440-62-2	E472	0.50	mg/kg	67.2	70.3	4.47%	40%	----

Sub-Matrix: **Biota**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Metals (QC Lot: 343590) - continued											
WR2101264-001	LWC-1-PERT	zinc	7440-66-6	E472	5.0	mg/kg	73.2	76.4	4.33%	40%	----
		zirconium	7440-67-7	E472	1.00	mg/kg	18.7	19.6	5.04%	40%	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Biota**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 343601)						
moisture	----	E144A	2	%	<2.0	----
Physical Tests (QCLot: 343603)						
moisture	----	E144-H	2	%	<2.0	----
Metals (QCLot: 343578)						
mercury	7439-97-6	E512	0.01	mg/kg	<0.010	----
Metals (QCLot: 343579)						
mercury	7439-97-6	E512A	0.002	mg/kg wwt	<0.0020	----
Metals (QCLot: 343580)						
aluminum	7429-90-5	E475A	1	mg/kg wwt	<1.0	----
antimony	7440-36-0	E475A	0.004	mg/kg wwt	<0.0040	----
arsenic	7440-38-2	E475A	0.01	mg/kg wwt	<0.010	----
barium	7440-39-3	E475A	0.01	mg/kg wwt	<0.010	----
beryllium	7440-41-7	E475A	0.002	mg/kg wwt	<0.0020	----
bismuth	7440-69-9	E475A	0.002	mg/kg wwt	<0.0020	----
boron	7440-42-8	E475A	0.2	mg/kg wwt	<0.20	----
cadmium	7440-43-9	E475A	0.002	mg/kg wwt	<0.0020	----
calcium	7440-70-2	E475A	4	mg/kg wwt	<4.0	----
cesium	7440-46-2	E475A	0.001	mg/kg wwt	<0.0010	----
chromium	7440-47-3	E475A	0.04	mg/kg wwt	<0.040	----
cobalt	7440-48-4	E475A	0.004	mg/kg wwt	<0.0040	----
copper	7440-50-8	E475A	0.04	mg/kg wwt	<0.040	----
iron	7439-89-6	E475A	1	mg/kg wwt	<1.0	----
lead	7439-92-1	E475A	0.01	mg/kg wwt	<0.010	----
lithium	7439-93-2	E475A	0.1	mg/kg wwt	<0.10	----
magnesium	7439-95-4	E475A	0.4	mg/kg wwt	<0.40	----
manganese	7439-96-5	E475A	0.01	mg/kg wwt	<0.010	----
molybdenum	7439-98-7	E475A	0.008	mg/kg wwt	<0.0080	----
nickel	7440-02-0	E475A	0.04	mg/kg wwt	<0.040	----
phosphorus	7723-14-0	E475A	4	mg/kg wwt	<4.0	----
potassium	7440-09-7	E475A	4	mg/kg wwt	<4.0	----
rubidium	7440-17-7	E475A	0.01	mg/kg wwt	<0.010	----
selenium	7782-49-2	E475A	0.02	mg/kg wwt	<0.020	----
sodium	7440-23-5	E475A	4	mg/kg wwt	<4.0	----

Sub-Matrix: **Biota**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 343580) - continued						
strontium	7440-24-6	E475A	0.02	mg/kg wwt	<0.020	----
tellurium	13494-80-9	E475A	0.004	mg/kg wwt	<0.0040	----
thallium	7440-28-0	E475A	0.0004	mg/kg wwt	<0.00040	----
tin	7440-31-5	E475A	0.02	mg/kg wwt	<0.020	----
uranium	7440-61-1	E475A	0.0004	mg/kg wwt	<0.00040	----
vanadium	7440-62-2	E475A	0.02	mg/kg wwt	<0.020	----
zinc	7440-66-6	E475A	0.2	mg/kg wwt	<0.20	----
zirconium	7440-67-7	E475A	0.04	mg/kg wwt	<0.040	----
Metals (QCLot: 343581)						
aluminum	7429-90-5	E475	5	mg/kg	<5.0	----
antimony	7440-36-0	E475	0.02	mg/kg	<0.020	----
arsenic	7440-38-2	E475	0.05	mg/kg	<0.050	----
barium	7440-39-3	E475	0.05	mg/kg	<0.050	----
beryllium	7440-41-7	E475	0.01	mg/kg	<0.010	----
bismuth	7440-69-9	E475	0.01	mg/kg	<0.010	----
boron	7440-42-8	E475	1	mg/kg	<1.0	----
cadmium	7440-43-9	E475	0.01	mg/kg	<0.010	----
calcium	7440-70-2	E475	20	mg/kg	<20	----
cesium	7440-46-2	E475	0.005	mg/kg	<0.0050	----
chromium	7440-47-3	E475	0.2	mg/kg	<0.20	----
cobalt	7440-48-4	E475	0.02	mg/kg	<0.020	----
copper	7440-50-8	E475	0.2	mg/kg	<0.20	----
iron	7439-89-6	E475	5	mg/kg	<5.0	----
lead	7439-92-1	E475	0.05	mg/kg	<0.050	----
lithium	7439-93-2	E475	0.5	mg/kg	<0.50	----
magnesium	7439-95-4	E475	2	mg/kg	<2.0	----
manganese	7439-96-5	E475	0.05	mg/kg	<0.050	----
molybdenum	7439-98-7	E475	0.04	mg/kg	<0.040	----
nickel	7440-02-0	E475	0.2	mg/kg	<0.20	----
phosphorus	7723-14-0	E475	20	mg/kg	<20	----
potassium	7440-09-7	E475	20	mg/kg	<20	----
rubidium	7440-17-7	E475	0.05	mg/kg	<0.050	----
selenium	7782-49-2	E475	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E475	20	mg/kg	<20	----
strontium	7440-24-6	E475	0.1	mg/kg	<0.10	----
tellurium	13494-80-9	E475	0.02	mg/kg	<0.020	----

Sub-Matrix: **Biota**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 343581) - continued						
thallium	7440-28-0	E475	0.002	mg/kg	<0.0020	----
tin	7440-31-5	E475	0.1	mg/kg	<0.10	----
uranium	7440-61-1	E475	0.002	mg/kg	<0.0020	----
vanadium	7440-62-2	E475	0.1	mg/kg	<0.10	----
zinc	7440-66-6	E475	1	mg/kg	<1.0	----
zirconium	7440-67-7	E475	0.2	mg/kg	<0.20	----
Metals (QCLot: 343587)						
aluminum	7429-90-5	E472A	1	mg/kg wwt	<1.0	----
antimony	7440-36-0	E472A	0.002	mg/kg wwt	<0.0020	----
arsenic	7440-38-2	E472A	0.006	mg/kg wwt	<0.0060	----
barium	7440-39-3	E472A	0.01	mg/kg wwt	<0.010	----
beryllium	7440-41-7	E472A	0.002	mg/kg wwt	<0.0020	----
bismuth	7440-69-9	E472A	0.002	mg/kg wwt	<0.0020	----
boron	7440-42-8	E472A	0.2	mg/kg wwt	<0.20	----
cadmium	7440-43-9	E472A	0.002	mg/kg wwt	<0.0020	----
calcium	7440-70-2	E472A	4	mg/kg wwt	<4.0	----
cesium	7440-46-2	E472A	0.001	mg/kg wwt	<0.0010	----
chromium	7440-47-3	E472A	0.04	mg/kg wwt	<0.040	----
cobalt	7440-48-4	E472A	0.004	mg/kg wwt	<0.0040	----
copper	7440-50-8	E472A	0.04	mg/kg wwt	<0.040	----
iron	7439-89-6	E472A	1	mg/kg wwt	<1.0	----
lead	7439-92-1	E472A	0.01	mg/kg wwt	<0.010	----
lithium	7439-93-2	E472A	0.1	mg/kg wwt	<0.10	----
magnesium	7439-95-4	E472A	0.4	mg/kg wwt	<0.40	----
manganese	7439-96-5	E472A	0.01	mg/kg wwt	<0.010	----
molybdenum	7439-98-7	E472A	0.008	mg/kg wwt	<0.0080	----
nickel	7440-02-0	E472A	0.04	mg/kg wwt	<0.040	----
phosphorus	7723-14-0	E472A	2	mg/kg wwt	<2.0	----
potassium	7440-09-7	E472A	4	mg/kg wwt	<4.0	----
rubidium	7440-17-7	E472A	0.01	mg/kg wwt	<0.010	----
selenium	7782-49-2	E472A	0.02	mg/kg wwt	<0.020	----
sodium	7440-23-5	E472A	4	mg/kg wwt	<4.0	----
strontium	7440-24-6	E472A	0.02	mg/kg wwt	<0.020	----
tellurium	13494-80-9	E472A	0.004	mg/kg wwt	<0.0040	----
thallium	7440-28-0	E472A	0.0004	mg/kg wwt	<0.00040	----
tin	7440-31-5	E472A	0.02	mg/kg wwt	<0.020	----

Sub-Matrix: **Biota**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 343587) - continued						
uranium	7440-61-1	E472A	0.0004	mg/kg wwt	<0.00040	----
vanadium	7440-62-2	E472A	0.02	mg/kg wwt	<0.020	----
zinc	7440-66-6	E472A	0.2	mg/kg wwt	<0.20	----
zirconium	7440-67-7	E472A	0.04	mg/kg wwt	<0.040	----
Metals (QCLot: 343588)						
mercury	7439-97-6	E511	0.005	mg/kg	<0.0050	----
Metals (QCLot: 343589)						
mercury	7439-97-6	E511A	0.001	mg/kg wwt	<0.0010	----
Metals (QCLot: 343590)						
aluminum	7429-90-5	E472	5	mg/kg	<5.0	----
antimony	7440-36-0	E472	0.01	mg/kg	<0.010	----
arsenic	7440-38-2	E472	0.03	mg/kg	<0.030	----
barium	7440-39-3	E472	0.05	mg/kg	<0.050	----
beryllium	7440-41-7	E472	0.01	mg/kg	<0.010	----
bismuth	7440-69-9	E472	0.01	mg/kg	<0.010	----
boron	7440-42-8	E472	1	mg/kg	<1.0	----
cadmium	7440-43-9	E472	0.01	mg/kg	<0.010	----
calcium	7440-70-2	E472	20	mg/kg	<20	----
cesium	7440-46-2	E472	0.005	mg/kg	<0.0050	----
chromium	7440-47-3	E472	0.2	mg/kg	<0.20	----
cobalt	7440-48-4	E472	0.02	mg/kg	<0.020	----
copper	7440-50-8	E472	0.2	mg/kg	<0.20	----
iron	7439-89-6	E472	5	mg/kg	<5.0	----
lead	7439-92-1	E472	0.05	mg/kg	<0.050	----
lithium	7439-93-2	E472	0.5	mg/kg	<0.50	----
magnesium	7439-95-4	E472	2	mg/kg	<2.0	----
manganese	7439-96-5	E472	0.05	mg/kg	<0.050	----
molybdenum	7439-98-7	E472	0.04	mg/kg	<0.040	----
nickel	7440-02-0	E472	0.2	mg/kg	<0.20	----
phosphorus	7723-14-0	E472	10	mg/kg	<10	----
potassium	7440-09-7	E472	20	mg/kg	<20	----
rubidium	7440-17-7	E472	0.05	mg/kg	<0.050	----
selenium	7782-49-2	E472	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E472	20	mg/kg	<20	----
strontium	7440-24-6	E472	0.1	mg/kg	<0.10	----
tellurium	13494-80-9	E472	0.02	mg/kg	<0.020	----

Sub-Matrix: **Biota**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 343590) - continued						
thallium	7440-28-0	E472	0.002	mg/kg	<0.0020	----
tin	7440-31-5	E472	0.1	mg/kg	<0.10	----
uranium	7440-61-1	E472	0.002	mg/kg	<0.0020	----
vanadium	7440-62-2	E472	0.1	mg/kg	<0.10	----
zinc	7440-66-6	E472	1	mg/kg	<1.0	----
zirconium	7440-67-7	E472	0.2	mg/kg	<0.20	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Biota**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 343601)									
moisture	----	E144A	2	%	100 %	99.3	90.0	110	----
Physical Tests (QCLot: 343603)									
moisture	----	E144-H	2	%	100 %	100	90.0	110	----
Metals (QCLot: 343578)									
mercury	7439-97-6	E512	0.01	mg/kg	0.05 mg/kg	94.4	80.0	120	----
Metals (QCLot: 343579)									
mercury	7439-97-6	E512A	0.002	mg/kg wwt	0.05 mg/kg wwt	94.4	80.0	120	----
Metals (QCLot: 343580)									
aluminum	7429-90-5	E475A	1	mg/kg wwt	50 mg/kg wwt	102	80.0	120	----
antimony	7440-36-0	E475A	0.004	mg/kg wwt	25 mg/kg wwt	102	80.0	120	----
arsenic	7440-38-2	E475A	0.01	mg/kg wwt	25 mg/kg wwt	101	80.0	120	----
barium	7440-39-3	E475A	0.01	mg/kg wwt	6.25 mg/kg wwt	95.7	80.0	120	----
beryllium	7440-41-7	E475A	0.002	mg/kg wwt	2.5 mg/kg wwt	98.1	80.0	120	----
bismuth	7440-69-9	E475A	0.002	mg/kg wwt	25 mg/kg wwt	95.3	80.0	120	----
boron	7440-42-8	E475A	0.2	mg/kg wwt	25 mg/kg wwt	98.5	80.0	120	----
cadmium	7440-43-9	E475A	0.002	mg/kg wwt	2.5 mg/kg wwt	97.5	80.0	120	----
calcium	7440-70-2	E475A	4	mg/kg wwt	1250 mg/kg wwt	94.5	80.0	120	----
cesium	7440-46-2	E475A	0.001	mg/kg wwt	1.25 mg/kg wwt	102	80.0	120	----
chromium	7440-47-3	E475A	0.04	mg/kg wwt	6.25 mg/kg wwt	97.4	80.0	120	----
cobalt	7440-48-4	E475A	0.004	mg/kg wwt	6.25 mg/kg wwt	95.5	80.0	120	----
copper	7440-50-8	E475A	0.04	mg/kg wwt	6.25 mg/kg wwt	94.4	80.0	120	----
iron	7439-89-6	E475A	1	mg/kg wwt	25 mg/kg wwt	97.0	80.0	120	----
lead	7439-92-1	E475A	0.01	mg/kg wwt	12.5 mg/kg wwt	95.3	80.0	120	----
lithium	7439-93-2	E475A	0.1	mg/kg wwt	6.25 mg/kg wwt	101	80.0	120	----
magnesium	7439-95-4	E475A	0.4	mg/kg wwt	1250 mg/kg wwt	97.6	80.0	120	----
manganese	7439-96-5	E475A	0.01	mg/kg wwt	6.25 mg/kg wwt	98.2	80.0	120	----
molybdenum	7439-98-7	E475A	0.008	mg/kg wwt	6.25 mg/kg wwt	103	80.0	120	----
nickel	7440-02-0	E475A	0.04	mg/kg wwt	12.5 mg/kg wwt	93.9	80.0	120	----
phosphorus	7723-14-0	E475A	4	mg/kg wwt	250 mg/kg wwt	107	80.0	120	----
potassium	7440-09-7	E475A	4	mg/kg wwt	1250 mg/kg wwt	95.1	80.0	120	----
rubidium	7440-17-7	E475A	0.01	mg/kg wwt	2.5 mg/kg wwt	103	80.0	120	----
selenium	7782-49-2	E475A	0.02	mg/kg wwt	25 mg/kg wwt	92.0	80.0	120	----
sodium	7440-23-5	E475A	4	mg/kg wwt	1250 mg/kg wwt	98.1	80.0	120	----

Sub-Matrix: **Biota**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 343580) - continued									
strontium	7440-24-6	E475A	0.02	mg/kg wwt	6.25 mg/kg wwt	103	80.0	120	----
tellurium	13494-80-9	E475A	0.004	mg/kg wwt	2.5 mg/kg wwt	97.0	80.0	120	----
thallium	7440-28-0	E475A	0.0004	mg/kg wwt	25 mg/kg wwt	94.7	80.0	120	----
tin	7440-31-5	E475A	0.02	mg/kg wwt	12.5 mg/kg wwt	103	80.0	120	----
uranium	7440-61-1	E475A	0.0004	mg/kg wwt	0.125 mg/kg wwt	98.3	80.0	120	----
vanadium	7440-62-2	E475A	0.02	mg/kg wwt	12.5 mg/kg wwt	99.4	80.0	120	----
zinc	7440-66-6	E475A	0.2	mg/kg wwt	12.5 mg/kg wwt	91.9	80.0	120	----
zirconium	7440-67-7	E475A	0.04	mg/kg wwt	2.5 mg/kg wwt	104	80.0	120	----
Metals (QCLot: 343581)									
aluminum	7429-90-5	E475	5	mg/kg	50 mg/kg	102	80.0	120	----
antimony	7440-36-0	E475	0.02	mg/kg	25 mg/kg	102	80.0	120	----
arsenic	7440-38-2	E475	0.05	mg/kg	25 mg/kg	101	80.0	120	----
barium	7440-39-3	E475	0.05	mg/kg	6.25 mg/kg	95.7	80.0	120	----
beryllium	7440-41-7	E475	0.01	mg/kg	2.5 mg/kg	98.1	80.0	120	----
bismuth	7440-69-9	E475	0.01	mg/kg	25 mg/kg	95.3	80.0	120	----
boron	7440-42-8	E475	1	mg/kg	25 mg/kg	98.5	80.0	120	----
cadmium	7440-43-9	E475	0.01	mg/kg	2.5 mg/kg	97.5	80.0	120	----
calcium	7440-70-2	E475	20	mg/kg	1250 mg/kg	94.5	80.0	120	----
cesium	7440-46-2	E475	0.005	mg/kg	1.25 mg/kg	102	80.0	120	----
chromium	7440-47-3	E475	0.2	mg/kg	6.25 mg/kg	97.4	80.0	120	----
cobalt	7440-48-4	E475	0.02	mg/kg	6.25 mg/kg	95.5	80.0	120	----
copper	7440-50-8	E475	0.2	mg/kg	6.25 mg/kg	94.4	80.0	120	----
iron	7439-89-6	E475	5	mg/kg	25 mg/kg	97.0	80.0	120	----
lead	7439-92-1	E475	0.05	mg/kg	12.5 mg/kg	95.3	80.0	120	----
lithium	7439-93-2	E475	0.5	mg/kg	6.25 mg/kg	101	80.0	120	----
magnesium	7439-95-4	E475	2	mg/kg	1250 mg/kg	97.6	80.0	120	----
manganese	7439-96-5	E475	0.05	mg/kg	6.25 mg/kg	98.2	80.0	120	----
molybdenum	7439-98-7	E475	0.04	mg/kg	6.25 mg/kg	103	80.0	120	----
nickel	7440-02-0	E475	0.2	mg/kg	12.5 mg/kg	93.9	80.0	120	----
phosphorus	7723-14-0	E475	20	mg/kg	250 mg/kg	107	80.0	120	----
potassium	7440-09-7	E475	20	mg/kg	1250 mg/kg	95.1	80.0	120	----
rubidium	7440-17-7	E475	0.05	mg/kg	2.5 mg/kg	103	80.0	120	----
selenium	7782-49-2	E475	0.1	mg/kg	25 mg/kg	92.0	80.0	120	----
sodium	7440-23-5	E475	20	mg/kg	1250 mg/kg	98.1	80.0	120	----
strontium	7440-24-6	E475	0.1	mg/kg	6.25 mg/kg	103	80.0	120	----
tellurium	13494-80-9	E475	0.02	mg/kg	2.5 mg/kg	97.0	80.0	120	----
thallium	7440-28-0	E475	0.002	mg/kg	25 mg/kg	94.7	80.0	120	----

Sub-Matrix: **Biota**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 343581) - continued									
tin	7440-31-5	E475	0.1	mg/kg	12.5 mg/kg	103	80.0	120	----
uranium	7440-61-1	E475	0.002	mg/kg	0.125 mg/kg	98.3	80.0	120	----
vanadium	7440-62-2	E475	0.1	mg/kg	12.5 mg/kg	99.4	80.0	120	----
zinc	7440-66-6	E475	1	mg/kg	12.5 mg/kg	91.9	80.0	120	----
zirconium	7440-67-7	E475	0.2	mg/kg	2.5 mg/kg	104	80.0	120	----
Metals (QCLot: 343587)									
aluminum	7429-90-5	E472A	1	mg/kg wwt	20 mg/kg wwt	113	80.0	120	----
antimony	7440-36-0	E472A	0.002	mg/kg wwt	10 mg/kg wwt	109	80.0	120	----
arsenic	7440-38-2	E472A	0.006	mg/kg wwt	10 mg/kg wwt	111	80.0	120	----
barium	7440-39-3	E472A	0.01	mg/kg wwt	2.5 mg/kg wwt	105	80.0	120	----
beryllium	7440-41-7	E472A	0.002	mg/kg wwt	1 mg/kg wwt	109	80.0	120	----
bismuth	7440-69-9	E472A	0.002	mg/kg wwt	10 mg/kg wwt	99.0	80.0	120	----
boron	7440-42-8	E472A	0.2	mg/kg wwt	10 mg/kg wwt	105	80.0	120	----
cadmium	7440-43-9	E472A	0.002	mg/kg wwt	1 mg/kg wwt	106	80.0	120	----
calcium	7440-70-2	E472A	4	mg/kg wwt	500 mg/kg wwt	102	80.0	120	----
cesium	7440-46-2	E472A	0.001	mg/kg wwt	0.5 mg/kg wwt	113	80.0	120	----
chromium	7440-47-3	E472A	0.04	mg/kg wwt	2.5 mg/kg wwt	108	80.0	120	----
cobalt	7440-48-4	E472A	0.004	mg/kg wwt	2.5 mg/kg wwt	105	80.0	120	----
copper	7440-50-8	E472A	0.04	mg/kg wwt	2.5 mg/kg wwt	104	80.0	120	----
iron	7439-89-6	E472A	1	mg/kg wwt	10 mg/kg wwt	105	80.0	120	----
lead	7439-92-1	E472A	0.01	mg/kg wwt	5 mg/kg wwt	101	80.0	120	----
lithium	7439-93-2	E472A	0.1	mg/kg wwt	2.5 mg/kg wwt	113	80.0	120	----
magnesium	7439-95-4	E472A	0.4	mg/kg wwt	500 mg/kg wwt	108	80.0	120	----
manganese	7439-96-5	E472A	0.01	mg/kg wwt	2.5 mg/kg wwt	108	80.0	120	----
molybdenum	7439-98-7	E472A	0.008	mg/kg wwt	2.5 mg/kg wwt	110	80.0	120	----
nickel	7440-02-0	E472A	0.04	mg/kg wwt	5 mg/kg wwt	104	80.0	120	----
phosphorus	7723-14-0	E472A	2	mg/kg wwt	100 mg/kg wwt	116	80.0	120	----
potassium	7440-09-7	E472A	4	mg/kg wwt	500 mg/kg wwt	106	80.0	120	----
rubidium	7440-17-7	E472A	0.01	mg/kg wwt	1 mg/kg wwt	112	80.0	120	----
selenium	7782-49-2	E472A	0.02	mg/kg wwt	10 mg/kg wwt	101	80.0	120	----
sodium	7440-23-5	E472A	4	mg/kg wwt	500 mg/kg wwt	108	80.0	120	----
strontium	7440-24-6	E472A	0.02	mg/kg wwt	2.5 mg/kg wwt	109	80.0	120	----
tellurium	13494-80-9	E472A	0.004	mg/kg wwt	1 mg/kg wwt	105	80.0	120	----
thallium	7440-28-0	E472A	0.0004	mg/kg wwt	10 mg/kg wwt	101	80.0	120	----
tin	7440-31-5	E472A	0.02	mg/kg wwt	5 mg/kg wwt	108	80.0	120	----
uranium	7440-61-1	E472A	0.0004	mg/kg wwt	0.05 mg/kg wwt	106	80.0	120	----
vanadium	7440-62-2	E472A	0.02	mg/kg wwt	5 mg/kg wwt	111	80.0	120	----

Sub-Matrix: **Biota**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 343587) - continued									
zinc	7440-66-6	E472A	0.2	mg/kg wwt	5 mg/kg wwt	101	80.0	120	----
zirconium	7440-67-7	E472A	0.04	mg/kg wwt	1 mg/kg wwt	114	80.0	120	----
Metals (QCLot: 343588)									
mercury	7439-97-6	E511	0.005	mg/kg	0.02 mg/kg	116	80.0	120	----
Metals (QCLot: 343589)									
mercury	7439-97-6	E511A	0.001	mg/kg wwt	0.02 mg/kg wwt	116	80.0	120	----
Metals (QCLot: 343590)									
aluminum	7429-90-5	E472	5	mg/kg	20 mg/kg	113	80.0	120	----
antimony	7440-36-0	E472	0.01	mg/kg	10 mg/kg	109	80.0	120	----
arsenic	7440-38-2	E472	0.03	mg/kg	10 mg/kg	111	80.0	120	----
barium	7440-39-3	E472	0.05	mg/kg	2.5 mg/kg	105	80.0	120	----
beryllium	7440-41-7	E472	0.01	mg/kg	1 mg/kg	109	80.0	120	----
bismuth	7440-69-9	E472	0.01	mg/kg	10 mg/kg	99.0	80.0	120	----
boron	7440-42-8	E472	1	mg/kg	10 mg/kg	105	80.0	120	----
cadmium	7440-43-9	E472	0.01	mg/kg	1 mg/kg	106	80.0	120	----
calcium	7440-70-2	E472	20	mg/kg	500 mg/kg	102	80.0	120	----
cesium	7440-46-2	E472	0.005	mg/kg	0.5 mg/kg	113	80.0	120	----
chromium	7440-47-3	E472	0.2	mg/kg	2.5 mg/kg	108	80.0	120	----
cobalt	7440-48-4	E472	0.02	mg/kg	2.5 mg/kg	105	80.0	120	----
copper	7440-50-8	E472	0.2	mg/kg	2.5 mg/kg	104	80.0	120	----
iron	7439-89-6	E472	5	mg/kg	10 mg/kg	105	80.0	120	----
lead	7439-92-1	E472	0.05	mg/kg	5 mg/kg	101	80.0	120	----
lithium	7439-93-2	E472	0.5	mg/kg	2.5 mg/kg	113	80.0	120	----
magnesium	7439-95-4	E472	2	mg/kg	500 mg/kg	108	80.0	120	----
manganese	7439-96-5	E472	0.05	mg/kg	2.5 mg/kg	108	80.0	120	----
molybdenum	7439-98-7	E472	0.04	mg/kg	2.5 mg/kg	110	80.0	120	----
nickel	7440-02-0	E472	0.2	mg/kg	5 mg/kg	104	80.0	120	----
phosphorus	7723-14-0	E472	10	mg/kg	100 mg/kg	116	80.0	120	----
potassium	7440-09-7	E472	20	mg/kg	500 mg/kg	106	80.0	120	----
rubidium	7440-17-7	E472	0.05	mg/kg	1 mg/kg	112	80.0	120	----
selenium	7782-49-2	E472	0.1	mg/kg	10 mg/kg	101	80.0	120	----
sodium	7440-23-5	E472	20	mg/kg	500 mg/kg	108	80.0	120	----
strontium	7440-24-6	E472	0.1	mg/kg	2.5 mg/kg	109	80.0	120	----
tellurium	13494-80-9	E472	0.02	mg/kg	1 mg/kg	105	80.0	120	----
thallium	7440-28-0	E472	0.002	mg/kg	10 mg/kg	101	80.0	120	----
tin	7440-31-5	E472	0.1	mg/kg	5 mg/kg	108	80.0	120	----
uranium	7440-61-1	E472	0.002	mg/kg	0.05 mg/kg	106	80.0	120	----

Sub-Matrix: **Biota**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 343590) - continued									
vanadium	7440-62-2	E472	0.1	mg/kg	5 mg/kg	111	80.0	120	----
zinc	7440-66-6	E472	1	mg/kg	5 mg/kg	101	80.0	120	----
zirconium	7440-67-7	E472	0.2	mg/kg	1 mg/kg	114	80.0	120	----

Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix: **Biota**

					Reference Material (RM) Report				
					RM Target	Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Concentration	RM	Low	High	Qualifier
Metals (QCLot: 343578)									
QC-343578-003	RM	mercury	7439-97-6	E512	0.332 mg/kg	93.3	70.0	130	----
Metals (QCLot: 343579)									
QC-343579-003	RM	mercury	7439-97-6	E512A	0.322 mg/kg wwt	96.2	70.0	130	----
Metals (QCLot: 343580)									
QC-343580-003	RM	aluminum	7429-90-5	E475A	1280 mg/kg wwt	104	70.0	130	----
QC-343580-003	RM	arsenic	7440-38-2	E475A	6.87 mg/kg wwt	94.9	70.0	130	----
QC-343580-003	RM	barium	7440-39-3	E475A	4.4 mg/kg wwt	97.7	70.0	130	----
QC-343580-003	RM	boron	7440-42-8	E475A	9.24 mg/kg wwt	91.2	70.0	130	----
QC-343580-003	RM	cadmium	7440-43-9	E475A	0.299 mg/kg wwt	99.4	70.0	130	----
QC-343580-003	RM	calcium	7440-70-2	E475A	2360 mg/kg wwt	94.9	70.0	130	----
QC-343580-003	RM	cesium	7440-46-2	E475A	0.078 mg/kg wwt	91.7	70.0	130	----
QC-343580-003	RM	chromium	7440-47-3	E475A	1.58 mg/kg wwt	97.3	70.0	130	----
QC-343580-003	RM	cobalt	7440-48-4	E475A	0.25 mg/kg wwt	94.0	70.0	130	----
QC-343580-003	RM	copper	7440-50-8	E475A	15.7 mg/kg wwt	91.4	70.0	130	----
QC-343580-003	RM	iron	7439-89-6	E475A	318 mg/kg wwt	108	70.0	130	----
QC-343580-003	RM	lead	7439-92-1	E475A	0.231 mg/kg wwt	99.1	70.0	130	----
QC-343580-003	RM	lithium	7439-93-2	E475A	1.21 mg/kg wwt	88.5	50.0	150	----
QC-343580-003	RM	magnesium	7439-95-4	E475A	910 mg/kg wwt	92.2	70.0	130	----
QC-343580-003	RM	manganese	7439-96-5	E475A	3.17 mg/kg wwt	100	70.0	130	----
QC-343580-003	RM	molybdenum	7439-98-7	E475A	0.29 mg/kg wwt	89.9	70.0	130	----
QC-343580-003	RM	nickel	7440-02-0	E475A	1.34 mg/kg wwt	85.0	70.0	130	----
QC-343580-003	RM	phosphorus	7723-14-0	E475A	8000 mg/kg wwt	98.2	70.0	130	----
QC-343580-003	RM	potassium	7440-09-7	E475A	12840 mg/kg wwt	93.2	70.0	130	----
QC-343580-003	RM	rubidium	7440-17-7	E475A	5.59 mg/kg wwt	99.3	70.0	130	----
QC-343580-003	RM	selenium	7782-49-2	E475A	3.45 mg/kg wwt	98.1	70.0	130	----
QC-343580-003	RM	sodium	7440-23-5	E475A	14000 mg/kg wwt	96.6	70.0	130	----
QC-343580-003	RM	strontium	7440-24-6	E475A	10.1 mg/kg wwt	96.2	70.0	130	----
QC-343580-003	RM	thallium	7440-28-0	E475A	0.0093 mg/kg wwt	92.7	70.0	130	----

Sub-Matrix: **Biota**

					Reference Material (RM) Report				
					RM Target	Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Concentration	RM	Low	High	Qualifier
Metals (QCLot: 343580) - continued									
QC-343580-003	RM	uranium	7440-61-1	E475A	0.0481 mg/kg wwt	90.0	70.0	130	----
QC-343580-003	RM	vanadium	7440-62-2	E475A	1.48 mg/kg wwt	96.7	70.0	130	----
QC-343580-003	RM	zinc	7440-66-6	E475A	46.2 mg/kg wwt	101	70.0	130	----
Metals (QCLot: 343581)									
QC-343581-003	RM	aluminum	7429-90-5	E475	1280 mg/kg	104	70.0	130	----
QC-343581-003	RM	arsenic	7440-38-2	E475	6.87 mg/kg	94.9	70.0	130	----
QC-343581-003	RM	barium	7440-39-3	E475	4.4 mg/kg	97.7	70.0	130	----
QC-343581-003	RM	boron	7440-42-8	E475	9.24 mg/kg	91.2	70.0	130	----
QC-343581-003	RM	cadmium	7440-43-9	E475	0.299 mg/kg	99.4	70.0	130	----
QC-343581-003	RM	calcium	7440-70-2	E475	2360 mg/kg	94.9	70.0	130	----
QC-343581-003	RM	cesium	7440-46-2	E475	0.078 mg/kg	91.7	70.0	130	----
QC-343581-003	RM	chromium	7440-47-3	E475	1.58 mg/kg	97.3	70.0	130	----
QC-343581-003	RM	cobalt	7440-48-4	E475	0.25 mg/kg	94.0	70.0	130	----
QC-343581-003	RM	copper	7440-50-8	E475	15.7 mg/kg	91.4	70.0	130	----
QC-343581-003	RM	iron	7439-89-6	E475	318 mg/kg	108	70.0	130	----
QC-343581-003	RM	lead	7439-92-1	E475	0.231 mg/kg	99.1	70.0	130	----
QC-343581-003	RM	lithium	7439-93-2	E475	1.21 mg/kg	88.5	50.0	150	----
QC-343581-003	RM	magnesium	7439-95-4	E475	910 mg/kg	92.2	70.0	130	----
QC-343581-003	RM	manganese	7439-96-5	E475	3.17 mg/kg	100	70.0	130	----
QC-343581-003	RM	molybdenum	7439-98-7	E475	0.29 mg/kg	89.9	70.0	130	----
QC-343581-003	RM	nickel	7440-02-0	E475	1.34 mg/kg	85.0	70.0	130	----
QC-343581-003	RM	phosphorus	7723-14-0	E475	8000 mg/kg	98.2	70.0	130	----
QC-343581-003	RM	potassium	7440-09-7	E475	12840 mg/kg	93.2	70.0	130	----
QC-343581-003	RM	rubidium	7440-17-7	E475	5.59 mg/kg	99.3	70.0	130	----
QC-343581-003	RM	selenium	7782-49-2	E475	3.45 mg/kg	98.1	70.0	130	----
QC-343581-003	RM	sodium	7440-23-5	E475	14000 mg/kg	96.6	70.0	130	----
QC-343581-003	RM	strontium	7440-24-6	E475	10.1 mg/kg	96.2	70.0	130	----
QC-343581-003	RM	thallium	7440-28-0	E475	0.0093 mg/kg	92.7	70.0	130	----
QC-343581-003	RM	uranium	7440-61-1	E475	0.0481 mg/kg	90.0	70.0	130	----
QC-343581-003	RM	vanadium	7440-62-2	E475	1.48 mg/kg	96.7	70.0	130	----
QC-343581-003	RM	zinc	7440-66-6	E475	46.2 mg/kg	101	70.0	130	----
Metals (QCLot: 343587)									

Sub-Matrix: **Biota**

					Reference Material (RM) Report				
					RM Target	Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Concentration	RM	Low	High	Qualifier
Metals (QCLot: 343587) - continued									
QC-343587-003	RM	aluminum	7429-90-5	E472A	1280 mg/kg wwt	121	70.0	130	----
QC-343587-003	RM	arsenic	7440-38-2	E472A	6.87 mg/kg wwt	106	70.0	130	----
QC-343587-003	RM	barium	7440-39-3	E472A	4.4 mg/kg wwt	109	70.0	130	----
QC-343587-003	RM	boron	7440-42-8	E472A	9.24 mg/kg wwt	104	70.0	130	----
QC-343587-003	RM	cadmium	7440-43-9	E472A	0.299 mg/kg wwt	109	70.0	130	----
QC-343587-003	RM	calcium	7440-70-2	E472A	2360 mg/kg wwt	106	70.0	130	----
QC-343587-003	RM	cesium	7440-46-2	E472A	0.078 mg/kg wwt	105	70.0	130	----
QC-343587-003	RM	cobalt	7440-48-4	E472A	0.25 mg/kg wwt	110	70.0	130	----
QC-343587-003	RM	copper	7440-50-8	E472A	15.7 mg/kg wwt	101	70.0	130	----
QC-343587-003	RM	iron	7439-89-6	E472A	318 mg/kg wwt	112	70.0	130	----
QC-343587-003	RM	lead	7439-92-1	E472A	0.231 mg/kg wwt	122	70.0	130	----
QC-343587-003	RM	lithium	7439-93-2	E472A	1.21 mg/kg wwt	102	50.0	150	----
QC-343587-003	RM	magnesium	7439-95-4	E472A	910 mg/kg wwt	105	70.0	130	----
QC-343587-003	RM	manganese	7439-96-5	E472A	3.17 mg/kg wwt	108	70.0	130	----
QC-343587-003	RM	molybdenum	7439-98-7	E472A	0.29 mg/kg wwt	107	70.0	130	----
QC-343587-003	RM	phosphorus	7723-14-0	E472A	8000 mg/kg wwt	110	70.0	130	----
QC-343587-003	RM	potassium	7440-09-7	E472A	12840 mg/kg wwt	105	70.0	130	----
QC-343587-003	RM	rubidium	7440-17-7	E472A	5.59 mg/kg wwt	110	70.0	130	----
QC-343587-003	RM	selenium	7782-49-2	E472A	3.45 mg/kg wwt	110	70.0	130	----
QC-343587-003	RM	sodium	7440-23-5	E472A	14000 mg/kg wwt	107	70.0	130	----
QC-343587-003	RM	strontium	7440-24-6	E472A	10.1 mg/kg wwt	100	70.0	130	----
QC-343587-003	RM	thallium	7440-28-0	E472A	0.0093 mg/kg wwt	103	70.0	130	----
QC-343587-003	RM	uranium	7440-61-1	E472A	0.0481 mg/kg wwt	106	70.0	130	----
QC-343587-003	RM	vanadium	7440-62-2	E472A	1.48 mg/kg wwt	111	70.0	130	----
QC-343587-003	RM	zinc	7440-66-6	E472A	46.2 mg/kg wwt	113	70.0	130	----
QC-343587-003	RM	zirconium	7440-67-7	E472A	0.254 mg/kg wwt	125	70.0	130	----
Metals (QCLot: 343588)									
QC-343588-003	RM	mercury	7439-97-6	E511	0.322 mg/kg	117	70.0	130	----
Metals (QCLot: 343589)									
QC-343589-003	RM	mercury	7439-97-6	E511A	0.322 mg/kg wwt	117	70.0	130	----
Metals (QCLot: 343590)									
QC-343590-003	RM	aluminum	7429-90-5	E472	1280 mg/kg	121	70.0	130	----

Sub-Matrix: **Biota**

					Reference Material (RM) Report				
					RM Target	Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Concentration	RM	Low	High	Qualifier
Metals (QCLot: 343590) - continued									
QC-343590-003	RM	arsenic	7440-38-2	E472	6.87 mg/kg	106	70.0	130	----
QC-343590-003	RM	barium	7440-39-3	E472	4.4 mg/kg	109	70.0	130	----
QC-343590-003	RM	boron	7440-42-8	E472	9.24 mg/kg	104	70.0	130	----
QC-343590-003	RM	cadmium	7440-43-9	E472	0.299 mg/kg	109	70.0	130	----
QC-343590-003	RM	calcium	7440-70-2	E472	2360 mg/kg	106	70.0	130	----
QC-343590-003	RM	cesium	7440-46-2	E472	0.078 mg/kg	105	70.0	130	----
QC-343590-003	RM	cobalt	7440-48-4	E472	0.25 mg/kg	110	70.0	130	----
QC-343590-003	RM	copper	7440-50-8	E472	15.7 mg/kg	101	70.0	130	----
QC-343590-003	RM	iron	7439-89-6	E472	318 mg/kg	112	70.0	130	----
QC-343590-003	RM	lead	7439-92-1	E472	0.231 mg/kg	122	70.0	130	----
QC-343590-003	RM	lithium	7439-93-2	E472	1.21 mg/kg	102	50.0	150	----
QC-343590-003	RM	magnesium	7439-95-4	E472	910 mg/kg	105	70.0	130	----
QC-343590-003	RM	manganese	7439-96-5	E472	3.17 mg/kg	108	70.0	130	----
QC-343590-003	RM	molybdenum	7439-98-7	E472	0.29 mg/kg	107	70.0	130	----
QC-343590-003	RM	phosphorus	7723-14-0	E472	8000 mg/kg	110	70.0	130	----
QC-343590-003	RM	potassium	7440-09-7	E472	12840 mg/kg	105	70.0	130	----
QC-343590-003	RM	rubidium	7440-17-7	E472	5.59 mg/kg	110	70.0	130	----
QC-343590-003	RM	selenium	7782-49-2	E472	3.45 mg/kg	110	70.0	130	----
QC-343590-003	RM	sodium	7440-23-5	E472	14000 mg/kg	107	70.0	130	----
QC-343590-003	RM	strontium	7440-24-6	E472	10.1 mg/kg	100	70.0	130	----
QC-343590-003	RM	thallium	7440-28-0	E472	0.0093 mg/kg	103	70.0	130	----
QC-343590-003	RM	uranium	7440-61-1	E472	0.0481 mg/kg	106	70.0	130	----
QC-343590-003	RM	vanadium	7440-62-2	E472	1.48 mg/kg	111	70.0	130	----
QC-343590-003	RM	zinc	7440-66-6	E472	46.2 mg/kg	113	70.0	130	----

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Chain of Custody / Analytical Request Form

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PERIPHYTON TISSUE

COC #

Report To		Report Format / Distribution		Service Requested (Rush for routine analysis subject to availability)
Company:	Minnow Environmental Inc.	☑ Standard ☐ Other		◉ Regular (Standard Turnaround Times -
Contact:	Pierre Stecko	☑ PDF ☑ Excel ☐ Digital ☐ Fax		○ Priority (2-4 Business Days) - 50% Sur
Address:	204-1006 Fort Street	Email 1: pstecko@minnow.ca		○ Emergency (1-2 Bus. Days) - 100% Su
	Victoria, BC	Email 2: slatimer@minnow.ca		○ Same Day or Weekend Emergency - C
Phone:	(250)595-1027 x24 Fax: (250) 606 1626	Email 3: lbowron@minnow.ca		Analys
Invoice To	Same as Report ? ☑ Yes ☐ No	Client / Project Information		Please indicate below Filtered,
Hardcopy of Invoice with Report?	☑ Yes ☐ No	Job #: Minnow Project 21-92		
Company:	Minto Exploration Ltd	PO / AFE:		
Contact:	Ian Smith	LSD:		
Address:	61 Wasson Place, Whitehorse, Yukon Y1A 0H7			
Phone:	867.332.0620 Fax:	Quote #: VA21MINN100-05		
Lab Work Order # (lab use only)		ALS Contact: Can Dang	Sampler: LBO, SLA	

Environmental Division Whitehorse

Work Order Reference

WR2101264

Telephone : +1 867 668 6589

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Moisture (%)	High Resolution ICP-MS scan	Mercury in Tissue by CVAFS	**See Complete Quote #	Number of Cont
	~~LWC-1-BIT~~ ~~PERT~~ LWC-1-PERT	12 -Sept-21		Tissue	X	X	X		1
	~~LWC-2-BIT~~ LWC-2-PERT	12 -Sept-21		Tissue	X	X	X		1
	~~LWC-3-BIT~~ LWC-3-PERT	12 -Sept-21		Tissue	X	X	X		1
	~~LWC-4-BIT~~ LWC-4-PERT	12 -Sept-21		Tissue	X	X	X		1
	~~LWC-5-BIT~~ LWC-5-PERT	11 -Sept-21		Tissue	X	X	X		1
	~~LBC-1-BIT~~ LBC-1-PERT	14 -Sept-21		Tissue	X	X	X		1
	~~LBC-2-BIT~~ LBC-2-PERT	14 -Sept-21		Tissue	X	X	X		1
	~~LBC-3-BIT~~ LBC-3-PERT	14 -Sept-21		Tissue	X	X	X		1
	~~LBC-4-BIT~~ LBC-4-PERT	14 -Sept-21		Tissue	X	X	X		1
	~~LBC-5-BIT~~ LBC-5-PERT	14 -Sept-21		Tissue	X	X	X		1
	~~LMC-1-BIT~~ LMC-1-PERT	10 -Sept-21		Tissue	X	X	X		1
	~~LMC-2-BIT~~ LMC-2-PERT	9 -Sept-21		Tissue	X	X	X		1

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details

Small samples. The critical analyte of interest is selenium; please ensure best possible MDLs. Benthic samples.

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.

By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab.

Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
Sarah Latimer Lisa Bowron	15-Sep-21	15:01		Sept 15	815	9 °C				

ALS Environmental

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Canada Toll Free: 1 800 668 9878
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COC # _____
Page 2 of 2

Report To		Report Format / Distribution		Service Requested (Rush for routine analysis subject to availability)
Company:	Minnow Environmental Inc.	☑ Standard ☐ Other		○ Regular (Standard Turnaround Times - Business Days)
Contact:	Pierre Stecko			○ Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT
Address:	204-1006 Fort Street	Email 1:	pstecko@minnow.ca	○ Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT
	Victoria, BC	Email 2:	slatimer@minnow.ca	◉ Same Day or Weekend Emergency - Contact ALS to Confirm TAT
Phone:	(250)595-1627 x24 Fax: (250) 595-1625	Email 3:	lbowron@minnow.ca	
Invoice To	Same as Report ? ☐ Yes ☑ No	**Client / Project Information**		
Hardcopy of Invoice with Report?	☑ Yes ☐ No	Job #:	Minnow Project 21-92	
Company:	Minto Exploration Ltd	PO / AFE:		
Contact:	Ian Smith	LSD:		
Address:	61 Wasson Place, Whitehorse, Yukon Y1A 0H7			
Phone:	867.332.0620 Fax:	Quote #:	VA21MINN100-05	
Lab Work Order # (lab use only)		**ALS Contact:**	Can Dang	**Sampler:** LBO, SLA

Analysis Request

Please indicate below Filtered, Preserved or both (F, P, F/P)

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Moisture (%)	High Resolution ICP-MS scan	Mercury in Tissue by CVAFS	**See Complete Quote	Number of Containers
	~~LMC-3-BIT~~ ~~Pert~~ LMC-3-PERT	9-Sept-21		Tissue	X	X	X		1
	~~LMC-4-BIT~~ ~~Pert~~ LMC-4-PERT	9-Sept-21		Tissue	X	X	X		1
	~~LMC-5-BIT~~ ~~Pert~~ LMC-5-PERT	9-Sept-21		Tissue	X	X	X		1
	~~X-BIT~~ ~~Pert~~ LMC-5-PERT-X	9-Sept-21		Tissue	X	X	X		1

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details

Small samples. The critical analyte of interest is selenium; please ensure best possible MDLs. Benthic samples

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.

By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab.

Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
Sarah Latimer Lisa Bowron	15-Sep-21	15:01		Sep 15	3:15	9 °C				

ALS Environmental

Chain of Custody / Analytical Request Form
Canada Toll Free: 1 800 668 9878
www.alsglobal.com

PERIPHYTON TISSUE

COC #

Report To		Report Format / Distribution		Service Requested (Rush for routine analysis subject to availability)
Company:	Minnow Environmental Inc.	☑ Standard ☐ Other		◉ Regular (Standard Turnaround Times -
Contact:	Pierre Stecko	☑ PDF ☑ Excel ☐ Digital ☐ Fax		○ Priority (2-4 Business Days) - 50% Sur
Address:	204-1006 Fort Street	Email 1: pstecko@minnow.ca		○ Emergency (1-2 Bus. Days) - 100% Su
	Victoria, BC	Email 2: slatimer@minnow.ca		○ Same Day or Weekend Emergency - C
Phone:	(250)595-1627 x24 Fax: (250) 595-1625	Email 3: lbowron@minnow.ca		Analys
Invoice To	Same as Report ? ☑ Yes ☐ No	Client / Project Information		Please indicate below Filtered,
Hardcopy of Invoice with Report?	☑ Yes ☐ No	Job #: Minnow Project 21-92		
Company:	Minto Exploration Ltd	PO / AFE:		
Contact:	Ian Smith	LSD:		
Address:	61 Wasson Place, Whitehorse, Yukon Y1A 0H7			
Phone:	867.332.0620 Fax:	Quote #: VA21MINN100-05		
Lab Work Order # (lab use only)		ALS Contact: Can Dang	Sampler: LBO, SLA	

Environmental Division Whitehorse
Work Order Reference
WR2101264

Telephone : +1 867 668 6689

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Moisture (%)	High Resolution ICP-MS scan	Mercury in Tissue by CVAFS	**See Complete Quote	Number of Cont
	~~LWC-1-BIT-PERI~~ ~~LWC-1-PERT~~ LWC-1-PERT	12-Sept-21		Tissue	X	X	X		1
	~~LWC-2-BIT-PERI~~ LWC-2-PERT	12-Sept-21		Tissue	X	X	X		1
	~~LWC-3-BIT-PERI~~ LWC-3-PERT	12-Sept-21		Tissue	X	X	X		1
	~~LWC-4-BIT-PERI~~ LWC-4-PERT	12-Sept-21		Tissue	X	X	X		1
	~~LWC-5-BIT-PERI~~ LWC-5-PERT	11-Sept-21		Tissue	X	X	X		1
	~~LBC-1-BIT-PERI~~ LBC-1-PERT	14-Sept-21		Tissue	X	X	X		1
	~~LBC-2-BIT-PERI~~ LBC-2-PERT	14-Sept-21		Tissue	X	X	X		1
	~~LBC-3-BIT-PERI~~ LBC-3-PERT	14-Sept-21		Tissue	X	X	X		1
	~~LBC-4-BIT-PERI~~ LBC-4-PERT	14-Sept-21		Tissue	X	X	X		1
	~~LBC-5-BIT-PERI~~ LBC-5-PERT	14-Sept-21		Tissue	X	X	X		1
	~~LMC-1-BIT-PERI~~ LMC-1-PERT	10-Sept-21		Tissue	X	X	X		1
	~~LMC-2-BIT-PERI~~ LMC-2-PERT	9-Sept-21		Tissue	X	X	X		1

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details

Small samples. The critical analyte of interest is selenium; please ensure best possible MDLs. Benthic samples.

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.
By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab.
Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
Sarah Latimer Lisa Bowron	15-Sep-21	15:01		Sept 15	315	9 °C	OA	16/09/2021	5pm	

ALS Environmental

Chain of Custody / Analytical Request Form
Canada Toll Free: 1 800 668 9878
www.alsglobal.com

COC # _____
Page 2 of 2

Report To		Report Format / Distribution		Service Requested (Rush for routine analysis subject to availability)
Company:	Minnow Environmental Inc.	☑ Standard ☐ Other		○ Regular (Standard Turnaround Times - Business Days)
Contact:	Pierre Stecko			○ Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT
Address:	204-1006 Fort Street	Email 1:	pstecko@minnow.ca	○ Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT
	Victoria, BC	Email 2:	slatimer@minnow.ca	◉ Same Day or Weekend Emergency - Contact ALS to Confirm TAT
Phone:	(250)595-1627 x24 Fax: (250) 595-1625	Email 3:	lbowron@minnow.ca	
Invoice To	Same as Report ? ☐ Yes ☑ No	Client / Project Information		Analysis Request
Hardcopy of Invoice with Report?	☑ Yes ☐ No	Job #:	Minnow Project 21-92	Please indicate below Filtered, Preserved or both (F, P, F/P)
Company:	Minto Exploration Ltd	PO / AFE:		
Contact:	Ian Smith	LSD:		
Address:	61 Wasson Place, Whitehorse, Yukon Y1A 0H7			
Phone:	867.332.0620 Fax:	Quote #:	VA21MINN100-05	
Lab Work Order # (lab use only)		ALS Contact:	Can Dang	Sampler: LBO, SLA

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Moisture (%)	High Resolution ICP-MS scan	Mercury in Tissue by CVAFS	**See Complete Quote								Number of Containers
	~~LMC-3-BIF~~ ~~Perl~~ LMC-3-PERT	9 -Sept-21		Tissue	X	X	X									1
	~~LMC-4-BIF~~ ~~Perl~~ LMC-4-PERT	9 -Sept-21		Tissue	X	X	X									1
	~~LMC-5-BIF~~ ~~Perl~~ LMC-5-PERT	9 -Sept-21		Tissue	X	X	X									1
	~~X-BIF~~ ~~Perl~~ LMC-5-PERT-X	9 -Sept-21		Tissue	X	X	X									1

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details

Small samples. The critical analyte of interest is selenium; please ensure best possible MDLs. Benthic samples

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.
By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab.
Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.

SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
Sorch Latimer Lisa Bowron	15-Sep-21	15:01	JE	Aug 15	3:15	9 °C	JA	16/09/2021	5pm	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2101265**	Page	: 1 of 16
Client	: **Minnow Environmental Inc.**	Laboratory	: Whitehorse - Environmental
Contact	: Pierre Stecko	Account Manager	: Can Dang
Address	: 204 – 1006 Fort Street Victoria BC Canada V8V 3K4	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: 250 595 1627	Telephone	: +1 867 668 6689
Project	: Minnow Environmental Inc Project for Minto MInes WUL Program	Date Samples Received	: 15-Sep-2021 15:15
PO	: Minto AEMP - 21-92	Date Analysis Commenced	: 18-Sep-2021
C-O-C number	: ----	Issue Date	: 07-Oct-2021 12:52
Sampler	: LBO, SLA		
Site	: ----		
Quote number	: Q79833 - Minnow/Minto		
No. of samples received	: 34		
No. of samples analysed	: 34		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Dee Lee	Analyst	Metals, Burnaby, British Columbia
Hedy Lai	Team Leader - Inorganics	Inorganics, Saskatoon, Saskatchewan
Jwan Abdalla	Laboratory Analyst	Inorganics, Saskatoon, Saskatchewan
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Melissa Houseman	Team Leader - Inorganics	Inorganics, Saskatoon, Saskatchewan
Nancy Cruse	Laboratory _ Supervisor	Inorganics, Saskatoon, Saskatchewan
Ophelia Chiu	Department Manager - Organics	Organics, Burnaby, British Columbia
Xihua Yao	Laboratory Analyst	Inorganics, Saskatoon, Saskatchewan

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
%	percent
mg/kg	milligrams per kilogram
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
DLM	*Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).*

Analytical Results

Sub-Matrix: **Sediment**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	UMC-1	UMC-2	UMC-3	UMC-4	UMC-5
					Client sampling date / time	13-Sep-2021	13-Sep-2021	13-Sep-2021	13-Sep-2021	13-Sep-2021
						WR2101265-001	WR2101265-002	WR2101265-003	WR2101265-004	WR2101265-005
						Result	Result	Result	Result	Result
Physical Tests										
loss on ignition @ 420°C	----	E205C	1.0	%		8.0	8.4	15.4	12.1	5.1
pH (1:2 soil:water)	----	E108	0.10	pH units		7.32	8.06	7.89	8.09	7.82
Organic / Inorganic Carbon										
carbon, inorganic [IC]	----	E354	0.050	%		0.109	0.145	0.291	0.150	0.075
carbon, total [TC]	----	E351	0.050	%		2.51	2.81	6.50	4.09	1.67
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%		0.91	1.20	2.43	1.25	0.62
carbon, total organic [TOC]	----	EC356	0.050	%		2.40	2.66	6.21	3.94	1.60
organic matter	----	EC356	0.10	%		4.14	4.58	10.7	6.79	2.76
Metals										
aluminum	7429-90-5	E440	50	mg/kg		11500	10900	13100	10000	8840
antimony	7440-36-0	E440	0.10	mg/kg		0.48	0.38	0.55	0.39	0.38
arsenic	7440-38-2	E440	0.10	mg/kg		5.34	5.72	8.20	5.15	5.16
barium	7440-39-3	E440	0.50	mg/kg		192	457	1130	191	177
beryllium	7440-41-7	E440	0.10	mg/kg		0.40	0.39	0.46	0.41	0.28
bismuth	7440-69-9	E440	0.20	mg/kg		<0.20	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg		<5.0	<5.0	7.4	<5.0	<5.0
cadmium	7440-43-9	E440	0.020	mg/kg		0.253	0.310	0.702	0.145	0.134
calcium	7440-70-2	E440	50	mg/kg		7940	8730	14600	9490	6170
chromium	7440-47-3	E440	0.50	mg/kg		25.9	25.2	26.4	25.6	23.5
cobalt	7440-48-4	E440	0.10	mg/kg		8.51	11.1	18.1	8.98	8.18
copper	7440-50-8	E440	0.50	mg/kg		170	189	340	93.6	67.5
iron	7439-89-6	E440	50	mg/kg		21800	24200	27900	20600	19900
lead	7439-92-1	E440	0.50	mg/kg		5.44	5.23	6.05	5.14	4.59
lithium	7439-93-2	E440	2.0	mg/kg		7.4	7.3	8.6	6.9	5.9
magnesium	7439-95-4	E440	20	mg/kg		6010	6360	7710	6090	5220
manganese	7439-96-5	E440	1.0	mg/kg		495	7980	26900	1180	1420
mercury	7439-97-6	E510	0.0050	mg/kg		0.0273	0.0264	0.0448	0.0316	0.0163
molybdenum	7439-98-7	E440	0.10	mg/kg		1.21	4.18	11.9	0.92	1.36
nickel	7440-02-0	E440	0.50	mg/kg		23.3	30.2	42.9	26.3	22.1
phosphorus	7723-14-0	E440	50	mg/kg		801	861	882	816	811
potassium	7440-09-7	E440	100	mg/kg		1380	1400	1760	1130	1020

Analytical Results

Sub-Matrix: **Sediment**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	UMC-1	UMC-2	UMC-3	UMC-4	UMC-5
					Client sampling date / time	13-Sep-2021	13-Sep-2021	13-Sep-2021	13-Sep-2021	13-Sep-2021
						WR2101265-001	WR2101265-002	WR2101265-003	WR2101265-004	WR2101265-005
						Result	Result	Result	Result	Result
Metals										
selenium	7782-49-2	E440	0.20	mg/kg		0.68	0.61	1.30	0.47	0.29
silver	7440-22-4	E440	0.10	mg/kg		0.10	0.11	0.16	<0.10	<0.10
sodium	7440-23-5	E440	50	mg/kg		314	293	371	303	311
strontium	7440-24-6	E440	0.50	mg/kg		68.4	119	262	118	67.2
sulfur	7704-34-9	E440	1000	mg/kg		<1000	<1000	<1000	<1000	<1000
thallium	7440-28-0	E440	0.050	mg/kg		0.090	0.084	0.117	0.075	0.060
tin	7440-31-5	E440	2.0	mg/kg		<2.0	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg		808	667	689	584	662
tungsten	7440-33-7	E440	0.50	mg/kg		<0.50	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg		1.31	0.684	1.34	0.745	0.666
vanadium	7440-62-2	E440	0.20	mg/kg		54.6	56.1	60.3	43.0	48.0
zinc	7440-66-6	E440	2.0	mg/kg		58.0	66.2	84.9	50.1	46.3
zirconium	7440-67-7	E440	1.0	mg/kg		2.9	1.9	<2.0 DLM	3.0	2.4
Leachable Anions & Nutrients										
Kjeldahl nitrogen, total [TKN]	----	E319	0.020	%		0.256	0.270	0.517	0.360	0.211

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Sediment**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	UMC	URC-1	URC-2	URC-3	URC-4
					Client sampling date / time	13-Sep-2021	13-Sep-2021	13-Sep-2021	13-Sep-2021	13-Sep-2021
						WR2101265-006	WR2101265-007	WR2101265-008	WR2101265-009	WR2101265-010
						Result	Result	Result	Result	Result
Physical Tests										
loss on ignition @ 420°C	----	E205C	1.0	%		----	19.0	18.7	18.2	8.0
pH (1:2 soil:water)	----	E108	0.10	pH units		----	7.17	6.91	6.98	7.40
Particle Size										
clay (<0.004mm)	----	EC184E	1.0	%		7.4	----	----	----	----
silt (0.063mm - 0.004mm)	----	EC184E	1.0	%		47.2	----	----	----	----
sand (0.2mm - 0.063mm)	----	EC184E	1.0	%		26.6	----	----	----	----
sand (2.0mm - 0.2mm)	----	EC184E	1.0	%		18.8	----	----	----	----
sand (2.0mm - 0.063mm)	----	EC184E	1.0	%		45.4	----	----	----	----
gravel (>2mm)	----	EC184E	1.0	%		<1.0	----	----	----	----
Organic / Inorganic Carbon										
carbon, inorganic [IC]	----	E354	0.050	%		----	0.207	0.132	0.141	0.097
carbon, total [TC]	----	E351	0.050	%		----	6.43	5.51	6.36	2.64
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%		----	1.72	1.10	1.18	0.81
carbon, total organic [TOC]	----	EC356	0.050	%		----	6.22	5.38	6.22	2.54
organic matter	----	EC356	0.10	%		----	10.7	9.28	10.7	4.38
Metals										
aluminum	7429-90-5	E440	50	mg/kg		----	11200	11300	10300	7510
antimony	7440-36-0	E440	0.10	mg/kg		----	0.38	0.39	0.52	0.30
arsenic	7440-38-2	E440	0.10	mg/kg		----	12.4	7.94	9.01	7.74
barium	7440-39-3	E440	0.50	mg/kg		----	368	235	270	188
beryllium	7440-41-7	E440	0.10	mg/kg		----	0.37	0.32	0.33	0.26
bismuth	7440-69-9	E440	0.20	mg/kg		----	<0.20	<0.20	<0.20	<0.20
boron	7440-42-8	E440	5.0	mg/kg		----	<5.0	<5.0	<5.0	<5.0
cadmium	7440-43-9	E440	0.020	mg/kg		----	0.249	0.173	0.220	0.130
calcium	7440-70-2	E440	50	mg/kg		----	11700	8640	11600	6960
chromium	7440-47-3	E440	0.50	mg/kg		----	23.0	23.7	21.6	16.4
cobalt	7440-48-4	E440	0.10	mg/kg		----	12.6	7.69	7.80	7.49
copper	7440-50-8	E440	0.50	mg/kg		----	24.5	21.1	22.1	15.2
iron	7439-89-6	E440	50	mg/kg		----	32400	24600	23400	20700
lead	7439-92-1	E440	0.50	mg/kg		----	4.66	4.50	4.18	3.41
lithium	7439-93-2	E440	2.0	mg/kg		----	6.7	7.0	6.3	4.8
magnesium	7439-95-4	E440	20	mg/kg		----	4620	4390	4340	3370

Analytical Results

Sub-Matrix: **Sediment**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	UMC	URC-1	URC-2	URC-3	URC-4
					Client sampling date / time	13-Sep-2021	13-Sep-2021	13-Sep-2021	13-Sep-2021	13-Sep-2021
						WR2101265-006	WR2101265-007	WR2101265-008	WR2101265-009	WR2101265-010
						Result	Result	Result	Result	Result
Metals										
manganese	7439-96-5	E440	1.0	mg/kg		----	2510	616	1310	1200
mercury	7439-97-6	E510	0.0050	mg/kg		----	0.0482	0.0417	0.0278	0.0294
molybdenum	7439-98-7	E440	0.10	mg/kg		----	0.76	0.58	3.78	0.86
nickel	7440-02-0	E440	0.50	mg/kg		----	20.4	16.5	17.9	13.6
phosphorus	7723-14-0	E440	50	mg/kg		----	998	868	692	664
potassium	7440-09-7	E440	100	mg/kg		----	700	750	760	590
selenium	7782-49-2	E440	0.20	mg/kg		----	0.89	0.72	2.35	0.75
silver	7440-22-4	E440	0.10	mg/kg		----	<0.10	<0.10	<0.10	<0.10
sodium	7440-23-5	E440	50	mg/kg		----	189	222	215	152
strontium	7440-24-6	E440	0.50	mg/kg		----	105	75.0	100	65.6
sulfur	7704-34-9	E440	1000	mg/kg		----	<1000	<1000	1400	<1000
thallium	7440-28-0	E440	0.050	mg/kg		----	0.063	0.065	0.066	<0.050
tin	7440-31-5	E440	2.0	mg/kg		----	<2.0	<2.0	<2.0	<2.0
titanium	7440-32-6	E440	1.0	mg/kg		----	508	702	660	526
tungsten	7440-33-7	E440	0.50	mg/kg		----	<0.50	<0.50	<0.50	<0.50
uranium	7440-61-1	E440	0.050	mg/kg		----	2.78	1.87	3.66	1.75
vanadium	7440-62-2	E440	0.20	mg/kg		----	50.4	45.2	47.0	40.9
zinc	7440-66-6	E440	2.0	mg/kg		----	50.1	44.5	44.9	35.7
zirconium	7440-67-7	E440	1.0	mg/kg		----	2.3	2.3	2.7	1.8
Leachable Anions & Nutrients										
Kjeldahl nitrogen, total [TKN]	----	E319	0.020	%		----	0.365	0.513	0.564	0.317

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Sediment**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	URC-5	URC	LMC-1	LMC-1	LMC-2
					Client sampling date / time	13-Sep-2021	13-Sep-2021	10-Sep-2021	10-Sep-2021	10-Sep-2021
						WR2101265-011	WR2101265-012	WR2101265-013	WR2101265-014	WR2101265-015
						Result	Result	Result	Result	Result
Physical Tests										
loss on ignition @ 420°C	----	E205C	1.0	%		7.5	----	5.9	----	7.5
pH (1:2 soil:water)	----	E108	0.10	pH units		7.13	----	7.96	----	7.95
Particle Size										
clay (<0.004mm)	----	EC184E	1.0	%		----	4.4	----	9.0	----
silt (0.063mm - 0.004mm)	----	EC184E	1.0	%		----	36.2	----	62.5	----
sand (0.2mm - 0.063mm)	----	EC184E	1.0	%		----	23.6	----	14.8	----
sand (2.0mm - 0.2mm)	----	EC184E	1.0	%		----	35.2	----	13.6	----
sand (2.0mm - 0.063mm)	----	EC184E	1.0	%		----	58.9	----	28.5	----
gravel (>2mm)	----	EC184E	1.0	%		----	<1.0	----	<1.0	----
Organic / Inorganic Carbon										
carbon, inorganic [IC]	----	E354	0.050	%		0.075	----	0.141	----	0.247
carbon, total [TC]	----	E351	0.050	%		2.60	----	2.51	----	3.32
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%		0.63	----	1.18	----	2.06
carbon, total organic [TOC]	----	EC356	0.050	%		2.52	----	2.37	----	3.07
organic matter	----	EC356	0.10	%		4.34	----	4.08	----	5.29
Metals										
aluminum	7429-90-5	E440	50	mg/kg		8760	----	14300	----	16300
antimony	7440-36-0	E440	0.10	mg/kg		0.50	----	0.48	----	0.61
arsenic	7440-38-2	E440	0.10	mg/kg		7.76	----	7.37	----	8.90
barium	7440-39-3	E440	0.50	mg/kg		236	----	236	----	287
beryllium	7440-41-7	E440	0.10	mg/kg		0.46	----	0.40	----	0.50
bismuth	7440-69-9	E440	0.20	mg/kg		<0.20	----	<0.20	----	<0.20
boron	7440-42-8	E440	5.0	mg/kg		<5.0	----	<5.0	----	<5.0
cadmium	7440-43-9	E440	0.020	mg/kg		0.267	----	0.148	----	0.230
calcium	7440-70-2	E440	50	mg/kg		10200	----	10200	----	13700
chromium	7440-47-3	E440	0.50	mg/kg		20.2	----	32.4	----	36.5
cobalt	7440-48-4	E440	0.10	mg/kg		8.76	----	10.4	----	12.0
copper	7440-50-8	E440	0.50	mg/kg		26.7	----	56.8	----	93.8
iron	7439-89-6	E440	50	mg/kg		20400	----	25500	----	29600
lead	7439-92-1	E440	0.50	mg/kg		4.83	----	5.72	----	6.72
lithium	7439-93-2	E440	2.0	mg/kg		5.6	----	10.3	----	12.4
magnesium	7439-95-4	E440	20	mg/kg		4080	----	7160	----	8490

Analytical Results

Sub-Matrix: **Sediment**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	URC-5	URC	LMC-1	LMC-1	LMC-2
					Client sampling date / time	13-Sep-2021	13-Sep-2021	10-Sep-2021	10-Sep-2021	10-Sep-2021
						WR2101265-011	WR2101265-012	WR2101265-013	WR2101265-014	WR2101265-015
						Result	Result	Result	Result	Result
Metals										
manganese	7439-96-5	E440	1.0	mg/kg		604	----	1040	----	1280
mercury	7439-97-6	E510	0.0050	mg/kg		0.0379	----	0.0451	----	0.0405
molybdenum	7439-98-7	E440	0.10	mg/kg		0.80	----	0.66	----	0.85
nickel	7440-02-0	E440	0.50	mg/kg		17.4	----	25.8	----	29.5
phosphorus	7723-14-0	E440	50	mg/kg		734	----	921	----	898
potassium	7440-09-7	E440	100	mg/kg		700	----	1540	----	1830
selenium	7782-49-2	E440	0.20	mg/kg		0.78	----	0.42	----	0.62
silver	7440-22-4	E440	0.10	mg/kg		<0.10	----	<0.10	----	0.12
sodium	7440-23-5	E440	50	mg/kg		186	----	368	----	371
strontium	7440-24-6	E440	0.50	mg/kg		103	----	96.9	----	118
sulfur	7704-34-9	E440	1000	mg/kg		<1000	----	<1000	----	<1000
thallium	7440-28-0	E440	0.050	mg/kg		0.057	----	0.106	----	0.122
tin	7440-31-5	E440	2.0	mg/kg		<2.0	----	<2.0	----	<2.0
titanium	7440-32-6	E440	1.0	mg/kg		576	----	911	----	882
tungsten	7440-33-7	E440	0.50	mg/kg		<0.50	----	<0.50	----	<0.50
uranium	7440-61-1	E440	0.050	mg/kg		1.96	----	0.948	----	1.11
vanadium	7440-62-2	E440	0.20	mg/kg		46.8	----	59.3	----	64.8
zinc	7440-66-6	E440	2.0	mg/kg		38.5	----	58.3	----	70.8
zirconium	7440-67-7	E440	1.0	mg/kg		3.5	----	2.4	----	2.5
Leachable Anions & Nutrients										
Kjeldahl nitrogen, total [TKN]	----	E319	0.020	%		0.251	----	0.165	----	0.228

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Sediment**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LMC-2	LMC-3	LMC-3	LMC-4	LMC-4
					Client sampling date / time	10-Sep-2021	10-Sep-2021	10-Sep-2021	10-Sep-2021	10-Sep-2021
						WR2101265-016	WR2101265-017	WR2101265-018	WR2101265-019	WR2101265-020
						Result	Result	Result	Result	Result
Physical Tests										
loss on ignition @ 420°C	----	E205C	1.0	%		----	8.8	----	4.9	----
pH (1:2 soil:water)	----	E108	0.10	pH units		----	8.05	----	8.14	----
Particle Size										
clay (<0.004mm)	----	EC184E	1.0	%		13.5	----	11.8	----	7.4
silt (0.063mm - 0.004mm)	----	EC184E	1.0	%		64.1	----	58.8	----	35.6
sand (0.2mm - 0.063mm)	----	EC184E	1.0	%		10.3	----	11.6	----	18.8
sand (2.0mm - 0.2mm)	----	EC184E	1.0	%		12.0	----	16.6	----	37.5
sand (2.0mm - 0.063mm)	----	EC184E	1.0	%		22.4	----	28.2	----	56.3
gravel (>2mm)	----	EC184E	1.0	%		<1.0	----	1.2	----	<1.0
Organic / Inorganic Carbon										
carbon, inorganic [IC]	----	E354	0.050	%		----	0.177	----	0.110	----
carbon, total [TC]	----	E351	0.050	%		----	3.82	----	1.68	----
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%		----	1.47	----	0.92	----
carbon, total organic [TOC]	----	EC356	0.050	%		----	3.64	----	1.57	----
organic matter	----	EC356	0.10	%		----	6.28	----	2.71	----
Metals										
aluminum	7429-90-5	E440	50	mg/kg		----	13500	----	10700	----
antimony	7440-36-0	E440	0.10	mg/kg		----	0.51	----	0.38	----
arsenic	7440-38-2	E440	0.10	mg/kg		----	8.05	----	6.15	----
barium	7440-39-3	E440	0.50	mg/kg		----	250	----	176	----
beryllium	7440-41-7	E440	0.10	mg/kg		----	0.43	----	0.34	----
bismuth	7440-69-9	E440	0.20	mg/kg		----	<0.20	----	<0.20	----
boron	7440-42-8	E440	5.0	mg/kg		----	<5.0	----	<5.0	----
cadmium	7440-43-9	E440	0.020	mg/kg		----	0.208	----	0.144	----
calcium	7440-70-2	E440	50	mg/kg		----	10600	----	7850	----
chromium	7440-47-3	E440	0.50	mg/kg		----	32.1	----	26.9	----
cobalt	7440-48-4	E440	0.10	mg/kg		----	11.0	----	8.73	----
copper	7440-50-8	E440	0.50	mg/kg		----	60.9	----	37.5	----
iron	7439-89-6	E440	50	mg/kg		----	28600	----	23200	----
lead	7439-92-1	E440	0.50	mg/kg		----	6.03	----	4.73	----
lithium	7439-93-2	E440	2.0	mg/kg		----	10.3	----	8.1	----
magnesium	7439-95-4	E440	20	mg/kg		----	7200	----	5880	----

Analytical Results

Sub-Matrix: **Sediment**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LMC-2	LMC-3	LMC-3	LMC-4	LMC-4
					Client sampling date / time	10-Sep-2021	10-Sep-2021	10-Sep-2021	10-Sep-2021	10-Sep-2021
						WR2101265-016	WR2101265-017	WR2101265-018	WR2101265-019	WR2101265-020
						Result	Result	Result	Result	Result
Metals										
manganese	7439-96-5	E440	1.0	mg/kg		----	1220	----	758	----
mercury	7439-97-6	E510	0.0050	mg/kg		----	0.0369	----	0.0206	----
molybdenum	7439-98-7	E440	0.10	mg/kg		----	0.80	----	0.63	----
nickel	7440-02-0	E440	0.50	mg/kg		----	26.7	----	21.6	----
phosphorus	7723-14-0	E440	50	mg/kg		----	851	----	794	----
potassium	7440-09-7	E440	100	mg/kg		----	1320	----	1110	----
selenium	7782-49-2	E440	0.20	mg/kg		----	0.39	----	0.22	----
silver	7440-22-4	E440	0.10	mg/kg		----	<0.10	----	<0.10	----
sodium	7440-23-5	E440	50	mg/kg		----	294	----	308	----
strontium	7440-24-6	E440	0.50	mg/kg		----	102	----	74.4	----
sulfur	7704-34-9	E440	1000	mg/kg		----	<1000	----	<1000	----
thallium	7440-28-0	E440	0.050	mg/kg		----	0.095	----	0.075	----
tin	7440-31-5	E440	2.0	mg/kg		----	<2.0	----	<2.0	----
titanium	7440-32-6	E440	1.0	mg/kg		----	704	----	725	----
tungsten	7440-33-7	E440	0.50	mg/kg		----	<0.50	----	<0.50	----
uranium	7440-61-1	E440	0.050	mg/kg		----	1.04	----	0.784	----
vanadium	7440-62-2	E440	0.20	mg/kg		----	64.2	----	55.2	----
zinc	7440-66-6	E440	2.0	mg/kg		----	61.4	----	49.0	----
zirconium	7440-67-7	E440	1.0	mg/kg		----	2.5	----	2.1	----
Leachable Anions & Nutrients										
Kjeldahl nitrogen, total [TKN]	----	E319	0.020	%		----	0.245	----	0.124	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Sediment**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LMC-5	LMC-5	LWC-1	LWC-1	LWC-2
					Client sampling date / time	10-Sep-2021	10-Sep-2021	11-Sep-2021	11-Sep-2021	11-Sep-2021
						WR2101265-021	WR2101265-022	WR2101265-023	WR2101265-024	WR2101265-025
						Result	Result	Result	Result	Result
Physical Tests										
loss on ignition @ 420°C	----	E205C	1.0	%		6.2	----	5.4	----	13.3
pH (1:2 soil:water)	----	E108	0.10	pH units		8.10	----	6.89	----	6.89
Particle Size										
clay (<0.004mm)	----	EC184E	1.0	%		----	8.9	----	3.9	----
silt (0.063mm - 0.004mm)	----	EC184E	1.0	%		----	46.1	----	35.1	----
sand (0.2mm - 0.063mm)	----	EC184E	1.0	%		----	11.5	----	26.9	----
sand (2.0mm - 0.2mm)	----	EC184E	1.0	%		----	32.7	----	33.9	----
sand (2.0mm - 0.063mm)	----	EC184E	1.0	%		----	44.2	----	60.8	----
gravel (>2mm)	----	EC184E	1.0	%		----	<1.0	----	<1.0	----
Organic / Inorganic Carbon										
carbon, inorganic [IC]	----	E354	0.050	%		0.138	----	0.082	----	0.137
carbon, total [TC]	----	E351	0.050	%		2.50	----	2.05	----	5.92
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%		1.15	----	0.68	----	1.14
carbon, total organic [TOC]	----	EC356	0.050	%		2.36	----	1.97	----	5.78
organic matter	----	EC356	0.10	%		4.07	----	3.40	----	9.96
Metals										
aluminum	7429-90-5	E440	50	mg/kg		11700	----	11900	----	15400
antimony	7440-36-0	E440	0.10	mg/kg		0.43	----	0.31	----	0.46
arsenic	7440-38-2	E440	0.10	mg/kg		7.22	----	4.32	----	6.52
barium	7440-39-3	E440	0.50	mg/kg		221	----	147	----	217
beryllium	7440-41-7	E440	0.10	mg/kg		0.37	----	0.51	----	0.77
bismuth	7440-69-9	E440	0.20	mg/kg		<0.20	----	<0.20	----	<0.20
boron	7440-42-8	E440	5.0	mg/kg		<5.0	----	<5.0	----	<5.0
cadmium	7440-43-9	E440	0.020	mg/kg		0.150	----	0.105	----	0.223
calcium	7440-70-2	E440	50	mg/kg		8740	----	6850	----	9970
chromium	7440-47-3	E440	0.50	mg/kg		28.8	----	39.1	----	46.8
cobalt	7440-48-4	E440	0.10	mg/kg		9.44	----	10.7	----	13.5
copper	7440-50-8	E440	0.50	mg/kg		46.0	----	16.2	----	27.3
iron	7439-89-6	E440	50	mg/kg		25100	----	24700	----	27700
lead	7439-92-1	E440	0.50	mg/kg		5.11	----	4.70	----	6.04
lithium	7439-93-2	E440	2.0	mg/kg		8.7	----	8.1	----	9.9
magnesium	7439-95-4	E440	20	mg/kg		6010	----	8230	----	9460

Analytical Results

Sub-Matrix: **Sediment**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LMC-5	LMC-5	LWC-1	LWC-1	LWC-2
					Client sampling date / time	10-Sep-2021	10-Sep-2021	11-Sep-2021	11-Sep-2021	11-Sep-2021
						WR2101265-021	WR2101265-022	WR2101265-023	WR2101265-024	WR2101265-025
						Result	Result	Result	Result	Result
Metals										
manganese	7439-96-5	E440	1.0	mg/kg		1020	----	243	----	434
mercury	7439-97-6	E510	0.0050	mg/kg		0.0261	----	0.0150	----	0.0405
molybdenum	7439-98-7	E440	0.10	mg/kg		0.67	----	0.56	----	0.62
nickel	7440-02-0	E440	0.50	mg/kg		22.2	----	31.0	----	37.6
phosphorus	7723-14-0	E440	50	mg/kg		830	----	986	----	1070
potassium	7440-09-7	E440	100	mg/kg		1230	----	970	----	1180
selenium	7782-49-2	E440	0.20	mg/kg		0.45	----	<0.20	----	0.31
silver	7440-22-4	E440	0.10	mg/kg		<0.10	----	<0.10	----	<0.10
sodium	7440-23-5	E440	50	mg/kg		278	----	446	----	477
strontium	7440-24-6	E440	0.50	mg/kg		84.0	----	71.2	----	101
sulfur	7704-34-9	E440	1000	mg/kg		<1000	----	<1000	----	<1000
thallium	7440-28-0	E440	0.050	mg/kg		0.083	----	0.060	----	0.082
tin	7440-31-5	E440	2.0	mg/kg		<2.0	----	<2.0	----	<2.0
titanium	7440-32-6	E440	1.0	mg/kg		729	----	980	----	999
tungsten	7440-33-7	E440	0.50	mg/kg		<0.50	----	<0.50	----	<0.50
uranium	7440-61-1	E440	0.050	mg/kg		0.823	----	1.22	----	2.76
vanadium	7440-62-2	E440	0.20	mg/kg		58.5	----	64.4	----	73.2
zinc	7440-66-6	E440	2.0	mg/kg		51.8	----	51.5	----	61.0
zirconium	7440-67-7	E440	1.0	mg/kg		2.1	----	3.7	----	4.8
Leachable Anions & Nutrients										
Kjeldahl nitrogen, total [TKN]	----	E319	0.020	%		0.160	----	0.119	----	0.266

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Sediment**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LWC-2	LWC-3	LWC-3	LWC-4	LWC-4
					Client sampling date / time	11-Sep-2021	11-Sep-2021	11-Sep-2021	11-Sep-2021	11-Sep-2021
						WR2101265-026	WR2101265-027	WR2101265-028	WR2101265-029	WR2101265-030
						Result	Result	Result	Result	Result
Physical Tests										
loss on ignition @ 420°C	----	E205C	1.0	%		----	25.7	----	12.7	----
pH (1:2 soil:water)	----	E108	0.10	pH units		----	6.78	----	6.80	----
Particle Size										
clay (<0.004mm)	----	EC184E	1.0	%		5.0	----	6.7	----	7.6
silt (0.063mm - 0.004mm)	----	EC184E	1.0	%		37.3	----	63.0	----	63.4
sand (0.2mm - 0.063mm)	----	EC184E	1.0	%		28.4	----	26.6	----	20.0
sand (2.0mm - 0.2mm)	----	EC184E	1.0	%		29.2	----	3.7	----	8.2
sand (2.0mm - 0.063mm)	----	EC184E	1.0	%		57.6	----	30.3	----	28.2
gravel (>2mm)	----	EC184E	1.0	%		<1.0	----	<1.0	----	<1.0
Organic / Inorganic Carbon										
carbon, inorganic [IC]	----	E354	0.050	%		----	0.149	----	0.128	----
carbon, total [TC]	----	E351	0.050	%		----	9.77	----	5.30	----
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%		----	1.24	----	1.06	----
carbon, total organic [TOC]	----	EC356	0.050	%		----	9.62	----	5.17	----
organic matter	----	EC356	0.10	%		----	16.6	----	8.91	----
Metals										
aluminum	7429-90-5	E440	50	mg/kg		----	14200	----	15800	----
antimony	7440-36-0	E440	0.10	mg/kg		----	0.50	----	0.44	----
arsenic	7440-38-2	E440	0.10	mg/kg		----	7.06	----	4.65	----
barium	7440-39-3	E440	0.50	mg/kg		----	238	----	210	----
beryllium	7440-41-7	E440	0.10	mg/kg		----	0.85	----	0.68	----
bismuth	7440-69-9	E440	0.20	mg/kg		----	<0.20	----	<0.20	----
boron	7440-42-8	E440	5.0	mg/kg		----	<5.0	----	<5.0	----
cadmium	7440-43-9	E440	0.020	mg/kg		----	0.262	----	0.206	----
calcium	7440-70-2	E440	50	mg/kg		----	11500	----	9640	----
chromium	7440-47-3	E440	0.50	mg/kg		----	47.1	----	47.1	----
cobalt	7440-48-4	E440	0.10	mg/kg		----	13.7	----	12.4	----
copper	7440-50-8	E440	0.50	mg/kg		----	30.0	----	25.7	----
iron	7439-89-6	E440	50	mg/kg		----	27300	----	25900	----
lead	7439-92-1	E440	0.50	mg/kg		----	6.29	----	6.18	----
lithium	7439-93-2	E440	2.0	mg/kg		----	9.7	----	10.8	----
magnesium	7439-95-4	E440	20	mg/kg		----	9030	----	9470	----

Analytical Results

Sub-Matrix: **Sediment**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LWC-2	LWC-3	LWC-3	LWC-4	LWC-4
					Client sampling date / time	11-Sep-2021	11-Sep-2021	11-Sep-2021	11-Sep-2021	11-Sep-2021
						WR2101265-026	WR2101265-027	WR2101265-028	WR2101265-029	WR2101265-030
						Result	Result	Result	Result	Result
Metals										
manganese	7439-96-5	E440	1.0	mg/kg		----	687	----	290	----
mercury	7439-97-6	E510	0.0050	mg/kg		----	0.0446	----	0.0337	----
molybdenum	7439-98-7	E440	0.10	mg/kg		----	0.59	----	1.03	----
nickel	7440-02-0	E440	0.50	mg/kg		----	37.2	----	36.4	----
phosphorus	7723-14-0	E440	50	mg/kg		----	1090	----	988	----
potassium	7440-09-7	E440	100	mg/kg		----	1050	----	1140	----
selenium	7782-49-2	E440	0.20	mg/kg		----	0.47	----	0.30	----
silver	7440-22-4	E440	0.10	mg/kg		----	0.12	----	<0.10	----
sodium	7440-23-5	E440	50	mg/kg		----	435	----	464	----
strontium	7440-24-6	E440	0.50	mg/kg		----	124	----	97.2	----
sulfur	7704-34-9	E440	1000	mg/kg		----	<1000	----	1200	----
thallium	7440-28-0	E440	0.050	mg/kg		----	0.080	----	0.095	----
tin	7440-31-5	E440	2.0	mg/kg		----	<2.0	----	<2.0	----
titanium	7440-32-6	E440	1.0	mg/kg		----	885	----	960	----
tungsten	7440-33-7	E440	0.50	mg/kg		----	<0.50	----	<0.50	----
uranium	7440-61-1	E440	0.050	mg/kg		----	3.61	----	2.52	----
vanadium	7440-62-2	E440	0.20	mg/kg		----	72.2	----	67.0	----
zinc	7440-66-6	E440	2.0	mg/kg		----	58.9	----	64.1	----
zirconium	7440-67-7	E440	1.0	mg/kg		----	5.4	----	5.1	----
Leachable Anions & Nutrients										
Kjeldahl nitrogen, total [TKN]	----	E319	0.020	%		----	0.302	----	0.271	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Sediment**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LWC-5	LWC-5	LWC-3X	LWC-3X	----
					Client sampling date / time	11-Sep-2021	11-Sep-2021	11-Sep-2021	[11-Sep-2021]	----
						WR2101265-031	WR2101265-032	WR2101265-033	WR2101265-034	--------
						Result	Result	Result	Result	----
Physical Tests										
loss on ignition @ 420°C	----	E205C	1.0	%		10.0	----	13.8	----	----
pH (1:2 soil:water)	----	E108	0.10	pH units		6.89	----	6.76	----	----
Particle Size										
clay (<0.004mm)	----	EC184E	1.0	%		----	7.6	----	6.8	----
silt (0.063mm - 0.004mm)	----	EC184E	1.0	%		----	73.2	----	62.8	----
sand (0.2mm - 0.063mm)	----	EC184E	1.0	%		----	16.2	----	26.1	----
sand (2.0mm - 0.2mm)	----	EC184E	1.0	%		----	3.0	----	4.3	----
sand (2.0mm - 0.063mm)	----	EC184E	1.0	%		----	19.2	----	30.4	----
gravel (>2mm)	----	EC184E	1.0	%		----	<1.0	----	<1.0	----
Organic / Inorganic Carbon										
carbon, inorganic [IC]	----	E354	0.050	%		0.117	----	0.162	----	----
carbon, total [TC]	----	E351	0.050	%		3.66	----	6.35	----	----
carbon, inorganic [IC], (as CaCO3 equivalent)	----	E354	0.40	%		0.98	----	1.35	----	----
carbon, total organic [TOC]	----	EC356	0.050	%		3.54	----	6.19	----	----
organic matter	----	EC356	0.10	%		6.10	----	10.7	----	----
Metals										
aluminum	7429-90-5	E440	50	mg/kg		14600	----	13100	----	----
antimony	7440-36-0	E440	0.10	mg/kg		0.39	----	0.45	----	----
arsenic	7440-38-2	E440	0.10	mg/kg		4.55	----	7.37	----	----
barium	7440-39-3	E440	0.50	mg/kg		186	----	224	----	----
beryllium	7440-41-7	E440	0.10	mg/kg		0.63	----	0.76	----	----
bismuth	7440-69-9	E440	0.20	mg/kg		<0.20	----	<0.20	----	----
boron	7440-42-8	E440	5.0	mg/kg		<5.0	----	<5.0	----	----
cadmium	7440-43-9	E440	0.020	mg/kg		0.170	----	0.228	----	----
calcium	7440-70-2	E440	50	mg/kg		8610	----	10000	----	----
chromium	7440-47-3	E440	0.50	mg/kg		45.8	----	42.8	----	----
cobalt	7440-48-4	E440	0.10	mg/kg		12.0	----	13.2	----	----
copper	7440-50-8	E440	0.50	mg/kg		24.3	----	27.4	----	----
iron	7439-89-6	E440	50	mg/kg		25600	----	27400	----	----
lead	7439-92-1	E440	0.50	mg/kg		5.70	----	5.98	----	----
lithium	7439-93-2	E440	2.0	mg/kg		10.1	----	9.2	----	----
magnesium	7439-95-4	E440	20	mg/kg		9360	----	8800	----	----

Analytical Results

Sub-Matrix: **Sediment**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LWC-5	LWC-5	LWC-3X	LWC-3X	----
					Client sampling date / time	11-Sep-2021	11-Sep-2021	11-Sep-2021	[11-Sep-2021]	----
						WR2101265-031	WR2101265-032	WR2101265-033	WR2101265-034	--------
						Result	Result	Result	Result	----
Metals										
manganese	7439-96-5	E440	1.0	mg/kg		331	----	553	----	----
mercury	7439-97-6	E510	0.0050	mg/kg		0.0288	----	0.0381	----	----
molybdenum	7439-98-7	E440	0.10	mg/kg		0.58	----	0.56	----	----
nickel	7440-02-0	E440	0.50	mg/kg		36.1	----	36.3	----	----
phosphorus	7723-14-0	E440	50	mg/kg		1040	----	985	----	----
potassium	7440-09-7	E440	100	mg/kg		1060	----	950	----	----
selenium	7782-49-2	E440	0.20	mg/kg		0.28	----	0.40	----	----
silver	7440-22-4	E440	0.10	mg/kg		<0.10	----	<0.10	----	----
sodium	7440-23-5	E440	50	mg/kg		454	----	398	----	----
strontium	7440-24-6	E440	0.50	mg/kg		86.4	----	109	----	----
sulfur	7704-34-9	E440	1000	mg/kg		<1000	----	<1000	----	----
thallium	7440-28-0	E440	0.050	mg/kg		0.079	----	0.071	----	----
tin	7440-31-5	E440	2.0	mg/kg		<2.0	----	<2.0	----	----
titanium	7440-32-6	E440	1.0	mg/kg		950	----	756	----	----
tungsten	7440-33-7	E440	0.50	mg/kg		<0.50	----	<0.50	----	----
uranium	7440-61-1	E440	0.050	mg/kg		2.18	----	3.06	----	----
vanadium	7440-62-2	E440	0.20	mg/kg		64.6	----	68.3	----	----
zinc	7440-66-6	E440	2.0	mg/kg		63.0	----	58.7	----	----
zirconium	7440-67-7	E440	1.0	mg/kg		4.4	----	5.1	----	----
Leachable Anions & Nutrients										
Kjeldahl nitrogen, total [TKN]	----	E319	0.020	%		0.234	----	0.302	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2101265**	Page	: 1 of 23
Client	: **Minnow Environmental Inc.**	Laboratory	: Whitehorse - Environmental
Contact	: Pierre Stecko	Account Manager	: Can Dang
Address	: 204 – 1006 Fort Street Victoria BC Canada V8V 3K4	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minnow Environmental Inc Project for Minto MInes WUL Program	Date Samples Received	: 15-Sep-2021 15:15
PO	: Minto AEMP - 21-92	Issue Date	: 07-Oct-2021 12:52
C-O-C number	: ----		
Sampler	: LBO, SLA		
Site	: ----		
Quote number	: Q79833 - Minnow/Minto		
No. of samples received	: 34		
No. of samples analysed	: 34		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- Duplicate outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Soil/Solid**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Duplicate (DUP) RPDs								
Metals	Anonymous	Anonymous	antimony	7440-36-0	E440	0.96 % DUP-H, J	Diff <2x LOR	Low Level DUP DQO exceeded (difference > 2 LOR).
Metals	Anonymous	Anonymous	barium	7440-39-3	E440	60.6 % DUP-H	40%	Duplicate RPD does not meet the DQO for this test.
Metals	Anonymous	Anonymous	calcium	7440-70-2	E440	45.3 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	Anonymous	Anonymous	chromium	7440-47-3	E440	61.9 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	Anonymous	Anonymous	cobalt	7440-48-4	E440	59.3 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	Anonymous	Anonymous	copper	7440-50-8	E440	83.0 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	Anonymous	Anonymous	lead	7439-92-1	E440	119 % DUP-H	40%	Duplicate RPD does not meet the DQO for this test.
Metals	Anonymous	Anonymous	manganese	7439-96-5	E440	133 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	Anonymous	Anonymous	molybdenum	7439-98-7	E440	0.34 % DUP-H, J	Diff <2x LOR	Low Level DUP DQO exceeded (difference > 2 LOR).
Metals	Anonymous	Anonymous	nickel	7440-02-0	E440	70.8 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	Anonymous	Anonymous	potassium	7440-09-7	E440	46.1 % DUP-H	40%	Duplicate RPD does not meet the DQO for this test.
Metals	Anonymous	Anonymous	sodium	7440-23-5	E440	45.4 % DUP-H	40%	Duplicate RPD does not meet the DQO for this test.
Metals	Anonymous	Anonymous	strontium	7440-24-6	E440	48.8 % DUP-H	40%	Duplicate RPD does not meet the DQO for this test.
Metals	Anonymous	Anonymous	tin	7440-31-5	E440	183 % DUP-H	40%	Duplicate RPD does not meet the DQO for this test.
Metals	Anonymous	Anonymous	vanadium	7440-62-2	E440	31.2 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	Anonymous	Anonymous	zinc	7440-66-6	E440	156 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.

Result Qualifiers

Qualifier	*Description*

Matrix: **Soil/Solid**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
DUP-H	*Duplicate results outside ALS DQO, due to sample heterogeneity.*							
J	*Duplicate results and limits are expressed in terms of absolute difference.*							

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
LMC-1	E319	10-Sep-2021	21-Sep-2021	----	----		22-Sep-2021	365 days	12 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
LMC-2	E319	10-Sep-2021	21-Sep-2021	----	----		22-Sep-2021	365 days	12 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
LMC-3	E319	10-Sep-2021	21-Sep-2021	----	----		22-Sep-2021	365 days	12 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
LWC-1	E319	11-Sep-2021	22-Sep-2021	----	----		23-Sep-2021	365 days	13 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
LWC-2	E319	11-Sep-2021	22-Sep-2021	----	----		23-Sep-2021	365 days	13 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
LWC-3	E319	11-Sep-2021	22-Sep-2021	----	----		23-Sep-2021	365 days	13 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
LWC-3X	E319	11-Sep-2021	22-Sep-2021	----	----		23-Sep-2021	365 days	13 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
LWC-4	E319	11-Sep-2021	22-Sep-2021	----	----		23-Sep-2021	365 days	13 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
LWC-5	E319	11-Sep-2021	22-Sep-2021	----	----		23-Sep-2021	365 days	13 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
LMC-4	E319	10-Sep-2021	22-Sep-2021	----	----		23-Sep-2021	365 days	14 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
LMC-5	E319	10-Sep-2021	22-Sep-2021	----	----		23-Sep-2021	365 days	14 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
UMC-1	E319	13-Sep-2021	21-Sep-2021	----	----		22-Sep-2021	365 days	9 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
UMC-2	E319	13-Sep-2021	21-Sep-2021	----	----		22-Sep-2021	365 days	9 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
UMC-3	E319	13-Sep-2021	21-Sep-2021	----	----		22-Sep-2021	365 days	9 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
UMC-4	E319	13-Sep-2021	21-Sep-2021	----	----		22-Sep-2021	365 days	9 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
UMC-5	E319	13-Sep-2021	21-Sep-2021	----	----		22-Sep-2021	365 days	9 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
URC-1	E319	13-Sep-2021	21-Sep-2021	----	----		22-Sep-2021	365 days	9 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
URC-2	E319	13-Sep-2021	21-Sep-2021	----	----		22-Sep-2021	365 days	9 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
URC-3	E319	13-Sep-2021	21-Sep-2021	----	----		22-Sep-2021	365 days	9 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
URC-4	E319	13-Sep-2021	21-Sep-2021	----	----		22-Sep-2021	365 days	9 days	✓
Leachable Anions & Nutrients : Total Kjeldahl Nitrogen by Colourimetry										
Glass soil jar/Teflon lined cap										
URC-5	E319	13-Sep-2021	21-Sep-2021	----	----		22-Sep-2021	365 days	9 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap										
UMC-1	E510	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	28 days	12 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap										
UMC-2	E510	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	28 days	12 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap										
UMC-3	E510	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	28 days	12 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap										
UMC-4	E510	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	28 days	12 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap										
UMC-5	E510	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	28 days	12 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap										
URC-1	E510	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	28 days	12 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap										
URC-2	E510	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	28 days	12 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap										
URC-3	E510	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	28 days	12 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap										
URC-4	E510	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	28 days	12 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap										
URC-5	E510	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	28 days	12 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap										
LWC-1	E510	11-Sep-2021	24-Sep-2021	----	----		25-Sep-2021	28 days	14 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap										
LWC-2	E510	11-Sep-2021	24-Sep-2021	----	----		25-Sep-2021	28 days	14 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap										
LWC-3	E510	11-Sep-2021	24-Sep-2021	----	----		25-Sep-2021	28 days	14 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap										
LWC-3X	E510	11-Sep-2021	24-Sep-2021	----	----		25-Sep-2021	28 days	14 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap										
LWC-4	E510	11-Sep-2021	24-Sep-2021	----	----		25-Sep-2021	28 days	14 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap										
LWC-5	E510	11-Sep-2021	24-Sep-2021	----	----		25-Sep-2021	28 days	14 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap										
LMC-1	E510	10-Sep-2021	24-Sep-2021	----	----		25-Sep-2021	28 days	15 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap										
LMC-2	E510	10-Sep-2021	24-Sep-2021	----	----		25-Sep-2021	28 days	15 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap										
LMC-3	E510	10-Sep-2021	24-Sep-2021	----	----		25-Sep-2021	28 days	15 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap										
LMC-4	E510	10-Sep-2021	24-Sep-2021	----	----		25-Sep-2021	28 days	15 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap										
LMC-5	E510	10-Sep-2021	24-Sep-2021	----	----		25-Sep-2021	28 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
UMC-1	E440	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	180 days	12 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
UMC-2	E440	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	180 days	12 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
UMC-3	E440	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	180 days	12 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
UMC-4	E440	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	180 days	12 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
UMC-5	E440	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	180 days	12 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
URC-1	E440	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	180 days	12 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
URC-2	E440	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	180 days	12 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
URC-3	E440	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	180 days	12 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
URC-4	E440	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	180 days	12 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
URC-5	E440	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	180 days	12 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
LWC-1	E440	11-Sep-2021	24-Sep-2021	----	----		24-Sep-2021	180 days	14 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
LWC-2	E440	11-Sep-2021	24-Sep-2021	----	----		24-Sep-2021	180 days	14 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
LWC-3	E440	11-Sep-2021	24-Sep-2021	----	----		24-Sep-2021	180 days	14 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
LWC-3X	E440	11-Sep-2021	24-Sep-2021	----	----		24-Sep-2021	180 days	14 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
LWC-4	E440	11-Sep-2021	24-Sep-2021	----	----		24-Sep-2021	180 days	14 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
LWC-5	E440	11-Sep-2021	24-Sep-2021	----	----		24-Sep-2021	180 days	14 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
LMC-1	E440	10-Sep-2021	24-Sep-2021	----	----		24-Sep-2021	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
LMC-2	E440	10-Sep-2021	24-Sep-2021	----	----		24-Sep-2021	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
LMC-3	E440	10-Sep-2021	24-Sep-2021	----	----		24-Sep-2021	180 days	15 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
LMC-4	E440	10-Sep-2021	24-Sep-2021	----	----		24-Sep-2021	180 days	15 days	✓
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap										
LMC-5	E440	10-Sep-2021	24-Sep-2021	----	----		24-Sep-2021	180 days	15 days	✓
Organic / Inorganic Carbon : Total Carbon by Combustion										
Glass soil jar/Teflon lined cap										
LMC-1	E351	10-Sep-2021	----	----	----		18-Sep-2021	180 days	0 days	✓
Organic / Inorganic Carbon : Total Carbon by Combustion										
Glass soil jar/Teflon lined cap										
LMC-2	E351	10-Sep-2021	----	----	----		18-Sep-2021	180 days	0 days	✓
Organic / Inorganic Carbon : Total Carbon by Combustion										
Glass soil jar/Teflon lined cap										
LMC-3	E351	10-Sep-2021	----	----	----		18-Sep-2021	180 days	0 days	✓
Organic / Inorganic Carbon : Total Carbon by Combustion										
Glass soil jar/Teflon lined cap										
LMC-4	E351	10-Sep-2021	----	----	----		18-Sep-2021	180 days	0 days	✓
Organic / Inorganic Carbon : Total Carbon by Combustion										
Glass soil jar/Teflon lined cap										
LMC-5	E351	10-Sep-2021	----	----	----		18-Sep-2021	180 days	0 days	✓
Organic / Inorganic Carbon : Total Carbon by Combustion										
Glass soil jar/Teflon lined cap										
LWC-1	E351	11-Sep-2021	----	----	----		18-Sep-2021	180 days	0 days	✓
Organic / Inorganic Carbon : Total Carbon by Combustion										
Glass soil jar/Teflon lined cap										
LWC-2	E351	11-Sep-2021	----	----	----		18-Sep-2021	180 days	0 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Total Carbon by Combustion										
Glass soil jar/Teflon lined cap LWC-3	E351	11-Sep-2021	----	----	----		18-Sep-2021	180 days	0 days	✓
Organic / Inorganic Carbon : Total Carbon by Combustion										
Glass soil jar/Teflon lined cap LWC-3X	E351	11-Sep-2021	----	----	----		22-Sep-2021	180 days	0 days	✓
Organic / Inorganic Carbon : Total Carbon by Combustion										
Glass soil jar/Teflon lined cap LWC-4	E351	11-Sep-2021	----	----	----		18-Sep-2021	180 days	0 days	✓
Organic / Inorganic Carbon : Total Carbon by Combustion										
Glass soil jar/Teflon lined cap LWC-5	E351	11-Sep-2021	----	----	----		18-Sep-2021	180 days	0 days	✓
Organic / Inorganic Carbon : Total Carbon by Combustion										
Glass soil jar/Teflon lined cap UMC-1	E351	13-Sep-2021	----	----	----		18-Sep-2021	180 days	0 days	✓
Organic / Inorganic Carbon : Total Carbon by Combustion										
Glass soil jar/Teflon lined cap UMC-2	E351	13-Sep-2021	----	----	----		18-Sep-2021	180 days	0 days	✓
Organic / Inorganic Carbon : Total Carbon by Combustion										
Glass soil jar/Teflon lined cap UMC-3	E351	13-Sep-2021	----	----	----		18-Sep-2021	180 days	0 days	✓
Organic / Inorganic Carbon : Total Carbon by Combustion										
Glass soil jar/Teflon lined cap UMC-4	E351	13-Sep-2021	----	----	----		18-Sep-2021	180 days	0 days	✓
Organic / Inorganic Carbon : Total Carbon by Combustion										
Glass soil jar/Teflon lined cap UMC-5	E351	13-Sep-2021	----	----	----		18-Sep-2021	180 days	0 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Total Carbon by Combustion										
Glass soil jar/Teflon lined cap URC-1	E351	13-Sep-2021	----	----	----		18-Sep-2021	180 days	0 days	✓
Organic / Inorganic Carbon : Total Carbon by Combustion										
Glass soil jar/Teflon lined cap URC-2	E351	13-Sep-2021	----	----	----		18-Sep-2021	180 days	0 days	✓
Organic / Inorganic Carbon : Total Carbon by Combustion										
Glass soil jar/Teflon lined cap URC-3	E351	13-Sep-2021	----	----	----		18-Sep-2021	180 days	0 days	✓
Organic / Inorganic Carbon : Total Carbon by Combustion										
Glass soil jar/Teflon lined cap URC-4	E351	13-Sep-2021	----	----	----		18-Sep-2021	180 days	0 days	✓
Organic / Inorganic Carbon : Total Carbon by Combustion										
Glass soil jar/Teflon lined cap URC-5	E351	13-Sep-2021	----	----	----		18-Sep-2021	180 days	0 days	✓
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Glass soil jar/Teflon lined cap LMC-1	E354	10-Sep-2021	----	----	----		21-Sep-2021	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Glass soil jar/Teflon lined cap LMC-2	E354	10-Sep-2021	----	----	----		21-Sep-2021	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Glass soil jar/Teflon lined cap LMC-3	E354	10-Sep-2021	----	----	----		21-Sep-2021	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Glass soil jar/Teflon lined cap LMC-4	E354	10-Sep-2021	----	----	----		21-Sep-2021	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Glass soil jar/Teflon lined cap										
LMC-5	E354	10-Sep-2021	----	----	----		21-Sep-2021	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Glass soil jar/Teflon lined cap										
LWC-1	E354	11-Sep-2021	----	----	----		21-Sep-2021	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Glass soil jar/Teflon lined cap										
LWC-2	E354	11-Sep-2021	----	----	----		21-Sep-2021	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Glass soil jar/Teflon lined cap										
LWC-3	E354	11-Sep-2021	----	----	----		21-Sep-2021	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Glass soil jar/Teflon lined cap										
LWC-3X	E354	11-Sep-2021	----	----	----		23-Sep-2021	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Glass soil jar/Teflon lined cap										
LWC-4	E354	11-Sep-2021	----	----	----		21-Sep-2021	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Glass soil jar/Teflon lined cap										
LWC-5	E354	11-Sep-2021	----	----	----		21-Sep-2021	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Glass soil jar/Teflon lined cap										
UMC-1	E354	13-Sep-2021	----	----	----		21-Sep-2021	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Glass soil jar/Teflon lined cap										
UMC-2	E354	13-Sep-2021	----	----	----		21-Sep-2021	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Glass soil jar/Teflon lined cap										
UMC-3	E354	13-Sep-2021	----	----	----		21-Sep-2021	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Glass soil jar/Teflon lined cap										
UMC-4	E354	13-Sep-2021	----	----	----		21-Sep-2021	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Glass soil jar/Teflon lined cap										
UMC-5	E354	13-Sep-2021	----	----	----		21-Sep-2021	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Glass soil jar/Teflon lined cap										
URC-1	E354	13-Sep-2021	----	----	----		21-Sep-2021	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Glass soil jar/Teflon lined cap										
URC-2	E354	13-Sep-2021	----	----	----		21-Sep-2021	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Glass soil jar/Teflon lined cap										
URC-3	E354	13-Sep-2021	----	----	----		21-Sep-2021	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Glass soil jar/Teflon lined cap										
URC-4	E354	13-Sep-2021	----	----	----		21-Sep-2021	----	----	
Organic / Inorganic Carbon : Total Inorganic Carbon by Acetic Acid pH Standard Curve										
Glass soil jar/Teflon lined cap										
URC-5	E354	13-Sep-2021	----	----	----		21-Sep-2021	----	----	
Physical Tests : Loss On Ignition (420°C)										
Glass soil jar/Teflon lined cap										
LWC-3X	E205C	11-Sep-2021	----	----	----		22-Sep-2021	----	12 days	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Loss On Ignition (420°C)										
Glass soil jar/Teflon lined cap										
UMC-1	E205C	13-Sep-2021	----	----	----		18-Sep-2021	----	6 days	
Physical Tests : Loss On Ignition (420°C)										
Glass soil jar/Teflon lined cap										
UMC-2	E205C	13-Sep-2021	----	----	----		18-Sep-2021	----	6 days	
Physical Tests : Loss On Ignition (420°C)										
Glass soil jar/Teflon lined cap										
UMC-3	E205C	13-Sep-2021	----	----	----		18-Sep-2021	----	6 days	
Physical Tests : Loss On Ignition (420°C)										
Glass soil jar/Teflon lined cap										
UMC-4	E205C	13-Sep-2021	----	----	----		18-Sep-2021	----	6 days	
Physical Tests : Loss On Ignition (420°C)										
Glass soil jar/Teflon lined cap										
UMC-5	E205C	13-Sep-2021	----	----	----		18-Sep-2021	----	6 days	
Physical Tests : Loss On Ignition (420°C)										
Glass soil jar/Teflon lined cap										
URC-1	E205C	13-Sep-2021	----	----	----		18-Sep-2021	----	6 days	
Physical Tests : Loss On Ignition (420°C)										
Glass soil jar/Teflon lined cap										
URC-2	E205C	13-Sep-2021	----	----	----		18-Sep-2021	----	6 days	
Physical Tests : Loss On Ignition (420°C)										
Glass soil jar/Teflon lined cap										
URC-3	E205C	13-Sep-2021	----	----	----		18-Sep-2021	----	6 days	
Physical Tests : Loss On Ignition (420°C)										
Glass soil jar/Teflon lined cap										
URC-4	E205C	13-Sep-2021	----	----	----		18-Sep-2021	----	6 days	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Loss On Ignition (420°C)										
Glass soil jar/Teflon lined cap										
URC-5	E205C	13-Sep-2021	----	----	----		18-Sep-2021	----	6 days	
Physical Tests : Loss On Ignition (420°C)										
Glass soil jar/Teflon lined cap										
LWC-1	E205C	11-Sep-2021	----	----	----		18-Sep-2021	----	8 days	
Physical Tests : Loss On Ignition (420°C)										
Glass soil jar/Teflon lined cap										
LWC-2	E205C	11-Sep-2021	----	----	----		18-Sep-2021	----	8 days	
Physical Tests : Loss On Ignition (420°C)										
Glass soil jar/Teflon lined cap										
LWC-3	E205C	11-Sep-2021	----	----	----		18-Sep-2021	----	8 days	
Physical Tests : Loss On Ignition (420°C)										
Glass soil jar/Teflon lined cap										
LWC-4	E205C	11-Sep-2021	----	----	----		18-Sep-2021	----	8 days	
Physical Tests : Loss On Ignition (420°C)										
Glass soil jar/Teflon lined cap										
LWC-5	E205C	11-Sep-2021	----	----	----		18-Sep-2021	----	8 days	
Physical Tests : Loss On Ignition (420°C)										
Glass soil jar/Teflon lined cap										
LMC-1	E205C	10-Sep-2021	----	----	----		18-Sep-2021	----	9 days	
Physical Tests : Loss On Ignition (420°C)										
Glass soil jar/Teflon lined cap										
LMC-2	E205C	10-Sep-2021	----	----	----		18-Sep-2021	----	9 days	
Physical Tests : Loss On Ignition (420°C)										
Glass soil jar/Teflon lined cap										
LMC-3	E205C	10-Sep-2021	----	----	----		18-Sep-2021	----	9 days	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Loss On Ignition (420°C)										
Glass soil jar/Teflon lined cap										
LMC-4	E205C	10-Sep-2021	----	----	----		18-Sep-2021	----	9 days	
Physical Tests : Loss On Ignition (420°C)										
Glass soil jar/Teflon lined cap										
LMC-5	E205C	10-Sep-2021	----	----	----		18-Sep-2021	----	9 days	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap										
UMC-1	E108	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	30 days	12 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap										
UMC-2	E108	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	30 days	12 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap										
UMC-3	E108	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	30 days	12 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap										
UMC-4	E108	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	30 days	12 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap										
UMC-5	E108	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	30 days	12 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap										
URC-1	E108	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	30 days	12 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap										
URC-2	E108	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	30 days	12 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap										
URC-3	E108	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	30 days	12 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap										
URC-4	E108	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	30 days	12 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap										
URC-5	E108	13-Sep-2021	25-Sep-2021	----	----		25-Sep-2021	30 days	12 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap										
LWC-1	E108	11-Sep-2021	24-Sep-2021	----	----		24-Sep-2021	30 days	14 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap										
LWC-2	E108	11-Sep-2021	24-Sep-2021	----	----		24-Sep-2021	30 days	14 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap										
LWC-3	E108	11-Sep-2021	24-Sep-2021	----	----		24-Sep-2021	30 days	14 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap										
LWC-3X	E108	11-Sep-2021	24-Sep-2021	----	----		24-Sep-2021	30 days	14 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap										
LWC-4	E108	11-Sep-2021	24-Sep-2021	----	----		24-Sep-2021	30 days	14 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap										
LWC-5	E108	11-Sep-2021	24-Sep-2021	----	----		24-Sep-2021	30 days	14 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap										
LMC-1	E108	10-Sep-2021	24-Sep-2021	----	----		24-Sep-2021	30 days	15 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap										
LMC-2	E108	10-Sep-2021	24-Sep-2021	----	----		24-Sep-2021	30 days	15 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap										
LMC-3	E108	10-Sep-2021	24-Sep-2021	----	----		24-Sep-2021	30 days	15 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap										
LMC-4	E108	10-Sep-2021	24-Sep-2021	----	----		24-Sep-2021	30 days	15 days	✓
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap										
LMC-5	E108	10-Sep-2021	24-Sep-2021	----	----		24-Sep-2021	30 days	15 days	✓

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Loss On Ignition (420°C)	E205C	296314	2	21	9.5	5.0	✓
Mercury in Soil/Solid by CVAAS	E510	301141	2	23	8.7	5.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	301140	2	26	7.6	5.0	✓
pH by Meter (1:2 Soil:Water Extraction)	E108	301142	2	26	7.6	5.0	✓
Total Carbon by Combustion	E351	296197	2	22	9.0	5.0	✓
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	298125	2	29	6.9	5.0	✓
Total Kjeldahl Nitrogen by Colourimetry	E319	297918	2	29	6.9	5.0	✓
Laboratory Control Samples (LCS)							
Loss On Ignition (420°C)	E205C	296314	2	21	9.5	5.0	✓
Mercury in Soil/Solid by CVAAS	E510	301141	4	23	17.3	10.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	301140	4	26	15.3	10.0	✓
pH by Meter (1:2 Soil:Water Extraction)	E108	301142	2	26	7.6	5.0	✓
Total Carbon by Combustion	E351	296197	4	22	18.1	10.0	✓
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	298125	4	29	13.7	10.0	✓
Total Kjeldahl Nitrogen by Colourimetry	E319	297918	4	29	13.7	10.0	✓
Method Blanks (MB)							
Loss On Ignition (420°C)	E205C	296314	2	21	9.5	5.0	✓
Mercury in Soil/Solid by CVAAS	E510	301141	2	23	8.7	5.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	301140	2	26	7.6	5.0	✓
Total Carbon by Combustion	E351	296197	2	22	9.0	5.0	✓
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354	298125	2	29	6.9	5.0	✓
Total Kjeldahl Nitrogen by Colourimetry	E319	297918	2	29	6.9	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:Water Extraction)	E108 Vancouver - Environmental	Soil/Solid	BC Lab Manual	pH is determined by potentiometric measurement with a pH electrode at ambient laboratory temperature (normally 20 ± 5°C), and is carried out in accordance with procedures described in the BC Lab Manual (prescriptive method). The procedure involves mixing the dried (at <60 ºC) and sieved (10mesh/2mm) sample with ultra pure water at a 1:2 ratio of sediment to water. The pH is then measured by a standard pH probe.
Loss On Ignition (420°C)	E205C Saskatoon - Environmental	Soil/Solid	CSSS (1978) 3.81 (mod)	Loss On Ignition (LOI) is determined by drying a portion of an air dried and ground sampld at 105°C, then igniting at 420°C for 2 hours. The weight loss after ignition is reported as % loss on ignition. LOI is reported on a dry weight basis. LOI at 420°C can be considered an estimation of Organic Matter Content according to Alberta Agriculture (1988).
Total Kjeldahl Nitrogen by Colourimetry	E319 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 22.2.3	The soil is digested with sulfuric acid in the presence of $CuSO_4$ and K_2SO_4 catalysts. Ammonia in the soil extract is determined colrimetrically at 660 nm.
Total Carbon by Combustion	E351 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2 (mod)	Total Carbon is determined by the high temperature combustion method with measurement by an infrared detector.
Total Inorganic Carbon by Acetic Acid pH Standard Curve	E354 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 20.2	Total Inorganic Carbon is determined by acetic acid pH standard curve, where a known quantity of acetic acid is consumed by reaction with carbonates in the soil. The pH of the resulting solution is measured and compared against a standard curve relating pH to weight of carbonate.
Metals in Soil/Solid by CRC ICPMS	E440 Vancouver - Environmental	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Elemental Sulfur may be poorly recovered by this method. Analysis is by Collision/Reaction Cell ICPMS.
Mercury in Soil/Solid by CVAAS	E510 Vancouver - Environmental	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl, followed by CVAAS analysis.
Particle Size Analysis (Pipette) - MMER Classification	EC184E Saskatoon - Environmental	Soil/Solid	Metal Mining Technical Guidance for Environmental Effects Monitoring (2012)	The particle size determination is performed by various methods to generate a Grain Size curve. The data from the curve is then used to produce particle size ranges based on the Metal Mining Effluent Regulations (MMER) classification system for Environmental Effects Monitoring.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Organic Carbon (Calculated) in soil	EC356 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 21.2	Total Organic Carbon (TOC) is calculated by the difference between total carbon (TC) and total inorganic carbon (TIC).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Leach 1:2 Soil:Water for pH/EC	EP108 Vancouver - Environmental	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.
Kjeldahl Digestion for soils	EP319 Saskatoon - Environmental	Soil/Solid	CSSS (2008) 22.2.3	The soil is digested with sulfuric acid in the presence of CuSO4 and K2SO4 catalysts.
Digestion for Metals and Mercury	EP440 Vancouver - Environmental	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO3 and HCl. This method is intended to liberate metals that may be environmentally available.
Dry and Grind	EPP442 Saskatoon - Environmental	Soil/Solid	Soil Sampling and Methods of Analysis, Carter 2008	After removal of any coarse fragments and reservation of wet subsamples a portion of homogenized sample is set in a tray and dried at less than 60°C until dry. The sample is then particle size reduced with an automated crusher or mortar and pestle, typically to <2 mm. Further size reduction may be needed for particular tests.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **WR2101265**	Page	: 1 of 14
Client	: Minnow Environmental Inc.	Laboratory	: Whitehorse - Environmental
Contact	: Pierre Stecko	Account Manager	: Can Dang
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minnow Environmental Inc Project for Minto MInes WUL Program	Date Samples Received	: 15-Sep-2021 15:15
PO	: Minto AEMP - 21-92	Date Analysis Commenced	: 18-Sep-2021
C-O-C number	: ----	Issue Date	: 07-Oct-2021 12:52
Sampler	: LBO, SLA		
Site	: ----		
Quote number	: Q79833 - Minnow/Minto		
No. of samples received	: 34		
No. of samples analysed	: 34		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Dee Lee	Analyst	Metals, Burnaby, British Columbia
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Jwan Abdalla	Laboratory Analyst	Inorganics, Saskatoon, Saskatchewan
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
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Nancy Cruse	Laboratory _ Supervisor	Inorganics, Saskatoon, Saskatchewan
Ophelia Chiu	Department Manager - Organics	Organics, Burnaby, British Columbia
Xihua Yao	Laboratory Analyst	Inorganics, Saskatoon, Saskatchewan

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: **Soil/Solid**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 296314)											
WR2101265-019	LMC-4	loss on ignition @ 420°C	----	E205C	1.0	%	4.9	4.3	0.6	Diff <2x LOR	----
Physical Tests (QC Lot: 299836)											
WR2101265-033	LWC-3X	loss on ignition @ 420°C	----	E205C	1.0	%	13.8	14.3	3.99%	20%	----
Physical Tests (QC Lot: 301142)											
VA21C0522-001	Anonymous	pH (1:2 soil:water)	----	E108	0.10	pH units	8.19	8.21	0.2%	5%	----
Physical Tests (QC Lot: 301194)											
WR2101265-013	LMC-1	pH (1:2 soil:water)	----	E108	0.10	pH units	7.96	7.93	0.4%	5%	----
Organic / Inorganic Carbon (QC Lot: 296197)											
WR2101265-001	UMC-1	carbon, total [TC]	----	E351	0.050	%	2.51	2.53	0.894%	20%	----
Organic / Inorganic Carbon (QC Lot: 298125)											
WR2101265-002	UMC-2	carbon, inorganic [IC]	----	E354	0.050	%	0.145	0.144	0.0005	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 299881)											
VA21C0321-010	Anonymous	carbon, total [TC]	----	E351	0.050	%	1.96	1.87	4.93%	20%	----
Organic / Inorganic Carbon (QC Lot: 300466)											
WR2101265-033	LWC-3X	carbon, inorganic [IC]	----	E354	0.050	%	0.162	0.163	0.0005	Diff <2x LOR	----
Metals (QC Lot: 301140)											
VA21C0522-001	Anonymous	aluminum	7429-90-5	E440	50	mg/kg	5110	3640	33.6%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	1.06	# <0.10	0.96	Diff <2x LOR	DUP-H,J
		arsenic	7440-38-2	E440	0.10	mg/kg	2.27	1.80	23.3%	30%	----
		barium	7440-39-3	E440	0.50	mg/kg	12.6	23.5	60.6%	40%	DUP-H
		beryllium	7440-41-7	E440	0.10	mg/kg	<0.10	<0.10	0	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	18.0	22.4	4.4	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	0.371	0.275	29.6%	30%	----
		calcium	7440-70-2	E440	50	mg/kg	161000	256000	45.3%	30%	DUP-H
		chromium	7440-47-3	E440	0.50	mg/kg	6.31	3.32	61.9%	30%	DUP-H
		cobalt	7440-48-4	E440	0.10	mg/kg	5.57	3.02	59.3%	30%	DUP-H
		copper	7440-50-8	E440	0.50	mg/kg	17.4	7.21	83.0%	30%	DUP-H
		iron	7439-89-6	E440	50	mg/kg	8680	6720	25.4%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	14.8	3.74	119%	40%	DUP-H
		lithium	7439-93-2	E440	2.0	mg/kg	6.7	6.6	0.2	Diff <2x LOR	----

Sub-Matrix: **Soil/Solid**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 301140) - continued											
VA21C0522-001	Anonymous	magnesium	7439-95-4	E440	20	mg/kg	5980	7460	22.0%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	2420	490	133%	30%	DUP-H
		molybdenum	7439-98-7	E440	0.10	mg/kg	0.64	# 0.30	0.34	Diff <2x LOR	DUP-H,J
		nickel	7440-02-0	E440	0.50	mg/kg	6.02	2.88	70.8%	30%	DUP-H
		phosphorus	7723-14-0	E440	50	mg/kg	499	627	22.7%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	660	1060	46.1%	40%	DUP-H
		selenium	7782-49-2	E440	0.20	mg/kg	0.26	0.26	0.001	Diff <2x LOR	----
		silver	7440-22-4	E440	0.10	mg/kg	<0.10	<0.10	0	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	6600	10500	45.4%	40%	DUP-H
		strontium	7440-24-6	E440	0.50	mg/kg	845	1390	48.8%	40%	DUP-H
		sulfur	7704-34-9	E440	1000	mg/kg	1400	2100	700	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.050	mg/kg	0.052	<0.050	0.002	Diff <2x LOR	----
		tin	7440-31-5	E440	2.0	mg/kg	45.4	<2.0	183%	40%	DUP-H
		titanium	7440-32-6	E440	1.0	mg/kg	455	312	37.2%	40%	----
		tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.050	mg/kg	0.330	0.354	7.23%	30%	----
		vanadium	7440-62-2	E440	0.20	mg/kg	28.7	20.9	31.2%	30%	DUP-H
		zinc	7440-66-6	E440	2.0	mg/kg	1200	149	156%	30%	DUP-H
		zirconium	7440-67-7	E440	1.0	mg/kg	<1.0	<1.0	0	Diff <2x LOR	----
Metals (QC Lot: 301141)											
VA21C0522-001	Anonymous	mercury	7439-97-6	E510	0.0050	mg/kg	0.183	0.164	11.2%	40%	DUP-H
Metals (QC Lot: 301192)											
WR2101265-013	LMC-1	aluminum	7429-90-5	E440	50	mg/kg	14300	13300	7.44%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	0.48	0.47	0.01	Diff <2x LOR	----
		arsenic	7440-38-2	E440	0.10	mg/kg	7.37	7.21	2.30%	30%	----
		barium	7440-39-3	E440	0.50	mg/kg	236	225	4.77%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.40	0.36	0.04	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	<5.0	<5.0	0	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	0.148	0.144	2.19%	30%	----
		calcium	7440-70-2	E440	50	mg/kg	10200	9620	5.72%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	32.4	31.4	2.89%	30%	----
		cobalt	7440-48-4	E440	0.10	mg/kg	10.4	9.95	4.56%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	56.8	53.7	5.65%	30%	----
		iron	7439-89-6	E440	50	mg/kg	25500	25000	1.83%	30%	----

Sub-Matrix: **Soil/Solid**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Metals (QC Lot: 301192) - continued											
WR2101265-013	LMC-1	lead	7439-92-1	E440	0.50	mg/kg	5.72	5.66	1.22%	40%	----
		lithium	7439-93-2	E440	2.0	mg/kg	10.3	9.8	0.5	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	7160	6810	5.06%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	1040	966	7.88%	30%	----
		molybdenum	7439-98-7	E440	0.10	mg/kg	0.66	0.68	2.96%	40%	----
		nickel	7440-02-0	E440	0.50	mg/kg	25.8	25.2	2.34%	30%	----
		phosphorus	7723-14-0	E440	50	mg/kg	921	930	1.04%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	1540	1320	15.5%	40%	----
		selenium	7782-49-2	E440	0.20	mg/kg	0.42	0.44	0.02	Diff <2x LOR	----
		silver	7440-22-4	E440	0.10	mg/kg	<0.10	<0.10	0	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	368	332	10.3%	40%	----
		strontium	7440-24-6	E440	0.50	mg/kg	96.9	90.9	6.43%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	0	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.050	mg/kg	0.106	0.092	0.014	Diff <2x LOR	----
		tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.0	mg/kg	911	822	10.3%	40%	----
		tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.050	mg/kg	0.948	0.859	9.92%	30%	----
		vanadium	7440-62-2	E440	0.20	mg/kg	59.3	56.5	4.85%	30%	----
		zinc	7440-66-6	E440	2.0	mg/kg	58.3	56.8	2.57%	30%	----
		zirconium	7440-67-7	E440	1.0	mg/kg	2.4	2.3	0.04	Diff <2x LOR	----
Metals (QC Lot: 301193)											
WR2101265-013	LMC-1	mercury	7439-97-6	E510	0.0050	mg/kg	0.0451	0.0636	34.1%	40%	----
Leachable Anions & Nutrients (QC Lot: 297918)											
FJ2100762-103	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E319	0.020	mg/kg	<0.020 %	<200	0	Diff <2x LOR	----
Leachable Anions & Nutrients (QC Lot: 299317)											
WR2101265-019	LMC-4	Kjeldahl nitrogen, total [TKN]	----	E319	0.059	mg/kg	0.124 %	1280	40	Diff <2x LOR	----

Qualifiers

Qualifier	*Description*
DUP-H	*Duplicate results outside ALS DQO, due to sample heterogeneity.*
J	*Duplicate results and limits are expressed in terms of absolute difference.*

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Organic / Inorganic Carbon (QCLot: 296197)						
carbon, total [TC]	----	E351	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 298125)						
carbon, inorganic [IC]	----	E354	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 299881)						
carbon, total [TC]	----	E351	0.05	%	<0.050	----
Organic / Inorganic Carbon (QCLot: 300466)						
carbon, inorganic [IC]	----	E354	0.05	%	<0.050	----
Metals (QCLot: 301140)						
aluminum	7429-90-5	E440	50	mg/kg	<50	----
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
barium	7440-39-3	E440	0.5	mg/kg	<0.50	----
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----
boron	7440-42-8	E440	5	mg/kg	<5.0	----
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
calcium	7440-70-2	E440	50	mg/kg	<50	----
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----
copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
iron	7439-89-6	E440	50	mg/kg	<50	----
lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
lithium	7439-93-2	E440	2	mg/kg	<2.0	----
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E440	50	mg/kg	<50	----
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----

Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 301140) - continued						
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
Metals (QCLot: 301141)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----
Metals (QCLot: 301192)						
aluminum	7429-90-5	E440	50	mg/kg	<50	----
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
barium	7440-39-3	E440	0.5	mg/kg	<0.50	----
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----
boron	7440-42-8	E440	5	mg/kg	<5.0	----
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
calcium	7440-70-2	E440	50	mg/kg	<50	----
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----
copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
iron	7439-89-6	E440	50	mg/kg	<50	----
lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
lithium	7439-93-2	E440	2	mg/kg	<2.0	----
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E440	50	mg/kg	<50	----

Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 301192) - continued						
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
Metals (QCLot: 301193)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----
Leachable Anions & Nutrients (QCLot: 297918)						
Kjeldahl nitrogen, total [TKN]	----	E319	200	mg/kg	<200	----
Leachable Anions & Nutrients (QCLot: 299317)						
Kjeldahl nitrogen, total [TKN]	----	E319	200	mg/kg	<200	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Soil/Solid**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 301142)									
pH (1:2 soil:water)	----	E108	----	pH units	6 pH units	100	95.0	105	----
Physical Tests (QCLot: 301194)									
pH (1:2 soil:water)	----	E108	----	pH units	6 pH units	99.5	95.0	105	----
Organic / Inorganic Carbon (QCLot: 296197)									
carbon, total [TC]	----	E351	0.05	%	48 %	97.1	90.0	110	----
Organic / Inorganic Carbon (QCLot: 298125)									
carbon, inorganic [IC]	----	E354	0.05	%	0.5 %	100	90.0	110	----
Organic / Inorganic Carbon (QCLot: 299881)									
carbon, total [TC]	----	E351	0.05	%	48 %	99.2	90.0	110	----
Organic / Inorganic Carbon (QCLot: 300466)									
carbon, inorganic [IC]	----	E354	0.05	%	0.5 %	99.1	90.0	110	----
Metals (QCLot: 301140)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	99.0	80.0	120	----
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	115	80.0	120	----
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	100.0	80.0	120	----
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	98.4	80.0	120	----
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	95.3	80.0	120	----
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	112	80.0	120	----
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	95.3	80.0	120	----
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	99.8	80.0	120	----
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	96.9	80.0	120	----
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	98.3	80.0	120	----
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	97.6	80.0	120	----
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	98.3	80.0	120	----
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	88.1	80.0	120	----
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	106	80.0	120	----
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	94.2	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	98.0	80.0	120	----
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	101	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	99.2	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	97.2	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	98.9	80.0	120	----

Sub-Matrix: **Soil/Solid**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 301140) - continued									
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	101	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	92.2	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	95.9	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	101	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	97.7	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	100	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	113	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	99.0	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	102	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	97.8	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	97.8	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	99.8	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	96.2	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	97.8	80.0	120	----
Metals (QCLot: 301141)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	102	80.0	120	----
Metals (QCLot: 301192)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	102	80.0	120	----
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	117	80.0	120	----
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	101	80.0	120	----
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	98.8	80.0	120	----
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	96.7	80.0	120	----
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	114	80.0	120	----
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	98.5	80.0	120	----
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	101	80.0	120	----
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	102	80.0	120	----
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	101	80.0	120	----
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	100	80.0	120	----
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	99.4	80.0	120	----
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	97.4	80.0	120	----
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	111	80.0	120	----
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	96.8	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	100	80.0	120	----
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	102	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	103	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	99.3	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	104	80.0	120	----

Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 301192) - continued									
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	101	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	104	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	99.9	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	102	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	109	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	104	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	114	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	102	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	102	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	104	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	103	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	102	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	100	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	92.6	80.0	120	----
Metals (QCLot: 301193)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	99.4	80.0	120	----
Leachable Anions & Nutrients (QCLot: 297918)									
Kjeldahl nitrogen, total [TKN]	----	E319	200	mg/kg	1000 mg/kg	87.4	80.0	120	----
Leachable Anions & Nutrients (QCLot: 299317)									
Kjeldahl nitrogen, total [TKN]	----	E319	200	mg/kg	1000 mg/kg	90.6	80.0	120	----

Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix: **Soil/Solid**

					Reference Material (RM) Report				
					RM Target	Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Concentration	RM	Low	High	Qualifier
Physical Tests (QCLot: 296314)									
QC-296314-002	RM	loss on ignition @ 420°C	----	E205C	5.3 %	112	80.0	120	----
Physical Tests (QCLot: 299836)									
QC-299836-002	RM	loss on ignition @ 420°C	----	E205C	5.3 %	106	80.0	120	----
Organic / Inorganic Carbon (QCLot: 296197)									
QC-296197-003	RM	carbon, total [TC]	----	E351	1.4 %	97.6	80.0	120	----
Organic / Inorganic Carbon (QCLot: 298125)									
QC-298125-003	RM	carbon, inorganic [IC]	----	E354	0.383 %	95.1	80.0	120	----
Organic / Inorganic Carbon (QCLot: 299881)									
QC-299881-003	RM	carbon, total [TC]	----	E351	1.4 %	97.6	80.0	120	----
Organic / Inorganic Carbon (QCLot: 300466)									
QC-300466-003	RM	carbon, inorganic [IC]	----	E354	0.383 %	97.2	80.0	120	----
Metals (QCLot: 301140)									
QC-301140-003	SCP SS-2	aluminum	7429-90-5	E440	9817 mg/kg	100	70.0	130	----
QC-301140-003	SCP SS-2	antimony	7440-36-0	E440	3.99 mg/kg	95.1	70.0	130	----
QC-301140-003	SCP SS-2	arsenic	7440-38-2	E440	3.73 mg/kg	100	70.0	130	----
QC-301140-003	SCP SS-2	barium	7440-39-3	E440	105 mg/kg	90.1	70.0	130	----
QC-301140-003	SCP SS-2	beryllium	7440-41-7	E440	0.349 mg/kg	90.9	70.0	130	----
QC-301140-003	SCP SS-2	boron	7440-42-8	E440	8.5 mg/kg	110	40.0	160	----
QC-301140-003	SCP SS-2	cadmium	7440-43-9	E440	0.91 mg/kg	89.9	70.0	130	----
QC-301140-003	SCP SS-2	calcium	7440-70-2	E440	31082 mg/kg	95.7	70.0	130	----
QC-301140-003	SCP SS-2	chromium	7440-47-3	E440	101 mg/kg	102	70.0	130	----
QC-301140-003	SCP SS-2	cobalt	7440-48-4	E440	6.9 mg/kg	92.5	70.0	130	----
QC-301140-003	SCP SS-2	copper	7440-50-8	E440	123 mg/kg	95.9	70.0	130	----
QC-301140-003	SCP SS-2	iron	7439-89-6	E440	23558 mg/kg	93.9	70.0	130	----
QC-301140-003	SCP SS-2	lead	7439-92-1	E440	267 mg/kg	104	70.0	130	----
QC-301140-003	SCP SS-2	lithium	7439-93-2	E440	9.5 mg/kg	93.9	70.0	130	----
QC-301140-003	SCP SS-2	magnesium	7439-95-4	E440	5509 mg/kg	93.8	70.0	130	----
QC-301140-003	SCP SS-2	manganese	7439-96-5	E440	269 mg/kg	100	70.0	130	----
QC-301140-003	SCP SS-2	molybdenum	7439-98-7	E440	1.03 mg/kg	92.8	70.0	130	----

Sub-Matrix: **Soil/Solid**

					Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%) Low	Recovery Limits (%) High	
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method					Qualifier
Metals (QCLot: 301140) - continued									
QC-301140-003	SCP SS-2	nickel	7440-02-0	E440	26.7 mg/kg	94.7	70.0	130	----
QC-301140-003	SCP SS-2	phosphorus	7723-14-0	E440	752 mg/kg	94.1	70.0	130	----
QC-301140-003	SCP SS-2	potassium	7440-09-7	E440	1587 mg/kg	105	70.0	130	----
QC-301140-003	SCP SS-2	sodium	7440-23-5	E440	797 mg/kg	96.6	70.0	130	----
QC-301140-003	SCP SS-2	strontium	7440-24-6	E440	86.1 mg/kg	99.6	70.0	130	----
QC-301140-003	SCP SS-2	thallium	7440-28-0	E440	0.0786 mg/kg	92.3	40.0	160	----
QC-301140-003	SCP SS-2	tin	7440-31-5	E440	10.6 mg/kg	95.4	70.0	130	----
QC-301140-003	SCP SS-2	titanium	7440-32-6	E440	839 mg/kg	114	70.0	130	----
QC-301140-003	SCP SS-2	uranium	7440-61-1	E440	0.52 mg/kg	91.9	70.0	130	----
QC-301140-003	SCP SS-2	vanadium	7440-62-2	E440	32.7 mg/kg	98.0	70.0	130	----
QC-301140-003	SCP SS-2	zinc	7440-66-6	E440	297 mg/kg	91.2	70.0	130	----
QC-301140-003	SCP SS-2	zirconium	7440-67-7	E440	5.73 mg/kg	92.8	70.0	130	----
Metals (QCLot: 301141)									
QC-301141-003	SCP SS-2	mercury	7439-97-6	E510	0.059 mg/kg	98.4	70.0	130	----
Metals (QCLot: 301192)									
QC-301192-003	SCP SS-2	aluminum	7429-90-5	E440	9817 mg/kg	100	70.0	130	----
QC-301192-003	SCP SS-2	antimony	7440-36-0	E440	3.99 mg/kg	118	70.0	130	----
QC-301192-003	SCP SS-2	arsenic	7440-38-2	E440	3.73 mg/kg	101	70.0	130	----
QC-301192-003	SCP SS-2	barium	7440-39-3	E440	105 mg/kg	94.8	70.0	130	----
QC-301192-003	SCP SS-2	beryllium	7440-41-7	E440	0.349 mg/kg	97.6	70.0	130	----
QC-301192-003	SCP SS-2	boron	7440-42-8	E440	8.5 mg/kg	115	40.0	160	----
QC-301192-003	SCP SS-2	cadmium	7440-43-9	E440	0.91 mg/kg	95.0	70.0	130	----
QC-301192-003	SCP SS-2	calcium	7440-70-2	E440	31082 mg/kg	103	70.0	130	----
QC-301192-003	SCP SS-2	chromium	7440-47-3	E440	101 mg/kg	105	70.0	130	----
QC-301192-003	SCP SS-2	cobalt	7440-48-4	E440	6.9 mg/kg	100	70.0	130	----
QC-301192-003	SCP SS-2	copper	7440-50-8	E440	123 mg/kg	99.0	70.0	130	----
QC-301192-003	SCP SS-2	iron	7439-89-6	E440	23558 mg/kg	98.7	70.0	130	----
QC-301192-003	SCP SS-2	lead	7439-92-1	E440	267 mg/kg	114	70.0	130	----
QC-301192-003	SCP SS-2	lithium	7439-93-2	E440	9.5 mg/kg	101	70.0	130	----
QC-301192-003	SCP SS-2	magnesium	7439-95-4	E440	5509 mg/kg	101	70.0	130	----
QC-301192-003	SCP SS-2	manganese	7439-96-5	E440	269 mg/kg	104	70.0	130	----
QC-301192-003	SCP SS-2	molybdenum	7439-98-7	E440	1.03 mg/kg	96.3	70.0	130	----

Sub-Matrix: **Soil/Solid**

					Reference Material (RM) Report				
					RM Target	Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Concentration	RM	Low	High	Qualifier
Metals (QCLot: 301192) - continued									
QC-301192-003	SCP SS-2	nickel	7440-02-0	E440	26.7 mg/kg	98.9	70.0	130	----
QC-301192-003	SCP SS-2	phosphorus	7723-14-0	E440	752 mg/kg	101	70.0	130	----
QC-301192-003	SCP SS-2	potassium	7440-09-7	E440	1587 mg/kg	106	70.0	130	----
QC-301192-003	SCP SS-2	sodium	7440-23-5	E440	797 mg/kg	100	70.0	130	----
QC-301192-003	SCP SS-2	strontium	7440-24-6	E440	86.1 mg/kg	104	70.0	130	----
QC-301192-003	SCP SS-2	thallium	7440-28-0	E440	0.0786 mg/kg	99.9	40.0	160	----
QC-301192-003	SCP SS-2	tin	7440-31-5	E440	10.6 mg/kg	106	70.0	130	----
QC-301192-003	SCP SS-2	titanium	7440-32-6	E440	839 mg/kg	116	70.0	130	----
QC-301192-003	SCP SS-2	uranium	7440-61-1	E440	0.52 mg/kg	103	70.0	130	----
QC-301192-003	SCP SS-2	vanadium	7440-62-2	E440	32.7 mg/kg	102	70.0	130	----
QC-301192-003	SCP SS-2	zinc	7440-66-6	E440	297 mg/kg	96.7	70.0	130	----
QC-301192-003	SCP SS-2	zirconium	7440-67-7	E440	5.73 mg/kg	89.8	70.0	130	----
Metals (QCLot: 301193)									
QC-301193-003	SCP SS-2	mercury	7439-97-6	E510	0.059 mg/kg	92.7	70.0	130	----
Leachable Anions & Nutrients (QCLot: 297918)									
QC-297918-003	RM	Kjeldahl nitrogen, total [TKN]	----	E319	1040 mg/kg	93.1	80.0	120	----
Leachable Anions & Nutrients (QCLot: 299317)									
QC-299317-003	RM	Kjeldahl nitrogen, total [TKN]	----	E319	1040 mg/kg	96.9	80.0	120	----

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Chain of Custody / Analytical Request Form

Canada To[illegible]ee: 1 800 668 9878

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COC # _____

Pa[illegible] 1 of 3

Report To		Report Format / Distribution				Service Requested (Rush
Company:	Minnow Environmental Inc.	☑ Standard	☐ Other			◉ Regular (Standard Turnaround
Contact:	Pierre Stecko	☑ PDF	☑ Excel	☐ Digital	☐ Fax	○ Priority (2-4 Business Days) - 5
Address:	204-1006 Fort Street	Email 1:	pstecko@minnow.ca			○ Emergency (1-2 Bus. Days) - 1
	Victoria, BC	Email 2:	slatimer@minnow.ca			○ Same Day or Weekend Emerge
Phone:	(250)506 1627 x21 Fax: (250) 595-1625	Email 3:	lbowron@minnow.ca			An
Invoice To	Same as Report ? ☐ Yes ☑ No	Client / Project Information				Please indicate below Filte
Hardcopy of Invoice with Report?	☑ Yes ☐ No	Job #:	Minnow Project 21-92			
Company:	Minto Explorations Ltd	PO / AFE:				
Contact:	Ian Smith	LSD:				
Address:	61 Wasson Place, Whitehorse, Yukon Y1A 0H7					
Phone:	867.332.0620 Fax:	Quote #:	VA21MINN100-05			
Lab Work Order # (lab use only)		ALS Contact:	Can Dang	Sampler:	LBO, SLA	

Environmental Division
Whitehorse
Work Order Reference
WR2101265

Telephone : +1 867 668 6689

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Rescan Low Level Sediments	Inorganic Carbon	Total Carbon by combustion	Mercury by CVAFS	Loss on Ignition	pH in soil	Particle Size	Total Organic Carbon	Total Kjeldahl Nitrogen	**See Complete Quote			Number of Containers
1	UMC-1 (jar)	13 -Sept-21		Sediment	X	X	X	X	X	X		X	X				1
	UMC-2 (jar)	13 -Sept-21			X	X	X	X	X	X		X	X				
	UMC-3 (jar)	13 -Sept-21			X	X	X	X	X	X		X	X				
	UMC-4 (jar)	13 -Sept-21			X	X	X	X	X	X		X	X				
	UMC-5 (jar)	13 -Sept-21			X	X	X	X	X	X		X	X				
	UMC (bag)	13 -Sept-21									X						
	URC-1 (jar)	13 -Sept-21			X	X	X	X	X	X		X	X				
	URC-2 (jar)	13 -Sept-21			X	X	X	X	X	X		X	X				
	URC-3 (jar)	13 -Sept-21			X	X	X	X	X	X		X	X				
	URC-4 (jar)	13 -Sept-21			X	X	X	X	X	X		X	X				
	URC-5 (jar)	13 -Sept-21			X	X	X	X	X	X		X	X				
12	URC (bag)	13 -Sept-21		Sediment							X						1

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details

~~Small samples. The critical analyte of interest is selenium, please ensure best possible MDLs.~~

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SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
Sarah Latimer Lisa Bowron	15-Sep-21	15:01	[illegible]	Sept 15/21	15:15	3/3 °C				

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COC # _____

Report To		Report Format / Distribution	Service Requested (Rush for routine analysis subject to availability)
Company:	Minnow Environmental Inc.	☑ Standard ☐ Other	◉ Regular (Standard Turnaround Times - Business Days)
Contact:	Pierre Stecko	☑ PDF ☑ Excel ☐ Digital ☐ Fax	○ Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT
Address:	204-1006 Fort Street	Email 1: pstecko@minnow.ca	○ Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT
	Victoria, BC	Email 2: slatimer@minnow.ca	○ Same Day or Weekend Emergency - Contact ALS to Confirm TAT
Phone:	(250)595-1627 x24 Fax: (250) 606 1625	Email 3: lbowron@minnow.ca	
Invoice To	Same as Report ? ☐ Yes ☑ No	**Client / Project Information**	
Hardcopy of Invoice with Report?	☑ Yes ☐ No	Job #: Minnow Project 21-92	
Company:	Minto Explorations Ltd	PO / AFE:	
Contact:	Ian Smith	LSD:	
Address:	61 Wasson Place, Whitehorse, Yukon Y1A 0H7		
Phone:	867.332.0620 Fax:	Quote #: VA21MINN100-05	
Lab Work Order # (lab use only)		ALS Contact: Can Dang	Sampler:

Analysis Request

Please indicate below Filtered, Preserved or both (F, P, F/P)

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Rescan Low Level Sediments	Inorganic Carbon	Total Carbon by combustion	Mercury by CVAFS	Loss on Ignition	pH in soil	Particle Size	Total Organic Carbon	Total Kjeldahl Nitrogen	**See Complete Quote			Number of Containers
13	LMC-1 (Jar)	10 -Sept-21		Sediment	X	X	X	X	X	X		X	X				1
	LMC-1 (Bag)	10 -Sept-21		Sediment							X						
	LMC-2 (Jar)	10 -Sept-21		Sediment	X	X	X	X	X	X		X	X				
	LMC-2 (Bag)	10 -Sept-21		Sediment							X						
	LMC-3 (Jar)	10 -Sept-21		Sediment	X	X	X	X	X	X		X	X				
	LMC-3 (Bag)	10 -Sept-21		Sediment							X						
	LMC-4 (Jar)	10 -Sept-21		Sediment	X	X	X	X	X	X		X	X				
	LMC-4 (Bag)	10 -Sept-21		Sediment							X						
	LMC-5 (Jar)	10 -Sept-21		Sediment	X	X	X	X	X	X		X	X				1
22	LMC-5 (Bag)	10 -Sept-21		Sediment							X						

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details

Small samples. The critical analyte of interest is selenium; please ensure best possible MDLs.

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Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
Sarah Lahmer Lisa Bowron	15-Sep-21	15:01				°C				

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Report To		Report Format / Distribution				Service Requested (Rush for routine analysis subject to availability)
Company:	Minnow Environmental Inc.	☑ Standard	☐ Other			◉ Regular (Standard Turnaround Times - Business Days)
Contact:	Pierre Stecko	☑ PDF	☑ Excel	☐ Digital	☐ Fax	○ Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT
Address:	204-1006 Fort Street	Email 1:	pstecko@minnow.ca			○ Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT
	Victoria, BC	Email 2:	slatimer@minnow.ca			○ Same Day or Weekend Emergency - Contact ALS to Confirm TAT
Phone:	(250)606 1627 x21 Fax: (250) 595-1625	Email 3:	lbowron@minnow.ca			
Invoice To	Same as Report ? ☐ Yes ☑ No	Client / Project Information				
Hardcopy of Invoice with Report?	☑ Yes ☐ No	Job #:	Minnow Project 21-92			
Company:	Minto Explorations Ltd	PO / AFE:				
Contact:	Ian Smith	LSD:				
Address:	61 Wasson Place, Whitehorse, Yukon Y1A 0H7					
Phone:	867.332.0620 Fax:	Quote #:	VA21MINN100-05			
Lab Work Order # (lab use only)		ALS Contact:	Can Dang	Sampler:		

Analysis Request

Please indicate below Filtered, Preserved or both (F, P, F/P)

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Rescan Low Level Sediments	Inorganic Carbon	Total Carbon by combustion	Mercury by CVAFS	Loss on Ignition	pH in soil	Particle Size	Total Organic Carbon	Total Kjeldahl Nitrogen	**See Complete Quote			Number of Containers
23	LWC-1 (Jar)	11-Sept-21		Sediment	X	X	X	X	X	X		X	X				1
	LWC-1 (Bag)	11-Sept-21		Sediment							X						
	LWC-2 (Jar)	11-Sept-21		Sediment	X	X	X	X	X	X		X	X				
	LWC-2 (Bag)	11-Sept-21		Sediment							X						
	LWC-3 (Jar)	11-Sept-21		Sediment	X	X	X	X	X	X		X	X				
	LWC-3 (Bag)	11-Sept-21		Sediment							X						
	LWC-4 (Jar)	11-Sept-21		Sediment	X	X	X	X	X	X		X	X				
	LWC-4 (Bag)	11-Sept-21		Sediment							X						
	LWC-5 (Jar)	11-Sept-21		Sediment	X	X	X	X	X	X		X	X				
	LWC-5 (Bag)	11-Sept-21		Sediment							X						↓
33	LWC-3X (Jar) (11)	11-Sep-21		sediment	X	X	X	X	X	X		X	X				1

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details

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Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
Sarah Latimer Lisa Bowron	15-Sep-21	15-01				°C				

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COC # _____

Pa[illegible] 1 of 3

Environmental Division
Whitehorse
Work Order Reference
WR2101265

Telephone : +1 867 668 6689

Report To		Report Format / Distribution		Service Requested (Rush
Company:	Minnow Environmental Inc.	☑ Standard ☐ Other		◉ Regular (Standard Turnaround
Contact:	Pierre Stecko	☑ PDF ☑ Excel ☐ Digital ☐ Fax		○ Priority (2-4 Business Days) - 5
Address:	204-1006 Fort Street	Email 1: pstecko@minnow.ca		○ Emergency (1-2 Bus. Days) - 1
	Victoria, BC	Email 2: slatimer@minnow.ca		○ Same Day or Weekend Emerge
Phone:	(250)595-1627 x24 Fax: (250) 595-1625	Email 3: lbowron@minnow.ca		An
Invoice To	Same as Report ? ☐ Yes ☑ No	Client / Project Information		Please indicate below Filte
Hardcopy of Invoice with Report?	☑ Yes ☐ No	Job #: Minnow Project 21-92		
Company:	Minto Explorations Ltd	PO / AFE:		
Contact:	Ian Smith	LSD:		
Address:	61 Wasson Place, Whitehorse, Yukon Y1A 0H7			
Phone:	867.332.0620 Fax:	Quote #: VA21MINN100-05		
Lab Work Order # (lab use only)		ALS Contact: Can Dang	Sampler: LBO, SLA	

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Rescan Low Level Sediments	Inorganic Carbon	Total Carbon by combustion	Mercury by CVAFS	Loss on Ignition	pH in soil	Particle Size	Total Organic Carbon	Total Kjeldahl Nitrogen	**See Complete Quote			Number of Containers
1	UMC-1 (jar)	13 -Sept-21		Sediment	X	X	X	X	X	X		X	X				1
	UMC-2 (jar)	13 -Sept-21			X	X	X	X	X	X		X	X				
	UMC-3 (jar)	13 -Sept-21			X	X	X	X	X	X		X	X				
	UMC-4 (jar)	13 -Sept-21			X	X	X	X	X	X		X	X				
	UMC-5 (jar)	13 -Sept-21			X	X	X	X	X	X		X	X				
	UMC (bag)	13 -Sept-21									X						
	URC-1 (jar)	13 -Sept-21			X	X	X	X	X	X		X	X				
	URC-2 (jar)	13 -Sept-21			X	X	X	X	X	X		X	X				
	URC-3 (jar)	13 -Sept-21			X	X	X	X	X	X		X	X				
	URC-4 (jar)	13 -Sept-21			X	X	X	X	X	X		X	X				
	URC-5 (jar)	13 -Sept-21			X	X	X	X	X	X		X	X				
12	URC (bag)	13 -Sept-21		Sediment							X						1

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details

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SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
Sarah Latimer Lisa Bowron	15-Sep-21	15:01		Sept15/21	15:15	3/3 °C	JA	16/09/2021	5pm	

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COC # _____

Report To		Report Format / Distribution		Service Requested (Rush for routine analysis subject to availability)
Company:	Minnow Environmental Inc.	☑ Standard ☐ Other		◉ Regular (Standard Turnaround Times - Business Days)
Contact:	Pierre Stecko	☑ PDF ☑ Excel ☐ Digital ☐ Fax		○ Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT
Address:	204-1006 Fort Street	Email 1:	pstecko@minnow.ca	○ Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT
	Victoria, BC	Email 2:	slatimer@minnow.ca	○ Same Day or Weekend Emergency - Contact ALS to Confirm TAT
Phone:	(250)595-1627 x24 Fax: (250) 595-1625	Email 3:	lbowron@minnow.ca	**Analysis Request**
Invoice To	Same as Report ? ☐ Yes ☑ No	Client / Project Information		Please indicate below Filtered, Preserved or both (F, P, F/P)
Hardcopy of Invoice with Report?	☑ Yes ☐ No	Job #:	Minnow Project 21-92	
Company:	Minto Explorations Ltd	PO / AFE:		
Contact:	Ian Smith	LSD:		
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Lab Work Order # (lab use only)		ALS Contact:	Can Dang	Sampler:

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Rescan Low Level Sediments	Inorganic Carbon	Total Carbon by combustion	Mercury by CVAFS	Loss on Ignition	pH in soil	Particle Size	Total Organic Carbon	Total Kjeldahl Nitrogen	**See Complete Quote			Number of Containers
13	LMC-1 (Jar)	10 -Sept-21		Sediment	X	X	X	X	X	X		X	X				1
	LMC-1 (Bag)	10 -Sept-21		Sediment							X						
	LMC-2 (Jar)	10 -Sept-21		Sediment	X	X	X	X	X	X		X	X				
	LMC-2 (Bag)	10 -Sept-21		Sediment							X						
	LMC-3 (Jar)	10 -Sept-21		Sediment	X	X	X	X	X	X		X	X				
	LMC-3 (Bag)	10 -Sept-21		Sediment							X						
	LMC-4 (Jar)	10 -Sept-21		Sediment	X	X	X	X	X	X		X	X				
	LMC-4 (Bag)	10 -Sept-21		Sediment							X						
	LMC-5 (Jar)	10 -Sept-21		Sediment	X	X	X	X	X	X		X	X				
22	LMC-5 (Bag)	10 -Sept-21		Sediment							X						1

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details

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Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
Sarah Latimer Lisa Bowron	15-Sep-21	15:01	JA	16/09/2021	5 pm	10 °C				

ALS Environmental

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COC # _____ Page 3 of 3

Report To		Report Format / Distribution		Service Requested (Rush for routine analysis subject to availability)
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Address:	204-1006 Fort Street	Email 1: pstecko@minnow.ca		○ Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT
	Victoria, BC	Email 2: slatimer@minnow.ca		○ Same Day or Weekend Emergency - Contact ALS to Confirm TAT
Phone:	(250)595-1627 x24 Fax: (250) 595-1625	Email 3: lbowron@minnow.ca		
Invoice To	Same as Report ? ☐ Yes ☑ No	Client / Project Information		Analysis Request
Hardcopy of Invoice with Report?	☑ Yes ☐ No	Job #: Minnow Project 21-92		Please indicate below Filtered, Preserved or both (F, P, F/P)
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Contact:	Ian Smith	LSD:		
Address:	61 Wasson Place, Whitehorse, Yukon Y1A 0H7			
Phone:	867.332.0620 Fax:	Quote #: VA21MINN100-05		
Lab Work Order # (lab use only)		ALS Contact: Can Dang	Sampler:	

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Rescan Low Level Sediments	Inorganic Carbon	Total Carbon by combustion	Mercury by CVAFS	Loss on Ignition	pH in soil	Particle Size	Total Organic Carbon	Total Kjeldahl Nitrogen	**See Complete Quote			Number of Containers
23	LWC-1 (Jar)	11-Sept-21		Sediment	X	X	X	X	X	X		X	X				1
	LWC-1 (Bag)	11-Sept-21		Sediment							X						
	LWC-2 (Jar)	11-Sept-21		Sediment	X	X	X	X	X	X		X	X				
	LWC-2 (Bag)	11-Sept-21		Sediment							X						
	LWC-3 (Jar)	11-Sept-21		Sediment	X	X	X	X	X	X		X	X				
	LWC-3 (Bag)	11-Sept-21		Sediment							X						
	LWC-4 (Jar)	11-Sept-21		Sediment	X	X	X	X	X	X		X	X				
	LWC-4 (Bag)	11-Sept-21		Sediment							X						
	LWC-5 (Jar)	11-Sept-21		Sediment	X	X	X	X	X	X		X	X				
	LWC-5 (Bag)	11-Sept-21		Sediment							X						
33	LWC-3X (Jar) (11)	11-Sep-21		sediment	X	X	X	X	X	X		X	X				1

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details

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Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
Sarah Cahmer Lisa Bowron	15-Sep-21	15-01	JA	16/09/2021	5pm	10 °C				

CERTIFICATE OF ANALYSIS

Work Order	: **WR2101266**	Page	: 1 of 14
Client	: **Minnow Environmental Inc.**	Laboratory	: Whitehorse - Environmental
Contact	: Pierre Stecko	Account Manager	: Can Dang
Address	: 204 – 1006 Fort Street Victoria BC Canada V8V 3K4	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: 250 595 1627	Telephone	: +1 867 668 6689
Project	: Minnow Environmental Inc Project for Minto MInes WUL Program	Date Samples Received	: 15-Sep-2021 15:14
PO	: ----	Date Analysis Commenced	: 12-Nov-2021
C-O-C number	: ----	Issue Date	: 03-Dec-2021 14:33
Sampler	: LBO, SLA		
Site	: ----		
Quote number	: Q79833 - Minnow/Minto		
No. of samples received	: 16		
No. of samples analysed	: 16		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Caleb Deroche	Lab Analyst	Metals, Burnaby, British Columbia
Ragini Saini	Lab Assistant	Metals, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
%	percent
mg/kg	milligrams per kilogram
mg/kg wwt	milligrams per kilogram wet weight

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LWC-1-BIT	LWC-2-BIT	LWC-3-BIT	LWC-4-BIT	LWC-5-BIT
					Client sampling date / time	12-Sep-2021	12-Sep-2021	12-Sep-2021	12-Sep-2021	11-Sep-2021
						WR2101266-001	WR2101266-002	WR2101266-003	WR2101266-004	WR2101266-005
						Result	Result	Result	Result	Result
Physical Tests										
moisture	----	E144A	2.0	%		87.2	82.0	87.5	86.2	80.2
Metals										
aluminum	7429-90-5	E475	5.0	mg/kg		383	880	436	496	1410
aluminum	7429-90-5	E475A	1.0	mg/kg wwt		49.1	158	54.4	68.6	278
antimony	7440-36-0	E475	0.020	mg/kg		<0.020	0.036	0.022	0.026	0.048
antimony	7440-36-0	E475A	0.0040	mg/kg wwt		<0.0040	0.0066	<0.0040	<0.0040	0.0096
arsenic	7440-38-2	E475	0.050	mg/kg		0.881	2.22	0.909	0.930	2.38
arsenic	7440-38-2	E475A	0.010	mg/kg wwt		0.113	0.401	0.113	0.129	0.470
barium	7440-39-3	E475	0.050	mg/kg		14.0	63.4	19.6	22.1	70.3
barium	7440-39-3	E475A	0.010	mg/kg wwt		1.79	11.4	2.44	3.06	13.9
beryllium	7440-41-7	E475	0.010	mg/kg		0.027	0.065	0.026	0.036	0.095
beryllium	7440-41-7	E475A	0.0020	mg/kg wwt		0.0034	0.0118	0.0033	0.0050	0.0188
bismuth	7440-69-9	E475	0.010	mg/kg		<0.010	<0.010	<0.010	<0.010	<0.010
bismuth	7440-69-9	E475A	0.0020	mg/kg wwt		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
boron	7440-42-8	E475	1.0	mg/kg		<1.0	1.2	1.0	<1.0	1.7
boron	7440-42-8	E475A	0.20	mg/kg wwt		<0.20	0.21	<0.20	<0.20	0.33
cadmium	7440-43-9	E475	0.010	mg/kg		0.627	0.483	0.668	0.659	0.303
cadmium	7440-43-9	E475A	0.0020	mg/kg wwt		0.0804	0.0870	0.0833	0.0911	0.0598
calcium	7440-70-2	E475	20	mg/kg		1220	1240	1290	1480	1830
calcium	7440-70-2	E475A	4.0	mg/kg wwt		156	223	160	204	361
cesium	7440-46-2	E475	0.0050	mg/kg		0.0435	0.0859	0.0484	0.0571	0.129
cesium	7440-46-2	E475A	0.0010	mg/kg wwt		0.0056	0.0155	0.0060	0.0079	0.0254
chromium	7440-47-3	E475	0.20	mg/kg		1.85	5.09	2.41	3.29	5.75
chromium	7440-47-3	E475A	0.040	mg/kg wwt		0.237	0.917	0.300	0.455	1.14
cobalt	7440-48-4	E475	0.020	mg/kg		1.00	1.72	1.22	1.42	2.22
cobalt	7440-48-4	E475A	0.0040	mg/kg wwt		0.129	0.310	0.152	0.196	0.438
copper	7440-50-8	E475	0.20	mg/kg		20.1	21.1	19.8	20.6	22.9
copper	7440-50-8	E475A	0.040	mg/kg wwt		2.58	3.80	2.46	2.85	4.52
iron	7439-89-6	E475	5.0	mg/kg		832	1850	952	1090	2950
iron	7439-89-6	E475A	1.0	mg/kg wwt		107	334	119	151	583
lead	7439-92-1	E475	0.050	mg/kg		0.164	0.347	0.169	0.287	0.502

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LWC-1-BIT	LWC-2-BIT	LWC-3-BIT	LWC-4-BIT	LWC-5-BIT
					Client sampling date / time	12-Sep-2021	12-Sep-2021	12-Sep-2021	12-Sep-2021	11-Sep-2021
						WR2101266-001	WR2101266-002	WR2101266-003	WR2101266-004	WR2101266-005
						Result	Result	Result	Result	Result
Metals										
lead	7439-92-1	E475A	0.010	mg/kg wwt		0.021	0.062	0.021	0.040	0.099
lithium	7439-93-2	E475	0.50	mg/kg		<0.50	0.59	<0.50	<0.50	0.95
lithium	7439-93-2	E475A	0.10	mg/kg wwt		<0.10	0.10	<0.10	<0.10	0.19
magnesium	7439-95-4	E475	2.0	mg/kg		1360	1660	1370	1460	1820
magnesium	7439-95-4	E475A	0.40	mg/kg wwt		174	299	171	202	358
manganese	7439-96-5	E475	0.050	mg/kg		97.7	258	158	146	236
manganese	7439-96-5	E475A	0.010	mg/kg wwt		12.5	46.5	19.7	20.2	46.5
mercury	7439-97-6	E512	0.010	mg/kg		0.025	0.025	0.027	0.069	0.063
mercury	7439-97-6	E512A	0.0020	mg/kg wwt		0.0032	0.0045	0.0033	0.0096	0.0125
molybdenum	7439-98-7	E475	0.040	mg/kg		0.897	0.974	0.942	0.745	0.886
molybdenum	7439-98-7	E475A	0.0080	mg/kg wwt		0.115	0.175	0.117	0.103	0.175
nickel	7440-02-0	E475	0.20	mg/kg		2.50	5.40	4.29	3.76	5.69
nickel	7440-02-0	E475A	0.040	mg/kg wwt		0.321	0.972	0.535	0.520	1.12
phosphorus	7723-14-0	E475	20	mg/kg		10000	8900	9950	9860	7680
phosphorus	7723-14-0	E475A	4.0	mg/kg wwt		1280	1600	1240	1360	1520
potassium	7440-09-7	E475	20	mg/kg		8740	10200	8970	8280	9270
potassium	7440-09-7	E475A	4.0	mg/kg wwt		1120	1840	1120	1140	1830
rubidium	7440-17-7	E475	0.050	mg/kg		4.83	4.39	5.28	5.04	4.18
rubidium	7440-17-7	E475A	0.010	mg/kg wwt		0.619	0.790	0.658	0.697	0.826
selenium	7782-49-2	E475	0.10	mg/kg		3.66	2.85	3.93	4.19	2.09
selenium	7782-49-2	E475A	0.020	mg/kg wwt		0.469	0.513	0.490	0.579	0.412
sodium	7440-23-5	E475	20	mg/kg		3900	3130	3770	3560	2620
sodium	7440-23-5	E475A	4.0	mg/kg wwt		500	564	470	493	518
strontium	7440-24-6	E475	0.10	mg/kg		12.2	14.9	15.6	23.4	20.9
strontium	7440-24-6	E475A	0.020	mg/kg wwt		1.56	2.69	1.94	3.23	4.13
tellurium	13494-80-9	E475	0.020	mg/kg		<0.020	<0.020	<0.020	<0.020	<0.020
tellurium	13494-80-9	E475A	0.0040	mg/kg wwt		<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
thallium	7440-28-0	E475	0.0020	mg/kg		0.0073	0.0087	0.0076	0.0094	0.0107
thallium	7440-28-0	E475A	0.00040	mg/kg wwt		0.00094	0.00157	0.00095	0.00130	0.00211
tin	7440-31-5	E475	0.10	mg/kg		<0.10	<0.10	<0.10	<0.10	<0.10
tin	7440-31-5	E475A	0.020	mg/kg wwt		<0.020	<0.020	<0.020	<0.020	<0.020
uranium	7440-61-1	E475	0.0020	mg/kg		0.0862	0.209	0.0990	0.200	0.247

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LWC-1-BIT	LWC-2-BIT	LWC-3-BIT	LWC-4-BIT	LWC-5-BIT
					Client sampling date / time	12-Sep-2021	12-Sep-2021	12-Sep-2021	12-Sep-2021	11-Sep-2021
						WR2101266-001	WR2101266-002	WR2101266-003	WR2101266-004	WR2101266-005
						Result	Result	Result	Result	Result
Metals										
uranium	7440-61-1	E475A	0.00040	mg/kg wwt		0.0110	0.0376	0.0123	0.0276	0.0487
vanadium	7440-62-2	E475	0.10	mg/kg		1.85	4.27	2.05	2.52	7.44
vanadium	7440-62-2	E475A	0.020	mg/kg wwt		0.237	0.769	0.255	0.348	1.47
zinc	7440-66-6	E475	1.0	mg/kg		108	111	98.8	130	107
zinc	7440-66-6	E475A	0.20	mg/kg wwt		13.8	20.0	12.3	18.0	21.2
zirconium	7440-67-7	E475	0.20	mg/kg		0.61	1.56	0.64	0.81	2.04
zirconium	7440-67-7	E475A	0.040	mg/kg wwt		0.078	0.282	0.080	0.112	0.403

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LBC-1-BIT	LBC-2-BIT	LBC-3-BIT	LBC-4-BIT	LBC-5-BIT
					Client sampling date / time	14-Sep-2021	14-Sep-2021	14-Sep-2021	14-Sep-2021	14-Sep-2021
						WR2101266-006	WR2101266-007	WR2101266-008	WR2101266-009	WR2101266-010
						Result	Result	Result	Result	Result
Physical Tests										
moisture	----	E144A	2.0	%		87.3	84.2	87.2	81.9	88.0
Metals										
aluminum	7429-90-5	E475	5.0	mg/kg		700	657	1330	813	492
aluminum	7429-90-5	E475A	1.0	mg/kg wwt		88.6	104	170	147	59.0
antimony	7440-36-0	E475	0.020	mg/kg		0.085	0.102	0.132	0.125	0.097
antimony	7440-36-0	E475A	0.0040	mg/kg wwt		0.0108	0.0162	0.0168	0.0227	0.0117
arsenic	7440-38-2	E475	0.050	mg/kg		3.95	2.94	5.98	3.95	4.81
arsenic	7440-38-2	E475A	0.010	mg/kg wwt		0.500	0.466	0.765	0.716	0.577
barium	7440-39-3	E475	0.050	mg/kg		39.0	26.8	45.8	33.7	28.7
barium	7440-39-3	E475A	0.010	mg/kg wwt		4.94	4.25	5.85	6.10	3.45
beryllium	7440-41-7	E475	0.010	mg/kg		0.037	0.050	0.065	0.044	0.030
beryllium	7440-41-7	E475A	0.0020	mg/kg wwt		0.0047	0.0080	0.0083	0.0081	0.0036
bismuth	7440-69-9	E475	0.010	mg/kg		0.025	0.019	0.037	0.026	0.027
bismuth	7440-69-9	E475A	0.0020	mg/kg wwt		0.0032	0.0030	0.0048	0.0047	0.0032
boron	7440-42-8	E475	1.0	mg/kg		1.3	1.0	2.8	2.6	1.8
boron	7440-42-8	E475A	0.20	mg/kg wwt		<0.20	<0.20	0.36	0.48	0.22
cadmium	7440-43-9	E475	0.010	mg/kg		2.43	1.03	2.35	2.20	1.98
cadmium	7440-43-9	E475A	0.0020	mg/kg wwt		0.308	0.163	0.300	0.398	0.238
calcium	7440-70-2	E475	20	mg/kg		1570	2500	2620	1870	1490
calcium	7440-70-2	E475A	4.0	mg/kg wwt		199	396	334	339	179
cesium	7440-46-2	E475	0.0050	mg/kg		0.165	0.141	0.275	0.194	0.143
cesium	7440-46-2	E475A	0.0010	mg/kg wwt		0.0209	0.0223	0.0352	0.0352	0.0171
chromium	7440-47-3	E475	0.20	mg/kg		3.46	3.27	7.68	3.81	2.76
chromium	7440-47-3	E475A	0.040	mg/kg wwt		0.438	0.518	0.982	0.690	0.331
cobalt	7440-48-4	E475	0.020	mg/kg		1.53	1.19	2.50	1.47	1.91
cobalt	7440-48-4	E475A	0.0040	mg/kg wwt		0.193	0.188	0.320	0.266	0.230
copper	7440-50-8	E475	0.20	mg/kg		24.8	23.0	30.8	24.6	32.0
copper	7440-50-8	E475A	0.040	mg/kg wwt		3.14	3.65	3.94	4.46	3.84
iron	7439-89-6	E475	5.0	mg/kg		1440	1240	2730	1740	1050
iron	7439-89-6	E475A	1.0	mg/kg wwt		182	196	348	316	127
lead	7439-92-1	E475	0.050	mg/kg		0.580	0.488	0.946	0.614	0.495
lead	7439-92-1	E475A	0.010	mg/kg wwt		0.073	0.077	0.121	0.111	0.059

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LBC-1-BIT	LBC-2-BIT	LBC-3-BIT	LBC-4-BIT	LBC-5-BIT
					Client sampling date / time	14-Sep-2021	14-Sep-2021	14-Sep-2021	14-Sep-2021	14-Sep-2021
						WR2101266-006	WR2101266-007	WR2101266-008	WR2101266-009	WR2101266-010
						Result	Result	Result	Result	Result
Metals										
lithium	7439-93-2	E475	0.50	mg/kg		0.57	<0.50	0.91	0.56	<0.50
lithium	7439-93-2	E475A	0.10	mg/kg wwt		<0.10	<0.10	0.12	0.10	<0.10
magnesium	7439-95-4	E475	2.0	mg/kg		1440	1370	1720	1230	1370
magnesium	7439-95-4	E475A	0.40	mg/kg wwt		182	217	220	223	164
manganese	7439-96-5	E475	0.050	mg/kg		331	217	332	297	368
manganese	7439-96-5	E475A	0.010	mg/kg wwt		41.9	34.5	42.4	53.9	44.2
mercury	7439-97-6	E512	0.010	mg/kg		0.065	0.028	0.055	0.055	0.054
mercury	7439-97-6	E512A	0.0020	mg/kg wwt		0.0082	0.0044	0.0071	0.0099	0.0064
molybdenum	7439-98-7	E475	0.040	mg/kg		0.530	1.02	0.665	0.795	0.530
molybdenum	7439-98-7	E475A	0.0080	mg/kg wwt		0.0670	0.161	0.0850	0.144	0.0636
nickel	7440-02-0	E475	0.20	mg/kg		3.53	4.81	5.88	3.72	3.29
nickel	7440-02-0	E475A	0.040	mg/kg wwt		0.447	0.762	0.752	0.674	0.395
phosphorus	7723-14-0	E475	20	mg/kg		8870	8480	7880	7080	9430
phosphorus	7723-14-0	E475A	4.0	mg/kg wwt		1120	1340	1010	1280	1130
potassium	7440-09-7	E475	20	mg/kg		8160	7160	7090	5590	8480
potassium	7440-09-7	E475A	4.0	mg/kg wwt		1030	1140	906	1010	1020
rubidium	7440-17-7	E475	0.050	mg/kg		5.81	4.24	6.92	5.63	7.05
rubidium	7440-17-7	E475A	0.010	mg/kg wwt		0.736	0.671	0.885	1.02	0.846
selenium	7782-49-2	E475	0.10	mg/kg		3.58	3.28	2.97	3.33	3.24
selenium	7782-49-2	E475A	0.020	mg/kg wwt		0.452	0.520	0.380	0.603	0.389
sodium	7440-23-5	E475	20	mg/kg		3480	3410	3270	2440	3880
sodium	7440-23-5	E475A	4.0	mg/kg wwt		441	541	418	442	466
strontium	7440-24-6	E475	0.10	mg/kg		22.4	26.4	24.1	22.5	21.9
strontium	7440-24-6	E475A	0.020	mg/kg wwt		2.84	4.19	3.08	4.08	2.64
tellurium	13494-80-9	E475	0.020	mg/kg		<0.020	<0.020	<0.020	<0.020	<0.020
tellurium	13494-80-9	E475A	0.0040	mg/kg wwt		<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
thallium	7440-28-0	E475	0.0020	mg/kg		0.0160	0.0105	0.0220	0.0189	0.0166
thallium	7440-28-0	E475A	0.00040	mg/kg wwt		0.00202	0.00167	0.00281	0.00342	0.00200
tin	7440-31-5	E475	0.10	mg/kg		<0.10	<0.10	<0.10	<0.10	<0.10
tin	7440-31-5	E475A	0.020	mg/kg wwt		<0.020	<0.020	<0.020	<0.020	<0.020
uranium	7440-61-1	E475	0.0020	mg/kg		0.232	2.04	0.378	0.381	0.236
uranium	7440-61-1	E475A	0.00040	mg/kg wwt		0.0294	0.323	0.0483	0.0689	0.0284

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LBC-1-BIT	LBC-2-BIT	LBC-3-BIT	LBC-4-BIT	LBC-5-BIT
					Client sampling date / time	14-Sep-2021	14-Sep-2021	14-Sep-2021	14-Sep-2021	14-Sep-2021
						WR2101266-006	WR2101266-007	WR2101266-008	WR2101266-009	WR2101266-010
						Result	Result	Result	Result	Result
Metals										
vanadium	7440-62-2	E475	0.10	mg/kg		3.20	3.28	6.47	3.87	2.23
vanadium	7440-62-2	E475A	0.020	mg/kg wwt		0.404	0.520	0.828	0.701	0.268
zinc	7440-66-6	E475	1.0	mg/kg		144	90.5	116	126	137
zinc	7440-66-6	E475A	0.20	mg/kg wwt		18.3	14.3	14.8	22.8	16.4
zirconium	7440-67-7	E475	0.20	mg/kg		0.90	0.84	1.60	1.06	0.77
zirconium	7440-67-7	E475A	0.040	mg/kg wwt		0.114	0.133	0.204	0.192	0.093

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LMC-1-BIT	LMC-2-BIT	LMC-3-BIT	LMC-4-BIT	LMC-5-BIT
					Client sampling date / time	10-Sep-2021	09-Sep-2021	09-Sep-2021	09-Sep-2021	09-Sep-2021
						WR2101266-011	WR2101266-012	WR2101266-013	WR2101266-014	WR2101266-015
						Result	Result	Result	Result	Result
Physical Tests										
moisture	----	E144A	2.0	%		85.9	89.9	87.6	83.1	79.8
Metals										
aluminum	7429-90-5	E475	5.0	mg/kg		653	984	733	812	952
aluminum	7429-90-5	E475A	1.0	mg/kg wwt		91.9	99.5	90.8	137	193
antimony	7440-36-0	E475	0.020	mg/kg		0.035	0.046	0.035	0.041	0.050
antimony	7440-36-0	E475A	0.0040	mg/kg wwt		0.0049	0.0046	0.0043	0.0069	0.0101
arsenic	7440-38-2	E475	0.050	mg/kg		1.25	2.07	1.58	2.04	1.75
arsenic	7440-38-2	E475A	0.010	mg/kg wwt		0.175	0.209	0.195	0.345	0.355
barium	7440-39-3	E475	0.050	mg/kg		23.4	28.0	23.6	31.3	23.9
barium	7440-39-3	E475A	0.010	mg/kg wwt		3.30	2.84	2.92	5.29	4.84
beryllium	7440-41-7	E475	0.010	mg/kg		0.022	0.034	0.024	0.034	0.031
beryllium	7440-41-7	E475A	0.0020	mg/kg wwt		0.0032	0.0034	0.0030	0.0058	0.0064
bismuth	7440-69-9	E475	0.010	mg/kg		<0.010	<0.010	<0.010	<0.010	<0.010
bismuth	7440-69-9	E475A	0.0020	mg/kg wwt		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
boron	7440-42-8	E475	1.0	mg/kg		2.2	1.4	1.7	1.7	<1.0
boron	7440-42-8	E475A	0.20	mg/kg wwt		0.30	<0.20	0.21	0.28	<0.20
cadmium	7440-43-9	E475	0.010	mg/kg		0.157	0.455	0.198	0.342	0.302
cadmium	7440-43-9	E475A	0.0020	mg/kg wwt		0.0222	0.0460	0.0245	0.0578	0.0611
calcium	7440-70-2	E475	20	mg/kg		1810	2060	2000	2170	2610
calcium	7440-70-2	E475A	4.0	mg/kg wwt		255	208	248	367	528
cesium	7440-46-2	E475	0.0050	mg/kg		0.0621	0.0940	0.0783	0.0768	0.0974
cesium	7440-46-2	E475A	0.0010	mg/kg wwt		0.0087	0.0095	0.0097	0.0130	0.0197
chromium	7440-47-3	E475	0.20	mg/kg		2.69	3.47	2.65	3.56	3.42
chromium	7440-47-3	E475A	0.040	mg/kg wwt		0.379	0.351	0.328	0.602	0.693
cobalt	7440-48-4	E475	0.020	mg/kg		0.742	1.12	0.810	1.19	0.859
cobalt	7440-48-4	E475A	0.0040	mg/kg wwt		0.104	0.113	0.100	0.201	0.174
copper	7440-50-8	E475	0.20	mg/kg		13.4	16.2	14.2	17.5	21.7
copper	7440-50-8	E475A	0.040	mg/kg wwt		1.88	1.64	1.76	2.97	4.40
iron	7439-89-6	E475	5.0	mg/kg		1430	2020	1670	1860	1960
iron	7439-89-6	E475A	1.0	mg/kg wwt		201	204	207	314	398
lead	7439-92-1	E475	0.050	mg/kg		0.291	0.455	0.367	0.361	0.422
lead	7439-92-1	E475A	0.010	mg/kg wwt		0.041	0.046	0.045	0.061	0.086

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LMC-1-BIT	LMC-2-BIT	LMC-3-BIT	LMC-4-BIT	LMC-5-BIT
					Client sampling date / time	10-Sep-2021	09-Sep-2021	09-Sep-2021	09-Sep-2021	09-Sep-2021
						WR2101266-011	WR2101266-012	WR2101266-013	WR2101266-014	WR2101266-015
						Result	Result	Result	Result	Result
Metals										
lithium	7439-93-2	E475	0.50	mg/kg		<0.50	0.76	0.57	0.61	0.80
lithium	7439-93-2	E475A	0.10	mg/kg wwt		<0.10	<0.10	<0.10	0.10	0.16
magnesium	7439-95-4	E475	2.0	mg/kg		1210	1320	1200	1230	1330
magnesium	7439-95-4	E475A	0.40	mg/kg wwt		170	133	148	208	269
manganese	7439-96-5	E475	0.050	mg/kg		284	266	288	478	149
manganese	7439-96-5	E475A	0.010	mg/kg wwt		40.0	26.9	35.7	80.8	30.2
mercury	7439-97-6	E512	0.010	mg/kg		0.015	0.020	0.025	0.032	0.026
mercury	7439-97-6	E512A	0.0020	mg/kg wwt		0.0021	0.0021	0.0031	0.0054	0.0052
molybdenum	7439-98-7	E475	0.040	mg/kg		0.793	0.719	0.680	1.02	0.615
molybdenum	7439-98-7	E475A	0.0080	mg/kg wwt		0.112	0.0727	0.0842	0.173	0.124
nickel	7440-02-0	E475	0.20	mg/kg		2.65	3.34	2.50	3.15	2.49
nickel	7440-02-0	E475A	0.040	mg/kg wwt		0.373	0.337	0.310	0.533	0.505
phosphorus	7723-14-0	E475	20	mg/kg		7140	7960	8300	8420	8080
phosphorus	7723-14-0	E475A	4.0	mg/kg wwt		1000	805	1030	1420	1640
potassium	7440-09-7	E475	20	mg/kg		9870	7660	7730	7470	7330
potassium	7440-09-7	E475A	4.0	mg/kg wwt		1390	774	957	1260	1480
rubidium	7440-17-7	E475	0.050	mg/kg		1.84	2.96	3.20	3.56	1.98
rubidium	7440-17-7	E475A	0.010	mg/kg wwt		0.260	0.300	0.396	0.602	0.401
selenium	7782-49-2	E475	0.10	mg/kg		1.16	1.47	1.33	1.72	2.22
selenium	7782-49-2	E475A	0.020	mg/kg wwt		0.164	0.149	0.164	0.292	0.448
sodium	7440-23-5	E475	20	mg/kg		6140	3790	3610	3630	3410
sodium	7440-23-5	E475A	4.0	mg/kg wwt		863	384	447	614	690
strontium	7440-24-6	E475	0.10	mg/kg		16.9	21.9	20.2	22.1	22.5
strontium	7440-24-6	E475A	0.020	mg/kg wwt		2.38	2.21	2.50	3.73	4.56
tellurium	13494-80-9	E475	0.020	mg/kg		<0.020	<0.020	<0.020	<0.020	<0.020
tellurium	13494-80-9	E475A	0.0040	mg/kg wwt		<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
thallium	7440-28-0	E475	0.0020	mg/kg		0.0065	0.0084	0.0061	0.0089	0.0089
thallium	7440-28-0	E475A	0.00040	mg/kg wwt		0.00091	0.00085	0.00076	0.00151	0.00181
tin	7440-31-5	E475	0.10	mg/kg		<0.10	<0.10	<0.10	<0.10	<0.10
tin	7440-31-5	E475A	0.020	mg/kg wwt		<0.020	<0.020	<0.020	<0.020	<0.020
uranium	7440-61-1	E475	0.0020	mg/kg		0.222	0.214	0.152	0.263	0.109
uranium	7440-61-1	E475A	0.00040	mg/kg wwt		0.0312	0.0216	0.0188	0.0445	0.0221

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LMC-1-BIT	LMC-2-BIT	LMC-3-BIT	LMC-4-BIT	LMC-5-BIT
					Client sampling date / time	10-Sep-2021	09-Sep-2021	09-Sep-2021	09-Sep-2021	09-Sep-2021
						WR2101266-011	WR2101266-012	WR2101266-013	WR2101266-014	WR2101266-015
						Result	Result	Result	Result	Result
Metals										
vanadium	7440-62-2	E475	0.10	mg/kg		2.81	4.26	3.55	3.87	4.59
vanadium	7440-62-2	E475A	0.020	mg/kg wwt		0.396	0.431	0.440	0.655	0.930
zinc	7440-66-6	E475	1.0	mg/kg		64.9	89.4	88.8	91.2	66.9
zinc	7440-66-6	E475A	0.20	mg/kg wwt		9.14	9.04	11.0	15.4	13.5
zirconium	7440-67-7	E475	0.20	mg/kg		0.64	0.98	0.70	0.76	0.78
zirconium	7440-67-7	E475A	0.040	mg/kg wwt		0.090	0.099	0.087	0.128	0.159

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LWC-3X-BIT	----	----	----	----
					Client sampling date / time	12-Sep-2021	----	----	----	----
						WR2101266-016	--------	--------	--------	--------
						Result	----	----	----	----
Physical Tests										
moisture	----	E144A	2.0	%		85.2	----	----	----	----
Metals										
aluminum	7429-90-5	E475	5.0	mg/kg		1030	----	----	----	----
aluminum	7429-90-5	E475A	1.0	mg/kg wwt		153	----	----	----	----
antimony	7440-36-0	E475	0.020	mg/kg		0.040	----	----	----	----
antimony	7440-36-0	E475A	0.0040	mg/kg wwt		0.0060	----	----	----	----
arsenic	7440-38-2	E475	0.050	mg/kg		1.66	----	----	----	----
arsenic	7440-38-2	E475A	0.010	mg/kg wwt		0.246	----	----	----	----
barium	7440-39-3	E475	0.050	mg/kg		62.9	----	----	----	----
barium	7440-39-3	E475A	0.010	mg/kg wwt		9.32	----	----	----	----
beryllium	7440-41-7	E475	0.010	mg/kg		0.084	----	----	----	----
beryllium	7440-41-7	E475A	0.0020	mg/kg wwt		0.0124	----	----	----	----
bismuth	7440-69-9	E475	0.010	mg/kg		<0.010	----	----	----	----
bismuth	7440-69-9	E475A	0.0020	mg/kg wwt		<0.0020	----	----	----	----
boron	7440-42-8	E475	1.0	mg/kg		1.5	----	----	----	----
boron	7440-42-8	E475A	0.20	mg/kg wwt		0.22	----	----	----	----
cadmium	7440-43-9	E475	0.010	mg/kg		0.539	----	----	----	----
cadmium	7440-43-9	E475A	0.0020	mg/kg wwt		0.0798	----	----	----	----
calcium	7440-70-2	E475	20	mg/kg		1590	----	----	----	----
calcium	7440-70-2	E475A	4.0	mg/kg wwt		235	----	----	----	----
cesium	7440-46-2	E475	0.0050	mg/kg		0.106	----	----	----	----
cesium	7440-46-2	E475A	0.0010	mg/kg wwt		0.0157	----	----	----	----
chromium	7440-47-3	E475	0.20	mg/kg		6.18	----	----	----	----
chromium	7440-47-3	E475A	0.040	mg/kg wwt		0.917	----	----	----	----
cobalt	7440-48-4	E475	0.020	mg/kg		2.62	----	----	----	----
cobalt	7440-48-4	E475A	0.0040	mg/kg wwt		0.388	----	----	----	----
copper	7440-50-8	E475	0.20	mg/kg		21.1	----	----	----	----
copper	7440-50-8	E475A	0.040	mg/kg wwt		3.12	----	----	----	----
iron	7439-89-6	E475	5.0	mg/kg		2880	----	----	----	----
iron	7439-89-6	E475A	1.0	mg/kg wwt		427	----	----	----	----
lead	7439-92-1	E475	0.050	mg/kg		0.433	----	----	----	----
lead	7439-92-1	E475A	0.010	mg/kg wwt		0.064	----	----	----	----

Analytical Results

Sub-Matrix: **Tissue**
(Matrix: **Biota**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LWC-3X-BIT	----	----	----	----
					Client sampling date / time	12-Sep-2021	----	----	----	----
						WR2101266-016	--------	--------	--------	--------
						Result	----	----	----	----
Metals										
lithium	7439-93-2	E475	0.50	mg/kg		0.74	----	----	----	----
lithium	7439-93-2	E475A	0.10	mg/kg wwt		0.11	----	----	----	----
magnesium	7439-95-4	E475	2.0	mg/kg		2520	----	----	----	----
magnesium	7439-95-4	E475A	0.40	mg/kg wwt		373	----	----	----	----
manganese	7439-96-5	E475	0.050	mg/kg		294	----	----	----	----
manganese	7439-96-5	E475A	0.010	mg/kg wwt		43.6	----	----	----	----
mercury	7439-97-6	E512	0.010	mg/kg		0.025	----	----	----	----
mercury	7439-97-6	E512A	0.0020	mg/kg wwt		0.0037	----	----	----	----
molybdenum	7439-98-7	E475	0.040	mg/kg		1.02	----	----	----	----
molybdenum	7439-98-7	E475A	0.0080	mg/kg wwt		0.152	----	----	----	----
nickel	7440-02-0	E475	0.20	mg/kg		11.0	----	----	----	----
nickel	7440-02-0	E475A	0.040	mg/kg wwt		1.63	----	----	----	----
phosphorus	7723-14-0	E475	20	mg/kg		9290	----	----	----	----
phosphorus	7723-14-0	E475A	4.0	mg/kg wwt		1380	----	----	----	----
potassium	7440-09-7	E475	20	mg/kg		9540	----	----	----	----
potassium	7440-09-7	E475A	4.0	mg/kg wwt		1410	----	----	----	----
rubidium	7440-17-7	E475	0.050	mg/kg		4.82	----	----	----	----
rubidium	7440-17-7	E475A	0.010	mg/kg wwt		0.714	----	----	----	----
selenium	7782-49-2	E475	0.10	mg/kg		3.12	----	----	----	----
selenium	7782-49-2	E475A	0.020	mg/kg wwt		0.462	----	----	----	----
sodium	7440-23-5	E475	20	mg/kg		3160	----	----	----	----
sodium	7440-23-5	E475A	4.0	mg/kg wwt		468	----	----	----	----
strontium	7440-24-6	E475	0.10	mg/kg		18.1	----	----	----	----
strontium	7440-24-6	E475A	0.020	mg/kg wwt		2.68	----	----	----	----
tellurium	13494-80-9	E475	0.020	mg/kg		<0.020	----	----	----	----
tellurium	13494-80-9	E475A	0.0040	mg/kg wwt		<0.0040	----	----	----	----
thallium	7440-28-0	E475	0.0020	mg/kg		0.0110	----	----	----	----
thallium	7440-28-0	E475A	0.00040	mg/kg wwt		0.00164	----	----	----	----
tin	7440-31-5	E475	0.10	mg/kg		<0.10	----	----	----	----
tin	7440-31-5	E475A	0.020	mg/kg wwt		<0.020	----	----	----	----
uranium	7440-61-1	E475	0.0020	mg/kg		0.464	----	----	----	----
uranium	7440-61-1	E475A	0.00040	mg/kg wwt		0.0688	----	----	----	----

Analytical Results

Sub-Matrix: **Tissue** (Matrix: **Biota**)					Client sample ID	**LWC-3X-BIT**	**----**	**----**	**----**	**----**
					Client sampling date / time	12-Sep-2021	----	----	----	----
Analyte	*CAS Number*	*Method*	*LOR*	*Unit*		**WR2101266-016**	--------	--------	--------	--------
						Result	----	----	----	----
Metals										
vanadium	7440-62-2	E475	0.10	mg/kg		5.22	----	----	----	----
vanadium	7440-62-2	E475A	0.020	mg/kg wwt		0.774	----	----	----	----
zinc	7440-66-6	E475	1.0	mg/kg		102	----	----	----	----
zinc	7440-66-6	E475A	0.20	mg/kg wwt		15.2	----	----	----	----
zirconium	7440-67-7	E475	0.20	mg/kg		1.92	----	----	----	----
zirconium	7440-67-7	E475A	0.040	mg/kg wwt		0.285	----	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2101266**	Page	: 1 of 13
Client	: **Minnow Environmental Inc.**	Laboratory	: Whitehorse - Environmental
Contact	: Pierre Stecko	Account Manager	: Can Dang
Address	: 204 – 1006 Fort Street Victoria BC Canada V8V 3K4	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minnow Environmental Inc Project for Minto MInes WUL Program	Date Samples Received	: 15-Sep-2021 15:14
PO	: ----	Issue Date	: 03-Dec-2021 14:33
C-O-C number	: ----		
Sampler	: LBO, SLA		
Site	: ----		
Quote number	: Q79833 - Minnow/Minto		
No. of samples received	: 16		
No. of samples analysed	: 16		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Biota**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Mercury in Biota by CVAAS (DRY units, Biopsy)										
LDPE bag LBC-1-BIT	E512	14-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	79 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Biopsy)										
LDPE bag LBC-2-BIT	E512	14-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	79 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Biopsy)										
LDPE bag LBC-3-BIT	E512	14-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	79 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Biopsy)										
LDPE bag LBC-4-BIT	E512	14-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	79 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Biopsy)										
LDPE bag LBC-5-BIT	E512	14-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	79 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Biopsy)										
LDPE bag LWC-1-BIT	E512	12-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	81 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Biopsy)										
LDPE bag LWC-2-BIT	E512	12-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	81 days	✓

Matrix: **Biota**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Mercury in Biota by CVAAS (DRY units, Biopsy)										
LDPE bag LWC-3-BIT	E512	12-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	81 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Biopsy)										
LDPE bag LWC-3X-BIT	E512	12-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	81 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Biopsy)										
LDPE bag LWC-4-BIT	E512	12-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	81 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Biopsy)										
LDPE bag LWC-5-BIT	E512	11-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	82 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Biopsy)										
LDPE bag LMC-1-BIT	E512	10-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	83 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Biopsy)										
LDPE bag LMC-2-BIT	E512	09-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	84 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Biopsy)										
LDPE bag LMC-3-BIT	E512	09-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	84 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Biopsy)										
LDPE bag LMC-4-BIT	E512	09-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	84 days	✓
Metals : Mercury in Biota by CVAAS (DRY units, Biopsy)										
LDPE bag LMC-5-BIT	E512	09-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	84 days	✓

Matrix: **Biota**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Mercury in Biota by CVAAS (WET units, Biopsy)										
LDPE bag LBC-1-BIT	E512A	14-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	79 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Biopsy)										
LDPE bag LBC-2-BIT	E512A	14-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	79 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Biopsy)										
LDPE bag LBC-3-BIT	E512A	14-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	79 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Biopsy)										
LDPE bag LBC-4-BIT	E512A	14-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	79 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Biopsy)										
LDPE bag LBC-5-BIT	E512A	14-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	79 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Biopsy)										
LDPE bag LWC-1-BIT	E512A	12-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	81 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Biopsy)										
LDPE bag LWC-2-BIT	E512A	12-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	81 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Biopsy)										
LDPE bag LWC-3-BIT	E512A	12-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	81 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Biopsy)										
LDPE bag LWC-3X-BIT	E512A	12-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	81 days	✓

Matrix: **Biota**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Mercury in Biota by CVAAS (WET units, Biopsy)										
LDPE bag LWC-4-BIT	E512A	12-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	81 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Biopsy)										
LDPE bag LWC-5-BIT	E512A	11-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	82 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Biopsy)										
LDPE bag LMC-1-BIT	E512A	10-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	83 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Biopsy)										
LDPE bag LMC-2-BIT	E512A	09-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	84 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Biopsy)										
LDPE bag LMC-3-BIT	E512A	09-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	84 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Biopsy)										
LDPE bag LMC-4-BIT	E512A	09-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	84 days	✓
Metals : Mercury in Biota by CVAAS (WET units, Biopsy)										
LDPE bag LMC-5-BIT	E512A	09-Sep-2021	30-Nov-2021	----	----		01-Dec-2021	365 days	84 days	✓
Metals : Metals by CRC ICPMS (DRY units, Biopsy)										
LDPE bag LBC-1-BIT	E475	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	78 days	✓
Metals : Metals by CRC ICPMS (DRY units, Biopsy)										
LDPE bag LBC-2-BIT	E475	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	78 days	✓

Matrix: **Biota**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Metals by CRC ICPMS (DRY units, Biopsy)										
LDPE bag LBC-3-BIT	E475	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	78 days	✓
Metals : Metals by CRC ICPMS (DRY units, Biopsy)										
LDPE bag LBC-4-BIT	E475	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	78 days	✓
Metals : Metals by CRC ICPMS (DRY units, Biopsy)										
LDPE bag LBC-5-BIT	E475	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	78 days	✓
Metals : Metals by CRC ICPMS (DRY units, Biopsy)										
LDPE bag LWC-1-BIT	E475	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	80 days	✓
Metals : Metals by CRC ICPMS (DRY units, Biopsy)										
LDPE bag LWC-2-BIT	E475	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	80 days	✓
Metals : Metals by CRC ICPMS (DRY units, Biopsy)										
LDPE bag LWC-3-BIT	E475	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	80 days	✓
Metals : Metals by CRC ICPMS (DRY units, Biopsy)										
LDPE bag LWC-3X-BIT	E475	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	80 days	✓
Metals : Metals by CRC ICPMS (DRY units, Biopsy)										
LDPE bag LWC-4-BIT	E475	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	80 days	✓
Metals : Metals by CRC ICPMS (DRY units, Biopsy)										
LDPE bag LWC-5-BIT	E475	11-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	81 days	✓

Matrix: **Biota**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Metals by CRC ICPMS (DRY units, Biopsy)										
LDPE bag LMC-1-BIT	E475	10-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	82 days	✓
Metals : Metals by CRC ICPMS (DRY units, Biopsy)										
LDPE bag LMC-2-BIT	E475	09-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	83 days	✓
Metals : Metals by CRC ICPMS (DRY units, Biopsy)										
LDPE bag LMC-3-BIT	E475	09-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	83 days	✓
Metals : Metals by CRC ICPMS (DRY units, Biopsy)										
LDPE bag LMC-4-BIT	E475	09-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	83 days	✓
Metals : Metals by CRC ICPMS (DRY units, Biopsy)										
LDPE bag LMC-5-BIT	E475	09-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	83 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Biopsy)										
LDPE bag LBC-1-BIT	E475A	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	78 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Biopsy)										
LDPE bag LBC-2-BIT	E475A	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	78 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Biopsy)										
LDPE bag LBC-3-BIT	E475A	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	78 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Biopsy)										
LDPE bag LBC-4-BIT	E475A	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	78 days	✓

Matrix: **Biota**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Metals in Biota by CRC ICPMS (WET units, Biopsy)										
LDPE bag LBC-5-BIT	E475A	14-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	78 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Biopsy)										
LDPE bag LWC-1-BIT	E475A	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	80 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Biopsy)										
LDPE bag LWC-2-BIT	E475A	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	80 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Biopsy)										
LDPE bag LWC-3-BIT	E475A	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	80 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Biopsy)										
LDPE bag LWC-3X-BIT	E475A	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	80 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Biopsy)										
LDPE bag LWC-4-BIT	E475A	12-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	80 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Biopsy)										
LDPE bag LWC-5-BIT	E475A	11-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	81 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Biopsy)										
LDPE bag LMC-1-BIT	E475A	10-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	82 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Biopsy)										
LDPE bag LMC-2-BIT	E475A	09-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	83 days	✓

Matrix: **Biota**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : Metals in Biota by CRC ICPMS (WET units, Biopsy)										
LDPE bag LMC-3-BIT	E475A	09-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	83 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Biopsy)										
LDPE bag LMC-4-BIT	E475A	09-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	83 days	✓
Metals : Metals in Biota by CRC ICPMS (WET units, Biopsy)										
LDPE bag LMC-5-BIT	E475A	09-Sep-2021	30-Nov-2021	----	----		30-Nov-2021	730 days	83 days	✓
Physical Tests : Moisture Content by Gravimetry (Biopsy)										
LDPE bag LBC-1-BIT	E144A	14-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Biopsy)										
LDPE bag LBC-2-BIT	E144A	14-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Biopsy)										
LDPE bag LBC-3-BIT	E144A	14-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Biopsy)										
LDPE bag LBC-4-BIT	E144A	14-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Biopsy)										
LDPE bag LBC-5-BIT	E144A	14-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Biopsy)										
LDPE bag LMC-1-BIT	E144A	10-Sep-2021	----	----	----		12-Nov-2021	----	----	

Matrix: **Biota**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Moisture Content by Gravimetry (Biopsy)										
LDPE bag LMC-2-BIT	E144A	09-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Biopsy)										
LDPE bag LMC-3-BIT	E144A	09-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Biopsy)										
LDPE bag LMC-4-BIT	E144A	09-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Biopsy)										
LDPE bag LMC-5-BIT	E144A	09-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Biopsy)										
LDPE bag LWC-1-BIT	E144A	12-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Biopsy)										
LDPE bag LWC-2-BIT	E144A	12-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Biopsy)										
LDPE bag LWC-3-BIT	E144A	12-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Biopsy)										
LDPE bag LWC-3X-BIT	E144A	12-Sep-2021	----	----	----		12-Nov-2021	----	----	
Physical Tests : Moisture Content by Gravimetry (Biopsy)										
LDPE bag LWC-4-BIT	E144A	12-Sep-2021	----	----	----		12-Nov-2021	----	----	

Matrix: **Biota**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Moisture Content by Gravimetry (Biopsy)										
LDPE bag										
LWC-5-BIT	E144A	11-Sep-2021	----	----	----		12-Nov-2021	----	----	

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Biota**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS)							
Mercury in Biota by CVAAS (DRY units, Biopsy)	E512	343578	2	19	10.5	10.0	✓
Mercury in Biota by CVAAS (WET units, Biopsy)	E512A	343579	2	19	10.5	10.0	✓
Metals by CRC ICPMS (DRY units, Biopsy)	E475	343581	2	19	10.5	10.0	✓
Metals in Biota by CRC ICPMS (WET units, Biopsy)	E475A	343580	2	19	10.5	10.0	✓
Moisture Content by Gravimetry (Biopsy)	E144A	343601	1	19	5.2	5.0	✓
Method Blanks (MB)							
Mercury in Biota by CVAAS (DRY units, Biopsy)	E512	343578	1	19	5.2	5.0	✓
Mercury in Biota by CVAAS (WET units, Biopsy)	E512A	343579	1	19	5.2	5.0	✓
Metals by CRC ICPMS (DRY units, Biopsy)	E475	343581	1	19	5.2	5.0	✓
Metals in Biota by CRC ICPMS (WET units, Biopsy)	E475A	343580	1	19	5.2	5.0	✓
Moisture Content by Gravimetry (Biopsy)	E144A	343601	1	19	5.2	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Moisture Content by Gravimetry (Biopsy)	E144A Vancouver - Environmental	Biota	Puget Sound Water Quality Authority/CCME PHC in Soil - Tier 1	This analysis is carried out gravimetrically by drying the sample at < 60 deg. C for a minimum of three days.
Metals by CRC ICPMS (DRY units, Biopsy)	E475 Vancouver - Environmental	Biota	EPA 200.3/6020B (mod)	Samples are digested with nitric acid, hydrochloric acid, and hydrogen peroxide. Analysis is by Collision/Reaction Cell ICPMS: This method employs a strong acid/peroxide digestion, and is intended to provide a conservative estimate of bio-available metals. Near complete recoveries are achieved for most toxicologically important metals, but elements associated with recalcitrant minerals may be only partially recovered.
Metals in Biota by CRC ICPMS (WET units, Biopsy)	E475A Vancouver - Environmental	Biota	EPA 200.3/6020B (mod)	Samples are digested with nitric acid, hydrochloric acid, and hydrogen peroxide. Analysis is by Collision/Reaction Cell ICPMS. Method Limitation: This method employs a strong acid/peroxide digestion, and is intended to provide a conservative estimate of bio-available metals. Near complete recoveries are achieved for most toxicologically important metals, but elements associated with recalcitrant minerals may be only partially recovered.
Mercury in Biota by CVAAS (DRY units, Biopsy)	E512 Vancouver - Environmental	Biota	EPA 200.3/1631E (mod)	Samples are digested with nitric acid, hydrochloric acid, and hydrogen peroxide. Analysis is by CVAAS.
Mercury in Biota by CVAAS (WET units, Biopsy)	E512A Vancouver - Environmental	Biota	EPA 200.3/1631E (mod)	Samples are homogenized digested with nitric acid, hydrochloric acid, and hydrogen peroxide. Analysis is by CVAAS.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Metals and Mercury Biota Digestion (Biopsy)	EP475 Vancouver - Environmental	Biota	EPA 200.3/200.8 (mod)	Samples are digested with nitric acid, hydrochloric acid, and hydrogen peroxide. Method Limitation: This method employs a strong acid/peroxide digestion, and is intended to provide a conservative estimate of bio-available metals. Near complete recoveries are achieved for most toxicologically important metals, but elements associated with recalcitrant minerals may be only partially recovered.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **WR2101266**	Page	: 1 of 11
Client	: Minnow Environmental Inc.	Laboratory	: Whitehorse - Environmental
Contact	: Pierre Stecko	Account Manager	: Can Dang
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minnow Environmental Inc Project for Minto MInes WUL Program	Date Samples Received	: 15-Sep-2021 15:14
PO	: ----	Date Analysis Commenced	: 12-Nov-2021
C-O-C number	: ----	Issue Date	: 03-Dec-2021 14:33
Sampler	: LBO, SLA		
Site	: ----		
Quote number	: Q79833 - Minnow/Minto		
No. of samples received	: 16		
No. of samples analysed	: 16		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Caleb Deroche	Lab Analyst	Metals, Burnaby, British Columbia
Ragini Saini	Lab Assistant	Metals, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Biota**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 343601)						
moisture	----	E144A	2	%	<2.0	----
Metals (QCLot: 343578)						
mercury	7439-97-6	E512	0.01	mg/kg	<0.010	----
Metals (QCLot: 343579)						
mercury	7439-97-6	E512A	0.002	mg/kg wwt	<0.0020	----
Metals (QCLot: 343580)						
aluminum	7429-90-5	E475A	1	mg/kg wwt	<1.0	----
antimony	7440-36-0	E475A	0.004	mg/kg wwt	<0.0040	----
arsenic	7440-38-2	E475A	0.01	mg/kg wwt	<0.010	----
barium	7440-39-3	E475A	0.01	mg/kg wwt	<0.010	----
beryllium	7440-41-7	E475A	0.002	mg/kg wwt	<0.0020	----
bismuth	7440-69-9	E475A	0.002	mg/kg wwt	<0.0020	----
boron	7440-42-8	E475A	0.2	mg/kg wwt	<0.20	----
cadmium	7440-43-9	E475A	0.002	mg/kg wwt	<0.0020	----
calcium	7440-70-2	E475A	4	mg/kg wwt	<4.0	----
cesium	7440-46-2	E475A	0.001	mg/kg wwt	<0.0010	----
chromium	7440-47-3	E475A	0.04	mg/kg wwt	<0.040	----
cobalt	7440-48-4	E475A	0.004	mg/kg wwt	<0.0040	----
copper	7440-50-8	E475A	0.04	mg/kg wwt	<0.040	----
iron	7439-89-6	E475A	1	mg/kg wwt	<1.0	----
lead	7439-92-1	E475A	0.01	mg/kg wwt	<0.010	----
lithium	7439-93-2	E475A	0.1	mg/kg wwt	<0.10	----
magnesium	7439-95-4	E475A	0.4	mg/kg wwt	<0.40	----
manganese	7439-96-5	E475A	0.01	mg/kg wwt	<0.010	----
molybdenum	7439-98-7	E475A	0.008	mg/kg wwt	<0.0080	----
nickel	7440-02-0	E475A	0.04	mg/kg wwt	<0.040	----
phosphorus	7723-14-0	E475A	4	mg/kg wwt	<4.0	----
potassium	7440-09-7	E475A	4	mg/kg wwt	<4.0	----
rubidium	7440-17-7	E475A	0.01	mg/kg wwt	<0.010	----
selenium	7782-49-2	E475A	0.02	mg/kg wwt	<0.020	----
sodium	7440-23-5	E475A	4	mg/kg wwt	<4.0	----
strontium	7440-24-6	E475A	0.02	mg/kg wwt	<0.020	----
tellurium	13494-80-9	E475A	0.004	mg/kg wwt	<0.0040	----

Sub-Matrix: **Biota**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 343580) - continued						
thallium	7440-28-0	E475A	0.0004	mg/kg wwt	<0.00040	----
tin	7440-31-5	E475A	0.02	mg/kg wwt	<0.020	----
uranium	7440-61-1	E475A	0.0004	mg/kg wwt	<0.00040	----
vanadium	7440-62-2	E475A	0.02	mg/kg wwt	<0.020	----
zinc	7440-66-6	E475A	0.2	mg/kg wwt	<0.20	----
zirconium	7440-67-7	E475A	0.04	mg/kg wwt	<0.040	----
Metals (QCLot: 343581)						
aluminum	7429-90-5	E475	5	mg/kg	<5.0	----
antimony	7440-36-0	E475	0.02	mg/kg	<0.020	----
arsenic	7440-38-2	E475	0.05	mg/kg	<0.050	----
barium	7440-39-3	E475	0.05	mg/kg	<0.050	----
beryllium	7440-41-7	E475	0.01	mg/kg	<0.010	----
bismuth	7440-69-9	E475	0.01	mg/kg	<0.010	----
boron	7440-42-8	E475	1	mg/kg	<1.0	----
cadmium	7440-43-9	E475	0.01	mg/kg	<0.010	----
calcium	7440-70-2	E475	20	mg/kg	<20	----
cesium	7440-46-2	E475	0.005	mg/kg	<0.0050	----
chromium	7440-47-3	E475	0.2	mg/kg	<0.20	----
cobalt	7440-48-4	E475	0.02	mg/kg	<0.020	----
copper	7440-50-8	E475	0.2	mg/kg	<0.20	----
iron	7439-89-6	E475	5	mg/kg	<5.0	----
lead	7439-92-1	E475	0.05	mg/kg	<0.050	----
lithium	7439-93-2	E475	0.5	mg/kg	<0.50	----
magnesium	7439-95-4	E475	2	mg/kg	<2.0	----
manganese	7439-96-5	E475	0.05	mg/kg	<0.050	----
molybdenum	7439-98-7	E475	0.04	mg/kg	<0.040	----
nickel	7440-02-0	E475	0.2	mg/kg	<0.20	----
phosphorus	7723-14-0	E475	20	mg/kg	<20	----
potassium	7440-09-7	E475	20	mg/kg	<20	----
rubidium	7440-17-7	E475	0.05	mg/kg	<0.050	----
selenium	7782-49-2	E475	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E475	20	mg/kg	<20	----
strontium	7440-24-6	E475	0.1	mg/kg	<0.10	----
tellurium	13494-80-9	E475	0.02	mg/kg	<0.020	----
thallium	7440-28-0	E475	0.002	mg/kg	<0.0020	----
tin	7440-31-5	E475	0.1	mg/kg	<0.10	----

Sub-Matrix: **Biota**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 343581) - continued						
uranium	7440-61-1	E475	0.002	mg/kg	<0.0020	----
vanadium	7440-62-2	E475	0.1	mg/kg	<0.10	----
zinc	7440-66-6	E475	1	mg/kg	<1.0	----
zirconium	7440-67-7	E475	0.2	mg/kg	<0.20	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Biota**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 343601)									
moisture	----	E144A	2	%	100 %	99.3	90.0	110	----
Metals (QCLot: 343578)									
mercury	7439-97-6	E512	0.01	mg/kg	0.05 mg/kg	94.4	80.0	120	----
Metals (QCLot: 343579)									
mercury	7439-97-6	E512A	0.002	mg/kg wwt	0.05 mg/kg wwt	94.4	80.0	120	----
Metals (QCLot: 343580)									
aluminum	7429-90-5	E475A	1	mg/kg wwt	50 mg/kg wwt	102	80.0	120	----
antimony	7440-36-0	E475A	0.004	mg/kg wwt	25 mg/kg wwt	102	80.0	120	----
arsenic	7440-38-2	E475A	0.01	mg/kg wwt	25 mg/kg wwt	101	80.0	120	----
barium	7440-39-3	E475A	0.01	mg/kg wwt	6.25 mg/kg wwt	95.7	80.0	120	----
beryllium	7440-41-7	E475A	0.002	mg/kg wwt	2.5 mg/kg wwt	98.1	80.0	120	----
bismuth	7440-69-9	E475A	0.002	mg/kg wwt	25 mg/kg wwt	95.3	80.0	120	----
boron	7440-42-8	E475A	0.2	mg/kg wwt	25 mg/kg wwt	98.5	80.0	120	----
cadmium	7440-43-9	E475A	0.002	mg/kg wwt	2.5 mg/kg wwt	97.5	80.0	120	----
calcium	7440-70-2	E475A	4	mg/kg wwt	1250 mg/kg wwt	94.5	80.0	120	----
cesium	7440-46-2	E475A	0.001	mg/kg wwt	1.25 mg/kg wwt	102	80.0	120	----
chromium	7440-47-3	E475A	0.04	mg/kg wwt	6.25 mg/kg wwt	97.4	80.0	120	----
cobalt	7440-48-4	E475A	0.004	mg/kg wwt	6.25 mg/kg wwt	95.5	80.0	120	----
copper	7440-50-8	E475A	0.04	mg/kg wwt	6.25 mg/kg wwt	94.4	80.0	120	----
iron	7439-89-6	E475A	1	mg/kg wwt	25 mg/kg wwt	97.0	80.0	120	----
lead	7439-92-1	E475A	0.01	mg/kg wwt	12.5 mg/kg wwt	95.3	80.0	120	----
lithium	7439-93-2	E475A	0.1	mg/kg wwt	6.25 mg/kg wwt	101	80.0	120	----
magnesium	7439-95-4	E475A	0.4	mg/kg wwt	1250 mg/kg wwt	97.6	80.0	120	----
manganese	7439-96-5	E475A	0.01	mg/kg wwt	6.25 mg/kg wwt	98.2	80.0	120	----
molybdenum	7439-98-7	E475A	0.008	mg/kg wwt	6.25 mg/kg wwt	103	80.0	120	----
nickel	7440-02-0	E475A	0.04	mg/kg wwt	12.5 mg/kg wwt	93.9	80.0	120	----
phosphorus	7723-14-0	E475A	4	mg/kg wwt	250 mg/kg wwt	107	80.0	120	----
potassium	7440-09-7	E475A	4	mg/kg wwt	1250 mg/kg wwt	95.1	80.0	120	----
rubidium	7440-17-7	E475A	0.01	mg/kg wwt	2.5 mg/kg wwt	103	80.0	120	----
selenium	7782-49-2	E475A	0.02	mg/kg wwt	25 mg/kg wwt	92.0	80.0	120	----
sodium	7440-23-5	E475A	4	mg/kg wwt	1250 mg/kg wwt	98.1	80.0	120	----
strontium	7440-24-6	E475A	0.02	mg/kg wwt	6.25 mg/kg wwt	103	80.0	120	----
tellurium	13494-80-9	E475A	0.004	mg/kg wwt	2.5 mg/kg wwt	97.0	80.0	120	----

Sub-Matrix: **Biota**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 343580) - continued									
thallium	7440-28-0	E475A	0.0004	mg/kg wwt	25 mg/kg wwt	94.7	80.0	120	----
tin	7440-31-5	E475A	0.02	mg/kg wwt	12.5 mg/kg wwt	103	80.0	120	----
uranium	7440-61-1	E475A	0.0004	mg/kg wwt	0.125 mg/kg wwt	98.3	80.0	120	----
vanadium	7440-62-2	E475A	0.02	mg/kg wwt	12.5 mg/kg wwt	99.4	80.0	120	----
zinc	7440-66-6	E475A	0.2	mg/kg wwt	12.5 mg/kg wwt	91.9	80.0	120	----
zirconium	7440-67-7	E475A	0.04	mg/kg wwt	2.5 mg/kg wwt	104	80.0	120	----
Metals (QCLot: 343581)									
aluminum	7429-90-5	E475	5	mg/kg	50 mg/kg	102	80.0	120	----
antimony	7440-36-0	E475	0.02	mg/kg	25 mg/kg	102	80.0	120	----
arsenic	7440-38-2	E475	0.05	mg/kg	25 mg/kg	101	80.0	120	----
barium	7440-39-3	E475	0.05	mg/kg	6.25 mg/kg	95.7	80.0	120	----
beryllium	7440-41-7	E475	0.01	mg/kg	2.5 mg/kg	98.1	80.0	120	----
bismuth	7440-69-9	E475	0.01	mg/kg	25 mg/kg	95.3	80.0	120	----
boron	7440-42-8	E475	1	mg/kg	25 mg/kg	98.5	80.0	120	----
cadmium	7440-43-9	E475	0.01	mg/kg	2.5 mg/kg	97.5	80.0	120	----
calcium	7440-70-2	E475	20	mg/kg	1250 mg/kg	94.5	80.0	120	----
cesium	7440-46-2	E475	0.005	mg/kg	1.25 mg/kg	102	80.0	120	----
chromium	7440-47-3	E475	0.2	mg/kg	6.25 mg/kg	97.4	80.0	120	----
cobalt	7440-48-4	E475	0.02	mg/kg	6.25 mg/kg	95.5	80.0	120	----
copper	7440-50-8	E475	0.2	mg/kg	6.25 mg/kg	94.4	80.0	120	----
iron	7439-89-6	E475	5	mg/kg	25 mg/kg	97.0	80.0	120	----
lead	7439-92-1	E475	0.05	mg/kg	12.5 mg/kg	95.3	80.0	120	----
lithium	7439-93-2	E475	0.5	mg/kg	6.25 mg/kg	101	80.0	120	----
magnesium	7439-95-4	E475	2	mg/kg	1250 mg/kg	97.6	80.0	120	----
manganese	7439-96-5	E475	0.05	mg/kg	6.25 mg/kg	98.2	80.0	120	----
molybdenum	7439-98-7	E475	0.04	mg/kg	6.25 mg/kg	103	80.0	120	----
nickel	7440-02-0	E475	0.2	mg/kg	12.5 mg/kg	93.9	80.0	120	----
phosphorus	7723-14-0	E475	20	mg/kg	250 mg/kg	107	80.0	120	----
potassium	7440-09-7	E475	20	mg/kg	1250 mg/kg	95.1	80.0	120	----
rubidium	7440-17-7	E475	0.05	mg/kg	2.5 mg/kg	103	80.0	120	----
selenium	7782-49-2	E475	0.1	mg/kg	25 mg/kg	92.0	80.0	120	----
sodium	7440-23-5	E475	20	mg/kg	1250 mg/kg	98.1	80.0	120	----
strontium	7440-24-6	E475	0.1	mg/kg	6.25 mg/kg	103	80.0	120	----
tellurium	13494-80-9	E475	0.02	mg/kg	2.5 mg/kg	97.0	80.0	120	----
thallium	7440-28-0	E475	0.002	mg/kg	25 mg/kg	94.7	80.0	120	----
tin	7440-31-5	E475	0.1	mg/kg	12.5 mg/kg	103	80.0	120	----
uranium	7440-61-1	E475	0.002	mg/kg	0.125 mg/kg	98.3	80.0	120	----

Sub-Matrix: **Biota**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Metals (QCLot: 343581) - continued									
vanadium	7440-62-2	E475	0.1	mg/kg	12.5 mg/kg	99.4	80.0	120	----
zinc	7440-66-6	E475	1	mg/kg	12.5 mg/kg	91.9	80.0	120	----
zirconium	7440-67-7	E475	0.2	mg/kg	2.5 mg/kg	104	80.0	120	----

Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix: **Biota**

					Reference Material (RM) Report				
					RM Target	Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Concentration	RM	Low	High	Qualifier
Metals (QCLot: 343578)									
QC-343578-003	RM	mercury	7439-97-6	E512	0.332 mg/kg	93.3	70.0	130	----
Metals (QCLot: 343579)									
QC-343579-003	RM	mercury	7439-97-6	E512A	0.322 mg/kg wwt	96.2	70.0	130	----
Metals (QCLot: 343580)									
QC-343580-003	RM	aluminum	7429-90-5	E475A	1280 mg/kg wwt	104	70.0	130	----
QC-343580-003	RM	arsenic	7440-38-2	E475A	6.87 mg/kg wwt	94.9	70.0	130	----
QC-343580-003	RM	barium	7440-39-3	E475A	4.4 mg/kg wwt	97.7	70.0	130	----
QC-343580-003	RM	boron	7440-42-8	E475A	9.24 mg/kg wwt	91.2	70.0	130	----
QC-343580-003	RM	cadmium	7440-43-9	E475A	0.299 mg/kg wwt	99.4	70.0	130	----
QC-343580-003	RM	calcium	7440-70-2	E475A	2360 mg/kg wwt	94.9	70.0	130	----
QC-343580-003	RM	cesium	7440-46-2	E475A	0.078 mg/kg wwt	91.7	70.0	130	----
QC-343580-003	RM	chromium	7440-47-3	E475A	1.58 mg/kg wwt	97.3	70.0	130	----
QC-343580-003	RM	cobalt	7440-48-4	E475A	0.25 mg/kg wwt	94.0	70.0	130	----
QC-343580-003	RM	copper	7440-50-8	E475A	15.7 mg/kg wwt	91.4	70.0	130	----
QC-343580-003	RM	iron	7439-89-6	E475A	318 mg/kg wwt	108	70.0	130	----
QC-343580-003	RM	lead	7439-92-1	E475A	0.231 mg/kg wwt	99.1	70.0	130	----
QC-343580-003	RM	lithium	7439-93-2	E475A	1.21 mg/kg wwt	88.5	50.0	150	----
QC-343580-003	RM	magnesium	7439-95-4	E475A	910 mg/kg wwt	92.2	70.0	130	----
QC-343580-003	RM	manganese	7439-96-5	E475A	3.17 mg/kg wwt	100	70.0	130	----
QC-343580-003	RM	molybdenum	7439-98-7	E475A	0.29 mg/kg wwt	89.9	70.0	130	----
QC-343580-003	RM	nickel	7440-02-0	E475A	1.34 mg/kg wwt	85.0	70.0	130	----
QC-343580-003	RM	phosphorus	7723-14-0	E475A	8000 mg/kg wwt	98.2	70.0	130	----
QC-343580-003	RM	potassium	7440-09-7	E475A	12840 mg/kg wwt	93.2	70.0	130	----
QC-343580-003	RM	rubidium	7440-17-7	E475A	5.59 mg/kg wwt	99.3	70.0	130	----
QC-343580-003	RM	selenium	7782-49-2	E475A	3.45 mg/kg wwt	98.1	70.0	130	----
QC-343580-003	RM	sodium	7440-23-5	E475A	14000 mg/kg wwt	96.6	70.0	130	----
QC-343580-003	RM	strontium	7440-24-6	E475A	10.1 mg/kg wwt	96.2	70.0	130	----
QC-343580-003	RM	thallium	7440-28-0	E475A	0.0093 mg/kg wwt	92.7	70.0	130	----

Sub-Matrix: **Biota**

					Reference Material (RM) Report				
					RM Target	Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Concentration	RM	Low	High	Qualifier
Metals (QCLot: 343580) - continued									
QC-343580-003	RM	uranium	7440-61-1	E475A	0.0481 mg/kg wwt	90.0	70.0	130	----
QC-343580-003	RM	vanadium	7440-62-2	E475A	1.48 mg/kg wwt	96.7	70.0	130	----
QC-343580-003	RM	zinc	7440-66-6	E475A	46.2 mg/kg wwt	101	70.0	130	----
Metals (QCLot: 343581)									
QC-343581-003	RM	aluminum	7429-90-5	E475	1280 mg/kg	104	70.0	130	----
QC-343581-003	RM	arsenic	7440-38-2	E475	6.87 mg/kg	94.9	70.0	130	----
QC-343581-003	RM	barium	7440-39-3	E475	4.4 mg/kg	97.7	70.0	130	----
QC-343581-003	RM	boron	7440-42-8	E475	9.24 mg/kg	91.2	70.0	130	----
QC-343581-003	RM	cadmium	7440-43-9	E475	0.299 mg/kg	99.4	70.0	130	----
QC-343581-003	RM	calcium	7440-70-2	E475	2360 mg/kg	94.9	70.0	130	----
QC-343581-003	RM	cesium	7440-46-2	E475	0.078 mg/kg	91.7	70.0	130	----
QC-343581-003	RM	chromium	7440-47-3	E475	1.58 mg/kg	97.3	70.0	130	----
QC-343581-003	RM	cobalt	7440-48-4	E475	0.25 mg/kg	94.0	70.0	130	----
QC-343581-003	RM	copper	7440-50-8	E475	15.7 mg/kg	91.4	70.0	130	----
QC-343581-003	RM	iron	7439-89-6	E475	318 mg/kg	108	70.0	130	----
QC-343581-003	RM	lead	7439-92-1	E475	0.231 mg/kg	99.1	70.0	130	----
QC-343581-003	RM	lithium	7439-93-2	E475	1.21 mg/kg	88.5	50.0	150	----
QC-343581-003	RM	magnesium	7439-95-4	E475	910 mg/kg	92.2	70.0	130	----
QC-343581-003	RM	manganese	7439-96-5	E475	3.17 mg/kg	100	70.0	130	----
QC-343581-003	RM	molybdenum	7439-98-7	E475	0.29 mg/kg	89.9	70.0	130	----
QC-343581-003	RM	nickel	7440-02-0	E475	1.34 mg/kg	85.0	70.0	130	----
QC-343581-003	RM	phosphorus	7723-14-0	E475	8000 mg/kg	98.2	70.0	130	----
QC-343581-003	RM	potassium	7440-09-7	E475	12840 mg/kg	93.2	70.0	130	----
QC-343581-003	RM	rubidium	7440-17-7	E475	5.59 mg/kg	99.3	70.0	130	----
QC-343581-003	RM	selenium	7782-49-2	E475	3.45 mg/kg	98.1	70.0	130	----
QC-343581-003	RM	sodium	7440-23-5	E475	14000 mg/kg	96.6	70.0	130	----
QC-343581-003	RM	strontium	7440-24-6	E475	10.1 mg/kg	96.2	70.0	130	----
QC-343581-003	RM	thallium	7440-28-0	E475	0.0093 mg/kg	92.7	70.0	130	----
QC-343581-003	RM	uranium	7440-61-1	E475	0.0481 mg/kg	90.0	70.0	130	----
QC-343581-003	RM	vanadium	7440-62-2	E475	1.48 mg/kg	96.7	70.0	130	----
QC-343581-003	RM	zinc	7440-66-6	E475	46.2 mg/kg	101	70.0	130	----

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Phone:	(250)595-1627 x24 Fax: (250) 595-1625	Email 3: lbowron@minnow.ca	Anal
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Contact:	Ian Smith	LSD:	
Address:	61 Wasson Place, Whitehorse, Yukon Y1A 0H7		
Phone:	867.332.0620 Fax:	Quote #: VA21MINN100-05	
Lab Work Order # (lab use only)		ALS Contact: Can Dang	Sampler: LBO, SLA

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Moisture (%)	High Resolution ICP-MS scan	Mercury in Tissue by CVAFS	**See Complete Quote #VA21MINN100-05	Number of Containers
	LWC-1-BIT	12-Sept-21		Tissue	X	X	X		1
	LWC-2-BIT	12-Sept-21		Tissue	X	X	X		1
	LWC-3-BIT	12-Sept-21		Tissue	X	X	X		1
	LWC-4-BIT	12-Sept-21		Tissue	X	X	X		1
	LWC-5-BIT	11-Sept-21		Tissue	X	X	X		1
	LBC-1-BIT	14-Sept-21		Tissue	X	X	X		1
	LBC-2-BIT	14-Sept-21		Tissue	X	X	X		1
	LBC-3-BIT	14-Sept-21		Tissue	X	X	X		1
	LBC-4-BIT	14-Sept-21		Tissue	X	X	X		1
	LBC-5-BIT	14-Sept-21		Tissue	X	X	X		1
	LMC-1-BIT	10-Sept-21		Tissue	X	X	X		1
	LMC-2-BIT	9-Sept-21		Tissue	X	X	X		1

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details

Small samples. The critical analyte of interest is selenium; please ensure best possible MDLs. Benthic samples.

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SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
Sarah Latimer Lisa Bowron	15-Sep-21	15:01		Aug 15	3:14	9 °C				

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Report To		Report Format / Distribution	Service Requested (Rush for routine analysis subject to availability)
Company:	Minnow Environmental Inc.	☑ Standard ☐ Other	○ Regular (Standard Turnaround Times - Business Days)
Contact:	Pierre Stecko		○ Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT
Address:	204-1006 Fort Street	Email 1: pstecko@minnow.ca	○ Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT
	Victoria, BC	Email 2: slatimer@minnow.ca	◉ Same Day or Weekend Emergency - Contact ALS to Confirm TAT
Phone:	(250)595-1627 x24 Fax: (250) 595-1625	Email 3: lbowron@minnow.ca	
Invoice To	Same as Report ? ☐ Yes ☑ No	Client / Project Information	Analysis Request
Hardcopy of Invoice with Report?	☑ Yes ☐ No	Job #: Minnow Project 21-92	Please indicate below Filtered, Preserved or both (F, P, F/P)
Company:	Minto Exploration Ltd	PO / AFE:	
Contact:	Ian Smith	LSD:	
Address:	61 Wasson Place, Whitehorse, Yukon Y1A 0H7		
Phone:	867.332.0620 Fax:	Quote #: VA21MINN100-05	
Lab Work Order # (lab use only)		ALS Contact: Can Dang	Sampler: LBO, SLA

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Moisture (%)	High Resolution ICP-MS scan	Mercury in Tissue by CVAFS	**See Complete Quote	Number of Containers
	LMC-3-BIT	9-Sept-21		Tissue	X	X	X		1
	LMC-4-BIT	9-Sept-21		Tissue	X	X	X		1
	LMC-5-BIT	9-Sept-21		Tissue	X	X	X		1
	~~LMC-6X-BIT~~	~~Sept-21~~		Tissue	X	X	X		1
	LMC-3X-BIT	12-Sept-21		Tissue	X	X	X		1

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details

Small samples. The critical analyte of interest is selenium; please ensure best possible MDLs. Benthic samples

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SHIPMENT RELEASE (client use)			SHIPMENT RECEPTION (lab use only)				SHIPMENT VERIFICATION (lab use only)			
Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
Sarah Latimer Lisa Bowron	15-Sep-21	15:01		Aug 15	314	9 °C				

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Environmental Division Whitehorse

Work Order Reference

WR2101266

Telephone : +1 867 668 6689

Report To		Report Format / Distribution		Service Requested (Rush for
Company:	Minnow Environmental Inc.	☑ Standard ☐ Other		◉ Regular (Standard Turnaround Tim
Contact:	Pierre Stecko	☑ PDF ☑ Excel ☐ Digital ☐ Fax		○ Priority (2-4 Business Days) - 50%
Address:	204-1006 Fort Street	Email 1:	pstecko@minnow.ca	○ Emergency (1-2 Bus. Days) - 100%
	Victoria, BC	Email 2:	slatimer@minnow.ca	○ Same Day or Weekend Emergency
Phone:	(250)595-1627 x24 Fax: (250) 595-1625	Email 3:	lbowron@minnow.ca	Anal
Invoice To	Same as Report ? ☑ Yes ☐ No	Client / Project Information		Please indicate below Filtere
Hardcopy of Invoice with Report?	☑ Yes ☐ No	Job #:	Minnow Project 21-92	
Company:	Minto Exploration Ltd	PO / AFE:		
Contact:	Ian Smith	LSD:		
Address:	61 Wasson Place, Whitehorse, Yukon Y1A 0H7			
Phone:	867.332.0620 Fax:	Quote #:	VA21MINN100-05	
Lab Work Order # (lab use only)		ALS Contact:	Can Dang	Sampler: LBO, SLA

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Moisture (%)	High Resolution ICP-MS scan	Mercury in Tissue by CVAFS	**See Complete Quote	Number of Containers
	LWC-1-BIT	12 -Sept-21		Tissue	X	X	X		1
	LWC-2-BIT	12 -Sept-21		Tissue	X	X	X		1
	LWC-3-BIT	12 -Sept-21		Tissue	X	X	X		1
	LWC-4-BIT	12 -Sept-21		Tissue	X	X	X		1
	LWC-5-BIT	11 -Sept-21		Tissue	X	X	X		1
	LBC-1-BIT	14 -Sept-21		Tissue	X	X	X		1
	LBC-2-BIT	14 -Sept-21		Tissue	X	X	X		1
	LBC-3-BIT	14 -Sept-21		Tissue	X	X	X		1
	LBC-4-BIT	14 -Sept-21		Tissue	X	X	X		1
	LBC-5-BIT	14 -Sept-21		Tissue	X	X	X		1
	LMC-1-BIT	10 -Sept-21		Tissue	X	X	X		1
	LMC-2-BIT	9 -Sept-21		Tissue	X	X	X		1

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Sarah Latimer Lisa Bowron	15-Sep-21	15:01		Aug 15	3:14	9 °C	JA	16/09/2021	5pm	

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Address:	204-1006 Fort Street	Email 1: pstecko@minnow.ca	○ Emergency (1-2 Bus. Days) - 100% Surcharge - Contact ALS to Confirm TAT
	Victoria, BC	Email 2: slatimer@minnow.ca	◉ Same Day or Weekend Emergency - Contact ALS to Confirm TAT
Phone:	(250)595-1627 x24 Fax: (250) 595-1625	Email 3: lbowron@minnow.ca	
Invoice To	Same as Report ? ☐ Yes ☑ No	**Client / Project Information**	**Analysis Request**
Hardcopy of Invoice with Report?	☑ Yes ☐ No	Job #: Minnow Project 21-92	Please indicate below Filtered, Preserved or both (F, P, F/P)
Company:	Minto Exploration Ltd	PO / AFE:	
Contact:	Ian Smith	LSD:	
Address:	61 Wasson Place, Whitehorse, Yukon Y1A 0H7		
Phone:	867.332.0620 Fax:	Quote #: VA21MINN100-05	
Lab Work Order # (lab use only)		ALS Contact: Can Dang	Sampler: LBO, SLA

Sample #	Sample Identification (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Moisture (%)	High Resolution ICP-MS scan	Mercury in Tissue by CVAFS	**See Complete Quote	Number of Containers
	LMC-3-BIT	9-Sept-21		Tissue	X	X	X		1
	LMC-4-BIT	9-Sept-21		Tissue	X	X	X		1
	LMC-5-BIT	9-Sept-21		Tissue	X	X	X		1
	~~LMC-BIT~~	~~-Sept-21~~		Tissue	X	X	X		1
	LWC-3X-BIT	12-Sept-21		Tissue	X	X	X		1

Special Instructions / Regulations with water or land use (CCME-Freshwater Aquatic Life/BC CSR - Commercial/AB Tier 1 - Natural, etc) / Hazardous Details

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Released by:	Date (dd-mmm-yy)	Time (hh-mm)	Received by:	Date:	Time:	Temperature:	Verified by:	Date:	Time:	Observations: Yes / No ? If Yes add SIF
Sarah Lahmer Lisa Bowron	15-Sep-21	15:01		Aug 15	3/4	9 °C	JA	16/09/2021	5pm	

APPENDIX D

BENTHIC INVERTEBRATE COMMUNITY DATA

Tables & Figures

Laboratory Reports

APPENDIX D

BENTHIC INVERTEBRATE COMMUNITY DATA

Tables & Figures

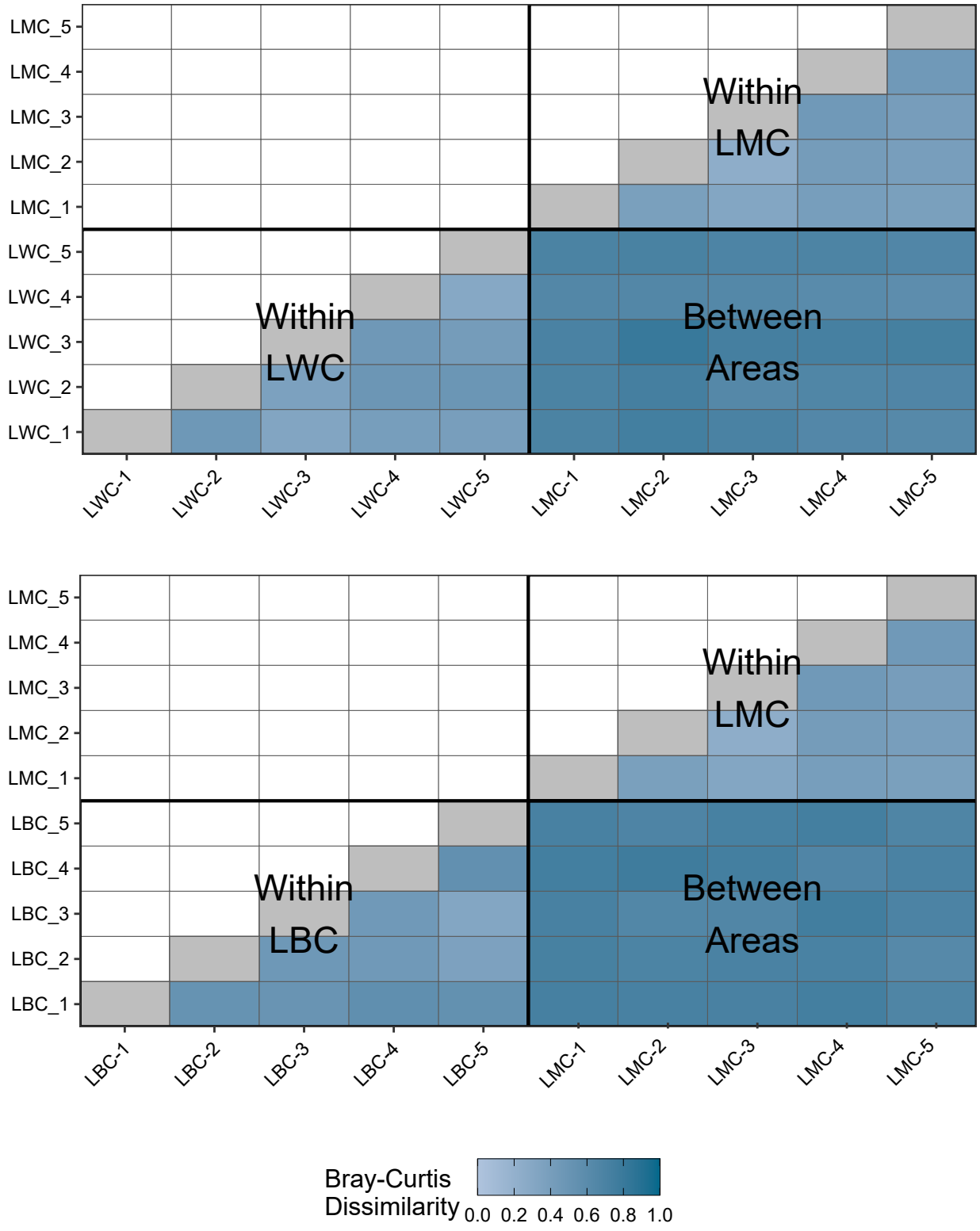


Figure D.1: Heatmap of Lowest Practical Level Benthic Invertebrate Bray-Curtis Dissimilarity among Lower Minto Creek and Reference Areas, Minto Mine AEMP, 2021

Notes: LWC = lower Wolverine Creek (reference), LBC = lower Big Creek (reference), LMC = Lower Minto Creek (exposed).

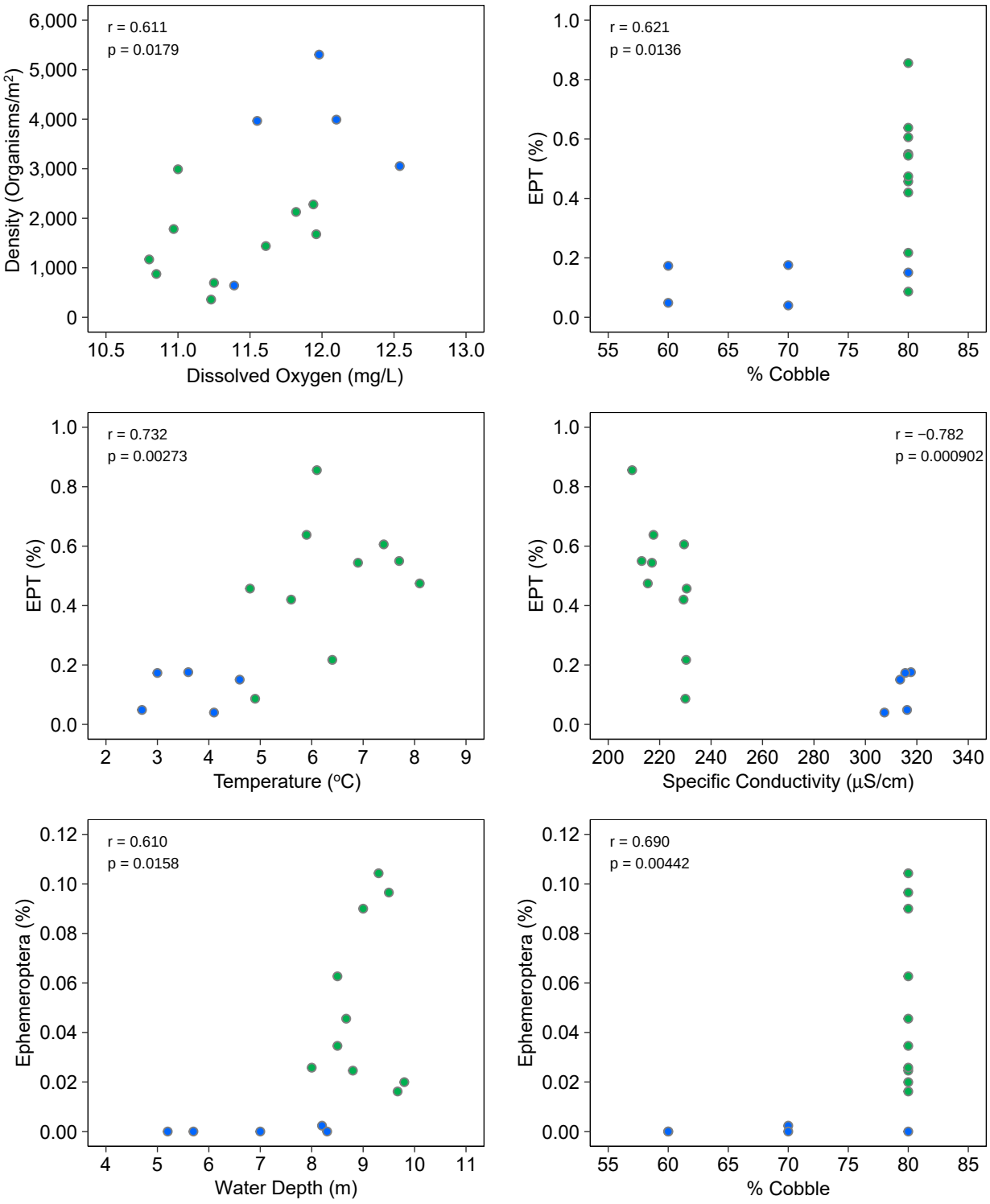


Figure D.2: Scatterplots of Significant Spearman's Correlation Relationships Between Benthic Invertebrate Environmental Measurements and Biological Endpoints, Minto Mine AEMP, 2021

Notes: Green dots represent reference stations (LWC, LBC) and blue dots represent mine−exposed stations (LMC). EPT = Ephemeroptera, Plecoptera, Trichoptera. Correlations that were significantly different (p−value <0.05) and strongly correlated between environmental measures and biological endpoints (rs >= 0.6 or <=−0.6) were presented.)

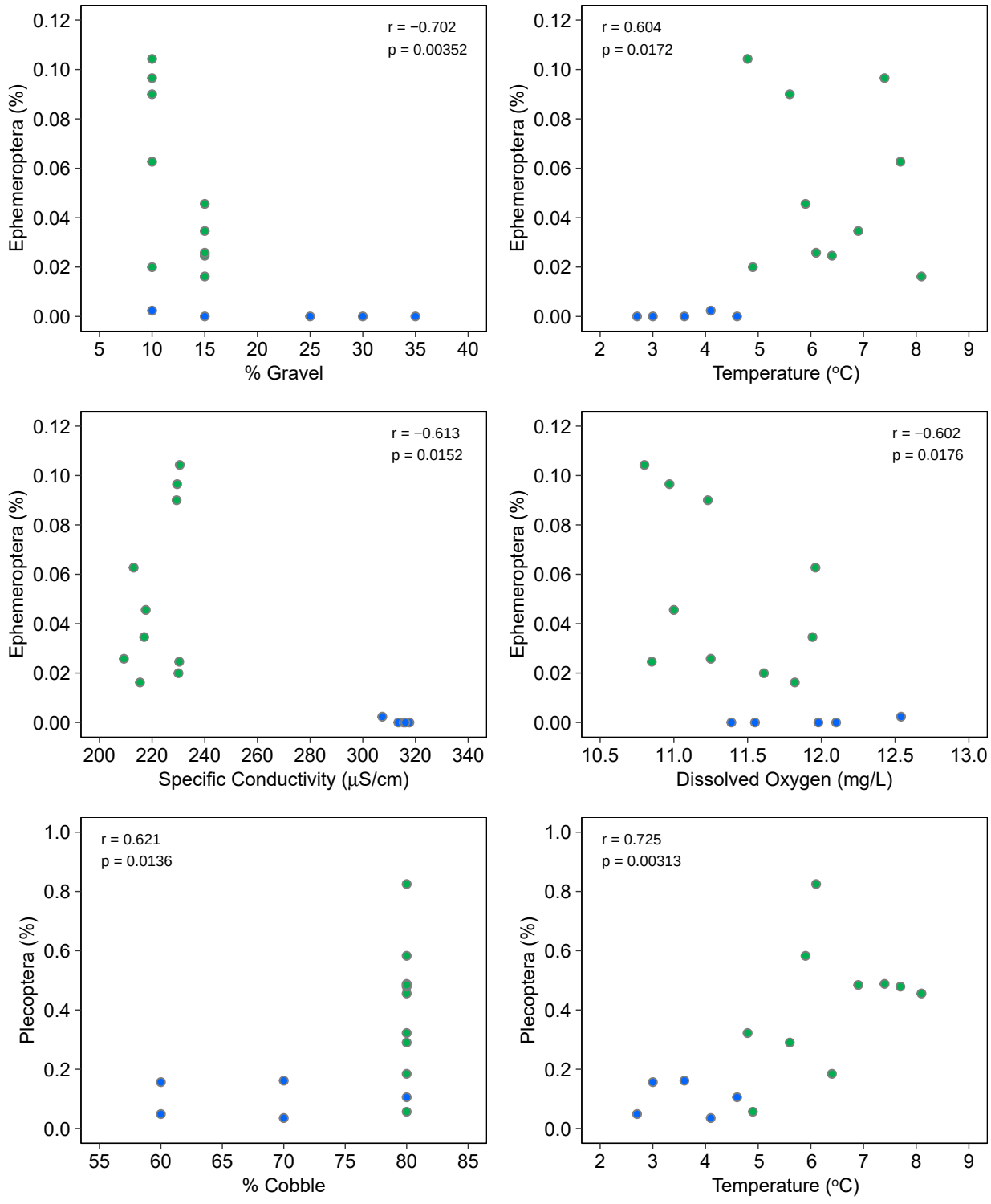
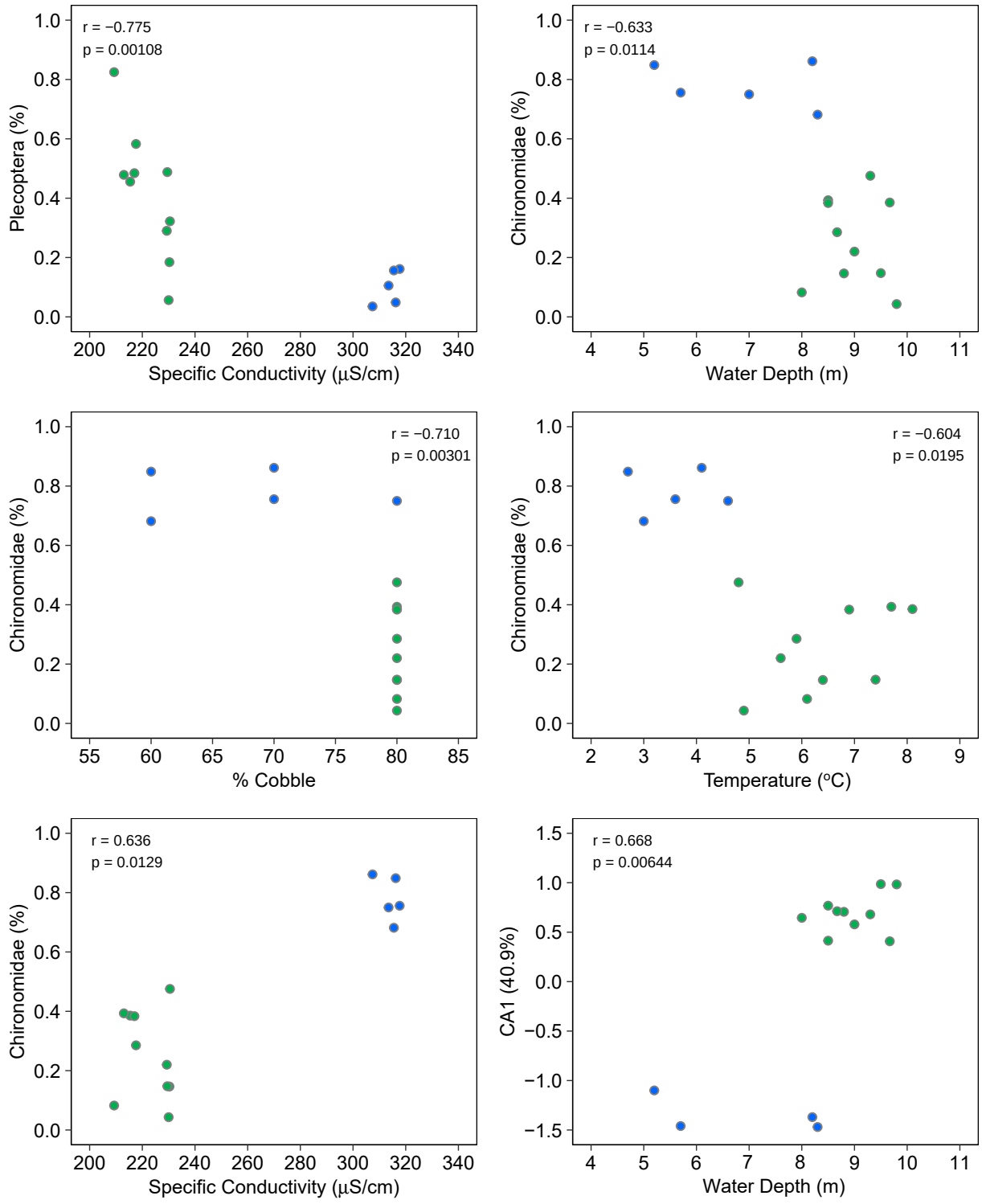


Figure D.2: Scatterplots of Significant Spearman's Correlation Relationships Between Benthic Invertebrate Environmental Measurements and Biological Endpoints, Minto Mine AEMP, 2021

Notes: Green dots represent reference stations (LWC, LBC) and blue dots represent mine−exposed stations (LMC). EPT = Ephemeroptera, Plecoptera, Trichoptera. Correlations that were significantly different (p−value <0.05) and strongly correlated between environmental measures and biological endpoints (rs >= 0.6 or <=−0.6) were presented.)



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Notes: Green dots represent reference stations (LWC, LBC) and blue dots represent mine−exposed stations (LMC). EPT = Ephemeroptera, Plecoptera, Trichoptera. Correlations that were significantly different (p−value <0.05) and strongly correlated between environmental measures and biological endpoints (rs >= 0.6 or <=−0.6) were presented.)

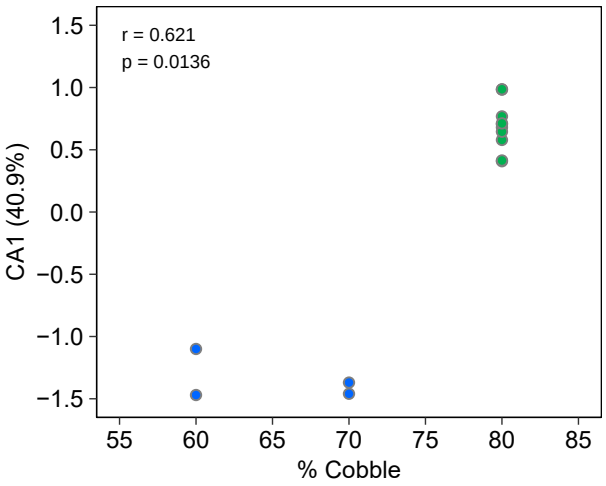

Figure D.2: Scatterplots of Significant Spearman's Correlation Relationships Between Benthic Invertebrate Environmental Measurements and Biological Endpoints, Minto Mine AEMP, 2021

Notes: Green dots represent reference stations (LWC, LBC) and blue dots represent mine−exposed stations (LMC). EPT = Ephemeroptera, Plecoptera, Trichoptera. Correlations that were significantly different (p−value <0.05) and strongly correlated between environmental measures and biological endpoints (rs >= 0.6 or <=−0.6) were presented.)

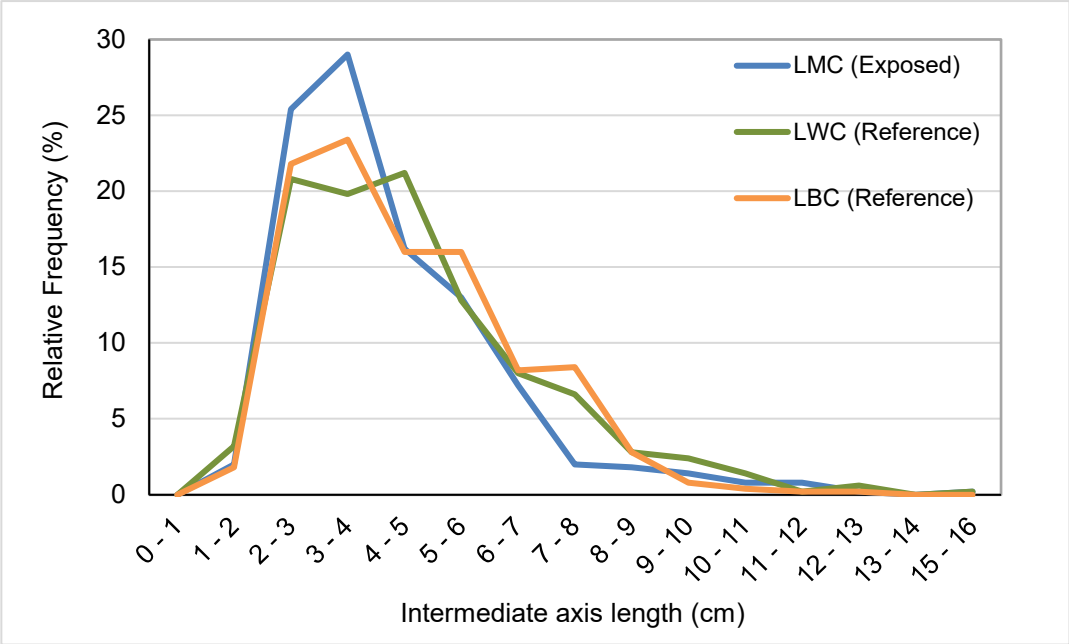

Figure D.3: Intermediate Axis Length of 100 Rocks Measured at Five Benthic Stations in Lower Wolverine Creek, Lower Big Creek, and Lower Minto Creek, Minto Mine, 2021

Table D.1: Benthic Invertebrate Community Metrics by Station, Minto Mine AEMP, 2021[a]

Area	Station	Density (organisms/m^2)	Richness (# of Taxa)	Simpson's Evenness	Simpson's Diversity	EPT (%)	Ephemeroptera (%)	Plecoptera (%)	Trichoptera (%)	Chironomidae (%)	Oligochaeta (%)	Arachnida (%)	CA1 (40.9%)	CA2 (18.1%)
Lower Wolverine Creek (Reference)	LWC-1	875	15	0.163	0.590	21.7	2.46	18.4	0.820	14.6	61.5	0	0.706	-0.187
	LWC-2	358	14	0.395	0.819	42.0	9.00	29.0	4.00	22.0	29.0	0	0.579	-0.464
	LWC-3	1,438	14	0.0990	0.279	8.64	1.99	5.65	0.997	4.32	84.7	0	0.983	-1.43
	LWC-4	1,168	25	0.288	0.861	45.7	10.4	32.2	3.07	47.5	3.99	0.00920	0.680	-1.05
	LWC-5	1,783	21	0.230	0.793	60.6	9.65	48.8	2.14	14.8	23.1	0.00268	0.986	-1.58
Lower Big Creek (Reference)	LBC-1	2,128	26	0.148	0.740	47.4	1.62	45.5	0.270	38.5	10.5	0.0108	0.408	1.51
	LBC-2	1,677	20	0.148	0.662	55.0	6.27	47.9	0.855	39.3	1.99	0	0.414	1.76
	LBC-3	2,280	22	0.158	0.713	54.4	3.46	48.4	2.52	38.4	5.35	0.00314	0.768	0.817
	LBC-4	695	11	0.133	0.314	85.6	2.58	82.5	0.515	8.25	4.64	0	0.645	1.26
	LBC-5	2,989	27	0.104	0.644	63.8	4.56	58.3	0.959	28.5	5.28	0	0.712	1.00
Lower Minto Creek (Exposed)	LMC-1	3,054	16	0.139	0.551	3.99	0.235	3.52	0.235	86.2	9.15	0	-1.37	-0.494
	LMC-2	3,967	22	0.136	0.667	15.1	0	10.5	4.52	75.0	5.12	0.00301	-1.53	-0.156
	LMC-3	3,991	20	0.139	0.640	17.6	0	16.1	1.44	75.6	4.02	0.00287	-1.46	-0.137
	LMC-4	642	14	0.177	0.597	17.3	0	15.6	1.68	68.2	11.7	0	-1.47	-0.233
	LMC-5	5,305	14	0.225	0.682	4.86	0	4.86	0	84.9	7.84	0	-1.10	0.173

Note: EPT = Ephemeroptera, Plecoptera, Trichoptera.

[a] All results displayed at at the lowest practical level (LPL).

Table D.2: Correspondence Analysis Axis Station Scores Using Benthic Invertebrate Abundances at the Lowest Practical Level of Taxonomic Resolution, Minto Mine AEMP, 2021

Area	Exposure	Replicate	CA1 (40.9%)	CA2 (18.1%)
Lower Wolverine Creek (LWC)	Reference	1	0.706	-0.187
		2	0.579	-0.464
		3	0.983	-1.43
		4	0.680	-1.05
		5	0.986	-1.58
Lower Big Creek (LBC)	Reference	1	0.408	1.51
		2	0.414	1.76
		3	0.768	0.817
		4	0.645	1.26
		5	0.712	1.00
Lower Minto Creek (LMC)	Exposed	1	-1.37	-0.494
		2	-1.53	-0.156
		3	-1.46	-0.137
		4	-1.47	-0.233
		5	-1.10	0.173

Note: CA = correspondence analysis.

Table D.3: Taxon Scores of Benthic Invertebrate Correspondence Analysis (CA) of Taxa Relative Densities, Minto Mine AEMP, 2021

Order or Higher	Family	Taxa	CA1 (40.9%)	CA2 (18.1%)
Oligochaeta	Lumbriculidae	-	0.0461	-0.0864
	Naididae	Tubificinae	-1.21	-0.167
Diptera	Chironomidae	*Brillia*	0.399	-0.0713
		Diamesa	0.0178	0.208
		Eukiefferiella	-0.795	-0.179
		Limnophyes	-0.953	0.153
		Micropsectra	-0.372	0.420
		Orthocladius complex	-0.0150	0.110
		Rheotanytarsus	0.578	1.25
		Pagastia	-0.0791	-0.183
	Empididae	Clinocerinae	0.687	0.108
		Neoplasta	0.757	0.0649
	Tipulidae	*Dicranota*	-0.286	0.0472
	Simuliidae	*Simulium*	0.650	0.845
Ephemeroptera	Baetidae	*Baetis*	0.774	-0.341
	Ephemerellidae	*Drunella doddsii*	0.451	-1.18
	Heptageniidae	-	0.688	0.237
Plecoptera	Capniidae	-	0.488	0.444
	Nemouridae	*Zapada cinctipes*	0.785	-0.784
		Nemoura	-1.46	-0.237
		Ostrocerca	-1.38	-0.150
	Perlodidae	*Isoperla*	0.985	-1.53
		-	0.784	-0.549
Trichoptera	Limnephilidae	-	-0.316	-0.139
	Rhyacophilidae	*Rhyacophila*	0.824	-0.707

Notes: "CA" = correspondence analysis, "-" = no further taxonomic resolution for the purpose of this analysis. Taxa present at two or fewer samples or accounted for less than 15% of the total abundace at any station were removed from the analysis

Table D.4: Intermediate Axis Length and Embeddedness of 100 Cobble Washed at Benthic Invertebrate Sampling Stations, Minto Mine, September 2021

Cobble Number	LWC-1		LWC-2		LWC-3		LWC-4	
	Intermediate Axis Length (cm)	Embeddedness (%)	Intermediate Axis Length (cm)	Embeddedness (%)	Intermediate Axis Length (cm)	Embeddedness (%)	Intermediate Axis Length (cm)	Embeddedness (%)
1	12.5		10.0		3.9		9.3	
2	10.4		7.4		4.4		8.9	
3	7.2		5.5		5.3		6.6	
4	7.4		5.5		2.2		7.6	
5	4.4		2.2		5.0		6.9	
6	9.4		4.0		5.7		6.0	
7	6.9		4.4		5.1		8.0	
8	8.4		3.4		2.2		6.7	
9	7.4		3.5		5.5		10.4	
10	5.0	0	6.9	0	3.5	25	5.8	0
11	6.2		5.9		5.0		3.6	
12	5.4		5.3		2.4		7.5	
13	4.5		6.7		2.2		7.0	
14	5.9		5.8		7.6		3.7	
15	5.4		7.0		4.3		3.6	
16	4.3		3.5		6.0		4.1	
17	3.7		3.8		3.5		8.6	
18	3.9		4.0		6.1		15.2	
19	5.9		3.0		2.3		6.8	
20	12.5	25	5.5	0	3.9	50	5.7	25
21	4.0		5.3		3.1		7.1	
22	3.7		4.4		2.7		8.3	
23	3.7		2.1		2.6		8.2	
24	6.4		5.7		1.9		4.2	
25	2.8		7.2		2.2		5.2	
26	3.9		4.4		2.3		1.9	
27	4.5		5.0		5.1		3.3	
28	4.0		2.0		6.2		4.2	
29	4.5		3.9		2.5		3.6	
30	8.0	0	7.0	25	2.3	25	5.3	50
31	4.2		8.0		3.5		9.1	
32	4.3		3.0		8.0		5.2	
33	4.0		4.3		4.6		4.5	
34	4.2		5.4		5.0		9.2	
35	3.0		6.8		3.5		4.2	
36	2.9		4.7		4.1		10.1	
37	4.4		3.7		2.3		3.6	
38	3.0		6.7		10.2		5.5	
39	4.2		4.0		3.6		4.2	
40	3.3	0	12.0	50	2.6	0	4.6	25
41	2.0		4.0		5.1		7.0	
42	2.0		7.0		2.5		4.0	
43	4.3		4.7		3.1		3.3	
44	3.5		6.9		3.5		2.1	
45	2.6		3.9		4.3		4.6	
46	2.0		4.7		4.8		3.3	
47	1.5		5.5		4.8		4.0	
48	2.4		3.0		1.9		7.0	
49	5.7		4.9		6.3		3.4	
50	8.5	25	5.8	0	2.1	0	3.0	25
51	5.2		4.5		2.4		2.5	
52	9.0		4.0		2.3		4.3	
53	5.4		3.7		2.3		2.3	
54	5.6		2.5		2.1		5.6	
55	8.0		3.0		2.3		3.9	
56	4.0		5.2		3.0		4.9	
57	3.7		2.9		2.3		6.6	
58	4.0		4.8		2.1		4.6	
59	4.0		2.9		1.9		4.0	
60	2.5	0	2.9	0	2.0	0	3.2	0
61	4.0		3.1		2.0		3.5	
62	4.5		4.0		3.2		4.1	
63	2.5		4.3		4.3		1.9	
64	5.0		3.0		7.0		2.4	
65	9.0		2.8		7.3		2.0	
66	3.6		4.0		5.5		4.1	
67	4.5		3.0		5.4		2.0	
68	5.0		2.5		3.6		3.8	
69	7.4		2.6		3.8		3.1	
70	4.5	0	4.3	25	4.7	25	2.1	0
71	4.5		7.7		2.5		2.4	
72	3.5		4.3		4.8		1.9	
73	3.6		3.7		5.1		2.2	
74	2.8		3.5		3.3		2.0	
75	3.2		7.4		2.2		2.3	
76	4.0		6.6		2.6		2.7	
77	5.2		7.0		6.7		2.6	
78	4.7		9.1		2.3		3.4	
79	2.2		4.9		5.0		2.6	
80	3.9	50	8.8	25	4.8	0	2.7	0
81	2.4		6.1		4.8		2.5	
82	3.0		6.3		2.9		2.0	
83	3.0		5.2		5.0		2.7	
84	4.9		3.8		5.8		2.2	
85	3.0		4.3		2.3		2.0	
86	2.8		6.5		3.0		6.2	
87	4.5		2.4		2.2		6.8	
88	3.0		1.7		2.0		5.0	
89	3.5		6.0		1.9		7.0	
90	2.9	0	7.5	75	4.0	0	4.0	0
91	4.0		4.2		6.3		6.0	
92	3.4		2.9		1.9		4.4	
93	2.4		3.0		7.1		5.1	
94	3.6		4.0		6.1		5.2	
95	3.1		4.5		3.6		6.7	
96	4.0		4.0		4.6		6.6	
97	2.4		3.5		5.6		5.0	
98	3.0		3.0		4.0		3.4	
99	2.7		2.9		4.0		7.0	
100	2.9	0	10.5	50	6.1	25	2.6	25
Minimum	**1.5**		**1.7**		**1.9**		**1.9**	
Maximum	**12.5**		**12.0**		**10.2**		**15.2**	
Mean	**4.6**		**4.8**		**3.9**		**4.8**	
Geometric mean	**4.2**		**4.5**		**3.6**		**4.3**	
Median	**4.0**	**0.0**	**4.4**	**25.0**	**3.6**	**12.5**	**4.2**	**12.5**

Notes: Intermediate axis length is the second longest axis on a cobble. Embeddedness refers to how deeply the cobble is surrounded or buried by other substrate. Embeddedness was measured for every 10th (n=10) cobble.

Table D.4: Intermediate Axis Length and Embeddedness of 100 Cobble Washed at Benthic Invertebrate Sampling Stations, Minto Mine, September 2021

Cobble Number	LWC-5		LBC-1		LBC-2		LBC-3	
	Intermediate Axis Length (cm)	Embeddedness (%)	Intermediate Axis Length (cm)	Embeddedness (%)	Intermediate Axis Length (cm)	Embeddedness (%)	Intermediate Axis Length (cm)	Embeddedness (%)
1	5.5		9.0		3.7		7.7	
2	3.1		7.0		8.2		7.6	
3	5.0		5.0		6.9		7.5	
4	4.7		4.4		7.6		4.2	
5	1.9		2.4		4.8		4.1	
6	9.0		7.0		10.0		3.2	
7	2.7		8.2		5.5		3.2	
8	4.5		4.8		5.1		2.7	
9	9.4		5.8		7.3		3.4	
10	7.3	25	3.5	0	5.6	0	4.8	0
11	7.7		3.6		5.7		2.6	
12	8.2		8.6		2.6		4.8	
13	3.5		3.2		2.3		2.3	
14	4.8		3.5		3.7		4.0	
15	3.2		5.5		3.7		6.0	
16	4.0		3.5		4.6		4.1	
17	3.7		2.7		3.4		3.5	
18	6.2		4.5		4.4		3.6	
19	3.1		6.2		2.0		4.2	
20	1.9	25	2.1	0	2.4	0	2.7	0
21	1.9		2.8		4.6		5.6	
22	3.1		1.9		6.9		3.2	
23	4.1		2.7		4.6		4.7	
24	6.5		1.9		5.0		5.0	
25	2.6		2.3		4.7		3.2	
26	5.2		4.9		3.2		7.9	
27	7.0		10.5		4.5		5.7	
28	8.0		3.5		3.2		2.7	
29	4.4		3.0		4.8		3.4	
30	6.2	0	3.9	25	6.0	25	2.0	0
31	5.5		6.5		3.0		2.1	
32	6.0		8.2		3.6		2.5	
33	4.7		7.2		4.3		2.5	
34	5.8		2.1		3.4		3.0	
35	5.3		2.2		3.7		5.4	
36	10.7		2.3		4.8		3.6	
37	4.0		7.8		3.7		2.1	
38	3.0		7.0		5.6		5.5	
39	3.1		5.8		4.8		3.5	
40	5.1	0	5.3	75	4.4	0	4.4	25
41	2.6		7.3		4.5		5.2	
42	2.1		6.5		7.2		3.2	
43	5.2		6.7		6.4		5.3	
44	6.7		2.0		4.0		2.4	
45	9.4		5.2		2.4		5.7	
46	4.6		2.0		7.4		3.7	
47	4.0		7.0		4.6		7.5	
48	2.5		1.7		2.2		3.7	
49	2.0		3.4		9.2		3.2	
50	3.5	50	2.3	0	5.6	25	2.4	0
51	3.2		3.2		8.0		4.9	
52	4.2		3.7		6.0		5.2	
53	3.0		2.6		5.0		2.6	
54	2.5		5.0		4.4		4.1	
55	2.0		5.5		6.5		4.0	
56	2.0		7.2		4.2		7.3	
57	2.0		3.6		4.6		2.8	
58	2.3		4.1		7.0		4.1	
59	2.6		6.5		5.0		2.0	
60	2.3	0	8.3	0	2.6	25	5.0	25
61	3.2		7.0		2.7		3.6	
62	9.7		5.7		3.1		5.2	
63	6.3		2.7		7.5		4.0	
64	7.2		4.3		3.7		2.5	
65	3.3		4.1		2.0		2.1	
66	7.7		3.7		2.8		3.1	
67	3.1		6.1		5.0		2.8	
68	4.2		2.6		5.1		3.5	
69	2.7		3.9		4.0		4.5	
70	3.0	0	3.7	0	5.2	25	3.0	25
71	1.9		2.8		8.5		2.2	
72	2.7		3.9		6.2		2.6	
73	3.0		2.7		2.3		3.8	
74	2.7		5.5		3.4		2.3	
75	4.2		2.8		5.3		1.9	
76	3.7		3.1		3.6		3.0	
77	4.0		3.1		5.0		3.7	
78	5.1		4.5		4.6		5.3	
79	3.1		2.6		7.7		4.5	
80	3.3	25	3.1	25	7.0	50	3.5	0
81	2.4		3.7		6.5		2.8	
82	4.1		4.0		4.2		2.0	
83	4.1		3.0		3.6		2.0	
84	9.5		3.8		2.7		2.0	
85	7.7		2.7		4.6		2.1	
86	3.7		3.1		5.4		5.4	
87	5.0		2.6		5.1		3.8	
88	11.3		2.7		6.5		4.8	
89	5.7		2.6		3.6		2.4	
90	4.1	50	2.6	50	2.8	0	4.5	50
91	2.8		5.0		2.9		3.7	
92	2.1		3.5		5.0		3.2	
93	1.9		4.0		4.4		3.3	
94	2.5		3.0		7.2		3.2	
95	1.9		4.0		7.8		2.2	
96	7.0		6.2		8.2		2.4	
97	6.2		6.5		5.0		2.0	
98	4.0		6.0		2.1		5.5	
99	7.4		5.5		4.1		5.5	
100	6.1	50	5.0	25	3.6	0	5.0	0
Minimum	**1.9**		**1.7**		**2.0**		**1.9**	
Maximum	**11.3**		**10.5**		**10.0**		**7.9**	
Mean	**4.5**		**4.4**		**4.9**		**3.8**	
Geometric mean	**4.1**		**4.0**		**4.5**		**3.6**	
Median	**4.0**	**25.0**	**3.9**	**12.5**	**4.6**	**12.5**	**3.6**	**0.0**

Notes: Intermediate axis length is the second longest axis on a cobble. Embeddedness refers to how deeply the cobble is surrounded or buried by other substrate. Embeddedness was measured for every 10th (n=10) cobble.

Table D.4: Intermediate Axis Length and Embeddedness of 100 Cobble Washed at Benthic Invertebrate Sampling Stations, Minto Mine, September 2021

Cobble Number	LBC-4		LBC-5		LMC-1		LMC-2	
	Intermediate Axis Length (cm)	Embeddedness (%)	Intermediate Axis Length (cm)	Embeddedness (%)	Intermediate Axis Length (cm)	Embeddedness (%)	Intermediate Axis Length (cm)	Embeddedness (%)
1	4.2		7.1		15.0		11.1	
2	5.2		7.7		12.6		10.6	
3	6.5		4.0		8.4		5.8	
4	7.0		5.5		9.5		9.6	
5	5.0		12.7		5.2		3.6	
6	5.3		7.4		5.1		3.4	
7	3.3		5.1		5.2		5.2	
8	3.3		5.4		7.6		6.0	
9	2.1		2.5		5.1		3.5	
10	5.5	0	3.0	0	4.0	25	6.7	25
11	3.5		8.0		4.5		8.1	
12	2.6		4.1		7.2		6.2	
13	3.9		5.3		5.0		4.3	
14	7.1		5.6		8.0		3.8	
15	7.2		2.8		6.5		3.1	
16	4.3		7.0		4.1		5.0	
17	2.2		5.4		5.1		4.1	
18	2.1		2.0		4.0		5.2	
19	2.2		2.2		5.6		6.7	
20	2.7	25	2.6	0	3.7	75	3.5	50
21	4.7		2.1		4.2		2.4	
22	5.0		2.9		9.5		2.7	
23	2.9		3.3		3.3		4.6	
24	2.8		2.6		2.0		5.2	
25	3.0		2.0		3.4		4.5	
26	3.4		1.9		4.9		5.3	
27	3.1		5.5		4.5		5.2	
28	5.9		4.3		2.6		2.6	
29	4.6		3.4		2.6		6.3	
30	3.4	25	6.1	25	3.0	0	4.6	50
31	4.9		2.7		3.0		5.2	
32	6.2		2.5		3.4		11.0	
33	6.4		5.4		3.4		2.7	
34	6.2		5.4		3.7		2.2	
35	5.5		1.9		6.4		2.8	
36	5.0		2.1		8.6		5.4	
37	6.8		6.5		5.6		7.0	
38	6.0		3.0		4.7		3.1	
39	7.0		7.1		10.8		5.7	
40	5.6	50	4.4	0	6.5	50	3.7	0
41	6.9		5.5		6.6		3.2	
42	7.0		6.7		11.5		3.9	
43	5.2		3.9		9.0		4.4	
44	5.5		6.8		3.6		2.4	
45	3.4		3.9		5.7		5.3	
46	6.0		2.4		9.4		2.7	
47	4.8		5.2		9.0		5.0	
48	2.2		3.2		3.9		3.5	
49	2.3		1.9		6.3		2.1	
50	5.3	25	3.7	50	4.9	25	5.5	0
51	7.2		3.2		10.0		4.5	
52	3.3		3.0		5.1		5.5	
53	2.6		6.4		5.1		2.7	
54	5.7		3.0		3.6		3.0	
55	4.7		5.9		4.6		5.1	
56	6.2		3.3		4.7		4.1	
57	8.1		3.0		6.2		5.7	
58	2.0		4.3		10.1		4.2	
59	3.0		3.3		8.3		3.0	
60	4.1	50	1.9	50	5.7	75	3.1	75
61	3.6		6.1		6.0		4.7	
62	4.2		3.3		8.0		4.9	
63	9.0		2.7		5.0		5.0	
64	6.0		9.1		6.6		2.2	
65	6.3		7.0		4.6		1.9	
66	3.3		5.1		5.0		2.4	
67	5.6		6.2		2.1		2.0	
68	2.3		3.5		2.9		2.3	
69	5.7		5.0		5.2		3.8	
70	3.1	0	2.1	0	5.0	50	5.0	25
71	6.0		2.9		3.4		3.0	
72	4.2		1.9		2.6		3.2	
73	3.0		5.6		3.1		4.4	
74	3.7		4.0		4.8		4.2	
75	3.3		4.0		6.5		2.9	
76	4.3		3.0		3.7		3	
77	4.7		11.8		3.0		4.3	
78	5.2		3.4		2.5		3.7	
79	2.1		3.4		4.1		2.2	
80	2.8	25	2.6	0	6.8	75	2.8	0
81	3.0		3.0		1.9		3.6	
82	2.5		2.5		6.5		2.8	
83	3.7		3.0		4.5		2.7	
84	2.7		8.1		3.6		7.5	
85	7.4		4.3		2.3		8.0	
86	7.6		4.2		3.0		5.1	
87	7.1		7.0		3.7		5.2	
88	6.5		8.4		5.7		3.0	
89	4.6		3.3		7.0		3.3	
90	5.1	50	7.0	25	3.1	50	6.2	25
91	6.5		4.2		4.4		5.7	
92	2.3		2.5		5.5		6.7	
93	3.9		3.5		11.9		4.2	
94	3.9		8.0		5.2		4.8	
95	4.3		2.8		4.6		4.1	
96	2.8		2.8		2.9		3.5	
97	8.6		5.0		8.0		6.8	
98	4.7		3.8		6.0		5.7	
99	4.7		3.8		3.4		2.9	
100	4.3	0	6.0	0	3.8	75	3.5	75
Minimum	**2.0**		**1.9**		**1.9**		**1.9**	
Maximum	**9.0**		**12.7**		**15.0**		**11.1**	
Mean	**4.6**		**4.5**		**5.5**		**4.5**	
Geometric mean	**4.3**		**4.0**		**5.0**		**4.2**	
Median	**4.7**	**25.0**	**3.9**	**0.0**	**5.0**	**50.0**	**4.2**	**25.0**

Notes: Intermediate axis length is the second longest axis on a cobble. Embeddedness refers to how deeply the cobble is surrounded or buried by other substrate. Embeddedness was measured for every 10th (n=10) cobble.

Table D.4: Intermediate Axis Length and Embeddedness of 100 Cobble Washed at Benthic Invertebrate Sampling Stations, Minto Mine, September 2021

Cobble Number	LMC-3		LMC-4		LMC-5	
	Intermediate Axis Length (cm)	Embeddedness (%)	Intermediate Axis Length (cm)	Embeddedness (%)	Intermediate Axis Length (cm)	Embeddedness (%)
1	6.5		6.7		6.4	
2	5.1		4.1		7.2	
3	6.1		6.1		3.4	
4	5.7		3.1		4.2	
5	9.5		6.0		5.4	
6	4.5		5.1		3.2	
7	4.4		3.0		3.5	
8	4.1		3.9		2.7	
9	4.6		3.2		3.1	
10	4.9	75	4.9	0	3.6	75
11	3.5		3.6		5.4	
12	5.1		5.1		2.2	
13	6.5		3.9		2.0	
14	3.9		2.7		1.9	
15	6.1		6.8		2.9	
16	4.6		5.9		2.5	
17	5.1		5.9		4.0	
18	3.5		5.1		3.7	
19	3.6		3.5		3.0	
20	4.3	25	4.5	0	3.3	25
21	2.2		3.2		2.5	
22	5.5		3.8		5.7	
23	7.4		2.5		2.8	
24	2.8		3.2		3.8	
25	2.4		2.8		1.9	
26	2.9		5.6		3.7	
27	4.5		3.2		3.6	
28	7.3		5.1		2.9	
29	2.5		3.7		2.7	
30	3.4	0	3.5	50	4.0	25
31	6.0		3.5		2.1	
32	5.5		2.9		3.5	
33	2.0		3.7		2.1	
34	2.8		3.4		2.0	
35	6.8		2.7		3.2	
36	3.7		2.8		2.5	
37	2.5		4.0		4.0	
38	2.5		4.2		4.0	
39	2.2		3.2		4.4	
40	3.6	75	3.0	25	4.6	0
41	3.8		4.0		3.1	
42	3.2		4.2		4.5	
43	3.9		3.6		3.6	
44	2.3		2.9		3.1	
45	4.1		3.0		3.1	
46	3.7		3.2		4.1	
47	4.5		3.0		2.8	
48	3.4		3.1		4.4	
49	4.3		4.1		2.6	
50	5.7	0	3.0	25	2.7	0
51	4.8		3.5		2.1	
52	2.7		3.0		2.3	
53	7.9		3.7		3.7	
54	2.6		2.8		4.9	
55	2.0		3.3		8.0	
56	3.5		4.1		3.0	
57	2.9		3.0		2.5	
58	2.8		2.3		4.6	
59	4.0		4.2		3.1	
60	2.8	75	6.5	0	2.2	50
61	2.2		5.0		2.1	
62	6.5		3.0		4.3	
63	3.0		2.8		2.4	
64	3.9		2.9		3.6	
65	6.2		3.5		2.4	
66	3.6		2.9		2.7	
67	4.0		3.1		2.7	
68	1.9		2.9		1.9	
69	1.9		3.5		3.5	
70	3.2	25	4.5	50	2.3	75
71	4.3		2.0		2.0	
72	2.7		2.1		2.2	
73	3.2		2.6		2.9	
74	1.9		2.5		3.0	
75	2.9		2.9		3.5	
76	3.2		2.3		2.5	
77	3.4		2.1		3.6	
78	5.2		2.1		2.3	
79	3.3		2.2		4.9	
80	3.5	25	3.8	25	5.0	25
81	3.3		2.9		3.2	
82	3.0		3.8		3.1	
83	3.4		2.2		4.0	
84	2.7		2.7		2.1	
85	2.2		3.1		2.6	
86	1.9		2.3		4.5	
87	3.4		2.9		3.1	
88	5.9		2.6		3.9	
89	6.0		3.2		3.4	
90	3.4	50	2.4	25	4.6	25
91	3.6		2.5		2.2	
92	5.4		2.7		3.9	
93	4.0		2.9		3.0	
94	5.8		2.5		4.2	
95	5.0		2.8		3.5	
96	3.0		3.0		2.2	
97	4.8		2.7		2.6	
98	7.8		2.4		2.2	
99	6.1		2.0		2.3	
100	4.5	25	2.0	25	1.9	50
Minimum	**1.9**		**2.0**		**1.9**	
Maximum	**9.5**		**6.8**		**8.0**	
Mean	**4.1**		**3.5**		**3.3**	
Geometric mean	**3.8**		**3.3**		**3.2**	
Median	**3.7**	**25.0**	**3.1**	**25.0**	**3.1**	**25.0**

Notes: Intermediate axis length is the second longest axis on a cobble. Embeddedness refers to how deeply the cobble is surrounded or buried by other substrate. Embeddedness was measured for every 10th (n=10) cobble.

APPENDIX D

BENTHIC INVERTEBRATE COMMUNITY DATA

Laboratory Reports

BENTHIC INVERTEBRATE COMMUNITY ANALYSIS

PROVIDED BY:

CORDILLERA CONSULTING

(SUMMERLAND, BC)

Methods and QC Report 2021

Project ID: Minto AEMP (21-92)

Client: Minnow Environmental

Prepared by:
Cordillera Consulting Inc.
Summerland, BC
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Sample Reception

On September 22, 2021, Cordillera Consulting received 15 benthic samples from Minnow Environmental. When samples arrived to Cordillera Consulting, exterior packaging was initially inspected for damage or wet spots that would have indicated damage to the interior containers.

Samples were logged into a proprietary software database (INSTAR1) where the clients assigned sample name was recorded along with a Cordillera Consulting (CC) number for cross-reference. Each sample was checked to ensure that all sites and replicates recorded on field sheets or packing lists were delivered intact and with adequate preservative. Any missing, mislabelled or extra samples were reported to the client immediately to confirm the total numbers and correct names on the sample jars. The client representative was notified of the arrival of the shipment and provided a sample inventory once intake was completed.
See table below for sample inventory:

Table 1: Summary of sample information including Cordillera Consulting (CC) number

Site	Sample	CC#	Date	Size	# of Jars
LMC	Rep 1	CC221139	9/10/2021	500µM	1
LMC	Rep 2	CC221140	9/9/2021	500µM	1
LMC	Rep 3	CC221141	9/9/2021	500µM	2
LMC	Rep 4	CC221142	9/9/2021	500µM	1
LMC	Rep 5	CC221143	9/9/2021	500µM	1
LWC	Rep 1	CC221144	9/12/2021	500µM	1
LWC	Rep 2	CC221145	9/12/2021	500µM	1
LWC	Rep 3	CC221146	9/12/2021	500µM	1
LWC	Rep 4	CC221147	9/12/2021	500µM	1
LWC	Rep 5	CC221148	9/11/2021	500µM	1
LBC	Rep 1	CC221149	9/14/2021	500µM	1
LBC	Rep 2	CC221150	9/14/2021	500µM	1
LBC	Rep 3	CC221151	9/14/2021	500µM	1
LBC	Rep 4	CC221152	9/14/2021	500µM	1
LBC	Rep 5	CC221153	9/14/2021	500µM	1

Sample Sorting

- Using a gridded Petri dish, fine forceps and a low power stereo-microscope (Olympus, Nikon, Leica) the sorting technicians removed the invertebrates and sorted them into family/orders.
- The sorting technician kept a running tally of total numbers excluding organisms from Porifera, Nemata, Platyhelminthes, Ostracoda, Copepoda, Cladocera and terrestrial drop-ins such as aphids. These organisms were marked for their presence

(given a value of 1) only and left in the sample. They were not included towards the 300-organism subsample count.

- Where specimens are broken or damaged, only heads were counted.
- Subsampling was conducted with the use of a Marchant Box.
- When using the Marchant box, cells were extracted at the same time in the order indicated by a random number table. If the 300th organism was found part way into sorting a cell then the balance of that cell was sorted. If the organism count had not reached 300 by the 50th cell then the entire sample was sorted.
- The total number of cells sorted and the number of organisms removed were recorded manually on a bench sheet and then recorded into INSTAR1
- Organisms were stored in vials containing 80% ethanol and an interior label indicating the site names, date of sampling, site code numbers and portion subsampled. This information was also recorded on the laboratory bench sheet and on INSTAR1.
- The sorted portion of the debris was preserved and labeled separately from the unsorted portion and was tested for sorting efficiency (Sorting Quality Control – Sorting Efficiency). The unsorted portion was also labeled and preserved in separate jars.

Percent sub-sampled and total countable invertebrates pulled from the samples were summarized in the table below.

Table 2: Percent sub-sample and invertebrate count for each sample

Site	Sample	Date	CC#	500 micron fraction	
				% Sampled	# Invertebrates
LMC	Rep 1	10-Sep-21	CC221139	50%	426
LMC	Rep 2	09-Sep-21	CC221140	30%	332
LMC	Rep 3	09-Sep-21	CC221141	31.25%	348
LMC	Rep 4	09-Sep-21	CC221142	100%	179
LMC	Rep 5	09-Sep-21	CC221143	25%	370
LWC	Rep 1	12-Sep-21	CC221144	100%	244
LWC	Rep 2	12-Sep-21	CC221145	100%	100
LWC	Rep 3	12-Sep-21	CC221146	75%	301
LWC	Rep 4	12-Sep-21	CC221147	100%	326
LWC	Rep 5	11-Sep-21	CC221148	75%	373
LBC	Rep 1	14-Sep-21	CC221149	62.5%	371
LBC	Rep 2	14-Sep-21	CC221150	75%	351
LBC	Rep 3	14-Sep-21	CC221151	50%	318
LBC	Rep 4	14-Sep-21	CC221152	100%	194
LBC	Rep 5	14-Sep-21	CC221153	50%	417

Sorting Quality Control - Sorting Efficiency

As a part of Cordillera's laboratory policy, all projects undergo sorting efficiency checks.

- As sorting progresses, 10% of samples were randomly chosen by senior members of the sorting team for resorting.
- All sorters working on a project had at least 1 sample resorted by another sorter.
- An efficiency of 90 % was expected (95% for CABIN samples).
- If 90/95% efficiency was not met, samples from that sorter were resorted.
- To calculated sorting efficiency the following formula was used:

$$\frac{\#OrganismsMissed}{TotalOrganismsFound} * 100 = \%OM$$

Table 3 Summary of sorting efficiency

			Total from Sample	Percent Efficiency
Site - QC, Sample - QC 1, CC# - CC221142, Percent sampled = 100%, Sieve size = 500				
Plecoptera		1		
Chironomidae		6		
	Total:	**7**	**179**	**96%**
Site - QC, Sample - QC 2, CC# - CC221150, Percent sampled = 75%, Sieve size = 500				
Chironomidae		5		
Ephemeroptera		4		
Diptera		1		
Plecoptera		3		
Trichoptera		2		
Oligochaeta		2		
	Total:	**17**	**351**	**95%**

Sorting Quality Control - Sub-Sampling QC

Certain Provincial and Mining projects require additional sorting checks in the form of sub-sampling QC, (Environmental Effects Monitoring (EEM) protocol). This ensured that

any fraction of the total sample that was examined was actually an accurate representation of the number of total organisms. Organisms from the additional sub-samples were not identified; rather total organism count only was compared.

Sub-Sampling efficiency was measured on 10% of the number of sub-sampled samples in the project. Ex. In a project where 50 of 100 total samples were processed through subsampling using a Marchant box, then 10% of 50; or 5 samples were used for sub sampling efficiency.

Sub-Sampling efficiency was performed by fractioning the entire sample into sub-sample percentages. On each sub-sampled portion, a total organism count was recorded and compared to the rest of the sub-samples. In order to pass, all fractions were required to be within 20% of total organism count.

Example: If 300 organisms are found in 10% of the sample, the sorter will continue to sample in 10% fractions until the entire sample is separated. They will then count the total number of organisms in each of the 10 fractions of 10% and compare the organism count.

When divergence is >20% the sorting manager examines for the source of the problem and takes steps to correct it. With the Marchant box, the problem typically rested with how the box is flipped back to the upright position. For this reason, subsampling was performed by experienced employees only. Another common source of error would be the type of debris in the sample. Samples with algae or heavy with periphyton have a higher incident of failure due to clumping than clear samples.

Table 4 Summary of Sub Sample efficiency

Station ID		Organisms in Subsample																				Sorter		Actual Total	Precision		Accuracy	
CC#	Sample Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	By	Time		Percent Range		Min	Max
221139	LMC - Rep 1	416	428																			HY	90	844	2.80	2.80	1.42	1.42

Taxonomic Effort

The next procedure was the identification to genus-species level where possible of all the organisms in the sample.

- Identifications were made at the genus/species level for all insect organisms found including Chironomidae (Based on CABIN protocol).
- Non-insect organisms (except those not included in CABIN count) were identified to genus/species where possible and to a minimum of family level with intact and mature specimens.
- The Standard Taxonomic Effort lists compiled by the CABIN manual[1], SAFIT[2] , and PNAMP[3] were used as a guide line for what level of identification to achieve where the condition and maturity of the organism enabled.
- Organisms from the same families/order were kept in separate vials with 80% ethanol and an interior label of printed laser paper.
- Chironomidae was identified to genus/species level where possible and was aided by slide mounts. CMC-10 was used to clear and mount the slide.
- Oligochaetes was identified to family/genus level with the aid of slide mounts. CMC-10 was used to clear and mount the slide.
- Other Annelida (leeches, polychaetes) were identified to the family/genus/species level with undamaged, mature specimens.
- Mollusca was identified to family and genus/species where possible
- Decapoda, Amphipoda and Isopoda were identified at family/genus/species level where possible.
- Bryozoans and Nemata remained at the phylum level
- Hydrachnidae and Cnidaria were identified at the family/genus level where possible.
- When requested, reference collections were made containing at least one individual from each taxa listed. Organisms represented will have been identified to the lowest practical level.
- Reference collection specimens were stored in 55 mm glass vials with screw-cap lids with polyseal inserts (museum quality). They were labeled with taxa name, site code, date identified and taxonomist name. The same information was applied to labels on the slide mounts.

Taxonomists

The taxonomists for this project were certified by the Society of Freshwater Science (SFS) Taxonomic Certification Program at level 2 which is the required certification for CABIN projects:

Scott Finlayson: Group 1 General Arthropods (East/West); Group 2 EPT (East/West); Group 3 Chironomidae (East/West); Group 4 Oligochaeta

Adam Bliss: Group 1 General Arthropods (East/West); Group 2 EPT (East/West); Group 3 Chironomidae
Rita Avery: Group 1 General Arthropods (East/West); Group 2 EPT (East/West)

Taxonomic QC

Taxonomic QC was performed in house by someone other than the original taxonomist.

- Quality control protocol involved complete, blind re-identification and re-enumeration of at least 10% of samples by a second SFS-certified taxonomist.
- Samples for taxonomic quality control were randomly selected and quality control procedures were conducted as the project progresses through the laboratories.

- The second (QC) taxonomist will calculate and record four types of errors:
    1. Misidentification error
    2. Enumeration error
    3. Questionable taxonomic resolution error
    4. Insufficient taxonomic resolution error

The QC coordinator then calculates the following estimates of taxonomic precision.

1. The percent total identification error rate is calculated as:

$$\frac{Sum\ of\ incorrect\ identifications}{total\ organisms\ counted\ in\ audit} * (100)$$

The average total identification error rate of audited samples did not exceed 5%. All samples that exceed a 5% error rate were re-evaluated to determine whether repeated errors or patterns in error contributed.

2. The percent difference in enumeration (PDE) to quantify the consistency of specimen counts.

$$PDE = \frac{|n_1 - n_2|}{n_1 + n_2} x100$$

3. The percent taxonomic disagreement (PTD) to quantify the shared precision between two sets of identifications.

$$PTD = \left(1 - \left[\frac{a}{N}\right]\right) x100$$

4. Bray Curtis dissimilarity Index to quantify the differences in identifications.

$$BC_{ij} = 1 - \frac{2C_{ij}}{S_j + S_i}$$

Error Summary

All samples report errors within the acceptable limits for CABIN Laboratory methods (less than 5% error).

Table 5 Summary of taxonomic error following QC

Site	Taxa Identified	% Error	PDE	PTD	Bray - Curtis Dissimilarity index
Site - LMC, Sample - Rep 1, CC# - CC221139, Percent sampled = 50%, Sieve size = 500	427	0.00	0.11723329	0.46838407	0.003517
Site - LWC, Sample - Rep 1, CC# - CC221144, Percent sampled = 100%, Sieve size = 500	245	0.00	0.20449898	0.40816327	0.00204499

There will always be disagreements between taxonomists regarding the degree of taxonomic resolution in immature specimens and when laboratories make use of different keys for certain groups (Mollusks is an especially disputed group). It is always possible that some taxa found by the original taxonomist were overlooked in QC.

All of the Taxonomic QC samples that were observed passed testing according to the CABIN misidentification protocols. See the tables below for results from taxonomic QC audit.

Error Rationale

Site - LMC, Sample - Rep 1, CC# - CC221139, Percent sampled = 50%, Sieve size = 500	Laboratory Count	QC Audit Count	Agreement	Misidentification	Questionable Taxonomic Resolution	Enumeration	Insufficient Taxonomic Resolution	Comments
Brillia	2	2						
Chironomidae	2	2						
Chironomidae	2	2						
Dicranota	1	1						
Diptera	1	1						
Drunella doddsii	1	1						
Eukiefferiella	273	274	No			X		

Hydrobaenus	1	1						
Limnephilidae	1	1						
Limnophyes	4	4						
Lumbriculidae	20	19	No			X		
Metriocnemus	13	13						
Micropsectra	5	5						
Nemoura	1	1						
Nemouridae	12	12						
Orthocladius complex	60	60						
Ostrocerca	2	2						
Parametriocnemus	4	4						
Tipula	2	2						
Tubificinae with hair chaetae	4	4						
Tubificinae without hair chaetae	15	16	No			X		
Total:	**426**	**427**						
					0	3	0	
% Total Misidentification Rate =	misidentifications / total number	x100 =	0.00	**Pass**				

Site - LWC, Sample - Rep 1, CC# - CC221144, Percent sampled = 100%, Sieve size = 500	Laboratory Count	QC Audit Count	Agreement	Misidentification	Questionable Taxonomic Resolution	Enumeration	Insufficient Taxonomic Resolution	Comments
Baetis rhodani group	1	1						
Capniidae	18	18						
Chironomidae	9	9						
Clinocerinae unknown genus B	2	2						
Diamesa	1	1						
Diptera	2	2						
Eukiefferiella	1	1						
Heptageniidae	5	5						
Lumbriculidae	150	151	No			X		
Micropsectra	1	1						
Nemouridae	2	2						
Orthocladius complex	22	22						
Perlodidae	3	3						

Rhyacophila brunnea/vemna group	2	2						
Simulium	1	1						
Skwala	1	1						
Tipulidae	2	2						
Zapada cinctipes	21	21						
Total:	**244**	**245**						
					0	**1**	**0**	
% Total Misidentification Rate =	misidentifications / total number	x100 =	0.00	**Pass**				

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[3] Pacific Northwest Aquatic Monitoring Partnership (Accessed 2015). www.pnamp.org

Taxonomic Keys

Below is a reference list of taxonomic keys utilized by taxonomists at Cordillera Consulting. Cordillera taxonomists routinely seek out new literature to ensure the most accurate identification keys are being utilized. This is not reflective of the exhaustive list of resources that we use for identification. A more complete list of taxonomic resources can be found at Southwest Association of Freshwater Invertebrate Taxonomists. (2015).
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Table D.1: Benthic Invertebrates (Organisms per Sample) Collected by Surber Sampler (500 µm Sieve), Minto Mine AEMP, 2021

Project: Minto AEMP (21-92)
Minnow Environmental (BC)
Taxonomist: Scott Finlayson
scottfinlayson@cordilleraconsulting.ca
250-494-7553

Taxa	Lower Minto Creek (Exposed)					Lower Wolverine Creek (Reference)					Lower Big Creek (Reference)				
	LMC-1	LMC-2	LMC-3	LMC-4	LMC-5	LWC-1	LWC-2	LWC-3	LWC-4	LWC-5	LBC-1	LBC-2	LBC-3	LBC-4	LBC-5
Phylum: Arthropoda	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Order: Collembola	0	33	3	2	16	0	1	0	3	1	0	0	0	0	0
Subphylum: Hexapoda	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Class: Insecta	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Order: Ephemeroptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Family: Ameletidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ameletus	0	0	0	0	0	0	0	0	0	0	3	1	0	0	2
| Family: Baetidae	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Acentrella	0	0	0	0	0	0	0	0	0	0	0	3	2	0	2
Baetis	0	0	0	0	0	0	5	5	13	7	0	0	8	1	6
Baetis rhodani group	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
| Family: Ephemerellidae	0	0	0	0	0	0	1	0	6	3	3	0	4	0	0
Drunella doddsii	2	0	0	0	0	0	0	1	7	9	0	0	0	0	0
Drunella spinifera	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
Ephemerella	0	0	0	0	0	0	0	0	0	0	0	0	2	0	4
Ephemerella excrucians complex	0	0	0	0	0	0	1	0	1	0	0	1	0	0	0
| Family: Heptageniidae	0	0	0	0	0	5	2	1	6	27	3	23	6	4	24
| Order: Plecoptera	0	0	0	0	0	0	0	0	5	19	10	5	0	11	18
| Family: Capniidae	0	0	3	0	4	18	9	8	9	16	259	213	298	149	456
| Family: Chloroperlidae	0	3	0	0	0	0	0	0	0	0	0	1	0	0	0
Haploperla	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Sweltsa	0	0	0	0	0	0	0	0	0	0	0	3	0	0	4
| Family: Nemouridae	24	40	74	10	20	2	2	1	2	12	0	0	0	0	0
Nemoura	2	17	32	5	0	0	0	0	0	0	0	0	0	0	0
Ostrocerca	4	50	58	13	48	0	0	0	0	0	0	0	0	0	0
Zapada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Zapada cinctipes	0	0	0	0	0	21	18	8	66	155	0	0	0	0	2
| Family: Perlidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
| Family: Perlodidae	0	0	0	0	0	3	0	3	21	28	2	0	6	0	0
Isoperla	0	0	0	0	0	0	0	3	0	12	0	0	0	0	0
Skwala	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
| Family: Taeniopterygidae	0	7	13	0	0	0	0	0	1	1	0	0	4	0	2
| Order: Trichoptera	0	0	0	0	0	0	1	0	0	0	0	1	2	0	2

Table D.1: Benthic Invertebrates (Organisms per Sample) Collected by Surber Sampler (500 µm Sieve), Minto Mine AEMP, 2021

Project: Minto AEMP (21-92)
Minnow Environmental (BC)
Taxonomist: Scott Finlayson
scottfinlayson@cordilleraconsulting.ca
250-494-7553

Taxa	Lower Minto Creek (Exposed)					Lower Wolverine Creek (Reference)					Lower Big Creek (Reference)				
	LMC-1	LMC-2	LMC-3	LMC-4	LMC-5	LWC-1	LWC-2	LWC-3	LWC-4	LWC-5	LBC-1	LBC-2	LBC-3	LBC-4	LBC-5
| Family: Brachycentridae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brachycentrus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
| Family: Glossosomatidae	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Glossosoma	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
| Family: Lepidostomatidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lepidostoma	0	0	0	0	0	0	0	0	0	0	0	1	0	0	4
| Family: Limnephilidae	2	50	16	3	0	0	2	1	3	1	2	0	10	1	0
Dicosmoecus	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Ecclisomyia	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
| Family: Rhyacophilidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rhyacophila	0	0	0	0	0	0	0	1	5	5	0	0	4	0	0
Rhyacophila brunnea/vemna group	0	0	0	0	0	2	0	0	1	4	0	0	0	0	0
| Order: Coleoptera	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Family: Staphylinidae	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
| Order: Diptera	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
| Family: Chironomidae	8	37	54	16	44	9	4	7	8	5	30	25	40	2	50
| Subfamily: Chironominae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Tribe: Tanytarsini	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Micropsectra	10	80	26	1	80	1	0	0	2	0	80	5	12	4	2
Rheotanytarsus	0	0	0	0	0	0	0	0	0	0	14	3	6	0	8
Stempellina	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0
| Subfamily: Diamesinae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Tribe: Diamesini	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diamesa	0	7	0	4	264	1	0	0	67	3	0	12	38	1	26
Pagastia	0	0	0	0	44	0	0	0	2	3	2	0	0	0	0
Pseudodiamesa	0	3	6	1	0	0	0	0	1	0	2	0	0	0	0
| Subfamily: Orthocladiinae	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0
Brillia	4	0	0	0	0	0	0	0	14	1	0	0	8	0	16
Diplocladius cultriger	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0
Eukiefferiella	546	590	595	95	744	1	0	0	7	11	0	1	0	0	6
Heterotrissocladius	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0
Hydrobaenus	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydrosmittia	0	0	0	0	0	0	0	0	0	0	6	0	2	0	0

Table D.1: Benthic Invertebrates (Organisms per Sample) Collected by Surber Sampler (500 µm Sieve), Minto Mine AEMP, 2021

Project: Minto AEMP (21-92)
Minnow Environmental (BC)
Taxonomist: Scott Finlayson
scottfinlayson@cordilleraconsulting.ca
250-494-7553

Taxa	Lower Minto Creek (Exposed)					Lower Wolverine Creek (Reference)					Lower Big Creek (Reference)				
	LMC-1	LMC-2	LMC-3	LMC-4	LMC-5	LWC-1	LWC-2	LWC-3	LWC-4	LWC-5	LBC-1	LBC-2	LBC-3	LBC-4	LBC-5
Limnophyes	8	0	0	1	8	0	0	0	0	0	2	0	0	0	0
Metriocnemus	26	30	6	0	0	0	0	0	0	0	0	0	0	0	0
Orthocladius complex	120	77	144	4	72	22	18	11	54	51	77	137	124	9	110
Parametriocnemus	8	0	6	0	0	0	0	0	0	0	0	0	0	0	0
Rheocricotopus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Tvetenia	0	3	0	0	0	0	0	0	0	0	2	0	8	0	18
| Subfamily: Tanypodinae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Tribe: Pentaneurini	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pentaneura	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
Thienemannimyia group	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0
| Family: Empididae	0	0	0	0	0	0	0	0	0	1	6	0	0	0	2
Clinocerinae unknown genus B	0	0	0	0	0	2	0	7	1	0	5	0	0	0	2
Neoplasta	0	0	0	0	0	0	2	0	0	3	0	0	2	1	2
Roederiodes	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
Wiedemannia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
| Family: Muscidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Limnophora	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0
| Family: Psychodidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pericoma/Telmatoscopus	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0
| Family: Simuliidae	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
Simulium	0	0	0	0	0	1	0	0	0	1	2	9	6	2	10
| Family: Tipulidae	0	0	0	0	0	2	0	0	2	0	0	1	0	0	0
Dicranota	2	3	16	1	8	0	3	3	0	0	2	4	0	0	2
Tipula	4	3	3	1	4	0	0	0	0	0	0	0	0	0	0
| Order: Lepidoptera	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0
| Order: Thysanoptera	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Chelicerata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Class: Arachnida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Order: Trombidiformes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Family: Aturidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aturus	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
| Family: Hygrobatidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hygrobates	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
| Family: Lebertiidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lebertia	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0

Table D.1: Benthic Invertebrates (Organisms per Sample) Collected by Surber Sampler (500 µm Sieve), Minto Mine AEMP, 2021

Project: Minto AEMP (21-92)
Minnow Environmental (BC)
Taxonomist: Scott Finlayson
scottfinlayson@cordilleraconsulting.ca
250-494-7553

Taxa	Lower Minto Creek (Exposed)					Lower Wolverine Creek (Reference)					Lower Big Creek (Reference)				
	LMC-1	LMC-2	LMC-3	LMC-4	LMC-5	LWC-1	LWC-2	LWC-3	LWC-4	LWC-5	LBC-1	LBC-2	LBC-3	LBC-4	LBC-5
| Family: Sperchontidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sperchon	0	3	3	0	0	0	0	0	0	1	0	0	2	0	0
| Class: Maxillipoda	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Class: Copepoda	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0
Phylum: Annelida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Clitellata	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Class: Oligochaeta	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Order: Lumbriculida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Family: Lumbriculidae	40	13	32	20	44	150	28	340	13	115	13	8	32	8	34
Rhynchelmis	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
| Order: Tubificida	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Family: Naididae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nais	0	0	0	0	0	0	0	0	0	0	48	1	2	1	10
Slavina appendiculata	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
| Subfamily: Tubificinae with hair chaetae	8	3	0	0	72	0	1	0	0	0	0	0	0	0	0
| Subfamily: Tubificinae without hair chaetae	30	40	13	0	0	0	0	0	0	0	0	0	0	0	0
Totals:	**852**	**1,104**	**1,112**	**179**	**1,480**	**244**	**100**	**401**	**326**	**497**	**596**	**464**	**636**	**194**	**834**
Taxa present but not included:															
Phylum: Arthropoda	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subphylum: Crustacea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
| Class: Ostracoda	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
Phylum: Nemata	2	3	3	1	4	1	0	0	0	1	2	1	2	0	2
Totals:	**2**	**3**	**3**	**1**	**4**	**1**	**0**	**0**	**0**	**1**	**2**	**1**	**4**	**0**	**2**

Appendix K – Waste Rock Verification and ABA Program Results

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2100004**	Page	: 1 of 8
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Laura Battsion	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine - WRMP	Date Samples Received	: 05-Jan-2021 09:00
PO	: ----	Date Analysis Commenced	: 08-Mar-2021
C-O-C number	: ----	Issue Date	: 15-Mar-2021 16:50
Sampler	: ----		
Site	: ----		
Quote number	: Q78311		
No. of samples received	: 10		
No. of samples analysed	: 10		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Erin Gatdula	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia
Kaitlyn Gardner	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
%	percent
kg	kilograms
pH units	pH units
ppm	parts per million
tCaCO3/kt	tons CaCO3 per kiloton

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MM 162908	MM 162909	MM 162910	MM 162646	MM 162647
					Client sampling date / time	[05-Jan-2021]	[05-Jan-2021]	[05-Jan-2021]	[05-Jan-2021]	[05-Jan-2021]
						WR2100004-001	WR2100004-002	WR2100004-003	WR2100004-004	WR2100004-005
						Result	Result	Result	Result	Result
Acid Base Accounting										
carbon dioxide	124-38-9	C-GAS05	0.2	%		0.3	0.2	0.2	0.3	0.8
carbon, total inorganic [TIC]	----	C-GAS05	0.05	%		0.09	0.05	0.07	0.08	0.22
fizz rating	----	OA-VOL08m	1	-		1	1	1	1	2
fizz rating	----	OA-VOL08	1	-		1	1	1	1	2
maximum potential acidity [MPA]	----	OA-VOL08m	0.3	tCaCO3/kt		6.3	10.0	6.9	12.5	3.8
maximum potential acidity [MPA]	----	OA-VOL08	0.3	tCaCO3/kt		6.3	10.0	6.9	12.5	3.8
net neutralization potential [NNP]	----	OA-VOL08m	1	tCaCO3/kt		20	8	10	3	32
net neutralization potential [NNP]	----	OA-VOL08	1	tCaCO3/kt		20	8	10	3	32
neutralization potential [NP]	----	OA-VOL08m	1	tCaCO3/kt		26	18	17	15	36
neutralization potential [NP]	----	OA-VOL08	1	tCaCO3/kt		26	18	17	15	36
neutralization potential ratio [NPR], (NP/MPA)	----	OA-VOL08m	0.01	-		4.16	1.80	2.47	1.20	9.60
neutralization potential ratio [NPR], (NP/MPA)	----	OA-VOL08	0.01	-		4.16	1.80	2.47	1.20	9.60
pH (1:1 soil:water)	----	OA-ELE07	0.10	pH units		7.90	8.30	8.10	8.30	8.30
sulfate (as S), carbonate leach	14808-79-8	S-GRA06	0.01	%		0.08	0.16	0.15	0.25	<0.01
sulfate (as S), HCl leach	14808-79-8	S-GRA06A	0.01	%		0.12	0.21	0.18	0.36	0.01
sulfide (as S), total minus carbonate leach	18496-25-8	S-CAL06	0.01	%		0.12	0.16	0.07	0.15	0.12
sulfur, total	7704-34-9	S-IR08	0.01	%		0.20	0.32	0.22	0.40	0.12
weight, sample received	NA	WEI-21	0.02	kg		1.32	1.32	1.34	1.28	1.34
Metals										
aluminum	7429-90-5	ME-MS41	0.01	%		1.04	1.13	1.17	1.11	1.33
antimony	7440-36-0	ME-MS41	0.05	ppm		0.05	0.05	<0.05	<0.05	<0.05
arsenic	7440-38-2	ME-MS41	0.1	ppm		0.9	0.5	0.7	0.3	1.1
barium	7440-39-3	ME-MS41	10	ppm		230	190	180	180	130
beryllium	7440-41-7	ME-MS41	0.05	ppm		0.34	0.26	0.31	0.19	0.40
bismuth	7440-69-9	ME-MS41	0.01	ppm		0.10	0.08	0.20	0.23	0.17
boron	7440-42-8	ME-MS41	10	ppm		<10	<10	<10	<10	10
cadmium	7440-43-9	ME-MS41	0.01	ppm		0.05	0.09	0.10	0.14	0.19
calcium	7440-70-2	ME-MS41	0.01	%		1.34	1.15	1.08	1.01	1.42
cerium	7440-45-1	ME-MS41	0.02	ppm		23.8	24.3	25.5	26.3	28.2
cesium	7440-46-2	ME-MS41	0.05	ppm		0.94	1.82	1.31	0.78	0.95
chromium	7440-47-3	ME-MS41	1	ppm		7	7	7	9	10

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MM 162908	MM 162909	MM 162910	MM 162646	MM 162647
					Client sampling date / time	[05-Jan-2021]	[05-Jan-2021]	[05-Jan-2021]	[05-Jan-2021]	[05-Jan-2021]
						WR2100004-001	WR2100004-002	WR2100004-003	WR2100004-004	WR2100004-005
						Result	Result	Result	Result	Result
Metals										
cobalt	7440-48-4	ME-MS41	0.1	ppm		5.3	6.0	6.3	5.3	6.5
copper	7440-50-8	ME-MS41	0.2	ppm		493	592	877	1290	1210
gallium	7440-55-3	ME-MS41	0.05	ppm		5.32	5.49	6.06	5.74	7.45
germanium	7440-56-4	ME-MS41	0.05	ppm		0.11	0.14	0.13	0.13	0.14
gold	7440-57-5	ME-MS41	0.02	ppm		<0.02	<0.02	0.03	0.04	0.05
hafnium	7440-58-6	ME-MS41	0.02	ppm		0.07	0.07	0.09	0.05	0.06
indium	7440-74-6	ME-MS41	0.005	ppm		0.019	0.021	0.020	0.021	0.035
iron	7439-89-6	ME-MS41	0.01	%		2.13	2.32	2.42	2.40	2.75
lanthanum	7439-91-0	ME-MS41	0.2	ppm		13.0	14.0	14.4	14.4	15.3
lead	7439-92-1	ME-MS41	0.2	ppm		7.5	5.3	3.5	2.4	7.0
lithium	7439-93-2	ME-MS41	0.1	ppm		5.8	6.0	6.9	6.2	7.3
magnesium	7439-95-4	ME-MS41	0.01	%		0.61	0.68	0.71	0.62	0.78
manganese	7439-96-5	ME-MS41	5	ppm		497	516	522	408	468
mercury	7439-97-6	ME-MS41	0.01	ppm		0.01	0.01	<0.01	<0.01	<0.01
molybdenum	7439-98-7	ME-MS41	0.05	ppm		1.32	1.99	0.52	2.22	1.58
nickel	7440-02-0	ME-MS41	0.2	ppm		1.6	1.8	1.8	1.4	2.5
niobium	7440-03-1	ME-MS41	0.05	ppm		0.17	0.29	0.26	0.34	0.13
phosphorus	7723-14-0	ME-MS41	10	ppm		680	800	750	690	850
potassium	7440-09-7	ME-MS41	0.01	%		0.29	0.59	0.60	0.66	0.34
rhenium	7440-15-5	ME-MS41	0.001	ppm		0.003	0.005	0.001	0.004	0.003
rubidium	7440-17-7	ME-MS41	0.1	ppm		13.6	29.8	30.1	33.7	16.9
scandium	7440-20-2	ME-MS41	0.1	ppm		3.0	3.2	3.5	3.0	3.7
selenium	7782-49-2	ME-MS41	0.2	ppm		0.6	0.5	1.0	1.3	1.2
silver	7440-22-4	ME-MS41	0.01	ppm		0.33	0.31	0.67	0.84	0.60
sodium	7440-23-5	ME-MS41	0.01	%		0.07	0.08	0.09	0.08	0.07
strontium	7440-24-6	ME-MS41	0.2	ppm		123.5	79.7	61.8	71.4	60.2
sulfur	7704-34-9	ME-MS41	0.01	%		0.23	0.35	0.29	0.45	0.14
tantalum	7440-25-7	ME-MS41	0.01	ppm		<0.01	<0.01	<0.01	<0.01	<0.01
tellurium	13494-80-9	ME-MS41	0.01	ppm		0.04	0.06	0.15	0.13	0.12
thallium	7440-28-0	ME-MS41	0.02	ppm		0.08	0.19	0.19	0.24	0.10
thorium	7440-29-1	ME-MS41	0.2	ppm		3.4	3.3	3.7	5.2	4.9
tin	7440-31-5	ME-MS41	0.2	ppm		0.4	0.5	0.6	0.5	0.6

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MM 162908	MM 162909	MM 162910	MM 162646	MM 162647
					Client sampling date / time	[05-Jan-2021]	[05-Jan-2021]	[05-Jan-2021]	[05-Jan-2021]	[05-Jan-2021]
						WR2100004-001	WR2100004-002	WR2100004-003	WR2100004-004	WR2100004-005
						Result	Result	Result	Result	Result
Metals										
titanium	7440-32-6	ME-MS41	0.005	%		0.079	0.135	0.144	0.131	0.069
tungsten	7440-33-7	ME-MS41	0.05	ppm		0.06	0.11	0.06	0.05	<0.05
uranium	7440-61-1	ME-MS41	0.05	ppm		0.38	0.48	0.41	0.52	0.53
vanadium	7440-62-2	ME-MS41	1	ppm		42	55	56	51	55
yttrium	7440-65-5	ME-MS41	0.05	ppm		6.41	5.44	5.70	5.82	7.24
zinc	7440-66-6	ME-MS41	2	ppm		72	73	70	69	83
zirconium	7440-67-7	ME-MS41	0.5	ppm		1.3	1.4	1.7	1.0	1.3

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MM 162648	MM 162649	MM 162650	MM 157999	MM 158000
					Client sampling date / time	[05-Jan-2021]	[05-Jan-2021]	[05-Jan-2021]	[05-Jan-2021]	[05-Jan-2021]
						WR2100004-006	WR2100004-007	WR2100004-008	WR2100004-009	WR2100004-010
						Result	Result	Result	Result	Result
Acid Base Accounting										
carbon dioxide	124-38-9	C-GAS05	0.2	%		0.5	1.4	0.6	0.9	<0.2
carbon, total inorganic [TIC]	----	C-GAS05	0.05	%		0.13	0.39	0.17	0.24	<0.05
fizz rating	----	OA-VOL08m	1	-		1	2	2	2	1
fizz rating	----	OA-VOL08	1	-		1	2	2	2	1
maximum potential acidity [MPA]	----	OA-VOL08m	0.3	tCaCO3/kt		10.3	6.3	2.8	4.4	3.1
maximum potential acidity [MPA]	----	OA-VOL08	0.3	tCaCO3/kt		10.3	6.3	2.8	4.4	3.1
net neutralization potential [NNP]	----	OA-VOL08m	1	tCaCO3/kt		11	40	24	28	18
net neutralization potential [NNP]	----	OA-VOL08	1	tCaCO3/kt		11	40	24	28	18
neutralization potential [NP]	----	OA-VOL08m	1	tCaCO3/kt		21	46	27	32	21
neutralization potential [NP]	----	OA-VOL08	1	tCaCO3/kt		21	46	27	32	21
neutralization potential ratio [NPR], (NP/MPA)	----	OA-VOL08m	0.01	-		2.04	7.36	9.60	7.31	6.72
neutralization potential ratio [NPR], (NP/MPA)	----	OA-VOL08	0.01	-		2.04	7.36	9.60	7.31	6.72
pH (1:1 soil:water)	----	OA-ELE07	0.10	pH units		8.20	7.70	8.70	8.10	8.10
sulfate (as S), carbonate leach	14808-79-8	S-GRA06	0.01	%		0.17	0.06	<0.01	0.04	<0.01
sulfate (as S), HCl leach	14808-79-8	S-GRA06A	0.01	%		0.22	0.09	0.02	0.01	0.01
sulfide (as S), total minus carbonate leach	18496-25-8	S-CAL06	0.01	%		0.16	0.14	0.09	0.10	0.10
sulfur, total	7704-34-9	S-IR08	0.01	%		0.33	0.20	0.09	0.14	0.10
weight, sample received	NA	WEI-21	0.02	kg		1.34	1.34	1.32	1.34	1.34
Metals										
aluminum	7429-90-5	ME-MS41	0.01	%		1.12	1.27	1.15	1.08	0.99
antimony	7440-36-0	ME-MS41	0.05	ppm		<0.05	0.17	0.12	0.05	<0.05
arsenic	7440-38-2	ME-MS41	0.1	ppm		3.1	1.6	1.3	1.2	0.9
barium	7440-39-3	ME-MS41	10	ppm		160	220	130	170	280
beryllium	7440-41-7	ME-MS41	0.05	ppm		0.31	0.57	0.38	0.36	0.31
bismuth	7440-69-9	ME-MS41	0.01	ppm		0.43	0.12	0.01	0.19	0.35
boron	7440-42-8	ME-MS41	10	ppm		<10	10	<10	<10	<10
cadmium	7440-43-9	ME-MS41	0.01	ppm		0.24	0.15	0.04	0.20	0.09
calcium	7440-70-2	ME-MS41	0.01	%		1.25	2.24	1.28	1.21	0.95
cerium	7440-45-1	ME-MS41	0.02	ppm		19.30	29.1	18.30	19.65	16.25
cesium	7440-46-2	ME-MS41	0.05	ppm		0.73	0.37	0.59	0.64	0.40
chromium	7440-47-3	ME-MS41	1	ppm		7	5	6	7	6
cobalt	7440-48-4	ME-MS41	0.1	ppm		5.4	5.0	5.1	5.4	5.0

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MM 162648	MM 162649	MM 162650	MM 157999	MM 158000
					Client sampling date / time	[05-Jan-2021]	[05-Jan-2021]	[05-Jan-2021]	[05-Jan-2021]	[05-Jan-2021]
						WR2100004-006	WR2100004-007	WR2100004-008	WR2100004-009	WR2100004-010
						Result	Result	Result	Result	Result
Metals										
copper	7440-50-8	ME-MS41	0.2	ppm		2720	920	155.0	1800	1350
gallium	7440-55-3	ME-MS41	0.05	ppm		6.13	6.84	6.20	6.18	5.89
germanium	7440-56-4	ME-MS41	0.05	ppm		0.12	0.09	0.09	0.09	0.08
gold	7440-57-5	ME-MS41	0.02	ppm		0.09	0.02	<0.02	0.08	0.06
hafnium	7440-58-6	ME-MS41	0.02	ppm		0.06	0.04	0.06	0.05	0.05
indium	7440-74-6	ME-MS41	0.005	ppm		0.028	0.028	0.019	0.028	0.018
iron	7439-89-6	ME-MS41	0.01	%		2.34	2.21	2.14	2.35	2.27
lanthanum	7439-91-0	ME-MS41	0.2	ppm		10.6	16.1	9.5	10.1	8.1
lead	7439-92-1	ME-MS41	0.2	ppm		3.5	6.5	8.2	4.7	2.9
lithium	7439-93-2	ME-MS41	0.1	ppm		7.6	8.0	7.1	7.4	6.5
magnesium	7439-95-4	ME-MS41	0.01	%		0.70	0.58	0.64	0.66	0.57
manganese	7439-96-5	ME-MS41	5	ppm		507	501	485	547	474
mercury	7439-97-6	ME-MS41	0.01	ppm		0.08	0.02	<0.01	0.02	0.01
molybdenum	7439-98-7	ME-MS41	0.05	ppm		0.19	1.07	0.81	1.89	0.19
nickel	7440-02-0	ME-MS41	0.2	ppm		1.6	2.3	1.8	1.7	1.5
niobium	7440-03-1	ME-MS41	0.05	ppm		0.20	0.08	0.23	0.19	0.19
phosphorus	7723-14-0	ME-MS41	10	ppm		610	640	670	640	550
potassium	7440-09-7	ME-MS41	0.01	%		0.28	0.19	0.29	0.34	0.31
rhenium	7440-15-5	ME-MS41	0.001	ppm		<0.001	0.002	0.003	0.009	0.001
rubidium	7440-17-7	ME-MS41	0.1	ppm		14.3	11.4	14.8	18.5	15.5
scandium	7440-20-2	ME-MS41	0.1	ppm		3.4	2.8	3.4	3.5	2.9
selenium	7782-49-2	ME-MS41	0.2	ppm		2.2	0.9	0.3	2.1	1.6
silver	7440-22-4	ME-MS41	0.01	ppm		1.39	0.46	0.08	0.78	0.72
sodium	7440-23-5	ME-MS41	0.01	%		0.06	0.05	0.09	0.08	0.06
strontium	7440-24-6	ME-MS41	0.2	ppm		100.0	162.0	87.2	112.5	78.4
sulfur	7704-34-9	ME-MS41	0.01	%		0.38	0.20	0.09	0.16	0.10
tantalum	7440-25-7	ME-MS41	0.01	ppm		<0.01	<0.01	<0.01	<0.01	<0.01
tellurium	13494-80-9	ME-MS41	0.01	ppm		0.41	0.09	0.01	0.19	0.16
thallium	7440-28-0	ME-MS41	0.02	ppm		0.08	0.07	0.09	0.10	0.10
thorium	7440-29-1	ME-MS41	0.2	ppm		2.5	3.8	2.3	2.1	2.1
tin	7440-31-5	ME-MS41	0.2	ppm		0.5	0.3	0.5	0.5	0.4
titanium	7440-32-6	ME-MS41	0.005	%		0.108	0.033	0.102	0.100	0.080

Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	MM 162648	MM 162649	MM 162650	MM 157999	MM 158000
					Client sampling date / time	[05-Jan-2021]	[05-Jan-2021]	[05-Jan-2021]	[05-Jan-2021]	[05-Jan-2021]
Analyte	CAS Number	Method	LOR	Unit		WR2100004-006	WR2100004-007	WR2100004-008	WR2100004-009	WR2100004-010
						Result	Result	Result	Result	Result
Metals										
tungsten	7440-33-7	ME-MS41	0.05	ppm		<0.05	<0.05	0.07	0.06	<0.05
uranium	7440-61-1	ME-MS41	0.05	ppm		0.18	0.31	0.23	0.20	0.20
vanadium	7440-62-2	ME-MS41	1	ppm		46	36	46	49	39
yttrium	7440-65-5	ME-MS41	0.05	ppm		4.96	4.71	5.65	5.23	4.72
zinc	7440-66-6	ME-MS41	2	ppm		69	73	68	72	66
zirconium	7440-67-7	ME-MS41	0.5	ppm		0.9	0.8	1.2	1.0	0.8

Please refer to the General Comments section for an explanation of any qualifiers detected.

ALS Minerals — Sample Submittal Form

Company Name: Minto Exploration Ltd
Submitted by: Peter Pang
Telephone: 250-203-1850
Courier/Waybill:
Containers:
Date Shipped:
PO Number:

Internal Use Only
Date Received: JAN 5/21
Client Code:
Workorder No:
Quote:
Template:

Environmental Division
Whitehorse
Work Order Reference
WR2100004

Telephone : +1 867 668 6689

Standard Project: Minto Mine - WRMP
Commodity: ☐ Ore ☑ Trace ☐ Potentially
Special Instructions:
Sample Type: ☑ Rock ☐ Pulp ☐ Percussion ☐ Soil ☐ Sediment ☐ Drill Core Other

Results to
Name: Laura Battsion
Email: LauraB@mintomine.com
Address:
City: Whitehorse State: Yukon
Country: Canada Zip:
☑ Invoice ☑ Certificate ☑ QC Certificate ☑ Data File ☐ Webtrieve Only

Copy to
Name: Peter Pang
Email: PeterP@mintomine.com
☑ Webtrieve Only ☐ Certificate ☑ Data File

Copy to
Name: Stu Harris
Email: StuartH@mintomine.com
☑ Webtrieve Only ☐ Certificate ☑ Data File

Sample Return

Pulps	Rejects
☑ Return after analysis	☑ Return after analysis
☐ Return after 90 days	☐ Return after 45 days
☐ Discard	☐ Discard
☐ Paid Storage	☐ Paid Storage

Failure to indicate pulp & reject disposition will be considered as paid storage.

Return Address:
Minto Mine, c/o Smalls Expediting
25 Pilgram Pl Suite 2
Whitehorse, Yukon,

Attention: Laura Battison

Authorized By:
Name: Laura Battison (Please Print)
Signature: JQ for Laura

*All shipments received are subject to inspection upon layout; all services are rendered in accordance with ALS Minerals Terms & Conditions (see the current Schedule of Services & Fees).

Samples ID's		Quantity	Sample Preparation Required (Prep Code)	Analytical (Elements or Method Code)	Check here for Rush Premium Service
Start No.	Finish No.				
MM 157999	MM 158000	2		ME-MS41-AX	
MM 157999	MM 158000	2		ACIDBASE-ACC04-AX	
MM 157999	MM 158000	2		SULPHUR-S-GRA06-AX	☐
	Total Samples	2			

CONTACT THE LAB TO CONFIRM AVAILABILITY

ALS Minerals — Sample Submittal Form

Company Name: Minto Exploration Ltd
Submitted by: Peter Pang
Telephone: 250-203-1850
Courier/Waybill:
Containers:
Date Shipped:
PO Number:

Internal Use Only

Date Received:
Client Code:
Workorder No:
Quote:
Template:

Standard Project: Minto Mine - WRMP
Commodity: ☐ Ore ☑ Trace ☐ Potentially Hazardous Materials
Special Instructions:
Sample Type: ☑ Rock ☐ Pulp ☐ Percussion ☐ Soil ☐ Sediment ☐ Drill Core Other

Results to
Name: Laura Battsion
Email: LauraB@mintomine.com
Address:
City: Whitehorse State: Yukon
Country: Canada Zip:
☑ Invoice ☑ Certificate ☑ QC Certificate ☑ Data File ☐ Webtrieve Only

Copy to
Name: Peter Pang
Email: PeterP@mintomine.com
☑ Webtrieve Only ☐ Certificate ☑ Data File

Copy to
Name: Stu Harris
Email: StuartH@mintomine.com
☑ Webtrieve Only ☐ Certificate ☑ Data File

Sample Return

Pulps	Rejects
☑ Return after analysis	☑ Return after analysis
☐ Return after 90 days	☐ Return after 45 days
☐ Discard	☐ Discard
☐ Paid Storage	☐ Paid Storage

Failure to indicate pulp & reject disposition will be considered as paid storage.

Return Address:
Minto Mine, c/o Smalls Expediting
25 Pilgram Pl Suite 2
Whitehorse, Yukon,

Attention: Laura Battison

*All shipments received are subject to inspection upon layout; all services are rendered in accordance with ALS Minerals Terms & Conditions (see the current Schedule of Services & Fees).

Authorized By:
Name: Laura Battison (Please Print)
Signature: for Laura

Samples ID's		Quantity	Sample Preparation Required (Prep Code)	Analytical (Elements or Method Code)	Check here for Rush Premium Service
Start No.	Finish No.				
MM 162908	MM 162910	3		ME-MS41-AX	
MM 162646	MM 162650	5		ME-MS41-AX	
MM 162908	MM 162910	3		ACIDBASE-ACC04-AX	☐ CONTACT THE LAB TO CONFIRM AVAILABILITY
MM 162646	MM 162650	5		ACIDBASE-ACC04-AX	
MM 162908	MM 162910	3		SULPHUR-S-GRA06-AX	
MM 162646	MM 162650	5		SULPHUR-S-GRA06-AX	
	Total Samples	8			

ALS Minerals — Sample Submittal Form

Company Name:	Minto Exploration Ltd
Submitted by:	Peter Pang
Telephone:	250-203-1850
Courier/Waybill:	
# Containers:	
Date Shipped:	
PO Number:	

Internal Use Only

Date Received:	JAN 5/21
Client Code:	
Workorder No:	
Quote:	
Template:	

Environmental Division Whitehorse
Work Order Reference
WR2100004

Telephone : +1 867 668 6689

Standard Project:	Minto Mine - WRMP
Commodity:	☐ Ore ☑ Trace ☐ Potential
Special Instructions:	
Sample Type:	☑ Rock ☐ Pulp ☐ Percussion ☐ Soil ☐ Sediment ☐ Drill Core Other

Results to

Name:	Laura Battsion
Email:	LauraB@mintomine.com
Address:	
City:	Whitehorse State: Yukon
Country:	Canada Zip:

☑ Invoice
☑ Certificate
☑ QC Certificate
☑ Data File
☐ Webtrieve Only

Copy to

Name:	Peter Pang
Email:	PeterP@mintomine.com

☑ Webtrieve Only
☐ Certificate
☑ Data File

Copy to

Name:	Stu Harris
Email:	StuartH@mintomine.com

☑ Webtrieve Only
☐ Certificate
☑ Data File

Sample Return

Pulps	Rejects
☑ Return after analysis	☑ Return after analysis
☐ Return after 90 days	☐ Return after 45 days
☐ Discard	☐ Discard
☐ Paid Storage	☐ Paid Storage

Failure to indicate pulp & reject disposition will be considered as paid storage.

Return Address:
Minto Mine, c/o Smalls Expediting
25 Pilgram Pl Suite 2
Whitehorse, Yukon,

Attention: Laura Battison

Authorized By:
Name: Laura Battison (Please Print)
Signature: for Laura

*All shipments received are subject to inspection upon layout; all services are rendered in accordance with ALS Minerals Terms & Conditions (see the current Schedule of Services & Fees).

Samples ID's Start No.	Samples ID's Finish No.	Quantity	Sample Preparation Required (Prep Code)	Analytical (Elements or Method Code)	Check here for Rush Premium Service
MM 162908	MM 162910	3		ME-MS41-AX	
MM 162646	MM 162650	5		ME-MS41-AX	
MM 162908	MM 162910	3		ACIDBASE-ACC04-AX	☐ CONTACT THE LAB TO CONFIRM AVAILABILITY
MM 162646	MM 162650	5		ACIDBASE-ACC04-AX	
MM 162908	MM 162910	3		SULPHUR-S-GRA06-AX	
MM 162646	MM 162650	5		SULPHUR-S-GRA06-AX	
	Total Samples	8			

ALS Minerals — Sample Submittal Form

Company Name:	Minto Exploration Ltd
Submitted by:	Peter Pang
Telephone:	250-203-1850
Courier/Waybill:	
# Containers:	
Date Shipped:	
PO Number:	

Internal Use Only

Date Received:	
Client Code:	
Workorder No:	
Quote:	
Template:	

Standard Project: Minto Mine - WRMP

Commodity: ☐ Ore ☑ Trace ☐ Potentially Hazardous Materials

Special Instructions:

Sample Type: ☑ Rock ☐ Pulp ☐ Percussion ☐ Soil ☐ Sediment ☐ Drill Core Other

Results to

Name:	Laura Battsion	☑	Invoice
Email:	LauraB@mintomine.com	☑	Certificate
Address:		☑	QC Certificate
City:	Whitehorse State: Yukon	☑	Data File
Country:	Canada Zip:	☐	Webtrieve Only

Copy to

Name:	Peter Pang	☑	Webtrieve Only
Email:	PeterP@mintomine.com	☐	Certificate
		☑	Data File

Copy to

Name:	Stu Harris	☑	Webtrieve Only
Email:	StuartH@mintomine.com	☐	Certificate
		☑	Data File

Sample Return

Pulps	Rejects
☑ Return after analysis	☑ Return after analysis
☐ Return after 90 days	☐ Return after 45 days
☐ Discard	☐ Discard
☐ Paid Storage	☐ Paid Storage

Failure to indicate pulp & reject disposition will be considered as paid storage.

Return Address:
Minto Mine, c/o Smalls Expediting
25 Pilgram Pl Suite 2
Whitehorse, Yukon,

Attention: Laura Battison

*All shipments received are subject to inspection upon layout; all services are rendered in accordance with ALS Minerals Terms & Conditions (see the current Schedule of Services & Fees).

Authorized By:

Name: Laura Battison (Please Print)

Signature: for Laura

Samples ID's Start No.	Samples ID's Finish No.	Quantity	Sample Preparation Required (Prep Code)	Analytical (Elements or Method Code)	Check here for Rush Premium Service
MM 157999	MM 158000	2		ME-MS41-AX	
MM 157999	MM 158000	2		ACIDBASE-ACC04-AX	
MM 157999	MM 158000	2		SULPHUR-S-GRA06-AX	☐
					CONTACT THE LAB TO CONFIRM AVAILABILITY
	Total Samples	2			

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2100022**	Page	: 1 of 5
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Laura Battsion	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: ----	Date Samples Received	: 11-Jan-2021 14:15
PO	: ----	Date Analysis Commenced	: 28-Feb-2021
C-O-C number	: ----	Issue Date	: 01-Mar-2021 17:52
Sampler	: ----		
Site	: ----		
Quote number	: Q78311		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Erin Gatdula	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
%	percent
kg	kilograms
pH units	pH units
ppm	parts per million
tCaCO3/kt	tons CaCO3 per kiloton

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in reports identified as "Preliminary Report" are considered authorized for use.

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MM 162918	MM 162919	MM 162920	MM 162921	----
					Client sampling date / time	[11-Jan-2021]	[11-Jan-2021]	[11-Jan-2021]	[11-Jan-2021]	----
						WR2100022-001	WR2100022-002	WR2100022-003	WR2100022-004	--------
						Result	Result	Result	Result	----
Acid Base Accounting										
carbon dioxide	124-38-9	C-GAS05	0.2	%		0.4	0.8	1.7	0.6	----
carbon, total inorganic [TIC]	----	C-GAS05	0.05	%		0.10	0.22	0.45	0.15	----
fizz rating	----	OA-VOL08m	1	-		1	2	2	1	----
maximum potential acidity [MPA]	----	OA-VOL08m	0.3	tCaCO3/kt		9.1	6.9	10.3	2.8	----
net neutralization potential [NNP]	----	OA-VOL08m	1	tCaCO3/kt		5	18	29	15	----
neutralization potential [NP]	----	OA-VOL08m	1	tCaCO3/kt		14	25	39	18	----
neutralization potential ratio [NPR], (NP/MPA)	----	OA-VOL08m	0.01	-		1.54	3.64	3.78	6.40	----
pH (1:1 soil:water)	----	OA-ELE07	0.10	pH units		8.30	8.20	8.00	8.10	----
sulfate (as S), carbonate leach	14808-79-8	S-GRA06	0.01	%		0.19	0.02	0.28	0.04	----
sulfate (as S), HCl leach	14808-79-8	S-GRA06A	0.01	%		0.17	<0.01	0.27	<0.01	----
sulfide (as S), total minus carbonate leach	18496-25-8	S-CAL06	0.01	%		0.10	0.20	0.05	0.05	----
sulfur, total	7704-34-9	S-IR08	0.01	%		0.29	0.22	0.33	0.09	----
weight, sample received	NA	WEI-21	0.02	kg		1.32	1.48	1.32	1.32	----
Metals										
aluminum	7429-90-5	ME-MS41	0.01	%		1.08	1.22	1.08	1.10	----
antimony	7440-36-0	ME-MS41	0.05	ppm		0.18	0.06	0.15	0.19	----
arsenic	7440-38-2	ME-MS41	0.1	ppm		0.9	1.1	2.8	1.0	----
barium	7440-39-3	ME-MS41	10	ppm		170	130	130	170	----
beryllium	7440-41-7	ME-MS41	0.05	ppm		0.28	0.44	0.49	0.34	----
bismuth	7440-69-9	ME-MS41	0.01	ppm		0.32	0.03	0.11	0.07	----
boron	7440-42-8	ME-MS41	10	ppm		<10	<10	<10	<10	----
cadmium	7440-43-9	ME-MS41	0.01	ppm		0.11	0.10	0.13	0.05	----
calcium	7440-70-2	ME-MS41	0.01	%		1.13	1.39	2.20	1.15	----
cerium	7440-45-1	ME-MS41	0.02	ppm		17.00	22.0	22.2	20.1	----
cesium	7440-46-2	ME-MS41	0.05	ppm		0.27	0.18	0.29	0.24	----
chromium	7440-47-3	ME-MS41	1	ppm		9	5	11	6	----
cobalt	7440-48-4	ME-MS41	0.1	ppm		6.3	7.9	6.0	5.5	----
copper	7440-50-8	ME-MS41	0.2	ppm		1290	404	784	320	----
gallium	7440-55-3	ME-MS41	0.05	ppm		6.10	6.44	6.10	5.68	----
germanium	7440-56-4	ME-MS41	0.05	ppm		0.08	0.08	0.06	0.08	----

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MM 162918	MM 162919	MM 162920	MM 162921	----
					Client sampling date / time	[11-Jan-2021]	[11-Jan-2021]	[11-Jan-2021]	[11-Jan-2021]	----
						WR2100022-001	WR2100022-002	WR2100022-003	WR2100022-004	--------
						Result	Result	Result	Result	----
Metals										
gold	7440-57-5	ME-MS41	0.02	ppm		0.05	<0.02	0.02	<0.02	----
hafnium	7440-58-6	ME-MS41	0.02	ppm		0.06	0.06	0.04	0.07	----
indium	7440-74-6	ME-MS41	0.005	ppm		0.019	0.019	0.022	0.019	----
iron	7439-89-6	ME-MS41	0.01	%		2.66	2.42	2.30	2.29	----
lanthanum	7439-91-0	ME-MS41	0.2	ppm		9.5	12.4	12.1	11.1	----
lead	7439-92-1	ME-MS41	0.2	ppm		6.3	5.3	4.5	6.8	----
lithium	7439-93-2	ME-MS41	0.1	ppm		6.0	6.0	7.2	6.5	----
magnesium	7439-95-4	ME-MS41	0.01	%		0.66	0.67	0.64	0.67	----
manganese	7439-96-5	ME-MS41	5	ppm		550	515	523	557	----
mercury	7439-97-6	ME-MS41	0.01	ppm		0.01	0.01	0.02	<0.01	----
molybdenum	7439-98-7	ME-MS41	0.05	ppm		0.32	1.19	0.31	0.24	----
nickel	7440-02-0	ME-MS41	0.2	ppm		2.9	1.8	4.3	1.7	----
niobium	7440-03-1	ME-MS41	0.05	ppm		0.26	0.18	0.11	0.24	----
phosphorus	7723-14-0	ME-MS41	10	ppm		690	700	660	680	----
potassium	7440-09-7	ME-MS41	0.01	%		0.45	0.26	0.22	0.40	----
rhenium	7440-15-5	ME-MS41	0.001	ppm		<0.001	0.004	<0.001	<0.001	----
rubidium	7440-17-7	ME-MS41	0.1	ppm		21.4	12.0	10.7	18.9	----
scandium	7440-20-2	ME-MS41	0.1	ppm		3.4	3.6	4.2	3.8	----
selenium	7782-49-2	ME-MS41	0.2	ppm		1.1	0.5	0.4	0.3	----
silver	7440-22-4	ME-MS41	0.01	ppm		0.64	0.16	0.31	0.16	----
sodium	7440-23-5	ME-MS41	0.01	%		0.09	0.09	0.07	0.11	----
strontium	7440-24-6	ME-MS41	0.2	ppm		67.4	75.8	163.0	105.0	----
sulfur	7704-34-9	ME-MS41	0.01	%		0.31	0.24	0.36	0.09	----
tantalum	7440-25-7	ME-MS41	0.01	ppm		<0.01	<0.01	<0.01	<0.01	----
tellurium	13494-80-9	ME-MS41	0.01	ppm		0.13	0.04	0.05	0.04	----
thallium	7440-28-0	ME-MS41	0.02	ppm		0.13	0.07	0.06	0.11	----
thorium	7440-29-1	ME-MS41	0.2	ppm		2.0	2.5	2.6	2.2	----
tin	7440-31-5	ME-MS41	0.2	ppm		0.4	0.4	0.4	0.5	----
titanium	7440-32-6	ME-MS41	0.005	%		0.121	0.071	0.045	0.112	----
tungsten	7440-33-7	ME-MS41	0.05	ppm		0.23	0.13	0.08	0.28	----
uranium	7440-61-1	ME-MS41	0.05	ppm		0.34	0.31	0.23	0.29	----
vanadium	7440-62-2	ME-MS41	1	ppm		52	44	42	48	----

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MM 162918	MM 162919	MM 162920	MM 162921	----
					Client sampling date / time	[11-Jan-2021]	[11-Jan-2021]	[11-Jan-2021]	[11-Jan-2021]	----
						WR2100022-001	WR2100022-002	WR2100022-003	WR2100022-004	--------
						Result	Result	Result	Result	----
Metals										
yttrium	7440-65-5	ME-MS41	0.05	ppm		5.40	6.23	7.16	6.14	----
zinc	7440-66-6	ME-MS41	2	ppm		76	71	63	67	----
zirconium	7440-67-7	ME-MS41	0.5	ppm		1.1	1.1	0.8	1.2	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

ALS Canada Ltd.

2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: +1 604 984 0221 Fax: +1 604 984 0218
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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 1-MAR-2021
Account: APN

CERTIFICATE VA21009437

Project: WR2100022

This report is for 4 samples of Other submitted to our lab in Vancouver, BC, Canada on 13-JAN-2021.

The following have access to data associated with this certificate:

ALSE VANCOUVER WEBTRIEVE SOFTWARE DEVELOPMENT GROUP	ALSEV DATASUBLET	HEATHER MCKENZIE

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
DISP-01	Disposal of all sample fractions
LOG-21	Sample logging - ClientBarCode
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize up to 250g 85% <75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
OA-VOL08m	Modified NP	
S-IR08	Total Sulphur (IR Spectroscopy)	LECO
OA-ELE07	Paste pH	
S-GRA06	Sulfate Sulfur-carbonate leach	WST-SEQ
S-CAL06	Sufide Sulfur (calculated)	LECO
C-GAS05	Inorganic Carbon (CO2)	
S-GRA06a	Sulfate Sulfur (HCl leachable)	WST-SEQ
ME-MS41	Ultra Trace Aqua Regia ICP-MS	

This is the Final Report and supersedes any preliminary report with this certificate number.Results apply to samples as submitted.All pages of this report have been checked and approved for release.
***** See Appendix Page for comments regarding this certificate *****

Signature:

Saa Traxler, General Manager, North Vancouver

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100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 1-MAR-2021
Account: APN

Project: WR2100022

CERTIFICATE OF ANALYSIS VA21009437

Sample Description	Method / Analyte / Units / LOD	WEI-21 Recvd Wt. kg 0.02	ME-MS41 Ag ppm 0.01	ME-MS41 Al % 0.01	ME-MS41 As ppm 0.1	ME-MS41 Au ppm 0.02	ME-MS41 B ppm 10	ME-MS41 Ba ppm 10	ME-MS41 Be ppm 0.05	ME-MS41 Bi ppm 0.01	ME-MS41 Ca % 0.01	ME-MS41 Cd ppm 0.01	ME-MS41 Ce ppm 0.02	ME-MS41 Co ppm 0.1	ME-MS41 Cr ppm 1	ME-MS41 Cs ppm 0.05
WR2100022-001		1.32	0.64	1.08	0.9	0.05	<10	170	0.28	0.32	1.13	0.11	17.00	6.3	9	0.27
WR2100022-002		1.48	0.16	1.22	1.1	<0.02	<10	130	0.44	0.03	1.39	0.10	22.0	7.9	5	0.18
WR2100022-003		1.32	0.31	1.08	2.8	0.02	<10	130	0.49	0.11	2.20	0.13	22.2	6.0	11	0.29
WR2100022-004		1.32	0.16	1.10	1.0	<0.02	<10	170	0.34	0.07	1.15	0.05	20.1	5.5	6	0.24

***** See Appendix Page for comments regarding this certificate *****

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Finalized Date: 1-MAR-2021
Account: APN

Project: WR2100022

CERTIFICATE OF ANALYSIS VA21009437

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm
	LOD	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05
WR2100022-001		1290	2.66	6.10	0.08	0.06	0.01	0.019	0.45	9.5	6.0	0.66	550	0.32	0.09	0.26
WR2100022-002		404	2.42	6.44	0.08	0.06	0.01	0.019	0.26	12.4	6.0	0.67	515	1.19	0.09	0.18
WR2100022-003		784	2.30	6.10	0.06	0.04	0.02	0.022	0.22	12.1	7.2	0.64	523	0.31	0.07	0.11
WR2100022-004		320	2.29	5.68	0.08	0.07	<0.01	0.019	0.40	11.1	6.5	0.67	557	0.24	0.11	0.24

***** See Appendix Page for comments regarding this certificate *****

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Finalized Date: 1-MAR-2021
Account: APN

Project: WR2100022

CERTIFICATE OF ANALYSIS VA21009437

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti
	Units	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	LOD	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005
WR2100022-001		2.9	690	6.3	21.4	<0.001	0.31	0.18	3.4	1.1	0.4	67.4	<0.01	0.13	2.0	0.121
WR2100022-002		1.8	700	5.3	12.0	0.004	0.24	0.06	3.6	0.5	0.4	75.8	<0.01	0.04	2.5	0.071
WR2100022-003		4.3	660	4.5	10.7	<0.001	0.36	0.15	4.2	0.4	0.4	163.0	<0.01	0.05	2.6	0.045
WR2100022-004		1.7	680	6.8	18.9	<0.001	0.09	0.19	3.8	0.3	0.5	105.0	<0.01	0.04	2.2	0.112

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Account: APN

Project: WR2100022

CERTIFICATE OF ANALYSIS VA21009437

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	OA-VOL08m	OA-VOL08m	OA-VOL08m	OA-VOL08m	OA-ELE07	OA-VOL08m	S-IR08	S-GRA06
	Analyte	Tl	U	V	W	Y	Zn	Zr	MPA	FIZZ RAT	NNP	NP	pH	Ratio (N	S	S
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	tCaCO3/1Kt	Unity	tCaCO3/1Kt	tCaCO3/1Kt	Unity	Unity	%	%
	LOD	0.02	0.05	1	0.05	0.05	2	0.5	0.3	1	1	1	0.1	0.01	0.01	0.01
WR2100022-001		0.13	0.34	52	0.23	5.40	76	1.1	9.1	1	5	14	8.3	1.54	0.29	0.19
WR2100022-002		0.07	0.31	44	0.13	6.23	71	1.1	6.9	2	18	25	8.2	3.64	0.22	0.02
WR2100022-003		0.06	0.23	42	0.08	7.16	63	0.8	10.3	2	29	39	8.0	3.78	0.33	0.28
WR2100022-004		0.11	0.29	48	0.28	6.14	67	1.2	2.8	1	15	18	8.1	6.40	0.09	0.04

***** See Appendix Page for comments regarding this certificate *****

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BURNABY BC V5A 1W9

Finalized Date: 1-MAR-2021
Account: APN

Project: WR2100022

CERTIFICATE OF ANALYSIS VA21009437

Sample Description	Method	S-GRA06a	S-CAL06	C-GAS05	C-GAS05
	Analyte	S	S	C	CO2
	Units	%	%	%	%
	LOD	0.01	0.01	0.05	0.2
WR2100022-001		0.17	0.10	0.10	0.4
WR2100022-002		<0.01	0.20	0.22	0.8
WR2100022-003		0.27	0.05	0.45	1.7
WR2100022-004		<0.01	0.05	0.15	0.6

***** See Appendix Page for comments regarding this certificate *****

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Finalized Date: 1-MAR-2021
Account: APN

Project: WR2100022

CERTIFICATE OF ANALYSIS VA21009437

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

C-GAS05	CRU-31	DISP-01	LOG-21
ME-MS41	OA-ELE07	OA-VOL08m	PUL-31
S-CAL06	S-GRA06	S-GRA06a	S-IR08
SPL-21	WEI-21		

ALS Minerals — Sample Submittal Form

Company Name:	Minto Exploration Ltd
Submitted by:	Peter Pang
Telephone:	604-424-8084
Courier/Waybill:	
# Containers:	
Date Shipped:	
PO Number:	

Internal Use Only

Date Received:	JAN 11/21 @ 14:15
Client Code:	
Workorder No:	
Quote:	
Template:	

Environmental Division Whitehorse
Work Order Reference
WR2100022

Telephone : +1 867 668 6689

Standard Project:	Minto Mine - WRMP
Commodity:	☐ Ore ☑ Trace ☐ Potenti
Special Instructions:	
Sample Type:	☑ Rock ☐ Pulp ☐ Percussion ☐ Soil ☐ Sediment ☐ Drill Core Other

Results to

Name:	Laura Battsion	☑	Invoice
Email:	LauraB@mintomine.com	☑	Certificate
Address:		☑	QC Certificate
City:	Whitehorse State: Yukon	☑	Data File
Country:	Canada Zip:	☐	Webtrieve Only

Copy to

Name:	Peter Pang	☑	Webtrieve Only
Email:	PeterP@mintomine.com	☐	Certificate
		☑	Data File

Copy to

Name:	Stu Harris	☑	Webtrieve Only
Email:	StuartH@mintomine.com	☐	Certificate
		☑	Data File

Sample Return

Pulps	Rejects
☑ Return after analysis	☑ Return after analysis
☐ Return after 90 days	☐ Return after 45 days
☐ Discard	☐ Discard
☐ Paid Storage	☐ Paid Storage

Failure to indicate pulp & reject disposition will be considered as paid storage.

Return Address:
Minto Mine, c/o Smalls Expediting
25 Pilgram Pl Suite 2
Whitehorse, Yukon,

Attention: Laura Battison

Authorized By:
Name: Laura Battison (Please Print)
Signature:

*All shipments received are subject to inspection upon layout; all services are rendered in accordance with ALS Minerals Terms & Conditions (see the current Schedule of Services & Fees).

Samples ID's Start No.	Samples ID's Finish No.	Quantity	Sample Preparation Required (Prep Code)	Analytical (Elements or Method Code)	Check here for Rush Premium Service
MM 162918	MM 162921	4		ME-MS41-AX	
MM 162918	MM 162921	4		ACIDBASE-ACC04-AX	
MM 162918	MM 162921	4		SULPHUR-S-GRA06-AX	☐
	Total Samples	4			

E LAB TO VLABILITY

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2100127**	Page	: 1 of 5
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 17-Feb-2021 15:27
PO	: ----	Date Analysis Commenced	: 01-Apr-2021
C-O-C number	: 17-773540	Issue Date	: 05-Apr-2021 12:52
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Erin Gatdula	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
%	percent
kg	kilograms
pH units	pH units
ppm	parts per million
tCaCO3/kt	tons CaCO3 per kiloton

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	162600	----	----	----	----
					Client sampling date / time	14-Feb-2021	----	----	----	----
						WR2100127-001	--------	--------	--------	--------
						Result	----	----	----	----
Acid Base Accounting										
carbon dioxide	124-38-9	C-GAS05	0.2	%		1.0	----	----	----	----
carbon, total inorganic [TIC]	----	C-GAS05	0.05	%		0.27	----	----	----	----
fizz rating	----	OA-VOL08m	1	-		2	----	----	----	----
maximum potential acidity [MPA]	----	OA-VOL08m	0.3	tCaCO3/kt		0.9	----	----	----	----
net neutralization potential [NNP]	----	OA-VOL08m	1	tCaCO3/kt		27	----	----	----	----
neutralization potential [NP]	----	OA-VOL08m	1	tCaCO3/kt		28	----	----	----	----
neutralization potential ratio [NPR], (NP/MPA)	----	OA-VOL08m	0.01	-		29.87	----	----	----	----
pH (1:1 soil:water)	----	OA-ELE07	0.10	pH units		8.50	----	----	----	----
sulfate (as S), carbonate leach	14808-79-8	S-GRA06	0.01	%		0.01	----	----	----	----
sulfate (as S), HCl leach	14808-79-8	S-GRA06A	0.01	%		<0.01	----	----	----	----
sulfide (as S), total minus carbonate leach	18496-25-8	S-CAL06	0.01	%		0.02	----	----	----	----
sulfur, total	7704-34-9	S-IR08	0.01	%		0.03	----	----	----	----
weight, sample received	NA	WEI-21	0.02	kg		1.32	----	----	----	----
Metals										
aluminum	7429-90-5	ME-MS41	0.01	%		1.13	----	----	----	----
antimony	7440-36-0	ME-MS41	0.05	ppm		<0.05	----	----	----	----
arsenic	7440-38-2	ME-MS41	0.1	ppm		1.0	----	----	----	----
barium	7440-39-3	ME-MS41	10	ppm		190	----	----	----	----
beryllium	7440-41-7	ME-MS41	0.05	ppm		0.40	----	----	----	----
bismuth	7440-69-9	ME-MS41	0.01	ppm		0.11	----	----	----	----
boron	7440-42-8	ME-MS41	10	ppm		<10	----	----	----	----
cadmium	7440-43-9	ME-MS41	0.01	ppm		0.10	----	----	----	----
calcium	7440-70-2	ME-MS41	0.01	%		1.29	----	----	----	----
cerium	7440-45-1	ME-MS41	0.02	ppm		22.9	----	----	----	----
cesium	7440-46-2	ME-MS41	0.05	ppm		0.30	----	----	----	----
chromium	7440-47-3	ME-MS41	1	ppm		6	----	----	----	----
cobalt	7440-48-4	ME-MS41	0.1	ppm		5.9	----	----	----	----
copper	7440-50-8	ME-MS41	0.2	ppm		549	----	----	----	----
gallium	7440-55-3	ME-MS41	0.05	ppm		6.47	----	----	----	----
germanium	7440-56-4	ME-MS41	0.05	ppm		0.08	----	----	----	----
gold	7440-57-5	ME-MS41	0.02	ppm		<0.02	----	----	----	----

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	162600	----	----	----	----
					Client sampling date / time	14-Feb-2021	----	----	----	----
						WR2100127-001	--------	--------	--------	--------
						Result	----	----	----	----
Metals										
hafnium	7440-58-6	ME-MS41	0.02	ppm		0.04	----	----	----	----
indium	7440-74-6	ME-MS41	0.005	ppm		0.017	----	----	----	----
iron	7439-89-6	ME-MS41	0.01	%		2.33	----	----	----	----
lanthanum	7439-91-0	ME-MS41	0.2	ppm		12.3	----	----	----	----
lead	7439-92-1	ME-MS41	0.2	ppm		4.2	----	----	----	----
lithium	7439-93-2	ME-MS41	0.1	ppm		7.3	----	----	----	----
magnesium	7439-95-4	ME-MS41	0.01	%		0.64	----	----	----	----
manganese	7439-96-5	ME-MS41	5	ppm		521	----	----	----	----
mercury	7439-97-6	ME-MS41	0.01	ppm		<0.01	----	----	----	----
molybdenum	7439-98-7	ME-MS41	0.05	ppm		0.30	----	----	----	----
nickel	7440-02-0	ME-MS41	0.2	ppm		1.7	----	----	----	----
niobium	7440-03-1	ME-MS41	0.05	ppm		0.14	----	----	----	----
phosphorus	7723-14-0	ME-MS41	10	ppm		630	----	----	----	----
potassium	7440-09-7	ME-MS41	0.01	%		0.38	----	----	----	----
rhenium	7440-15-5	ME-MS41	0.001	ppm		0.001	----	----	----	----
rubidium	7440-17-7	ME-MS41	0.1	ppm		18.8	----	----	----	----
scandium	7440-20-2	ME-MS41	0.1	ppm		4.3	----	----	----	----
selenium	7782-49-2	ME-MS41	0.2	ppm		0.8	----	----	----	----
silver	7440-22-4	ME-MS41	0.01	ppm		0.25	----	----	----	----
sodium	7440-23-5	ME-MS41	0.01	%		0.05	----	----	----	----
strontium	7440-24-6	ME-MS41	0.2	ppm		92.5	----	----	----	----
sulfur	7704-34-9	ME-MS41	0.01	%		0.04	----	----	----	----
tantalum	7440-25-7	ME-MS41	0.01	ppm		<0.01	----	----	----	----
tellurium	13494-80-9	ME-MS41	0.01	ppm		0.06	----	----	----	----
thallium	7440-28-0	ME-MS41	0.02	ppm		0.11	----	----	----	----
thorium	7440-29-1	ME-MS41	0.2	ppm		3.4	----	----	----	----
tin	7440-31-5	ME-MS41	0.2	ppm		0.4	----	----	----	----
titanium	7440-32-6	ME-MS41	0.005	%		0.070	----	----	----	----
tungsten	7440-33-7	ME-MS41	0.05	ppm		0.05	----	----	----	----
uranium	7440-61-1	ME-MS41	0.05	ppm		0.22	----	----	----	----
vanadium	7440-62-2	ME-MS41	1	ppm		44	----	----	----	----
yttrium	7440-65-5	ME-MS41	0.05	ppm		6.76	----	----	----	----

Analytical Results

Sub-Matrix: **Soil/Solid** (Matrix: **Soil/Solid**)					Client sample ID	**162600**	**----**	**----**	**----**	**----**
					Client sampling date / time	14-Feb-2021	----	----	----	----
Analyte	*CAS Number*	*Method*	*LOR*	*Unit*		**WR2100127-001**	**--------**	**--------**	**--------**	**--------**
						Result	----	----	----	----
Metals										
zinc	7440-66-6	ME-MS41	2	ppm		65	----	----	----	----
zirconium	7440-67-7	ME-MS41	0.5	ppm		0.7	----	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2100127**	Page	: 1 of 7
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 17-Feb-2021 15:27
PO	: ----	Issue Date	: 05-Apr-2021 12:52
C-O-C number	: 17-773540		
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 15:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 15:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Acid Base Accounting (Modified Sobek)										
Glass soil jar/Teflon lined cap										
162600	OA-VOL08m	14-Feb-2021	----	----	----		01-Apr-2021	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
Glass soil jar/Teflon lined cap										
162600	C-GAS05	14-Feb-2021	----	----	----		01-Apr-2021	----	----	
Acid Base Accounting : Received Sample Weight										
Glass soil jar/Teflon lined cap										
162600	WEI-21	14-Feb-2021	----	----	----		01-Apr-2021	180 days	46 days	✓
Acid Base Accounting : Saturated Paste pH										
Glass soil jar/Teflon lined cap										
162600	OA-ELE07	14-Feb-2021	----	----	----		01-Apr-2021	----	----	
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
Glass soil jar/Teflon lined cap										
162600	S-GRA06A	14-Feb-2021	----	----	----		01-Apr-2021	----	----	
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
Glass soil jar/Teflon lined cap										
162600	S-GRA06	14-Feb-2021	----	----	----		01-Apr-2021	----	----	
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
Glass soil jar/Teflon lined cap										
162600	S-CAL06	14-Feb-2021	----	----	----		01-Apr-2021	28 days	46 days	× EHT

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Total Sulfur by Combustion and IR										
Glass soil jar/Teflon lined cap										
162600	S-IR08	14-Feb-2021	----	----	----		01-Apr-2021	----	----	
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
Glass soil jar/Teflon lined cap										
162600	ME-MS41	14-Feb-2021	----	----	----		01-Apr-2021	----	----	

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

- **No Quality Control data available for this section.**

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Inorganic Carbon by Coulometer	C-GAS05 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals C-GAS05	Determine Total Inorganic Carbon (TIC) by using diluted perchloric acid to react with metal carbonate and yield carbon dioxide. Concentration of CO_2 is determined by coulometer.
51 Elements by Aqua Regia digestion and ICP-AES/MS	ME-MS41 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals ME-MS41	A prepared sample is digested with aqua regia in a graphite heating block. After cooling, the resulting solution is diluted to with deionized water, mixed and analyzed by ICP-AES. Samples are then analyzed by ICP-MS for the remaining suite of elements.
Saturated Paste pH	OA-ELE07 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals OA-ELE07	Sample mix with water in 1:1 ratio to make a paste, pH is then determined.
Acid Base Accounting (Modified Sobek)	OA-VOL08m ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals OA-VOL08m	Determine the acid generation power of a sample as tonne $CaCO_3$ per kilo-tonne using modified Sobek method
Sulfide S (as S) Calc. (Total-S - SO4-S)	S-CAL06 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-CAL06	Sulfide Sulfur (as S) is calculated by subtracting the Carbonate Leachable Sulfate Sulfur (as S) from the Total Sulfur (as S) obtained from combustion.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfates by NaCO3 Leaching and Gravimetry	S-GRA06 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-GRA06	A preppared sample is heated with diluted Na□CO□ and then filtered. The sulfate in the filtrate is precipitated with BaCl2 in a dilute HCl. The BaSO4 precipitate is filtered, ignited, weighed and the Sulfate Sulfur is determined (as S).
Sulfates by HCl Leaching and Gravimetry	S-GRA06A ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-GRA06A	A prepared sample is heated with dilute HCl and then filtered. The sulfate in the filtrate is precipitated with BaCl2 in a dilute HCl. The BaSO4 precipitate is filtered, ignited, weighed and the Sulfate Sulfur is determined (as S).
Total Sulfur by Combustion and IR	S-IR08 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-IR08	A prepared sample is heated to approximately 1350°C in an induction furnace with oxygen stream. Sulfur dioxide released from the sample are measured by IR (Leco analyzer) and the Total Sulfur result is provided.
Received Sample Weight	WEI-21 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals WEI-21	Weigh out sample received.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **WR2100127**	Page	: 1 of 2
Client	: Minto Explorations Ltd.	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 17-Feb-2021 15:27
PO	: ----	Date Analysis Commenced	: 01-Apr-2021
C-O-C number	: 17-773540	Issue Date	: 05-Apr-2021 12:52
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Erin Gatdula	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 17 - 773540

Page of

Environmental Division Whitehorse

Work Order Reference WR2100127

Telephone : +1 867 668 6689

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	Select Service Level Below - Contact your
Company:	MINTO	Select Report Format: PDF EXCEL EDD (DIGITAL)	Regular [R] Standard TAT if received b
Contact:		Quality Control (QC) Report with Report YES NO	PRIORITY (Business Days): 4 day [P4-20%] 1 Busi
Phone:		Compare Results to Criteria on Report - provide details below if box checked	3 day [P3-25%] Same D
Company address below will appear on the final report		Select Distribution: EMAIL MAIL FAX	2 day [P2-50%] (Laborat
Street:		Email 1 or Fax	EMERGENCY
City/Province:		Email 2	Date and Time Required for all E&P TATs:
Postal Code:		Email 3	For tests that can not be performed according to the service level sele
Invoice To	Same as Report To YES NO	Invoice Distribution	Analys
	Copy of Invoice with Report YES NO	Select Invoice Distribution: EMAIL MAIL FAX	
Company:		Email 1 or Fax	
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#
Job #:		Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only):		ALS Contact:	Sampler:

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Indicate Filtered (F), Preserved (P) or Filt	SAMPLES ON HO	SUSPECTED HAZARD (see Special Instructions)
	162600	14-FEB-21						

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? YES NO	
Are samples for human consumption/ use? YES NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen SIF Observations Yes No

Ice Packs Ice Cubes Custody seal intact Yes No

Cooling Initiated

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
4°							

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
				FEB 17/21	15:27			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 FRONT

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2100273**	Page	: 1 of 5
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 29-Mar-2021 11:35
PO	: TBD	Date Analysis Commenced	: 01-May-2021
C-O-C number	: 02	Issue Date	: 05-May-2021 17:30
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Kaitlyn Gardner	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
%	percent
kg	kilograms
pH units	pH units
ppm	parts per million
tCaCO3/kt	tons CaCO3 per kiloton

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	FEB. TAL 2021	----	----	----	----
					Client sampling date / time	25-Mar-2021	----	----	----	----
						WR2100273-001	--------	--------	--------	--------
						Result	----	----	----	----
Acid Base Accounting										
carbon dioxide	124-38-9	C-GAS05	0.2	%		0.8	----	----	----	----
carbon, total inorganic [TIC]	----	C-GAS05	0.05	%		0.21	----	----	----	----
fizz rating	----	OA-VOL08m	1	-		2	----	----	----	----
maximum potential acidity [MPA]	----	OA-VOL08m	0.3	tCaCO3/kt		5.0	----	----	----	----
net neutralization potential [NNP]	----	OA-VOL08m	1	tCaCO3/kt		19	----	----	----	----
neutralization potential [NP]	----	OA-VOL08m	1	tCaCO3/kt		24	----	----	----	----
neutralization potential ratio [NPR], (NP/MPA)	----	OA-VOL08m	0.01	-		4.80	----	----	----	----
pH (1:1 soil:water)	----	OA-ELE07	0.10	pH units		8.10	----	----	----	----
sulfate (as S), carbonate leach	14808-79-8	S-GRA06	0.01	%		0.06	----	----	----	----
sulfate (as S), HCl leach	14808-79-8	S-GRA06A	0.01	%		0.10	----	----	----	----
sulfide (as S), total minus carbonate leach	18496-25-8	S-CAL06	0.01	%		0.10	----	----	----	----
sulfur, total	7704-34-9	S-IR08	0.01	%		0.16	----	----	----	----
weight, sample received	NA	WEI-21	0.02	kg		0.64	----	----	----	----
Metals										
aluminum	7429-90-5	ME-MS41	0.01	%		1.09	----	----	----	----
antimony	7440-36-0	ME-MS41	0.05	ppm		0.05	----	----	----	----
arsenic	7440-38-2	ME-MS41	0.1	ppm		1.0	----	----	----	----
barium	7440-39-3	ME-MS41	10	ppm		160	----	----	----	----
beryllium	7440-41-7	ME-MS41	0.05	ppm		0.26	----	----	----	----
bismuth	7440-69-9	ME-MS41	0.01	ppm		0.09	----	----	----	----
boron	7440-42-8	ME-MS41	10	ppm		<10	----	----	----	----
cadmium	7440-43-9	ME-MS41	0.01	ppm		0.26	----	----	----	----
calcium	7440-70-2	ME-MS41	0.01	%		1.17	----	----	----	----
cerium	7440-45-1	ME-MS41	0.02	ppm		15.90	----	----	----	----
cesium	7440-46-2	ME-MS41	0.05	ppm		0.25	----	----	----	----
chromium	7440-47-3	ME-MS41	1	ppm		8	----	----	----	----
cobalt	7440-48-4	ME-MS41	0.1	ppm		6.1	----	----	----	----
copper	7440-50-8	ME-MS41	0.2	ppm		813	----	----	----	----
gallium	7440-55-3	ME-MS41	0.05	ppm		6.98	----	----	----	----
germanium	7440-56-4	ME-MS41	0.05	ppm		0.07	----	----	----	----
gold	7440-57-5	ME-MS41	0.02	ppm		0.10	----	----	----	----

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	FEB. TAL 2021	----	----	----	----
					Client sampling date / time	25-Mar-2021	----	----	----	----
						WR2100273-001	--------	--------	--------	--------
						Result	----	----	----	----
Metals										
hafnium	7440-58-6	ME-MS41	0.02	ppm		0.04	----	----	----	----
indium	7440-74-6	ME-MS41	0.005	ppm		0.064	----	----	----	----
iron	7439-89-6	ME-MS41	0.01	%		2.68	----	----	----	----
lanthanum	7439-91-0	ME-MS41	0.2	ppm		8.1	----	----	----	----
lead	7439-92-1	ME-MS41	0.2	ppm		3.9	----	----	----	----
lithium	7439-93-2	ME-MS41	0.1	ppm		7.7	----	----	----	----
magnesium	7439-95-4	ME-MS41	0.01	%		0.65	----	----	----	----
manganese	7439-96-5	ME-MS41	5	ppm		552	----	----	----	----
mercury	7439-97-6	ME-MS41	0.01	ppm		0.08	----	----	----	----
molybdenum	7439-98-7	ME-MS41	0.05	ppm		1.54	----	----	----	----
nickel	7440-02-0	ME-MS41	0.2	ppm		2.6	----	----	----	----
niobium	7440-03-1	ME-MS41	0.05	ppm		0.17	----	----	----	----
phosphorus	7723-14-0	ME-MS41	10	ppm		640	----	----	----	----
potassium	7440-09-7	ME-MS41	0.01	%		0.34	----	----	----	----
rhenium	7440-15-5	ME-MS41	0.001	ppm		0.005	----	----	----	----
rubidium	7440-17-7	ME-MS41	0.1	ppm		18.0	----	----	----	----
scandium	7440-20-2	ME-MS41	0.1	ppm		2.5	----	----	----	----
selenium	7782-49-2	ME-MS41	0.2	ppm		0.7	----	----	----	----
silver	7440-22-4	ME-MS41	0.01	ppm		0.53	----	----	----	----
sodium	7440-23-5	ME-MS41	0.01	%		0.05	----	----	----	----
strontium	7440-24-6	ME-MS41	0.2	ppm		67.4	----	----	----	----
sulfur	7704-34-9	ME-MS41	0.01	%		0.15	----	----	----	----
tantalum	7440-25-7	ME-MS41	0.01	ppm		<0.01	----	----	----	----
tellurium	13494-80-9	ME-MS41	0.01	ppm		0.19	----	----	----	----
thallium	7440-28-0	ME-MS41	0.02	ppm		0.11	----	----	----	----
thorium	7440-29-1	ME-MS41	0.2	ppm		2.4	----	----	----	----
tin	7440-31-5	ME-MS41	0.2	ppm		0.8	----	----	----	----
titanium	7440-32-6	ME-MS41	0.005	%		0.082	----	----	----	----
tungsten	7440-33-7	ME-MS41	0.05	ppm		0.07	----	----	----	----
uranium	7440-61-1	ME-MS41	0.05	ppm		0.25	----	----	----	----
vanadium	7440-62-2	ME-MS41	1	ppm		49	----	----	----	----
yttrium	7440-65-5	ME-MS41	0.05	ppm		3.92	----	----	----	----

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	FEB. TAL 2021	----	----	----	----
					Client sampling date / time	25-Mar-2021	----	----	----	----
						WR2100273-001	--------	--------	--------	--------
						Result	----	----	----	----
Metals										
zinc	7440-66-6	ME-MS41	2	ppm		99	----	----	----	----
zirconium	7440-67-7	ME-MS41	0.5	ppm		1.0	----	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2100273**	Page	: 1 of 6
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 29-Mar-2021 11:35
PO	: TBD	Issue Date	: 05-May-2021 17:30
C-O-C number	: 02		
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Acid Base Accounting (Modified Sobek)										
LDPE bag FEB. TAL 2021	OA-VOL08m	25-Mar-2021	----	----	----		01-May-2021	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
LDPE bag FEB. TAL 2021	C-GAS05	25-Mar-2021	----	----	----		01-May-2021	----	----	
Acid Base Accounting : Received Sample Weight										
LDPE bag FEB. TAL 2021	WEI-21	25-Mar-2021	----	----	----		01-May-2021	180 days	38 days	✓
Acid Base Accounting : Saturated Paste pH										
LDPE bag FEB. TAL 2021	OA-ELE07	25-Mar-2021	----	----	----		01-May-2021	----	----	
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
LDPE bag FEB. TAL 2021	S-GRA06A	25-Mar-2021	----	----	----		01-May-2021	----	----	
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
LDPE bag FEB. TAL 2021	S-GRA06	25-Mar-2021	----	----	----		01-May-2021	----	----	
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
LDPE bag FEB. TAL 2021	S-CAL06	25-Mar-2021	----	----	----		01-May-2021	28 days	38 days	× EHT

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times* Rec	*Holding Times* Actual	*Eval*	*Analysis Date*	*Holding Times* Rec	*Holding Times* Actual	*Eval*
Acid Base Accounting : Total Sulfur by Combustion and IR										
LDPE bag FEB. TAL 2021	S-IR08	25-Mar-2021	----	----	----		01-May-2021	----	----	
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
LDPE bag FEB. TAL 2021	ME-MS41	25-Mar-2021	----	----	----		01-May-2021	----	----	

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

- **No Quality Control data available for this section.**

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Inorganic Carbon by Coulometer	C-GAS05 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals C-GAS05	Determine Total Inorganic Carbon (TIC) by using diluted perchloric acid to react with metal carbonate and yield carbon dioxide. Concentration of CO_2 is determined by coulometer.
51 Elements by Aqua Regia digestion and ICP-AES/MS	ME-MS41 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals ME-MS41	A prepared sample is digested with aqua regia in a graphite heating block. After cooling, the resulting solution is diluted to with deionized water, mixed and analyzed by ICP-AES. Samples are then analyzed by ICP-MS for the remaining suite of elements.
Saturated Paste pH	OA-ELE07 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals OA-ELE07	Sample mix with water in 1:1 ratio to make a paste, pH is then determined.
Acid Base Accounting (Modified Sobek)	OA-VOL08m ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals OA-VOL08m	Determine the acid generation power of a sample as tonne $CaCO_3$ per kilo-tonne using modified Sobek method
Sulfide S (as S) Calc. (Total-S - SO4-S)	S-CAL06 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-CAL06	Sulfide Sulfur (as S) is calculated by subtracting the Carbonate Leachable Sulfate Sulfur (as S) from the Total Sulfur (as S) obtained from combustion.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfates by NaCO3 Leaching and Gravimetry	S-GRA06 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-GRA06	A preppared sample is heated with diluted Na□CO□ and then filtered. The sulfate in the filtrate is precipitated with BaCl2 in a dilute HCl. The BaSO4 precipitate is filtered, ignited, weighed and the Sulfate Sulfur is determined (as S).
Sulfates by HCl Leaching and Gravimetry	S-GRA06A ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-GRA06A	A prepared sample is heated with dilute HCl and then filtered. The sulfate in the filtrate is precipitated with BaCl2 in a dilute HCl. The BaSO4 precipitate is filtered, ignited, weighed and the Sulfate Sulfur is determined (as S).
Total Sulfur by Combustion and IR	S-IR08 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-IR08	A prepared sample is heated to approximately 1350°C in an induction furnace with oxygen stream. Sulfur dioxide released from the sample are measured by IR (Leco analyzer) and the Total Sulfur result is provided.
Received Sample Weight	WEI-21 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals WEI-21	Weigh out sample received.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **WR2100273**	Page	: 1 of 2
Client	: Minto Explorations Ltd.	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 29-Mar-2021 11:35
PO	: TBD	Date Analysis Commenced	: 01-May-2021
C-O-C number	: 02	Issue Date	: 05-May-2021 17:30
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Kaitlyn Gardner	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

ALS Canada Ltd.

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North Vancouver BC V7H 0A7
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www.alsglobal.com/geochemistry

To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 2-MAY-2021
Account: APN

CERTIFICATE VA21080626

Project: WR2100273

This report is for 1 sample of Rock submitted to our lab in Vancouver, BC, Canada on 1-APR-2021.

The following have access to data associated with this certificate:

ALSE VANCOUVER WEBTRIEVE SOFTWARE DEVELOPMENT GROUP	ALSEV DATASUBLET	HEATHER MCKENZIE

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
DISP-01	Disposal of all sample fractions
CRU-QC	Crushing QC Test
LOG-21	Sample logging - ClientBarCode
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize up to 250g 85% <75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
OA-VOL08m	Modified NP	
S-IR08	Total Sulphur (IR Spectroscopy)	LECO
OA-ELE07	Paste pH	
S-GRA06	Sulfate Sulfur-carbonate leach	WST-SEQ
S-CAL06	Sufide Sulfur (calculated)	LECO
C-GAS05	Inorganic Carbon (CO2)	
S-GRA06a	Sulfate Sulfur (HCl leachable)	WST-SEQ
ME-MS41	Ultra Trace Aqua Regia ICP-MS	

This is the Final Report and supersedes any preliminary report with this certificate number.Results apply to samples as submitted.All pages of this report have been checked and approved for release.
***** See Appendix Page for comments regarding this certificate *****

Signature:

Saa Traxler, General Manager, North Vancouver

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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 2-MAY-2021
Account: APN

Project: WR2100273

CERTIFICATE OF ANALYSIS VA21080626

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	ME-MS41 Ag ppm 0.01	ME-MS41 Al % 0.01	ME-MS41 As ppm 0.1	ME-MS41 Au ppm 0.02	ME-MS41 B ppm 10	ME-MS41 Ba ppm 10	ME-MS41 Be ppm 0.05	ME-MS41 Bi ppm 0.01	ME-MS41 Ca % 0.01	ME-MS41 Cd ppm 0.01	ME-MS41 Ce ppm 0.02	ME-MS41 Co ppm 0.1	ME-MS41 Cr ppm 1	ME-MS41 Cs ppm 0.05
WR2100273-001		0.64	0.53	1.09	1.0	0.10	<10	160	0.26	0.09	1.17	0.26	15.90	6.1	8	0.25

***** See Appendix Page for comments regarding this certificate *****

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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 2-MAY-2021
Account: APN

Project: WR2100273

CERTIFICATE OF ANALYSIS VA21080626

Sample Description	Method Analyte Units LOD	ME-MS41 Cu ppm 0.2	ME-MS41 Fe % 0.01	ME-MS41 Ga ppm 0.05	ME-MS41 Ge ppm 0.05	ME-MS41 Hf ppm 0.02	ME-MS41 Hg ppm 0.01	ME-MS41 In ppm 0.005	ME-MS41 K % 0.01	ME-MS41 La ppm 0.2	ME-MS41 Li ppm 0.1	ME-MS41 Mg % 0.01	ME-MS41 Mn ppm 5	ME-MS41 Mo ppm 0.05	ME-MS41 Na % 0.01	ME-MS41 Nb ppm 0.05
WR2100273-001		813	2.68	6.98	0.07	0.04	0.08	0.064	0.34	8.1	7.7	0.65	552	1.54	0.05	0.17

***** See Appendix Page for comments regarding this certificate *****

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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 2-MAY-2021
Account: APN

Project: WR2100273

CERTIFICATE OF ANALYSIS VA21080626

Sample Description	Method Analyte Units LOD	ME-MS41 Ni ppm 0.2	ME-MS41 P ppm 10	ME-MS41 Pb ppm 0.2	ME-MS41 Rb ppm 0.1	ME-MS41 Re ppm 0.001	ME-MS41 S % 0.01	ME-MS41 Sb ppm 0.05	ME-MS41 Sc ppm 0.1	ME-MS41 Se ppm 0.2	ME-MS41 Sn ppm 0.2	ME-MS41 Sr ppm 0.2	ME-MS41 Ta ppm 0.01	ME-MS41 Te ppm 0.01	ME-MS41 Th ppm 0.2	ME-MS41 Ti % 0.005
WR2100273-001		2.6	640	3.9	18.0	0.005	0.15	0.05	2.5	0.7	0.8	67.4	<0.01	0.19	2.4	0.082

***** See Appendix Page for comments regarding this certificate *****

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100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 2-MAY-2021
Account: APN

Project: WR2100273

CERTIFICATE OF ANALYSIS VA21080626

Sample Description	Method Analyte Units LOD	ME-MS41 Tl ppm 0.02	ME-MS41 U ppm 0.05	ME-MS41 V ppm 1	ME-MS41 W ppm 0.05	ME-MS41 Y ppm 0.05	ME-MS41 Zn ppm 2	ME-MS41 Zr ppm 0.5	OA-VOL08m MPA tCaCO3/1Kt 0.3	OA-VOL08m FIZZ RAT Unity 1	OA-VOL08m NNP tCaCO3/1Kt 1	OA-VOL08m NP tCaCO3/1Kt 1	OA-ELE07 pH Unity 0.1	OA-VOL08m Ratio (N Unity 0.01	S-IR08 S % 0.01	S-GRA06 S % 0.01
WR2100273-001		0.11	0.25	49	0.07	3.92	99	1.0	5.0	2	19	24	8.1	4.80	0.16	0.06

***** See Appendix Page for comments regarding this certificate *****

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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 2-MAY-2021
Account: APN

Project: WR2100273

CERTIFICATE OF ANALYSIS VA21080626

Sample Description	Method Analyte Units LOD	S-GRA06a S % 0.01	S-CAL06 S % 0.01	C-GAS05 C % 0.05	C-GAS05 CO2 % 0.2
WR2100273-001		0.10	0.10	0.21	0.8

***** See Appendix Page for comments regarding this certificate *****

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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 2-MAY-2021
Account: APN

Project: WR2100273

CERTIFICATE OF ANALYSIS VA21080626

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

C-GAS05	CRU-31	CRU-QC	DISP-01
LOG-21	ME-MS41	OA-ELE07	OA-VOL08m
PUL-31	S-CAL06	S-GRA06	S-GRA06a
S-IR08	SPL-21	WEI-21	

ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

Date: MAR. 25/21

COC Number: 02

Environmental Division
Whitehorse
Work Order Reference
WR2100273

Telephone : +1 867-668 6689

Report To	Contact and company name below will appear on the final report
Company:	Minto Explorations Ltd.
Contact:	Minto Environment - Coordinator
Phone:	1-604-759-4659
	Company address below will appear on the final report
Street:	12-151 Industrial Road
City/Province:	Whitehorse, YT
Postal Code:	YA1 2V3
Invoice To	Same as Report To ☐ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Minto Explorations Ltd.
Contact:	Ruth Cayetano

Report Format / Distribution	
Select Report Format:	☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	minto_environment@mintomine.com
Email 2	
Email 3	

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	ap@mintomine.com
Email 2	

Project Information	
ALS Account # / Quote #:	
Job #:	
PO / AFE:	TBD
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only):

ALS Contact:

Sampler:

Select Service Level Below - Please confirm all E&P TATs with your AM

Regular [R] ☐ Standard TAT if received

PRIORITY (Business Days): 4 day [P4] ☐ | 3 day [P3] ☐ | 2 day [P2] ☐

EMERGENCY: 1

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level selected

Analysis Requ

Indicate Filtered (F), Preserved (P) or Filtered and P

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total Metals- Aqua regia digestion (ICP)	Paste pH	% Inorganic Carbonate	Total Carbon/Sulphur (Leco)	AP - determination by % sulphide sulphur	Modified NP - (MEND 1991)			Number of Cont
	FEB TAL 2021	25/03/21		TAILS	X	X	X	X	X	X			

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☑ NO	
Are samples for human drinking water use? ☐ YES ☑ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
16				5			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: JOEY	Date: MAR. 25/21	Time:	Received by:	Date: Mar 29/21	Time: 11:35	Received by: ice pack	Date: MAR 3 1 2021	Time: 1230 pm

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2100294**	Page	: 1 of 5
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Laura Battsion	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine - WRMP	Date Samples Received	: 06-Apr-2021 13:30
PO	: ----	Date Analysis Commenced	: 28-Apr-2021
C-O-C number	: ----	Issue Date	: 29-Apr-2021 13:15
Sampler	: ----		
Site	: ----		
Quote number	: Q78311		
No. of samples received	: 2		
No. of samples analysed	: 2		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Kaitlyn Gardner	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
%	percent
kg	kilograms
pH units	pH units
ppm	parts per million
tCaCO3/kt	tons CaCO3 per kiloton

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MM177264	MM177265	----	----	----
					Client sampling date / time	25-Mar-2021	25-Mar-2021	----	----	----
						WR2100294-001	WR2100294-002	--------	--------	--------
						Result	Result	----	----	----
Acid Base Accounting										
carbon dioxide	124-38-9	C-GAS05	0.2	%		0.9	1.4	----	----	----
carbon, total inorganic [TIC]	----	C-GAS05	0.05	%		0.25	0.38	----	----	----
fizz rating	----	OA-VOL08m	1	-		2	2	----	----	----
maximum potential acidity [MPA]	----	OA-VOL08m	0.3	tCaCO3/kt		2.2	2.2	----	----	----
net neutralization potential [NNP]	----	OA-VOL08m	1	tCaCO3/kt		25	32	----	----	----
neutralization potential [NP]	----	OA-VOL08m	1	tCaCO3/kt		27	34	----	----	----
neutralization potential ratio [NPR], (NP/MPA)	----	OA-VOL08m	0.01	-		12.34	15.54	----	----	----
pH (1:1 soil:water)	----	OA-ELE07	0.10	pH units		8.20	8.10	----	----	----
sulfate (as S), carbonate leach	14808-79-8	S-GRA06	0.01	%		<0.01	<0.01	----	----	----
sulfate (as S), HCl leach	14808-79-8	S-GRA06A	0.01	%		0.02	0.02	----	----	----
sulfide (as S), total minus carbonate leach	18496-25-8	S-CAL06	0.01	%		0.07	0.07	----	----	----
sulfur, total	7704-34-9	S-IR08	0.01	%		0.07	0.07	----	----	----
weight, sample received	NA	WEI-21	0.02	kg		1.34	1.32	----	----	----
Metals										
aluminum	7429-90-5	ME-MS41	0.01	%		1.01	1.08	----	----	----
antimony	7440-36-0	ME-MS41	0.05	ppm		0.06	0.08	----	----	----
arsenic	7440-38-2	ME-MS41	0.1	ppm		1.2	1.1	----	----	----
barium	7440-39-3	ME-MS41	10	ppm		170	190	----	----	----
beryllium	7440-41-7	ME-MS41	0.05	ppm		0.34	0.38	----	----	----
bismuth	7440-69-9	ME-MS41	0.01	ppm		0.17	0.24	----	----	----
boron	7440-42-8	ME-MS41	10	ppm		<10	<10	----	----	----
cadmium	7440-43-9	ME-MS41	0.01	ppm		0.07	0.18	----	----	----
calcium	7440-70-2	ME-MS41	0.01	%		1.24	1.51	----	----	----
cerium	7440-45-1	ME-MS41	0.02	ppm		18.45	19.25	----	----	----
cesium	7440-46-2	ME-MS41	0.05	ppm		0.17	0.21	----	----	----
chromium	7440-47-3	ME-MS41	1	ppm		6	6	----	----	----
cobalt	7440-48-4	ME-MS41	0.1	ppm		5.4	5.6	----	----	----
copper	7440-50-8	ME-MS41	0.2	ppm		1125	1230	----	----	----
gallium	7440-55-3	ME-MS41	0.05	ppm		5.93	5.99	----	----	----
germanium	7440-56-4	ME-MS41	0.05	ppm		0.07	0.07	----	----	----
gold	7440-57-5	ME-MS41	0.02	ppm		0.03	0.05	----	----	----

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MM177264	MM177265	----	----	----
					Client sampling date / time	25-Mar-2021	25-Mar-2021	----	----	----
						WR2100294-001	WR2100294-002	--------	--------	--------
						Result	Result	----	----	----
Metals										
hafnium	7440-58-6	ME-MS41	0.02	ppm		0.05	0.06	----	----	----
indium	7440-74-6	ME-MS41	0.005	ppm		0.018	0.023	----	----	----
iron	7439-89-6	ME-MS41	0.01	%		2.36	2.46	----	----	----
lanthanum	7439-91-0	ME-MS41	0.2	ppm		9.6	10.2	----	----	----
lead	7439-92-1	ME-MS41	0.2	ppm		5.0	5.8	----	----	----
lithium	7439-93-2	ME-MS41	0.1	ppm		6.1	6.0	----	----	----
magnesium	7439-95-4	ME-MS41	0.01	%		0.60	0.59	----	----	----
manganese	7439-96-5	ME-MS41	5	ppm		534	577	----	----	----
mercury	7439-97-6	ME-MS41	0.01	ppm		0.01	<0.01	----	----	----
molybdenum	7439-98-7	ME-MS41	0.05	ppm		0.27	0.35	----	----	----
nickel	7440-02-0	ME-MS41	0.2	ppm		1.7	1.7	----	----	----
niobium	7440-03-1	ME-MS41	0.05	ppm		0.15	0.15	----	----	----
phosphorus	7723-14-0	ME-MS41	10	ppm		560	600	----	----	----
potassium	7440-09-7	ME-MS41	0.01	%		0.27	0.32	----	----	----
rhenium	7440-15-5	ME-MS41	0.001	ppm		<0.001	<0.001	----	----	----
rubidium	7440-17-7	ME-MS41	0.1	ppm		12.9	15.6	----	----	----
scandium	7440-20-2	ME-MS41	0.1	ppm		3.2	3.8	----	----	----
selenium	7782-49-2	ME-MS41	0.2	ppm		1.1	1.5	----	----	----
silver	7440-22-4	ME-MS41	0.01	ppm		0.56	0.66	----	----	----
sodium	7440-23-5	ME-MS41	0.01	%		0.07	0.08	----	----	----
strontium	7440-24-6	ME-MS41	0.2	ppm		80.6	87.8	----	----	----
sulfur	7704-34-9	ME-MS41	0.01	%		0.05	0.06	----	----	----
tantalum	7440-25-7	ME-MS41	0.01	ppm		<0.01	<0.01	----	----	----
tellurium	13494-80-9	ME-MS41	0.01	ppm		0.17	0.24	----	----	----
thallium	7440-28-0	ME-MS41	0.02	ppm		0.07	0.08	----	----	----
thorium	7440-29-1	ME-MS41	0.2	ppm		1.9	1.9	----	----	----
tin	7440-31-5	ME-MS41	0.2	ppm		0.4	0.4	----	----	----
titanium	7440-32-6	ME-MS41	0.005	%		0.077	0.074	----	----	----
tungsten	7440-33-7	ME-MS41	0.05	ppm		0.09	0.08	----	----	----
uranium	7440-61-1	ME-MS41	0.05	ppm		0.20	0.20	----	----	----
vanadium	7440-62-2	ME-MS41	1	ppm		46	46	----	----	----
yttrium	7440-65-5	ME-MS41	0.05	ppm		5.37	6.68	----	----	----

Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	MM177264	MM177265	----	----	----
					Client sampling date / time	25-Mar-2021	25-Mar-2021	----	----	----
Analyte	CAS Number	Method	LOR	Unit		WR2100294-001	WR2100294-002	--------	--------	--------
						Result	Result	----	----	----
Metals										
zinc	7440-66-6	ME-MS41	2	ppm		62	65	----	----	----
zirconium	7440-67-7	ME-MS41	0.5	ppm		1.1	1.1	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

ALS minerals — Sample Submittal Form

Company Name:	Minto Exploration Ltd
Submitted by:	Peter Pang
Telephone:	604-759-6014
Courier/Waybill:	
# Containers:	
Date Shipped:	
PO Number:	

Environmental Division Whitehorse
Work Order Reference
WR2100294

Date Receive	
Client Code:	
Workorder N	
Quote:	
Template:	

Telephone : +1 867 668 6689

Standard Project:	Minto Mine - WRMP
Commodity:	☐ Ore ☑ Trace ☐ Potentially Hazardous Materials
Special Instructions:	
Sample Type:	☑ Rock ☐ Pulp ☐ Percussion ☐ Soil ☐ Sediment ☐ Drill Core Other

Results to

Name:	Laura Battsion	☑ Invoice	
Email:	LauraB@mintomine.com	☑ Certificate	
Address:		☑ QC Certificate	
City:	Whitehorse	State: Yukon	☑ Data File
Country:	Canada	Zip:	☐ Webtrieve Only

Copy to

Name:	Peter Pang	☑ Webtrieve Only
Email:	PeterP@mintomine.com	☐ Certificate
		☑ Data File

Copy to

Name:	Stu Harris	☑ Webtrieve Only
Email:	StuartH@mintomine.com	☐ Certificate
		☑ Data File

Sample Return

Pulps	Rejects
☑ Return after analysis	☑ Return after analysis
☐ Return after 90 days	☐ Return after 45 days
☐ Discard	☐ Discard
☐ Paid Storage	☐ Paid Storage

Failure to indicate pulp & reject disposition will be considered as paid storage.

Return Address:
Minto Mine, c/o Smalls Expediting
25 Pilgram Pl Suite 2
Whitehorse, Yukon,

Attention: Laura Battison

Authorized By:
Name: Laura Battison (Please Print)
Signature: Peter Signed for Laura

*All shipments received are subject to inspection upon layout; all services are rendered in accordance with ALS Minerals Terms & Conditions (see the current Schedule of Services & Fees).

Samples ID's		Quantity	Sample Preparation Required (Prep Code)	Analytical (Elements or Method Code)	Check here for Rush Premium Service
Start No.	Finish No.				
MM 177264	MM 177265	2		ME-MS41-AX	
MM 177264	MM 177265	2		ACIDBASE-ACC04-AX	
MM 177264	MM 177265	2		SULPHUR-S-GRA06-AX	☐
	Total Samples	2			

APR 6, 2021, 4°C

ALS Minerals — Sample Submittal Form

Company Name:	Minto Exploration Ltd
Submitted by:	Peter Pang
Telephone:	604-759-6014
Courier/Waybill:	
# Containers:	
Date Shipped:	
PO Number:	

Date Receive
Client Code:
Workorder N
Quote:
Template:

Environmental Division
Whitehorse
Work Order Reference
WR2100294

Telephone : +1 867 668 6689

Standard Project: Minto Mine - WRMP
Commodity: ☐ Ore ☑ Trace ☐ Potentially Hazardous Materials
Special Instructions:
Sample Type: ☑ Rock ☐ Pulp ☐ Percussion ☐ Soil ☐ Sediment ☐ Drill Core Other

Results to

Name:	Laura Battsion	☑	Invoice
Email:	LauraB@mintomine.com	☑	Certificate
Address:		☑	QC Certificate
City:	Whitehorse	☑	Data File
State:	Yukon	☐	Webtrieve Only
Country:	Canada		
Zip:			

Copy to

Name:	Peter Pang	☑	Webtrieve Only
Email:	PeterP@mintomine.com	☐	Certificate
		☑	Data File

Copy to

Name:	Stu Harris	☑	Webtrieve Only
Email:	StuartH@mintomine.com	☐	Certificate
		☑	Data File

Sample Return

Pulps	Rejects
☑ Return after analysis	☑ Return after analysis
☐ Return after 90 days	☐ Return after 45 days
☐ Discard	☐ Discard
☐ Paid Storage	☐ Paid Storage

Failure to indicate pulp & reject disposition will be considered as paid storage.

Return Address:
Minto Mine, c/o Smalls Expediting
25 Pilgram Pl Suite 2
Whitehorse, Yukon,

Attention: Laura Battison

Authorized By:
Name: Laura Battison
(Please Print)
Signature: Peter Signed for Laura

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Samples ID's Start No.	Samples ID's Finish No.	Quantity	Sample Preparation Required (Prep Code)	Analytical (Elements or Method Code)	Check here for Rush Premium Service
MM 177264	MM 177265	2		ME-MS41-AX	
MM 177264	MM 177265	2		ACIDBASE-ACC04-AX	
MM 177264	MM 177265	2		SULPHUR-S-GRA06-AX	☐
	Total Samples	2			

12bo

April 6, 2021, 7°C

5 C HA 2:40P-
4/7

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2100333**	Page	: 1 of 5
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 15-Apr-2021 15:27
PO	: ----	Date Analysis Commenced	: 24-May-2021
C-O-C number	: ----	Issue Date	: 27-May-2021 14:13
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Kaitlyn Gardner	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

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Unit	*Description*
-	No Unit
%	percent
kg	kilograms
pH units	pH units
ppm	parts per million
tCaCO3/kt	tons CaCO3 per kiloton

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	177312	177313	177314	177315	----
					Client sampling date / time	15-Apr-2021	15-Apr-2021	15-Apr-2021	15-Apr-2021	----
						WR2100333-001	WR2100333-002	WR2100333-003	WR2100333-004	--------
						Result	Result	Result	Result	----
Acid Base Accounting										
carbon dioxide	124-38-9	C-GAS05	0.2	%		1.4	0.6	1.2	0.6	----
carbon, total inorganic [TIC]	----	C-GAS05	0.05	%		0.38	0.17	0.32	0.18	----
fizz rating	----	OA-VOL08m	1	-		2	1	2	1	----
maximum potential acidity [MPA]	----	OA-VOL08m	0.3	tCaCO3/kt		3.8	4.7	1.3	0.3	----
net neutralization potential [NNP]	----	OA-VOL08m	1	tCaCO3/kt		26	12	31	19	----
neutralization potential [NP]	----	OA-VOL08m	1	tCaCO3/kt		30	17	32	19	----
neutralization potential ratio [NPR], (NP/MPA)	----	OA-VOL08m	0.01	-		8.00	3.63	25.60	60.80	----
pH (1:1 soil:water)	----	OA-ELE07	0.10	pH units		8.10	8.30	8.20	8.60	----
sulfate (as S), carbonate leach	14808-79-8	S-GRA06	0.01	%		0.12	0.12	0.03	0.01	----
sulfate (as S), HCl leach	14808-79-8	S-GRA06A	0.01	%		0.07	0.12	0.01	<0.01	----
sulfide (as S), total minus carbonate leach	18496-25-8	S-CAL06	0.01	%		<0.01	0.03	0.01	<0.01	----
sulfur, total	7704-34-9	S-IR08	0.01	%		0.12	0.15	0.04	0.01	----
weight, sample received	NA	WEI-21	0.02	kg		1.36	1.18	1.34	1.38	----
Metals										
aluminum	7429-90-5	ME-MS41	0.01	%		0.87	0.96	1.15	0.92	----
antimony	7440-36-0	ME-MS41	0.05	ppm		0.06	<0.05	<0.05	0.05	----
arsenic	7440-38-2	ME-MS41	0.1	ppm		1.4	0.9	1.1	0.4	----
barium	7440-39-3	ME-MS41	10	ppm		280	140	250	180	----
beryllium	7440-41-7	ME-MS41	0.05	ppm		0.37	0.32	0.43	0.26	----
bismuth	7440-69-9	ME-MS41	0.01	ppm		0.06	0.04	0.03	0.02	----
boron	7440-42-8	ME-MS41	10	ppm		10	<10	10	<10	----
cadmium	7440-43-9	ME-MS41	0.01	ppm		0.11	0.07	0.06	0.03	----
calcium	7440-70-2	ME-MS41	0.01	%		1.40	1.11	1.57	0.97	----
cerium	7440-45-1	ME-MS41	0.02	ppm		19.80	19.75	19.00	17.50	----
cesium	7440-46-2	ME-MS41	0.05	ppm		0.28	0.42	0.20	0.24	----
chromium	7440-47-3	ME-MS41	1	ppm		6	6	5	5	----
cobalt	7440-48-4	ME-MS41	0.1	ppm		4.7	5.2	5.6	4.9	----
copper	7440-50-8	ME-MS41	0.2	ppm		739	312	180.0	71.3	----
gallium	7440-55-3	ME-MS41	0.05	ppm		4.66	5.23	6.16	4.95	----
germanium	7440-56-4	ME-MS41	0.05	ppm		0.05	0.07	0.06	0.06	----
gold	7440-57-5	ME-MS41	0.02	ppm		<0.02	<0.02	<0.02	<0.02	----

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	177312	177313	177314	177315	----
					Client sampling date / time	15-Apr-2021	15-Apr-2021	15-Apr-2021	15-Apr-2021	----
						WR2100333-001	WR2100333-002	WR2100333-003	WR2100333-004	--------
						Result	Result	Result	Result	----
Metals										
hafnium	7440-58-6	ME-MS41	0.02	ppm		0.05	0.06	0.06	0.05	----
indium	7440-74-6	ME-MS41	0.005	ppm		0.023	0.022	0.021	0.018	----
iron	7439-89-6	ME-MS41	0.01	%		2.08	2.06	2.32	2.05	----
lanthanum	7439-91-0	ME-MS41	0.2	ppm		11.0	11.3	10.4	10.0	----
lead	7439-92-1	ME-MS41	0.2	ppm		4.5	4.6	5.1	4.7	----
lithium	7439-93-2	ME-MS41	0.1	ppm		4.9	5.0	6.3	5.3	----
magnesium	7439-95-4	ME-MS41	0.01	%		0.57	0.60	0.65	0.60	----
manganese	7439-96-5	ME-MS41	5	ppm		526	468	556	482	----
mercury	7439-97-6	ME-MS41	0.01	ppm		<0.01	<0.01	<0.01	<0.01	----
molybdenum	7439-98-7	ME-MS41	0.05	ppm		0.58	0.57	0.26	0.23	----
nickel	7440-02-0	ME-MS41	0.2	ppm		2.0	1.7	1.9	1.6	----
niobium	7440-03-1	ME-MS41	0.05	ppm		0.17	0.21	0.17	0.19	----
phosphorus	7723-14-0	ME-MS41	10	ppm		600	670	650	580	----
potassium	7440-09-7	ME-MS41	0.01	%		0.35	0.39	0.29	0.42	----
rhenium	7440-15-5	ME-MS41	0.001	ppm		0.001	0.002	<0.001	<0.001	----
rubidium	7440-17-7	ME-MS41	0.1	ppm		17.9	20.9	13.6	20.9	----
scandium	7440-20-2	ME-MS41	0.1	ppm		3.4	3.5	3.9	3.4	----
selenium	7782-49-2	ME-MS41	0.2	ppm		0.6	0.4	<0.2	<0.2	----
silver	7440-22-4	ME-MS41	0.01	ppm		0.35	0.13	0.10	0.04	----
sodium	7440-23-5	ME-MS41	0.01	%		0.05	0.06	0.08	0.07	----
strontium	7440-24-6	ME-MS41	0.2	ppm		205	77.1	113.5	89.0	----
sulfur	7704-34-9	ME-MS41	0.01	%		0.14	0.17	0.04	0.01	----
tantalum	7440-25-7	ME-MS41	0.01	ppm		<0.01	<0.01	<0.01	<0.01	----
tellurium	13494-80-9	ME-MS41	0.01	ppm		0.09	0.01	0.01	0.01	----
thallium	7440-28-0	ME-MS41	0.02	ppm		0.12	0.13	0.08	0.13	----
thorium	7440-29-1	ME-MS41	0.2	ppm		2.3	2.6	1.6	1.7	----
tin	7440-31-5	ME-MS41	0.2	ppm		0.4	0.4	0.5	0.4	----
titanium	7440-32-6	ME-MS41	0.005	%		0.071	0.094	0.077	0.107	----
tungsten	7440-33-7	ME-MS41	0.05	ppm		0.05	0.08	<0.05	0.06	----
uranium	7440-61-1	ME-MS41	0.05	ppm		0.23	0.32	0.22	0.28	----
vanadium	7440-62-2	ME-MS41	1	ppm		41	46	46	45	----
yttrium	7440-65-5	ME-MS41	0.05	ppm		5.35	5.52	6.65	5.02	----

Analytical Results

Sub-Matrix: Soil/Solid (Matrix: Soil/Solid)					Client sample ID	177312	177313	177314	177315	----
					Client sampling date / time	15-Apr-2021	15-Apr-2021	15-Apr-2021	15-Apr-2021	----
Analyte	CAS Number	Method	LOR	Unit		WR2100333-001	WR2100333-002	WR2100333-003	WR2100333-004	--------
						Result	Result	Result	Result	----
Metals										
zinc	7440-66-6	ME-MS41	2	ppm		62	65	66	58	----
zirconium	7440-67-7	ME-MS41	0.5	ppm		0.8	0.9	1.0	0.9	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2100333**	Page	: 1 of 9
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 15-Apr-2021 15:27
PO	: ----	Issue Date	: 27-May-2021 14:13
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Acid Base Accounting (Modified Sobek)										
LDPE bag 177312	OA-VOL08m	15-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Acid Base Accounting (Modified Sobek)										
LDPE bag 177313	OA-VOL08m	15-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Acid Base Accounting (Modified Sobek)										
LDPE bag 177314	OA-VOL08m	15-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Acid Base Accounting (Modified Sobek)										
LDPE bag 177315	OA-VOL08m	15-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
LDPE bag 177312	C-GAS05	15-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
LDPE bag 177313	C-GAS05	15-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
LDPE bag 177314	C-GAS05	15-Apr-2021	----	----	----		24-May-2021	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Inorganic Carbon by Coulometer										
LDPE bag 177315	C-GAS05	15-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Received Sample Weight										
LDPE bag 177312	WEI-21	15-Apr-2021	----	----	----		24-May-2021	180 days	40 days	✓
Acid Base Accounting : Received Sample Weight										
LDPE bag 177313	WEI-21	15-Apr-2021	----	----	----		24-May-2021	180 days	40 days	✓
Acid Base Accounting : Received Sample Weight										
LDPE bag 177314	WEI-21	15-Apr-2021	----	----	----		24-May-2021	180 days	40 days	✓
Acid Base Accounting : Received Sample Weight										
LDPE bag 177315	WEI-21	15-Apr-2021	----	----	----		24-May-2021	180 days	40 days	✓
Acid Base Accounting : Saturated Paste pH										
LDPE bag 177312	OA-ELE07	15-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Saturated Paste pH										
LDPE bag 177313	OA-ELE07	15-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Saturated Paste pH										
LDPE bag 177314	OA-ELE07	15-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Saturated Paste pH										
LDPE bag 177315	OA-ELE07	15-Apr-2021	----	----	----		24-May-2021	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
LDPE bag 177312	S-GRA06A	15-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
LDPE bag 177313	S-GRA06A	15-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
LDPE bag 177314	S-GRA06A	15-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
LDPE bag 177315	S-GRA06A	15-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
LDPE bag 177312	S-GRA06	15-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
LDPE bag 177313	S-GRA06	15-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
LDPE bag 177314	S-GRA06	15-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
LDPE bag 177315	S-GRA06	15-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
LDPE bag 177312	S-CAL06	15-Apr-2021	----	----	----		24-May-2021	28 days	40 days	× EHT

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
LDPE bag 177313	S-CAL06	15-Apr-2021	----	----	----		24-May-2021	28 days	40 days	× EHT
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
LDPE bag 177314	S-CAL06	15-Apr-2021	----	----	----		24-May-2021	28 days	40 days	× EHT
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
LDPE bag 177315	S-CAL06	15-Apr-2021	----	----	----		24-May-2021	28 days	40 days	× EHT
Acid Base Accounting : Total Sulfur by Combustion and IR										
LDPE bag 177312	S-IR08	15-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Total Sulfur by Combustion and IR										
LDPE bag 177313	S-IR08	15-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Total Sulfur by Combustion and IR										
LDPE bag 177314	S-IR08	15-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Total Sulfur by Combustion and IR										
LDPE bag 177315	S-IR08	15-Apr-2021	----	----	----		24-May-2021	----	----	
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
LDPE bag 177312	ME-MS41	15-Apr-2021	----	----	----		24-May-2021	----	----	
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
LDPE bag 177313	ME-MS41	15-Apr-2021	----	----	----		24-May-2021	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
LDPE bag 177314	ME-MS41	15-Apr-2021	----	----	----		24-May-2021	----	----	
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
LDPE bag 177315	ME-MS41	15-Apr-2021	----	----	----		24-May-2021	----	----	

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

- **No Quality Control data available for this section.**

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Inorganic Carbon by Coulometer	C-GAS05 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals C-GAS05	Determine Total Inorganic Carbon (TIC) by using diluted perchloric acid to react with metal carbonate and yield carbon dioxide. Concentration of CO_2 is determined by coulometer.
51 Elements by Aqua Regia digestion and ICP-AES/MS	ME-MS41 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals ME-MS41	A prepared sample is digested with aqua regia in a graphite heating block. After cooling, the resulting solution is diluted to with deionized water, mixed and analyzed by ICP-AES. Samples are then analyzed by ICP-MS for the remaining suite of elements.
Saturated Paste pH	OA-ELE07 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals OA-ELE07	Sample mix with water in 1:1 ratio to make a paste, pH is then determined.
Acid Base Accounting (Modified Sobek)	OA-VOL08m ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals OA-VOL08m	Determine the acid generation power of a sample as tonne $CaCO_3$ per kilo-tonne using modified Sobek method
Sulfide S (as S) Calc. (Total-S - SO4-S)	S-CAL06 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-CAL06	Sulfide Sulfur (as S) is calculated by subtracting the Carbonate Leachable Sulfate Sulfur (as S) from the Total Sulfur (as S) obtained from combustion.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfates by NaCO3 Leaching and Gravimetry	S-GRA06 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-GRA06	A preppared sample is heated with diluted Na□CO□ and then filtered. The sulfate in the filtrate is precipitated with BaCl2 in a dilute HCl. The BaSO4 precipitate is filtered, ignited, weighed and the Sulfate Sulfur is determined (as S).
Sulfates by HCl Leaching and Gravimetry	S-GRA06A ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-GRA06A	A prepared sample is heated with dilute HCl and then filtered. The sulfate in the filtrate is precipitated with BaCl2 in a dilute HCl. The BaSO4 precipitate is filtered, ignited, weighed and the Sulfate Sulfur is determined (as S).
Total Sulfur by Combustion and IR	S-IR08 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-IR08	A prepared sample is heated to approximately 1350°C in an induction furnace with oxygen stream. Sulfur dioxide released from the sample are measured by IR (Leco analyzer) and the Total Sulfur result is provided.
Received Sample Weight	WEI-21 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals WEI-21	Weigh out sample received.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **WR2100333**	Page	: 1 of 2
Client	: Minto Explorations Ltd.	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 15-Apr-2021 15:27
PO	: ----	Date Analysis Commenced	: 24-May-2021
C-O-C number	: ----	Issue Date	: 27-May-2021 14:13
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Kaitlyn Gardner	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: +1 604 984 0221 Fax: +1 604 984 0218
www.alsglobal.com/geochemistry

To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 25-MAY-2021
Account: APN

CERTIFICATE VA21096661

Project: WR2100333

This report is for 4 samples of Crushed Rock submitted to our lab in Vancouver, BC, Canada on 20-APR-2021.

The following have access to data associated with this certificate:

ALSE VANCOUVER WEBTRIEVE SOFTWARE DEVELOPMENT GROUP	ALSEV DATASUBLET	HEATHER MCKENZIE

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-21	Sample logging - ClientBarCode
PUL-31	Pulverize up to 250g 85% <75 um
DISP-01	Disposal of all sample fractions
SPL-21	Split sample - riffle splitter

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-MS41	Ultra Trace Aqua Regia ICP-MS	
OA-VOL08m	Modified NP	
S-IR08	Total Sulphur (IR Spectroscopy)	LECO
OA-ELE07	Paste pH	
S-GRA06	Sulfate Sulfur-carbonate leach	WST-SEQ
S-CAL06	Sufide Sulfur (calculated)	LECO
C-GAS05	Inorganic Carbon (CO2)	
S-GRA06a	Sulfate Sulfur (HCl leachable)	WST-SEQ

This is the Final Report and supersedes any preliminary report with this certificate number.Results apply to samples as submitted.All pages of this report have been checked and approved for release.
***** See Appendix Page for comments regarding this certificate *****

Signature:

Saa Traxler, General Manager, North Vancouver

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: +1 604 984 0221 Fax: +1 604 984 0218
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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 25-MAY-2021
Account: APN

Project: WR2100333

CERTIFICATE OF ANALYSIS VA21096661

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	OA-VOL08m MPA tCaCO3/1Kt 0.3	OA-VOL08m FIZZ RAT Unity 1	OA-VOL08m NNP tCaCO3/1Kt 1	OA-VOL08m NP tCaCO3/1Kt 1	OA-ELE07 pH Unity 0.1	OA-VOL08m Ratio (N Unity 0.01	S-IR08 S % 0.01	S-GRA06 S % 0.01	S-GRA06a S % 0.01	S-CAL06 S % 0.01	C-GAS05 C % 0.05	C-GAS05 CO2 % 0.2	ME-MS41 Ag ppm 0.01	ME-MS41 Al % 0.01
WR2100333-001		1.36	3.8	2	26	30	8.1	8.00	0.12	0.12	0.07	<0.01	0.38	1.4	0.35	0.87
WR2100333-002		1.18	4.7	1	12	17	8.3	3.63	0.15	0.12	0.12	0.03	0.17	0.6	0.13	0.96
WR2100333-003		1.34	1.3	2	31	32	8.2	25.60	0.04	0.03	0.01	0.01	0.32	1.2	0.10	1.15
WR2100333-004		1.38	0.3	1	19	19	8.6	60.80	0.01	0.01	<0.01	<0.01	0.18	0.6	0.04	0.92

***** See Appendix Page for comments regarding this certificate *****

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: +1 604 984 0221 Fax: +1 604 984 0218
www.alsglobal.com/geochemistry

To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 25-MAY-2021
Account: APN

Project: WR2100333

CERTIFICATE OF ANALYSIS VA21096661

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Fe	Ga
	Units	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm
	LOD	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05	0.2	0.01	0.05
WR2100333-001		1.4	<0.02	10	280	0.37	0.06	1.40	0.11	19.80	4.7	6	0.28	739	2.08	4.66
WR2100333-002		0.9	<0.02	<10	140	0.32	0.04	1.11	0.07	19.75	5.2	6	0.42	312	2.06	5.23
WR2100333-003		1.1	<0.02	10	250	0.43	0.03	1.57	0.06	19.00	5.6	5	0.20	180.0	2.32	6.16
WR2100333-004		0.4	<0.02	<10	180	0.26	0.02	0.97	0.03	17.50	4.9	5	0.24	71.3	2.05	4.95

***** See Appendix Page for comments regarding this certificate *****

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CERTIFICATE OF ANALYSIS VA21096661

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb	Ni	P	Pb
	Units	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm
	LOD	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05	0.2	10	0.2
WR2100333-001		0.05	0.05	<0.01	0.023	0.35	11.0	4.9	0.57	526	0.58	0.05	0.17	2.0	600	4.5
WR2100333-002		0.07	0.06	<0.01	0.022	0.39	11.3	5.0	0.60	468	0.57	0.06	0.21	1.7	670	4.6
WR2100333-003		0.06	0.06	<0.01	0.021	0.29	10.4	6.3	0.65	556	0.26	0.08	0.17	1.9	650	5.1
WR2100333-004		0.06	0.05	<0.01	0.018	0.42	10.0	5.3	0.60	482	0.23	0.07	0.19	1.6	580	4.7

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CERTIFICATE OF ANALYSIS VA21096661

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	V
	Units	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm
	LOD	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005	0.02	0.05	1
WR2100333-001		17.9	0.001	0.14	0.06	3.4	0.6	0.4	205	<0.01	0.09	2.3	0.071	0.12	0.23	41
WR2100333-002		20.9	0.002	0.17	<0.05	3.5	0.4	0.4	77.1	<0.01	0.01	2.6	0.094	0.13	0.32	46
WR2100333-003		13.6	<0.001	0.04	<0.05	3.9	<0.2	0.5	113.5	<0.01	0.01	1.6	0.077	0.08	0.22	46
WR2100333-004		20.9	<0.001	0.01	0.05	3.4	<0.2	0.4	89.0	<0.01	0.01	1.7	0.107	0.13	0.28	45

***** See Appendix Page for comments regarding this certificate *****

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BURNABY BC V5A 1W9

Finalized Date: 25-MAY-2021
Account: APN

Project: WR2100333

CERTIFICATE OF ANALYSIS VA21096661

Sample Description	Method Analyte Units LOD	ME-MS41 W ppm 0.05	ME-MS41 Y ppm 0.05	ME-MS41 Zn ppm 2	ME-MS41 Zr ppm 0.5
WR2100333-001		0.05	5.35	62	0.8
WR2100333-002		0.08	5.52	65	0.9
WR2100333-003		<0.05	6.65	66	1.0
WR2100333-004		0.06	5.02	58	0.9

***** See Appendix Page for comments regarding this certificate *****

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100 - 8081 LOUGHEED HWY.
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Finalized Date: 25-MAY-2021
Account: APN

Project: WR2100333

CERTIFICATE OF ANALYSIS VA21096661

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

C-GAS05	DISP-01	LOG-21	ME-MS41
OA-ELE07	OA-VOL08m	PUL-31	S-CAL06
S-GRA06	S-GRA06a	S-IR08	SPL-21
WEI-21			

ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 17 - 773560

Page

Environmental Division Whitehorse

Work Order Reference WR2100333

Telephone : +1 867 668 6689

Report To	Contact and company name below will appear on the final report
Company:	MINTO
Contact:	
Phone:	
	Company address below will appear on the final report
Street:	
City/Province:	
Postal Code:	
Invoice To	Same as Report To ☐ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☐ NO
Company:	
Contact:	

Report Format / Distribution

Select Report Format: ☐ PDF ☐ EXCEL ☐ EDD (DIGITAL)

Quality Control (QC) Report with Report ☐ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax

Email 2

Email 3

Invoice Distribution

Select Invoice Distribution: ☐ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax

Email 2

Select Service Level Below - Contact your AM to con

Regular [R] ☐ Standard TAT if received by 3 pm - bus

PRIORITY (Business Days): 4 day [P4-20%] ☐ | 3 day [P3-25%] ☐ | 2 day [P2-50%] ☐

EMERGENCY: 1 Business day | Same Day, Weel (Laboratory ope

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level selected, you

Analysis Requ

Indicate Filtered (F), Preserved (P) or Filtered and

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#
Job #:		Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only):		ALS Contact:	Sampler:

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	SAMPLES ON HO	SUSPECTED HAZARD (see Special Instruct
	177312						
	177313						
	177314						
	177315						

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? ☐ YES ☐ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
16							

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
				APR 15/21	15:27			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 FRONT

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2100353**	Page	: 1 of 5
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 20-Apr-2021 15:30
PO	:	Date Analysis Commenced	: 24-May-2021
C-O-C number	: 03	Issue Date	: 27-May-2021 14:23
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Kaitlyn Gardner	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
%	percent
kg	kilograms
pH units	pH units
ppm	parts per million
tCaCO3/kt	tons CaCO3 per kiloton

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	Mar. TAL 2021	----	----	----	----
					Client sampling date / time	14-Apr-2021	----	----	----	----
						WR2100353-001	--------	--------	--------	--------
						Result	----	----	----	----
Acid Base Accounting										
carbon dioxide	124-38-9	C-GAS05	0.2	%		1.8	----	----	----	----
carbon, total inorganic [TIC]	----	C-GAS05	0.05	%		0.49	----	----	----	----
fizz rating	----	OA-VOL08m	1	-		2	----	----	----	----
maximum potential acidity [MPA]	----	OA-VOL08m	0.3	tCaCO3/kt		2.5	----	----	----	----
net neutralization potential [NNP]	----	OA-VOL08m	1	tCaCO3/kt		31	----	----	----	----
neutralization potential [NP]	----	OA-VOL08m	1	tCaCO3/kt		33	----	----	----	----
neutralization potential ratio [NPR], (NP/MPA)	----	OA-VOL08m	0.01	-		13.20	----	----	----	----
pH (1:1 soil:water)	----	OA-ELE07	0.10	pH units		8.20	----	----	----	----
sulfate (as S), carbonate leach	14808-79-8	S-GRA06	0.01	%		0.04	----	----	----	----
sulfate (as S), HCl leach	14808-79-8	S-GRA06A	0.01	%		0.03	----	----	----	----
sulfide (as S), total minus carbonate leach	18496-25-8	S-CAL06	0.01	%		0.04	----	----	----	----
sulfur, total	7704-34-9	S-IR08	0.01	%		0.08	----	----	----	----
weight, sample received	NA	WEI-21	0.02	kg		1.28	----	----	----	----
Metals										
aluminum	7429-90-5	ME-MS41	0.01	%		0.86	----	----	----	----
antimony	7440-36-0	ME-MS41	0.05	ppm		0.34	----	----	----	----
arsenic	7440-38-2	ME-MS41	0.1	ppm		7.7	----	----	----	----
barium	7440-39-3	ME-MS41	10	ppm		180	----	----	----	----
beryllium	7440-41-7	ME-MS41	0.05	ppm		0.33	----	----	----	----
bismuth	7440-69-9	ME-MS41	0.01	ppm		0.11	----	----	----	----
boron	7440-42-8	ME-MS41	10	ppm		<10	----	----	----	----
cadmium	7440-43-9	ME-MS41	0.01	ppm		0.25	----	----	----	----
calcium	7440-70-2	ME-MS41	0.01	%		1.34	----	----	----	----
cerium	7440-45-1	ME-MS41	0.02	ppm		20.5	----	----	----	----
cesium	7440-46-2	ME-MS41	0.05	ppm		0.81	----	----	----	----
chromium	7440-47-3	ME-MS41	1	ppm		7	----	----	----	----
cobalt	7440-48-4	ME-MS41	0.1	ppm		6.3	----	----	----	----
copper	7440-50-8	ME-MS41	0.2	ppm		518	----	----	----	----
gallium	7440-55-3	ME-MS41	0.05	ppm		6.16	----	----	----	----
germanium	7440-56-4	ME-MS41	0.05	ppm		0.07	----	----	----	----
gold	7440-57-5	ME-MS41	0.02	ppm		0.07	----	----	----	----

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	Mar. TAL 2021	----	----	----	----
					Client sampling date / time	14-Apr-2021	----	----	----	----
						WR2100353-001	--------	--------	--------	--------
						Result	----	----	----	----
Metals										
hafnium	7440-58-6	ME-MS41	0.02	ppm		0.06	----	----	----	----
indium	7440-74-6	ME-MS41	0.005	ppm		0.043	----	----	----	----
iron	7439-89-6	ME-MS41	0.01	%		3.37	----	----	----	----
lanthanum	7439-91-0	ME-MS41	0.2	ppm		11.1	----	----	----	----
lead	7439-92-1	ME-MS41	0.2	ppm		4.0	----	----	----	----
lithium	7439-93-2	ME-MS41	0.1	ppm		5.3	----	----	----	----
magnesium	7439-95-4	ME-MS41	0.01	%		0.63	----	----	----	----
manganese	7439-96-5	ME-MS41	5	ppm		685	----	----	----	----
mercury	7439-97-6	ME-MS41	0.01	ppm		0.34	----	----	----	----
molybdenum	7439-98-7	ME-MS41	0.05	ppm		1.12	----	----	----	----
nickel	7440-02-0	ME-MS41	0.2	ppm		2.6	----	----	----	----
niobium	7440-03-1	ME-MS41	0.05	ppm		0.17	----	----	----	----
phosphorus	7723-14-0	ME-MS41	10	ppm		600	----	----	----	----
potassium	7440-09-7	ME-MS41	0.01	%		0.38	----	----	----	----
rhenium	7440-15-5	ME-MS41	0.001	ppm		0.002	----	----	----	----
rubidium	7440-17-7	ME-MS41	0.1	ppm		22.6	----	----	----	----
scandium	7440-20-2	ME-MS41	0.1	ppm		3.8	----	----	----	----
selenium	7782-49-2	ME-MS41	0.2	ppm		0.5	----	----	----	----
silver	7440-22-4	ME-MS41	0.01	ppm		0.33	----	----	----	----
sodium	7440-23-5	ME-MS41	0.01	%		0.04	----	----	----	----
strontium	7440-24-6	ME-MS41	0.2	ppm		137.5	----	----	----	----
sulfur	7704-34-9	ME-MS41	0.01	%		0.08	----	----	----	----
tantalum	7440-25-7	ME-MS41	0.01	ppm		<0.01	----	----	----	----
tellurium	13494-80-9	ME-MS41	0.01	ppm		0.12	----	----	----	----
thallium	7440-28-0	ME-MS41	0.02	ppm		0.15	----	----	----	----
thorium	7440-29-1	ME-MS41	0.2	ppm		3.5	----	----	----	----
tin	7440-31-5	ME-MS41	0.2	ppm		0.6	----	----	----	----
titanium	7440-32-6	ME-MS41	0.005	%		0.071	----	----	----	----
tungsten	7440-33-7	ME-MS41	0.05	ppm		0.08	----	----	----	----
uranium	7440-61-1	ME-MS41	0.05	ppm		0.42	----	----	----	----
vanadium	7440-62-2	ME-MS41	1	ppm		54	----	----	----	----
yttrium	7440-65-5	ME-MS41	0.05	ppm		5.14	----	----	----	----

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	Mar. TAL 2021	----	----	----	----
					Client sampling date / time	14-Apr-2021	----	----	----	----
						WR2100353-001	--------	--------	--------	--------
						Result	----	----	----	----
Metals										
zinc	7440-66-6	ME-MS41	2	ppm		95	----	----	----	----
zirconium	7440-67-7	ME-MS41	0.5	ppm		1.0	----	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2100353**	Page	: 1 of 6
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 20-Apr-2021 15:30
PO	:	Issue Date	: 27-May-2021 14:23
C-O-C number	: 03		
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Acid Base Accounting (Modified Sobek)										
Double bagged HDPE Mar. TAL 2021	OA-VOL08m	14-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
Double bagged HDPE Mar. TAL 2021	C-GAS05	14-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Received Sample Weight										
Double bagged HDPE Mar. TAL 2021	WEI-21	14-Apr-2021	----	----	----		24-May-2021	----	41 days	
Acid Base Accounting : Saturated Paste pH										
Double bagged HDPE Mar. TAL 2021	OA-ELE07	14-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
Double bagged HDPE Mar. TAL 2021	S-GRA06A	14-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
Double bagged HDPE Mar. TAL 2021	S-GRA06	14-Apr-2021	----	----	----		24-May-2021	----	----	
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
Double bagged HDPE Mar. TAL 2021	S-CAL06	14-Apr-2021	----	----	----		24-May-2021	----	41 days	EHT

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times* Rec	*Holding Times* Actual	*Eval*	*Analysis Date*	*Holding Times* Rec	*Holding Times* Actual	*Eval*
Acid Base Accounting : Total Sulfur by Combustion and IR										
Double bagged HDPE Mar. TAL 2021	S-IR08	14-Apr-2021	----	----	----		24-May-2021	----	----	
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
Double bagged HDPE Mar. TAL 2021	ME-MS41	14-Apr-2021	----	----	----		24-May-2021	----	----	

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

- **No Quality Control data available for this section.**

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Inorganic Carbon by Coulometer	C-GAS05 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals C-GAS05	Determine Total Inorganic Carbon (TIC) by using diluted perchloric acid to react with metal carbonate and yield carbon dioxide. Concentration of CO_2 is determined by coulometer.
51 Elements by Aqua Regia digestion and ICP-AES/MS	ME-MS41 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals ME-MS41	A prepared sample is digested with aqua regia in a graphite heating block. After cooling, the resulting solution is diluted to with deionized water, mixed and analyzed by ICP-AES. Samples are then analyzed by ICP-MS for the remaining suite of elements.
Saturated Paste pH	OA-ELE07 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals OA-ELE07	Sample mix with water in 1:1 ratio to make a paste, pH is then determined.
Acid Base Accounting (Modified Sobek)	OA-VOL08m ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals OA-VOL08m	Determine the acid generation power of a sample as tonne $CaCO_3$ per kilo-tonne using modified Sobek method
Sulfide S (as S) Calc. (Total-S - SO4-S)	S-CAL06 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-CAL06	Sulfide Sulfur (as S) is calculated by subtracting the Carbonate Leachable Sulfate Sulfur (as S) from the Total Sulfur (as S) obtained from combustion.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfates by NaCO3 Leaching and Gravimetry	S-GRA06 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-GRA06	A preppared sample is heated with diluted Na□CO□ and then filtered. The sulfate in the filtrate is precipitated with BaCl2 in a dilute HCl. The BaSO4 precipitate is filtered, ignited, weighed and the Sulfate Sulfur is determined (as S).
Sulfates by HCl Leaching and Gravimetry	S-GRA06A ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-GRA06A	A prepared sample is heated with dilute HCl and then filtered. The sulfate in the filtrate is precipitated with BaCl2 in a dilute HCl. The BaSO4 precipitate is filtered, ignited, weighed and the Sulfate Sulfur is determined (as S).
Total Sulfur by Combustion and IR	S-IR08 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-IR08	A prepared sample is heated to approximately 1350°C in an induction furnace with oxygen stream. Sulfur dioxide released from the sample are measured by IR (Leco analyzer) and the Total Sulfur result is provided.
Received Sample Weight	WEI-21 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals WEI-21	Weigh out sample received.

QUALITY CONTROL REPORT

Work Order	: **WR2100353**	Page	: 1 of 2
Client	: Minto Explorations Ltd.	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 20-Apr-2021 15:30
PO	:	Date Analysis Commenced	: 24-May-2021
C-O-C number	: 03	Issue Date	: 27-May-2021 14:23
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Kaitlyn Gardner	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

ALS Canada Ltd.

2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: +1 604 984 0221 Fax: +1 604 984 0218
www.alsglobal.com/geochemistry

To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 25-MAY-2021
Account: APN

CERTIFICATE VA21099843

Project: WR2100353

This report is for 1 sample of Other submitted to our lab in Vancouver, BC, Canada on 22-APR-2021.

The following have access to data associated with this certificate:

ALSE VANCOUVER WEBTRIEVE SOFTWARE DEVELOPMENT GROUP	ALSEV DATASUBLET	HEATHER MCKENZIE

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
DISP-01	Disposal of all sample fractions
LOG-21	Sample logging - ClientBarCode
PUL-31	Pulverize up to 250g 85% <75 um
SPL-21	Split sample - riffle splitter

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
OA-VOL08m	Modified NP	
S-IR08	Total Sulphur (IR Spectroscopy)	LECO
OA-ELE07	Paste pH	
S-GRA06	Sulfate Sulfur-carbonate leach	WST-SEQ
S-CAL06	Sufide Sulfur (calculated)	LECO
C-GAS05	Inorganic Carbon (CO2)	
S-GRA06a	Sulfate Sulfur (HCl leachable)	WST-SEQ
ME-MS41	Ultra Trace Aqua Regia ICP-MS	

This is the Final Report and supersedes any preliminary report with this certificate number.Results apply to samples as submitted.All pages of this report have been checked and approved for release.
***** See Appendix Page for comments regarding this certificate *****

Signature:

Saa Traxler, General Manager, North Vancouver

ALS Canada Ltd.
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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 25-MAY-2021
Account: APN

Project: WR2100353

CERTIFICATE OF ANALYSIS VA21099843

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	ME-MS41 Ag ppm 0.01	ME-MS41 Al % 0.01	ME-MS41 As ppm 0.1	ME-MS41 Au ppm 0.02	ME-MS41 B ppm 10	ME-MS41 Ba ppm 10	ME-MS41 Be ppm 0.05	ME-MS41 Bi ppm 0.01	ME-MS41 Ca % 0.01	ME-MS41 Cd ppm 0.01	ME-MS41 Ce ppm 0.02	ME-MS41 Co ppm 0.1	ME-MS41 Cr ppm 1	ME-MS41 Cs ppm 0.05
WR2100353-001		1.28	0.33	0.86	7.7	0.07	<10	180	0.33	0.11	1.34	0.25	20.5	6.3	7	0.81

***** See Appendix Page for comments regarding this certificate *****

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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 25-MAY-2021
Account: APN

Project: WR2100353

CERTIFICATE OF ANALYSIS VA21099843

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm
	LOD	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05
WR2100353-001		518	3.37	6.16	0.07	0.06	0.34	0.043	0.38	11.1	5.3	0.63	685	1.12	0.04	0.17

***** See Appendix Page for comments regarding this certificate *****

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100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 25-MAY-2021
Account: APN

Project: WR2100353

CERTIFICATE OF ANALYSIS VA21099843

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti
	Units	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	LOD	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005
WR2100353-001		2.6	600	4.0	22.6	0.002	0.08	0.34	3.8	0.5	0.6	137.5	<0.01	0.12	3.5	0.071

***** See Appendix Page for comments regarding this certificate *****

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Finalized Date: 25-MAY-2021
Account: APN

Project: WR2100353

CERTIFICATE OF ANALYSIS VA21099843

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	OA-VOL08m	OA-VOL08m	OA-VOL08m	OA-VOL08m	OA-ELE07	OA-VOL08m	S-IR08	S-GRA06
	Analyte	Tl	U	V	W	Y	Zn	Zr	MPA	FIZZ RAT	NNP	NP	pH	Ratio (N	S	S
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	tCaCO3/1Kt	Unity	tCaCO3/1Kt	tCaCO3/1Kt	Unity	Unity	%	%
	LOD	0.02	0.05	1	0.05	0.05	2	0.5	0.3	1	1	1	0.1	0.01	0.01	0.01
WR2100353-001		0.15	0.42	54	0.08	5.14	95	1.0	2.5	2	31	33	8.2	13.20	0.08	0.04

***** See Appendix Page for comments regarding this certificate *****

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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 25-MAY-2021
Account: APN

Project: WR2100353

CERTIFICATE OF ANALYSIS VA21099843

Sample Description	Method	S-GRA06a	S-CAL06	C-GAS05	C-GAS05
	Analyte	S	S	C	CO2
	Units	%	%	%	%
	LOD	0.01	0.01	0.05	0.2
WR2100353-001		0.03	0.04	0.49	1.8

***** See Appendix Page for comments regarding this certificate *****

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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 25-MAY-2021
Account: APN

Project: WR2100353

CERTIFICATE OF ANALYSIS VA21099843

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

C-GAS05	DISP-01	LOG-21	ME-MS41
OA-ELE07	OA-VOL08m	PUL-31	S-CAL06
S-GRA06	S-GRA06a	S-IR08	SPL-21
WEI-21			

ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

Date: Apr. 20/21

COC Number: 03

Environmental Division Whitehorse

Work Order Reference WR2100353

Telephone : +1 867 668 6689

Report To	Contact and company name below will appear on the final report
Company:	Minto Explorations Ltd.
Contact:	Minto Environment - Coordinator
Phone:	1-604-759-4659
	Company address below will appear on the final report
Street:	12-151 Industrial Road
City/Province:	Whitehorse, YT
Postal Code:	YA1 2V3
Invoice To	Same as Report To ☐ YES ☐ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Minto Explorations Ltd.
Contact:	Ruth Cayetano

Report Format / Distribution	
Select Report Format:	☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	minto_environment@mintomine.com
Email 2	
Email 3	

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	ap@mintomine.com
Email 2	

Project Information	
ALS Account # / Quote #:	
Job #:	
PO / AFE:	TBD
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only)

ALS Contact: Sampler:

Select Service Level Below - Please confirm all E&P TATs with your AM - su

Regular [R] ☐ Standard TAT if received by

PRIORITY (Business Days): 4 day [P4] ☐ 3 day [P3] ☐ 2 day [P2] ☐

EMERGENCY: 1 E Sa S

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level selected,

Analysis Reque

Indicate Filtered (F), Preserved (P) or Filtered and Pre

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total Metals- Aqua regia disgestion (ICP)	Paste pH	% Inorganic Carbonate	Total Corbon/Sukphur (Leco)	AP - determination by % sulphide sulphur	Modified NP - (MEND 1991)	Number of Co
	Mar. TAL 2021	Apr.14/21		Tails	X	X	X	X	X	X	1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human drinking water use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
14					

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Corey R	Date: Apr. 20 /21	Time:	Received by: (2)	Date: APR 20/21	Time: 15:30	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

Date: Apr. 20/21

COC Number: 03

Environmental Division
Whitehorse
Work Order Reference
WR2100353

Telephone : +1 867 668 6689

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	Select Service Level Below - Please confirm all E&P TATs with your AM - su
Company:	Minto Explorations Ltd.	Select Report Format: ☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)	Regular [R] ☐ Standard TAT if received by
Contact:	Minto Environment - Coordinator	Quality Control (QC) Report with Report ☑ YES ☐ NO	PRIORITY (Business Days): 4 day [P4] ☐ 3 day [P3] ☐ 2 day [P2] ☐ EMERGENCY: 1 E Sa Su
Phone:	1-604-759-4659	☑ Compare Results to Criteria on Report - provide details below if box checked	
	Company address below will appear on the final report	Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	
Street:	12-151 Industrial Road	Email 1 or Fax minto_environment@mintomine.com	Date and Time Required for all E&P TATs:
City/Province:	Whitehorse, YT	Email 2	For tests that can not be performed according to the service level selected,
Postal Code:	YA1 2V3	Email 3	Analysis Reque
Invoice To	Same as Report To ☐ YES ☐ NO	Invoice Distribution	Indicate Filtered (F), Preserved (P) or Filtered and Pre
	Copy of Invoice with Report ☐ YES ☑ NO	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	
Company:	Minto Explorations Ltd.	Email 1 or Fax ap@mintomine.com	
Contact:	Ruth Cayetano	Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#
Job #:		Major/Minor Code:	Routing Code:
PO / AFE:	TBD	Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		ALS Contact:	Sampler:

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total Metals- Aqua regia digestion (ICP)	Paste pH	% Inorganic Carbonate	Total Carbon/Sulphur (Leco)	AP - determination by % sulphide sulphur	Modified NP - (MEND 1991)						Number of Co
	Mar. TAL 2021	Apr.14/21	—	Tails	X	X	X	X	X	X					-	1

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☑ NO	
Are samples for human drinking water use? ☐ YES ☑ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	☐	SIF Observations	Yes ☐	No ☐	
Ice Packs	☑	Ice Cubes ☐	Custody seal intact	Yes ☐	No ☐
Cooling Initiated	☐				

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C
14			8.5 & (avg 3)

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Corey R	Date: Apr. 20 /21	Time:	Received by: (2)	Date: APR 20/21	Time: 15:30	Received by: JA	Date: 21/04/2021	Time: 3:45pm

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1: If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2100574**	Page	: 1 of 5
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine - WRMP	Date Samples Received	: 09-Jun-2021 11:34
PO	: ----	Date Analysis Commenced	: 19-Jul-2021
C-O-C number	: ----	Issue Date	: 20-Jul-2021 17:05
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Kaitlyn Gardner	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
%	percent
kg	kilograms
pH units	pH units
ppm	parts per million
tCaCO3/kt	tons CaCO3 per kiloton

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MM 177274	MM 177275	MM 181999	MM 182000	----
					Client sampling date / time	[09-Jun-2021]	[09-Jun-2021]	[09-Jun-2021]	[09-Jun-2021]	----
						WR2100574-001	WR2100574-002	WR2100574-003	WR2100574-004	--------
						Result	Result	Result	Result	----
Acid Base Accounting										
carbon dioxide	124-38-9	C-GAS05	0.2	%		1.0	0.6	0.3	0.7	----
carbon, total inorganic [TIC]	----	C-GAS05	0.05	%		0.27	0.16	0.07	0.18	----
fizz rating	----	OA-VOL08m	1	-		2	2	1	2	----
maximum potential acidity [MPA]	----	OA-VOL08m	0.3	tCaCO3/kt		4.1	1.3	0.6	0.3	----
net neutralization potential [NNP]	----	OA-VOL08m	1	tCaCO3/kt		22	16	11	17	----
neutralization potential [NP]	----	OA-VOL08m	1	tCaCO3/kt		26	17	12	17	----
neutralization potential ratio [NPR], (NP/MPA)	----	OA-VOL08m	0.01	-		6.40	13.60	19.20	54.40	----
pH (1:1 soil:water)	----	OA-ELE07	0.10	pH units		7.90	8.70	7.90	8.00	----
sulfate (as S), carbonate leach	14808-79-8	S-GRA06	0.01	%		<0.01	<0.01	<0.01	<0.01	----
sulfate (as S), HCl leach	14808-79-8	S-GRA06A	0.01	%		<0.01	<0.01	0.01	<0.01	----
sulfide (as S), total minus carbonate leach	18496-25-8	S-CAL06	0.01	%		0.13	0.04	0.02	0.01	----
sulfur, total	7704-34-9	S-IR08	0.01	%		0.13	0.04	0.02	0.01	----
weight, sample received	NA	WEI-21	0.02	kg		1.34	1.30	1.30	0.96	----
Metals										
aluminum	7429-90-5	ME-MS41	0.01	%		1.12	1.02	1.13	1.13	----
antimony	7440-36-0	ME-MS41	0.05	ppm		0.07	<0.05	<0.05	0.05	----
arsenic	7440-38-2	ME-MS41	0.1	ppm		1.3	2.1	0.9	1.2	----
barium	7440-39-3	ME-MS41	10	ppm		190	160	190	150	----
beryllium	7440-41-7	ME-MS41	0.05	ppm		0.37	0.29	0.28	0.42	----
bismuth	7440-69-9	ME-MS41	0.01	ppm		0.41	0.17	0.10	0.06	----
boron	7440-42-8	ME-MS41	10	ppm		10	<10	<10	<10	----
cadmium	7440-43-9	ME-MS41	0.01	ppm		0.17	0.07	0.05	0.03	----
calcium	7440-70-2	ME-MS41	0.01	%		1.28	0.86	0.71	1.03	----
cerium	7440-45-1	ME-MS41	0.02	ppm		22.5	22.6	24.2	20.3	----
cesium	7440-46-2	ME-MS41	0.05	ppm		0.28	0.31	0.35	0.20	----
chromium	7440-47-3	ME-MS41	1	ppm		5	6	6	5	----
cobalt	7440-48-4	ME-MS41	0.1	ppm		6.0	5.6	5.6	5.2	----
copper	7440-50-8	ME-MS41	0.2	ppm		2450	805	528	79.1	----
gallium	7440-55-3	ME-MS41	0.05	ppm		6.05	5.51	5.40	5.74	----
germanium	7440-56-4	ME-MS41	0.05	ppm		0.10	0.11	0.10	0.10	----
gold	7440-57-5	ME-MS41	0.02	ppm		0.10	0.07	0.02	<0.02	----

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MM 177274	MM 177275	MM 181999	MM 182000	----
					Client sampling date / time	[09-Jun-2021]	[09-Jun-2021]	[09-Jun-2021]	[09-Jun-2021]	----
						WR2100574-001	WR2100574-002	WR2100574-003	WR2100574-004	--------
						Result	Result	Result	Result	----
Metals										
hafnium	7440-58-6	ME-MS41	0.02	ppm		0.08	0.06	0.06	0.06	----
indium	7440-74-6	ME-MS41	0.005	ppm		0.042	0.020	0.018	0.013	----
iron	7439-89-6	ME-MS41	0.01	%		2.60	2.25	2.37	2.11	----
lanthanum	7439-91-0	ME-MS41	0.2	ppm		12.0	12.4	13.1	11.1	----
lead	7439-92-1	ME-MS41	0.2	ppm		6.7	4.2	3.7	5.7	----
lithium	7439-93-2	ME-MS41	0.1	ppm		7.6	6.3	5.9	7.0	----
magnesium	7439-95-4	ME-MS41	0.01	%		0.75	0.69	0.71	0.69	----
manganese	7439-96-5	ME-MS41	5	ppm		598	498	502	492	----
mercury	7439-97-6	ME-MS41	0.01	ppm		0.01	0.01	<0.01	<0.01	----
molybdenum	7439-98-7	ME-MS41	0.05	ppm		0.35	0.16	3.42	0.97	----
nickel	7440-02-0	ME-MS41	0.2	ppm		1.7	2.2	1.6	1.7	----
niobium	7440-03-1	ME-MS41	0.05	ppm		0.20	0.25	0.26	0.26	----
phosphorus	7723-14-0	ME-MS41	10	ppm		720	640	720	620	----
potassium	7440-09-7	ME-MS41	0.01	%		0.40	0.43	0.63	0.34	----
rhenium	7440-15-5	ME-MS41	0.001	ppm		0.001	<0.001	0.012	0.002	----
rubidium	7440-17-7	ME-MS41	0.1	ppm		19.6	22.1	29.3	16.1	----
scandium	7440-20-2	ME-MS41	0.1	ppm		3.9	3.8	3.4	3.2	----
selenium	7782-49-2	ME-MS41	0.2	ppm		2.5	1.1	0.6	0.3	----
silver	7440-22-4	ME-MS41	0.01	ppm		0.95	0.40	0.25	0.05	----
sodium	7440-23-5	ME-MS41	0.01	%		0.06	0.07	0.08	0.07	----
strontium	7440-24-6	ME-MS41	0.2	ppm		107.0	55.8	40.5	62.8	----
sulfur	7704-34-9	ME-MS41	0.01	%		0.14	0.04	0.03	0.01	----
tantalum	7440-25-7	ME-MS41	0.01	ppm		<0.01	<0.01	<0.01	<0.01	----
tellurium	13494-80-9	ME-MS41	0.01	ppm		0.23	0.09	0.06	0.01	----
thallium	7440-28-0	ME-MS41	0.02	ppm		0.10	0.11	0.16	0.08	----
thorium	7440-29-1	ME-MS41	0.2	ppm		3.2	2.8	3.8	2.2	----
tin	7440-31-5	ME-MS41	0.2	ppm		0.5	0.4	0.4	0.4	----
titanium	7440-32-6	ME-MS41	0.005	%		0.101	0.118	0.145	0.110	----
tungsten	7440-33-7	ME-MS41	0.05	ppm		0.10	0.14	0.25	0.17	----
uranium	7440-61-1	ME-MS41	0.05	ppm		0.28	0.40	0.35	0.23	----
vanadium	7440-62-2	ME-MS41	1	ppm		54	48	56	45	----
yttrium	7440-65-5	ME-MS41	0.05	ppm		6.23	5.39	4.62	5.19	----

Analytical Results

Sub-Matrix: Soil/Solid (Matrix: Soil/Solid)					Client sample ID	MM 177274	MM 177275	MM 181999	MM 182000	----
					Client sampling date / time	[09-Jun-2021]	[09-Jun-2021]	[09-Jun-2021]	[09-Jun-2021]	----
Analyte	CAS Number	Method	LOR	Unit		WR2100574-001	WR2100574-002	WR2100574-003	WR2100574-004	--------
						Result	Result	Result	Result	----
Metals										
zinc	7440-66-6	ME-MS41	2	ppm		88	68	71	63	----
zirconium	7440-67-7	ME-MS41	0.5	ppm		1.6	1.3	1.4	1.1	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2100574**	Page	: 1 of 9
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine - WRMP	Date Samples Received	: 09-Jun-2021 11:34
PO	: ----	Issue Date	: 20-Jul-2021 17:05
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Acid Base Accounting (Modified Sobek)										
LDPE bag MM 177274	OA-VOL08m	09-Jun-2021	----	----	----		19-Jul-2021	----	----	
Acid Base Accounting : Acid Base Accounting (Modified Sobek)										
LDPE bag MM 177275	OA-VOL08m	09-Jun-2021	----	----	----		19-Jul-2021	----	----	
Acid Base Accounting : Acid Base Accounting (Modified Sobek)										
LDPE bag MM 181999	OA-VOL08m	09-Jun-2021	----	----	----		19-Jul-2021	----	----	
Acid Base Accounting : Acid Base Accounting (Modified Sobek)										
LDPE bag MM 182000	OA-VOL08m	09-Jun-2021	----	----	----		19-Jul-2021	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
LDPE bag MM 177274	C-GAS05	09-Jun-2021	----	----	----		19-Jul-2021	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
LDPE bag MM 177275	C-GAS05	09-Jun-2021	----	----	----		19-Jul-2021	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
LDPE bag MM 181999	C-GAS05	09-Jun-2021	----	----	----		19-Jul-2021	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Inorganic Carbon by Coulometer										
LDPE bag MM 182000	C-GAS05	09-Jun-2021	----	----	----		19-Jul-2021	----	----	
Acid Base Accounting : Received Sample Weight										
LDPE bag MM 177274	WEI-21	09-Jun-2021	----	----	----		19-Jul-2021	180 days	41 days	✓
Acid Base Accounting : Received Sample Weight										
LDPE bag MM 177275	WEI-21	09-Jun-2021	----	----	----		19-Jul-2021	180 days	41 days	✓
Acid Base Accounting : Received Sample Weight										
LDPE bag MM 181999	WEI-21	09-Jun-2021	----	----	----		19-Jul-2021	180 days	41 days	✓
Acid Base Accounting : Received Sample Weight										
LDPE bag MM 182000	WEI-21	09-Jun-2021	----	----	----		19-Jul-2021	180 days	41 days	✓
Acid Base Accounting : Saturated Paste pH										
LDPE bag MM 177274	OA-ELE07	09-Jun-2021	----	----	----		19-Jul-2021	----	----	
Acid Base Accounting : Saturated Paste pH										
LDPE bag MM 177275	OA-ELE07	09-Jun-2021	----	----	----		19-Jul-2021	----	----	
Acid Base Accounting : Saturated Paste pH										
LDPE bag MM 181999	OA-ELE07	09-Jun-2021	----	----	----		19-Jul-2021	----	----	
Acid Base Accounting : Saturated Paste pH										
LDPE bag MM 182000	OA-ELE07	09-Jun-2021	----	----	----		19-Jul-2021	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
LDPE bag MM 177274	S-GRA06A	09-Jun-2021	----	----	----		19-Jul-2021	----	----	
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
LDPE bag MM 177275	S-GRA06A	09-Jun-2021	----	----	----		19-Jul-2021	----	----	
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
LDPE bag MM 181999	S-GRA06A	09-Jun-2021	----	----	----		19-Jul-2021	----	----	
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
LDPE bag MM 182000	S-GRA06A	09-Jun-2021	----	----	----		19-Jul-2021	----	----	
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
LDPE bag MM 177274	S-GRA06	09-Jun-2021	----	----	----		19-Jul-2021	----	----	
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
LDPE bag MM 177275	S-GRA06	09-Jun-2021	----	----	----		19-Jul-2021	----	----	
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
LDPE bag MM 181999	S-GRA06	09-Jun-2021	----	----	----		19-Jul-2021	----	----	
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
LDPE bag MM 182000	S-GRA06	09-Jun-2021	----	----	----		19-Jul-2021	----	----	
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
LDPE bag MM 177274	S-CAL06	09-Jun-2021	----	----	----		19-Jul-2021	28 days	41 days	× EHT

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
LDPE bag MM 177275	S-CAL06	09-Jun-2021	----	----	----		19-Jul-2021	28 days	41 days	× EHT
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
LDPE bag MM 181999	S-CAL06	09-Jun-2021	----	----	----		19-Jul-2021	28 days	41 days	× EHT
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
LDPE bag MM 182000	S-CAL06	09-Jun-2021	----	----	----		19-Jul-2021	28 days	41 days	× EHT
Acid Base Accounting : Total Sulfur by Combustion and IR										
LDPE bag MM 177274	S-IR08	09-Jun-2021	----	----	----		19-Jul-2021	----	----	
Acid Base Accounting : Total Sulfur by Combustion and IR										
LDPE bag MM 177275	S-IR08	09-Jun-2021	----	----	----		19-Jul-2021	----	----	
Acid Base Accounting : Total Sulfur by Combustion and IR										
LDPE bag MM 181999	S-IR08	09-Jun-2021	----	----	----		19-Jul-2021	----	----	
Acid Base Accounting : Total Sulfur by Combustion and IR										
LDPE bag MM 182000	S-IR08	09-Jun-2021	----	----	----		19-Jul-2021	----	----	
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
LDPE bag MM 177274	ME-MS41	09-Jun-2021	----	----	----		19-Jul-2021	----	----	
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
LDPE bag MM 177275	ME-MS41	09-Jun-2021	----	----	----		19-Jul-2021	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / **Container / Client Sample ID(s)**	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times*		*Eval*	*Analysis Date*	*Holding Times*		*Eval*
				Rec	*Actual*			*Rec*	*Actual*	
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
LDPE bag										
MM 181999	ME-MS41	09-Jun-2021	----	----	----		19-Jul-2021	----	----	
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
LDPE bag										
MM 182000	ME-MS41	09-Jun-2021	----	----	----		19-Jul-2021	----	----	

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

- **No Quality Control data available for this section.**

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Inorganic Carbon by Coulometer	C-GAS05 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals C-GAS05	Determine Total Inorganic Carbon (TIC) by using diluted perchloric acid to react with metal carbonate and yield carbon dioxide. Concentration of CO_2 is determined by coulometer.
51 Elements by Aqua Regia digestion and ICP-AES/MS	ME-MS41 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals ME-MS41	A prepared sample is digested with aqua regia in a graphite heating block. After cooling, the resulting solution is diluted to with deionized water, mixed and analyzed by ICP-AES. Samples are then analyzed by ICP-MS for the remaining suite of elements.
Saturated Paste pH	OA-ELE07 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals OA-ELE07	Sample mix with water in 1:1 ratio to make a paste, pH is then determined.
Acid Base Accounting (Modified Sobek)	OA-VOL08m ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals OA-VOL08m	Determine the acid generation power of a sample as tonne $CaCO_3$ per kilo-tonne using modified Sobek method
Sulfide S (as S) Calc. (Total-S - SO4-S)	S-CAL06 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-CAL06	Sulfide Sulfur (as S) is calculated by subtracting the Carbonate Leachable Sulfate Sulfur (as S) from the Total Sulfur (as S) obtained from combustion.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfates by NaCO3 Leaching and Gravimetry	S-GRA06 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-GRA06	A preppared sample is heated with diluted Na□CO□ and then filtered. The sulfate in the filtrate is precipitated with BaCl2 in a dilute HCl. The BaSO4 precipitate is filtered, ignited, weighed and the Sulfate Sulfur is determined (as S).
Sulfates by HCl Leaching and Gravimetry	S-GRA06A ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-GRA06A	A prepared sample is heated with dilute HCl and then filtered. The sulfate in the filtrate is precipitated with BaCl2 in a dilute HCl. The BaSO4 precipitate is filtered, ignited, weighed and the Sulfate Sulfur is determined (as S).
Total Sulfur by Combustion and IR	S-IR08 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-IR08	A prepared sample is heated to approximately 1350°C in an induction furnace with oxygen stream. Sulfur dioxide released from the sample are measured by IR (Leco analyzer) and the Total Sulfur result is provided.
Received Sample Weight	WEI-21 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals WEI-21	Weigh out sample received.

QUALITY CONTROL REPORT

Work Order	: **WR2100574**	Page	: 1 of 2
Client	: Minto Explorations Ltd.	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine - WRMP	Date Samples Received	: 09-Jun-2021 11:34
PO	: ----	Date Analysis Commenced	: 19-Jul-2021
C-O-C number	: ----	Issue Date	: 20-Jul-2021 17:05
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Kaitlyn Gardner	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

ALS Canada Ltd.

2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: +1 604 984 0221 Fax: +1 604 984 0218
www.alsglobal.com/geochemistry

To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 20-JUL-2021
Account: APN

CERTIFICATE VA21149199

Project: WR2100574

This report is for 4 samples of Crushed Rock submitted to our lab in Vancouver, BC, Canada on 11-JUN-2021.

The following have access to data associated with this certificate:

ALSE VANCOUVER WEBTRIEVE SOFTWARE DEVELOPMENT GROUP	ALSEV DATASUBLET	HEATHER MCKENZIE

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
DISP-01	Disposal of all sample fractions
LOG-21	Sample logging - ClientBarCode
PUL-31	Pulverize up to 250g 85% <75 um
SPL-21	Split sample - riffle splitter

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
OA-VOL08m	Modified NP	
S-IR08	Total Sulphur (IR Spectroscopy)	LECO
OA-ELE07	Paste pH	
S-GRA06	Sulfate Sulfur-carbonate leach	WST-SEQ
S-CAL06	Sufide Sulfur (calculated)	LECO
C-GAS05	Inorganic Carbon (CO2)	
S-GRA06a	Sulfate Sulfur (HCl leachable)	WST-SEQ
ME-MS41	Ultra Trace Aqua Regia ICP-MS	

This is the Final Report and supersedes any preliminary report with this certificate number.Results apply to samples as submitted.All pages of this report have been checked and approved for release.
***** See Appendix Page for comments regarding this certificate *****

Signature:

Saa Traxler, General Manager, North Vancouver

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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 20-JUL-2021
Account: APN

Project: WR2100574

CERTIFICATE OF ANALYSIS VA21149199

Sample Description	Method / Analyte / Units / LOD	WEI-21 Recvd Wt. kg 0.02	ME-MS41 Ag ppm 0.01	ME-MS41 Al % 0.01	ME-MS41 As ppm 0.1	ME-MS41 Au ppm 0.02	ME-MS41 B ppm 10	ME-MS41 Ba ppm 10	ME-MS41 Be ppm 0.05	ME-MS41 Bi ppm 0.01	ME-MS41 Ca % 0.01	ME-MS41 Cd ppm 0.01	ME-MS41 Ce ppm 0.02	ME-MS41 Co ppm 0.1	ME-MS41 Cr ppm 1	ME-MS41 Cs ppm 0.05
WR2100574-001		1.34	0.95	1.12	1.3	0.10	10	190	0.37	0.41	1.28	0.17	22.5	6.0	5	0.28
WR2100574-002		1.30	0.40	1.02	2.1	0.07	<10	160	0.29	0.17	0.86	0.07	22.6	5.6	6	0.31
WR2100574-003		1.30	0.25	1.13	0.9	0.02	<10	190	0.28	0.10	0.71	0.05	24.2	5.6	6	0.35
WR2100574-004		0.96	0.05	1.13	1.2	<0.02	<10	150	0.42	0.06	1.03	0.03	20.3	5.2	5	0.20

***** See Appendix Page for comments regarding this certificate *****

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100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 20-JUL-2021
Account: APN

Project: WR2100574

CERTIFICATE OF ANALYSIS VA21149199

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm
	LOD	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05
WR2100574-001		2450	2.60	6.05	0.10	0.08	0.01	0.042	0.40	12.0	7.6	0.75	598	0.35	0.06	0.20
WR2100574-002		805	2.25	5.51	0.11	0.06	0.01	0.020	0.43	12.4	6.3	0.69	498	0.16	0.07	0.25
WR2100574-003		528	2.37	5.40	0.10	0.06	<0.01	0.018	0.63	13.1	5.9	0.71	502	3.42	0.08	0.26
WR2100574-004		79.1	2.11	5.74	0.10	0.06	<0.01	0.013	0.34	11.1	7.0	0.69	492	0.97	0.07	0.26

***** See Appendix Page for comments regarding this certificate *****

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BURNABY BC V5A 1W9

Finalized Date: 20-JUL-2021
Account: APN

Project: WR2100574

CERTIFICATE OF ANALYSIS VA21149199

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti
	Units	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	LOD	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005
WR2100574-001		1.7	720	6.7	19.6	0.001	0.14	0.07	3.9	2.5	0.5	107.0	<0.01	0.23	3.2	0.101
WR2100574-002		2.2	640	4.2	22.1	<0.001	0.04	<0.05	3.8	1.1	0.4	55.8	<0.01	0.09	2.8	0.118
WR2100574-003		1.6	720	3.7	29.3	0.012	0.03	<0.05	3.4	0.6	0.4	40.5	<0.01	0.06	3.8	0.145
WR2100574-004		1.7	620	5.7	16.1	0.002	0.01	0.05	3.2	0.3	0.4	62.8	<0.01	0.01	2.2	0.110

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Project: WR2100574

CERTIFICATE OF ANALYSIS VA21149199

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	OA-VOL08m	OA-VOL08m	OA-VOL08m	OA-VOL08m	OA-ELE07	OA-VOL08m	S-IR08	S-GRA06
	Analyte	Tl	U	V	W	Y	Zn	Zr	MPA	FIZZ RAT	NNP	NP	pH	Ratio (N	S	S
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	tCaCO3/1Kt	Unity	tCaCO3/1Kt	tCaCO3/1Kt	Unity	Unity	%	%
	LOD	0.02	0.05	1	0.05	0.05	2	0.5	0.3	1	1	1	0.1	0.01	0.01	0.01
WR2100574-001		0.10	0.28	54	0.10	6.23	88	1.6	4.1	2	22	26	7.9	6.40	0.13	<0.01
WR2100574-002		0.11	0.40	48	0.14	5.39	68	1.3	1.3	2	16	17	8.7	13.60	0.04	<0.01
WR2100574-003		0.16	0.35	56	0.25	4.62	71	1.4	0.6	1	11	12	7.9	19.20	0.02	<0.01
WR2100574-004		0.08	0.23	45	0.17	5.19	63	1.1	0.3	2	17	17	8.0	54.40	0.01	<0.01

***** See Appendix Page for comments regarding this certificate *****

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BURNABY BC V5A 1W9

Finalized Date: 20-JUL-2021
Account: APN

Project: WR2100574

CERTIFICATE OF ANALYSIS VA21149199

Sample Description	Method	S-GRA06a	S-CAL06	C-GAS05	C-GAS05
	Analyte	S	S	C	CO2
	Units	%	%	%	%
	LOD	0.01	0.01	0.05	0.2
WR2100574-001		<0.01	0.13	0.27	1.0
WR2100574-002		<0.01	0.04	0.16	0.6
WR2100574-003		0.01	0.02	0.07	0.3
WR2100574-004		<0.01	0.01	0.18	0.7

***** See Appendix Page for comments regarding this certificate *****

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BURNABY BC V5A 1W9

Finalized Date: 20-JUL-2021
Account: APN

Project: WR2100574

CERTIFICATE OF ANALYSIS VA21149199

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

C-GAS05	DISP-01	LOG-21	ME-MS41
OA-ELE07	OA-VOL08m	PUL-31	S-CAL06
S-GRA06	S-GRA06a	S-IR08	SPL-21
WEI-21			

ALS Minerals — Sample Submittal Form

Company Name:	Minto Exploration Ltd
Submitted by:	Peter Pang
Telephone:	604-759-6014
Courier/Waybill:	
# Containers:	
Date Shipped:	
PO Number:	

Internal Use Only

Date Received:	JUNE 9 | 21
Client Code:	
Workorder No:	
Quote:	
Template:	

Environmental Division Whitehorse
Work Order Reference
WR2100574

Telephone : +1 867 668 6689

Standard Project:	Minto Mine - WRMP
Commodity:	☐ Ore ☑ Trace ☐ Potential
Special Instructions:	
Sample Type:	☑ Rock ☐ Pulp ☐ Percussion ☐ Soil ☐ Sediment ☐ Drill Core Other

Results to

Name:	Laura Battsion	☑ Invoice	
Email:	LauraB@mintomine.com	☑ Certificate	
Address:		☑ QC Certificate	
City:	Whitehorse	State: Yukon	☑ Data File
Country:	Canada	Zip:	☐ Webtrieve Only

Copy to

Name:	Peter Pang	☑ Webtrieve Only
Email:	PeterP@mintomine.com	☑ Certificate ☑ Data File

Copy to

Name:	Stu Harris	☑ Webtrieve Only
Email:	StuartH@mintomine.com	☑ Certificate ☑ Data File

Sample Return

Pulps	Rejects
☑ Return after analysis	☑ Return after analysis
☐ Return after 90 days	☐ Return after 45 days
☐ Discard	☐ Discard
☐ Paid Storage	☐ Paid Storage

Failure to indicate pulp & reject disposition will be considered as paid storage.

Return Address:
Minto Mine, c/o Smalls Expediting
25 Pilgram Pl Suite 2
Whitehorse, Yukon,

Attention: Laura Battison

Authorized By:
Name: Laura Battison (Please Print)
Signature: Peter for Laura

*All shipments received are subject to inspection upon layout; all services are rendered in accordance with ALS Minerals Terms & Conditions (see the current Schedule of Services & Fees).

Samples ID's		Quantity	Sample Preparation Required (Prep Code)	Analytical (Elements or Method Code)	Check here for Rush Premium Service
Start No.	Finish No.				
MM 177274	MM 177275	2		ME-MS41-AX	
MM 177274	MM 177275	2		ACIDBASE-ACC04-AX	
MM 177274	MM 177275	2		SULPHUR-S-GRA06-AX	☐
MM 181999	MM 182000	2		ME-MS41-AX	
MM 181999	MM 182000	2		ACIDBASE-ACC04-AX	
MM 181999	MM 182000	2		SULPHUR-S-GRA06-AX	
	Total Samples	4			

CONTACT THE LAB TO CONFIRM AVAILABILITY

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2101032**	Page	: 1 of 5
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 12-Aug-2021 14:20
PO	: TBD	Date Analysis Commenced	: 23-Sep-2021
C-O-C number	: 2021-08-11 C	Issue Date	: 28-Sep-2021 09:21
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 2		
No. of samples analysed	: 2		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Kaitlyn Gardner	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
%	percent
kg	kilograms
pH units	pH units
ppm	parts per million
tCaCO3/kt	tons CaCO3 per kiloton

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	May 2021 ABA	June 2021 ABA	----	----	----
					Client sampling date / time	21-May-2021	15-Jun-2021	----	----	----
						WR2101032-001	WR2101032-002	--------	--------	--------
						Result	Result	----	----	----
Acid Base Accounting										
carbon dioxide	124-38-9	C-GAS05	0.2	%		1.3	1	----	----	----
carbon, total [TC]	----	C-IR07	0.01	%		0.43	0.32	----	----	----
carbon, total inorganic [TIC]	----	C-GAS05	0.05	%		0.34	0.26	----	----	----
fizz rating	----	OA-VOL08mn	1	-		2	2	----	----	----
maximum potential acidity [MPA]	----	OA-VOL08mn	0.3	tCaCO3/kt		5	2.2	----	----	----
net neutralization potential [NNP]	----	OA-VOL08mn	1	tCaCO3/kt		29	24	----	----	----
neutralization potential [NP]	----	OA-VOL08mn	1	tCaCO3/kt		34	26	----	----	----
neutralization potential ratio [NPR], (NP/MPA)	----	OA-VOL08mn	0.01	-		6.80	11.89	----	----	----
pH (1:1 soil:water)	----	OA-ELE07	0.10	pH units		8.00	8.10	----	----	----
sulfate (as S), carbonate leach	14808-79-8	S-GRA06	0.01	%		0.10	0.01	----	----	----
sulfate (as S), HCl leach	14808-79-8	S-GRA06A	0.01	%		0.08	0.01	----	----	----
sulfide (as S), total minus carbonate leach	18496-25-8	S-CAL06	0.01	%		0.06	0.06	----	----	----
sulfur, total	7704-34-9	S-IR08	0.01	%		0.16	0.07	----	----	----
weight, sample received	NA	WEI-21	0.02	kg		0.43	1.60	----	----	----
Metals										
aluminum	7429-90-5	ME-MS41	0.01	%		1.33	1.15	----	----	----
antimony	7440-36-0	ME-MS41	0.05	ppm		<0.05	<0.05	----	----	----
arsenic	7440-38-2	ME-MS41	0.1	ppm		1.8	0.9	----	----	----
barium	7440-39-3	ME-MS41	10	ppm		180	160	----	----	----
beryllium	7440-41-7	ME-MS41	0.05	ppm		0.28	0.23	----	----	----
bismuth	7440-69-9	ME-MS41	0.01	ppm		0.14	0.18	----	----	----
boron	7440-42-8	ME-MS41	10	ppm		<10	<10	----	----	----
cadmium	7440-43-9	ME-MS41	0.01	ppm		0.21	0.18	----	----	----
calcium	7440-70-2	ME-MS41	0.01	%		1.59	1.10	----	----	----
cerium	7440-45-1	ME-MS41	0.02	ppm		16.55	14.40	----	----	----
cesium	7440-46-2	ME-MS41	0.05	ppm		0.28	0.52	----	----	----
chromium	7440-47-3	ME-MS41	1	ppm		8	7	----	----	----
cobalt	7440-48-4	ME-MS41	0.1	ppm		6.6	6.3	----	----	----
copper	7440-50-8	ME-MS41	0.2	ppm		717	801	----	----	----
gallium	7440-55-3	ME-MS41	0.05	ppm		8.65	8.07	----	----	----
germanium	7440-56-4	ME-MS41	0.05	ppm		0.06	0.06	----	----	----

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	May 2021 ABA	June 2021 ABA	----	----	----
					Client sampling date / time	21-May-2021	15-Jun-2021	----	----	----
						WR2101032-001	WR2101032-002	--------	--------	--------
						Result	Result	----	----	----
Metals										
gold	7440-57-5	ME-MS41	0.02	ppm		0.08	0.07	----	----	----
hafnium	7440-58-6	ME-MS41	0.02	ppm		0.04	0.04	----	----	----
indium	7440-74-6	ME-MS41	0.005	ppm		0.070	0.047	----	----	----
iron	7439-89-6	ME-MS41	0.01	%		4.37	4.24	----	----	----
lanthanum	7439-91-0	ME-MS41	0.2	ppm		8.8	7.5	----	----	----
lead	7439-92-1	ME-MS41	0.2	ppm		2.9	2.3	----	----	----
lithium	7439-93-2	ME-MS41	0.1	ppm		8.4	5.5	----	----	----
magnesium	7439-95-4	ME-MS41	0.01	%		0.72	0.62	----	----	----
manganese	7439-96-5	ME-MS41	5	ppm		716	787	----	----	----
mercury	7439-97-6	ME-MS41	0.01	ppm		0.10	0.02	----	----	----
molybdenum	7439-98-7	ME-MS41	0.05	ppm		0.56	0.61	----	----	----
nickel	7440-02-0	ME-MS41	0.2	ppm		2.5	2.2	----	----	----
niobium	7440-03-1	ME-MS41	0.05	ppm		0.17	0.21	----	----	----
phosphorus	7723-14-0	ME-MS41	10	ppm		620	590	----	----	----
potassium	7440-09-7	ME-MS41	0.01	%		0.33	0.54	----	----	----
rhenium	7440-15-5	ME-MS41	0.001	ppm		<0.001	<0.001	----	----	----
rubidium	7440-17-7	ME-MS41	0.1	ppm		16.8	29.2	----	----	----
scandium	7440-20-2	ME-MS41	0.1	ppm		3.3	3.4	----	----	----
selenium	7782-49-2	ME-MS41	0.2	ppm		0.6	0.8	----	----	----
silver	7440-22-4	ME-MS41	0.01	ppm		0.41	0.46	----	----	----
sodium	7440-23-5	ME-MS41	0.01	%		0.07	0.06	----	----	----
strontium	7440-24-6	ME-MS41	0.2	ppm		132	56.5	----	----	----
sulfur	7704-34-9	ME-MS41	0.01	%		0.16	0.06	----	----	----
tantalum	7440-25-7	ME-MS41	0.01	ppm		<0.01	<0.01	----	----	----
tellurium	13494-80-9	ME-MS41	0.01	ppm		0.15	0.15	----	----	----
thallium	7440-28-0	ME-MS41	0.02	ppm		0.10	0.22	----	----	----
thorium	7440-29-1	ME-MS41	0.2	ppm		2.6	3.3	----	----	----
tin	7440-31-5	ME-MS41	0.2	ppm		0.7	0.6	----	----	----
titanium	7440-32-6	ME-MS41	0.005	%		0.069	0.105	----	----	----
tungsten	7440-33-7	ME-MS41	0.05	ppm		0.35	0.20	----	----	----
uranium	7440-61-1	ME-MS41	0.05	ppm		0.26	0.21	----	----	----
vanadium	7440-62-2	ME-MS41	1	ppm		63	65	----	----	----

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	May 2021 ABA	June 2021 ABA	----	----	----
					Client sampling date / time	21-May-2021	15-Jun-2021	----	----	----
						WR2101032-001	WR2101032-002	--------	--------	--------
						Result	Result	----	----	----
Metals										
yttrium	7440-65-5	ME-MS41	0.05	ppm		4.89	3.96	----	----	----
zinc	7440-66-6	ME-MS41	2	ppm		115	95	----	----	----
zirconium	7440-67-7	ME-MS41	0.5	ppm		0.9	0.8	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2101032**	Page	: 1 of 7
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 12-Aug-2021 14:20
PO	: TBD	Issue Date	: 28-Sep-2021 09:21
C-O-C number	: 2021-08-11 C		
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 2		
No. of samples analysed	: 2		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Acid Base Accounting (MEND 1991)										
Glass soil jar/Teflon lined cap										
June 2021 ABA	OA-VOL08mn	15-Jun-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Acid Base Accounting (MEND 1991)										
Glass soil jar/Teflon lined cap										
May 2021 ABA	OA-VOL08mn	21-May-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
Glass soil jar/Teflon lined cap										
June 2021 ABA	C-GAS05	15-Jun-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
Glass soil jar/Teflon lined cap										
May 2021 ABA	C-GAS05	21-May-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Received Sample Weight										
Glass soil jar/Teflon lined cap										
June 2021 ABA	WEI-21	15-Jun-2021	----	----	----		23-Sep-2021	180 days	101 days	✓
Acid Base Accounting : Received Sample Weight										
Glass soil jar/Teflon lined cap										
May 2021 ABA	WEI-21	21-May-2021	----	----	----		23-Sep-2021	180 days	126 days	✓
Acid Base Accounting : Saturated Paste pH										
Glass soil jar/Teflon lined cap										
June 2021 ABA	OA-ELE07	15-Jun-2021	----	----	----		23-Sep-2021	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Saturated Paste pH										
Glass soil jar/Teflon lined cap										
May 2021 ABA	OA-ELE07	21-May-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
Glass soil jar/Teflon lined cap										
June 2021 ABA	S-GRA06A	15-Jun-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
Glass soil jar/Teflon lined cap										
May 2021 ABA	S-GRA06A	21-May-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
Glass soil jar/Teflon lined cap										
June 2021 ABA	S-GRA06	15-Jun-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
Glass soil jar/Teflon lined cap										
May 2021 ABA	S-GRA06	21-May-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
Glass soil jar/Teflon lined cap										
June 2021 ABA	S-CAL06	15-Jun-2021	----	----	----		23-Sep-2021	28 days	101 days	× EHTR
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
Glass soil jar/Teflon lined cap										
May 2021 ABA	S-CAL06	21-May-2021	----	----	----		23-Sep-2021	28 days	126 days	× EHTR
Acid Base Accounting : Total Carbon (TC) by Combustion-IR										
Glass soil jar/Teflon lined cap										
June 2021 ABA	C-IR07	15-Jun-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Total Carbon (TC) by Combustion-IR										
Glass soil jar/Teflon lined cap										
May 2021 ABA	C-IR07	21-May-2021	----	----	----		23-Sep-2021	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Total Sulfur by Combustion and IR										
Glass soil jar/Teflon lined cap										
June 2021 ABA	S-IR08	15-Jun-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Total Sulfur by Combustion and IR										
Glass soil jar/Teflon lined cap										
May 2021 ABA	S-IR08	21-May-2021	----	----	----		23-Sep-2021	----	----	
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
Glass soil jar/Teflon lined cap										
June 2021 ABA	ME-MS41	15-Jun-2021	----	----	----		23-Sep-2021	----	----	
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
Glass soil jar/Teflon lined cap										
May 2021 ABA	ME-MS41	21-May-2021	----	----	----		23-Sep-2021	----	----	

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

- **No Quality Control data available for this section.**

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Inorganic Carbon by Coulometer	C-GAS05 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals C-GAS05	Determine Total Inorganic Carbon (TIC) by using diluted perchloric acid to react with metal carbonate and yield carbon dioxide. Concentration of CO_2 is determined by coulometer.
Total Carbon (TC) by Combustion-IR	C-IR07 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals C-IR07	Sample is heated to 1350ºC in an induction furnace with oxygen stream. Carbon dioxide released from the sample are measured by an IR detection system (Leco analyzer).
51 Elements by Aqua Regia digestion and ICP-AES/MS	ME-MS41 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals ME-MS41	A prepared sample is digested with aqua regia in a graphite heating block. After cooling, the resulting solution is diluted to with deionized water, mixed and analyzed by ICP-AES. Samples are then analyzed by ICP-MS for the remaining suite of elements.
Saturated Paste pH	OA-ELE07 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals OA-ELE07	Sample mix with water in 1:1 ratio to make a paste, pH is then determined.
Acid Base Accounting (MEND 1991)	OA-VOL08mn ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals OA-VOL08mn	Determine the acid generation power of a sample as tonne $CaCO_3$ per kilo-tonne using MEND 1991 method.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfide S (as S) Calc. (Total-S - SO4-S)	S-CAL06 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-CAL06	Sulfide Sulfur (as S) is calculated by subtracting the Carbonate Leachable Sulfate Sulfur (as S) from the Total Sulfur (as S) obtained from combustion.
Sulfates by NaCO3 Leaching and Gravimetry	S-GRA06 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-GRA06	A preppared sample is heated with diluted Na□CO□ and then filtered. The sulfate in the filtrate is precipitated with BaCl2 in a dilute HCl. The BaSO4 precipitate is filtered, ignited, weighed and the Sulfate Sulfur is determined (as S).
Sulfates by HCl Leaching and Gravimetry	S-GRA06A ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-GRA06A	A prepared sample is heated with dilute HCl and then filtered. The sulfate in the filtrate is precipitated with BaCl2 in a dilute HCl. The BaSO4 precipitate is filtered, ignited, weighed and the Sulfate Sulfur is determined (as S).
Total Sulfur by Combustion and IR	S-IR08 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-IR08	A prepared sample is heated to approximately 1350°C in an induction furnace with oxygen stream. Sulfur dioxide released from the sample are measured by IR (Leco analyzer) and the Total Sulfur result is provided.
Received Sample Weight	WEI-21 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals WEI-21	Weigh out sample received.

QUALITY CONTROL REPORT

Work Order	: **WR2101032**	Page	: 1 of 2
Client	: Minto Explorations Ltd.	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 12-Aug-2021 14:20
PO	: TBD	Date Analysis Commenced	: 23-Sep-2021
C-O-C number	: 2021-08-11 C	Issue Date	: 28-Sep-2021 09:21
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 2		
No. of samples analysed	: 2		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Kaitlyn Gardner	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

ALS Canada Ltd.

2103 Dollarton Hwy
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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 24-SEP-2021
Account: APN

CERTIFICATE WH21212630

Project: WR2101032

This report is for 2 samples of Reject submitted to our lab in Whitehorse, YT, Canada on 12-AUG-2021.

The following have access to data associated with this certificate:

ALSE VANCOUVER WEBTRIEVE	ALSEV DATASUBLET	SOFTWARE DEVELOPMENT GROUP

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
DISP-01	Disposal of all sample fractions
LOG-21	Sample logging - ClientBarCode
PUL-QC	Pulverizing QC Test
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize up to 250g 85% <75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
OA-VOL08mn	NP MEND 1991	
S-IR08	Total Sulphur (IR Spectroscopy)	LECO
OA-ELE07	Paste pH	
S-GRA06	Sulfate Sulfur-carbonate leach	WST-SEQ
S-GRA06a	Sulfate Sulfur (HCl leachable)	WST-SEQ
S-CAL06	Sufide Sulfur (calculated)	LECO
C-GAS05	Inorganic Carbon (CO2)	
C-IR07	Total Carbon (IR Spectroscopy)	LECO
ME-MS41	Ultra Trace Aqua Regia ICP-MS	

This is the Final Report and supersedes any preliminary report with this certificate number.Results apply to samples as submitted.All pages of this report have been checked and approved for release.
***** See Appendix Page for comments regarding this certificate *****

Signature:

Saa Traxler, General Manager, North Vancouver

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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 24-SEP-2021
Account: APN

Project: WR2101032

CERTIFICATE OF ANALYSIS WH21212630

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	ME-MS41 Ag ppm 0.01	ME-MS41 Al % 0.01	ME-MS41 As ppm 0.1	ME-MS41 Au ppm 0.02	ME-MS41 B ppm 10	ME-MS41 Ba ppm 10	ME-MS41 Be ppm 0.05	ME-MS41 Bi ppm 0.01	ME-MS41 Ca % 0.01	ME-MS41 Cd ppm 0.01	ME-MS41 Ce ppm 0.02	ME-MS41 Co ppm 0.1	ME-MS41 Cr ppm 1	ME-MS41 Cs ppm 0.05
WR2101032001AA		0.43	0.41	1.33	1.8	0.08	<10	180	0.28	0.14	1.59	0.21	16.55	6.6	8	0.28
WR2101032002AA		1.60	0.46	1.15	0.9	0.07	<10	160	0.23	0.18	1.10	0.18	14.40	6.3	7	0.52

***** See Appendix Page for comments regarding this certificate *****

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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 24-SEP-2021
Account: APN

Project: WR2101032

CERTIFICATE OF ANALYSIS WH21212630

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm
	LOD	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05
WR2101032001AA		717	4.37	8.65	0.06	0.04	0.10	0.070	0.33	8.8	8.4	0.72	716	0.56	0.07	0.17
WR2101032002AA		801	4.24	8.07	0.06	0.04	0.02	0.047	0.54	7.5	5.5	0.62	787	0.61	0.06	0.21

***** See Appendix Page for comments regarding this certificate *****

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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 24-SEP-2021
Account: APN

Project: WR2101032

CERTIFICATE OF ANALYSIS WH21212630

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti
	Units	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	LOD	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005
WR2101032001AA		2.5	620	2.9	16.8	<0.001	0.16	<0.05	3.3	0.6	0.7	132.0	<0.01	0.15	2.6	0.069
WR2101032002AA		2.2	590	2.3	29.2	<0.001	0.06	<0.05	3.4	0.8	0.6	56.5	<0.01	0.15	3.3	0.105

***** See Appendix Page for comments regarding this certificate *****

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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 24-SEP-2021
Account: APN

Project: WR2101032

CERTIFICATE OF ANALYSIS WH21212630

Sample Description	Method Analyte Units LOD	ME-MS41 Tl ppm 0.02	ME-MS41 U ppm 0.05	ME-MS41 V ppm 1	ME-MS41 W ppm 0.05	ME-MS41 Y ppm 0.05	ME-MS41 Zn ppm 2	ME-MS41 Zr ppm 0.5	OA-VOL08mn MPA tCaCO3/1Kt 0.3	OA-VOL08mn FIZZ RAT Unity 1	OA-VOL08mn NNP tCaCO3/1Kt 1	OA-VOL08mn NP tCaCO3/1Kt 1	OA-ELE07 pH Unity 0.1	OA-VOL08mn Ratio (N Unity 0.01	S-IR08 S % 0.01	S-GRA06 S % 0.01
WR2101032001AA		0.10	0.26	63	0.35	4.89	115	0.9	5.0	2	29	34	8.0	6.80	0.16	0.10
WR2101032002AA		0.22	0.21	65	0.20	3.96	95	0.8	2.2	2	24	26	8.1	11.89	0.07	0.01

***** See Appendix Page for comments regarding this certificate *****

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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 24-SEP-2021
Account: APN

Project: WR2101032

CERTIFICATE OF ANALYSIS WH21212630

Sample Description	Method	S-GRA06a	S-CAL06	C-GAS05	C-GAS05	C-IR07
	Analyte	S	S	C	CO2	C
	Units	%	%	%	%	%
	LOD	0.01	0.01	0.05	0.2	0.01
WR2101032001AA		0.08	0.06	0.34	1.3	0.43
WR2101032002AA		0.01	0.06	0.26	1.0	0.32

***** See Appendix Page for comments regarding this certificate *****

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100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Project: WR2101032

CERTIFICATE OF ANALYSIS WH21212630

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Whitehorse located at 78 Mt. Sima Rd, Whitehorse, YT, Canada.

DISP-01	LOG-21	PUL-31	PUL-QC
SPL-21	WEI-21		

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

C-GAS05	C-IR07	ME-MS41	OA-ELE07
OA-VOL08mn	S-CAL06	S-GRA06	S-GRA06a
S-IR08			

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 2021-08-11 C

Page 1 of 1

Environmental Division Whitehorse
Work Order Reference
WR2101032

Telephone : +1 867 668 6689

Report To	Contact and company name below will appear on the final report
Company:	Minto Explorations Ltd.
Contact:	Minto Environment - Coordinator
Phone:	1-604-759-4659
	Company address below will appear on the final report
Street:	2100-510 West Georgia St.
City/Province:	Vancouver, British Columbia
Postal Code:	V6B 0M3
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Minto Explorations Ltd.
Contact:	Ruth Cayetano

Report Format / Distribution

Select Report Format: ☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax minto_environment@mintomine.com
Email 2
Email 3

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax ap@mintomine.com
Email 2

Select Service Level Below - Please confirm all E&P

Regular [R] ☑ Standard T/
PRIORITY (Business Days): 4 day [P4] ☐ | 3 day [P3] ☐ | 2 day [P2] ☐

Date and Time Required for all E&P TA
For tests that can not be performed according to the s
Anal

Indicate Filtered (F), Preserved (P) or Fil

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#
Job #:		Major/Minor Code:	Routing Code:
PO / AFE:	TBD	Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		ALS Contact:	Sampler:

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total Metals- Aqua regia disgestion (ICP)	Paste pH	% Inorganic Carbonate	Total Corbon/Sukphur (Leco)	AP - determination by % sulphide sulphur	Modified NP - (MEND 1991)								Number of Containers
	May 2021 ABA	21-05-21		Composite	R	R	R	R	R	R								1
	June 2021 ABA	15-06-21		Composite	R	R	R	R	R	R								1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?
☐ YES ☑ NO

Are samples for human drinking water use?
☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
8	6	8			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Corey Roberts	Date: 2021-08-09	Time:	Received by:	Date: AUG 12/21	Time: 14:20	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2101033**	Page	: 1 of 5
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine - WRMP	Date Samples Received	: 12-Aug-2021 14:00
PO	: ----	Date Analysis Commenced	: 23-Sep-2021
C-O-C number	: ----	Issue Date	: 01-Oct-2021 17:44
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Kaitlyn Gardner	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
%	percent
kg	kilograms
pH units	pH units
ppm	parts per million
tCaCO3/kt	tons CaCO3 per kiloton

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MM 182246	MM 182247	MM 182248	----	----
					Client sampling date / time	[12-Aug-2021]	[12-Aug-2021]	[12-Aug-2021]	----	----
						WR2101033-001	WR2101033-002	WR2101033-003	--------	--------
						Result	Result	Result	----	----
Acid Base Accounting										
carbon dioxide	124-38-9	C-GAS05	0.2	%		0.8	0.4	0.6	----	----
carbon, total inorganic [TIC]	----	C-GAS05	0.05	%		0.21	0.10	0.17	----	----
fizz rating	----	OA-VOL08	1	-		2	1	1	----	----
maximum potential acidity [MPA]	----	OA-VOL08	0.3	tCaCO3/kt		0.3	0.9	1.3	----	----
net neutralization potential [NNP]	----	OA-VOL08	1	tCaCO3/kt		32	18	23	----	----
neutralization potential [NP]	----	OA-VOL08	1	tCaCO3/kt		32	19	24	----	----
neutralization potential ratio [NPR], (NP/MPA)	----	OA-VOL08	0.01	-		102.40	20.27	19.20	----	----
pH (1:1 soil:water)	----	OA-ELE07	0.10	pH units		8.70	8.40	8.30	----	----
sulfate (as S), carbonate leach	14808-79-8	S-GRA06	0.01	%		<0.01	0.02	0.02	----	----
sulfate (as S), HCl leach	14808-79-8	S-GRA06A	0.01	%		<0.01	0.01	0.01	----	----
sulfide (as S), total minus carbonate leach	18496-25-8	S-CAL06	0.01	%		0.01	0.01	0.02	----	----
sulfur, total	7704-34-9	S-IR08	0.01	%		0.01	0.03	0.04	----	----
weight, sample received	NA	WEI-21	0.02	kg		1.34	1.35	1.32	----	----
Metals										
aluminum	7429-90-5	ME-MS41	0.01	%		1.15	1.10	0.93	----	----
antimony	7440-36-0	ME-MS41	0.05	ppm		0.10	<0.05	<0.05	----	----
arsenic	7440-38-2	ME-MS41	0.1	ppm		1.4	0.4	0.9	----	----
barium	7440-39-3	ME-MS41	10	ppm		160	210	150	----	----
beryllium	7440-41-7	ME-MS41	0.05	ppm		0.42	0.27	0.27	----	----
bismuth	7440-69-9	ME-MS41	0.01	ppm		0.01	0.01	0.02	----	----
boron	7440-42-8	ME-MS41	10	ppm		<10	<10	<10	----	----
cadmium	7440-43-9	ME-MS41	0.01	ppm		0.05	0.03	0.03	----	----
calcium	7440-70-2	ME-MS41	0.01	%		1.46	0.87	1.03	----	----
cerium	7440-45-1	ME-MS41	0.02	ppm		18.45	17.35	15.90	----	----
cesium	7440-46-2	ME-MS41	0.05	ppm		0.14	0.23	0.26	----	----
chromium	7440-47-3	ME-MS41	1	ppm		5	6	6	----	----
cobalt	7440-48-4	ME-MS41	0.1	ppm		5.5	5.2	5	----	----
copper	7440-50-8	ME-MS41	0.2	ppm		113.5	19.1	142.5	----	----
gallium	7440-55-3	ME-MS41	0.05	ppm		5.66	4.93	4.71	----	----
germanium	7440-56-4	ME-MS41	0.05	ppm		0.07	0.06	0.06	----	----
gold	7440-57-5	ME-MS41	0.02	ppm		<0.02	<0.02	<0.02	----	----

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MM 182246	MM 182247	MM 182248	----	----
					Client sampling date / time	[12-Aug-2021]	[12-Aug-2021]	[12-Aug-2021]	----	----
						WR2101033-001	WR2101033-002	WR2101033-003	--------	--------
						Result	Result	Result	----	----
Metals										
hafnium	7440-58-6	ME-MS41	0.02	ppm		0.08	0.07	0.05	----	----
indium	7440-74-6	ME-MS41	0.005	ppm		0.015	0.015	0.012	----	----
iron	7439-89-6	ME-MS41	0.01	%		1.96	1.96	1.92	----	----
lanthanum	7439-91-0	ME-MS41	0.2	ppm		10	9.2	8.8	----	----
lead	7439-92-1	ME-MS41	0.2	ppm		7.6	2.9	2.8	----	----
lithium	7439-93-2	ME-MS41	0.1	ppm		5.7	5	5	----	----
magnesium	7439-95-4	ME-MS41	0.01	%		0.60	0.58	0.51	----	----
manganese	7439-96-5	ME-MS41	5	ppm		499	479	463	----	----
mercury	7439-97-6	ME-MS41	0.01	ppm		<0.01	<0.01	<0.01	----	----
molybdenum	7439-98-7	ME-MS41	0.05	ppm		0.17	0.24	0.17	----	----
nickel	7440-02-0	ME-MS41	0.2	ppm		1.8	1.7	1.5	----	----
niobium	7440-03-1	ME-MS41	0.05	ppm		0.22	0.23	0.22	----	----
phosphorus	7723-14-0	ME-MS41	10	ppm		640	610	570	----	----
potassium	7440-09-7	ME-MS41	0.01	%		0.23	0.46	0.36	----	----
rhenium	7440-15-5	ME-MS41	0.001	ppm		<0.001	<0.001	<0.001	----	----
rubidium	7440-17-7	ME-MS41	0.1	ppm		10.2	21.2	18.3	----	----
scandium	7440-20-2	ME-MS41	0.1	ppm		3.8	3.7	3	----	----
selenium	7782-49-2	ME-MS41	0.2	ppm		<0.2	<0.2	0.2	----	----
silver	7440-22-4	ME-MS41	0.01	ppm		0.07	0.02	0.07	----	----
sodium	7440-23-5	ME-MS41	0.01	%		0.08	0.10	0.07	----	----
strontium	7440-24-6	ME-MS41	0.2	ppm		100.5	53.7	51.8	----	----
sulfur	7704-34-9	ME-MS41	0.01	%		0.02	0.04	0.05	----	----
tantalum	7440-25-7	ME-MS41	0.01	ppm		<0.01	<0.01	<0.01	----	----
tellurium	13494-80-9	ME-MS41	0.01	ppm		0.02	<0.01	0.01	----	----
thallium	7440-28-0	ME-MS41	0.02	ppm		0.05	0.11	0.10	----	----
thorium	7440-29-1	ME-MS41	0.2	ppm		1.6	1.8	1.7	----	----
tin	7440-31-5	ME-MS41	0.2	ppm		0.4	0.5	0.4	----	----
titanium	7440-32-6	ME-MS41	0.005	%		0.090	0.112	0.087	----	----
tungsten	7440-33-7	ME-MS41	0.05	ppm		0.32	0.08	0.49	----	----
uranium	7440-61-1	ME-MS41	0.05	ppm		0.23	0.26	0.29	----	----
vanadium	7440-62-2	ME-MS41	1	ppm		43	45	40	----	----
yttrium	7440-65-5	ME-MS41	0.05	ppm		7.04	6.55	5.33	----	----

Analytical Results

Sub-Matrix: Soil/Solid (Matrix: Soil/Solid)					Client sample ID	MM 182246	MM 182247	MM 182248	----	----
					Client sampling date / time	[12-Aug-2021]	[12-Aug-2021]	[12-Aug-2021]	----	----
Analyte	CAS Number	Method	LOR	Unit		WR2101033-001	WR2101033-002	WR2101033-003	--------	--------
						Result	Result	Result	----	----
Metals										
zinc	7440-66-6	ME-MS41	2	ppm		58	59	56	----	----
zirconium	7440-67-7	ME-MS41	0.5	ppm		1.5	1.1	0.9	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2101033**	Page	: 1 of 8
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine - WRMP	Date Samples Received	: 12-Aug-2021 14:00
PO	: ----	Issue Date	: 01-Oct-2021 17:44
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Acid Base Accounting (Regular Sobek)										
Glass soil jar/Teflon lined cap										
MM 182246	OA-VOL08	12-Aug-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Acid Base Accounting (Regular Sobek)										
Glass soil jar/Teflon lined cap										
MM 182247	OA-VOL08	12-Aug-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Acid Base Accounting (Regular Sobek)										
Glass soil jar/Teflon lined cap										
MM 182248	OA-VOL08	12-Aug-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
Glass soil jar/Teflon lined cap										
MM 182246	C-GAS05	12-Aug-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
Glass soil jar/Teflon lined cap										
MM 182247	C-GAS05	12-Aug-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
Glass soil jar/Teflon lined cap										
MM 182248	C-GAS05	12-Aug-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Received Sample Weight										
Glass soil jar/Teflon lined cap										
MM 182246	WEI-21	12-Aug-2021	----	----	----		23-Sep-2021	180 days	43 days	✓

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Received Sample Weight										
Glass soil jar/Teflon lined cap MM 182247	WEI-21	12-Aug-2021	----	----	----		23-Sep-2021	180 days	43 days	✓
Acid Base Accounting : Received Sample Weight										
Glass soil jar/Teflon lined cap MM 182248	WEI-21	12-Aug-2021	----	----	----		23-Sep-2021	180 days	43 days	✓
Acid Base Accounting : Saturated Paste pH										
Glass soil jar/Teflon lined cap MM 182246	OA-ELE07	12-Aug-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Saturated Paste pH										
Glass soil jar/Teflon lined cap MM 182247	OA-ELE07	12-Aug-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Saturated Paste pH										
Glass soil jar/Teflon lined cap MM 182248	OA-ELE07	12-Aug-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
Glass soil jar/Teflon lined cap MM 182246	S-GRA06A	12-Aug-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
Glass soil jar/Teflon lined cap MM 182247	S-GRA06A	12-Aug-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
Glass soil jar/Teflon lined cap MM 182248	S-GRA06A	12-Aug-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
Glass soil jar/Teflon lined cap MM 182246	S-GRA06	12-Aug-2021	----	----	----		23-Sep-2021	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
Glass soil jar/Teflon lined cap MM 182247	S-GRA06	12-Aug-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
Glass soil jar/Teflon lined cap MM 182248	S-GRA06	12-Aug-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
Glass soil jar/Teflon lined cap MM 182246	S-CAL06	12-Aug-2021	----	----	----		23-Sep-2021	28 days	43 days	× EHT
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
Glass soil jar/Teflon lined cap MM 182247	S-CAL06	12-Aug-2021	----	----	----		23-Sep-2021	28 days	43 days	× EHT
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
Glass soil jar/Teflon lined cap MM 182248	S-CAL06	12-Aug-2021	----	----	----		23-Sep-2021	28 days	43 days	× EHT
Acid Base Accounting : Total Sulfur by Combustion and IR										
Glass soil jar/Teflon lined cap MM 182246	S-IR08	12-Aug-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Total Sulfur by Combustion and IR										
Glass soil jar/Teflon lined cap MM 182247	S-IR08	12-Aug-2021	----	----	----		23-Sep-2021	----	----	
Acid Base Accounting : Total Sulfur by Combustion and IR										
Glass soil jar/Teflon lined cap MM 182248	S-IR08	12-Aug-2021	----	----	----		23-Sep-2021	----	----	
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
Glass soil jar/Teflon lined cap MM 182246	ME-MS41	12-Aug-2021	----	----	----		29-Sep-2021	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
Glass soil jar/Teflon lined cap										
MM 182247	ME-MS41	12-Aug-2021	----	----	----		29-Sep-2021	----	----	
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
Glass soil jar/Teflon lined cap										
MM 182248	ME-MS41	12-Aug-2021	----	----	----		29-Sep-2021	----	----	

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

- **No Quality Control data available for this section.**

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Inorganic Carbon by Coulometer	C-GAS05 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals C-GAS05	Determine Total Inorganic Carbon (TIC) by using diluted perchloric acid to react with metal carbonate and yield carbon dioxide. Concentration of CO_2 is determined by coulometer.
51 Elements by Aqua Regia digestion and ICP-AES/MS	ME-MS41 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals ME-MS41	A prepared sample is digested with aqua regia in a graphite heating block. After cooling, the resulting solution is diluted to with deionized water, mixed and analyzed by ICP-AES. Samples are then analyzed by ICP-MS for the remaining suite of elements.
Saturated Paste pH	OA-ELE07 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals OA-ELE07	Sample mix with water in 1:1 ratio to make a paste, pH is then determined.
Acid Base Accounting (Regular Sobek)	OA-VOL08 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals OA-VOL08	Determine the acid generation power of a sample as tonne $CaCO_3$ per kilo-tonne.
Sulfide S (as S) Calc. (Total-S - SO4-S)	S-CAL06 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-CAL06	Sulfide Sulfur (as S) is calculated by subtracting the Carbonate Leachable Sulfate Sulfur (as S) from the Total Sulfur (as S) obtained from combustion.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfates by NaCO3 Leaching and Gravimetry	S-GRA06 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-GRA06	A preppared sample is heated with diluted Na□CO□ and then filtered. The sulfate in the filtrate is precipitated with BaCl2 in a dilute HCl. The BaSO4 precipitate is filtered, ignited, weighed and the Sulfate Sulfur is determined (as S).
Sulfates by HCl Leaching and Gravimetry	S-GRA06A ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-GRA06A	A prepared sample is heated with dilute HCl and then filtered. The sulfate in the filtrate is precipitated with BaCl2 in a dilute HCl. The BaSO4 precipitate is filtered, ignited, weighed and the Sulfate Sulfur is determined (as S).
Total Sulfur by Combustion and IR	S-IR08 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-IR08	A prepared sample is heated to approximately 1350°C in an induction furnace with oxygen stream. Sulfur dioxide released from the sample are measured by IR (Leco analyzer) and the Total Sulfur result is provided.
Received Sample Weight	WEI-21 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals WEI-21	Weigh out sample received.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **WR2101033**	Page	: 1 of 2
Client	: Minto Explorations Ltd.	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine - WRMP	Date Samples Received	: 12-Aug-2021 14:00
PO	: ----	Date Analysis Commenced	: 23-Sep-2021
C-O-C number	: ----	Issue Date	: 01-Oct-2021 17:44
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Kaitlyn Gardner	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

ALS Canada Ltd.

2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: +1 604 984 0221 Fax: +1 604 984 0218
www.alsglobal.com/geochemistry

To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 24-SEP-2021
Account: APN

CERTIFICATE WH21212647

Project: WR2101033

This report is for 3 samples of Reject submitted to our lab in Whitehorse, YT, Canada on 12-AUG-2021.

The following have access to data associated with this certificate:

ALSE VANCOUVER WEBTRIEVE	ALSEV DATASUBLET	SOFTWARE DEVELOPMENT GROUP

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-21	Sample logging - ClientBarCode
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize up to 250g 85% <75 um
PUL-QC	Pulverizing QC Test
DISP-01	Disposal of all sample fractions

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
OA-VOL08	Basic Acid Base Accounting	
S-IR08	Total Sulphur (IR Spectroscopy)	LECO
OA-ELE07	Paste pH	
S-CAL06	Sufide Sulfur (calculated)	LECO
S-GRA06	Sulfate Sulfur-carbonate leach	WST-SEQ
C-GAS05	Inorganic Carbon (CO2)	
S-GRA06a	Sulfate Sulfur (HCl leachable)	WST-SEQ

This is the Final Report and supersedes any preliminary report with this certificate number.Results apply to samples as submitted.All pages of this report have been checked and approved for release.
***** See Appendix Page for comments regarding this certificate *****

Signature:

Saa Traxler, General Manager, North Vancouver

ALS Canada Ltd.
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North Vancouver BC V7H 0A7
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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 24-SEP-2021
Account: APN

Project: WR2101033

CERTIFICATE OF ANALYSIS WH21212647

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	OA-VOL08 MPA tCaCO3/1Kt 0.3	OA-VOL08 FIZZ RAT Unity 1	OA-VOL08 NNP tCaCO3/1Kt 1	OA-VOL08 NP tCaCO3/1Kt 1	OA-ELE07 pH Unity 0.1	OA-VOL08 Ratio (N Unity 0.01	S-IR08 S % 0.01	S-GRA06 S % 0.01	S-GRA06a S % 0.01	S-CAL06 S % 0.01	C-GAS05 C % 0.05	C-GAS05 CO2 % 0.2
WR2101033001AA		1.34	0.3	2	32	32	8.7	102.40	0.01	<0.01	<0.01	0.01	0.21	0.8
WR2101033002AA		1.35	0.9	1	18	19	8.4	20.27	0.03	0.02	0.01	0.01	0.10	0.4
WR2101033003AA		1.32	1.3	1	23	24	8.3	19.20	0.04	0.02	0.01	0.02	0.17	0.6

***** See Appendix Page for comments regarding this certificate *****

ALS Canada Ltd.
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www.alsglobal.com/geochemistry

To: **ALS ENVIRONMENTAL**
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 24-SEP-2021
Account: APN

Project: WR2101033

CERTIFICATE OF ANALYSIS WH21212647

CERTIFICATE COMMENTS

LABORATORY ADDRESSES

Processed at ALS Whitehorse located at 78 Mt. Sima Rd, Whitehorse, YT, Canada.

Applies to Method:				
	DISP-01	LOG-21	PUL-31	PUL-QC
	SPL-21	WEI-21		

Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

Applies to Method:				
	C-GAS05	OA-ELE07	OA-VOL08	S-CAL06
	S-GRA06	S-GRA06a	S-IR08	

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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 30-SEP-2021
Account: APN

CERTIFICATE WH21259238

Project: WR2101033

This report is for 3 samples of Pulp submitted to our lab in Whitehorse, YT, Canada on 27-SEP-2021.

The following have access to data associated with this certificate:

ALSE VANCOUVER WEBTRIEVE	ALSEV DATASUBLET	SOFTWARE DEVELOPMENT GROUP

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
FND-02	Find Sample for Addn Analysis

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
ME-MS41	Ultra Trace Aqua Regia ICP-MS	

This is the Final Report and supersedes any preliminary report with this certificate number.Results apply to samples as submitted.All pages of this report have been checked and approved for release.
***** See Appendix Page for comments regarding this certificate *****

Signature:

Saa Traxler, General Manager, North Vancouver

ALS Canada Ltd.
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www.alsglobal.com/geochemistry

To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 30-SEP-2021
Account: APN

Project: WR2101033

CERTIFICATE OF ANALYSIS WH21259238

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ag	Al	As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm
	LOD	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05	0.2
WR2101033-001		0.07	1.15	1.4	<0.02	<10	160	0.42	0.01	1.46	0.05	18.45	5.5	5	0.14	113.5
WR2101033-002		0.02	1.10	0.4	<0.02	<10	210	0.27	0.01	0.87	0.03	17.35	5.2	6	0.23	19.1
WR2101033-003		0.07	0.93	0.9	<0.02	<10	150	0.27	0.02	1.03	0.03	15.90	5.0	6	0.26	142.5

***** See Appendix Page for comments regarding this certificate *****

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100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 30-SEP-2021
Account: APN

Project: WR2101033

CERTIFICATE OF ANALYSIS WH21259238

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb	Ni
	Units	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm
	LOD	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05	0.2
WR2101033-001		1.96	5.66	0.07	0.08	<0.01	0.015	0.23	10.0	5.7	0.60	499	0.17	0.08	0.22	1.8
WR2101033-002		1.96	4.93	0.06	0.07	<0.01	0.015	0.46	9.2	5.0	0.58	479	0.24	0.10	0.23	1.7
WR2101033-003		1.92	4.71	0.06	0.05	<0.01	0.012	0.36	8.8	5.0	0.51	463	0.17	0.07	0.22	1.5

***** See Appendix Page for comments regarding this certificate *****

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100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 30-SEP-2021
Account: APN

Project: WR2101033

CERTIFICATE OF ANALYSIS WH21259238

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl
	Units	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm
	LOD	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005	0.02
WR2101033-001		640	7.6	10.2	<0.001	0.02	0.10	3.8	<0.2	0.4	100.5	<0.01	0.02	1.6	0.090	0.05
WR2101033-002		610	2.9	21.2	<0.001	0.04	<0.05	3.7	<0.2	0.5	53.7	<0.01	<0.01	1.8	0.112	0.11
WR2101033-003		570	2.8	18.3	<0.001	0.05	<0.05	3.0	0.2	0.4	51.8	<0.01	0.01	1.7	0.087	0.10

***** See Appendix Page for comments regarding this certificate *****

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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 30-SEP-2021
Account: APN

Project: WR2101033

CERTIFICATE OF ANALYSIS WH21259238

Sample Description	Method Analyte Units LOD	ME-MS41 U ppm 0.05	ME-MS41 V ppm 1	ME-MS41 W ppm 0.05	ME-MS41 Y ppm 0.05	ME-MS41 Zn ppm 2	ME-MS41 Zr ppm 0.5
WR2101033-001		0.23	43	0.32	7.04	58	1.5
WR2101033-002		0.26	45	0.08	6.55	59	1.1
WR2101033-003		0.29	40	0.49	5.33	56	0.9

***** See Appendix Page for comments regarding this certificate *****

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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 30-SEP-2021
Account: APN

Project: WR2101033

CERTIFICATE OF ANALYSIS WH21259238

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.
FND-02 ME-MS41

ALS Minerals — Sample Submittal Form

Company Name:	Minto Exploration Ltd
Submitted by:	Peter Pang
Telephone:	604-759-6014
Courier/Waybill:	
# Containers:	
Date Shipped:	
PO Number:	

Internal Use Only

Date Received:	AUG 12/21
Client Code:	
Workorder No:	
Quote:	
Template:	

Environmental Division
Whitehorse
Work Order Reference
WR2101033

Telephone : +1 867 668 6689

Standard Project:	Minto Mine - WRMP
Commodity:	☐ Ore ☑ Trace ☐ Potential
Special Instructions:	
Sample Type:	☑ Rock ☐ Pulp ☐ Percussion ☐ Soil ☐ Sediment ☐ Drill Core Other

Results to

Name:	Chris Roney	☑ Invoice	
Email:	chrisr@mintomine.com	☑ Certificate	
Address:		☑ QC Certificate	
City:	Whitehorse	State: Yukon	☑ Data File
Country:	Canada	Zip:	☐ Webtrieve Only

Copy to

Name:	Shawn Horte	☑ Webtrieve Only
Email:	shawnh@mintomine.com	☐ Certificate
		☑ Data File

Copy to

Name:	Stu Harris	☑ Webtrieve Only
Email:	StuartH@mintomine.com	☐ Certificate
		☑ Data File

Sample Return

Pulps	Rejects
☑ Return after analysis	☑ Return after analysis
☐ Return after 90 days	☐ Return after 45 days
☐ Discard	☐ Discard
☐ Paid Storage	☐ Paid Storage

Failure to indicate pulp & reject disposition will be considered as paid storage.

Return Address:
Minto Mine, c/o Smalls Expediting
25 Pilgram Pl Suite 2
Whitehorse, Yukon,

Attention: Chris Roney

Authorized By:
Name: Chris Roney (Please Print)
Signature:

*All shipments received are subject to inspection upon layout; all services are rendered in accordance with ALS Minerals Terms & Conditions (see the current Schedule of Services & Fees).

Samples ID's		Quantity	Sample Preparation Required (Prep Code)	Analytical (Elements or Method Code)	Check here for Rush Premium Service
Start No.	Finish No.				
MM 182246	MM 182248	3		ME-MS41-AX	
MM 182246	MM 182248	3		ACIDBASE-ACC04-AX	
MM 182246	MM 182248	3		SULPHUR-S-GRA06-AX	☐
	Total Samples	3			

CONTACT THE LAB TO CONFIRM AVAILABILITY

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2101612**	Page	: 1 of 5
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: TBD	Date Samples Received	: 09-Nov-2021 13:55
PO	: ----	Date Analysis Commenced	: 03-Jan-2022
C-O-C number	: 2021-11-06 A	Issue Date	: 04-Jan-2022 16:52
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Kaitlyn Gardner	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
%	percent
kg	kilograms
pH units	pH units
ppm	parts per million
tCaCO3/kt	tons CaCO3 per kiloton

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	ABA Tailings Sample	ABA Tailings Sample	ABA Tailings Sample	ABA Tailings Sample	----
					Client sampling date / time	[01-Jul-2021]	[01-Aug-2021]	[01-Sep-2021]	[01-Oct-2021]	----
						WR2101612-001	WR2101612-002	WR2101612-003	WR2101612-004	--------
						Result	Result	Result	Result	----
Acid Base Accounting										
carbon dioxide	124-38-9	C-GAS05	0.2	%		1.1	1.6	1.7	2.2	----
carbon, total inorganic [TIC]	----	C-GAS05	0.05	%		0.30	0.42	0.45	0.59	----
fizz rating	----	OA-VOL08m	1	-		----	2	2	2	----
fizz rating	----	OA-VOL08m	1	-		2	----	----	----	----
maximum potential acidity [MPA]	----	OA-VOL08m	0.3	tCaCO3/kt		----	1.3	1.3	1.6	----
maximum potential acidity [MPA]	----	OA-VOL08m	0.3	tCaCO3/kt		1.9	----	----	----	----
net neutralization potential [NNP]	----	OA-VOL08m	1	tCaCO3/kt		----	30	27	32	----
net neutralization potential [NNP]	----	OA-VOL08m	1	tCaCO3/kt		23	----	----	----	----
neutralization potential [NP]	----	OA-VOL08m	1	tCaCO3/kt		----	31	28	34	----
neutralization potential [NP]	----	OA-VOL08m	1	tCaCO3/kt		25	----	----	----	----
neutralization potential ratio [NPR], (NP/MPA)	----	OA-VOL08m	0.01	-		----	24.80	22.40	21.76	----
neutralization potential ratio [NPR], (NP/MPA)	----	OA-VOL08m	0.01	-		13.33	----	----	----	----
pH (1:1 soil:water)	----	OA-ELE07	0.10	pH units		8.20	8.50	8.60	8.50	----
sulfate (as S), carbonate leach	14808-79-8	S-GRA06	0.01	%		<0.01	<0.01	<0.01	<0.01	----
sulfate (as S), HCl leach	14808-79-8	S-GRA06A	0.01	%		<0.01	0.01	0.01	<0.01	----
sulfide (as S), total minus carbonate leach	18496-25-8	S-CAL06	0.01	%		0.06	0.04	0.04	0.05	----
sulfur, total	7704-34-9	S-IR08	0.01	%		0.06	0.04	0.04	0.05	----
weight, sample received	n/a	WEI-21	0.02	kg		1.32	1.16	1.20	1.29	----
Metals										
aluminum	7429-90-5	ME-MS41	0.01	%		1.12	1.25	1.03	0.98	----
antimony	7440-36-0	ME-MS41	0.05	ppm		<0.05	<0.05	<0.05	<0.05	----
arsenic	7440-38-2	ME-MS41	0.1	ppm		0.8	0.7	0.6	2	----
barium	7440-39-3	ME-MS41	10	ppm		170	190	190	200	----
beryllium	7440-41-7	ME-MS41	0.05	ppm		0.23	0.28	0.24	0.24	----
bismuth	7440-69-9	ME-MS41	0.01	ppm		0.16	0.17	0.18	0.17	----
boron	7440-42-8	ME-MS41	10	ppm		<10	<10	<10	<10	----
cadmium	7440-43-9	ME-MS41	0.01	ppm		0.17	0.23	0.31	0.51	----
calcium	7440-70-2	ME-MS41	0.01	%		1.08	1.38	1.16	1.32	----
cerium	7440-45-1	ME-MS41	0.02	ppm		13.25	14.75	12.45	13	----
cesium	7440-46-2	ME-MS41	0.05	ppm		0.46	0.56	0.43	0.35	----
chromium	7440-47-3	ME-MS41	1	ppm		9	11	9	9	----

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	ABA Tailings Sample	ABA Tailings Sample	ABA Tailings Sample	ABA Tailings Sample	----
					Client sampling date / time	[01-Jul-2021]	[01-Aug-2021]	[01-Sep-2021]	[01-Oct-2021]	----
						WR2101612-001	WR2101612-002	WR2101612-003	WR2101612-004	--------
						Result	Result	Result	Result	----
Metals										
cobalt	7440-48-4	ME-MS41	0.1	ppm		6.6	6.6	6.6	7.4	----
copper	7440-50-8	ME-MS41	0.2	ppm		693	650	766	829	----
gallium	7440-55-3	ME-MS41	0.05	ppm		8.49	8.62	8.27	7.78	----
germanium	7440-56-4	ME-MS41	0.05	ppm		0.10	0.09	0.09	0.09	----
gold	7440-57-5	ME-MS41	0.02	ppm		0.13	0.08	0.12	0.10	----
hafnium	7440-58-6	ME-MS41	0.02	ppm		0.04	0.05	0.04	0.03	----
indium	7440-74-6	ME-MS41	0.005	ppm		0.045	0.056	0.063	0.081	----
iron	7439-89-6	ME-MS41	0.01	%		4.19	4.19	4.44	4.36	----
lanthanum	7439-91-0	ME-MS41	0.2	ppm		7.5	7.6	6.7	7.2	----
lead	7439-92-1	ME-MS41	0.2	ppm		2.6	2.6	2.2	2.5	----
lithium	7439-93-2	ME-MS41	0.1	ppm		5.5	5.5	4.8	5.3	----
magnesium	7439-95-4	ME-MS41	0.01	%		0.58	0.62	0.56	0.62	----
manganese	7439-96-5	ME-MS41	5	ppm		724	819	753	744	----
mercury	7439-97-6	ME-MS41	0.01	ppm		0.03	0.03	0.02	0.05	----
molybdenum	7439-98-7	ME-MS41	0.05	ppm		0.72	1.16	0.73	0.91	----
nickel	7440-02-0	ME-MS41	0.2	ppm		2.5	2.9	2.5	3.1	----
niobium	7440-03-1	ME-MS41	0.05	ppm		0.19	0.23	0.21	0.16	----
phosphorus	7723-14-0	ME-MS41	10	ppm		540	670	520	510	----
potassium	7440-09-7	ME-MS41	0.01	%		0.52	0.61	0.54	0.41	----
rhenium	7440-15-5	ME-MS41	0.001	ppm		<0.001	0.001	0.001	0.002	----
rubidium	7440-17-7	ME-MS41	0.1	ppm		27.8	30.9	27.5	20.9	----
scandium	7440-20-2	ME-MS41	0.1	ppm		3.1	3.9	3.2	3	----
selenium	7782-49-2	ME-MS41	0.2	ppm		0.6	0.5	0.6	0.8	----
silver	7440-22-4	ME-MS41	0.01	ppm		0.46	0.42	0.51	0.58	----
sodium	7440-23-5	ME-MS41	0.01	%		0.06	0.06	0.06	0.06	----
strontium	7440-24-6	ME-MS41	0.2	ppm		65.7	66.3	56.5	76.6	----
sulfur	7704-34-9	ME-MS41	0.01	%		0.07	0.05	0.05	0.06	----
tantalum	7440-25-7	ME-MS41	0.01	ppm		<0.01	<0.01	<0.01	<0.01	----
tellurium	13494-80-9	ME-MS41	0.01	ppm		0.16	0.16	0.17	0.20	----
thallium	7440-28-0	ME-MS41	0.02	ppm		0.22	0.28	0.21	0.16	----
thorium	7440-29-1	ME-MS41	0.2	ppm		3.1	3.4	2.6	2.3	----
tin	7440-31-5	ME-MS41	0.2	ppm		0.6	0.7	0.6	0.7	----

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	ABA Tailings Sample	ABA Tailings Sample	ABA Tailings Sample	ABA Tailings Sample	----
					Client sampling date / time	[01-Jul-2021]	[01-Aug-2021]	[01-Sep-2021]	[01-Oct-2021]	----
						WR2101612-001	WR2101612-002	WR2101612-003	WR2101612-004	--------
						Result	Result	Result	Result	----
Metals										
titanium	7440-32-6	ME-MS41	0.005	%		0.095	0.106	0.098	0.075	----
tungsten	7440-33-7	ME-MS41	0.05	ppm		0.13	0.13	0.11	0.06	----
uranium	7440-61-1	ME-MS41	0.05	ppm		0.23	0.23	0.18	0.35	----
vanadium	7440-62-2	ME-MS41	1	ppm		62	65	65	62	----
yttrium	7440-65-5	ME-MS41	0.05	ppm		4.14	4.98	3.89	3.89	----
zinc	7440-66-6	ME-MS41	2	ppm		93	99	100	113	----
zirconium	7440-67-7	ME-MS41	0.5	ppm		0.9	1.1	0.9	0.9	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2101612**	Page	: 1 of 8
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: TBD	Date Samples Received	: 09-Nov-2021 13:55
PO	: ----	Issue Date	: 04-Jan-2022 16:52
C-O-C number	: 2021-11-06 A		
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Acid Base Accounting (Modified Sobek)										
Double bagged HDPE ABA Tailings Sample	OA-VOL08m	01-Aug-2021	----	----	----		03-Jan-2022	----	----	
Double bagged HDPE ABA Tailings Sample	OA-VOL08m	01-Jul-2021	----	----	----		03-Jan-2022	----	----	
Double bagged HDPE ABA Tailings Sample	OA-VOL08m	01-Oct-2021	----	----	----		03-Jan-2022	----	----	
Double bagged HDPE ABA Tailings Sample	OA-VOL08m	01-Sep-2021	----	----	----		03-Jan-2022	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
Double bagged HDPE ABA Tailings Sample	C-GAS05	01-Aug-2021	----	----	----		03-Jan-2022	----	----	
Double bagged HDPE ABA Tailings Sample	C-GAS05	01-Jul-2021	----	----	----		03-Jan-2022	----	----	
Double bagged HDPE ABA Tailings Sample	C-GAS05	01-Oct-2021	----	----	----		03-Jan-2022	----	----	
Double bagged HDPE ABA Tailings Sample	C-GAS05	01-Sep-2021	----	----	----		03-Jan-2022	----	----	
Acid Base Accounting : Received Sample Weight										
Double bagged HDPE ABA Tailings Sample	WEI-21	01-Sep-2021	----	----	----		03-Jan-2022	----	125 days	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Received Sample Weight										
Double bagged HDPE ABA Tailings Sample	WEI-21	01-Aug-2021	----	----	----		03-Jan-2022	----	156 days	
Acid Base Accounting : Received Sample Weight										
Double bagged HDPE ABA Tailings Sample	WEI-21	01-Jul-2021	----	----	----		03-Jan-2022	----	187 days	EHT
Acid Base Accounting : Received Sample Weight										
Double bagged HDPE ABA Tailings Sample	WEI-21	01-Oct-2021	----	----	----		03-Jan-2022	----	95 days	
Acid Base Accounting : Saturated Paste pH										
Double bagged HDPE ABA Tailings Sample	OA-ELE07	01-Aug-2021	----	----	----		03-Jan-2022	----	----	
Double bagged HDPE ABA Tailings Sample	OA-ELE07	01-Jul-2021	----	----	----		03-Jan-2022	----	----	
Double bagged HDPE ABA Tailings Sample	OA-ELE07	01-Oct-2021	----	----	----		03-Jan-2022	----	----	
Double bagged HDPE ABA Tailings Sample	OA-ELE07	01-Sep-2021	----	----	----		03-Jan-2022	----	----	
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
Double bagged HDPE ABA Tailings Sample	S-GRA06A	01-Aug-2021	----	----	----		03-Jan-2022	----	----	
Double bagged HDPE ABA Tailings Sample	S-GRA06A	01-Jul-2021	----	----	----		03-Jan-2022	----	----	
Double bagged HDPE ABA Tailings Sample	S-GRA06A	01-Oct-2021	----	----	----		03-Jan-2022	----	----	
Double bagged HDPE ABA Tailings Sample	S-GRA06A	01-Sep-2021	----	----	----		03-Jan-2022	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
Double bagged HDPE ABA Tailings Sample	S-GRA06	01-Aug-2021	----	----	----		03-Jan-2022	----	----	
Double bagged HDPE ABA Tailings Sample	S-GRA06	01-Jul-2021	----	----	----		03-Jan-2022	----	----	
Double bagged HDPE ABA Tailings Sample	S-GRA06	01-Oct-2021	----	----	----		03-Jan-2022	----	----	
Double bagged HDPE ABA Tailings Sample	S-GRA06	01-Sep-2021	----	----	----		03-Jan-2022	----	----	
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
Double bagged HDPE ABA Tailings Sample	S-CAL06	01-Sep-2021	----	----	----		03-Jan-2022	----	125 days	EHTR
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
Double bagged HDPE ABA Tailings Sample	S-CAL06	01-Aug-2021	----	----	----		03-Jan-2022	----	156 days	EHTR
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
Double bagged HDPE ABA Tailings Sample	S-CAL06	01-Jul-2021	----	----	----		03-Jan-2022	----	187 days	EHTR
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
Double bagged HDPE ABA Tailings Sample	S-CAL06	01-Oct-2021	----	----	----		03-Jan-2022	----	95 days	EHTR

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Total Sulfur by Combustion and IR										
Double bagged HDPE ABA Tailings Sample	S-IR08	01-Aug-2021	----	----	----		03-Jan-2022	----	----	
Double bagged HDPE ABA Tailings Sample	S-IR08	01-Jul-2021	----	----	----		03-Jan-2022	----	----	
Double bagged HDPE ABA Tailings Sample	S-IR08	01-Oct-2021	----	----	----		03-Jan-2022	----	----	
Double bagged HDPE ABA Tailings Sample	S-IR08	01-Sep-2021	----	----	----		03-Jan-2022	----	----	
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
Double bagged HDPE ABA Tailings Sample	ME-MS41	01-Aug-2021	----	----	----		03-Jan-2022	----	----	
Double bagged HDPE ABA Tailings Sample	ME-MS41	01-Jul-2021	----	----	----		03-Jan-2022	----	----	
Double bagged HDPE ABA Tailings Sample	ME-MS41	01-Oct-2021	----	----	----		03-Jan-2022	----	----	
Double bagged HDPE ABA Tailings Sample	ME-MS41	01-Sep-2021	----	----	----		03-Jan-2022	----	----	

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

- **No Quality Control data available for this section.**

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Inorganic Carbon by Coulometer	C-GAS05 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals C-GAS05	Determine Total Inorganic Carbon (TIC) by using diluted perchloric acid to react with metal carbonate and yield carbon dioxide. Concentration of CO_2 is determined by coulometer.
51 Elements by Aqua Regia digestion and ICP-AES/MS	ME-MS41 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals ME-MS41	A prepared sample is digested with aqua regia in a graphite heating block. After cooling, the resulting solution is diluted to with deionized water, mixed and analyzed by ICP-AES. Samples are then analyzed by ICP-MS for the remaining suite of elements.
Saturated Paste pH	OA-ELE07 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals OA-ELE07	Sample mix with water in 1:1 ratio to make a paste, pH is then determined.
Acid Base Accounting (Modified Sobek)	OA-VOL08m ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals OA-VOL08m	Determine the acid generation power of a sample as tonne $CaCO_3$ per kilo-tonne using modified Sobek method
Sulfide S (as S) Calc. (Total-S - SO4-S)	S-CAL06 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-CAL06	Sulfide Sulfur (as S) is calculated by subtracting the Carbonate Leachable Sulfate Sulfur (as S) from the Total Sulfur (as S) obtained from combustion.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfates by NaCO3 Leaching and Gravimetry	S-GRA06 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-GRA06	A preppared sample is heated with diluted Na□CO□ and then filtered. The sulfate in the filtrate is precipitated with BaCl2 in a dilute HCl. The BaSO4 precipitate is filtered, ignited, weighed and the Sulfate Sulfur is determined (as S).
Sulfates by HCl Leaching and Gravimetry	S-GRA06A ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-GRA06A	A prepared sample is heated with dilute HCl and then filtered. The sulfate in the filtrate is precipitated with BaCl2 in a dilute HCl. The BaSO4 precipitate is filtered, ignited, weighed and the Sulfate Sulfur is determined (as S).
Total Sulfur by Combustion and IR	S-IR08 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-IR08	A prepared sample is heated to approximately 1350°C in an induction furnace with oxygen stream. Sulfur dioxide released from the sample are measured by IR (Leco analyzer) and the Total Sulfur result is provided.
Received Sample Weight	WEI-21 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals WEI-21	Weigh out sample received.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **WR2101612**	Page	: 1 of 2
Client	: Minto Explorations Ltd.	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: TBD	Date Samples Received	: 09-Nov-2021 13:55
PO	: ----	Date Analysis Commenced	: 03-Jan-2022
C-O-C number	: 2021-11-06 A	Issue Date	: 04-Jan-2022 16:52
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 4		
No. of samples analysed	: 4		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Kaitlyn Gardner	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

ALS Canada Ltd.

2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: +1 604 984 0221 Fax: +1 604 984 0218
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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 4-JAN-2022
Account: APN

CERTIFICATE VA21310559

Project: WR2101612

This report is for 4 samples of Tailings submitted to our lab in Vancouver, BC, Canada on 12-NOV-2021.

The following have access to data associated with this certificate:

ALSE VANCOUVER WEBTRIEVE SOFTWARE DEVELOPMENT GROUP	ALSEV DATASUBLET	HEATHER MCKENZIE

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
DISP-01	Disposal of all sample fractions
LOG-21	Sample logging - ClientBarCode
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize up to 250g 85% <75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
OA-VOL08m	Modified NP	
S-IR08	Total Sulphur (IR Spectroscopy)	LECO
OA-ELE07	Paste pH	
S-GRA06	Sulfate Sulfur-carbonate leach	WST-SEQ
S-CAL06	Sufide Sulfur (calculated)	LECO
C-GAS05	Inorganic Carbon (CO2)	
S-GRA06a	Sulfate Sulfur (HCl leachable)	WST-SEQ
ME-MS41	Ultra Trace Aqua Regia ICP-MS	

This is the Final Report and supersedes any preliminary report with this certificate number.Results apply to samples as submitted.All pages of this report have been checked and approved for release.
***** See Appendix Page for comments regarding this certificate *****

Signature:

Saa Traxler, General Manager, North Vancouver

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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 4-JAN-2022
Account: APN

Project: WR2101612

CERTIFICATE OF ANALYSIS VA21310559

Sample Description	Method / Analyte / Units / LOD	WEI-21 Recvd Wt. kg 0.02	ME-MS41 Ag ppm 0.01	ME-MS41 Al % 0.01	ME-MS41 As ppm 0.1	ME-MS41 Au ppm 0.02	ME-MS41 B ppm 10	ME-MS41 Ba ppm 10	ME-MS41 Be ppm 0.05	ME-MS41 Bi ppm 0.01	ME-MS41 Ca % 0.01	ME-MS41 Cd ppm 0.01	ME-MS41 Ce ppm 0.02	ME-MS41 Co ppm 0.1	ME-MS41 Cr ppm 1	ME-MS41 Cs ppm 0.05
WR2101612-001		1.32	0.46	1.12	0.8	0.13	<10	170	0.23	0.16	1.08	0.17	13.25	6.6	9	0.46
WR2101612-002		1.16	0.42	1.25	0.7	0.08	<10	190	0.28	0.17	1.38	0.23	14.75	6.6	11	0.56
WR2101612-003		1.20	0.51	1.03	0.6	0.12	<10	190	0.24	0.18	1.16	0.31	12.45	6.6	9	0.43
WR2101612-004		1.29	0.58	0.98	2.0	0.10	<10	200	0.24	0.17	1.32	0.51	13.00	7.4	9	0.35

***** See Appendix Page for comments regarding this certificate *****

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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 4-JAN-2022
Account: APN

Project: WR2101612

CERTIFICATE OF ANALYSIS VA21310559

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm
	LOD	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05
WR2101612-001		693	4.19	8.49	0.10	0.04	0.03	0.045	0.52	7.5	5.5	0.58	724	0.72	0.06	0.19
WR2101612-002		650	4.19	8.62	0.09	0.05	0.03	0.056	0.61	7.6	5.5	0.62	819	1.16	0.06	0.23
WR2101612-003		766	4.44	8.27	0.09	0.04	0.02	0.063	0.54	6.7	4.8	0.56	753	0.73	0.06	0.21
WR2101612-004		829	4.36	7.78	0.09	0.03	0.05	0.081	0.41	7.2	5.3	0.62	744	0.91	0.06	0.16

***** See Appendix Page for comments regarding this certificate *****

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: +1 604 984 0221 Fax: +1 604 984 0218
www.alsglobal.com/geochemistry

To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 4-JAN-2022
Account: APN

Project: WR2101612

CERTIFICATE OF ANALYSIS VA21310559

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti
	Units	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	LOD	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005
WR2101612-001		2.5	540	2.6	27.8	<0.001	0.07	<0.05	3.1	0.6	0.6	65.7	<0.01	0.16	3.1	0.095
WR2101612-002		2.9	670	2.6	30.9	0.001	0.05	<0.05	3.9	0.5	0.7	66.3	<0.01	0.16	3.4	0.106
WR2101612-003		2.5	520	2.2	27.5	0.001	0.05	<0.05	3.2	0.6	0.6	56.5	<0.01	0.17	2.6	0.098
WR2101612-004		3.1	510	2.5	20.9	0.002	0.06	<0.05	3.0	0.8	0.7	76.6	<0.01	0.20	2.3	0.075

***** See Appendix Page for comments regarding this certificate *****

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100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 4-JAN-2022
Account: APN

Project: WR2101612

CERTIFICATE OF ANALYSIS VA21310559

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	OA-VOL08m	OA-VOL08m	OA-VOL08m	OA-VOL08m	OA-ELE07	OA-VOL08m	S-IR08	S-GRA06
	Analyte	Tl	U	V	W	Y	Zn	Zr	MPA	FIZZ RAT	NNP	NP	pH	Ratio (N	S	S
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	tCaCO3/1Kt	Unity	tCaCO3/1Kt	tCaCO3/1Kt	Unity	Unity	%	%
	LOD	0.02	0.05	1	0.05	0.05	2	0.5	0.3	1	1	1	0.1	0.01	0.01	0.01
WR2101612-001		0.22	0.23	62	0.13	4.14	93	0.9	1.9	2	23	25	8.2	13.33	0.06	<0.01
WR2101612-002		0.28	0.23	65	0.13	4.98	99	1.1	1.3	2	30	31	8.5	24.80	0.04	<0.01
WR2101612-003		0.21	0.18	65	0.11	3.89	100	0.9	1.3	2	27	28	8.6	22.40	0.04	<0.01
WR2101612-004		0.16	0.35	62	0.06	3.89	113	0.9	1.6	2	32	34	8.5	21.76	0.05	<0.01

***** See Appendix Page for comments regarding this certificate *****

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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 4-JAN-2022
Account: APN

Project: WR2101612

CERTIFICATE OF ANALYSIS VA21310559

Sample Description	Method	S-GRA06a	S-CAL06	C-GAS05	C-GAS05
	Analyte	S	S	C	CO2
	Units	%	%	%	%
	LOD	0.01	0.01	0.05	0.2
WR2101612-001		<0.01	0.06	0.30	1.1
WR2101612-002		0.01	0.04	0.42	1.6
WR2101612-003		0.01	0.04	0.45	1.7
WR2101612-004		<0.01	0.05	0.59	2.2

***** See Appendix Page for comments regarding this certificate *****

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To: **ALS ENVIRONMENTAL**
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 4-JAN-2022
Account: APN

Project: WR2101612

CERTIFICATE OF ANALYSIS VA21310559

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

C-GAS05	DISP-01	LOG-21	ME-MS41
OA-ELE07	OA-VOL08m	PUL-31	S-CAL06
S-GRA06	S-GRA06a	S-IR08	SPL-21
WEI-21			

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 2021-11-06 A

Environmental Division Whitehorse

Work Order Reference WR2101612

Telephone : +1 867 668 6689

Report To	Contact and company name below will appear on the final report
Company:	Minto Explorations Ltd.
Contact:	Minto Environment - Coordinator
Phone:	1-604-759-4659
	Company address below will appear on the final report
Street:	2100-510 West Georgia St.
City/Province:	Vancouver, British Columbia
Postal Code:	V6B 0M3
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Minto Explorations Ltd.
Contact:	Ruth Cayetano

Report Format / Distribution	
Select Report Format:	☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	minto_environment@mintomine.com
Email 2	
Email 3	

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	ap@mintomine.com
Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#
Job #:		Major/Minor Code:	Routing Code:
PO / AFE:	TBD	Requisitioner:	
LSD:		Location:	

ALS Lab Work Order # (lab use only)		ALS Contact:	Sampler:

Select Service Level Below - Please confirm all E&P TATs with

Regular [R] ☑ Standard TAT if received

PRIORITY (Business Days): 4 day [P4] ☐ | 3 day [P3] ☐ | 2 day [P2] ☐

EMERGENCY: 1 | 5

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service lev

Analysis R

Indicate Filtered (F), Preserved (P) or Filtered an

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total Metals- Aqua regia digestion (ICP)	Paste pH	% Inorganic Carbonate	Total Corbon/Sukphur (Leco)	AP - determination by % sulphide sulphur	Modified NP - (MEND 1991)	Number of Containers
	ABA Tailings Sample	July		Composite	R	R	R	R	R	R	1
	ABA Tailings Sample	August		Composite	R	R	R	R	R	R	1
	ABA Tailings Sample	September		Composite	R	R	R	R	R	R	1
	ABA Tailings Sample	October		Composite	R	R	R	R	R	R	1

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☑ NO	
Are samples for human drinking water use? ☐ YES ☑ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
12					

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Dani Thorne	Date: 06-Nov-2021	Time:	Received by:	Date: NOV 9/21	Time: 13:55	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2101769**	Page	: 1 of 8
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 13-Dec-2021 10:45
PO	: TBD	Date Analysis Commenced	: 02-Feb-2022
C-O-C number	: 2021-12-11 C	Issue Date	: 07-Feb-2022 17:28
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 8		
No. of samples analysed	: 8		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Kaitlyn Gardner	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
%	percent
kg	kilograms
pH units	pH units
ppm	parts per million
tCaCO3/kt	tons CaCO3 per kiloton

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

Discrepancy in sample identification.

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	ABA 208801	ABA 208802	ABA 228803	ABA 228804	ABA 228805
					Client sampling date / time	[13-Dec-2021]	[13-Dec-2021]	[13-Dec-2021]	[13-Dec-2021]	[13-Dec-2021]
						WR2101769-001	WR2101769-002	WR2101769-003	WR2101769-004	WR2101769-005
						Result	Result	Result	Result	Result
Acid Base Accounting										
carbon dioxide	124-38-9	C-GAS05	0.2	%		0.6	1.1	0.5	0.2	0.8
carbon, total inorganic [TIC]	----	C-GAS05	0.05	%		0.16	0.31	0.13	<0.05	0.22
fizz rating	----	OA-VOL08m	1	-		2	2	1	1	1
maximum potential acidity [MPA]	----	OA-VOL08m	0.3	tCaCO3/kt		<0.3	3.8	<0.3	<0.3	<0.3
net neutralization potential [NNP]	----	OA-VOL08m	1	tCaCO3/kt		32	28	17	10	19
neutralization potential [NP]	----	OA-VOL08m	1	tCaCO3/kt		32	32	17	10	19
neutralization potential ratio [NPR], (NP/MPA)	----	OA-VOL08m	0.01	-		204.80	8.53	108.80	64	121.60
pH (1:1 soil:water)	----	OA-ELE07	0.10	pH units		9.00	8.20	9.10	9.50	8.90
sulfate (as S), carbonate leach	14808-79-8	S-GRA06	0.01	%		<0.01	0.10	<0.01	<0.01	<0.01
sulfate (as S), HCl leach	14808-79-8	S-GRA06A	0.01	%		<0.01	0.09	<0.01	<0.01	<0.01
sulfide (as S), total minus carbonate leach	18496-25-8	S-CAL06	0.01	%		<0.01	0.02	<0.01	<0.01	<0.01
sulfur, total	7704-34-9	S-IR08	0.01	%		<0.01	0.12	<0.01	<0.01	<0.01
weight, sample received	n/a	WEI-21	0.02	kg		2.09	1.95	1.98	2.60	2.58
Metals										
aluminum	7429-90-5	ME-MS41	0.01	%		0.89	1.07	1.02	1	1.07
antimony	7440-36-0	ME-MS41	0.05	ppm		0.08	0.05	<0.05	<0.05	<0.05
arsenic	7440-38-2	ME-MS41	0.1	ppm		1	0.7	1	0.6	0.7
barium	7440-39-3	ME-MS41	10	ppm		190	150	110	190	270
beryllium	7440-41-7	ME-MS41	0.05	ppm		0.28	0.30	0.33	0.19	0.28
bismuth	7440-69-9	ME-MS41	0.01	ppm		0.02	0.02	0.01	0.01	0.01
boron	7440-42-8	ME-MS41	10	ppm		<10	<10	<10	<10	<10
cadmium	7440-43-9	ME-MS41	0.01	ppm		0.04	0.06	0.04	0.02	0.05
calcium	7440-70-2	ME-MS41	0.01	%		1.28	1.46	0.93	0.66	0.82
cerium	7440-45-1	ME-MS41	0.02	ppm		23.3	19.30	16.95	18.40	28.7
cesium	7440-46-2	ME-MS41	0.05	ppm		0.21	0.17	0.17	0.26	0.40
chromium	7440-47-3	ME-MS41	1	ppm		7	8	8	10	8
cobalt	7440-48-4	ME-MS41	0.1	ppm		5.3	5.4	5.6	5.3	5.7
copper	7440-50-8	ME-MS41	0.2	ppm		32.1	64.4	11	10.7	10.6
gallium	7440-55-3	ME-MS41	0.05	ppm		4.92	5.25	5.48	4.83	5.30
germanium	7440-56-4	ME-MS41	0.05	ppm		0.08	0.08	0.11	0.11	0.10
gold	7440-57-5	ME-MS41	0.02	ppm		<0.02	<0.02	<0.02	<0.02	<0.02

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	ABA 208801	ABA 208802	ABA 228803	ABA 228804	ABA 228805
					Client sampling date / time	[13-Dec-2021]	[13-Dec-2021]	[13-Dec-2021]	[13-Dec-2021]	[13-Dec-2021]
						WR2101769-001	WR2101769-002	WR2101769-003	WR2101769-004	WR2101769-005
						Result	Result	Result	Result	Result
Metals										
hafnium	7440-58-6	ME-MS41	0.02	ppm		0.05	0.06	0.08	0.09	0.07
indium	7440-74-6	ME-MS41	0.005	ppm		0.023	0.021	0.019	0.012	0.023
iron	7439-89-6	ME-MS41	0.01	%		2.14	2.17	2.12	1.96	2.28
lanthanum	7439-91-0	ME-MS41	0.2	ppm		12.7	9.6	9.2	10.2	15.3
lead	7439-92-1	ME-MS41	0.2	ppm		3.6	3.1	3.1	2.1	2.2
lithium	7439-93-2	ME-MS41	0.1	ppm		5.8	5.6	6.4	5.2	6
magnesium	7439-95-4	ME-MS41	0.01	%		0.64	0.61	0.66	0.60	0.64
manganese	7439-96-5	ME-MS41	5	ppm		509	620	507	469	507
mercury	7439-97-6	ME-MS41	0.01	ppm		0.01	0.01	0.01	0.01	0.01
molybdenum	7439-98-7	ME-MS41	0.05	ppm		0.31	0.30	0.24	0.27	0.33
nickel	7440-02-0	ME-MS41	0.2	ppm		1.7	1.9	1.9	1.8	1.9
niobium	7440-03-1	ME-MS41	0.05	ppm		0.13	0.12	0.25	0.29	0.18
phosphorus	7723-14-0	ME-MS41	10	ppm		600	630	680	680	690
potassium	7440-09-7	ME-MS41	0.01	%		0.31	0.35	0.28	0.52	0.68
rhenium	7440-15-5	ME-MS41	0.001	ppm		<0.001	<0.001	<0.001	<0.001	0.001
rubidium	7440-17-7	ME-MS41	0.1	ppm		15.3	16.8	13.3	24.9	33.1
scandium	7440-20-2	ME-MS41	0.1	ppm		4.4	4.1	4.2	3.4	4.8
selenium	7782-49-2	ME-MS41	0.2	ppm		<0.2	<0.2	<0.2	<0.2	<0.2
silver	7440-22-4	ME-MS41	0.01	ppm		0.05	0.06	0.03	0.03	0.03
sodium	7440-23-5	ME-MS41	0.01	%		0.08	0.08	0.10	0.12	0.09
strontium	7440-24-6	ME-MS41	0.2	ppm		67.7	102.5	44.1	37.2	209
sulfur	7704-34-9	ME-MS41	0.01	%		0.02	0.15	0.01	0.01	0.02
tantalum	7440-25-7	ME-MS41	0.01	ppm		<0.01	<0.01	<0.01	<0.01	<0.01
tellurium	13494-80-9	ME-MS41	0.01	ppm		<0.01	<0.01	<0.01	<0.01	0.01
thallium	7440-28-0	ME-MS41	0.02	ppm		0.08	0.09	0.07	0.13	0.17
thorium	7440-29-1	ME-MS41	0.2	ppm		2.3	1.6	1.4	1.6	3.2
tin	7440-31-5	ME-MS41	0.2	ppm		0.5	0.6	0.5	0.5	0.5
titanium	7440-32-6	ME-MS41	0.005	%		0.062	0.060	0.105	0.127	0.115
tungsten	7440-33-7	ME-MS41	0.05	ppm		<0.05	<0.05	<0.05	<0.05	<0.05
uranium	7440-61-1	ME-MS41	0.05	ppm		0.29	0.23	0.24	0.36	0.22
vanadium	7440-62-2	ME-MS41	1	ppm		43	43	47	46	51
yttrium	7440-65-5	ME-MS41	0.05	ppm		6.30	9.58	6.96	6.46	7.78

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	ABA 208801	ABA 208802	ABA 228803	ABA 228804	ABA 228805
					Client sampling date / time	[13-Dec-2021]	[13-Dec-2021]	[13-Dec-2021]	[13-Dec-2021]	[13-Dec-2021]
						WR2101769-001	WR2101769-002	WR2101769-003	WR2101769-004	WR2101769-005
						Result	Result	Result	Result	Result
Metals										
zinc	7440-66-6	ME-MS41	2	ppm		71	77	65	65	69
zirconium	7440-67-7	ME-MS41	0.5	ppm		1	0.7	1.4	1.5	1.2

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	ABA 228806	ABA 228807	ABA 228808	----	----
					Client sampling date / time	[13-Dec-2021]	[13-Dec-2021]	[13-Dec-2021]	----	----
						WR2101769-006	WR2101769-007	WR2101769-008	--------	--------
						Result	Result	Result	----	----
Acid Base Accounting										
carbon dioxide	124-38-9	C-GAS05	0.2	%		0.5	0.7	0.6	----	----
carbon, total inorganic [TIC]	----	C-GAS05	0.05	%		0.13	0.18	0.17	----	----
fizz rating	----	OA-VOL08m	1	-		1	1	1	----	----
maximum potential acidity [MPA]	----	OA-VOL08m	0.3	tCaCO3/kt		3.8	<0.3	<0.3	----	----
net neutralization potential [NNP]	----	OA-VOL08m	1	tCaCO3/kt		13	21	20	----	----
neutralization potential [NP]	----	OA-VOL08m	1	tCaCO3/kt		17	21	20	----	----
neutralization potential ratio [NPR], (NP/MPA)	----	OA-VOL08m	0.01	-		4.53	134.40	128	----	----
pH (1:1 soil:water)	----	OA-ELE07	0.10	pH units		8.40	8.90	8.90	----	----
sulfate (as S), carbonate leach	14808-79-8	S-GRA06	0.01	%		0.07	<0.01	<0.01	----	----
sulfate (as S), HCl leach	14808-79-8	S-GRA06A	0.01	%		0.09	<0.01	<0.01	----	----
sulfide (as S), total minus carbonate leach	18496-25-8	S-CAL06	0.01	%		0.05	<0.01	<0.01	----	----
sulfur, total	7704-34-9	S-IR08	0.01	%		0.12	<0.01	<0.01	----	----
weight, sample received	n/a	WEI-21	0.02	kg		1.75	1.48	1.63	----	----
Metals										
aluminum	7429-90-5	ME-MS41	0.01	%		1	1.02	1.05	----	----
antimony	7440-36-0	ME-MS41	0.05	ppm		<0.05	<0.05	<0.05	----	----
arsenic	7440-38-2	ME-MS41	0.1	ppm		0.8	0.6	0.6	----	----
barium	7440-39-3	ME-MS41	10	ppm		140	170	100	----	----
beryllium	7440-41-7	ME-MS41	0.05	ppm		0.28	0.28	0.30	----	----
bismuth	7440-69-9	ME-MS41	0.01	ppm		0.07	0.02	0.01	----	----
boron	7440-42-8	ME-MS41	10	ppm		<10	<10	<10	----	----
cadmium	7440-43-9	ME-MS41	0.01	ppm		0.05	0.04	0.07	----	----
calcium	7440-70-2	ME-MS41	0.01	%		0.98	0.99	1.03	----	----
cerium	7440-45-1	ME-MS41	0.02	ppm		17.80	20.3	15.90	----	----
cesium	7440-46-2	ME-MS41	0.05	ppm		0.17	0.23	0.13	----	----
chromium	7440-47-3	ME-MS41	1	ppm		10	8	8	----	----
cobalt	7440-48-4	ME-MS41	0.1	ppm		5.3	5.5	5.8	----	----
copper	7440-50-8	ME-MS41	0.2	ppm		425	208	26.1	----	----
gallium	7440-55-3	ME-MS41	0.05	ppm		5.40	5.34	5.42	----	----
germanium	7440-56-4	ME-MS41	0.05	ppm		0.08	0.07	0.08	----	----
gold	7440-57-5	ME-MS41	0.02	ppm		0.05	<0.02	<0.02	----	----
hafnium	7440-58-6	ME-MS41	0.02	ppm		0.06	0.05	0.08	----	----

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	ABA 228806	ABA 228807	ABA 228808	----	----
					Client sampling date / time	[13-Dec-2021]	[13-Dec-2021]	[13-Dec-2021]	----	----
						WR2101769-006	WR2101769-007	WR2101769-008	--------	--------
						Result	Result	Result	----	----
Metals										
indium	7440-74-6	ME-MS41	0.005	ppm		0.017	0.022	0.017	----	----
iron	7439-89-6	ME-MS41	0.01	%		2.22	2.18	2.17	----	----
lanthanum	7439-91-0	ME-MS41	0.2	ppm		9.7	11.2	8.4	----	----
lead	7439-92-1	ME-MS41	0.2	ppm		3	2.4	2.9	----	----
lithium	7439-93-2	ME-MS41	0.1	ppm		5.5	5.9	6.2	----	----
magnesium	7439-95-4	ME-MS41	0.01	%		0.61	0.61	0.67	----	----
manganese	7439-96-5	ME-MS41	5	ppm		518	506	504	----	----
mercury	7439-97-6	ME-MS41	0.01	ppm		0.02	0.01	0.02	----	----
molybdenum	7439-98-7	ME-MS41	0.05	ppm		0.25	0.24	0.21	----	----
nickel	7440-02-0	ME-MS41	0.2	ppm		1.7	1.7	1.9	----	----
niobium	7440-03-1	ME-MS41	0.05	ppm		0.21	0.24	0.19	----	----
phosphorus	7723-14-0	ME-MS41	10	ppm		610	680	710	----	----
potassium	7440-09-7	ME-MS41	0.01	%		0.33	0.44	0.25	----	----
rhenium	7440-15-5	ME-MS41	0.001	ppm		<0.001	<0.001	<0.001	----	----
rubidium	7440-17-7	ME-MS41	0.1	ppm		17	20.5	11	----	----
scandium	7440-20-2	ME-MS41	0.1	ppm		3.7	3.9	3.9	----	----
selenium	7782-49-2	ME-MS41	0.2	ppm		0.8	<0.2	<0.2	----	----
silver	7440-22-4	ME-MS41	0.01	ppm		0.34	0.11	0.03	----	----
sodium	7440-23-5	ME-MS41	0.01	%		0.09	0.08	0.09	----	----
strontium	7440-24-6	ME-MS41	0.2	ppm		72.4	38.1	48.1	----	----
sulfur	7704-34-9	ME-MS41	0.01	%		0.15	0.03	0.01	----	----
tantalum	7440-25-7	ME-MS41	0.01	ppm		<0.01	<0.01	<0.01	----	----
tellurium	13494-80-9	ME-MS41	0.01	ppm		0.20	0.02	0.01	----	----
thallium	7440-28-0	ME-MS41	0.02	ppm		0.08	0.11	0.06	----	----
thorium	7440-29-1	ME-MS41	0.2	ppm		1.6	2.2	1.2	----	----
tin	7440-31-5	ME-MS41	0.2	ppm		0.5	0.5	0.5	----	----
titanium	7440-32-6	ME-MS41	0.005	%		0.087	0.091	0.084	----	----
tungsten	7440-33-7	ME-MS41	0.05	ppm		<0.05	<0.05	<0.05	----	----
uranium	7440-61-1	ME-MS41	0.05	ppm		0.17	0.32	0.23	----	----
vanadium	7440-62-2	ME-MS41	1	ppm		45	47	44	----	----
yttrium	7440-65-5	ME-MS41	0.05	ppm		5.61	6.67	6.96	----	----
zinc	7440-66-6	ME-MS41	2	ppm		79	68	65	----	----

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	ABA 228806	ABA 228807	ABA 228808	----	----
					Client sampling date / time	[13-Dec-2021]	[13-Dec-2021]	[13-Dec-2021]	----	----
						WR2101769-006	WR2101769-007	WR2101769-008	--------	--------
						Result	Result	Result	----	----
Metals										
zirconium	7440-67-7	ME-MS41	0.5	ppm		0.8	0.9	1.2	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2101769**	Page	: 1 of 13
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 13-Dec-2021 10:45
PO	: TBD	Issue Date	: 07-Feb-2022 17:28
C-O-C number	: 2021-12-11 C		
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 8		
No. of samples analysed	: 8		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Acid Base Accounting (Modified Sobek)										
LDPE bag ABA 208801	OA-VOL08m	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Acid Base Accounting (Modified Sobek)										
LDPE bag ABA 208802	OA-VOL08m	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Acid Base Accounting (Modified Sobek)										
LDPE bag ABA 228803	OA-VOL08m	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Acid Base Accounting (Modified Sobek)										
LDPE bag ABA 228804	OA-VOL08m	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Acid Base Accounting (Modified Sobek)										
LDPE bag ABA 228805	OA-VOL08m	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Acid Base Accounting (Modified Sobek)										
LDPE bag ABA 228806	OA-VOL08m	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Acid Base Accounting (Modified Sobek)										
LDPE bag ABA 228807	OA-VOL08m	13-Dec-2021	----	----	----		02-Feb-2022	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Acid Base Accounting (Modified Sobek)										
LDPE bag ABA 228808	OA-VOL08m	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
LDPE bag ABA 208801	C-GAS05	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
LDPE bag ABA 208802	C-GAS05	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
LDPE bag ABA 228803	C-GAS05	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
LDPE bag ABA 228804	C-GAS05	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
LDPE bag ABA 228805	C-GAS05	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
LDPE bag ABA 228806	C-GAS05	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
LDPE bag ABA 228807	C-GAS05	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
LDPE bag ABA 228808	C-GAS05	13-Dec-2021	----	----	----		02-Feb-2022	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Received Sample Weight										
LDPE bag ABA 208801	WEI-21	13-Dec-2021	----	----	----		02-Feb-2022	180 days	52 days	✓
Acid Base Accounting : Received Sample Weight										
LDPE bag ABA 208802	WEI-21	13-Dec-2021	----	----	----		02-Feb-2022	180 days	52 days	✓
Acid Base Accounting : Received Sample Weight										
LDPE bag ABA 228803	WEI-21	13-Dec-2021	----	----	----		02-Feb-2022	180 days	52 days	✓
Acid Base Accounting : Received Sample Weight										
LDPE bag ABA 228804	WEI-21	13-Dec-2021	----	----	----		02-Feb-2022	180 days	52 days	✓
Acid Base Accounting : Received Sample Weight										
LDPE bag ABA 228805	WEI-21	13-Dec-2021	----	----	----		02-Feb-2022	180 days	52 days	✓
Acid Base Accounting : Received Sample Weight										
LDPE bag ABA 228806	WEI-21	13-Dec-2021	----	----	----		02-Feb-2022	180 days	52 days	✓
Acid Base Accounting : Received Sample Weight										
LDPE bag ABA 228807	WEI-21	13-Dec-2021	----	----	----		02-Feb-2022	180 days	52 days	✓
Acid Base Accounting : Received Sample Weight										
LDPE bag ABA 228808	WEI-21	13-Dec-2021	----	----	----		02-Feb-2022	180 days	52 days	✓
Acid Base Accounting : Saturated Paste pH										
LDPE bag ABA 208801	OA-ELE07	13-Dec-2021	----	----	----		02-Feb-2022	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Saturated Paste pH										
LDPE bag ABA 208802	OA-ELE07	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Saturated Paste pH										
LDPE bag ABA 228803	OA-ELE07	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Saturated Paste pH										
LDPE bag ABA 228804	OA-ELE07	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Saturated Paste pH										
LDPE bag ABA 228805	OA-ELE07	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Saturated Paste pH										
LDPE bag ABA 228806	OA-ELE07	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Saturated Paste pH										
LDPE bag ABA 228807	OA-ELE07	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Saturated Paste pH										
LDPE bag ABA 228808	OA-ELE07	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
LDPE bag ABA 208801	S-GRA06A	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
LDPE bag ABA 208802	S-GRA06A	13-Dec-2021	----	----	----		02-Feb-2022	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
LDPE bag ABA 228803	S-GRA06A	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
LDPE bag ABA 228804	S-GRA06A	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
LDPE bag ABA 228805	S-GRA06A	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
LDPE bag ABA 228806	S-GRA06A	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
LDPE bag ABA 228807	S-GRA06A	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
LDPE bag ABA 228808	S-GRA06A	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
LDPE bag ABA 208801	S-GRA06	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
LDPE bag ABA 208802	S-GRA06	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
LDPE bag ABA 228803	S-GRA06	13-Dec-2021	----	----	----		02-Feb-2022	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
LDPE bag ABA 228804	S-GRA06	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
LDPE bag ABA 228805	S-GRA06	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
LDPE bag ABA 228806	S-GRA06	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
LDPE bag ABA 228807	S-GRA06	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
LDPE bag ABA 228808	S-GRA06	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
LDPE bag ABA 208801	S-CAL06	13-Dec-2021	----	----	----		02-Feb-2022	28 days	52 days	× EHT
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
LDPE bag ABA 208802	S-CAL06	13-Dec-2021	----	----	----		02-Feb-2022	28 days	52 days	× EHT
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
LDPE bag ABA 228803	S-CAL06	13-Dec-2021	----	----	----		02-Feb-2022	28 days	52 days	× EHT
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
LDPE bag ABA 228804	S-CAL06	13-Dec-2021	----	----	----		02-Feb-2022	28 days	52 days	× EHT

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
LDPE bag ABA 228805	S-CAL06	13-Dec-2021	----	----	----		02-Feb-2022	28 days	52 days	× EHT
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
LDPE bag ABA 228806	S-CAL06	13-Dec-2021	----	----	----		02-Feb-2022	28 days	52 days	× EHT
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
LDPE bag ABA 228807	S-CAL06	13-Dec-2021	----	----	----		02-Feb-2022	28 days	52 days	× EHT
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
LDPE bag ABA 228808	S-CAL06	13-Dec-2021	----	----	----		02-Feb-2022	28 days	52 days	× EHT
Acid Base Accounting : Total Sulfur by Combustion and IR										
LDPE bag ABA 208801	S-IR08	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Total Sulfur by Combustion and IR										
LDPE bag ABA 208802	S-IR08	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Total Sulfur by Combustion and IR										
LDPE bag ABA 228803	S-IR08	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Total Sulfur by Combustion and IR										
LDPE bag ABA 228804	S-IR08	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Total Sulfur by Combustion and IR										
LDPE bag ABA 228805	S-IR08	13-Dec-2021	----	----	----		02-Feb-2022	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Total Sulfur by Combustion and IR										
LDPE bag ABA 228806	S-IR08	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Total Sulfur by Combustion and IR										
LDPE bag ABA 228807	S-IR08	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Acid Base Accounting : Total Sulfur by Combustion and IR										
LDPE bag ABA 228808	S-IR08	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
LDPE bag ABA 208801	ME-MS41	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
LDPE bag ABA 208802	ME-MS41	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
LDPE bag ABA 228803	ME-MS41	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
LDPE bag ABA 228804	ME-MS41	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
LDPE bag ABA 228805	ME-MS41	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
LDPE bag ABA 228806	ME-MS41	13-Dec-2021	----	----	----		02-Feb-2022	----	----	

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times* Rec	*Holding Times* Actual	*Eval*	*Analysis Date*	*Holding Times* Rec	*Holding Times* Actual	*Eval*
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
LDPE bag										
ABA 228807	ME-MS41	13-Dec-2021	----	----	----		02-Feb-2022	----	----	
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
LDPE bag										
ABA 228808	ME-MS41	13-Dec-2021	----	----	----		02-Feb-2022	----	----	

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

- **No Quality Control data available for this section.**

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Inorganic Carbon by Coulometer	C-GAS05 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals C-GAS05	Determine Total Inorganic Carbon (TIC) by using diluted perchloric acid to react with metal carbonate and yield carbon dioxide. Concentration of CO_2 is determined by coulometer.
51 Elements by Aqua Regia digestion and ICP-AES/MS	ME-MS41 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals ME-MS41	A prepared sample is digested with aqua regia in a graphite heating block. After cooling, the resulting solution is diluted to with deionized water, mixed and analyzed by ICP-AES. Samples are then analyzed by ICP-MS for the remaining suite of elements.
Saturated Paste pH	OA-ELE07 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals OA-ELE07	Sample mix with water in 1:1 ratio to make a paste, pH is then determined.
Acid Base Accounting (Modified Sobek)	OA-VOL08m ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals OA-VOL08m	Determine the acid generation power of a sample as tonne $CaCO_3$ per kilo-tonne using modified Sobek method
Sulfide S (as S) Calc. (Total-S - SO4-S)	S-CAL06 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-CAL06	Sulfide Sulfur (as S) is calculated by subtracting the Carbonate Leachable Sulfate Sulfur (as S) from the Total Sulfur (as S) obtained from combustion.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfates by NaCO3 Leaching and Gravimetry	S-GRA06 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-GRA06	A preppared sample is heated with diluted Na□CO□ and then filtered. The sulfate in the filtrate is precipitated with BaCl2 in a dilute HCl. The BaSO4 precipitate is filtered, ignited, weighed and the Sulfate Sulfur is determined (as S).
Sulfates by HCl Leaching and Gravimetry	S-GRA06A ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-GRA06A	A prepared sample is heated with dilute HCl and then filtered. The sulfate in the filtrate is precipitated with BaCl2 in a dilute HCl. The BaSO4 precipitate is filtered, ignited, weighed and the Sulfate Sulfur is determined (as S).
Total Sulfur by Combustion and IR	S-IR08 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-IR08	A prepared sample is heated to approximately 1350°C in an induction furnace with oxygen stream. Sulfur dioxide released from the sample are measured by IR (Leco analyzer) and the Total Sulfur result is provided.
Received Sample Weight	WEI-21 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals WEI-21	Weigh out sample received.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **WR2101769**	Page	: 1 of 2
Client	: Minto Explorations Ltd.	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 13-Dec-2021 10:45
PO	: TBD	Date Analysis Commenced	: 02-Feb-2022
C-O-C number	: 2021-12-11 C	Issue Date	: 07-Feb-2022 17:28
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 8		
No. of samples analysed	: 8		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Kaitlyn Gardner	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

ALS Canada Ltd.

2103 Dollarton Hwy
North Vancouver BC V7H 0A7
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www.alsglobal.com/geochemistry

To: **ALS ENVIRONMENTAL**
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 3-FEB-2022
Account: APN

CERTIFICATE VA21345672

Project: WR2101769

This report is for 8 samples of Other submitted to our lab in Vancouver, BC, Canada on 16-DEC-2021.

The following have access to data associated with this certificate:

ALSE VANCOUVER WEBTRIEVE SOFTWARE DEVELOPMENT GROUP	ALSEV DATASUBLET	HEATHER MCKENZIE

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
DISP-01	Disposal of all sample fractions
LOG-21	Sample logging - ClientBarCode
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize up to 250g 85% <75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
OA-VOL08m	Modified NP	
S-IR08	Total Sulphur (IR Spectroscopy)	LECO
OA-ELE07	Paste pH	
S-GRA06	Sulfate Sulfur-carbonate leach	WST-SEQ
S-CAL06	Sufide Sulfur (calculated)	LECO
C-GAS05	Inorganic Carbon (CO2)	
S-GRA06a	Sulfate Sulfur (HCl leachable)	WST-SEQ
ME-MS41	Ultra Trace Aqua Regia ICP-MS	

This is the Final Report and supersedes any preliminary report with this certificate number.Results apply to samples as submitted.All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:

Saa Traxler, General Manager, North Vancouver

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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 3-FEB-2022
Account: APN

Project: WR2101769

CERTIFICATE OF ANALYSIS VA21345672

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	ME-MS41 Ag ppm 0.01	ME-MS41 Al % 0.01	ME-MS41 As ppm 0.1	ME-MS41 Au ppm 0.02	ME-MS41 B ppm 10	ME-MS41 Ba ppm 10	ME-MS41 Be ppm 0.05	ME-MS41 Bi ppm 0.01	ME-MS41 Ca % 0.01	ME-MS41 Cd ppm 0.01	ME-MS41 Ce ppm 0.02	ME-MS41 Co ppm 0.1	ME-MS41 Cr ppm 1	ME-MS41 Cs ppm 0.05
WR2101769-001		2.09	0.05	0.89	1.0	<0.02	<10	190	0.28	0.02	1.28	0.04	23.3	5.3	7	0.21
WR2101769-002		1.95	0.06	1.07	0.7	<0.02	<10	150	0.30	0.02	1.46	0.06	19.30	5.4	8	0.17
WR2101769-003		1.98	0.03	1.02	1.0	<0.02	<10	110	0.33	0.01	0.93	0.04	16.95	5.6	8	0.17
WR2101769-004		2.60	0.03	1.00	0.6	<0.02	<10	190	0.19	0.01	0.66	0.02	18.40	5.3	10	0.26
WR2101769-005		2.58	0.03	1.07	0.7	<0.02	<10	270	0.28	0.01	0.82	0.05	28.7	5.7	8	0.40
WR2101769-006		1.75	0.34	1.00	0.8	0.05	<10	140	0.28	0.07	0.98	0.05	17.80	5.3	10	0.17
WR2101769-007		1.48	0.11	1.02	0.6	<0.02	<10	170	0.28	0.02	0.99	0.04	20.3	5.5	8	0.23
WR2101769-008		1.63	0.03	1.05	0.6	<0.02	<10	100	0.30	0.01	1.03	0.07	15.90	5.8	8	0.13

***** See Appendix Page for comments regarding this certificate *****

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100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 3-FEB-2022
Account: APN

Project: WR2101769

CERTIFICATE OF ANALYSIS VA21345672

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb
	Units	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm
	LOD	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05
WR2101769-001		32.1	2.14	4.92	0.08	0.05	0.01	0.023	0.31	12.7	5.8	0.64	509	0.31	0.08	0.13
WR2101769-002		64.4	2.17	5.25	0.08	0.06	0.01	0.021	0.35	9.6	5.6	0.61	620	0.30	0.08	0.12
WR2101769-003		11.0	2.12	5.48	0.11	0.08	0.01	0.019	0.28	9.2	6.4	0.66	507	0.24	0.10	0.25
WR2101769-004		10.7	1.96	4.83	0.11	0.09	0.01	0.012	0.52	10.2	5.2	0.60	469	0.27	0.12	0.29
WR2101769-005		10.6	2.28	5.30	0.10	0.07	0.01	0.023	0.68	15.3	6.0	0.64	507	0.33	0.09	0.18
WR2101769-006		425	2.22	5.40	0.08	0.06	0.02	0.017	0.33	9.7	5.5	0.61	518	0.25	0.09	0.21
WR2101769-007		208	2.18	5.34	0.07	0.05	0.01	0.022	0.44	11.2	5.9	0.61	506	0.24	0.08	0.24
WR2101769-008		26.1	2.17	5.42	0.08	0.08	0.02	0.017	0.25	8.4	6.2	0.67	504	0.21	0.09	0.19

***** See Appendix Page for comments regarding this certificate *****

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100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 3-FEB-2022
Account: APN

Project: WR2101769

CERTIFICATE OF ANALYSIS VA21345672

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti
	Units	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	LOD	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005
WR2101769-001		1.7	600	3.6	15.3	<0.001	0.02	0.08	4.4	<0.2	0.5	67.7	<0.01	<0.01	2.3	0.062
WR2101769-002		1.9	630	3.1	16.8	<0.001	0.15	0.05	4.1	<0.2	0.6	102.5	<0.01	<0.01	1.6	0.060
WR2101769-003		1.9	680	3.1	13.3	<0.001	0.01	<0.05	4.2	<0.2	0.5	44.1	<0.01	<0.01	1.4	0.105
WR2101769-004		1.8	680	2.1	24.9	<0.001	0.01	<0.05	3.4	<0.2	0.5	37.2	<0.01	<0.01	1.6	0.127
WR2101769-005		1.9	690	2.2	33.1	0.001	0.02	<0.05	4.8	<0.2	0.5	209	<0.01	0.01	3.2	0.115
WR2101769-006		1.7	610	3.0	17.0	<0.001	0.15	<0.05	3.7	0.8	0.5	72.4	<0.01	0.20	1.6	0.087
WR2101769-007		1.7	680	2.4	20.5	<0.001	0.03	<0.05	3.9	<0.2	0.5	38.1	<0.01	0.02	2.2	0.091
WR2101769-008		1.9	710	2.9	11.0	<0.001	0.01	<0.05	3.9	<0.2	0.5	48.1	<0.01	0.01	1.2	0.084

***** See Appendix Page for comments regarding this certificate *****

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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 3-FEB-2022
Account: APN

Project: WR2101769

CERTIFICATE OF ANALYSIS VA21345672

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	OA-VOL08m	OA-VOL08m	OA-VOL08m	OA-VOL08m	OA-ELE07	OA-VOL08m	S-IR08	S-GRA06
	Analyte	Tl	U	V	W	Y	Zn	Zr	MPA	FIZZ RAT	NNP	NP	pH	Ratio (N	S	S
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	tCaCO3/1Kt	Unity	tCaCO3/1Kt	tCaCO3/1Kt	Unity	Unity	%	%
	LOD	0.02	0.05	1	0.05	0.05	2	0.5	0.3	1	1	1	0.1	0.01	0.01	0.01
WR2101769-001		0.08	0.29	43	<0.05	6.30	71	1.0	<0.3	2	32	32	9.0	204.80	<0.01	<0.01
WR2101769-002		0.09	0.23	43	<0.05	9.58	77	0.7	3.8	2	28	32	8.2	8.53	0.12	0.10
WR2101769-003		0.07	0.24	47	<0.05	6.96	65	1.4	<0.3	1	17	17	9.1	108.80	<0.01	<0.01
WR2101769-004		0.13	0.36	46	<0.05	6.46	65	1.5	<0.3	1	10	10	9.5	64.00	<0.01	<0.01
WR2101769-005		0.17	0.22	51	<0.05	7.78	69	1.2	<0.3	1	19	19	8.9	121.60	<0.01	<0.01
WR2101769-006		0.08	0.17	45	<0.05	5.61	79	0.8	3.8	1	13	17	8.4	4.53	0.12	0.07
WR2101769-007		0.11	0.32	47	<0.05	6.67	68	0.9	<0.3	1	21	21	8.9	134.40	<0.01	<0.01
WR2101769-008		0.06	0.23	44	<0.05	6.96	65	1.2	<0.3	1	20	20	8.9	128.00	<0.01	<0.01

***** See Appendix Page for comments regarding this certificate *****

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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 3-FEB-2022
Account: APN

Project: WR2101769

CERTIFICATE OF ANALYSIS VA21345672

Sample Description	Method Analyte Units LOD	S-GRA06a S % 0.01	S-CAL06 S % 0.01	C-GAS05 C % 0.05	C-GAS05 CO2 % 0.2
WR2101769-001		<0.01	<0.01	0.16	0.6
WR2101769-002		0.09	0.02	0.31	1.1
WR2101769-003		<0.01	<0.01	0.13	0.5
WR2101769-004		<0.01	<0.01	<0.05	0.2
WR2101769-005		<0.01	<0.01	0.22	0.8
WR2101769-006		0.09	0.05	0.13	0.5
WR2101769-007		<0.01	<0.01	0.18	0.7
WR2101769-008		<0.01	<0.01	0.17	0.6

***** See Appendix Page for comments regarding this certificate *****

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To: **ALS ENVIRONMENTAL**
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 3-FEB-2022
Account: APN

Project: WR2101769

CERTIFICATE OF ANALYSIS VA21345672

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

C-GAS05	CRU-31	DISP-01	LOG-21
ME-MS41	OA-ELE07	OA-VOL08m	PUL-31
S-CAL06	S-GRA06	S-GRA06a	S-IR08
SPL-21	WEI-21		

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

COC Number: 2021-12-11 C

Affix ALS barcode label here
(lab use only)

Environmental Division
Whitehorse
Work Order Reference
WR2101769

Telephone : +1 867 668 6689

Report To	Contact and company name below will appear on the final report
Company:	Minto Explorations Ltd.
Contact:	Minto Environment - Coordinator
Phone:	1-604-759-4659
	Company address below will appear on the final report
Street:	2100-510 West Georgia St.
City/Province:	Vancouver, British Columbia
Postal Code:	V6B 0M3
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Minto Explorations Ltd.
Contact:	Ruth Cayetano

Report Format / Distribution

Select Report Format: ☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax minto_environment@mintomine.com
Email 2
Email 3

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax ap@mintomine.com
Email 2

Project Information

ALS Account # / Quote #:
Job #:
PO / AFE: TBD
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only)

ALS Contact: **Sampler:**

Select Service Level Below - Please confirm all E&P TATs w

Regular [R] ☑ Standard TAT if recei

PRIORITY (Business Days): 4 day [P4] ☐ | 3 day [P3] ☐ | 2 day [P2] ☐ — EMERGENCY

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service l

Analysis

Indicate Filtered (F), Preserved (P) or Filtered a

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total Metals- Aqua regia digestion (ICP)	Paste pH	% Inorganic Carbonate	Total Carbon/Sulphur (Leco)	AP - determination by % sulphide sulphur	Modified NP - (MEND 1991)	Number of Containers
	ABA 208801			Composite	R	R	R	R	R	R	1
	ABA 208802			Composite	R	R	R	R	R	R	1
	ABA 208803			Composite	R	R	R	R	R	R	1
	ABA 208804			Composite	R	R	R	R	R	R	1
	ABA 208805			Composite	R	R	R	R	R	R	1
	ABA 208806			Composite	R	R	R	R	R	R	1
	ABA 208807			Composite	R	R	R	R	R	R	1
	ABA 208808			Composite	R	R	R	R	R	R	1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?
☐ YES ☑ NO

Are samples for human drinking water use?
☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
16					

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Brian Hyde	Date: December 11, 2021	Time:	Received by:	Date: DEC 13	Time: 1045	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

COC Number: 2021-12-11 C

Affix ALS barcode label here
(lab use only)

Environmental Division Whitehorse
Work Order Reference
WR2101769

Telephone : +1 867 668 6689

Report To	Contact and company name below will appear on the final report
Company:	Minto Explorations Ltd.
Contact:	Minto Environment - Coordinator
Phone:	1-604-759-4659
	Company address below will appear on the final report
Street:	2100-510 West Georgia St.
City/Province:	Vancouver, British Columbia
Postal Code:	V6B 0M3
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Minto Explorations Ltd.
Contact:	Ruth Cayetano

Report Format / Distribution	
Select Report Format:	☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	minto_environment@mintomine.com
Email 2	
Email 3	
Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	ap@mintomine.com
Email 2	

Select Service Level Below - Please confirm all E&P TATs w

Regular [R] ☑ Standard TAT if rece

PRIORITY (Business Days): 4 day [P4] ☐ | 3 day [P3] ☐ | 2 day [P2] ☐ | EMERGENCY

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service l

Analysis

Indicate Filtered (F), Preserved (P) or Filtered a

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#
Job #:		Major/Minor Code:	Routing Code:
PO / AFE:	TBD	Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		ALS Contact:	Sampler:

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total Metals- Aqua regia disgestion (ICP)	Paste pH	% Inorganic Carbonate	Total Corbon/Sukphur (Leco)	AP - determination by % sulphide sulphur	Modified NP - (MEND 1991)	Number of Containers
	ABA 208801			Composite	R	R	R	R	R	R	1
	ABA 208802			Composite	R	R	R	R	R	R	1
	ABA 208803			Composite	R	R	R	R	R	R	1
	ABA 208804			Composite	R	R	R	R	R	R	1
	ABA 208805			Composite	R	R	R	R	R	R	1
	ABA 208806			Composite	R	R	R	R	R	R	1
	ABA 208807			Composite	R	R	R	R	R	R	1
	ABA 208808			Composite	R	R	R	R	R	R	1

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☑ NO	
Are samples for human drinking water use? ☐ YES ☑ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☑ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☑

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
11			10.5		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Brian Hyde	Date: December 11, 2021	Time:	Received by:	Date: DEC 13	Time: 1085	Received by: RJ	Date: DEC 14	Time: 16:30

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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OCTOBER 2015 FRONT

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1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2101770**	Page	: 1 of 5
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 13-Dec-2021 10:45
PO	: TBD	Date Analysis Commenced	: 25-Jan-2022
C-O-C number	: 2021-12-11 D	Issue Date	: 18-Feb-2022 17:46
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Kaitlyn Gardner	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
%	percent
kg	kilograms
pH units	pH units
ppm	parts per million
tCaCO3/kt	tons CaCO3 per kiloton

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	ABA November Tailings 2021	----	----	----	----
					Client sampling date / time	[13-Dec-2021]	----	----	----	----
						WR2101770-001	--------	--------	--------	--------
						Result	----	----	----	----
Acid Base Accounting										
carbon dioxide	124-38-9	C-GAS05	0.2	%		2.4	----	----	----	----
carbon, total inorganic [TIC]	----	C-GAS05	0.05	%		0.67	----	----	----	----
fizz rating	----	OA-VOL08m	1	-		2	----	----	----	----
maximum potential acidity [MPA]	----	OA-VOL08m	0.3	tCaCO3/kt		1.9	----	----	----	----
net neutralization potential [NNP]	----	OA-VOL08m	1	tCaCO3/kt		37	----	----	----	----
neutralization potential [NP]	----	OA-VOL08m	1	tCaCO3/kt		39	----	----	----	----
neutralization potential ratio [NPR], (NP/MPA)	----	OA-VOL08m	0.01	-		20.80	----	----	----	----
pH (1:1 soil:water)	----	OA-ELE07	0.10	pH units		8.60	----	----	----	----
sulfate (as S), carbonate leach	14808-79-8	S-GRA06	0.01	%		<0.01	----	----	----	----
sulfate (as S), HCl leach	14808-79-8	S-GRA06A	0.01	%		<0.01	----	----	----	----
sulfide (as S), total minus carbonate leach	18496-25-8	S-CAL06	0.01	%		0.06	----	----	----	----
sulfur, total	7704-34-9	S-IR08	0.01	%		0.06	----	----	----	----
weight, sample received	n/a	WEI-21	0.02	kg		1.63	----	----	----	----
Metals										
aluminum	7429-90-5	ME-MS41	0.01	%		1.06	----	----	----	----
antimony	7440-36-0	ME-MS41	0.05	ppm		<0.05	----	----	----	----
arsenic	7440-38-2	ME-MS41	0.1	ppm		1	----	----	----	----
barium	7440-39-3	ME-MS41	10	ppm		260	----	----	----	----
beryllium	7440-41-7	ME-MS41	0.05	ppm		0.33	----	----	----	----
bismuth	7440-69-9	ME-MS41	0.01	ppm		0.19	----	----	----	----
boron	7440-42-8	ME-MS41	10	ppm		<10	----	----	----	----
cadmium	7440-43-9	ME-MS41	0.01	ppm		0.59	----	----	----	----
calcium	7440-70-2	ME-MS41	0.01	%		1.50	----	----	----	----
cerium	7440-45-1	ME-MS41	0.02	ppm		18.90	----	----	----	----
cesium	7440-46-2	ME-MS41	0.05	ppm		0.50	----	----	----	----
chromium	7440-47-3	ME-MS41	1	ppm		11	----	----	----	----
cobalt	7440-48-4	ME-MS41	0.1	ppm		7.2	----	----	----	----
copper	7440-50-8	ME-MS41	0.2	ppm		907	----	----	----	----
gallium	7440-55-3	ME-MS41	0.05	ppm		8.27	----	----	----	----
germanium	7440-56-4	ME-MS41	0.05	ppm		0.10	----	----	----	----
gold	7440-57-5	ME-MS41	0.02	ppm		0.15	----	----	----	----

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	ABA November Tailings 2021	----	----	----	----
					Client sampling date / time	[13-Dec-2021]	----	----	----	----
						WR2101770-001	--------	--------	--------	--------
						Result	----	----	----	----
Metals										
hafnium	7440-58-6	ME-MS41	0.02	ppm		0.05	----	----	----	----
indium	7440-74-6	ME-MS41	0.005	ppm		0.084	----	----	----	----
iron	7439-89-6	ME-MS41	0.01	%		4.02	----	----	----	----
lanthanum	7439-91-0	ME-MS41	0.2	ppm		9.2	----	----	----	----
lead	7439-92-1	ME-MS41	0.2	ppm		2.8	----	----	----	----
lithium	7439-93-2	ME-MS41	0.1	ppm		5	----	----	----	----
magnesium	7439-95-4	ME-MS41	0.01	%		0.64	----	----	----	----
manganese	7439-96-5	ME-MS41	5	ppm		767	----	----	----	----
mercury	7439-97-6	ME-MS41	0.01	ppm		0.03	----	----	----	----
molybdenum	7439-98-7	ME-MS41	0.05	ppm		2.39	----	----	----	----
nickel	7440-02-0	ME-MS41	0.2	ppm		3.4	----	----	----	----
niobium	7440-03-1	ME-MS41	0.05	ppm		0.19	----	----	----	----
phosphorus	7723-14-0	ME-MS41	10	ppm		550	----	----	----	----
potassium	7440-09-7	ME-MS41	0.01	%		0.59	----	----	----	----
rhenium	7440-15-5	ME-MS41	0.001	ppm		0.004	----	----	----	----
rubidium	7440-17-7	ME-MS41	0.1	ppm		33.1	----	----	----	----
scandium	7440-20-2	ME-MS41	0.1	ppm		3.9	----	----	----	----
selenium	7782-49-2	ME-MS41	0.2	ppm		0.9	----	----	----	----
silver	7440-22-4	ME-MS41	0.01	ppm		0.63	----	----	----	----
sodium	7440-23-5	ME-MS41	0.01	%		0.06	----	----	----	----
strontium	7440-24-6	ME-MS41	0.2	ppm		86	----	----	----	----
sulfur	7704-34-9	ME-MS41	0.01	%		0.07	----	----	----	----
tantalum	7440-25-7	ME-MS41	0.01	ppm		<0.01	----	----	----	----
tellurium	13494-80-9	ME-MS41	0.01	ppm		0.27	----	----	----	----
thallium	7440-28-0	ME-MS41	0.02	ppm		0.22	----	----	----	----
thorium	7440-29-1	ME-MS41	0.2	ppm		2.6	----	----	----	----
tin	7440-31-5	ME-MS41	0.2	ppm		0.9	----	----	----	----
titanium	7440-32-6	ME-MS41	0.005	%		0.096	----	----	----	----
tungsten	7440-33-7	ME-MS41	0.05	ppm		0.10	----	----	----	----
uranium	7440-61-1	ME-MS41	0.05	ppm		0.29	----	----	----	----
vanadium	7440-62-2	ME-MS41	1	ppm		64	----	----	----	----
yttrium	7440-65-5	ME-MS41	0.05	ppm		4.95	----	----	----	----

Analytical Results

Sub-Matrix: **Soil/Solid**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	ABA November Tailings 2021	----	----	----	----
					Client sampling date / time	[13-Dec-2021]	----	----	----	----
						WR2101770-001	--------	--------	--------	--------
						Result	----	----	----	----
Metals										
zinc	7440-66-6	ME-MS41	2	ppm		109	----	----	----	----
zirconium	7440-67-7	ME-MS41	0.5	ppm		1	----	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2101770**	Page	: 1 of 6
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 13-Dec-2021 10:45
PO	: TBD	Issue Date	: 18-Feb-2022 17:46
C-O-C number	: 2021-12-11 D		
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Acid Base Accounting (Modified Sobek)										
Double bagged HDPE ABA November Tailings 2021	OA-VOL08m	13-Dec-2021	----	----	----		25-Jan-2022	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
Double bagged HDPE ABA November Tailings 2021	C-GAS05	13-Dec-2021	----	----	----		25-Jan-2022	----	----	
Acid Base Accounting : Received Sample Weight										
Double bagged HDPE ABA November Tailings 2021	WEI-21	13-Dec-2021	----	----	----		25-Jan-2022	----	44 days	
Acid Base Accounting : Saturated Paste pH										
Double bagged HDPE ABA November Tailings 2021	OA-ELE07	13-Dec-2021	----	----	----		25-Jan-2022	----	----	
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
Double bagged HDPE ABA November Tailings 2021	S-GRA06A	13-Dec-2021	----	----	----		25-Jan-2022	----	----	
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
Double bagged HDPE ABA November Tailings 2021	S-GRA06	13-Dec-2021	----	----	----		25-Jan-2022	----	----	
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
Double bagged HDPE ABA November Tailings 2021	S-CAL06	13-Dec-2021	----	----	----		25-Jan-2022	----	44 days	EHT

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Total Sulfur by Combustion and IR										
Double bagged HDPE										
ABA November Tailings 2021	S-IR08	13-Dec-2021	----	----	----		25-Jan-2022	----	----	
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
Double bagged HDPE										
ABA November Tailings 2021	ME-MS41	13-Dec-2021	----	----	----		25-Jan-2022	----	----	

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

- **No Quality Control data available for this section.**

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Inorganic Carbon by Coulometer	C-GAS05 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals C-GAS05	Determine Total Inorganic Carbon (TIC) by using diluted perchloric acid to react with metal carbonate and yield carbon dioxide. Concentration of CO_2 is determined by coulometer.
51 Elements by Aqua Regia digestion and ICP-AES/MS	ME-MS41 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals ME-MS41	A prepared sample is digested with aqua regia in a graphite heating block. After cooling, the resulting solution is diluted to with deionized water, mixed and analyzed by ICP-AES. Samples are then analyzed by ICP-MS for the remaining suite of elements.
Saturated Paste pH	OA-ELE07 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals OA-ELE07	Sample mix with water in 1:1 ratio to make a paste, pH is then determined.
Acid Base Accounting (Modified Sobek)	OA-VOL08m ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals OA-VOL08m	Determine the acid generation power of a sample as tonne $CaCO_3$ per kilo-tonne using modified Sobek method
Sulfide S (as S) Calc. (Total-S - SO4-S)	S-CAL06 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-CAL06	Sulfide Sulfur (as S) is calculated by subtracting the Carbonate Leachable Sulfate Sulfur (as S) from the Total Sulfur (as S) obtained from combustion.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfates by NaCO3 Leaching and Gravimetry	S-GRA06 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-GRA06	A preppared sample is heated with diluted Na□CO□ and then filtered. The sulfate in the filtrate is precipitated with BaCl2 in a dilute HCl. The BaSO4 precipitate is filtered, ignited, weighed and the Sulfate Sulfur is determined (as S).
Sulfates by HCl Leaching and Gravimetry	S-GRA06A ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-GRA06A	A prepared sample is heated with dilute HCl and then filtered. The sulfate in the filtrate is precipitated with BaCl2 in a dilute HCl. The BaSO4 precipitate is filtered, ignited, weighed and the Sulfate Sulfur is determined (as S).
Total Sulfur by Combustion and IR	S-IR08 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-IR08	A prepared sample is heated to approximately 1350°C in an induction furnace with oxygen stream. Sulfur dioxide released from the sample are measured by IR (Leco analyzer) and the Total Sulfur result is provided.
Received Sample Weight	WEI-21 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals WEI-21	Weigh out sample received.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **WR2101770**	Page	: 1 of 2
Client	: Minto Explorations Ltd.	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 13-Dec-2021 10:45
PO	: TBD	Date Analysis Commenced	: 25-Jan-2022
C-O-C number	: 2021-12-11 D	Issue Date	: 18-Feb-2022 17:46
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Kaitlyn Gardner	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

ALS Canada Ltd.

2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: +1 604 984 0221 Fax: +1 604 984 0218
www.alsglobal.com/geochemistry

To: **ALS ENVIRONMENTAL**
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 26-JAN-2022
Account: APN

CERTIFICATE VA21345673

Project: WR2101770

This report is for 1 sample of Tailings submitted to our lab in Vancouver, BC, Canada on 16-DEC-2021.

The following have access to data associated with this certificate:

ALSE VANCOUVER WEBTRIEVE SOFTWARE DEVELOPMENT GROUP	ALSEV DATASUBLET	HEATHER MCKENZIE

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
DISP-01	Disposal of all sample fractions
LOG-21	Sample logging - ClientBarCode
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize up to 250g 85% <75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
OA-VOL08m	Modified NP	
S-IR08	Total Sulphur (IR Spectroscopy)	LECO
OA-ELE07	Paste pH	
S-GRA06	Sulfate Sulfur-carbonate leach	WST-SEQ
S-CAL06	Sufide Sulfur (calculated)	LECO
C-GAS05	Inorganic Carbon (CO2)	
S-GRA06a	Sulfate Sulfur (HCl leachable)	WST-SEQ
ME-MS41	Ultra Trace Aqua Regia ICP-MS	

This is the Final Report and supersedes any preliminary report with this certificate number.Results apply to samples as submitted.All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:

Saa Traxler, General Manager, North Vancouver

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BURNABY BC V5A 1W9

Finalized Date: 26-JAN-2022
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Project: WR2101770

CERTIFICATE OF ANALYSIS VA21345673

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg 0.02	ME-MS41 Ag ppm 0.01	ME-MS41 Al % 0.01	ME-MS41 As ppm 0.1	ME-MS41 Au ppm 0.02	ME-MS41 B ppm 10	ME-MS41 Ba ppm 10	ME-MS41 Be ppm 0.05	ME-MS41 Bi ppm 0.01	ME-MS41 Ca % 0.01	ME-MS41 Cd ppm 0.01	ME-MS41 Ce ppm 0.02	ME-MS41 Co ppm 0.1	ME-MS41 Cr ppm 1	ME-MS41 Cs ppm 0.05
WR2101770-001		1.63	0.63	1.06	1.0	0.15	<10	260	0.33	0.19	1.50	0.59	18.90	7.2	11	0.50

***** See Appendix Page for comments regarding this certificate *****

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BURNABY BC V5A 1W9

Finalized Date: 26-JAN-2022
Account: APN

Project: WR2101770

CERTIFICATE OF ANALYSIS VA21345673

Sample Description	Method Analyte Units LOD	ME-MS41 Cu ppm 0.2	ME-MS41 Fe % 0.01	ME-MS41 Ga ppm 0.05	ME-MS41 Ge ppm 0.05	ME-MS41 Hf ppm 0.02	ME-MS41 Hg ppm 0.01	ME-MS41 In ppm 0.005	ME-MS41 K % 0.01	ME-MS41 La ppm 0.2	ME-MS41 Li ppm 0.1	ME-MS41 Mg % 0.01	ME-MS41 Mn ppm 5	ME-MS41 Mo ppm 0.05	ME-MS41 Na % 0.01	ME-MS41 Nb ppm 0.05
WR2101770-001		907	4.02	8.27	0.10	0.05	0.03	0.084	0.59	9.2	5.0	0.64	767	2.39	0.06	0.19

***** See Appendix Page for comments regarding this certificate *****

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BURNABY BC V5A 1W9

Finalized Date: 26-JAN-2022
Account: APN

Project: WR2101770

CERTIFICATE OF ANALYSIS VA21345673

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti
	Units	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
	LOD	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2	0.005
WR2101770-001		3.4	550	2.8	33.1	0.004	0.07	<0.05	3.9	0.9	0.9	86.0	<0.01	0.27	2.6	0.096

***** See Appendix Page for comments regarding this certificate *****

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Account: APN

Project: WR2101770

CERTIFICATE OF ANALYSIS VA21345673

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	OA-VOL08m	OA-VOL08m	OA-VOL08m	OA-VOL08m	OA-ELE07	OA-VOL08m	S-IR08	S-GRA06
	Analyte	Tl	U	V	W	Y	Zn	Zr	MPA	FIZZ RAT	NNP	NP	pH	Ratio (N	S	S
	Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	tCaCO3/1Kt	Unity	tCaCO3/1Kt	tCaCO3/1Kt	Unity	Unity	%	%
	LOD	0.02	0.05	1	0.05	0.05	2	0.5	0.3	1	1	1	0.1	0.01	0.01	0.01
WR2101770-001		0.22	0.29	64	0.10	4.95	109	1.0	1.9	2	37	39	8.6	20.80	0.06	<0.01

***** See Appendix Page for comments regarding this certificate *****

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CERTIFICATE OF ANALYSIS VA21345673

Sample Description	Method Analyte Units LOD	S-GRA06a S % 0.01	S-CAL06 S % 0.01	C-GAS05 C % 0.05	C-GAS05 CO2 % 0.2
WR2101770-001		<0.01	0.06	0.67	2.4

***** See Appendix Page for comments regarding this certificate *****

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100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 26-JAN-2022
Account: APN

Project: WR2101770

CERTIFICATE OF ANALYSIS VA21345673

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

C-GAS05	CRU-31	DISP-01	LOG-21
ME-MS41	OA-ELE07	OA-VOL08m	PUL-31
S-CAL06	S-GRA06	S-GRA06a	S-IR08
SPL-21	WEI-21		

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 2021-12-11 D

Page 1 of 1

Environmental Division
Whitehorse
Work Order Reference
WR2101770

Telephone : +1 867 668 6689

Report To	Contact and company name below will appear on the final report
Company:	Minto Explorations Ltd.
Contact:	Minto Environment - Coordinator
Phone:	1-604-759-4659
	Company address below will appear on the final report
Street:	2100-510 West Georgia St.
City/Province:	Vancouver, British Columbia
Postal Code:	V6B 0M3
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Minto Explorations Ltd.
Contact:	Ruth Cayetano

Report Format / Distribution	
Select Report Format:	☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	minto_environment@mintomine.com
Email 2	
Email 3	

Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	ap@mintomine.com
Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#
Job #:		Major/Minor Code:	Routing Code:
PO / AFE:	TBD	Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		ALS Contact:	Sampler:

Select Service Level Below - Please confirm all E&P TA

Regular [R] ☑ Standard TAT if

PRIORITY (Business Days): 4 day [P4] ☐ | 3 day [P3] ☐ | 2 day [P2] ☐ — EMERGENCY

Date and Time Required for all E&P TATs

For tests that can not be performed according to the se

Analy

Indicate Filtered (F), Preserved (P) or Fil

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total Metals- Aqua regia disgestion (ICP)	Paste pH	% Inorganic Carbonate	Total Carbon/Sulphur (Leco)	AP - determination by % sulphide sulphur	Modified NP - (MEND 1991)								Number of Containers
	ABA November Tailings 2021			Composite	R	R	R	R	R	R								1

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☑ NO	
Are samples for human drinking water use? ☐ YES ☑ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
11	10.5

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Brian Hyde	Date: December 11, 2021	Time:	Received by: JE	Date: DEC 13	Time: 1045	Received by: RJ	Date: DEC-14	Time: 16:32

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. *Please fill in this form LEGIBLY.* By the use of this form the user acknowledges and agrees with the Terms and Conditions *as specified on the back page of the white - report copy.*

1. If any water samples are taken from a **Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.**

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2200021**	Page	: 1 of 5
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 14-Jan-2022 11:25
PO	: TBD	Date Analysis Commenced	: 01-Mar-2022
C-O-C number	: 2022-01-13_D	Issue Date	: 02-Mar-2022 16:12
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Paolo Obillo	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
%	percent
kg	kilograms
pH units	pH units
ppm	parts per million
tCaCO3/kt	tons CaCO3 per kiloton

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	December Composite Tailings	----	----	----	----
					Client sampling date / time	14-Jan-2022	----	----	----	----
						WR2200021-001	--------	--------	--------	--------
						Result	----	----	----	----
Acid Base Accounting										
carbon dioxide	124-38-9	C-GAS05	0.2	%		1.6	----	----	----	----
carbon, total inorganic [TIC]	----	C-GAS05	0.05	%		0.43	----	----	----	----
fizz rating	----	OA-VOL08m	1	-		2	----	----	----	----
maximum potential acidity [MPA]	----	OA-VOL08m	0.3	tCaCO3/kt		2.8	----	----	----	----
net neutralization potential [NNP]	----	OA-VOL08m	1	tCaCO3/kt		27	----	----	----	----
neutralization potential [NP]	----	OA-VOL08m	1	tCaCO3/kt		30	----	----	----	----
neutralization potential ratio [NPR], (NP/MPA)	----	OA-VOL08m	0.01	-		10.67	----	----	----	----
pH (1:1 soil:water)	----	OA-ELE07	0.10	pH units		8.30	----	----	----	----
sulfate (as S), carbonate leach	14808-79-8	S-GRA06	0.01	%		0.01	----	----	----	----
sulfate (as S), HCl leach	14808-79-8	S-GRA06A	0.01	%		0.01	----	----	----	----
sulfide (as S), total minus carbonate leach	18496-25-8	S-CAL06	0.01	%		0.08	----	----	----	----
sulfur, total	7704-34-9	S-IR08	0.01	%		0.09	----	----	----	----
weight, sample received	n/a	WEI-21	0.02	kg		2.22	----	----	----	----
Metals										
aluminum	7429-90-5	ME-MS41	0.01	%		1.09	----	----	----	----
antimony	7440-36-0	ME-MS41	0.05	ppm		0.05	----	----	----	----
arsenic	7440-38-2	ME-MS41	0.1	ppm		4.2	----	----	----	----
barium	7440-39-3	ME-MS41	10	ppm		220	----	----	----	----
beryllium	7440-41-7	ME-MS41	0.05	ppm		0.24	----	----	----	----
bismuth	7440-69-9	ME-MS41	0.01	ppm		0.14	----	----	----	----
boron	7440-42-8	ME-MS41	10	ppm		<10	----	----	----	----
cadmium	7440-43-9	ME-MS41	0.01	ppm		0.47	----	----	----	----
calcium	7440-70-2	ME-MS41	0.01	%		1.27	----	----	----	----
cerium	7440-45-1	ME-MS41	0.02	ppm		15.05	----	----	----	----
cesium	7440-46-2	ME-MS41	0.05	ppm		0.35	----	----	----	----
chromium	7440-47-3	ME-MS41	1	ppm		9	----	----	----	----
cobalt	7440-48-4	ME-MS41	0.1	ppm		7.8	----	----	----	----
copper	7440-50-8	ME-MS41	0.2	ppm		1030	----	----	----	----
gallium	7440-55-3	ME-MS41	0.05	ppm		7.53	----	----	----	----
germanium	7440-56-4	ME-MS41	0.05	ppm		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	December Composite Tailings	----	----	----	----
					Client sampling date / time	14-Jan-2022	----	----	----	----
						WR2200021-001	--------	--------	--------	--------
						Result	----	----	----	----
Metals										
gold	7440-57-5	ME-MS41	0.02	ppm		0.13	----	----	----	----
hafnium	7440-58-6	ME-MS41	0.02	ppm		0.04	----	----	----	----
indium	7440-74-6	ME-MS41	0.005	ppm		0.080	----	----	----	----
iron	7439-89-6	ME-MS41	0.01	%		4.22	----	----	----	----
lanthanum	7439-91-0	ME-MS41	0.2	ppm		8	----	----	----	----
lead	7439-92-1	ME-MS41	0.2	ppm		2.4	----	----	----	----
lithium	7439-93-2	ME-MS41	0.1	ppm		5.8	----	----	----	----
magnesium	7439-95-4	ME-MS41	0.01	%		0.68	----	----	----	----
manganese	7439-96-5	ME-MS41	5	ppm		728	----	----	----	----
mercury	7439-97-6	ME-MS41	0.01	ppm		0.09	----	----	----	----
molybdenum	7439-98-7	ME-MS41	0.05	ppm		1.62	----	----	----	----
nickel	7440-02-0	ME-MS41	0.2	ppm		2.9	----	----	----	----
niobium	7440-03-1	ME-MS41	0.05	ppm		0.14	----	----	----	----
phosphorus	7723-14-0	ME-MS41	10	ppm		560	----	----	----	----
potassium	7440-09-7	ME-MS41	0.01	%		0.48	----	----	----	----
rhenium	7440-15-5	ME-MS41	0.001	ppm		0.005	----	----	----	----
rubidium	7440-17-7	ME-MS41	0.1	ppm		25.9	----	----	----	----
scandium	7440-20-2	ME-MS41	0.1	ppm		3.5	----	----	----	----
selenium	7782-49-2	ME-MS41	0.2	ppm		0.9	----	----	----	----
silver	7440-22-4	ME-MS41	0.01	ppm		0.77	----	----	----	----
sodium	7440-23-5	ME-MS41	0.01	%		0.07	----	----	----	----
strontium	7440-24-6	ME-MS41	0.2	ppm		62.8	----	----	----	----
sulfur	7704-34-9	ME-MS41	0.01	%		0.10	----	----	----	----
tantalum	7440-25-7	ME-MS41	0.01	ppm		<0.01	----	----	----	----
tellurium	13494-80-9	ME-MS41	0.01	ppm		0.27	----	----	----	----
thallium	7440-28-0	ME-MS41	0.02	ppm		0.15	----	----	----	----
thorium	7440-29-1	ME-MS41	0.2	ppm		2.2	----	----	----	----
tin	7440-31-5	ME-MS41	0.2	ppm		0.9	----	----	----	----
titanium	7440-32-6	ME-MS41	0.005	%		0.091	----	----	----	----
tungsten	7440-33-7	ME-MS41	0.05	ppm		0.07	----	----	----	----
uranium	7440-61-1	ME-MS41	0.05	ppm		0.27	----	----	----	----

Analytical Results

Sub-Matrix: **Soil**
(Matrix: **Soil/Solid**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	December Composite Tailings	----	----	----	----
					Client sampling date / time	14-Jan-2022	----	----	----	----
						WR2200021-001	--------	--------	--------	--------
						Result	----	----	----	----
Metals										
vanadium	7440-62-2	ME-MS41	1	ppm		68	----	----	----	----
yttrium	7440-65-5	ME-MS41	0.05	ppm		4.25	----	----	----	----
zinc	7440-66-6	ME-MS41	2	ppm		127	----	----	----	----
zirconium	7440-67-7	ME-MS41	0.5	ppm		1	----	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2200021**	Page	: 1 of 6
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 14-Jan-2022 11:25
PO	: TBD	Issue Date	: 02-Mar-2022 16:12
C-O-C number	: 2022-01-13_D		
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Acid Base Accounting : Acid Base Accounting (Modified Sobek)										
Compliant container										
December Composite Tailings	OA-VOL08m	14-Jan-2022	----	----	----		01-Mar-2022	----	----	
Acid Base Accounting : Inorganic Carbon by Coulometer										
Compliant container										
December Composite Tailings	C-GAS05	14-Jan-2022	----	----	----		01-Mar-2022	----	----	
Acid Base Accounting : Received Sample Weight										
Compliant container										
December Composite Tailings	WEI-21	14-Jan-2022	----	----	----		01-Mar-2022	----	47 days	
Acid Base Accounting : Saturated Paste pH										
Compliant container										
December Composite Tailings	OA-ELE07	14-Jan-2022	----	----	----		01-Mar-2022	----	----	
Acid Base Accounting : Sulfates by HCl Leaching and Gravimetry										
Compliant container										
December Composite Tailings	S-GRA06A	14-Jan-2022	----	----	----		01-Mar-2022	----	----	
Acid Base Accounting : Sulfates by NaCO3 Leaching and Gravimetry										
Compliant container										
December Composite Tailings	S-GRA06	14-Jan-2022	----	----	----		01-Mar-2022	----	----	
Acid Base Accounting : Sulfide S (as S) Calc. (Total-S - SO4-S)										
Compliant container										
December Composite Tailings	S-CAL06	14-Jan-2022	----	----	----		01-Mar-2022	----	47 days	EHT

Matrix: **Soil/Solid**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times* Rec	*Holding Times* Actual	*Eval*	*Analysis Date*	*Holding Times* Rec	*Holding Times* Actual	*Eval*
Acid Base Accounting : Total Sulfur by Combustion and IR										
Compliant container										
December Composite Tailings	S-IR08	14-Jan-2022	----	----	----		01-Mar-2022	----	----	
Metals : 51 Elements by Aqua Regia digestion and ICP-AES/MS										
Compliant container										
December Composite Tailings	ME-MS41	14-Jan-2022	----	----	----		01-Mar-2022	----	----	

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

- **No Quality Control data available for this section.**

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Inorganic Carbon by Coulometer	C-GAS05 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals C-GAS05	Determine Total Inorganic Carbon (TIC) by using diluted perchloric acid to react with metal carbonate and yield carbon dioxide. Concentration of CO_2 is determined by coulometer.
51 Elements by Aqua Regia digestion and ICP-AES/MS	ME-MS41 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals ME-MS41	A prepared sample is digested with aqua regia in a graphite heating block. After cooling, the resulting solution is diluted to with deionized water, mixed and analyzed by ICP-AES. Samples are then analyzed by ICP-MS for the remaining suite of elements.
Saturated Paste pH	OA-ELE07 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals OA-ELE07	Sample mix with water in 1:1 ratio to make a paste, pH is then determined.
Acid Base Accounting (Modified Sobek)	OA-VOL08m ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals OA-VOL08m	Determine the acid generation power of a sample as tonne $CaCO_3$ per kilo-tonne using modified Sobek method
Sulfide S (as S) Calc. (Total-S - SO4-S)	S-CAL06 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-CAL06	Sulfide Sulfur (as S) is calculated by subtracting the Carbonate Leachable Sulfate Sulfur (as S) from the Total Sulfur (as S) obtained from combustion.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfates by NaCO3 Leaching and Gravimetry	S-GRA06 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-GRA06	A preppared sample is heated with diluted Na□CO□ and then filtered. The sulfate in the filtrate is precipitated with BaCl2 in a dilute HCl. The BaSO4 precipitate is filtered, ignited, weighed and the Sulfate Sulfur is determined (as S).
Sulfates by HCl Leaching and Gravimetry	S-GRA06A ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-GRA06A	A prepared sample is heated with dilute HCl and then filtered. The sulfate in the filtrate is precipitated with BaCl2 in a dilute HCl. The BaSO4 precipitate is filtered, ignited, weighed and the Sulfate Sulfur is determined (as S).
Total Sulfur by Combustion and IR	S-IR08 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals S-IR08	A prepared sample is heated to approximately 1350°C in an induction furnace with oxygen stream. Sulfur dioxide released from the sample are measured by IR (Leco analyzer) and the Total Sulfur result is provided.
Received Sample Weight	WEI-21 ALS Minerals (Vancouver) - 2103 Dollarton Hwy North Vancouver British Columbia Canada V7H 0A7	Soil/Solid	ALS Minerals WEI-21	Weigh out sample received.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **WR2200021**	Page	: 1 of 2
Client	: Minto Explorations Ltd.	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 14-Jan-2022 11:25
PO	: TBD	Date Analysis Commenced	: 01-Mar-2022
C-O-C number	: 2022-01-13_D	Issue Date	: 02-Mar-2022 16:12
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Paolo Obillo	Account Manager Assistant	Internal Subcontracting, North Vancouver, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

ALS Canada Ltd.

2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: +1 604 984 0221 Fax: +1 604 984 0218
www.alsglobal.com/geochemistry

To: **ALS ENVIRONMENTAL**
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 2-MAR-2022
Account: APN

CERTIFICATE VA22013052

Project: WR2200021

This report is for 1 sample of Tailings submitted to our lab in Vancouver, BC, Canada on 17-JAN-2022.

The following have access to data associated with this certificate:

ALSE VANCOUVER WEBTRIEVE SOFTWARE DEVELOPMENT GROUP	ALSEV DATASUBLET	HEATHER MCKENZIE

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
DISP-01	Disposal of all sample fractions
LOG-21	Sample logging - ClientBarCode
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize up to 250g 85% <75 um

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	INSTRUMENT
S-CAL06	Sufide Sulfur (calculated)	LECO
C-GAS05	Inorganic Carbon (CO2)	
S-GRA06a	Sulfate Sulfur (HCl leachable)	WST-SEQ
ME-MS41	Ultra Trace Aqua Regia ICP-MS	
OA-VOL08m	Modified NP	
S-IR08	Total Sulphur (IR Spectroscopy)	LECO
OA-ELE07	Paste pH	
S-GRA06	Sulfate Sulfur-carbonate leach	WST-SEQ

This is the Final Report and supersedes any preliminary report with this certificate number.Results apply to samples as submitted.All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:

Saa Traxler, Director, North Vancouver Operations

ALS Canada Ltd.
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North Vancouver BC V7H 0A7
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www.alsglobal.com/geochemistry

To: **ALS ENVIRONMENTAL**
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 2-MAR-2022
Account: APN

Project: WR2200021

CERTIFICATE OF ANALYSIS VA22013052

Sample Description	Method / Analyte / Units / LOD	WEI-21 Recvd Wt. kg 0.02	OA-VOL08m MPA tCaCO3/1Kt 0.3	OA-VOL08m FIZZ RAT Unity 1	OA-VOL08m NNP tCaCO3/1Kt 1	OA-VOL08m NP tCaCO3/1Kt 1	OA-ELE07 pH Unity 0.1	OA-VOL08m Ratio (N Unity 0.01	S-IR08 S % 0.01	S-GRA06 S % 0.01	S-GRA06a S % 0.01	S-CAL06 S % 0.01	C-GAS05 C % 0.05	C-GAS05 CO2 % 0.2	ME-MS41 Ag ppm 0.01	ME-MS41 Al % 0.01
WR2200021-001		2.22	2.8	2	27	30	8.3	10.67	0.09	0.01	0.01	0.08	0.43	1.6	0.77	1.09

***** See Appendix Page for comments regarding this certificate *****

ALS Canada Ltd.
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www.alsglobal.com/geochemistry

To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 2-MAR-2022
Account: APN

Project: WR2200021

CERTIFICATE OF ANALYSIS VA22013052

Sample Description	Method Analyte Units LOD	ME-MS41 As ppm 0.1	ME-MS41 Au ppm 0.02	ME-MS41 B ppm 10	ME-MS41 Ba ppm 10	ME-MS41 Be ppm 0.05	ME-MS41 Bi ppm 0.01	ME-MS41 Ca % 0.01	ME-MS41 Cd ppm 0.01	ME-MS41 Ce ppm 0.02	ME-MS41 Co ppm 0.1	ME-MS41 Cr ppm 1	ME-MS41 Cs ppm 0.05	ME-MS41 Cu ppm 0.2	ME-MS41 Fe % 0.01	ME-MS41 Ga ppm 0.05
WR2200021-001		4.2	0.13	<10	220	0.24	0.14	1.27	0.47	15.05	7.8	9	0.35	1030	4.22	7.53

***** See Appendix Page for comments regarding this certificate *****

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BURNABY BC V5A 1W9

Finalized Date: 2-MAR-2022
Account: APN

Project: WR2200021

CERTIFICATE OF ANALYSIS VA22013052

Sample Description	Method	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
	Analyte	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb	Ni	P	Pb
	Units	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm
	LOD	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05	0.2	10	0.2
WR2200021-001		<0.05	0.04	0.09	0.080	0.48	8.0	5.8	0.68	728	1.62	0.07	0.14	2.9	560	2.4

***** See Appendix Page for comments regarding this certificate *****

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Account: APN

Project: WR2200021

CERTIFICATE OF ANALYSIS VA22013052

Sample Description	Method Analyte Units LOD	ME-MS41 Rb ppm 0.1	ME-MS41 Re ppm 0.001	ME-MS41 S % 0.01	ME-MS41 Sb ppm 0.05	ME-MS41 Sc ppm 0.1	ME-MS41 Se ppm 0.2	ME-MS41 Sn ppm 0.2	ME-MS41 Sr ppm 0.2	ME-MS41 Ta ppm 0.01	ME-MS41 Te ppm 0.01	ME-MS41 Th ppm 0.2	ME-MS41 Ti % 0.005	ME-MS41 Tl ppm 0.02	ME-MS41 U ppm 0.05	ME-MS41 V ppm 1
WR2200021-001		25.9	0.005	0.10	0.05	3.5	0.9	0.9	62.8	<0.01	0.27	2.2	0.091	0.15	0.27	68

***** See Appendix Page for comments regarding this certificate *****

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To: ALS ENVIRONMENTAL
100 - 8081 LOUGHEED HWY.
BURNABY BC V5A 1W9

Finalized Date: 2-MAR-2022
Account: APN

Project: WR2200021

CERTIFICATE OF ANALYSIS VA22013052

Sample Description	Method Analyte Units LOD	ME-MS41 W ppm 0.05	ME-MS41 Y ppm 0.05	ME-MS41 Zn ppm 2	ME-MS41 Zr ppm 0.5
WR2200021-001		0.07	4.25	127	1.0

***** See Appendix Page for comments regarding this certificate *****

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Finalized Date: 2-MAR-2022
Account: APN

Project: WR2200021

CERTIFICATE OF ANALYSIS VA22013052

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

C-GAS05	DISP-01	LOG-21	ME-MS41
OA-ELE07	OA-VOL08m	PUL-31	S-CAL06
S-GRA06	S-GRA06a	S-IR08	SPL-21
WEI-21			

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 2022-01-13_D

Environmental Division
Whitehorse
Work Order Reference
WR2200021

Telephone : +1 867 668 6689

Report To	Contact and company name below will appear on the final report
Company:	Minto Explorations Ltd.
Contact:	Minto Environment - Coordinator
Phone:	1-604-759-4659
	Company address below will appear on the final report
Street:	2100-510 West Georgia St.
City/Province:	Vancouver, British Columbia
Postal Code:	V6B 0M3
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Minto Explorations Ltd.
Contact:	Katie Androsoff

Report Format / Distribution

Select Report Format: ☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax minto_environment@mintomine.com
Email 2
Email 3

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax ap@mintomine.com
Email 2

Project Information

ALS Account # / Quote #:
Job #:
PO / AFE: TBD
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only)

ALS Contact: Heather McKenzie **Sampler:**

Select Service Level Below - Please confirm all E&P TATs with

Regular [R] ☑ Standard TAT if receive

PRIORITY (Business Days): 4 day [P4] ☐ 3 day [P3] ☐ 2 day [P2] ☐
EMERGENCY: 1

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service l

Analysis

Indicate Filtered (F), Preserved (P) or Filtered

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total Metals- Aqua regia disgestion (ICP)	Paste pH	% Inorganic Carbonate	Total Corbon/Sukphur (Leco)	AP - determination by % sulphide sulphur	Modified NP - (MEND 1991)	Number of Containers
	December Composite Tailings	1-Dec-21		Composite	R	R	R	R	R	R	1

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO
Are samples for human drinking water use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
13					

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Brian Hyde	Date: January 13	Time:	Received by:	Date: JAN 14/22	Time: 11:25	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Appendix L – 2021 Leach Pad Sampling Program Report

Minto Metals Corp.

Leach Pad Sampling Summary Report

2018 - 2021

Prepared by:
Minto Metals Corp.
Minto Mine
March 31, 2022

1 Introduction

The following report presents a summary of the construction for the Leach Pads, constructed from August 2017 to March 2018, and the subsequent monitoring of the leachate produced from March 2018 to October 2021.

1.1 Background

The Geochemical Monitoring Program detailed in the Water Use Licence QZ14-031 includes as one of the conditions the requirement for geochemical characterization of waste, including leachate quality (Section 5.1.5, Article 94):

> *"The Licensee shall update the Geochemical Monitoring Program to include a monitoring and geochemical characterization program that will produce detailed metals leaching characterization from the low-grade ore and oxide ore."*

Implementation of a monitoring program that satisfies this condition was included in the Environmental Monitoring, Surveillance, and Reporting Plan (EMSRP). The plan included construction of the leach pads in the summer of 2017 and sampling of the leachate for one year, starting in September 2017.

2 Construction Activities

Details of the Construction Activities are included in Appendix LPS-A.

3 Sampling Methodology

Samples were collected from the Leach pads beginning in May 2018, and continued until October 2021. It should be noted that this is longer than the 12-month sampling requirement identified in the EMSRP. Water quality parameters chosen for analysis were the same as those used for groundwater monitoring at Minto.

A detailed SOP for Leach Pad sample collection is included in Appendix LPS-B.

4 Sampling results and analysis

The following Table 4.1 outlines the sampling effort and success for the Leach Pads over the 41-month period from May 2018 to October 2021.

Table 4-1: Leach Pad Sampling Effort, 2018 - 2021

Month	Leach Pad 1 Samples	Leach Pad 2 Samples
2018-May	1	1
2018-Jun	2	2
2018-Jul	2	2
2018-Aug	1	1
2018-Sept	2	2
2018-Oct	1	1
2018- Nov[1]	0	0
2019-Mar	1	1
2019-Apr[2]	0	0
2019-May	1	1
2019-Jun	2	2
2019-Jul	1	1
2019-Aug	1	1
2019-Sep	1	1
2019-Oct	1	1
2019-Nov[1]	0	0
2020-Apr[1]	0	0
2020-May	1	1
2020-Jun	1	1
2020-Jul	1	1
2020-Aug	2	2
2020-Sep	1	1
2020-Oct[1]	0	0
2021-May	1	1
2021-Jun	1	1
2021-Jul	1	1
2021-Aug	1	1
2021-Sep	1	1
2021-Oct	1	1

[1]Leach Pad Frozen

2Leach Pads Dry – Not enough water for a sample.

Table 4.2 presents the raw data from Leach Pad samples collected from 2018 to 2021.

Table 4-2: Leach Pad Sample Results, 2021

Leach Pad Sampling Results, May 2018 - September 2020																	
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pH units
Station	Date	Ag-D	Al-D	As-D	Cd-D	Cr-D	Cu-D	Fe-D	Mo-D	Ni-D	N-NH3	N-NO2	N-NO3	Pb-D	Se-D	Zr-D	pH-L
LP1	26-May-18	<0.000010	0.0129	0.00042	0.000121	<0.00010	0.0118	<0.010	0.00595	<0.00050	<0.0050	0.0559	1.80	<0.000050	0.00204	<0.00030	7.91
LP1	26-May-18	<0.000010	0.0119	0.00043	0.000115	<0.00010	0.0116	<0.010	0.00511	<0.00050	<0.0050	0.0560	1.80	<0.000050	0.00165	<0.00030	7.94
LP1	9-Jun-18	<0.000020	0.0029	0.00045	0.000368	<0.00020	0.0360	<0.020	0.0380	<0.0010	1.28	4.77	130	0.00012	0.462	<0.00030	7.77
LP1	9-Jun-18	<0.000020	0.0024	0.00044	0.000358	<0.00020	0.0351	<0.020	0.0380	<0.0010	1.31	4.63	127	<0.00010	0.465	<0.00030	7.75
LP1	19-Jun-18	<0.000020	0.0024	0.00020	0.000121	<0.00020	0.0239	<0.020	0.0328	<0.0010	0.346	0.977	26.2	0.00015	0.127	<0.00030	7.85
LP1	19-Jun-18	<0.000020	0.0020	<0.00020	0.000129	<0.00020	0.0244	<0.020	0.0326	<0.0010	0.347	0.957	25.9	0.00016	0.127	<0.00030	7.86
LP1	9-Jul-18	<0.000010	0.0068	0.00013	0.0000441	<0.00010	0.0141	<0.010	0.0176	<0.00050	0.0464	0.116	6.52	0.000221	0.0340	<0.00030	7.89
LP1	21-Jul-18	<0.000010	0.0036	0.00019	0.0000499	<0.00010	0.0148	<0.010	0.0180	<0.00050	0.0115	0.0467	11.1	0.000350	0.0501	<0.00030	7.99
LP1	21-Jul-18	<0.000010	0.0041	0.00021	0.0000402	<0.00010	0.0148	<0.010	0.0183	<0.00050	0.0121	0.0471	11.0	0.000350	0.0489	<0.00030	7.97
LP1	20-Aug-18	<0.000010	0.0017	0.00026	0.000136	<0.00010	0.0451	<0.010	0.0464	<0.00050	<0.0050	0.0097	41.4	0.000352	0.140	<0.00030	7.94
LP1	6-Sep-18	<0.000010	0.0010	0.00029	0.000154	<0.00010	0.0449	<0.010	0.0453	<0.00050	<0.0050	0.0053	46.4	0.000157	0.152	<0.00030	7.93
LP1	6-Sep-18	<0.000010	0.0011	0.00032	0.000152	<0.00010	0.0438	<0.010	0.0452	<0.00050	<0.0050	<0.0050	46.3	0.000148	0.155	<0.00030	7.93
LP1	28-Sep-18	<0.000010	<0.0010	0.00028	0.000160	<0.00010	0.0454	<0.010	0.0428	<0.00050	0.0119	<0.010	52.2	<0.000050	0.167	<0.00030	7.78
LP1	8-Oct-18	<0.000020	0.0051	0.00072	0.000296	<0.00020	0.0899	<0.020	0.109	<0.0010	0.0140	0.022	134	<0.00010	0.454	<0.00030	8.04
LP1	31-Mar-19	<0.000010	0.0012	0.00035	<0.00014	0.00013	0.0710	<0.010	0.0465	<0.00050	0.0078	<0.010	50.5	<0.000050	0.186	<0.00030	7.79
LP1	31-Mar-19	<0.000010	0.0042	0.00043	0.000170	<0.00010	0.0792	<0.010	0.0564	<0.00050	<0.0050	<0.010	54.9	<0.000050	0.213	<0.00030	7.80
LP1	20-May-19	<0.000010	0.0029	0.00027	<0.000085	<0.00010	0.0254	<0.010	0.0325	<0.00050	<0.0050	0.0061	38.3	0.000377	0.127	<0.00030	7.88
LP1	20-May-19	<0.000010	0.0026	0.00032	<0.000085	<0.00010	0.0244	<0.010	0.0345	<0.00050	<0.0050	0.0080	43.8	0.000333	0.124	<0.00030	7.99
LP1	4-Jun-19	<0.000010	0.0044	0.00026	<0.00017	<0.00010	0.0364	0.012	0.0312	<0.00050	<0.0050	0.010	59.6	<0.000050	0.225	<0.00030	7.85
LP1	24-Jun-19	<0.000010	0.0022	0.00020	<0.00011	<0.00010	0.0325	<0.010	0.0288	<0.00050	<0.0050	<0.010	30.2	0.000199	0.131	<0.00030	7.80
LP1	15-Jul-19	<0.000010	0.0039	0.00035	<0.000030	0.00020	0.0353	<0.010	0.0420	<0.00050	0.0130	0.114	45.0	<0.000050	0.183	<0.00030	7.66
LP1	15-Jul-19	<0.000010	0.0041	0.00032	<0.000035	<0.00010	0.0352	<0.010	0.0455	<0.00050	0.0152	0.113	44.7	0.000055	0.193	<0.00030	7.74
LP1	8-Aug-19	<0.000020	0.0027	0.00081	0.000402	<0.00020	0.0643	<0.020	0.0391	<0.0010	2.16	0.889	106	0.00021	0.112	<0.00040	7.96
LP1	8-Sep-19	<0.000010	0.0014	0.00029	<0.000090	<0.00010	0.0288	<0.010	0.0489	<0.00050	0.0067	0.0237	33.7	0.000061	0.155	<0.00030	7.93
LP1	8-Sep-19	<0.000010	0.0012	0.00024	<0.000090	<0.00010	0.0298	<0.010	0.0479	<0.00050	<0.0050	0.032	34.7	<0.000050	0.143	<0.00030	7.92
LP1	7-Oct-19	<0.000020	<0.0020	0.00033	0.000131	<0.00020	0.0410	<0.020	0.0750	<0.0010	<0.0050	<0.020	46.5	<0.00010	0.231	<0.00040	8.04
LP1	7-Oct-19	<0.000020	<0.0020	0.00133	0.000603	<0.00020	0.0830	<0.020	0.0562	<0.0010	0.158	0.115	155	<0.00010	0.265	<0.00040	7.99
LP1	7-May-20	<0.000010	0.0098	0.00018	0.0000817	<0.00010	0.0318	<0.010	0.0253	<0.00050	0.0970	0.0092	18.4	0.000358	0.0738	<0.00020	7.70
LP1	1-Jun-20	<0.000020	0.0036	0.00040	<0.0000450	<0.00020	0.0222	<0.020	0.0453	<0.00100	0.0084	0.0377	33.1	<0.000100	0.248	<0.00040	7.42
LP1	1-Jun-20	<0.000020	0.0077	0.00037	<0.0000450	<0.00020	0.0228	<0.020	0.0460	<0.00100	<0.0050	0.0338	33.5	<0.000100	0.246	<0.00040	7.46
LP1	8-Jul-20	<0.000010	0.0040	0.00059	0.000198	<0.00010	0.0536	<0.010	0.0318	<0.00050	0.0292	0.0058	10.7	<0.000050	0.0784	<0.00020	7.90
LP1	2-Aug-20	<0.000010	0.0031	0.00068	0.0000962	<0.00010	0.0456	<0.010	0.0383	<0.00050	0.0067	<0.0050	5.44	0.000051	0.0850	<0.00020	8.01
LP1	30-Aug-20	<0.000010	0.0871	0.00058	0.000101	<0.00010	0.0540	0.154	0.0396	<0.00050	<0.0050	<0.0050	3.53	0.000057	0.0640	<0.00020	7.98
LP1	30-Aug-20	0.000011	0.0065	0.00057	0.000101	<0.00010	0.0489	0.034	0.0403	<0.00050	<0.0050	<0.0050	3.54	<0.000050	0.0660	<0.00020	7.98
LP1	24/May/21	<0.000010	0.006	0.0003	0.0000529	<0.00050	0.0124	<0.010	0.0305	<0.00050	<0.0050	<0.0010	2.08	<0.000050	0.0345	0.0025	7.60

LP1	10/Jun/21	<0.000010	0.0285	0.00024	<0.0000500	<0.00050	0.0135	0.028	0.0505	<0.00050	<0.0050	0.0046	2.92	<0.000050	0.056	0.0052	7.96
LP1	24/Jul/21	<0.000010	0.0047	0.00029	<0.0000550	<0.00050	0.0307	<0.010	0.0510	<0.00050	0.0093	0.0088	2.14	<0.000050	0.0436	0.0037	8.16
LP1	14/Aug/21	<0.000010	0.0012	0.00026	<0.0000200	<0.00050	0.0155	<0.010	0.054	<0.00050	0.0119	0.0087	1.2	<0.000050	0.0418	0.007	8.03
LP1	15/Sep/21	<0.000010	0.0028	0.0002	<0.0000300	<0.00050	0.0199	<0.010	0.0561	<0.00050	<0.0050	0.026	0.98	<0.000050	0.0367	0.0075	8.01
LP1	9/Oct/21	<0.000010	0.0034	0.00024	0.0003	<0.00050	0.0288	<0.010	0.0613	<0.00050	0.0088	<0.0050	1.44	<0.000050	0.0370	0.0052	8.01
LP2	24/May/21	<0.000010	0.0021	0.00128	<0.0000600	<0.00050	0.0278	<0.010	0.0598	<0.00050	0.0099	0.0315	6.78	<0.000050	0.1660	0.0021	7.87
LP2	10/Jun/21	<0.000010	0.0053	0.00051	0.000103	<0.00050	0.0488	<0.010	0.0244	<0.00050	<0.0050	0.0038	3.24	0.000078	0.0632	0.005	8.19
LP2	24/Jul/21	<0.000010	0.0105	0.00052	0.0000724	<0.00050	0.0314	0.019	0.0372	<0.00050	<0.0050	0.0037	2.2	<0.000050	0.0406	0.005	8.19
LP2	14/Aug/21	<0.000010	0.0025	0.00058	0.000122	<0.00050	0.0388	<0.010	0.044	<0.00050	0.006	<0.0050	2.98	<0.000050	0.0616	0.0083	7.99
LP2	15/Sep/21	<0.000010	0.0029	0.00053	0.0000699	<0.00050	0.03070	<0.010	0.0444	<0.00050	<0.0050	0.0171	3.68	0.000173	0.0798	0.0315	8.05
LP2	9/Oct/21	<0.000010	0.0048	0.00065	0.000433	<0.00050	0.043	<0.010	0.0427	<0.00050	0.0107	<0.0050	3.76	<0.000050	0.0943	0.0042	7.95

5 Results Presentation and Discussion

The data presented in Table 4.2 above has been presented in the following figures for ease of interpretation, along with comments regarding apparent trends. Green dotted lines represent Minto's Effluent Release Limits, while blue dotted lines represent the trend line.

5.1 pH

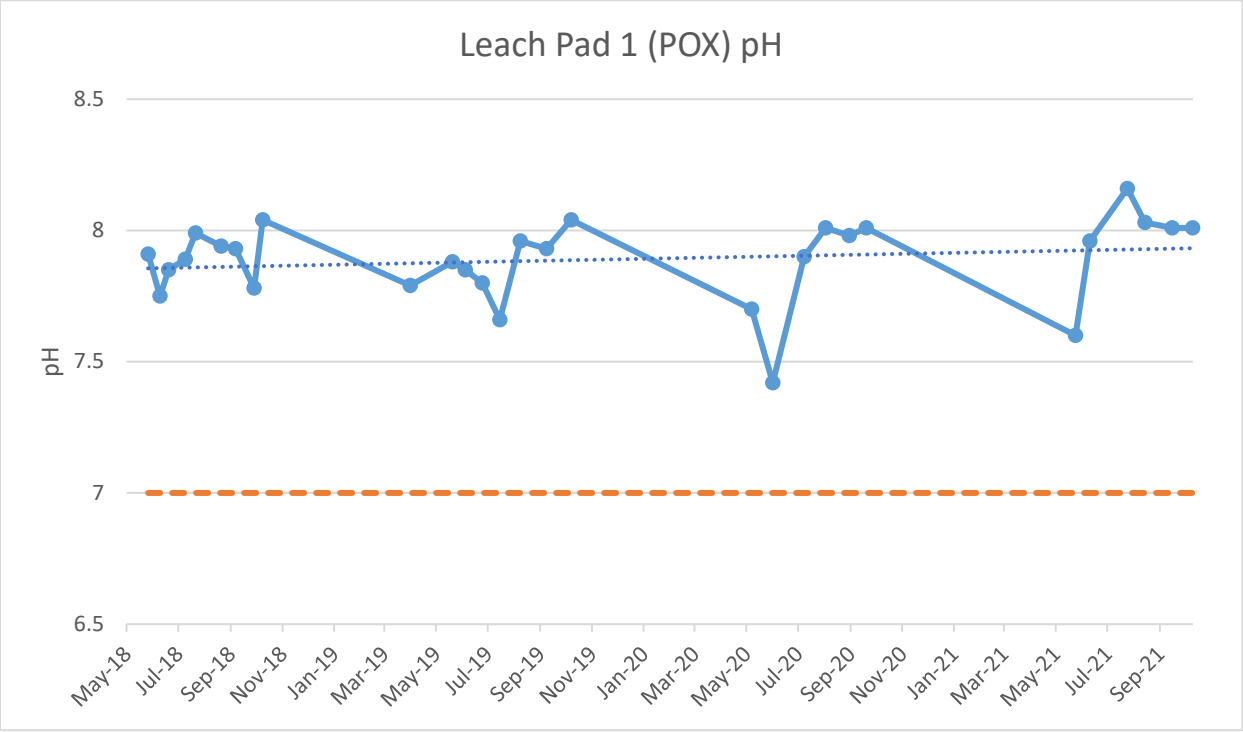

Figure 5-1: Leach Pad 1 pH
(orange dotted line represents neutral pH)

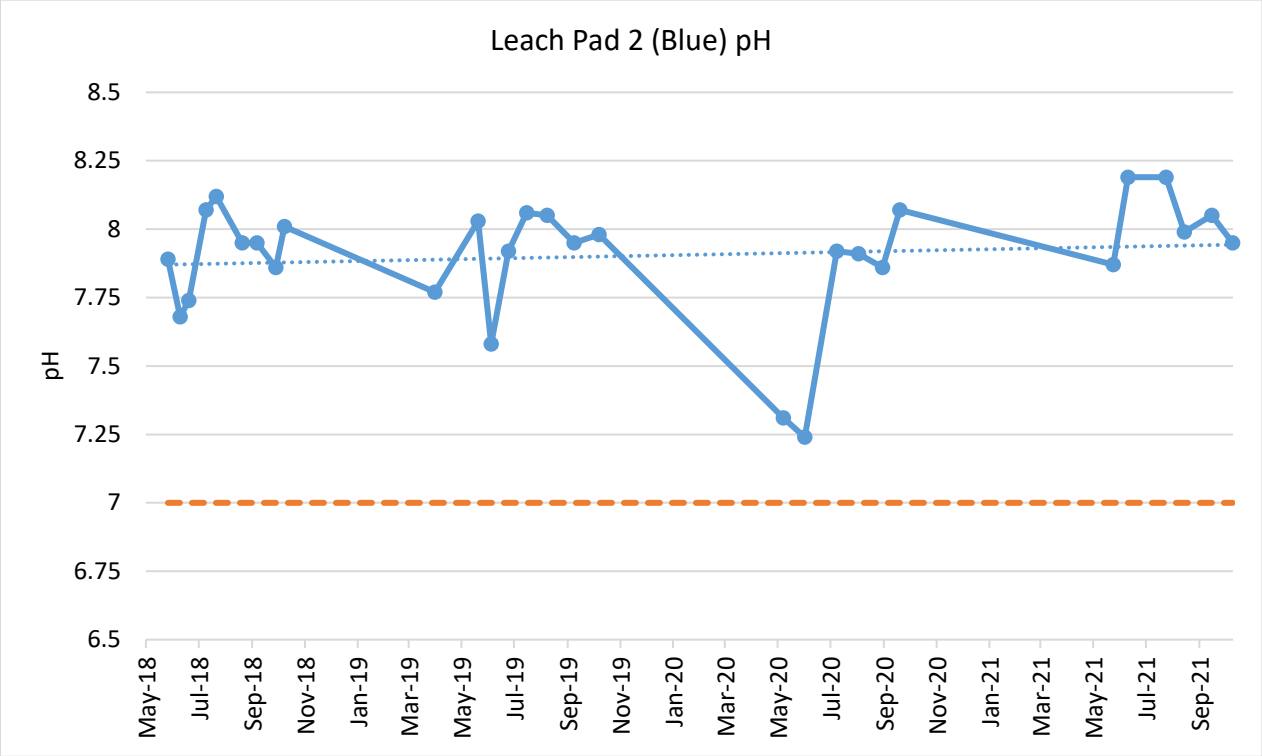

Figure 5-2: Leach Pad 2 pH
(orange dotted line represents neutral pH)

The pH of leachate from both leach pads was well above neutral, indicating they are both currently non-acid-generating, with trends indicating a stable neutralizing potential.

16 Samples of rock were collected from the leach pads as they were constructed, and analyzed for percent copper, Silver concentration in grams/tonne, percent carbon, percent sulfur, and Neutralizing potential and acid generating potential.

The results of these samples are presented in table 5-1, below.

These results indicate that the POX material, sourced from the Top of the World POX pile, are clearly Non-Acid Generating with and Average NP:AP of well over the cut-off value of 3.0 (Mean of 5.41). The Blue Ore pile, however, while still not currently acid generating, are Potentially Acid Generating with an average NP:AP below the 3.0 cut-off (mean of 1.50).

Table 5-1: Rock Samples from Leach Pad Construction

Sample ID	HOLE ID	Cu %	Ag (g/tonne)		% C(Tot)		% S(Tot)	NP	AP	NP/AP
Leach Pad #1 (POX)										
LP1-1	MM168851	0.124	<1		0.059		0.015	4.91	0.47	10.48
LP1-2	MM168852	1.045			0.077		0.044	6.41	1.38	4.66
LP1-3	MM168853	0.705			0.057		0.017	4.75	0.53	8.94
LP1-4	MM168854	0.417	<1		0.046		0.034	3.83	1.06	3.61
LP1-5	MM168855	0.371	<1		0.044		0.032	3.67	1.00	3.67
LP1-6	MM168856	0.509			0.049		0.022	4.08	0.69	5.94
LP1-7	MM168857	0.62			0.057		0.026	4.75	0.81	5.84
LP1-8	MM168858	0.366	<1		0.03		0.018	2.50	0.56	4.44
LP1-9	MM168859	0.547			0.074		0.058	6.16	1.81	3.40
LP1-10	MM168860	0.291	<1		0.051		0.013	4.25	0.41	10.46
LP1-11	MM168861	0.247	<1		0.099		0.031	8.25	0.97	8.51
LP1-12	MM168862	0.243	<1		0.03		0.018	2.50	0.56	4.44
LP1-13	MM168863	0.364	<1		0.068		0.074	5.66	2.31	**2.45**
LP1-14	MM168864	0.572			0.044		0.032	3.67	1.00	3.67
LP1-15	MM168865	0.469	<1		0.055		0.041	4.58	1.28	3.58
LP1-16	MM168866	0.556			0.066		0.071	5.50	2.22	**2.48**
LEACH PAD 1	**Average Cu %**	**0.465**		**Average % C(tot)**	**0.0566**	**Average %S(Tot)**	**0.0341**	**Average NP:AP**		**5.41**
Leach Pad #2 (Blue Ore)										
LP2-1	MM168867	0.305	<1		0.194		0.349	16.16	10.91	**1.48**
LP2-2	MM168868	0.378	<1		0.164		0.541	13.66	16.91	**0.81**
LP2-3	MM168869	0.358	<1		0.139		0.693	11.58	21.66	**0.53**
LP2-4	MM168870	0.56			0.333		0.778	27.74	24.31	**1.14**
LP2-5	MM168871	0.645			0.214		0.86	17.83	26.88	**0.66**
LP2-6	MM168872	0.581			0.477		0.778	39.73	24.31	**1.63**
LP2-7	MM168873	0.426	<1		0.454		0.643	37.82	20.09	**1.88**
LP2-8	MM168874	0.325	<1		0.215		0.399	17.91	12.47	**1.44**
LP2-9	MM168875	0.517			0.282		0.65	23.49	20.31	**1.16**
LP2-10	MM168876	0.385	<1		0.221		0.525	18.41	16.41	**1.12**
LP2-11	MM168877	0.764			0.862		0.939	71.80	29.34	**2.45**
LP2-12	MM168878	0.442	<1		0.657		0.511	54.73	15.97	3.43
LP2-13	MM168879	0.895			0.667		1.125	55.56	35.16	**1.58**
LP2-14	MM168880	0.401	<1		0.214		0.527	17.83	16.47	**1.08**
LP2-15	MM168881	0.645			0.64		0.711	53.31	22.22	**2.40**
LP2-16	MM168882	0.301	<1		0.159		0.341	13.24	10.66	**1.24**
LEACH PAD 2	**Average Cu %**	**0.496**		**Average % C(tot)**	**0.368**		**0.648**	**Average NP:AP**		**1.50**

5.2 Dissolved Copper

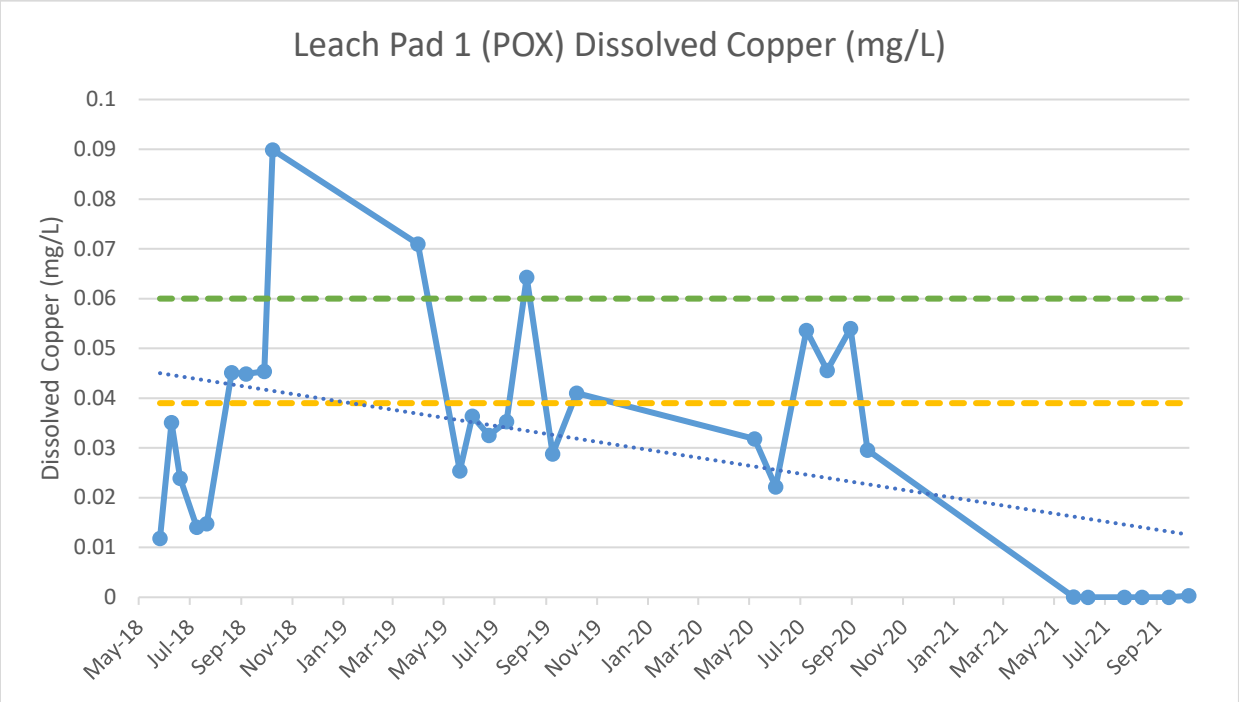

Figure 5-3: Leach Pad 1 Dissolved Copper

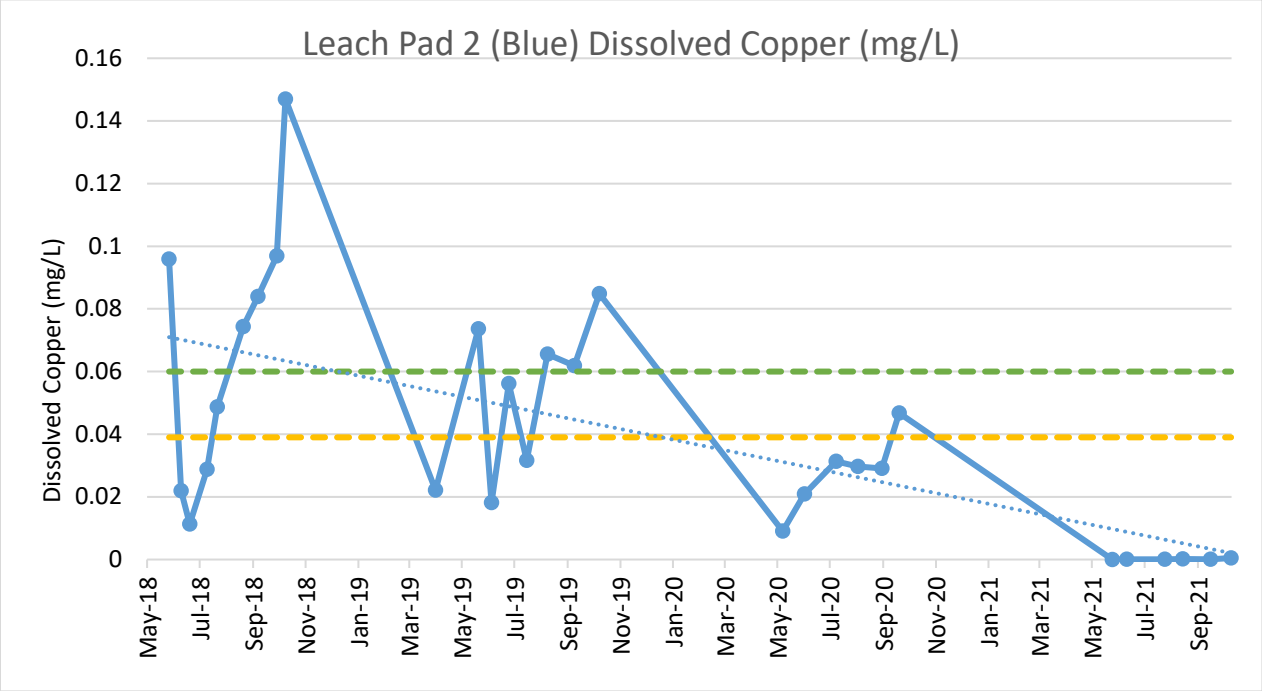

Figure 5-4: Leach Pad 2 Dissolved Copper

5.3 Nitrite

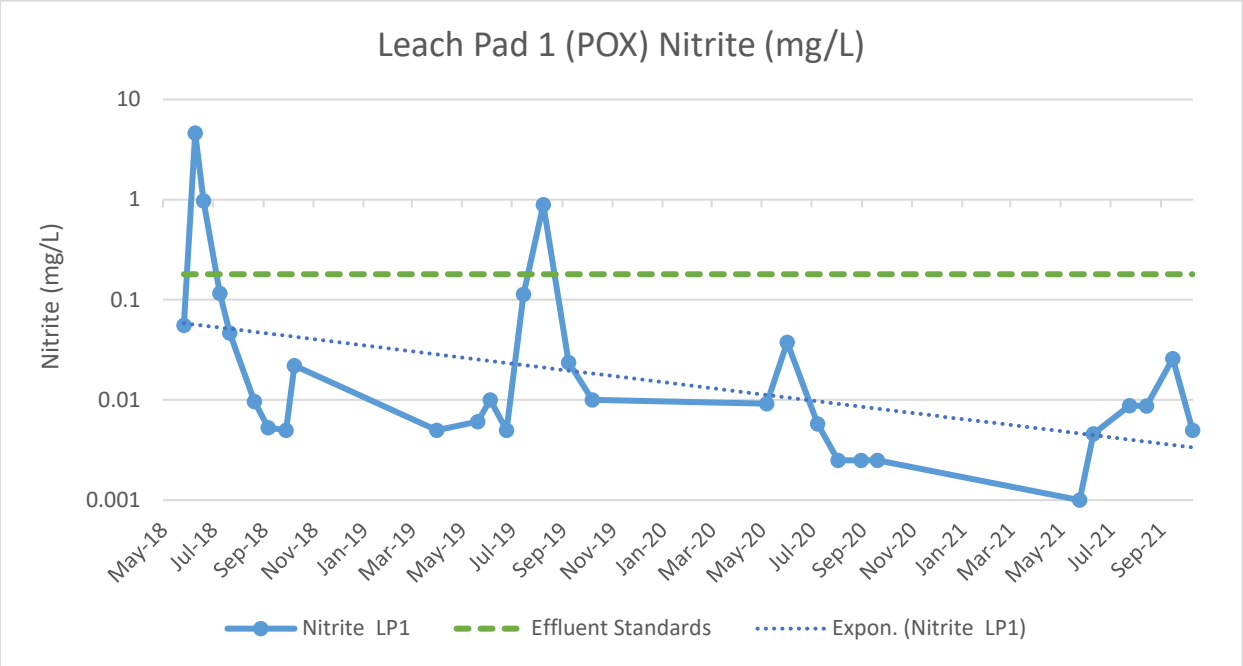

Figure 5-5: Leach Pad 1 Nitrite

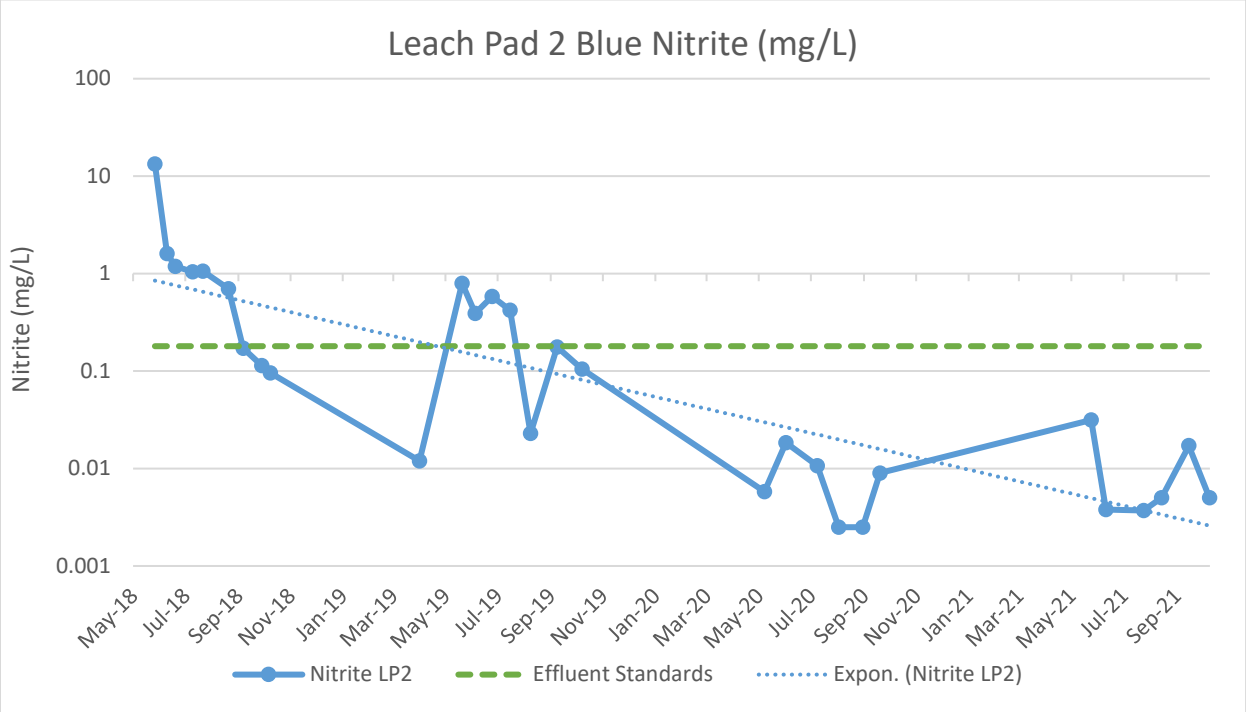

Figure 5-6: Leach Pad 2 Nitrite

5.4 Nitrate

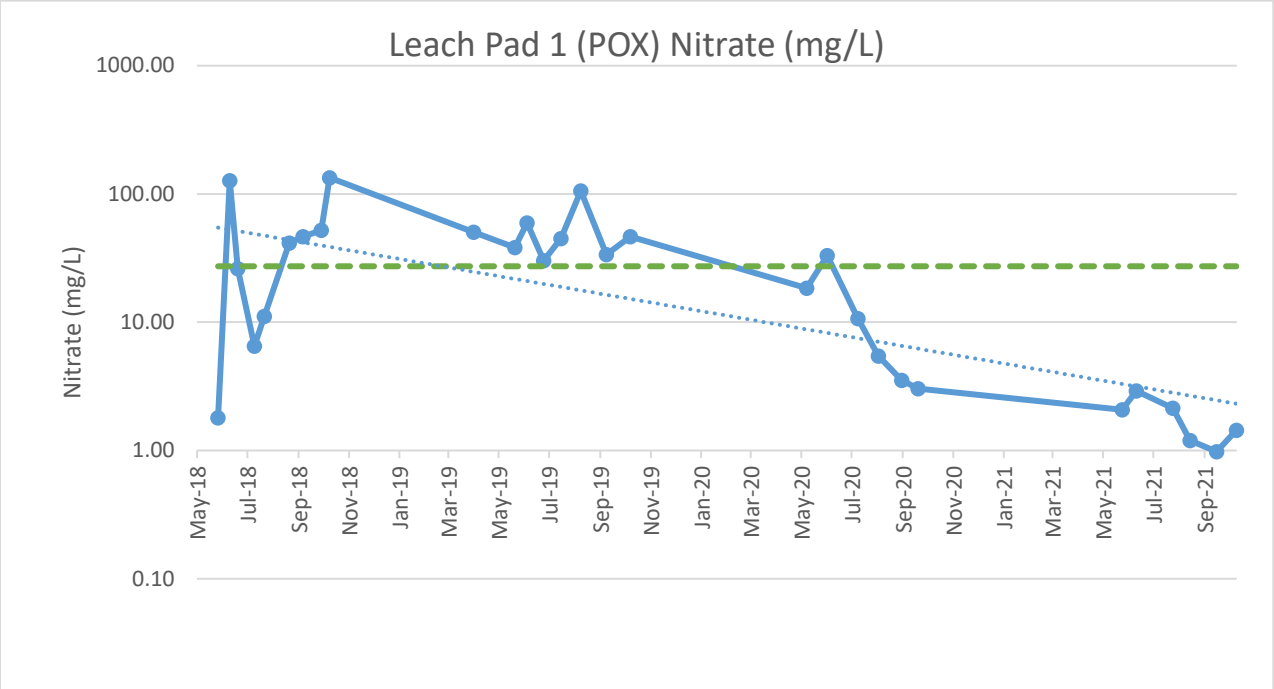

Figure 5-7: Leach Pad 1 Nitrate

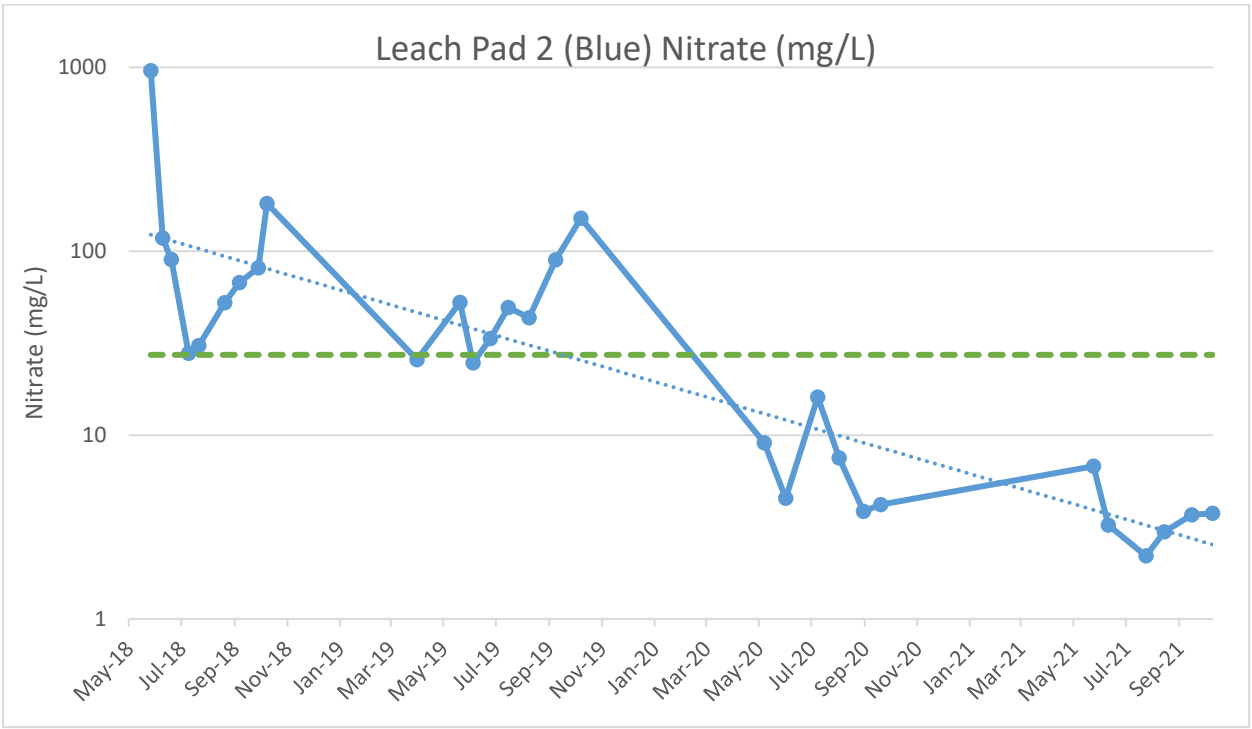

Figure 5-8: Leach Pad 2 Nitrate

5.5 Ammonia

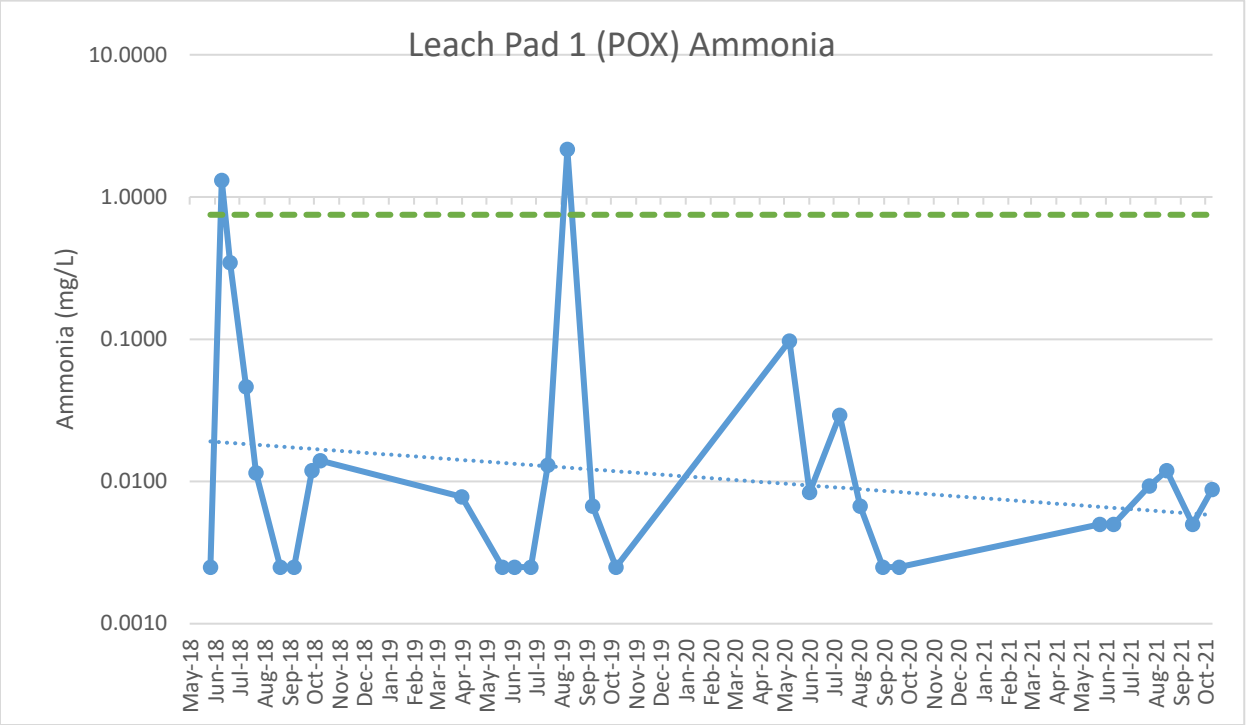

Figure 5-9: Leach Pad 1 Ammonia

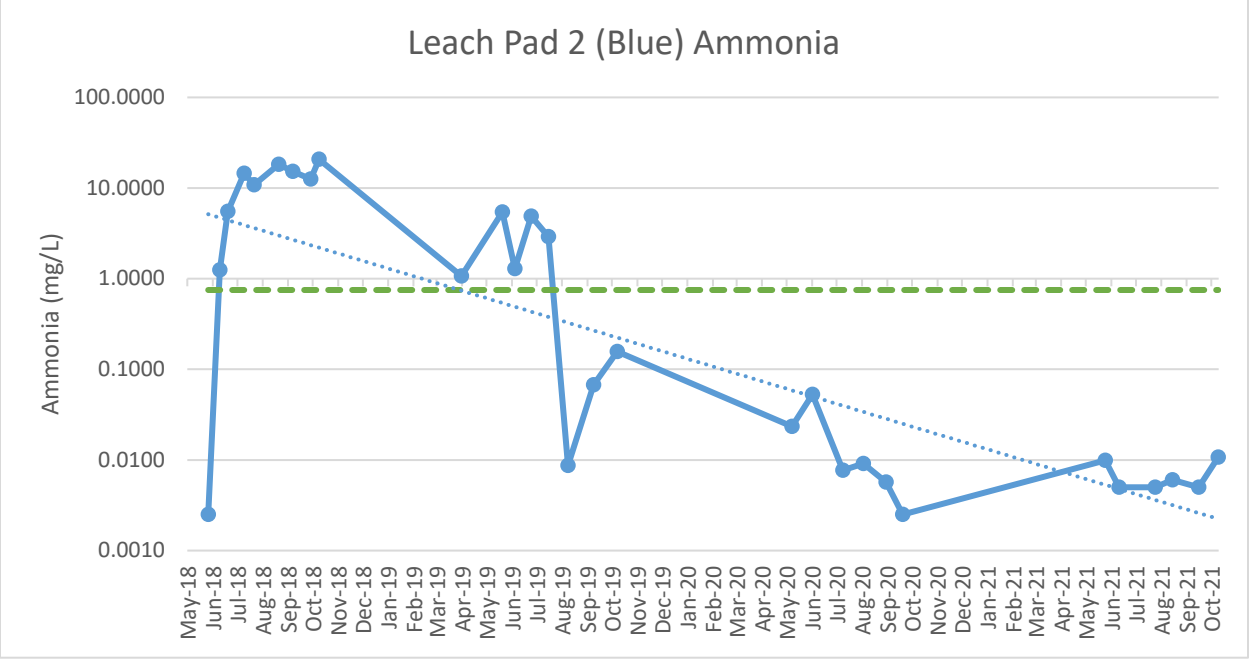

Figure 5-10: Leach Pad 2 Ammonia

5.6 Dissolved Selenium

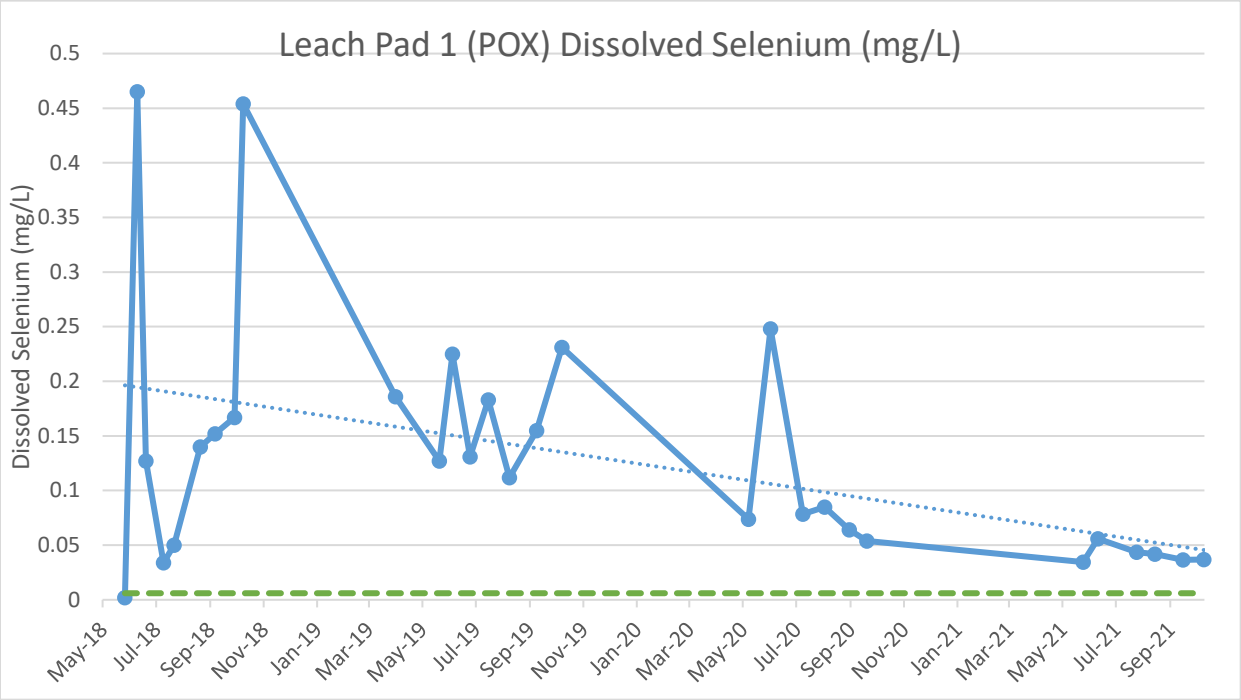

Figure 5-11: Leach Pad 1 Dissolved Selenium

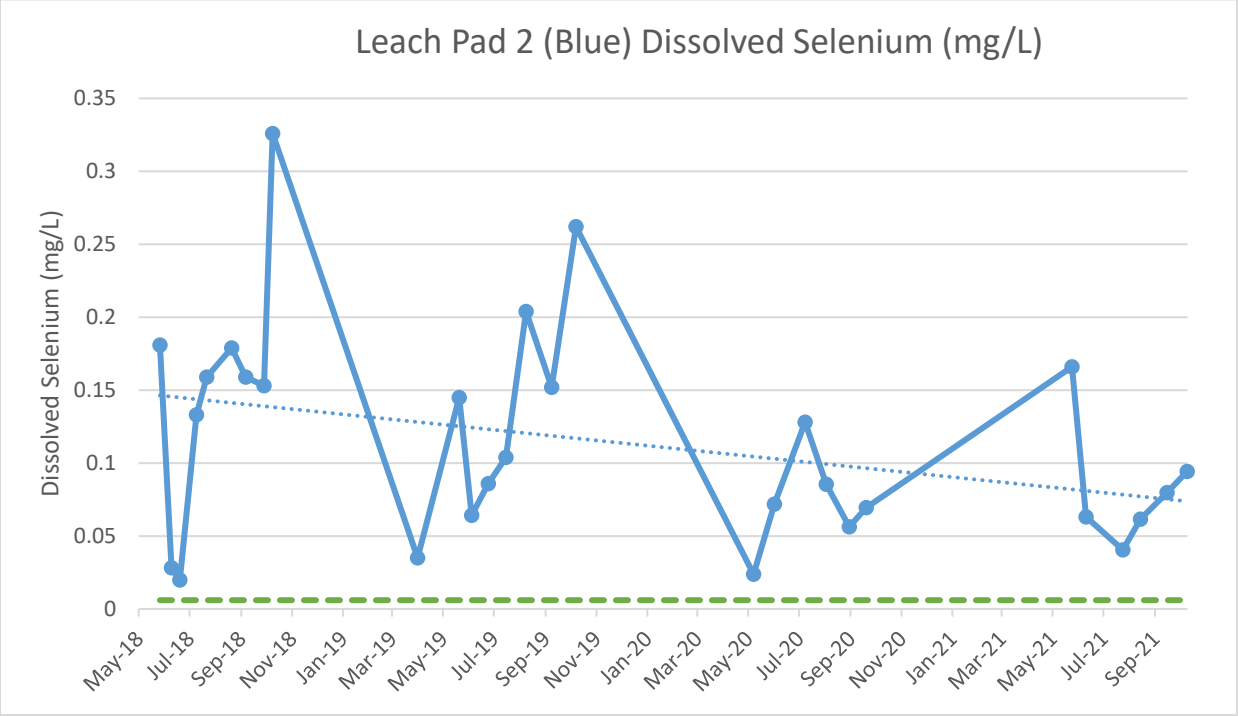

Figure 5-12: Leach Pad 2 Dissolved Selenium

5.7 Dissolved Zinc

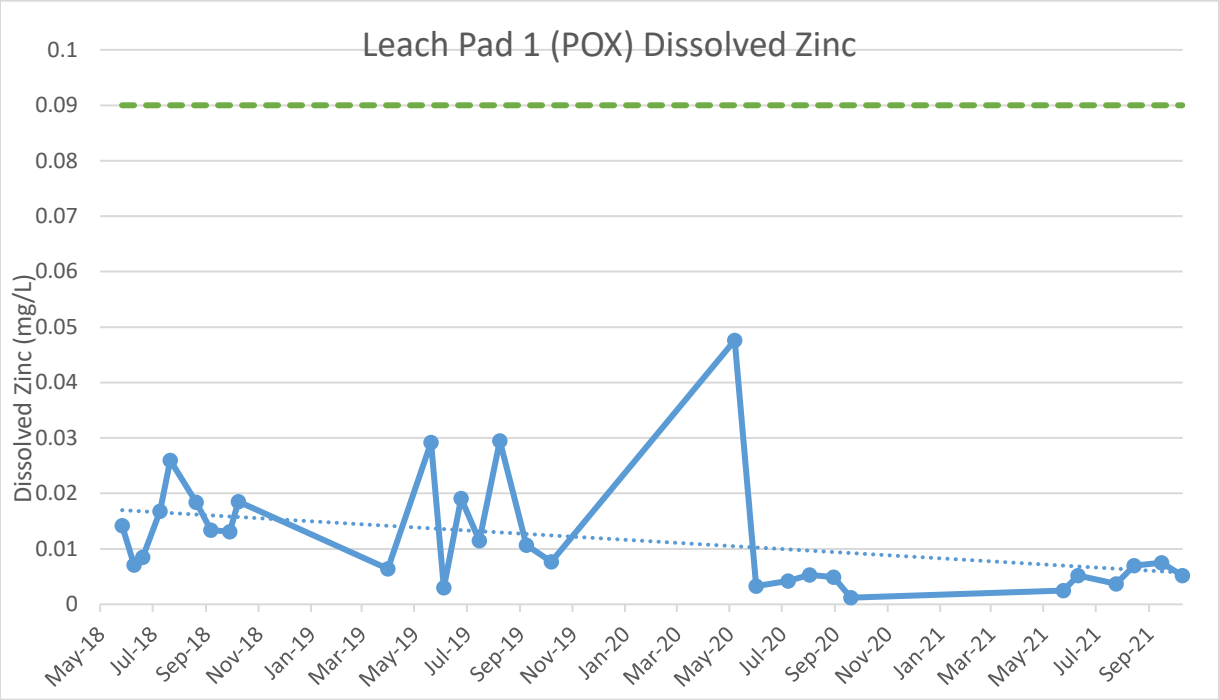

Figure 5-13: Leach Pad 1 Dissolved Zinc

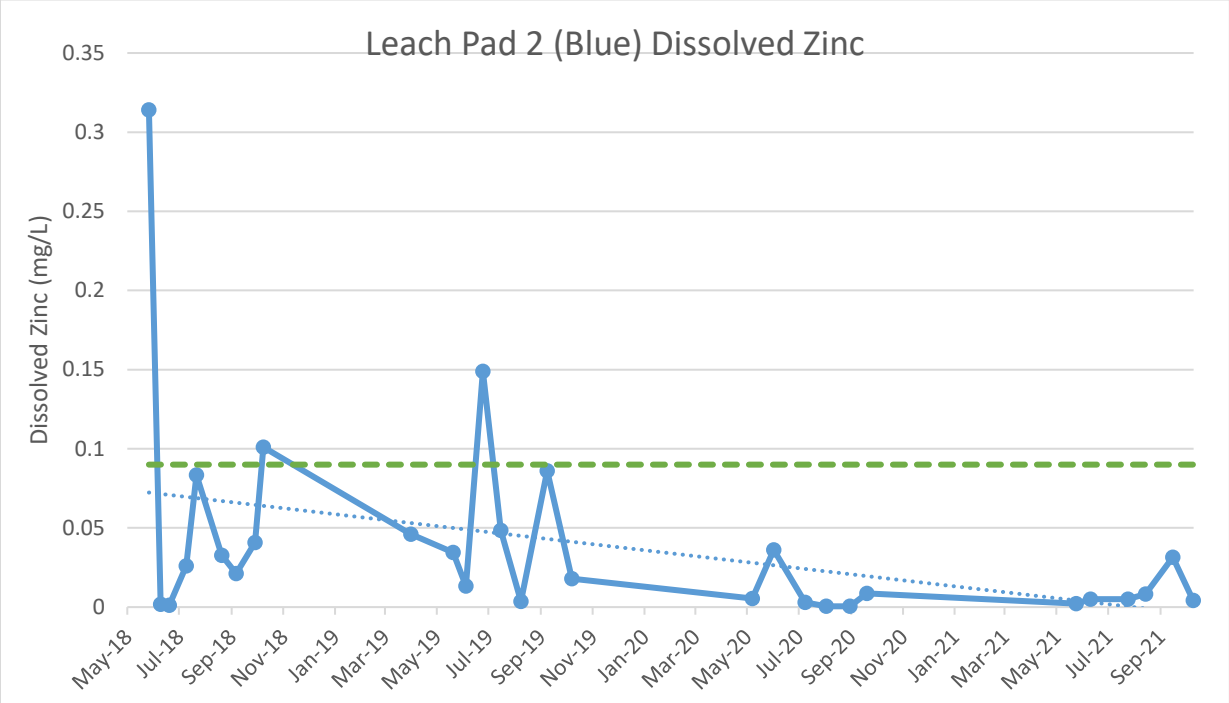

Figure 5-14: Leach Pad 2 Dissolved Zinc

6 Conclusions and Recommendations

Overall, the Contaminants of Potential Concern (COPC's) are at, near, or below the effluent release limits from both leachate sources, with the one exception of Selenium. This seems to indicate at closure, that the leachate from POX material on surface may have a slight increasing influence on other runoff waters reporting to the pits, however based on these findings, elevated selenium may be the only contaminant of concern.

The blue ore pile's NP:AP indicates this material either requires milling or aqueous disposal within the pits.

Further testing and analysis by other Qualified Professionals is recommended over the next few years, to assess differing trends from dry vs. wet years.

Appendix LPS A – Leach Pad Construction Report

Metals Leaching Characterization
Leach Pads
Record of Construction

Prepared by:
Minto Explorations Ltd.
Minto Mine
May, 2018

Table of Contents

1 Introduction 1
2 Construction Activities 1
2.1 Work Site Preparation 1
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2.3 Pad Filling 2
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1 Introduction

The following report presents a record of construction for the Leach Pads, constructed from August 2017 to March 2018. The Geochemical Monitoring Program detailed in the Water Use Licence QZ14-031 includes as one of the conditions the requirement for geochemical characterization of waste, including leachate quality (Section 5.1.5, Article 94):

> *The Licensee shall update the Geochemical Monitoring Program to include a monitoring and geochemical characterization program that will produce detailed metals leaching characterization from the low-grade ore and oxide ore.*

Implementation of a monitoring program that satisfies this condition was included in the Environmental Monitoring, Surveillance, and Reporting Plan (EMSRP). The plan included construction of the leach pads in the summer of 2017 and sampling of the leachate for one year, starting in September 2017.

2 Construction Activities

The Design drawings for the construction of the Leach Pads were provided by SRK in late July, and construction began in August and September, proceeding intermittently due to high competitive demand for the necessary equipment during aggressive production mining activity in the Area 2 Phase 4 Pit.

2.1 Work Site Preparation

Work site preparation began with the initial excavation of the ground surface for the placement of residuum for the base construction and shaping, and was undertaken in August of 2017. Construction of outfall channels and the placement of 100 mm HDPE leachate collection pipes in the bottom of the pads was completed prior to the placement and shaping of residuum base material to the design dimensions from the design drawings provided by SRK (See Figure 1).

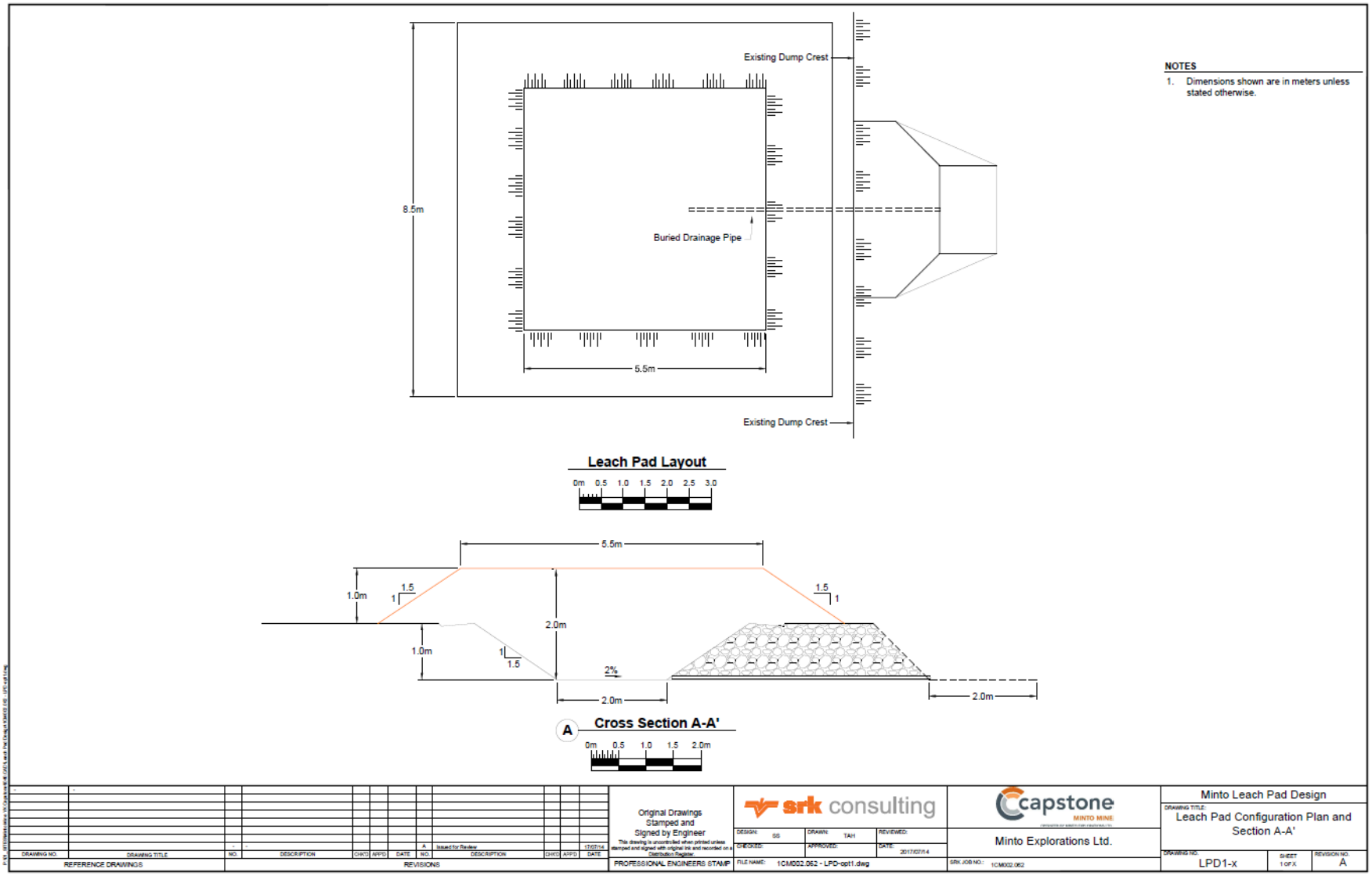


Figure 1: Leach Pad Design Drawing

Photo 1: Pad #2 under construction using Residuum. Pad 1 in Foreground – looking southeast

The initial Shaping of Pad #1 was completed in it's entirety before Pad #2 construction began. Placement of Residuum and shaping of the berms prior to liner installation was completed on October 6th (See Photos 1&2).

Photo 2: Leach Pad #1 residuum placement completed. Pipe in bottom visible

Photo 3: Outfall for leachate collection pipe placement

2.2 Liner Placement

A 4.0 mm Bituminous Geomebrane Liner (BGM Liner) was selected for the Leach Pads due to relative ease of installation, requiring no specialized tools or skills to weld the seams. A liner installation plan was supplied by SRK (See Figure 2), however it was not deemed practical for field installation due to the difficulty in installing the largest piece of liner by hand due to it's weight, as well as the number of seams requiring sealing and the propensity for smaller liner pieces to shift and move while being walked on. Each liner was installed in 5 pieces; one for the bottom, and one for each of the sides. All liner pieces overlapped the next piece by at least 150 mm as per the manufacturers recommendations. The installed liners are shown in Photos 4, 5, and 6.

All seams were welded using a "tiger torch", with pressure applied to the seams ensuring full bonding of both layers. Quality Control was completed during seam welding on at least 10% of each seam and in random locations following completion of each weld. Particular attention was paid to areas where three layers converged, ensuring a strong, water tight bond between all layers.

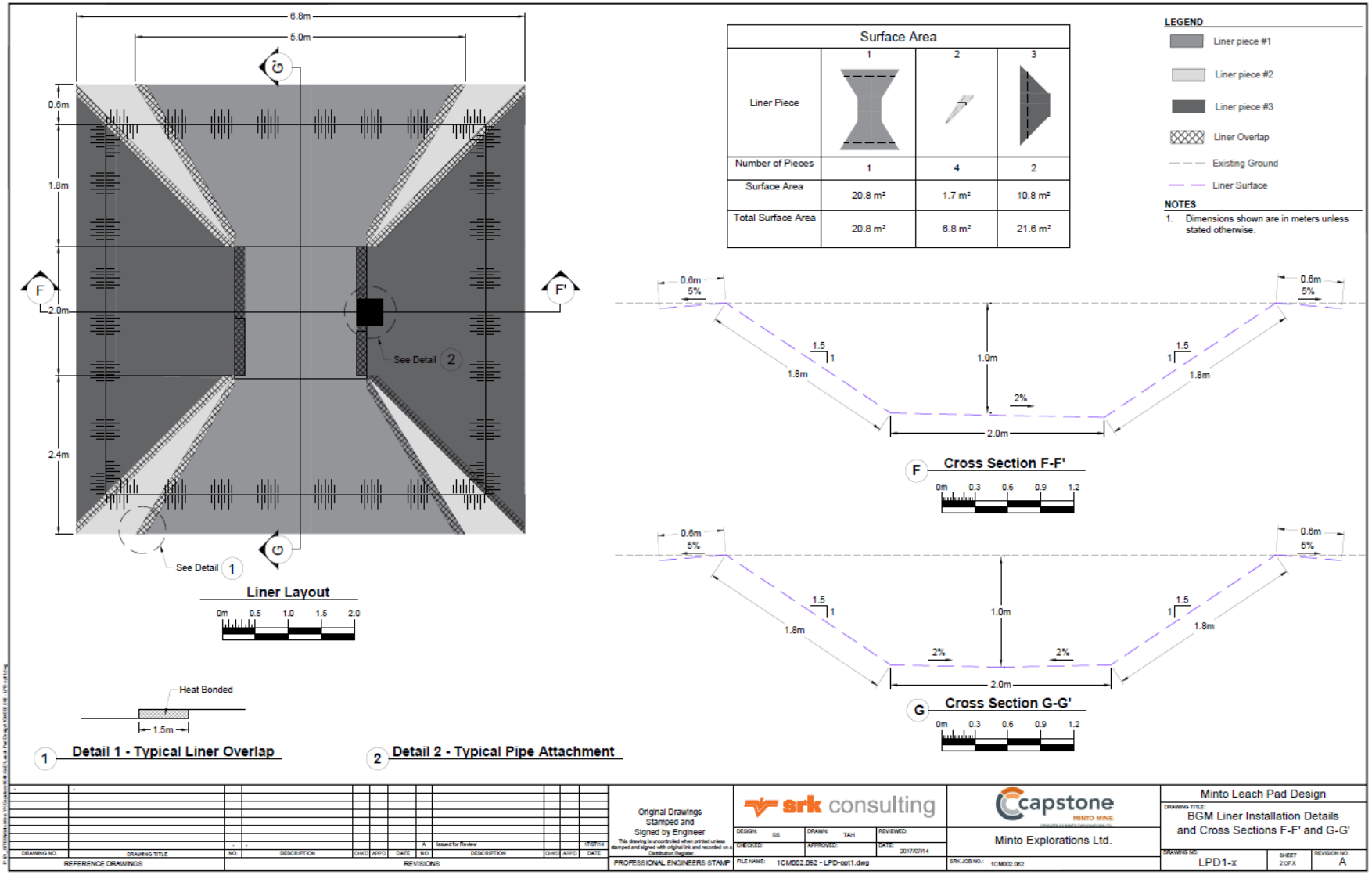


Figure 2: Liner Installation Design Drawings

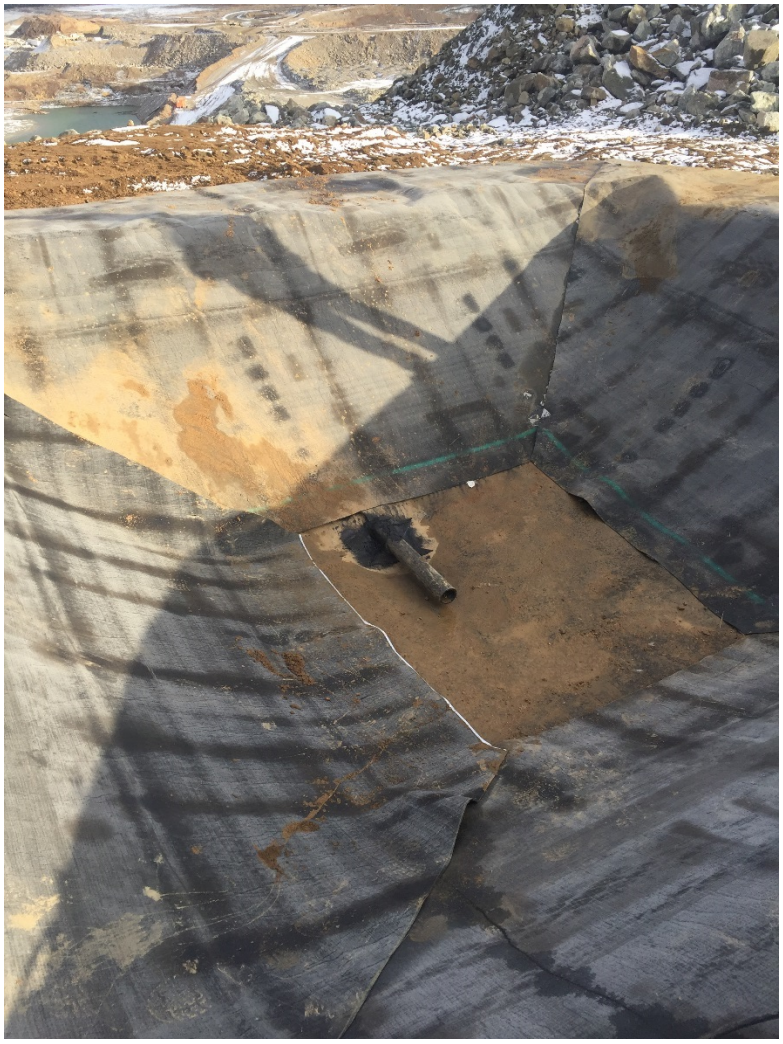


Photo 4: BGM liner install: bottom not yet sealed

Photo 5: Leachate collection pipe boot seal detail

2.3 Pad Filling

The Leach pads were designed to be filled with a nominal depth of 2.0 meters of ore. Pad #1 was to be filled with Partially Oxidized Ore (POX), and Pad #2 was to be filled with Low Grade Sulphide (Blue) Ore. SRK provided fill design plans (See Figure 3), and these were roughly adhered to in the field resulting in a nominal depth of 2.5 meters of POX on Pad #1, and a nominal depth of 2.1 meters of Blue Ore on Pad #2. The final measured volume of material placed on Pad 1 was 143 m3, and on Pad 2 was 126 m3. Because placement of both materials occurred during the winter, the pads had to be cleared of snow before the ore could be placed. This activity and the completed placement of ore can be seen in Photos 6 -8.

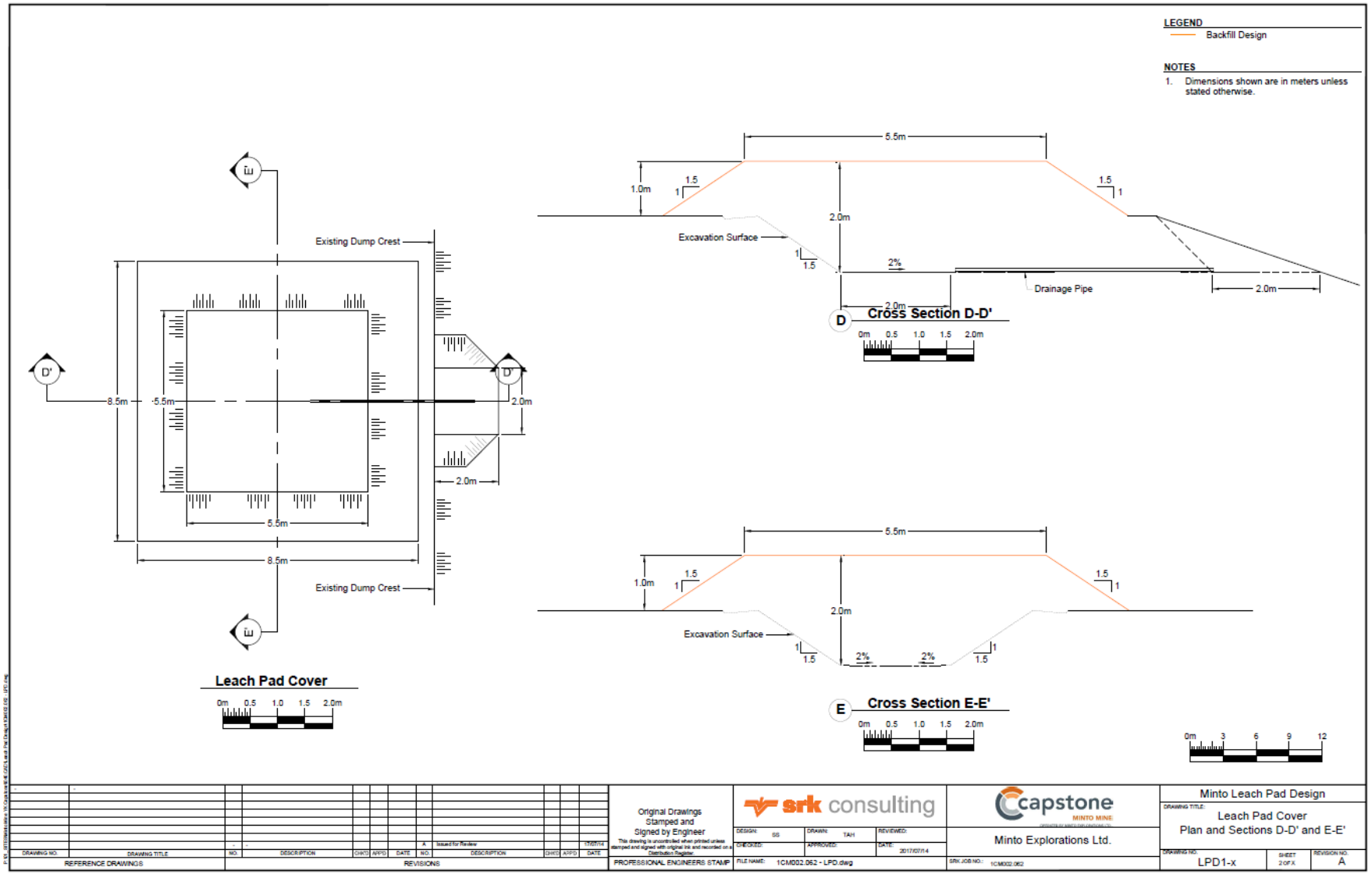


Figure 3: Leachate Pad Cover/Fill Design

Photo 6: Leach Pad #1 snow clearing prior to POX placement

Photo 7: Leach Pad #1 filled with POX

Photo 8: Leach Pads #1 and #2 Completed (Spring 2018 photo)

Figure 4 shows Survey scans of the completed Leach Pads before and after placement of materials in plan view. Figure 5 shows a cross-section of each leach pad as-constructed in the field.

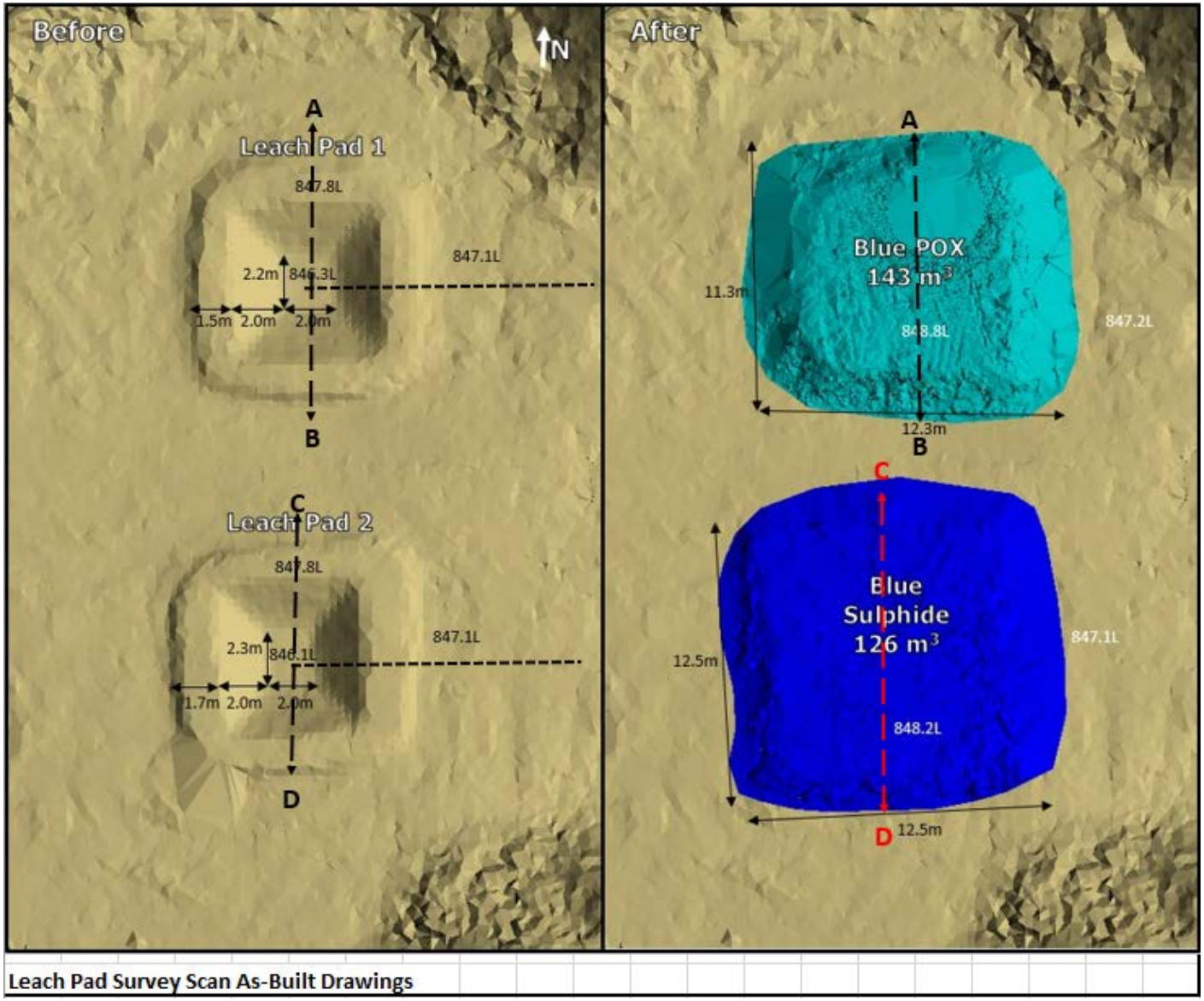


Figure 4 – Plan View of Pads before and after material placement

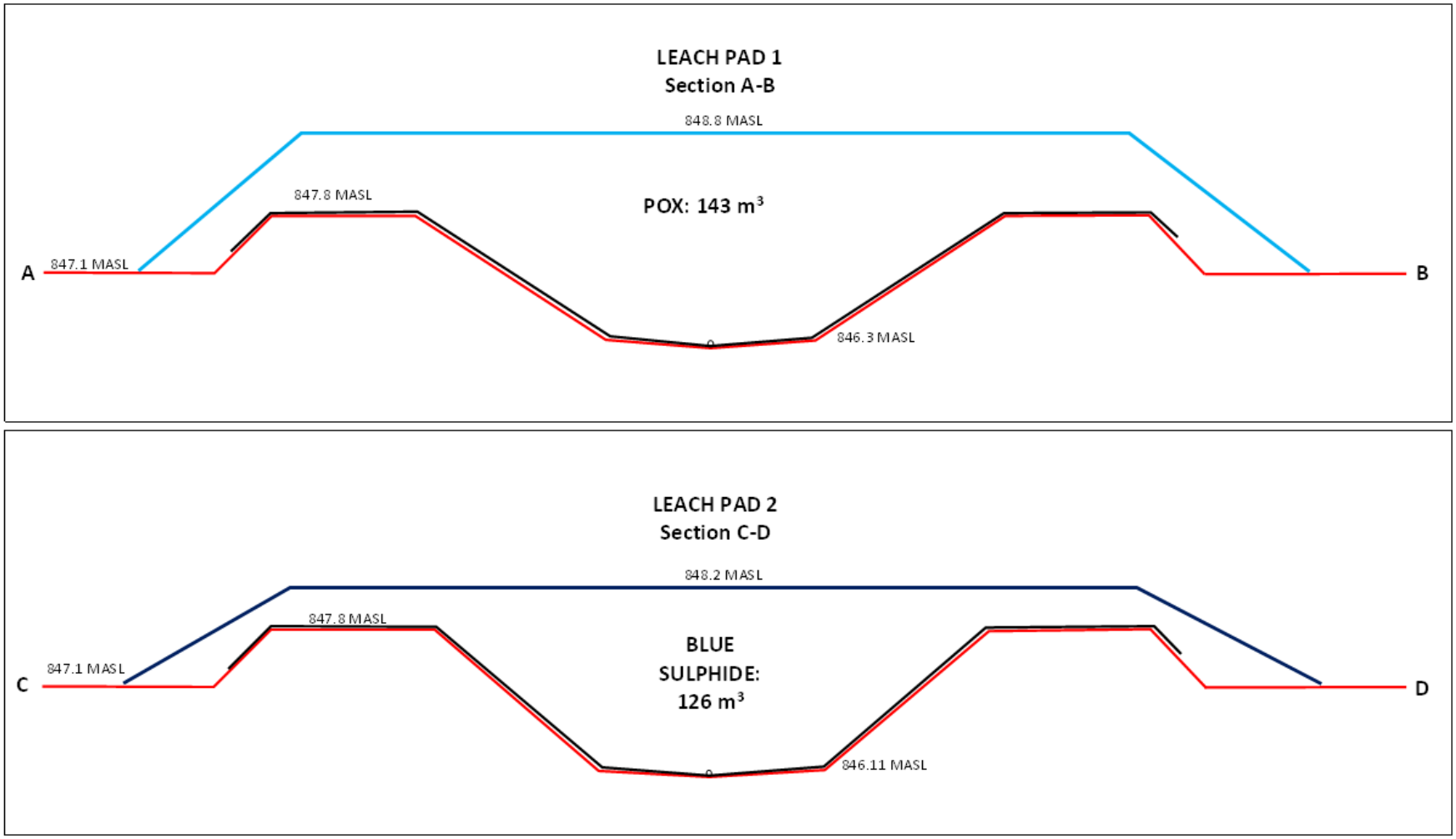


Figure 5: Cross Sections A-B and C-D of Pads 1 and 2.

3 Conclusion

This report has been prepared to satisfy the as-built construction report for the metals leaching characterization test pads as per Article 34 of Water Licence QZ14-031.

Prepared By:

_____
Todd Swenson, EP

Environmental Professional

Date: May 22, 2018

Reviewed by:

_____
Kevin Cymbalisty, P.Eng

Mine Manager

Date: May 28, 2018

4 References

Environmental Moitoring, Sampling, and Reporting Plan (EMSRP). Minto Explorations, July 2016.

SRK Consulting (Canada) Inc. 2017. Proposal for Installation of Lysimeters and Construction of Leach Pads. Proposal prepared for Minto Explorations Ltd., SRK Project Number 1CM002.P13. June 9, 2017.

SRK Consulting (Canada) Inc. 2017. Leach Pad Construction Drawings. Memo prepared for Minto Explorations Ltd., SRK Project Number 1CM002.062. July 14, 2017.

Appendix LPS B – Sampling Methodology

Background

The collection of leachate samples from two Leach Characterization Testing Pads (Leach Pads) at Minto Mine (Minto) was first required by the approved 2017-02 EMSRP. Leach Pad 1 is filled with POX material. Leach Pad 2 is filled with blue ore. Water quality samples are required monthly from both leach pads.

Field staff are responsible for coordinating all sampling events in accordance with the requirements of the current EMSRP, including sampling locations, sampling frequency, and parameter requirements.

All sampling and documentation must be conducted in accordance with the Surface WQ Sampling SOP and the QA/QC protocols.

Preparation for Leach Pad sampling must also include provision for quality control samples. Due to the short term of this sampling project, a duplicate sample will be collected from one of the Leach Pads each month.

Safety Precautions

It is particularly important for employees to be aware they are working in proximity to a sheer rock face. It is important they remain aware of where they are, stay as far away from the cliff face as possible, and remain conscious of their footing when approaching the sampling sites.

Leach Pad water quality sampling and related tasks can be carried out by an employee working alone.

Equipment

- Sample bottles, labels, and seepage WQ field forms
- pH Pen
- Nitrile gloves
- Syringes and filters
- Sample preservatives
- Cooler and sufficient ice packs

Procedure

1. Clearly label all sample bottles with station name (LP1 or LP2), date, time (24-hour clock). See Figure 1 below for the location of the leach pads.
2. Put on clean nitrile gloves prior to collecting the sample.
3. For each leach pad, shown in Figure 1, collect a WQ sample as listed in Table 1 and send to ALS Environmental labs.

Table 1: Leach Pad WQ Sample Requirements

Analysis Name	Parameters (not inclusive)	Bottle	Filter	Preservative
Physical Parameters (General)	pH, Conductivity, TSS, TDS, Alkalinity, Anions	500 mL (Plastic)	Not required	Not required
Dissolved Metals	Metals	125 mL (Plastic)	Required	Required
Ammonia/Phosphorus	P, NH_3	125 mL (Glass)	Not Required	Required

4. All bottles will be triple-rinsed.
    a. Ensure that samples requiring filtering are rinsed with filtered water only.
5. Collect water directly from the sampling bucket using a syringe.
6. Use new syringes and filters for every station
7. Filter and add preservatives to the required samples as soon as possible after sample collection and filtering, at the sampling location.
8. **COLLECT A DUPLICATE sample from one of the Leach Pads every sampling event.**
    a. If sufficient water is available, collect the duplicate from Pad #1 on odd numbered months, and from Pad #2 on even numbered months.
    b. Alternatively collect the duplicate from whichever pad collection sump (bucket) has the most water present.
9. Field measurements can be made either in situ (in the water bucket) or using a sub-sample taken in a separate container which is discarded once the measurements are recorded.

a. Sub-samples are not used for further chemical analyses, and must be taken after the sample collection has been completed.

b. Instrumentation must display stable in-situ parameters before field staff record parameters.

10. Once Sampling is complete, the buckets should be tipped over and drained, allowing for new leachate to enter the bucket for the next sampling session, and ensuring the same leachate water is not being sampled twice.

11. Complete the seepage field form at the station, including

    a. Station Name (LP1 or LP2)

    b. Date and time of sample collection;

    c. Weather at time of sample collection;

    d. Field measurements of pH, conductivity, temperature;

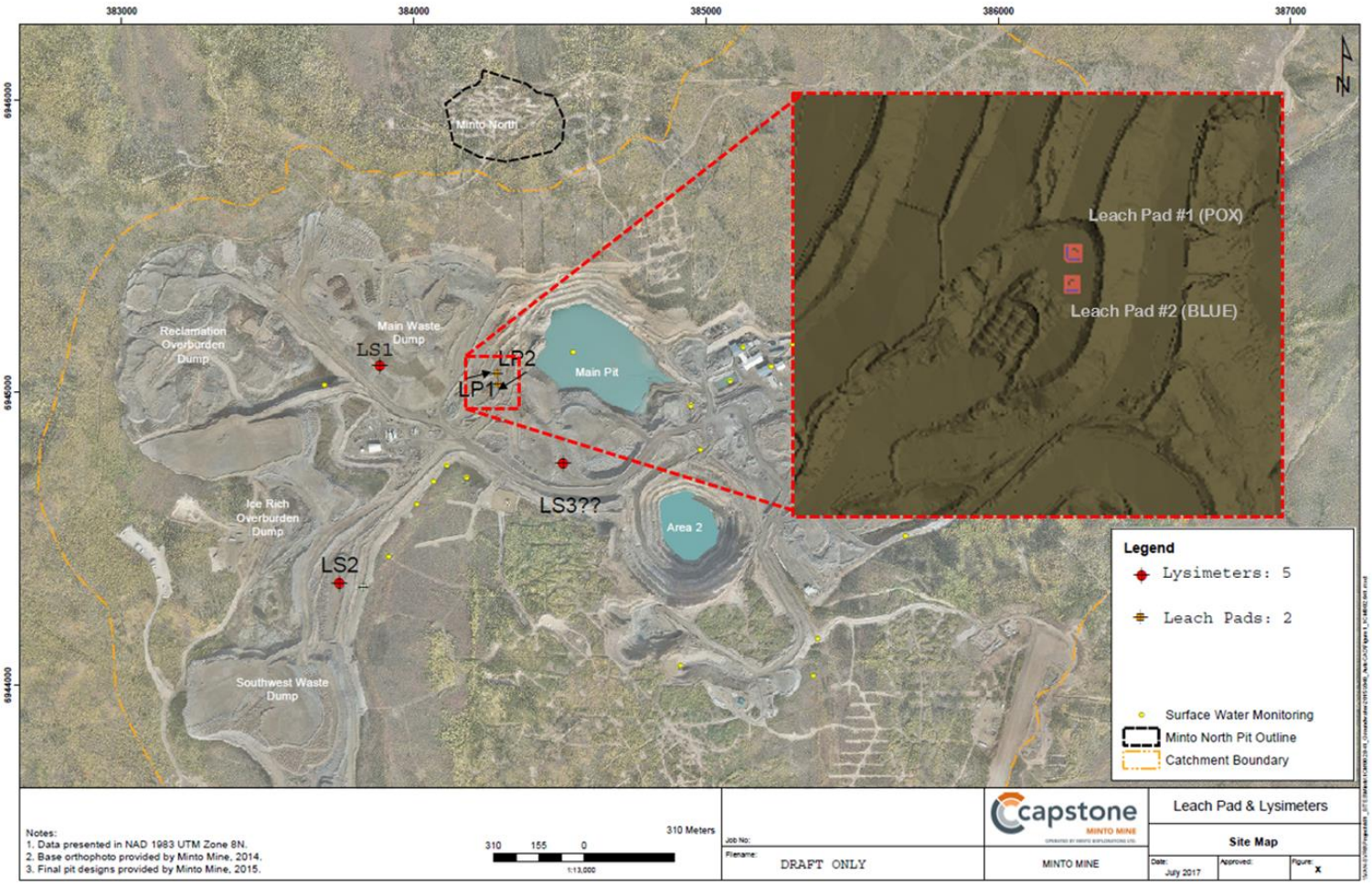
    e. Water colour, turbidity, and presence of any precipitates or mineral staining; and

    f. Record the quantity of filters used and the colour of the sediment contained, photograph the filters.

12. Enter the sample data into the water quality tracking sheet (WQTS) and file the field form.

13. Ship the samples to ALS Environmental at the earliest opportunity, as per the regular shipping process.

Figure 1: Leach Pad Location



Appendix M – Leach Pad Sampling Program Results

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2100496**	Page	: 1 of 4
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 26-May-2021 13:30
PO	: 2857 (Seepage) - 10-8103-07050	Date Analysis Commenced	: 31-May-2021
C-O-C number	: 2021-05-25 G	Issue Date	: 07-Jun-2021 16:04
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Clarie Tejano	Laboratory Assistant	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Sristika Chand	Lab Analyst	Metals, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
µS/cm	Microsiemens per centimetre
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
DLM	*Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LP1	LP2	DUP	----	----
					Client sampling date / time	24-May-2021 07:45	24-May-2021 08:00	24-May-2021	----	----
						WR2100496-001	WR2100496-002	WR2100496-003	--------	--------
						Result	Result	Result	----	----
Physical Tests										
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L		46.4	71.2	43.1	----	----
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	----	----
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	----	----
alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	----	----
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		46.4	71.2	43.1	----	----
conductivity	----	E100	2.0	µS/cm		700	1320	656	----	----
hardness (as CaCO3), dissolved	----	EC100	0.60	mg/L		310	807	322	----	----
pH	----	E108	0.10	pH units		7.60	7.87	7.59	----	----
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L		474	1040	464	----	----
solids, total suspended [TSS]	----	E160-L	1.0	mg/L		2.1	2.9	1.4	----	----
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		<0.0050	0.0099	<0.0050	----	----
chloride	16887-00-6	E235.Cl-L	0.10	mg/L		0.69	1.15	0.64	----	----
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L		2.08	6.78	1.94	----	----
nitrate + nitrite (as N)	----	EC235.N+N	0.0050	mg/L		2.08	6.81	1.94	----	----
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L		<0.0010	0.0315	<0.0010	----	----
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		298	664	285	----	----
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0060	0.0021	0.0065	----	----
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	0.00028	<0.00010	----	----
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00030	0.00128	0.00026	----	----
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.0155	0.0350	0.0161	----	----
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	<0.000020	<0.000020	----	----
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
boron, dissolved	7440-42-8	E421	0.010	mg/L		0.051	0.269	0.056	----	----
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		0.0000529	<0.0000600 DLM	0.0000479	----	----
calcium, dissolved	7440-70-2	E421	0.050	mg/L		98.0	150	102	----	----
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.0124	0.0278	0.0128	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LP1	LP2	DUP	----	----
					Client sampling date / time	24-May-2021 07:45	24-May-2021 08:00	24-May-2021	----	----
						WR2100496-001	WR2100496-002	WR2100496-003	--------	--------
						Result	Result	Result	----	----
Dissolved Metals										
iron, dissolved	7439-89-6	E421	0.010	mg/L		<0.010	<0.010	<0.010	----	----
lead, dissolved	7439-92-1	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		0.0022	0.0277	0.0023	----	----
magnesium, dissolved	7439-95-4	E421	0.100	mg/L		15.8	105	16.4	----	----
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.00543	0.0597	0.00547	----	----
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	----	----
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		0.0305	0.0598	0.0326	----	----
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	----	----
potassium, dissolved	7440-09-7	E421	0.100	mg/L		5.28	16.0	5.48	----	----
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.0345	0.166	0.0365	----	----
silicon, dissolved	7440-21-3	E421	0.050	mg/L		3.01	4.20	3.16	----	----
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
sodium, dissolved	17341-25-2	E421	0.050	mg/L		11.3	21.5	11.8	----	----
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.845	5.40	0.896	----	----
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		99.2	270	104	----	----
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		<0.00030	<0.00030	<0.00030	----	----
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.000369	0.000168	0.000391	----	----
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		0.0025	0.0021	0.0022	----	----
zirconium, dissolved	7440-67-7	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----
dissolved mercury filtration location	----	EP509	-	-		Field	Field	Field	----	----
dissolved metals filtration location	----	EP421	-	-		Field	Field	Field	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2100496**	Page	: 1 of 10
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 26-May-2021 13:30
PO	: 2857 (Seepage) - 10-8103-07050	Issue Date	: 07-Jun-2021 16:04
C-O-C number	: 2021-05-25 G		
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Matrix Spike outliers occur.
- Laboratory Control Sample (LCS) outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Laboratory Control Sample (LCS) Recoveries								
Physical Tests	QC-212356-002	----	alkalinity, phenolphthalein (as CaCO3)	----	E290	69.8 % LCS-L	75.0-125%	Recovery less than lower control limit

Result Qualifiers

Qualifier	Description
LCS-L	*Lab Control Sample recovery was below ALS DQO. Reference Material and/or Matrix Spike results were acceptable. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.*

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) LP1	E298	24-May-2021	03-Jun-2021	----	10 days	✓	03-Jun-2021	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) LP2	E298	24-May-2021	03-Jun-2021	----	10 days	✓	03-Jun-2021	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) DUP	E298	24-May-2021	03-Jun-2021	----	11 days	✓	03-Jun-2021	28 days	1 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE DUP	E235.Cl-L	24-May-2021	----	----	----		03-Jun-2021	28 days	11 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE LP1	E235.Cl-L	24-May-2021	----	----	----		03-Jun-2021	28 days	11 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE LP2	E235.Cl-L	24-May-2021	----	----	----		03-Jun-2021	28 days	11 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE DUP	E235.NO3-L	24-May-2021	----	----	----		03-Jun-2021	3 days	11 days	× EHT

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE LP1	E235.NO3-L	24-May-2021	----	----	----		03-Jun-2021	3 days	11 days	× EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE LP2	E235.NO3-L	24-May-2021	----	----	----		03-Jun-2021	3 days	11 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE DUP	E235.NO2-L	24-May-2021	----	----	----		03-Jun-2021	3 days	11 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE LP1	E235.NO2-L	24-May-2021	----	----	----		03-Jun-2021	3 days	11 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE LP2	E235.NO2-L	24-May-2021	----	----	----		03-Jun-2021	3 days	11 days	× EHT
Anions and Nutrients : Sulfate in Water by IC										
HDPE DUP	E235.SO4	24-May-2021	----	----	----		03-Jun-2021	28 days	11 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE LP1	E235.SO4	24-May-2021	----	----	----		03-Jun-2021	28 days	11 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE LP2	E235.SO4	24-May-2021	----	----	----		03-Jun-2021	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) DUP	E509	24-May-2021	01-Jun-2021	----	9 days	✓	01-Jun-2021	28 days	1 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) LP1	E509	24-May-2021	01-Jun-2021	----	9 days	✓	01-Jun-2021	28 days	1 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) LP2	E509	24-May-2021	01-Jun-2021	----	9 days	✓	01-Jun-2021	28 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) DUP	E421	24-May-2021	31-May-2021	----	8 days	✓	31-May-2021	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) LP1	E421	24-May-2021	31-May-2021	----	8 days	✓	31-May-2021	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) LP2	E421	24-May-2021	31-May-2021	----	8 days	✓	31-May-2021	180 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE DUP	E290	24-May-2021	----	----	----		03-Jun-2021	14 days	11 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE LP1	E290	24-May-2021	----	----	----		03-Jun-2021	14 days	11 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE LP2	E290	24-May-2021	----	----	----		03-Jun-2021	14 days	11 days	✓
Physical Tests : Conductivity in Water										
HDPE DUP	E100	24-May-2021	----	----	----		03-Jun-2021	28 days	11 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE LP1	E100	24-May-2021	----	----	----		03-Jun-2021	28 days	11 days	✓
Physical Tests : Conductivity in Water										
HDPE LP2	E100	24-May-2021	----	----	----		03-Jun-2021	28 days	11 days	✓
Physical Tests : pH by Meter										
HDPE LP1	E108	24-May-2021	----	----	----		03-Jun-2021	0.25 hrs	252 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE LP2	E108	24-May-2021	----	----	----		03-Jun-2021	0.25 hrs	252 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE DUP	E108	24-May-2021	----	----	----		03-Jun-2021	0.25 hrs	260 hrs	× EHTR-FM
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE DUP	E160-L	24-May-2021	----	----	----		31-May-2021	7 days	8 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE LP1	E160-L	24-May-2021	----	----	----		31-May-2021	7 days	8 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE LP2	E160-L	24-May-2021	----	----	----		31-May-2021	7 days	8 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: ✗ = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	212356	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	211867	1	14	7.1	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	212353	1	5	20.0	5.0	✓
Conductivity in Water	E100	212355	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	210472	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	209551	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	212348	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	212349	1	18	5.5	5.0	✓
pH by Meter	E108	212354	1	13	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	212347	1	18	5.5	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	212356	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	211867	1	14	7.1	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	212353	1	5	20.0	5.0	✓
Conductivity in Water	E100	212355	0	15	0.0	5.0	✗
Dissolved Mercury in Water by CVAAS	E509	210472	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	209551	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	212348	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	212349	1	18	5.5	5.0	✓
pH by Meter	E108	212354	1	13	7.6	5.0	✓
Sulfate in Water by IC	E235.SO4	212347	1	18	5.5	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	209114	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	212356	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	211867	1	14	7.1	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	212353	1	5	20.0	5.0	✓
Conductivity in Water	E100	212355	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	210472	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	209551	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	212348	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	212349	1	18	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	212347	1	18	5.5	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	209114	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	211867	1	14	7.1	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	212353	1	5	20.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	210472	1	20	5.0	5.0	✓

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Dissolved Metals in Water by CRC ICPMS	E421	209551	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	212348	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	212349	1	18	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	212347	1	18	5.5	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Vancouver - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Vancouver - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry (Low Level)	E160-L Vancouver - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
Chloride in Water by IC (Low Level)	E235.Cl-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 Vancouver - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Vancouver - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103 Vancouver - Environmental	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N Vancouver - Environmental	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Vancouver - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **WR2100496**	Page	: 1 of 10
Client	: Minto Explorations Ltd.	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 26-May-2021 13:30
PO	: 2857 (Seepage) - 10-8103-07050	Date Analysis Commenced	: 31-May-2021
C-O-C number	: 2021-05-25 G	Issue Date	: 07-Jun-2021 16:04
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Clarie Tejano	Laboratory Assistant	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia
Owen Cheng		Metals, Burnaby, British Columbia
Sristika Chand	Lab Analyst	Metals, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 212354)											
WR2100494-001	Anonymous	pH	----	E108	0.10	pH units	7.57	7.59	0.264%	4%	----
Physical Tests (QC Lot: 212355)											
WR2100494-001	Anonymous	conductivity	----	E100	2.0	µS/cm	962	966	0.415%	10%	----
Physical Tests (QC Lot: 212356)											
WR2100494-001	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	199	196	1.57%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	199	196	1.57%	20%	----
Anions and Nutrients (QC Lot: 211867)											
VA21B0762-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	1.00	mg/L	224	227	1.34%	20%	----
Anions and Nutrients (QC Lot: 212347)											
VA21B0405-007	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	3.00	mg/L	21.1	21.3	0.20	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 212348)											
VA21B0405-007	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0500	mg/L	48.5	49.4	1.70%	20%	----
Anions and Nutrients (QC Lot: 212349)											
VA21B0405-007	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0100	mg/L	<0.0100	<0.0100	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 212353)											
WR2100494-001	Anonymous	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	11.9	11.9	0.535%	20%	----
Dissolved Metals (QC Lot: 209551)											
VA21B0466-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0030	mg/L	0.225	0.233	3.67%	20%	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00036	0.00034	0.00001	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.00710	0.00731	2.84%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	<0.0000050	0.0000055	0.0000005	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	11.2	11.2	0.214%	20%	----
		chromium, dissolved	7440-47-3	E421	0.00050	mg/L	0.00067	0.00069	0.00002	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00012	0.00012	0.00001	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 209551) - continued											
VA21B0466-001	Anonymous	copper, dissolved	7440-50-8	E421	0.00050	mg/L	0.00378	0.00382	0.00005	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.030	mg/L	0.229	0.238	0.008	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.000052	0.000058	0.000006	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E421	0.100	mg/L	2.58	2.59	0.295%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0109	0.0109	0.226%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000137	0.000138	0.0000007	Diff <2x LOR	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00099	0.00099	0.000004	Diff <2x LOR	----
		phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.601	0.608	1.16%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000087	0.000082	0.000004	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	5.15	5.06	1.82%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	17341-25-2	E421	0.050	mg/L	1.98	1.99	0.826%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.130	0.129	0.365%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.0100	mg/L	<0.0100	<0.0100	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000058	0.000062	0.000004	Diff <2x LOR	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.00092	0.00093	0.000008	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	0.00046	0.00049	0.00004	Diff <2x LOR	----
Dissolved Metals (QC Lot: 210472)											
CG2101639-003	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 209114)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 212355)						
conductivity	----	E100	1	µS/cm	1.1	----
Physical Tests (QCLot: 212356)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Anions and Nutrients (QCLot: 211867)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 212347)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 212348)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 212349)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 212353)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Dissolved Metals (QCLot: 209551)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 209551) - continued						
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	17341-25-2	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 210472)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 209114)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	89.5	85.0	115	----
Physical Tests (QCLot: 212354)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Physical Tests (QCLot: 212356)									
alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	# 69.8	75.0	125	LCS-L
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 211867)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	92.9	85.0	115	----
Anions and Nutrients (QCLot: 212347)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 212348)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 212349)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 212353)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	102	90.0	110	----
Dissolved Metals (QCLot: 209551)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	98.3	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	106	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	94.2	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	97.7	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	97.2	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	104	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	95.8	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	93.8	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	99.5	80.0	120	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	92.2	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	95.3	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	92.0	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	91.3	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	98.7	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	89.7	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 209551) - continued									
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	93.5	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	95.1	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	98.9	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	93.9	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	91.1	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	92.9	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	94.9	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	100	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	104	80.0	120	----
sodium, dissolved	17341-25-2	E421	0.05	mg/L	50 mg/L	90.7	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	98.9	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	92.3	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	104	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	95.2	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	91.4	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	94.2	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	94.2	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	95.9	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	92.9	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	95.2	80.0	120	----

Qualifiers

Qualifier	Description
LCS-L	*Lab Control Sample recovery was below ALS DQO. Reference Material and/or Matrix Spike results were acceptable. Non-detected sample results are considered reliable. Other results, if reported, have been qualified.*

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 211867)										
VA21B0774-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	MS-B
Anions and Nutrients (QCLot: 212347)										
VA21B0405-008	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	2000 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 212348)										
VA21B0405-008	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	54.5 mg/L	50 mg/L	109	75.0	125	----
Anions and Nutrients (QCLot: 212349)										
VA21B0405-008	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	10.6 mg/L	10 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 212353)										
WR2100494-002	Anonymous	chloride	16887-00-6	E235.Cl-L	521 mg/L	500 mg/L	104	75.0	125	----
Dissolved Metals (QCLot: 209551)										
VA21B0466-001	Anonymous	aluminum, dissolved	7429-90-5	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0209 mg/L	0.02 mg/L	104	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0193 mg/L	0.02 mg/L	96.6	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0393 mg/L	0.04 mg/L	98.2	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00913 mg/L	0.01 mg/L	91.3	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.100 mg/L	0.1 mg/L	99.6	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00388 mg/L	0.004 mg/L	96.9	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		chromium, dissolved	7440-47-3	E421	0.0382 mg/L	0.04 mg/L	95.4	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0194 mg/L	0.02 mg/L	96.9	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0187 mg/L	0.02 mg/L	93.6	70.0	130	----
		iron, dissolved	7439-89-6	E421	1.85 mg/L	2 mg/L	92.4	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0199 mg/L	0.02 mg/L	99.4	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0963 mg/L	0.1 mg/L	96.3	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.0190 mg/L	0.02 mg/L	94.8	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0187 mg/L	0.02 mg/L	93.4	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0382 mg/L	0.04 mg/L	95.6	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	10.2 mg/L	10 mg/L	102	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 209551) - continued										
VA21B0466-001	Anonymous	potassium, dissolved	7440-09-7	E421	3.74 mg/L	4 mg/L	93.6	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0414 mg/L	0.04 mg/L	104	70.0	130	----
		silicon, dissolved	7440-21-3	E421	9.00 mg/L	10 mg/L	90.0	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00416 mg/L	0.004 mg/L	104	70.0	130	----
		sodium, dissolved	17341-25-2	E421	1.89 mg/L	2 mg/L	94.4	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	21.0 mg/L	20 mg/L	105	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00385 mg/L	0.004 mg/L	96.2	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0194 mg/L	0.02 mg/L	97.2	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0374 mg/L	0.04 mg/L	93.4	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.00390 mg/L	0.004 mg/L	97.5	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.0962 mg/L	0.1 mg/L	96.2	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.398 mg/L	0.4 mg/L	99.5	70.0	130	----
		zirconium, dissolved	7440-67-7	E421	0.0381 mg/L	0.04 mg/L	95.2	70.0	130	----
Dissolved Metals (QCLot: 210472)										
CG2101639-004	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000913 mg/L	0.0001 mg/L	91.3	70.0	130	----

Qualifiers

Qualifier	Description
MS-B	*Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.*

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 2021-05-25 G

Environmental Division
Whitehorse
Work Order Reference
WR2100496

Telephone : +1 867 668 6689

Report To	Contact and company name below will appear on the final report
Company:	Minto Explorations Ltd.
Contact:	Minto Environment - Coordinator
Phone:	1-604-759-4659
	Company address below will appear on the final report
Street:	61 Wasson Place
City/Province:	Whitehorse
Postal Code:	Y1A 0H7
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Minto Explorations Ltd.
Contact:	Katie Androsoff

Report Format / Distribution	
Select Report Format:	☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report	☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	mintoenvironment@mintomine.com
Email 2	
Email 3	
Invoice Distribution	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	ap@mintomine.com
Email 2	

Project Information	
ALS Account # / Quote #:	
Job #:	
PO / AFE:	PO2857 (Seepage) - 10-8103-07050
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only)	ALS Contact:	Sampler:

Select Service Level Below - Please confirm all E&P TATs

Regular [R] ☑ Standard TAT if rec

PRIORITY (Business Days): 4 day [P4] ☐ | 3 day [P3] ☐ | 2 day [P2] ☐ | EMERGENCY

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the servi

Analys

Indicate Filtered (F), Preserved (P) or Filter

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total Metals(TM)	Dissolved Metals (DM)	Total Mercury, Hardness	Dissolved Mercury	Ammonia (Total Nutrients)	Dissolved Organic Carbon (DOC)	pH, Cond., TSS, TDS, Alkalinity, Anions	Number of Containers
					P	F/P	P	F/P	P	F/P		
	LP1	24-May-21	7:45	Water		R		R	R		R	4
	LP2	24-May-21	8:00	Water		R		R	R		R	4
	Dup	11	—	Water		R		R	R		R	

1/4 cooler

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☑ NO	
Are samples for human drinking water use? ☐ YES ☑ NO	

SAMPLE CONDITION

Frozen ☐ SIF

Ice Packs ☐ Ice Cubes ☐ Cust

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C	
3	4	3	4	7.4°

SHIPMENT RELEASE (client use)		
Released by: Reanna Moore	Date: 2021-05-25	Time:

INITIAL SHIPMENT RECEPTION (lab use only)		
Received by: JC	Date: May 26	Time: 1230

FINAL SHIPMENT RECEPTION (lab use only)		
Received by: TB	Date: May 28th	Time: 12:00 pm

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2100647**	Page	: 1 of 7
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 18-Jun-2021 15:45
PO	: 2856 - 10-8102-07050	Date Analysis Commenced	: 19-Jun-2021
C-O-C number	: 2021-06-16 D	Issue Date	: 25-Jun-2021 14:21
Sampler	: CR/BK/SS		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Dee Lee	Analyst	Metals, Burnaby, British Columbia
Ilnaz Badbezanchi	Team Leader - Metals preparation	Metals, Burnaby, British Columbia
Jashan Kaur	Lab Assistant	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
%	percent
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
DLB	*Detection Limit Raised. Analyte detected at comparable level in Method Blank.*
DLM	*Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	Leach Pad 2	Leach Pad 1	Dup 2	MW09-03-1	MW09-03-02
					Client sampling date / time	10-Jun-2021 15:25	10-Jun-2021 15:20	10-Jun-2021	13-Jun-2021 10:10	13-Jun-2021 10:30
						WR2100647-001	WR2100647-002	WR2100647-003	WR2100647-004	WR2100647-005
						Result	Result	Result	Result	Result
Physical Tests										
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L		80.1	40.0	39.9	139	110
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	1.4	<1.0
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		80.1	40.0	39.9	140	110
conductivity	----	E100	2.0	µS/cm		840	679	684	303	264
hardness (as CaCO3), dissolved	----	EC100	0.60	mg/L		433	289	287	138	126
pH	----	E108	0.10	pH units		8.19	7.96	7.96	8.29	8.16
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L		584	466	465	174	165
solids, total suspended [TSS]	----	E160-H	3.0	mg/L		<3.0	<3.0	3.4	<3.0	<3.0
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		<0.0050	<0.0050	<0.0050	0.0173	<0.0050
chloride	16887-00-6	E235.Cl-L	0.10	mg/L		0.51	1.07	1.09	0.37	1.07
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L		3.24	2.92	2.94	0.0117	5.93
nitrate + nitrite (as N)	----	EC235.N+N	0.0050	mg/L		3.24	2.92	2.94	0.0117	5.93
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L		0.0038	0.0046	0.0044	<0.0010	0.0029
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		356	293	293	17.0	4.56
Ion Balance										
anion sum	----	EC101	0.10	meq/L		9.26	7.14	7.14	3.16	2.75
cation sum	----	EC101	0.10	meq/L		9.44	6.88	6.84	3.19	2.74
ion balance (cation-anion difference)	----	EC101	0.010	%		0.962	1.85	2.14	0.472	0.182
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0053	0.0285	0.0141	0.0018	0.0014
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		0.00012	<0.00010	<0.00010	<0.00010	<0.00010
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00051	0.00024	0.00023	0.00093	<0.00010
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.0160	0.0235	0.0235	0.0724	0.0166
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, dissolved	7440-42-8	E421	0.010	mg/L		0.170	0.074	0.072	0.053	0.036
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		0.000103	<0.0000500 DLM	<0.0000400 DLM	0.0000129	0.0000252

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	Leach Pad 2	Leach Pad 1	Dup 2	MW09-03-1	MW09-03-02
					Client sampling date / time	10-Jun-2021 15:25	10-Jun-2021 15:20	10-Jun-2021	13-Jun-2021 10:10	13-Jun-2021 10:30
						WR2100647-001	WR2100647-002	WR2100647-003	WR2100647-004	WR2100647-005
						Result	Result	Result	Result	Result
Dissolved Metals										
calcium, dissolved	7440-70-2	E421	0.050	mg/L		82.3	74.5	73.9	36.6	41.6
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		0.00011	<0.00010	<0.00010	<0.00010	<0.00010
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.0488	0.0135	0.0151	<0.00020	0.00140
iron, dissolved	7439-89-6	E421	0.010	mg/L		<0.010	0.028	0.012	0.351	<0.010
lead, dissolved	7439-92-1	E421	0.000050	mg/L		0.000078	<0.000050	<0.000050	<0.000050	<0.000050
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		0.0167	0.0036	0.0036	0.0036	0.0012
magnesium, dissolved	7439-95-4	E421	0.100	mg/L		55.2	25.0	24.9	11.3	5.26
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.0618	0.00176	0.00163	0.0843	0.00244
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		0.0244	0.0505	0.0509	0.00420	0.00367
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	0.00062	<0.00050
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, dissolved	7440-09-7	E421	0.100	mg/L		8.21	9.62	9.25	2.20	2.22
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.0632	0.0560	0.0565	0.000063	0.000239
silicon, dissolved	7440-21-3	E421	0.050	mg/L		2.14	2.37	2.39	5.04	5.01
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, dissolved	17341-25-2	E421	0.050	mg/L		13.3	19.8	19.8	8.17	4.07
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		2.82	0.703	0.702	0.942	0.284
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		124	102	101	5.73	1.37
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	0.00012	<0.00010
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		<0.00060 DLM	0.00130	<0.00060 DLM	<0.00030	<0.00030
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.000070	0.000552	0.000554	0.000900	0.00129
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		0.0050	0.0052	0.0060	0.0801	0.0428
zirconium, dissolved	7440-67-7	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
dissolved mercury filtration location	----	EP509	-	-		Field	Field	Field	Field	Field
dissolved metals filtration location	----	EP421	-	-		Field	Field	Field	Field	Field

Please refer to the General Comments section for an explanation of any qualifiers detected.

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID: MW12-05-05	----	----	----	----
					Client sampling date / time: 06-Jun-2021 13:30	----	----	----	----
					WR2100647-006	--------	--------	--------	--------
					Result	----	----	----	----
Physical Tests									
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	245	----	----	----	----
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----
alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	----	----	----	----
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	245	----	----	----	----
conductivity	----	E100	2.0	µS/cm	568	----	----	----	----
hardness (as CaCO3), dissolved	----	EC100	0.60	mg/L	267	----	----	----	----
pH	----	E108	0.10	pH units	8.22	----	----	----	----
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L	340	----	----	----	----
solids, total suspended [TSS]	----	E160-H	3.0	mg/L	<3.0	----	----	----	----
Anions and Nutrients									
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0071	----	----	----	----
chloride	16887-00-6	E235.Cl-L	0.10	mg/L	5.29	----	----	----	----
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	----	----	----	----
nitrate + nitrite (as N)	----	EC235.N+N	0.0050	mg/L	<0.0051	----	----	----	----
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	----	----	----	----
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	63.5	----	----	----	----
Ion Balance									
anion sum	----	EC101	0.10	meq/L	6.37	----	----	----	----
cation sum	----	EC101	0.10	meq/L	6.18	----	----	----	----
ion balance (cation-anion difference)	----	EC101	0.010	%	1.51	----	----	----	----
Dissolved Metals									
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0050 DLB	----	----	----	----
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	----	----	----	----
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00012	----	----	----	----
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0673	----	----	----	----
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	----	----	----	----
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	----	----	----	----
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.044	----	----	----	----
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000118	----	----	----	----
calcium, dissolved	7440-70-2	E421	0.050	mg/L	56.6	----	----	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	MW12-05-05	----	----	----	----
					Client sampling date / time	06-Jun-2021 13:30	----	----	----	----
						WR2100647-006	--------	--------	--------	--------
						Result	----	----	----	----
Dissolved Metals										
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	----	----	----	----
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	----	----	----	----
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.00091	----	----	----	----
iron, dissolved	7439-89-6	E421	0.010	mg/L		0.014	----	----	----	----
lead, dissolved	7439-92-1	E421	0.000050	mg/L		<0.000050	----	----	----	----
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		0.0040	----	----	----	----
magnesium, dissolved	7439-95-4	E421	0.100	mg/L		30.5	----	----	----	----
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.157	----	----	----	----
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L		<0.0000050	----	----	----	----
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		0.00482	----	----	----	----
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		0.00052	----	----	----	----
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	----	----	----	----
potassium, dissolved	7440-09-7	E421	0.100	mg/L		2.22	----	----	----	----
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.000069	----	----	----	----
silicon, dissolved	7440-21-3	E421	0.050	mg/L		6.10	----	----	----	----
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	----	----	----	----
sodium, dissolved	17341-25-2	E421	0.050	mg/L		18.0	----	----	----	----
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.961	----	----	----	----
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		21.2	----	----	----	----
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	----	----	----	----
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	----	----	----	----
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		<0.00030	----	----	----	----
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.00358	----	----	----	----
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	----	----	----	----
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		0.0089	----	----	----	----
zirconium, dissolved	7440-67-7	E421	0.00020	mg/L		<0.00020	----	----	----	----
dissolved mercury filtration location	----	EP509	-	-		Field	----	----	----	----
dissolved metals filtration location	----	EP421	-	-		Field	----	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2100647**	Page	: 1 of 14
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 18-Jun-2021 15:45
PO	: 2856 - 10-8102-07050	Issue Date	: 25-Jun-2021 14:21
C-O-C number	: 2021-06-16 D		
Sampler	: CR/BK/SS		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- Method Blank value outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Method Blank (MB) Values								
Dissolved Metals	QC-227099-001	----	aluminum, dissolved	7429-90-5	E421	0.0010 MB-LOR mg/L	0.001 mg/L	Blank result exceeds permitted value

Result Qualifiers

Qualifier	Description
MB-LOR	*Method Blank exceeds ALS DQO. Limits of Reporting have been adjusted for samples with positive hits below 5x blank level.*

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW09-03-02	E298	13-Jun-2021	24-Jun-2021	----	12 days	✓	24-Jun-2021	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW09-03-1	E298	13-Jun-2021	24-Jun-2021	----	12 days	✓	24-Jun-2021	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
Dup 2	E298	10-Jun-2021	24-Jun-2021	----	15 days	✓	24-Jun-2021	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
Leach Pad 1	E298	10-Jun-2021	24-Jun-2021	----	15 days	✓	24-Jun-2021	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
Leach Pad 2	E298	10-Jun-2021	24-Jun-2021	----	15 days	✓	24-Jun-2021	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW12-05-05	E298	06-Jun-2021	24-Jun-2021	----	19 days	✓	24-Jun-2021	28 days	1 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE										
MW12-05-05	E235.Cl-L	06-Jun-2021	----	----	----		19-Jun-2021	28 days	13 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE MW09-03-02	E235.Cl-L	13-Jun-2021	----	----	----		19-Jun-2021	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE MW09-03-1	E235.Cl-L	13-Jun-2021	----	----	----		19-Jun-2021	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE Dup 2	E235.Cl-L	10-Jun-2021	----	----	----		19-Jun-2021	28 days	9 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE Leach Pad 1	E235.Cl-L	10-Jun-2021	----	----	----		19-Jun-2021	28 days	9 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE Leach Pad 2	E235.Cl-L	10-Jun-2021	----	----	----		19-Jun-2021	28 days	9 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE MW12-05-05	E235.NO3-L	06-Jun-2021	----	----	----		19-Jun-2021	3 days	13 days	× EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE MW09-03-02	E235.NO3-L	13-Jun-2021	----	----	----		19-Jun-2021	3 days	7 days	× EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE MW09-03-1	E235.NO3-L	13-Jun-2021	----	----	----		19-Jun-2021	3 days	7 days	× EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE Dup 2	E235.NO3-L	10-Jun-2021	----	----	----		19-Jun-2021	3 days	9 days	× EHTR

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
Leach Pad 1	E235.NO3-L	10-Jun-2021	----	----	----		19-Jun-2021	3 days	9 days	× EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
Leach Pad 2	E235.NO3-L	10-Jun-2021	----	----	----		19-Jun-2021	3 days	9 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
MW12-05-05	E235.NO2-L	06-Jun-2021	----	----	----		19-Jun-2021	3 days	13 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
MW09-03-02	E235.NO2-L	13-Jun-2021	----	----	----		19-Jun-2021	3 days	7 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
MW09-03-1	E235.NO2-L	13-Jun-2021	----	----	----		19-Jun-2021	3 days	7 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
Dup 2	E235.NO2-L	10-Jun-2021	----	----	----		19-Jun-2021	3 days	9 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
Leach Pad 1	E235.NO2-L	10-Jun-2021	----	----	----		19-Jun-2021	3 days	9 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
Leach Pad 2	E235.NO2-L	10-Jun-2021	----	----	----		19-Jun-2021	3 days	9 days	× EHTR
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
MW12-05-05	E235.SO4	06-Jun-2021	----	----	----		19-Jun-2021	28 days	13 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
MW09-03-02	E235.SO4	13-Jun-2021	----	----	----		19-Jun-2021	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
MW09-03-1	E235.SO4	13-Jun-2021	----	----	----		19-Jun-2021	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
Dup 2	E235.SO4	10-Jun-2021	----	----	----		19-Jun-2021	28 days	9 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
Leach Pad 1	E235.SO4	10-Jun-2021	----	----	----		19-Jun-2021	28 days	9 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
Leach Pad 2	E235.SO4	10-Jun-2021	----	----	----		19-Jun-2021	28 days	9 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW09-03-02	E509	13-Jun-2021	23-Jun-2021	----	10 days	✓	23-Jun-2021	28 days	1 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW09-03-1	E509	13-Jun-2021	23-Jun-2021	----	10 days	✓	23-Jun-2021	28 days	1 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
Dup 2	E509	10-Jun-2021	23-Jun-2021	----	13 days	✓	23-Jun-2021	28 days	1 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
Leach Pad 1	E509	10-Jun-2021	23-Jun-2021	----	13 days	✓	23-Jun-2021	28 days	1 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) Leach Pad 2	E509	10-Jun-2021	23-Jun-2021	----	13 days	✓	23-Jun-2021	28 days	1 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) MW12-05-05	E509	06-Jun-2021	23-Jun-2021	----	17 days	✓	23-Jun-2021	28 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) Dup 2	E421	10-Jun-2021	21-Jun-2021	----	11 days	✓	23-Jun-2021	180 days	3 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) Leach Pad 1	E421	10-Jun-2021	21-Jun-2021	----	11 days	✓	23-Jun-2021	180 days	3 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) Leach Pad 2	E421	10-Jun-2021	21-Jun-2021	----	11 days	✓	23-Jun-2021	180 days	3 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW12-05-05	E421	06-Jun-2021	22-Jun-2021	----	16 days	✓	23-Jun-2021	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW09-03-02	E421	13-Jun-2021	21-Jun-2021	----	9 days	✓	23-Jun-2021	180 days	3 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW09-03-1	E421	13-Jun-2021	21-Jun-2021	----	9 days	✓	23-Jun-2021	180 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE MW12-05-05	E290	06-Jun-2021	----	----	----		19-Jun-2021	14 days	13 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE MW09-03-02	E290	13-Jun-2021	----	----	----		19-Jun-2021	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE MW09-03-1	E290	13-Jun-2021	----	----	----		19-Jun-2021	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE Dup 2	E290	10-Jun-2021	----	----	----		19-Jun-2021	14 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE Leach Pad 1	E290	10-Jun-2021	----	----	----		19-Jun-2021	14 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE Leach Pad 2	E290	10-Jun-2021	----	----	----		19-Jun-2021	14 days	9 days	✓
Physical Tests : Conductivity in Water										
HDPE MW12-05-05	E100	06-Jun-2021	----	----	----		19-Jun-2021	28 days	13 days	✓
Physical Tests : Conductivity in Water										
HDPE MW09-03-02	E100	13-Jun-2021	----	----	----		19-Jun-2021	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE MW09-03-1	E100	13-Jun-2021	----	----	----		19-Jun-2021	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE Dup 2	E100	10-Jun-2021	----	----	----		19-Jun-2021	28 days	9 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE Leach Pad 1	E100	10-Jun-2021	----	----	----		19-Jun-2021	28 days	9 days	✓
Physical Tests : Conductivity in Water										
HDPE Leach Pad 2	E100	10-Jun-2021	----	----	----		19-Jun-2021	28 days	9 days	✓
Physical Tests : pH by Meter										
HDPE MW09-03-02	E108	13-Jun-2021	----	----	----		19-Jun-2021	0.25 hrs	146 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE MW09-03-1	E108	13-Jun-2021	----	----	----		19-Jun-2021	0.25 hrs	147 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE Leach Pad 2	E108	10-Jun-2021	----	----	----		19-Jun-2021	0.25 hrs	213 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE Dup 2	E108	10-Jun-2021	----	----	----		19-Jun-2021	0.25 hrs	214 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE Leach Pad 1	E108	10-Jun-2021	----	----	----		19-Jun-2021	0.25 hrs	214 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE MW12-05-05	E108	06-Jun-2021	----	----	----		19-Jun-2021	0.25 hrs	311 hrs	× EHTR-FM
Physical Tests : TSS by Gravimetry										
HDPE MW12-05-05	E160-H	06-Jun-2021	----	----	----		19-Jun-2021	7 days	13 days	× EHTR

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE MW09-03-02	E160-H	13-Jun-2021	----	----	----		19-Jun-2021	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE MW09-03-1	E160-H	13-Jun-2021	----	----	----		19-Jun-2021	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE Dup 2	E160-H	10-Jun-2021	----	----	----		19-Jun-2021	7 days	9 days	× EHTR
Physical Tests : TSS by Gravimetry										
HDPE Leach Pad 1	E160-H	10-Jun-2021	----	----	----		19-Jun-2021	7 days	9 days	× EHTR
Physical Tests : TSS by Gravimetry										
HDPE Leach Pad 2	E160-H	10-Jun-2021	----	----	----		19-Jun-2021	7 days	9 days	× EHTR

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	225296	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	229407	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	225293	1	16	6.2	5.0	✓
Conductivity in Water	E100	225295	1	17	5.8	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	227932	2	29	6.9	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	226152	2	39	5.1	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	225290	1	17	5.8	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	225291	1	17	5.8	5.0	✓
pH by Meter	E108	225294	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	225292	1	17	5.8	5.0	✓
TSS by Gravimetry	E160-H	225138	1	6	16.6	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	225296	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	229407	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	225293	1	16	6.2	5.0	✓
Conductivity in Water	E100	225295	1	17	5.8	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	227932	2	29	6.9	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	226152	2	39	5.1	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	225290	1	17	5.8	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	225291	1	17	5.8	5.0	✓
pH by Meter	E108	225294	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	225292	1	17	5.8	5.0	✓
TSS by Gravimetry	E160-H	225138	1	6	16.6	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	225296	1	17	5.8	5.0	✓
Ammonia by Fluorescence	E298	229407	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	225293	1	16	6.2	5.0	✓
Conductivity in Water	E100	225295	1	17	5.8	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	227932	2	29	6.9	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	226152	2	39	5.1	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	225290	1	17	5.8	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	225291	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	225292	1	17	5.8	5.0	✓
TSS by Gravimetry	E160-H	225138	1	6	16.6	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	229407	1	20	5.0	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	225293	1	16	6.2	5.0	✓

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Dissolved Mercury in Water by CVAAS	E509	227932	2	29	6.9	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	226152	2	39	5.1	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	225290	1	17	5.8	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	225291	1	17	5.8	5.0	✓
Sulfate in Water by IC	E235.SO4	225292	1	17	5.8	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Vancouver - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Vancouver - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry	E160-H Vancouver - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
Chloride in Water by IC (Low Level)	E235.Cl-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 Vancouver - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Vancouver - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Vancouver - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).
TDS in Water (Calculation)	EC103 Vancouver - Environmental	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N Vancouver - Environmental	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Vancouver - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **WR2100647**	Page	: 1 of 14
Client	: Minto Explorations Ltd.	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 18-Jun-2021 15:45
PO	: 2856 - 10-8102-07050	Date Analysis Commenced	: 19-Jun-2021
C-O-C number	: 2021-06-16 D	Issue Date	: 25-Jun-2021 14:21
Sampler	: CR/BK/SS		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Dee Lee	Analyst	Metals, Burnaby, British Columbia
Ilnaz Badbezanchi	Team Leader - Metals preparation	Metals, Burnaby, British Columbia
Jashan Kaur	Lab Assistant	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 225138)											
WR2100647-001	Leach Pad 2	solids, total suspended [TSS]	----	E160-H	3.0	mg/L	<3.0	3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 225294)											
WR2100644-002	Anonymous	pH	----	E108	0.10	pH units	8.25	8.20	0.608%	4%	----
Physical Tests (QC Lot: 225295)											
WR2100644-002	Anonymous	conductivity	----	E100	2.0	µS/cm	481	482	0.208%	10%	----
Physical Tests (QC Lot: 225296)											
WR2100644-002	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	194	189	2.97%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	194	189	2.97%	20%	----
Anions and Nutrients (QC Lot: 225290)											
VA21B2318-009	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0360	0.0357	0.0003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 225291)											
VA21B2318-009	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 225292)											
VA21B2318-009	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	10.6	10.5	0.792%	20%	----
Anions and Nutrients (QC Lot: 225293)											
WR2100644-001	Anonymous	chloride	16887-00-6	E235.Cl-L	1.00	mg/L	17.8	17.9	0.264%	20%	----
Anions and Nutrients (QC Lot: 229407)											
VA21B2297-004	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	1.39	1.39	0.158%	20%	----
Dissolved Metals (QC Lot: 226152)											
FJ2100434-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0219	0.0216	1.24%	20%	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00012	0.00010	0.00002	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0785	0.0783	0.214%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000371	0.0000344	0.0000027	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	25.6	25.6	0.0358%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 226152) - continued											
FJ2100434-001	Anonymous	chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00057	0.00061	0.00004	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	0.039	0.037	0.002	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0021	0.0021	0.00003	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	4.44	4.39	1.27%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00059	0.00058	0.000008	Diff <2x LOR	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000250	0.000272	0.000022	Diff <2x LOR	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00115	0.00118	0.00002	Diff <2x LOR	----
		phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.343	0.350	0.007	Diff <2x LOR	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000295	0.000335	0.000040	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	1.49	1.48	1.30%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	17341-25-2	E421	0.050	mg/L	0.895	0.889	0.684%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0385	0.0385	0.113%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	<0.50	0.52	0.02	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	0.00075	0.00079	0.00004	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000091	0.000088	0.000003	Diff <2x LOR	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0015	0.0015	0.00009	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 227099)											
FJ2100434-005	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0126	0.0135	7.01%	20%	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00011	0.00011	0.000001	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00013	0.00012	0.000009	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0948	0.0939	0.945%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000305	0.0000298	0.0000007	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	31.8	30.3	4.66%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 227099) - continued											
FJ2100434-005	Anonymous	chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00092	0.00083	0.00009	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	0.037	0.038	0.0010	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0029	0.0029	0.00005	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	4.91	4.95	0.741%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00101	0.00107	5.35%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000315	0.000296	0.000019	Diff <2x LOR	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00134	0.00136	0.00002	Diff <2x LOR	----
		phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.356	0.362	0.007	Diff <2x LOR	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000327	0.000331	0.000004	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	1.54	1.60	3.83%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	17341-25-2	E421	0.050	mg/L	1.25	1.25	0.402%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.0501	0.0494	1.48%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	0.50	<0.50	0.003	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	0.00072	0.00070	0.00002	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000129	0.000128	0.653%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 227932)											
WR2100644-003	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 227933)											
WR2100647-004	MW09-03-1	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 225138)						
solids, total suspended [TSS]	----	E160-H	3	mg/L	<3.0	----
Physical Tests (QCLot: 225295)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 225296)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	1.0	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	1.0	----
Anions and Nutrients (QCLot: 225290)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 225291)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 225292)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 225293)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 229407)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Dissolved Metals (QCLot: 226152)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 226152) - continued						
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	17341-25-2	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 227099)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	# 0.0010	MB-LOR
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 227099) - continued						
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	17341-25-2	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 227932)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 227933)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----

Qualifiers

Qualifier	Description
MB-LOR	*Method Blank exceeds ALS DQO. Limits of Reporting have been adjusted for samples with positive hits below 5x blank level.*

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 225138)									
solids, total suspended [TSS]	----	E160-H	3	mg/L	150 mg/L	90.7	85.0	115	----
Physical Tests (QCLot: 225294)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 225295)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	99.2	90.0	110	----
Physical Tests (QCLot: 225296)									
alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	98.2	75.0	125	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	100	85.0	115	----
Anions and Nutrients (QCLot: 225290)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 225291)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 225292)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	106	90.0	110	----
Anions and Nutrients (QCLot: 225293)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 229407)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	104	85.0	115	----
Dissolved Metals (QCLot: 226152)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	110	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	99.1	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	100	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	101	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	100	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	97.4	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	97.0	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	97.2	80.0	120	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	102	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	97.5	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	102	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 226152) - continued									
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	99.0	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	99.0	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	105	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	100	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	114	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	112	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	97.1	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	100.0	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	96.7	80.0	120	----
sodium, dissolved	17341-25-2	E421	0.05	mg/L	50 mg/L	108	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	100	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	106	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	101	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	98.2	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	101	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	99.7	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	104	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	101	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	91.1	80.0	120	----
Dissolved Metals (QCLot: 227099)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	103	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	104	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	101	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	104	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	81.7	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	99.9	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	100	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	103	80.0	120	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	98.0	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	99.9	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	98.0	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	102	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	111	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 227099) - continued									
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	101	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	103	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	98.0	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	110	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	104	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	103	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	95.0	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	101	80.0	120	----
sodium, dissolved	17341-25-2	E421	0.05	mg/L	50 mg/L	104	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	97.8	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	101	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	96.7	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	95.3	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	99.4	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	101	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	93.3	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	99.2	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	99.2	80.0	120	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 225290)										
WR2100644-002	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.53 mg/L	2.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 225291)										
WR2100644-002	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.489 mg/L	0.5 mg/L	97.8	75.0	125	----
Anions and Nutrients (QCLot: 225292)										
WR2100644-002	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	98.9 mg/L	100 mg/L	98.9	75.0	125	----
Anions and Nutrients (QCLot: 225293)										
WR2100644-002	Anonymous	chloride	16887-00-6	E235.Cl-L	102 mg/L	100 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 229407)										
VA21B2297-005	Anonymous	ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.5 mg/L	ND	75.0	125	MS-B
Dissolved Metals (QCLot: 226152)										
FJ2100434-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		barium, dissolved	7440-39-3	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0407 mg/L	0.04 mg/L	102	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00861 mg/L	0.01 mg/L	86.1	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.096 mg/L	0.1 mg/L	95.9	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00418 mg/L	0.004 mg/L	104	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		chromium, dissolved	7440-47-3	E421	0.0409 mg/L	0.04 mg/L	102	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0203 mg/L	0.02 mg/L	101	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0203 mg/L	0.02 mg/L	101	70.0	130	----
		iron, dissolved	7439-89-6	E421	2.02 mg/L	2 mg/L	101	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0962 mg/L	0.1 mg/L	96.2	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0194 mg/L	0.02 mg/L	96.9	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0413 mg/L	0.04 mg/L	103	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	11.2 mg/L	10 mg/L	112	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 226152) - continued										
FJ2100434-001	Anonymous	potassium, dissolved	7440-09-7	E421	4.18 mg/L	4 mg/L	104	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0452 mg/L	0.04 mg/L	113	70.0	130	----
		silicon, dissolved	7440-21-3	E421	9.55 mg/L	10 mg/L	95.5	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00387 mg/L	0.004 mg/L	96.7	70.0	130	----
		sodium, dissolved	17341-25-2	E421	1.97 mg/L	2 mg/L	98.4	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	21.6 mg/L	20 mg/L	108	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00408 mg/L	0.004 mg/L	102	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0198 mg/L	0.02 mg/L	98.8	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0402 mg/L	0.04 mg/L	100	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.00408 mg/L	0.004 mg/L	102	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.106 mg/L	0.1 mg/L	106	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.428 mg/L	0.4 mg/L	107	70.0	130	----
		zirconium, dissolved	7440-67-7	E421	0.0387 mg/L	0.04 mg/L	96.7	70.0	130	----
Dissolved Metals (QCLot: 227099)										
FJ2100434-005	Anonymous	aluminum, dissolved	7429-90-5	E421	0.201 mg/L	0.2 mg/L	100	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0198 mg/L	0.02 mg/L	98.9	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		barium, dissolved	7440-39-3	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0411 mg/L	0.04 mg/L	103	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00852 mg/L	0.01 mg/L	85.2	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.104 mg/L	0.1 mg/L	104	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00382 mg/L	0.004 mg/L	95.4	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		chromium, dissolved	7440-47-3	E421	0.0388 mg/L	0.04 mg/L	96.9	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0196 mg/L	0.02 mg/L	98.1	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		iron, dissolved	7439-89-6	E421	1.90 mg/L	2 mg/L	95.0	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0198 mg/L	0.02 mg/L	98.8	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.106 mg/L	0.1 mg/L	106	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.0197 mg/L	0.02 mg/L	98.6	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0197 mg/L	0.02 mg/L	98.6	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0382 mg/L	0.04 mg/L	95.5	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	10.4 mg/L	10 mg/L	104	70.0	130	----
		potassium, dissolved	7440-09-7	E421	3.90 mg/L	4 mg/L	97.6	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 227099) - continued										
FJ2100434-005	Anonymous	selenium, dissolved	7782-49-2	E421	0.0408 mg/L	0.04 mg/L	102	70.0	130	----
		silicon, dissolved	7440-21-3	E421	9.03 mg/L	10 mg/L	90.3	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00394 mg/L	0.004 mg/L	98.5	70.0	130	----
		sodium, dissolved	17341-25-2	E421	1.95 mg/L	2 mg/L	97.6	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	20.0 mg/L	20 mg/L	100	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00387 mg/L	0.004 mg/L	96.8	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0190 mg/L	0.02 mg/L	94.9	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0377 mg/L	0.04 mg/L	94.2	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.00400 mg/L	0.004 mg/L	100	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.0992 mg/L	0.1 mg/L	99.2	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.387 mg/L	0.4 mg/L	96.7	70.0	130	----
		zirconium, dissolved	7440-67-7	E421	0.0393 mg/L	0.04 mg/L	98.2	70.0	130	----
Dissolved Metals (QCLot: 227932)										
WR2100644-004	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000962 mg/L	0.0001 mg/L	96.2	70.0	130	----
Dissolved Metals (QCLot: 227933)										
WR2100647-005	MW09-03-02	mercury, dissolved	7439-97-6	E509	0.0000961 mg/L	0.0001 mg/L	96.1	70.0	130	----

Qualifiers

Qualifier	Description
MS-B	*Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.*

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 2021-06-16 D

Page 1 of 1

Report To	Contact and company name below will appear on the final report
Company:	Minto Explorations Ltd.
Contact:	Minto Environment - Coordinator
Phone:	1-604-759-4659
	Company address below will appear on the final report
Street:	61 Wasson Place
City/Province:	Whitehorse, YT
Postal Code:	Y1A 0H7
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Minto Explorations Ltd.
Contact:	Katie Androsoff

Report Format / Distribution

Select Report Format: ☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: mintoenvironment@mintomine.com
Email 2:
Email 3:

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: ap@mintomine.com
Email 2:

Select Service Level Below - Please confirm all E&P TATs with your AM - surcharges will apply

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
	4 day [P4] ☐		1 Business day [E1] ☐
	3 day [P3] ☐		Same Day, Weekend or Statutory holiday [E0] ☐
	2 day [P2] ☐		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #:
Job #:
PO / AFE: PO2856 (Groundwater) - 10-8102-07050
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only): WR2100647

ALS Contact: Sampler: CR/BK/SS

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total Metals(TM) P	Dissolved Metals (DM) F/P	Total Mercury, Hardness P	Dissolved Mercury F/P	Ammonia (Total Nutrients) P	Dissolved Organic Carbon (DOC) F/P	pH, Cond., TSS, TDS, Alkalinity, Anions	Dissolved Bromide (Br-D)	Number of Containers
	Leach Pad 2	10-Jun-21	15:25	Water		R		R	R		R		4
	Leach Pad 1	10-Jun-21	15:20	Water		R		R	R		R		4
	DUP 2	10-Jun-21		Water		R		R	R		R		4
	MW09-03-01	13-Jun-21	10:10	Water		R		R	R		R		4
	MW09-03-02	13-Jun-21	10:30	Water		R		R	R		R		4
	MW12-05-05	06-Jun-21	13:30	water		R		R	R		R		4

Environmental Division Whitehorse
Work Order Reference
WR2100647

Telephone : +1 867 668 6689

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ ☑ NO
Are samples for human drinking water use? ☐ ☑ NO

Special Instructions / Sp ... op-down list below

TSS-regular

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☑ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
				12	14

SHIPMENT RELEASE (client use)			...ON (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Corey Roberts	Date: 2021-06-16	Time:	Received by:	Date:	Time:	Received by: FIA	Date: 6/19/8	Time: 3:45P

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2100912**	Page	: 1 of 4
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 28-Jul-2021 15:55
PO	: 2857 - 10-8103-070	Date Analysis Commenced	: 31-Jul-2021
C-O-C number	: 2021-07-24 B	Issue Date	: 06-Aug-2021 22:23
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Dee Lee	Analyst	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia
Ruby Pham	Lab Assistant	Metals, Burnaby, British Columbia
Sristika Chand	Lab Analyst	Metals, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
%	percent
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
DLM	*Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LP1	LP2	DUP	----	----
					Client sampling date / time	24-Jul-2021 09:40	24-Jul-2021 09:25	24-Jul-2021	----	----
						WR2100912-001	WR2100912-002	WR2100912-003	--------	--------
						Result	Result	Result	----	----
Physical Tests										
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L		88.2	80.3	80.2	----	----
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	----	----
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	----	----
alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	----	----
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		88.2	80.3	80.2	----	----
conductivity	----	E100	2.0	µS/cm		832	709	707	----	----
hardness (as CaCO3), dissolved	----	EC100	0.60	mg/L		400	354	357	----	----
pH	----	E108	0.10	pH units		8.16	8.19	8.21	----	----
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L		603	478	478	----	----
solids, total suspended [TSS]	----	E160-L	1.0	mg/L		2.9	1.5	2.0	----	----
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.0093	<0.0050	<0.0050	----	----
chloride	16887-00-6	E235.Cl-L	0.10	mg/L		1.36	0.38	0.28	----	----
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L		2.14	2.20	2.08	----	----
nitrate + nitrite (as N)	----	EC235.N+N	0.0050	mg/L		2.15	2.20	2.08	----	----
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L		0.0088	0.0037	0.0038	----	----
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		349	278	278	----	----
Ion Balance										
anion sum	----	EC101	0.10	meq/L		9.22	7.56	7.55	----	----
cation sum	----	EC101	0.10	meq/L		9.08	7.76	7.83	----	----
ion balance (cation-anion difference)	----	EC101	0.010	%		0.765	1.30	1.82	----	----
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0047	0.0105	0.0086	----	----
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		0.00061	0.00022	0.00022	----	----
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00029	0.00052	0.00055	----	----
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.0239	0.0302	0.0303	----	----
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	<0.000020	<0.000020	----	----
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
boron, dissolved	7440-42-8	E421	0.010	mg/L		0.143	0.244	0.257	----	----
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		<0.0000550 DLM	0.0000724	0.0000709	----	----
calcium, dissolved	7440-70-2	E421	0.050	mg/L		121	71.9	72.5	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LP1	LP2	DUP	----	----
					Client sampling date / time	24-Jul-2021 09:40	24-Jul-2021 09:25	24-Jul-2021	----	----
						WR2100912-001	WR2100912-002	WR2100912-003	--------	--------
						Result	Result	Result	----	----
Dissolved Metals										
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.0307	0.0314	0.0304	----	----
iron, dissolved	7439-89-6	E421	0.010	mg/L		<0.010	0.019	<0.010	----	----
lead, dissolved	7439-92-1	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		0.0056	0.0196	0.0198	----	----
magnesium, dissolved	7439-95-4	E421	0.100	mg/L		23.7	42.3	42.8	----	----
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.00817	0.0506	0.0508	----	----
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	----	----
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		0.0510	0.0372	0.0378	----	----
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	----	----
potassium, dissolved	7440-09-7	E421	0.100	mg/L		9.61	8.93	8.92	----	----
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.0436	0.0406	0.0394	----	----
silicon, dissolved	7440-21-3	E421	0.050	mg/L		6.24	2.86	2.80	----	----
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
sodium, dissolved	17341-25-2	E421	0.050	mg/L		19.4	10.5	10.6	----	----
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		1.15	2.30	2.33	----	----
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		113	93.8	92.2	----	----
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		<0.00030	0.00086	0.00048	----	----
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.000600	0.000058	0.000057	----	----
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		0.0037	0.0050	0.0070	----	----
zirconium, dissolved	7440-67-7	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----
dissolved mercury filtration location	----	EP509	-	-		Field	Field	Field	----	----
dissolved metals filtration location	----	EP421	-	-		Field	Field	Field	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2100912**	Page	: 1 of 9
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 28-Jul-2021 15:55
PO	: 2857 - 10-8103-070	Issue Date	: 06-Aug-2021 22:23
C-O-C number	: 2021-07-24 B		
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
DUP	E298	24-Jul-2021	04-Aug-2021	----	----		04-Aug-2021	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
LP1	E298	24-Jul-2021	04-Aug-2021	----	----		04-Aug-2021	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
LP2	E298	24-Jul-2021	04-Aug-2021	----	----		04-Aug-2021	28 days	11 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE										
DUP	E235.Cl-L	24-Jul-2021	----	----	----		31-Jul-2021	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE										
LP1	E235.Cl-L	24-Jul-2021	----	----	----		31-Jul-2021	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE										
LP2	E235.Cl-L	24-Jul-2021	----	----	----		31-Jul-2021	28 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
DUP	E235.NO3-L	24-Jul-2021	----	----	----		31-Jul-2021	3 days	7 days	× EHTR

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE LP1	E235.NO3-L	24-Jul-2021	----	----	----		31-Jul-2021	3 days	7 days	× EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE LP2	E235.NO3-L	24-Jul-2021	----	----	----		31-Jul-2021	3 days	7 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE DUP	E235.NO2-L	24-Jul-2021	----	----	----		31-Jul-2021	3 days	7 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE LP1	E235.NO2-L	24-Jul-2021	----	----	----		31-Jul-2021	3 days	7 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE LP2	E235.NO2-L	24-Jul-2021	----	----	----		31-Jul-2021	3 days	7 days	× EHTR
Anions and Nutrients : Sulfate in Water by IC										
HDPE DUP	E235.SO4	24-Jul-2021	----	----	----		31-Jul-2021	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE LP1	E235.SO4	24-Jul-2021	----	----	----		31-Jul-2021	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE LP2	E235.SO4	24-Jul-2021	----	----	----		31-Jul-2021	28 days	7 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) DUP	E509	24-Jul-2021	06-Aug-2021	----	----		06-Aug-2021	28 days	13 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
LP1	E509	24-Jul-2021	06-Aug-2021	----	----		06-Aug-2021	28 days	13 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
LP2	E509	24-Jul-2021	06-Aug-2021	----	----		06-Aug-2021	28 days	13 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
DUP	E421	24-Jul-2021	02-Aug-2021	----	----		03-Aug-2021	180 days	10 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
LP1	E421	24-Jul-2021	02-Aug-2021	----	----		03-Aug-2021	180 days	10 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
LP2	E421	24-Jul-2021	02-Aug-2021	----	----		03-Aug-2021	180 days	10 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
DUP	E290	24-Jul-2021	----	----	----		31-Jul-2021	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
LP1	E290	24-Jul-2021	----	----	----		31-Jul-2021	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
LP2	E290	24-Jul-2021	----	----	----		31-Jul-2021	14 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE										
DUP	E100	24-Jul-2021	----	----	----		31-Jul-2021	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE LP1	E100	24-Jul-2021	----	----	----		31-Jul-2021	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE LP2	E100	24-Jul-2021	----	----	----		31-Jul-2021	28 days	7 days	✓
Physical Tests : pH by Meter										
HDPE DUP	E108	24-Jul-2021	----	----	----		31-Jul-2021	0.25 hrs	163 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE LP1	E108	24-Jul-2021	----	----	----		31-Jul-2021	0.25 hrs	168 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE LP2	E108	24-Jul-2021	----	----	----		31-Jul-2021	0.25 hrs	168 hrs	× EHTR-FM
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE DUP	E160-L	24-Jul-2021	----	----	----		31-Jul-2021	7 days	6 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE LP1	E160-L	24-Jul-2021	----	----	----		31-Jul-2021	7 days	7 days	✓
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE LP2	E160-L	24-Jul-2021	----	----	----		31-Jul-2021	7 days	7 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	256251	1	14	7.1	5.0	✓
Ammonia by Fluorescence	E298	257808	1	14	7.1	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	256258	1	5	20.0	5.0	✓
Conductivity in Water	E100	256250	1	14	7.1	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	260461	1	17	5.8	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	256887	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	256256	1	9	11.1	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	256257	1	9	11.1	5.0	✓
pH by Meter	E108	256249	1	14	7.1	5.0	✓
Sulfate in Water by IC	E235.SO4	256252	1	14	7.1	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	256251	1	14	7.1	5.0	✓
Ammonia by Fluorescence	E298	257808	1	14	7.1	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	256258	1	5	20.0	5.0	✓
Conductivity in Water	E100	256250	1	14	7.1	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	260461	1	17	5.8	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	256887	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	256256	1	9	11.1	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	256257	1	9	11.1	5.0	✓
pH by Meter	E108	256249	1	14	7.1	5.0	✓
Sulfate in Water by IC	E235.SO4	256252	1	14	7.1	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	256119	1	18	5.5	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	256251	1	14	7.1	5.0	✓
Ammonia by Fluorescence	E298	257808	1	14	7.1	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	256258	1	5	20.0	5.0	✓
Conductivity in Water	E100	256250	1	14	7.1	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	260461	1	17	5.8	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	256887	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	256256	1	9	11.1	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	256257	1	9	11.1	5.0	✓
Sulfate in Water by IC	E235.SO4	256252	1	14	7.1	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	256119	1	18	5.5	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	257808	1	14	7.1	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	256258	1	5	20.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	260461	1	17	5.8	5.0	✓

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Dissolved Metals in Water by CRC ICPMS	E421	256887	1	20	5.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	256256	1	9	11.1	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	256257	1	9	11.1	5.0	✓
Sulfate in Water by IC	E235.SO4	256252	1	14	7.1	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Vancouver - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Vancouver - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry (Low Level)	E160-L Vancouver - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
Chloride in Water by IC (Low Level)	E235.Cl-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 Vancouver - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Vancouver - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Vancouver - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).
TDS in Water (Calculation)	EC103 Vancouver - Environmental	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N Vancouver - Environmental	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Vancouver - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order	: **WR2100912**	Page	: 1 of 10
Client	: Minto Explorations Ltd.	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 28-Jul-2021 15:55
PO	: 2857 - 10-8103-070	Date Analysis Commenced	: 31-Jul-2021
C-O-C number	: 2021-07-24 B	Issue Date	: 06-Aug-2021 22:23
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Dee Lee	Analyst	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia
Ruby Pham	Lab Assistant	Metals, Burnaby, British Columbia
Sristika Chand	Lab Analyst	Metals, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 256249)											
VA21B5709-001	Anonymous	pH	----	E108	0.10	pH units	7.77	7.78	0.129%	4%	----
Physical Tests (QC Lot: 256250)											
VA21B5709-001	Anonymous	conductivity	----	E100	2.0	µS/cm	240	242	0.830%	10%	----
Physical Tests (QC Lot: 256251)											
VA21B5709-001	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	44.2	44.6	0.901%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	44.2	44.6	0.901%	20%	----
Anions and Nutrients (QC Lot: 256252)											
VA21B5806-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	60.6	60.6	0.131%	20%	----
Anions and Nutrients (QC Lot: 256256)											
VA21B5806-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.243	0.243	0.0935%	20%	----
Anions and Nutrients (QC Lot: 256257)											
VA21B5806-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0081	0.0081	0.00002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 256258)											
WR2100911-001	Anonymous	chloride	16887-00-6	E235.Cl-L	0.10	mg/L	0.36	0.35	0.006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 257808)											
VA21B5766-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.250	mg/L	14.4	14.2	1.36%	20%	----
Dissolved Metals (QC Lot: 256887)											
VA21B5779-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00011	0.00011	0.000003	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00084	0.00084	0.000007	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.00799	0.00827	3.43%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.062	0.061	0.0009	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000200	mg/L	<0.0000200	<0.0000200	0	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	230	225	2.32%	20%	----
		chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00225	0.00225	0.0122%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 256887) - continued											
VA21B5779-001	Anonymous	copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00309	0.00299	3.29%	20%	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	0.026	0.026	0.0004	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0031	0.0030	0.00008	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	26.4	25.7	2.45%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0278	0.0281	1.000%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0338	0.0332	1.79%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00126	0.00102	0.00024	Diff <2x LOR	----
		phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	4.72	4.85	2.55%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000484	0.000509	0.000024	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	4.57	4.45	2.64%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	17341-25-2	E421	0.050	mg/L	84.8	83.7	1.31%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.722	0.707	2.04%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	249	242	2.81%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00221	0.00222	0.379%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 260461)											
CG2103031-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 256119)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 256250)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 256251)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Anions and Nutrients (QCLot: 256252)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 256256)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 256257)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 256258)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 257808)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Dissolved Metals (QCLot: 256887)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 256887) - continued						
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	17341-25-2	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 260461)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 256119)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	101	85.0	115	----
Physical Tests (QCLot: 256249)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 256250)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	98.7	90.0	110	----
Physical Tests (QCLot: 256251)									
alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	102	75.0	125	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	101	85.0	115	----
Anions and Nutrients (QCLot: 256252)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 256256)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 256257)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.6	90.0	110	----
Anions and Nutrients (QCLot: 256258)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 257808)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	100	85.0	115	----
Dissolved Metals (QCLot: 256887)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	100.0	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	101	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	99.4	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	100	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	100	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	103	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	102	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	101	80.0	120	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	98.7	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	98.8	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	105	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 256887) - continued									
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	99.3	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	102	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	99.1	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	98.8	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	100	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	97.7	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	104	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	103	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	98.3	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	93.5	80.0	120	----
sodium, dissolved	17341-25-2	E421	0.05	mg/L	50 mg/L	104	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	98.4	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	93.8	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	99.6	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	95.5	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	98.8	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	96.6	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	106	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	95.6	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	100	80.0	120	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 256252)										
WR2100911-002	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 256256)										
WR2100911-002	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.53 mg/L	2.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 256257)										
WR2100911-002	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.499 mg/L	0.5 mg/L	99.9	75.0	125	----
Anions and Nutrients (QCLot: 256258)										
WR2100911-002	Anonymous	chloride	16887-00-6	E235.Cl-L	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 257808)										
VA21B5813-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	MS-B
Dissolved Metals (QCLot: 256887)										
VA21B5779-002	Anonymous	aluminum, dissolved	7429-90-5	E421	0.192 mg/L	0.2 mg/L	96.3	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0198 mg/L	0.02 mg/L	99.2	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.0182 mg/L	0.02 mg/L	91.0	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0392 mg/L	0.04 mg/L	98.1	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00840 mg/L	0.01 mg/L	84.0	70.0	130	----
		boron, dissolved	7440-42-8	E421	ND mg/L	0.1 mg/L	ND	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00390 mg/L	0.004 mg/L	97.4	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		chromium, dissolved	7440-47-3	E421	0.0385 mg/L	0.04 mg/L	96.3	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0193 mg/L	0.02 mg/L	96.4	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0183 mg/L	0.02 mg/L	91.7	70.0	130	----
		iron, dissolved	7439-89-6	E421	1.96 mg/L	2 mg/L	97.8	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0184 mg/L	0.02 mg/L	91.8	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0992 mg/L	0.1 mg/L	99.2	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0370 mg/L	0.04 mg/L	92.5	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	10.1 mg/L	10 mg/L	101	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 256887) - continued										
VA21B5779-002	Anonymous	potassium, dissolved	7440-09-7	E421	4.09 mg/L	4 mg/L	102	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0436 mg/L	0.04 mg/L	109	70.0	130	----
		silicon, dissolved	7440-21-3	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00281 mg/L	0.004 mg/L	70.3	70.0	130	----
		sodium, dissolved	17341-25-2	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00368 mg/L	0.004 mg/L	91.9	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0192 mg/L	0.02 mg/L	95.8	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0398 mg/L	0.04 mg/L	99.5	70.0	130	----
		uranium, dissolved	7440-61-1	E421	ND mg/L	0.004 mg/L	ND	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.404 mg/L	0.4 mg/L	101	70.0	130	----
		zirconium, dissolved	7440-67-7	E421	0.0398 mg/L	0.04 mg/L	99.6	70.0	130	----
Dissolved Metals (QCLot: 260461)										
CG2103031-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000979 mg/L	0.0001 mg/L	97.9	70.0	130	----

Qualifiers

Qualifier	Description
MS-B	*Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.*

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 2021-07-24 B

Environmental Division
Whitehorse
Work Order Reference
WR2100912

Telephone : +1 867 668 6689

Report To	Contact and company name below will appear on the final report
Company:	Minto Explorations Ltd.
Contact:	Minto Environment - Coordinator
Phone:	1-604-759-4659
	Company address below will appear on the final report
Street:	61 Wasson Place
City/Province:	Whitehorse
Postal Code:	Y1A 0H7
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Minto Explorations Ltd.
Contact:	Katie Androsoff

Report Format / Distribution

Select Report Format: ☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax mintoenvironment@mintomine.com
Email 2
Email 3

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax ap@mintomine.com
Email 2

Project Information

ALS Account # / Quote #:	
Job #:	
PO / AFE:	PO2857 (Seepage) - 10-8103-07050
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only)

ALS Contact: **Sampler:**

Select Service Level Below - Please confirm all E&P TATs with

Regular [R] ☑ Standard TAT if receiv

PRIORITY (Business Days): 4 day [P4] ☐ | 3 day [P3] ☐ | 2 day [P2] ☐

EMERGENCY: 1

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service le

Analysis R

Indicate Filtered (F), Preserved (P) or Filtered a

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	Total Metals(TM) P	Disolved Metals (DM) F/P	Total Mercury, Hardness P	Dissolved Mercury F/P	Ammonia (Total Nutrients) P	Dissolved Organic Carbon (DOC) F/P	pH, Cond., TSS, TDS, Alkalinity, Anions						Number of Contain
	LP1 ✓	24-07-21	9:40	Water		R		R	R		R						4
	LP2 ✓	24-07-21	9:25	Water		R		R	R		R						4
	DUP ✓	24-07-21		Water		R		R	R		R						4

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?
☐ YES ☑ NO

Are samples for human drinking water use?
☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
2	6				

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Danielle Thorne	7/24/2021	Time:	Received by:	Date: July 28	Time: 355	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2101063**	Page	: 1 of 4
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: PO2857 (Seepage) - 10-8103-07050	Date Samples Received	: 19-Aug-2021 13:15
PO	: ----	Date Analysis Commenced	: 22-Aug-2021
C-O-C number	: 2021-08-18 A	Issue Date	: 27-Aug-2021 11:40
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Dee Lee	Analyst	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Ruby Pham	Lab Assistant	Metals, Burnaby, British Columbia
Sristika Chand	Lab Analyst	Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
µS/cm	Microsiemens per centimetre
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
DLDS	*Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.*
DLM	*Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LP1	LP2	DUP	----	----
					Client sampling date / time	14-Aug-2021 07:40	14-Aug-2021 07:20	14-Aug-2021	----	----
						WR2101063-001	WR2101063-002	WR2101063-003	--------	--------
						Result	Result	Result	----	----
Physical Tests										
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L		73.2	65.6	65.8	----	----
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	----	----
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	----	----
alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	----	----
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		73.2	65.6	65.8	----	----
conductivity	----	E100	2.0	µS/cm		806	988	988	----	----
hardness (as CaCO3), dissolved	----	EC100	0.60	mg/L		365	502	505	----	----
pH	----	E108	0.10	pH units		8.03	7.99	7.98	----	----
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L		565	710	715	----	----
solids, total suspended [TSS]	----	E160-L	1.0	mg/L		<1.0	<1.0	<1.0	----	----
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.0119	0.0060	<0.0050	----	----
chloride	16887-00-6	E235.Cl-L	0.10	mg/L		0.87	<0.50 DLDS	0.61	----	----
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L		1.20	2.98	3.00	----	----
nitrate + nitrite (as N)	----	EC235.N+N	0.0050	mg/L		1.21	2.98	3.00	----	----
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L		0.0087	<0.0050 DLDS	<0.0050 DLDS	----	----
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		339	464	467	----	----
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0012	0.0025	0.0029	----	----
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		0.00042	0.00011	0.00011	----	----
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00026	0.00058	0.00055	----	----
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.0236	0.0290	0.0297	----	----
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	<0.000020	<0.000020	----	----
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
boron, dissolved	7440-42-8	E421	0.010	mg/L		0.149	0.249	0.251	----	----
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		<0.0000200 DLM	0.000122	0.000137	----	----
calcium, dissolved	7440-70-2	E421	0.050	mg/L		110	105	106	----	----
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.0155	0.0388	0.0387	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LP1	LP2	DUP	----	----
					Client sampling date / time	14-Aug-2021 07:40	14-Aug-2021 07:20	14-Aug-2021	----	----
						WR2101063-001	WR2101063-002	WR2101063-003	--------	--------
						Result	Result	Result	----	----
Dissolved Metals										
iron, dissolved	7439-89-6	E421	0.010	mg/L		<0.010	<0.010	<0.010	----	----
lead, dissolved	7439-92-1	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		0.0053	0.0214	0.0213	----	----
magnesium, dissolved	7439-95-4	E421	0.100	mg/L		22.0	58.3	58.4	----	----
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.00227	0.0634	0.0640	----	----
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	----	----
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		0.0540	0.0440	0.0437	----	----
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	----	----
potassium, dissolved	7440-09-7	E421	0.100	mg/L		9.14	10.4	10.8	----	----
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.0418	0.0616	0.0604	----	----
silicon, dissolved	7440-21-3	E421	0.050	mg/L		6.19	2.93	2.92	----	----
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
sodium, dissolved	17341-25-2	E421	0.050	mg/L		18.0	11.3	11.4	----	----
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		1.11	3.37	3.31	----	----
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		123	166	162	----	----
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		<0.00030	<0.00030	<0.00030	----	----
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.000633	0.000140	0.000134	----	----
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		0.0070	0.0083	0.0077	----	----
zirconium, dissolved	7440-67-7	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----
dissolved mercury filtration location	----	EP509	-	-		Field	Field	Field	----	----
dissolved metals filtration location	----	EP421	-	-		Field	Field	Field	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2101063**	Page	: 1 of 9
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: PO2857 (Seepage) - 10-8103-07050	Date Samples Received	: 19-Aug-2021 13:15
PO	: ----	Issue Date	: 27-Aug-2021 11:40
C-O-C number	: 2021-08-18 A		
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (lab preserved) LP1	E298	14-Aug-2021	22-Aug-2021	3 days	8 days	✗ EHTR	25-Aug-2021	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (lab preserved) LP2	E298	14-Aug-2021	22-Aug-2021	3 days	8 days	✗ EHTR	25-Aug-2021	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (lab preserved) DUP	E298	14-Aug-2021	22-Aug-2021	3 days	9 days	✗ EHTR	25-Aug-2021	28 days	3 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE LP1	E235.Cl-L	14-Aug-2021	----	----	----		24-Aug-2021	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE LP2	E235.Cl-L	14-Aug-2021	----	----	----		24-Aug-2021	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE DUP	E235.Cl-L	14-Aug-2021	----	----	----		24-Aug-2021	28 days	11 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE LP1	E235.NO3-L	14-Aug-2021	----	----	----		24-Aug-2021	3 days	10 days	✗ EHTR

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE LP2	E235.NO3-L	14-Aug-2021	----	----	----		24-Aug-2021	3 days	10 days	× EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE DUP	E235.NO3-L	14-Aug-2021	----	----	----		24-Aug-2021	3 days	11 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE LP1	E235.NO2-L	14-Aug-2021	----	----	----		24-Aug-2021	3 days	10 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE LP2	E235.NO2-L	14-Aug-2021	----	----	----		24-Aug-2021	3 days	10 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE DUP	E235.NO2-L	14-Aug-2021	----	----	----		24-Aug-2021	3 days	11 days	× EHTR
Anions and Nutrients : Sulfate in Water by IC										
HDPE LP1	E235.SO4	14-Aug-2021	----	----	----		24-Aug-2021	28 days	10 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE LP2	E235.SO4	14-Aug-2021	----	----	----		24-Aug-2021	28 days	10 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE DUP	E235.SO4	14-Aug-2021	----	----	----		24-Aug-2021	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) LP1	E509	14-Aug-2021	25-Aug-2021	----	----		25-Aug-2021	28 days	11 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) LP2	E509	14-Aug-2021	25-Aug-2021	----	----		25-Aug-2021	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) DUP	E509	14-Aug-2021	25-Aug-2021	----	----		25-Aug-2021	28 days	12 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) LP1	E421	14-Aug-2021	25-Aug-2021	----	----		25-Aug-2021	180 days	11 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) LP2	E421	14-Aug-2021	25-Aug-2021	----	----		25-Aug-2021	180 days	11 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) DUP	E421	14-Aug-2021	25-Aug-2021	----	----		25-Aug-2021	180 days	12 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE LP1	E290	14-Aug-2021	----	----	----		24-Aug-2021	14 days	10 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE LP2	E290	14-Aug-2021	----	----	----		24-Aug-2021	14 days	10 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE DUP	E290	14-Aug-2021	----	----	----		24-Aug-2021	14 days	11 days	✓
Physical Tests : Conductivity in Water										
HDPE LP1	E100	14-Aug-2021	----	----	----		24-Aug-2021	28 days	10 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE LP2	E100	14-Aug-2021	----	----	----		24-Aug-2021	28 days	10 days	✓
Physical Tests : Conductivity in Water										
HDPE DUP	E100	14-Aug-2021	----	----	----		24-Aug-2021	28 days	11 days	✓
Physical Tests : pH by Meter										
HDPE LP1	E108	14-Aug-2021	----	----	----		24-Aug-2021	0.25 hrs	250 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE LP2	E108	14-Aug-2021	----	----	----		24-Aug-2021	0.25 hrs	251 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE DUP	E108	14-Aug-2021	----	----	----		24-Aug-2021	0.25 hrs	258 hrs	× EHTR-FM
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE DUP	E160-L	14-Aug-2021	----	----	----		23-Aug-2021	7 days	9 days	× EHT
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE LP1	E160-L	14-Aug-2021	----	----	----		23-Aug-2021	7 days	9 days	× EHT
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE LP2	E160-L	14-Aug-2021	----	----	----		23-Aug-2021	7 days	9 days	× EHT

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	274904	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	273546	1	6	16.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	274911	1	6	16.6	5.0	✓
Conductivity in Water	E100	274902	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	275945	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	275860	1	12	8.3	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	274908	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	274909	1	20	5.0	5.0	✓
pH by Meter	E108	274903	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	274910	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	274904	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	273546	1	6	16.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	274911	1	6	16.6	5.0	✓
Conductivity in Water	E100	274902	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	275945	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	275860	1	12	8.3	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	274908	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	274909	1	20	5.0	5.0	✓
pH by Meter	E108	274903	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	274910	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	273649	2	40	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	274904	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	273546	1	6	16.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	274911	1	6	16.6	5.0	✓
Conductivity in Water	E100	274902	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	275945	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	275860	1	12	8.3	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	274908	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	274909	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	274910	1	20	5.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	273649	2	40	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	273546	1	6	16.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	274911	1	6	16.6	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	275945	1	20	5.0	5.0	✓

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Dissolved Metals in Water by CRC ICPMS	E421	275860	1	12	8.3	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	274908	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	274909	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	274910	1	20	5.0	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Vancouver - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Vancouver - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry (Low Level)	E160-L Vancouver - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
Chloride in Water by IC (Low Level)	E235.Cl-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 Vancouver - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Vancouver - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103 Vancouver - Environmental	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N Vancouver - Environmental	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Vancouver - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **WR2101063**	Page	: 1 of 10
Client	: Minto Explorations Ltd.	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: PO2857 (Seepage) - 10-8103-07050	Date Samples Received	: 19-Aug-2021 13:15
PO	: ----	Date Analysis Commenced	: 22-Aug-2021
C-O-C number	: 2021-08-18 A	Issue Date	: 27-Aug-2021 11:40
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Dee Lee	Analyst	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Ruby Pham	Lab Assistant	Metals, Burnaby, British Columbia
Sristika Chand	Lab Analyst	Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 274902)											
VA21B7861-001	Anonymous	conductivity	----	E100	2.0	µS/cm	617	620	0.485%	10%	----
Physical Tests (QC Lot: 274903)											
VA21B7861-001	Anonymous	pH	----	E108	0.10	pH units	5.98	6.00	0.400%	4%	----
Physical Tests (QC Lot: 274904)											
VA21B7861-001	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	2.1	2.2	0.1	Diff <2x LOR	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	2.1	2.2	0.1	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 273546)											
WR2101063-001	LP1	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0119	0.0112	0.0008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 274908)											
VA21B7861-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0250	mg/L	<0.0250	<0.0250	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 274909)											
VA21B7861-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 274910)											
VA21B7861-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	291	293	0.499%	20%	----
Anions and Nutrients (QC Lot: 274911)											
WR2101063-001	LP1	chloride	16887-00-6	E235.Cl-L	0.10	mg/L	0.87	0.87	0.001	Diff <2x LOR	----
Dissolved Metals (QC Lot: 275860)											
VA21B7494-005	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0137	0.0133	2.97%	20%	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00239	0.00239	0.0414%	20%	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00171	0.00171	0.183%	20%	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0448	0.0458	2.22%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.026	0.026	0.0009	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000074	0.0000109	0.0000035	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	144	140	2.66%	20%	----
		chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00019	0.00019	0.000002	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 275860) - continued											
VA21B7494-005	Anonymous	copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00080	0.00080	0.000007	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0068	0.0068	0.00004	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	16.6	16.7	0.508%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0200	0.0200	0.416%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00479	0.00476	0.620%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00225	0.00223	0.00002	Diff <2x LOR	----
		phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	7.20	7.27	0.882%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000546	0.000626	13.6%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	1.62	1.64	0.954%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	17341-25-2	E421	0.050	mg/L	45.4	44.6	1.76%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.648	0.656	1.22%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	139	141	1.49%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000021	0.000020	0.0000004	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00229	0.00224	2.19%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 275945)											
VA21B7562-005	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 273648)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 273649)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 274902)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 274904)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Anions and Nutrients (QCLot: 273546)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 274908)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 274909)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 274910)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 274911)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Dissolved Metals (QCLot: 275860)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 275860) - continued						
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	17341-25-2	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 275945)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 273648)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	94.3	85.0	115	----
Physical Tests (QCLot: 273649)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	95.7	85.0	115	----
Physical Tests (QCLot: 274902)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	98.9	90.0	110	----
Physical Tests (QCLot: 274903)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 274904)									
alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	108	75.0	125	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 273546)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	98.1	85.0	115	----
Anions and Nutrients (QCLot: 274908)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 274909)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	96.7	90.0	110	----
Anions and Nutrients (QCLot: 274910)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 274911)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	102	90.0	110	----
Dissolved Metals (QCLot: 275860)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	103	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	104	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	103	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	106	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	103	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	98.3	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	102	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	100	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	103	80.0	120	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	102	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	98.9	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 275860) - continued									
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	97.8	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	101	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	103	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	103	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	103	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	104	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	99.3	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	110	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	106	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	109	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	101	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	105	80.0	120	----
sodium, dissolved	17341-25-2	E421	0.05	mg/L	50 mg/L	106	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	106	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	110	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	102	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	101	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	104	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	101	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	103	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	105	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	99.2	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	99.5	80.0	120	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 273546)										
WR2101063-002	LP2	ammonia, total (as N)	7664-41-7	E298	0.0990 mg/L	0.1 mg/L	99.0	75.0	125	----
Anions and Nutrients (QCLot: 274908)										
VA21B7861-002	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.42 mg/L	2.5 mg/L	96.8	75.0	125	----
Anions and Nutrients (QCLot: 274909)										
VA21B7861-002	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.458 mg/L	0.5 mg/L	91.5	75.0	125	----
Anions and Nutrients (QCLot: 274910)										
VA21B7861-002	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	96.6 mg/L	100 mg/L	96.6	75.0	125	----
Anions and Nutrients (QCLot: 274911)										
WR2101063-002	LP2	chloride	16887-00-6	E235.Cl-L	502 mg/L	500 mg/L	100	75.0	125	----
Dissolved Metals (QCLot: 275860)										
VA21B7494-004	Anonymous	aluminum, dissolved	7429-90-5	E421	0.202 mg/L	0.2 mg/L	101	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0196 mg/L	0.02 mg/L	98.2	70.0	130	----
		barium, dissolved	7440-39-3	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0392 mg/L	0.04 mg/L	97.9	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00920 mg/L	0.01 mg/L	92.0	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00379 mg/L	0.004 mg/L	94.7	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		chromium, dissolved	7440-47-3	E421	0.0388 mg/L	0.04 mg/L	97.1	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0185 mg/L	0.02 mg/L	92.5	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0179 mg/L	0.02 mg/L	89.3	70.0	130	----
		iron, dissolved	7439-89-6	E421	1.84 mg/L	2 mg/L	91.9	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0189 mg/L	0.02 mg/L	94.7	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0991 mg/L	0.1 mg/L	99.1	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0196 mg/L	0.02 mg/L	98.3	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0362 mg/L	0.04 mg/L	90.4	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	10.7 mg/L	10 mg/L	107	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 275860) - continued										
VA21B7494-004	Anonymous	potassium, dissolved	7440-09-7	E421	3.48 mg/L	4 mg/L	87.0	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0424 mg/L	0.04 mg/L	106	70.0	130	----
		silicon, dissolved	7440-21-3	E421	9.25 mg/L	10 mg/L	92.5	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00349 mg/L	0.004 mg/L	87.3	70.0	130	----
		sodium, dissolved	17341-25-2	E421	1.94 mg/L	2 mg/L	96.8	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00379 mg/L	0.004 mg/L	94.8	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0192 mg/L	0.02 mg/L	96.1	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0398 mg/L	0.04 mg/L	99.5	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.00381 mg/L	0.004 mg/L	95.2	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.0981 mg/L	0.1 mg/L	98.1	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.386 mg/L	0.4 mg/L	96.5	70.0	130	----
		zirconium, dissolved	7440-67-7	E421	0.0401 mg/L	0.04 mg/L	100	70.0	130	----
Dissolved Metals (QCLot: 275945)										
VA21B7695-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000956 mg/L	0.0001 mg/L	95.6	70.0	130	----

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 2021-08-18 A

Page 1 of 1

Environmental Division Whitehorse

Work Order Reference WR2101063

Telephone : +1 867 668 6689

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	Select Service Level Below - Please confirm all E&P TATs
Company:	Minto Explorations Ltd.	Select Report Format: ☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)	Regular [R] ☑ Standard TAT if rec
Contact:	Minto Environment - Coordinator	Quality Control (QC) Report with Report ☑ YES ☐ NO	PRIORITY (Business Days): 4 day [P4] ☐ / 3 day [P3] ☐ / 2 day [P2] ☐ — EMERGENCY
Phone:	1-604-759-4659	☑ Compare Results to Criteria on Report - provide details below if box checked	Date and Time Required for all E&P TATs:
	Company address below will appear on the final report	Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	For tests that can not be performed according to the servi
Street:	61 Wasson Place	Email 1 or Fax mintoenvironment@mintomine.com	Analys
City/Province:	Whitehorse	Email 2	
Postal Code:	Y1A 0H7	Email 3	
Invoice To	Same as Report To ☐ YES ☑ NO	**Invoice Distribution**	Indicate Filtered (F), Preserved (P) or Filte
	Copy of Invoice with Report ☐ YES ☑ NO	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	P / F/P / P / F/P / P / F/P
Company:	Minto Explorations Ltd.	Email 1 or Fax ap@mintomine.com	
Contact:	Katie Androsoff	Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#
Job #:		Major/Minor Code:	Routing Code:
PO / AFE:	PO2857 (Seepage) - 10-8103-07050	Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		ALS Contact:	Sampler:

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total Metals(TM)	Dissolved Metals (DM)	Total Mercury, Hardness	Dissolved Mercury	Ammonia (Total Nutrients)	Dissolved Organic Carbon (DOC)	pH, Cond., TSS, TDS, Alkalinity, Anions	Number of Containers
	LP1	14-Aug-21	7:40	Water		R		R	R		R	4
	LP2	14-Aug-21	7:20	Water		R		R	R		R	4
	DUP	14-Aug-21		Water		R		R	R		R	4

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☑ NO	
Are samples for human drinking water use? ☐ YES ☑ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C		FINAL COOLER TEMPERATURES °C	
5	5	2, 9	9, 7

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Reanna Moore	Date: 2021-08-18	Time:	Received by:	Date: Aug 19	Time: 1225	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

OCTOBER 2015 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2101489**	Page	: 1 of 5
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 14-Oct-2021 09:05
PO	: 2857-10-8103-07050	Date Analysis Commenced	: 18-Oct-2021
C-O-C number	: 2021-10-13 B	Issue Date	: 29-Oct-2021 17:28
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Caleb Deroche	Lab Analyst	Metals, Burnaby, British Columbia
Dion Chan	Lab Assistant	Metals, Burnaby, British Columbia
Jay Jang	Lab Assistant	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
%	percent
µS/cm	Microsiemens per centimetre
meq/L	milliequivalents per litre
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	*Description*
DLDS	*Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.*

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LP1	LP2	DUP	----	----
					Client sampling date / time	09-Oct-2021 15:10	09-Oct-2021 14:50	09-Oct-2021	----	----
						WR2101489-001	WR2101489-002	WR2101489-003	--------	--------
						Result	Result	Result	----	----
Physical Tests										
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L		72.8	64.3	67.3	----	----
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	----	----
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	----	----
alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	----	----
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		72.8	64.3	67.3	----	----
conductivity	----	E100	2.0	µS/cm		814	1210	1260	----	----
hardness (as CaCO3), dissolved	----	EC100	0.60	mg/L		400	709	687	----	----
pH	----	E108	0.10	pH units		8.01	7.95	7.97	----	----
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L		595	950	974	----	----
solids, total suspended [TSS]	----	E160-L	1.0	mg/L		2.3	<1.0	1.8	----	----
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.0088	0.0107	0.0091	----	----
chloride	16887-00-6	E235.Cl-L	0.10	mg/L		1.12	0.93	0.96	----	----
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L		1.44	3.76	3.89	----	----
nitrate + nitrite (as N)	----	EC235.N+N	0.0050	mg/L		1.44	3.76	3.89	----	----
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L		<0.0050 DLDS	<0.0050 DLDS	<0.0050 DLDS	----	----
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		356	634	663	----	----
Ion Balance										
anion sum	----	EC101	0.10	meq/L		9.00	14.8	15.4	----	----
cation sum	----	EC101	0.10	meq/L		9.01	15.0	14.5	----	----
ion balance (cation-anion difference)	----	EC101	0.010	%		0.056	0.671	3.01	----	----
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0034	0.0048	0.0026	----	----
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		0.00039	0.00012	0.00012	----	----
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00024	0.00065	0.00060	----	----
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.0248	0.0225	0.0221	----	----
beryllium, dissolved	7440-41-7	E421	0.000020	mg/L		<0.000020	<0.000020	<0.000020	----	----
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
boron, dissolved	7440-42-8	E421	0.010	mg/L		0.103	0.172	0.168	----	----
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		0.000300	0.000433	0.000453	----	----

Analytical Results

Sub-Matrix: **Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	LP1	LP2	DUP	----	----
					Client sampling date / time	09-Oct-2021 15:10	09-Oct-2021 14:50	09-Oct-2021	----	----
						WR2101489-001	WR2101489-002	WR2101489-003	--------	--------
						Result	Result	Result	----	----
Dissolved Metals										
calcium, dissolved	7440-70-2	E421	0.050	mg/L		121	146	143	----	----
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	0.00011	0.00010	----	----
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.0288	0.0430	0.0411	----	----
iron, dissolved	7439-89-6	E421	0.010	mg/L		<0.010	<0.010	<0.010	----	----
lead, dissolved	7439-92-1	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	----
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		0.0044	0.0211	0.0195	----	----
magnesium, dissolved	7439-95-4	E421	0.100	mg/L		23.7	83.6	80.2	----	----
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.00287	0.0445	0.0418	----	----
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	----	----
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		0.0613	0.0427	0.0423	----	----
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	----	----
potassium, dissolved	7440-09-7	E421	0.100	mg/L		8.74	10.3	10.1	----	----
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.0370	0.0943	0.0907	----	----
silicon, dissolved	7440-21-3	E421	0.050	mg/L		5.78	2.61	2.50	----	----
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
sodium, dissolved	17341-25-2	E421	0.050	mg/L		18.3	12.3	11.9	----	----
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		1.12	4.55	4.51	----	----
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		126	227	220	----	----
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	----	----
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	----	----
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		<0.00030	0.00047	<0.00030	----	----
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.000712	0.000249	0.000240	----	----
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	----	----
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		0.0052	0.0042	0.0053	----	----
zirconium, dissolved	7440-67-7	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	----	----
dissolved mercury filtration location	----	EP509	-	-		Field	Field	Field	----	----
dissolved metals filtration location	----	EP421	-	-		Field	Field	Field	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2101489**	Page	: 1 of 9
Client	: **Minto Explorations Ltd.**	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 14-Oct-2021 09:05
PO	: 2857-10-8103-07050	Issue Date	: 29-Oct-2021 17:28
C-O-C number	: 2021-10-13 B		
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
DUP	E298	09-Oct-2021	26-Oct-2021	----	----		26-Oct-2021	28 days	17 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
LP1	E298	09-Oct-2021	26-Oct-2021	----	----		26-Oct-2021	28 days	17 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
LP2	E298	09-Oct-2021	26-Oct-2021	----	----		26-Oct-2021	28 days	17 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE										
LP1	E235.Cl-L	09-Oct-2021	----	----	----		19-Oct-2021	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE										
LP2	E235.Cl-L	09-Oct-2021	----	----	----		19-Oct-2021	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC (Low Level)										
HDPE										
DUP	E235.Cl-L	09-Oct-2021	----	----	----		19-Oct-2021	28 days	11 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
LP1	E235.NO3-L	09-Oct-2021	----	----	----		19-Oct-2021	3 days	10 days	× EHTR

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE LP2	E235.NO3-L	09-Oct-2021	----	----	----		19-Oct-2021	3 days	10 days	× EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE DUP	E235.NO3-L	09-Oct-2021	----	----	----		19-Oct-2021	3 days	11 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE LP1	E235.NO2-L	09-Oct-2021	----	----	----		19-Oct-2021	3 days	10 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE LP2	E235.NO2-L	09-Oct-2021	----	----	----		19-Oct-2021	3 days	10 days	× EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE DUP	E235.NO2-L	09-Oct-2021	----	----	----		19-Oct-2021	3 days	11 days	× EHTR
Anions and Nutrients : Sulfate in Water by IC										
HDPE LP1	E235.SO4	09-Oct-2021	----	----	----		19-Oct-2021	28 days	10 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE LP2	E235.SO4	09-Oct-2021	----	----	----		19-Oct-2021	28 days	10 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE DUP	E235.SO4	09-Oct-2021	----	----	----		19-Oct-2021	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) LP1	E509	09-Oct-2021	28-Oct-2021	----	----		28-Oct-2021	28 days	19 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) LP2	E509	09-Oct-2021	28-Oct-2021	----	----		28-Oct-2021	28 days	19 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) DUP	E509	09-Oct-2021	28-Oct-2021	----	----		28-Oct-2021	28 days	20 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) LP1	E421	09-Oct-2021	22-Oct-2021	----	----		23-Oct-2021	180 days	14 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) LP2	E421	09-Oct-2021	22-Oct-2021	----	----		23-Oct-2021	180 days	14 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) DUP	E421	09-Oct-2021	22-Oct-2021	----	----		23-Oct-2021	180 days	15 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE DUP	E290	09-Oct-2021	----	----	----		20-Oct-2021	14 days	11 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE LP1	E290	09-Oct-2021	----	----	----		20-Oct-2021	14 days	11 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE LP2	E290	09-Oct-2021	----	----	----		20-Oct-2021	14 days	11 days	✓
Physical Tests : Conductivity in Water										
HDPE DUP	E100	09-Oct-2021	----	----	----		20-Oct-2021	28 days	11 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE LP1	E100	09-Oct-2021	----	----	----		20-Oct-2021	28 days	11 days	✓
Physical Tests : Conductivity in Water										
HDPE LP2	E100	09-Oct-2021	----	----	----		20-Oct-2021	28 days	11 days	✓
Physical Tests : pH by Meter										
HDPE LP1	E108	09-Oct-2021	----	----	----		20-Oct-2021	0.25 hrs	255 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE LP2	E108	09-Oct-2021	----	----	----		20-Oct-2021	0.25 hrs	255 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE DUP	E108	09-Oct-2021	----	----	----		20-Oct-2021	0.25 hrs	270 hrs	× EHTR-FM
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE DUP	E160-L	09-Oct-2021	----	----	----		18-Oct-2021	7 days	10 days	× EHT
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE LP1	E160-L	09-Oct-2021	----	----	----		18-Oct-2021	7 days	9 days	× EHT
Physical Tests : TSS by Gravimetry (Low Level)										
HDPE LP2	E160-L	09-Oct-2021	----	----	----		18-Oct-2021	7 days	9 days	× EHT

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	323664	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	329636	1	12	8.3	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	323663	1	3	33.3	5.0	✓
Conductivity in Water	E100	323666	1	12	8.3	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	332503	1	13	7.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	327281	1	19	5.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	323657	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	323658	1	16	6.2	5.0	✓
pH by Meter	E108	323665	1	15	6.6	5.0	✓
Sulfate in Water by IC	E235.SO4	323662	1	11	9.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	323664	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	329636	1	12	8.3	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	323663	1	3	33.3	5.0	✓
Conductivity in Water	E100	323666	1	12	8.3	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	332503	1	13	7.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	327281	1	19	5.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	323657	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	323658	1	16	6.2	5.0	✓
pH by Meter	E108	323665	1	15	6.6	5.0	✓
Sulfate in Water by IC	E235.SO4	323662	1	11	9.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	323001	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	323664	1	15	6.6	5.0	✓
Ammonia by Fluorescence	E298	329636	1	12	8.3	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	323663	1	3	33.3	5.0	✓
Conductivity in Water	E100	323666	1	12	8.3	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	332503	1	13	7.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	327281	1	19	5.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	323657	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	323658	1	16	6.2	5.0	✓
Sulfate in Water by IC	E235.SO4	323662	1	11	9.0	5.0	✓
TSS by Gravimetry (Low Level)	E160-L	323001	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	329636	1	12	8.3	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	323663	1	3	33.3	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	332503	1	13	7.6	5.0	✓

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Dissolved Metals in Water by CRC ICPMS	E421	327281	1	19	5.2	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	323657	1	16	6.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	323658	1	16	6.2	5.0	✓
Sulfate in Water by IC	E235.SO4	323662	1	11	9.0	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Vancouver - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Vancouver - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
TSS by Gravimetry (Low Level)	E160-L Vancouver - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
Chloride in Water by IC (Low Level)	E235.Cl-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 Vancouver - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Vancouver - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Ion Balance using Dissolved Metals	EC101 Vancouver - Environmental	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).
TDS in Water (Calculation)	EC103 Vancouver - Environmental	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N Vancouver - Environmental	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Vancouver - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order	: **WR2101489**	Page	: 1 of 10
Client	: Minto Explorations Ltd.	Laboratory	: Whitehorse - Environmental
Contact	: Minto Environment - Coordinator	Account Manager	: Heather McKenzie
Address	: 4838 Richard Rd. SW, Suite 300 Calgary AB Canada T3E 6L1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Minto Mine Monitoring	Date Samples Received	: 14-Oct-2021 09:05
PO	: 2857-10-8103-07050	Date Analysis Commenced	: 18-Oct-2021
C-O-C number	: 2021-10-13 B	Issue Date	: 29-Oct-2021 17:28
Sampler	: ----		
Site	: ----		
Quote number	: Q54721-Standing Offer		
No. of samples received	: 3		
No. of samples analysed	: 3		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Caleb Deroche	Lab Analyst	Metals, Burnaby, British Columbia
Dion Chan	Lab Assistant	Metals, Burnaby, British Columbia
Jay Jang	Lab Assistant	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 323664)											
VA21C2657-004	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	10.1	10.2	0.985%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	10.1	10.2	0.985%	20%	----
Physical Tests (QC Lot: 323665)											
VA21C2657-004	Anonymous	pH	----	E108	0.10	pH units	7.20	7.21	0.139%	4%	----
Physical Tests (QC Lot: 323666)											
VA21C2657-004	Anonymous	conductivity	----	E100	2.0	µS/cm	53.1	53.3	0.376%	10%	----
Anions and Nutrients (QC Lot: 323657)											
VA21C2897-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0373	0.0352	0.0021	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 323658)											
VA21C2897-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 323662)											
VA21C2897-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	54.2	54.3	0.106%	20%	----
Anions and Nutrients (QC Lot: 323663)											
WR2101489-001	LP1	chloride	16887-00-6	E235.Cl-L	0.50	mg/L	1.12	1.07	0.04	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 329636)											
VA21C2702-013	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0061	<0.0050	0.0011	Diff <2x LOR	----
Dissolved Metals (QC Lot: 327281)											
VA21C2866-010	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0027	0.0028	0.00009	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00192	0.00192	0.248%	20%	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.389	0.384	1.35%	20%	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0329	0.0320	2.69%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.257	0.256	0.333%	20%	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000354	0.0000396	0.0000042	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	189	191	1.00%	20%	----
		chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 327281) - continued											
VA21C2866-010	Anonymous	copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00160	0.00154	0.00005	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.000139	0.000132	0.000007	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0435	0.0432	0.542%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	22.9	22.5	2.11%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00195	0.00191	2.00%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0158	0.0158	0.314%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	11.4	11.4	0.394%	20%	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	7.14	7.27	1.73%	20%	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.0229	0.0222	3.32%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	15.2	14.8	2.99%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	17341-25-2	E421	0.050	mg/L	79.1	78.4	0.905%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	1.95	1.93	0.884%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	150	145	3.38%	20%	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000047	0.000050	0.000003	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	0.0120	0.0122	1.52%	20%	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000489	0.000479	2.23%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	0.0305	0.0299	2.08%	20%	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0046	0.0048	0.0001	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 332503)											
VA21C3406-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 323001)						
solids, total suspended [TSS]	----	E160-L	1	mg/L	<1.0	----
Physical Tests (QCLot: 323664)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	1.4	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	1.4	----
Physical Tests (QCLot: 323666)						
conductivity	----	E100	1	µS/cm	1.4	----
Anions and Nutrients (QCLot: 323657)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 323658)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 323662)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 323663)						
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 329636)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Dissolved Metals (QCLot: 327281)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 327281) - continued						
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	17341-25-2	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 332503)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 323001)									
solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	93.7	85.0	115	----
Physical Tests (QCLot: 323664)									
alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	109	75.0	125	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	102	85.0	115	----
Physical Tests (QCLot: 323665)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 323666)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	98.3	90.0	110	----
Anions and Nutrients (QCLot: 323657)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 323658)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 323662)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 323663)									
chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 329636)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	94.2	85.0	115	----
Dissolved Metals (QCLot: 327281)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	98.5	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	95.9	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	94.2	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	92.9	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	94.9	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	99.4	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	81.8	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	88.3	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	92.4	80.0	120	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	91.3	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	92.6	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	91.3	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	92.5	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 327281) - continued									
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	93.1	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	88.4	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	96.9	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	95.1	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	95.2	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	92.0	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	103	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	94.1	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	92.9	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	96.7	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	95.1	80.0	120	----
sodium, dissolved	17341-25-2	E421	0.05	mg/L	50 mg/L	94.7	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	93.5	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	116	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	93.8	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	88.6	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	92.7	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	96.2	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	94.9	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	97.2	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	86.6	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	103	80.0	120	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 323657)										
VA21C2897-002	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.62 mg/L	2.5 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 323658)										
VA21C2897-002	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.532 mg/L	0.5 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 323662)										
VA21C2897-002	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	104 mg/L	100 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 323663)										
WR2101489-002	LP2	chloride	16887-00-6	E235.Cl-L	469 mg/L	500 mg/L	93.9	75.0	125	----
Anions and Nutrients (QCLot: 329636)										
VA21C2710-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0989 mg/L	0.1 mg/L	98.9	75.0	125	----
Dissolved Metals (QCLot: 327281)										
VA21C2866-011	Anonymous	aluminum, dissolved	7429-90-5	E421	0.964 mg/L	1 mg/L	96.4	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0962 mg/L	0.1 mg/L	96.2	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.1000 mg/L	0.1 mg/L	100.0	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.0973 mg/L	0.1 mg/L	97.3	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.192 mg/L	0.2 mg/L	96.2	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0447 mg/L	0.05 mg/L	89.4	70.0	130	----
		boron, dissolved	7440-42-8	E421	ND mg/L	0.5 mg/L	ND	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.0186 mg/L	0.02 mg/L	93.1	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		chromium, dissolved	7440-47-3	E421	0.181 mg/L	0.2 mg/L	90.7	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0906 mg/L	0.1 mg/L	90.6	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0886 mg/L	0.1 mg/L	88.6	70.0	130	----
		iron, dissolved	7439-89-6	E421	9.11 mg/L	10 mg/L	91.1	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0871 mg/L	0.1 mg/L	87.1	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.431 mg/L	0.5 mg/L	86.2	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	5 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.0929 mg/L	0.1 mg/L	92.9	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0990 mg/L	0.1 mg/L	99.0	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.178 mg/L	0.2 mg/L	89.2	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	54.1 mg/L	50 mg/L	108	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 327281) - continued										
VA21C2866-011	Anonymous	potassium, dissolved	7440-09-7	E421	18.6 mg/L	20 mg/L	93.2	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.192 mg/L	0.2 mg/L	96.0	70.0	130	----
		silicon, dissolved	7440-21-3	E421	45.0 mg/L	50 mg/L	89.9	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.0182 mg/L	0.02 mg/L	90.9	70.0	130	----
		sodium, dissolved	17341-25-2	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.1 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	100 mg/L	ND	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0171 mg/L	0.02 mg/L	85.7	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0912 mg/L	0.1 mg/L	91.2	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.189 mg/L	0.2 mg/L	94.6	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.0192 mg/L	0.02 mg/L	96.0	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.488 mg/L	0.5 mg/L	97.7	70.0	130	----
		zinc, dissolved	7440-66-6	E421	1.94 mg/L	2 mg/L	96.8	70.0	130	----
		zirconium, dissolved	7440-67-7	E421	0.192 mg/L	0.2 mg/L	96.1	70.0	130	----
Dissolved Metals (QCLot: 332503)										
VA21C3406-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000988 mg/L	0.0001 mg/L	98.8	70.0	130	----

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 2021-10-13 B

Page 1 of 1

Environmental Division
Whitehorse
Work Order Reference
WR2101489

Telephone : +1 867 668 6689

Report To	Contact and company name below will appear on the final report
Company:	Minto Explorations Ltd.
Contact:	Minto Environment - Coordinator
Phone:	1-604-759-4659
	Company address below will appear on the final report
Street:	61 Wasson Place
City/Province:	Whitehorse
Postal Code:	Y1A 0H7
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Minto Explorations Ltd.
Contact:	Katie Androsoff

Report Format / Distribution

Select Report Format: ☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax mintoenvironment@mintomine.com
Email 2
Email 3

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax ap@mintomine.com
Email 2

Project Information

ALS Account # / Quote #:	
Job #:	
PO / AFE:	PO2857 (Seepage) - 10-8103-07050
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only)

ALS Contact: **Sampler:**

Select Service Level Below - Please confirm all E&P TATs with

Regular [R] ☑ Standard TAT if received

PRIORITY (Business Days)		EMERGENCY	
	4 day [P4] ☐		1
	3 day [P3] ☐		S
	2 day [P2] ☐		S

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level

Analysis Re

Indicate Filtered (F), Preserved (P) or Filtered and

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total Metals(TM)	Disolved Metals (DM)	Total Mercury, Hardness	Dissolved Mercury	Ammonia (Total Nutrients)	Dissolved Organic Carbon (DOC)	pH, Cond., TSS, TDS, Alkalinity, Anions							Number of Containers
					P	F/P	P	F/P	P	F/P								
	LP1	9-Oct-21	15:10	Water		R		R	R		R							4
	LP2	9-Oct-21	14:50	Water		R		R	R		R							4
	DUP	9-Oct-21		Water		R		R	R		R							4
				Water														
				Water														
				Water														
				Water														
				Water														
				Water														
				Water														
				Water														
				Water														

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?
☐ YES ☑ NO

Are samples for human drinking water use?
☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS REC

Frozen ☐ SIF Observa
Ice Packs ☐ Ice Cubes ☐ Custody sea
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C

2	3	1	1		

1/8

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RE	
Released by: Dani Thorne	Date: 13 Oct. 2021	Time:	Received by:	Date: OCT 14/21	Time: 905	Received by:	D

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here
(lab use only)

COC Number: 2021-10-13 B

Page 1 of 1

Environmental Division
Whitehorse
Work Order Reference
WR2101489

Telephone : +1 867 668 6689

Report To	Contact and company name below will appear on the final report
Company:	Minto Explorations Ltd.
Contact:	Minto Environment - Coordinator
Phone:	1-604-759-4659
	Company address below will appear on the final report
Street:	61 Wasson Place
City/Province:	Whitehorse
Postal Code:	Y1A 0H7
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Minto Explorations Ltd.
Contact:	Katie Androsoff

Report Format / Distribution

Select Report Format: ☑ PDF ☐ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☑ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax: mintoenvironment@mintomine.com
Email 2:
Email 3:

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☑ FAX
Email 1 or Fax: ap@mintomine.com
Email 2:

Project Information

ALS Account # / Quote #:
Job #:
PO / AFE: PO2857 (Seepage) - 10-8103-07050
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only):
ALS Contact: Sampler:

Select Service Level Below - Please confirm all E&P TATs with

Regular [R] ☑ Standard TAT if received

PRIORITY (Business Days): 4 day [P4] ☐ | 3 day [P3] ☐ | 2 day [P2] ☐
EMERGENCY: 1 | S

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level

Analysis Re

Indicate Filtered (F), Preserved (P) or Filtered and

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total Metals(TM) P	Dissolved Metals (DM) F/P	Total Mercury, Hardness P	Dissolved Mercury F/P	Ammonia (Total Nutrients) P	Dissolved Organic Carbon (DOC) F/P	pH, Cond., TSS, TDS, Alkalinity, Anions						Number of Containers
	LP1	9-Oct-21	15:10	Water		R		R	R		R						4
	LP2	9-Oct-21	14:50	Water		R		R	R		R						4
	DUP	9-Oct-21		Water		R		R	R		R						4
				Water													
				Water													
				Water													
				Water													
				Water													
				Water													
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				Water													
				Water													

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System?
☐ YES ☑ NO

Are samples for human drinking water use?
☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS REC

Frozen ☐ SIF Observa
Ice Packs ☑ Ice Cubes ☐ Custody seal
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C: 2 | 3 | 1 | 1

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RE
Released by: Dani Thorne	Date: 13 Oct. 2021	Time:	Received by:	Date: OCT 14 21	Time: 9:05	Received by:

9 1/8

OCT 15 2021

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REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

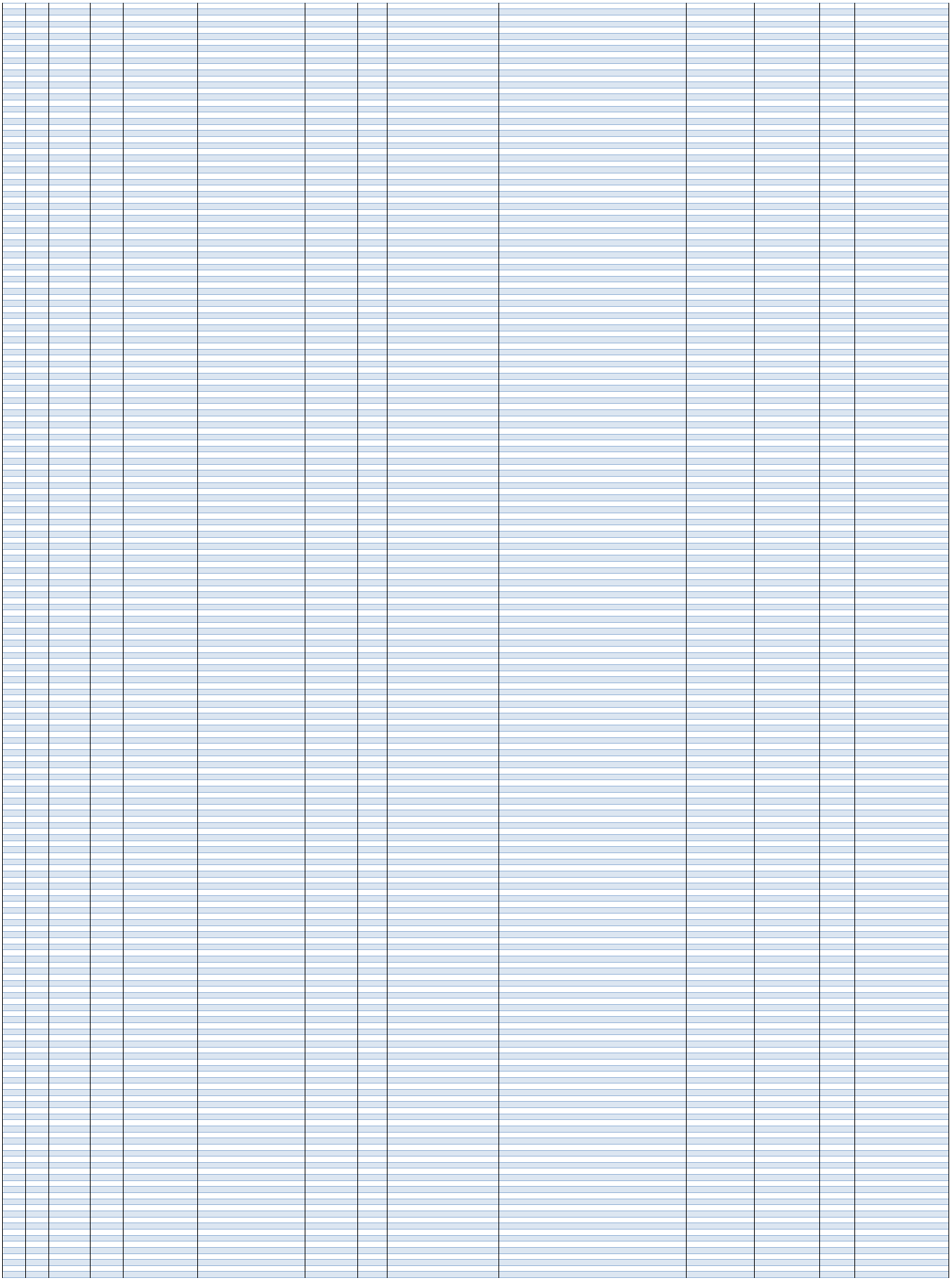
WHITE - LABORATORY COPY YELLOW - CLIENT COPY

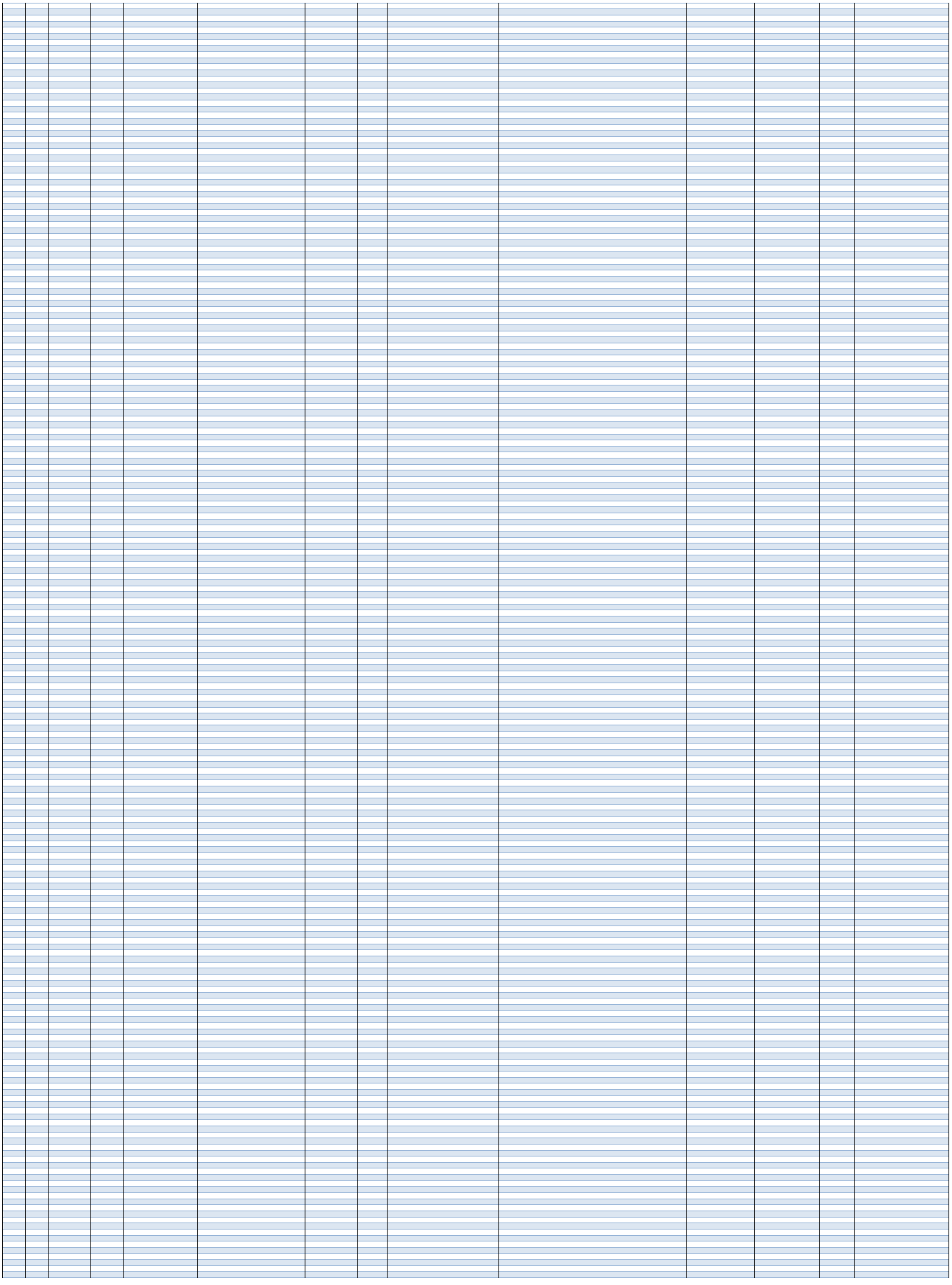
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

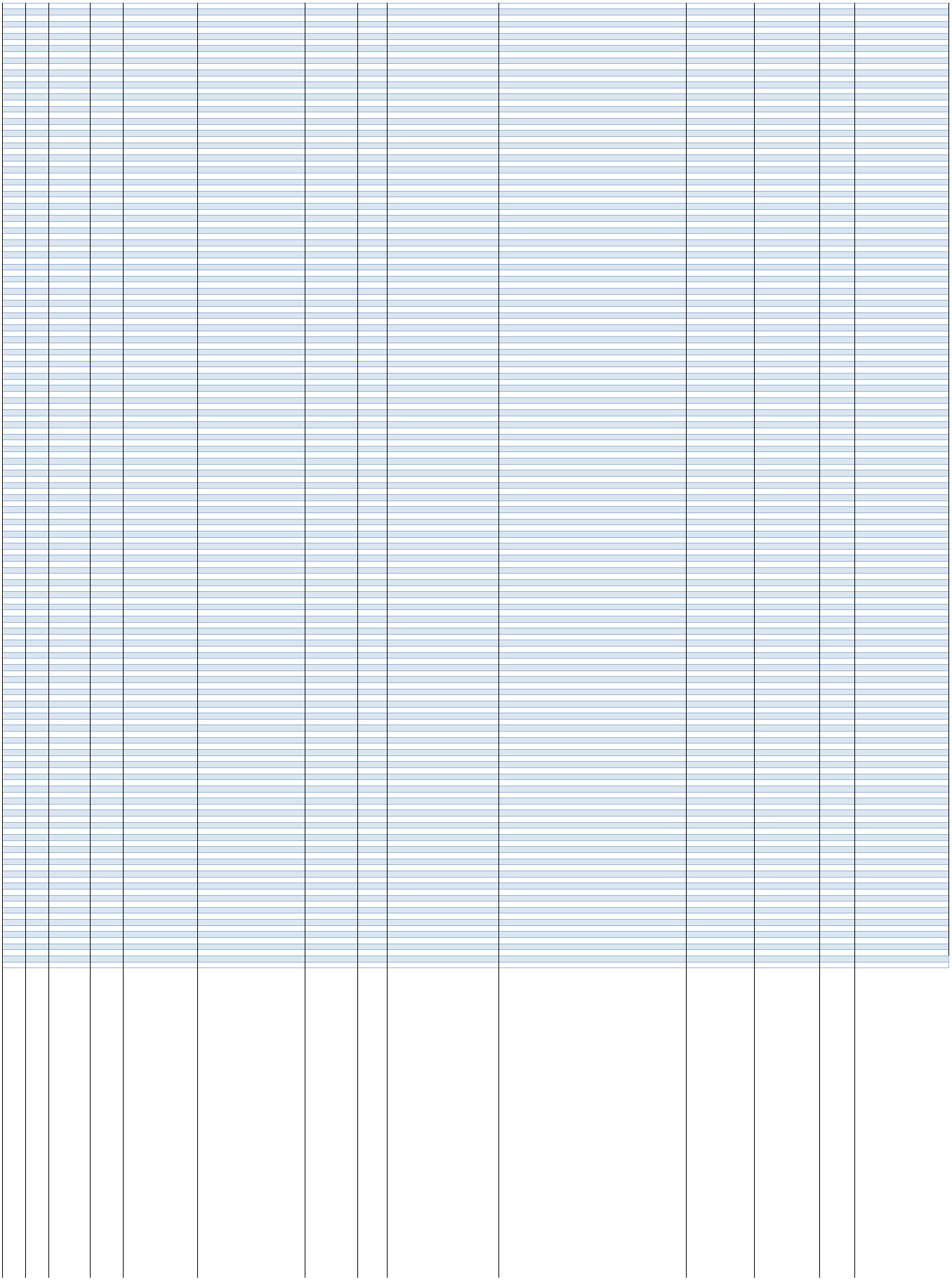
1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form.**

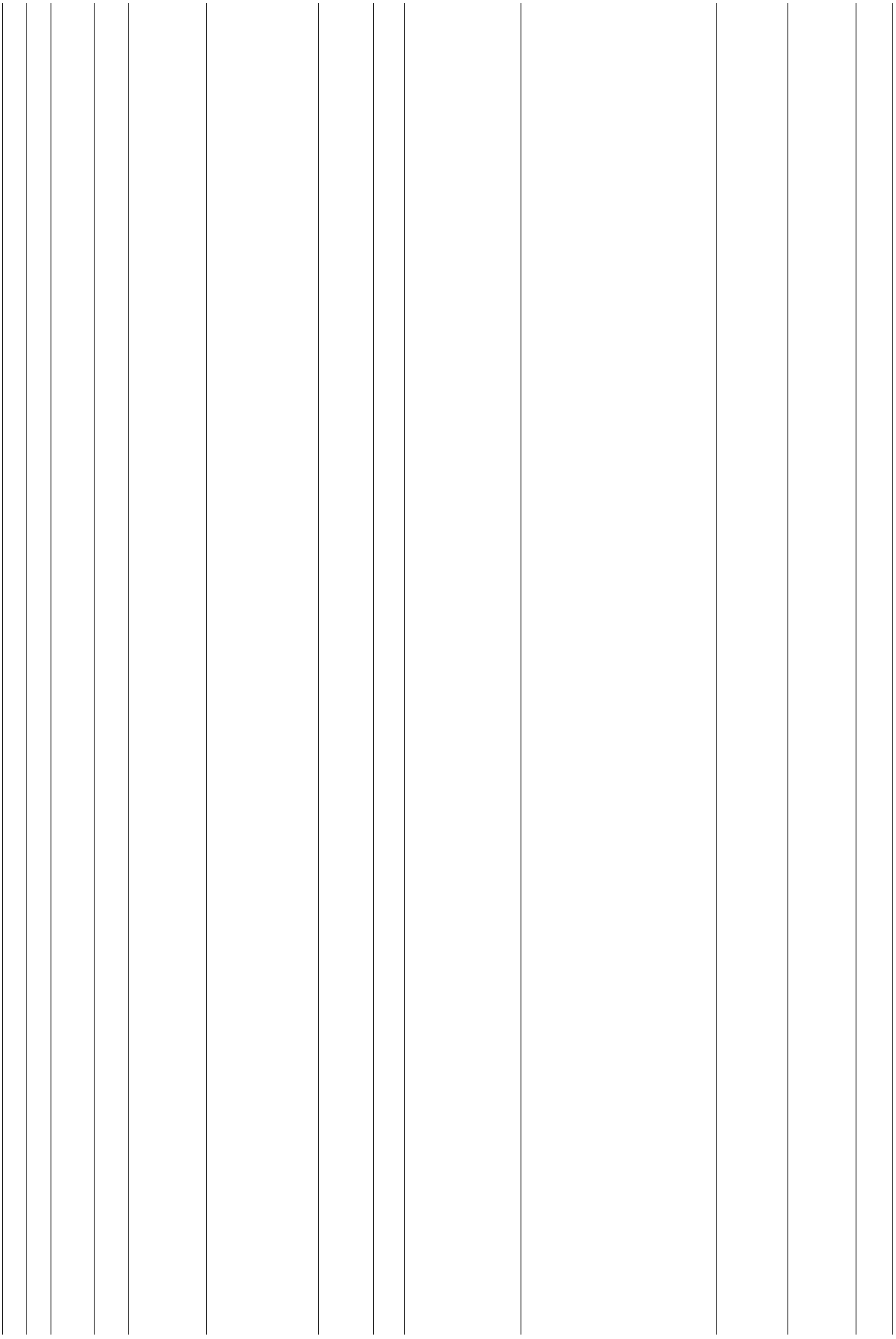
Appendix N – Wildlife and Hazing Tracking Report

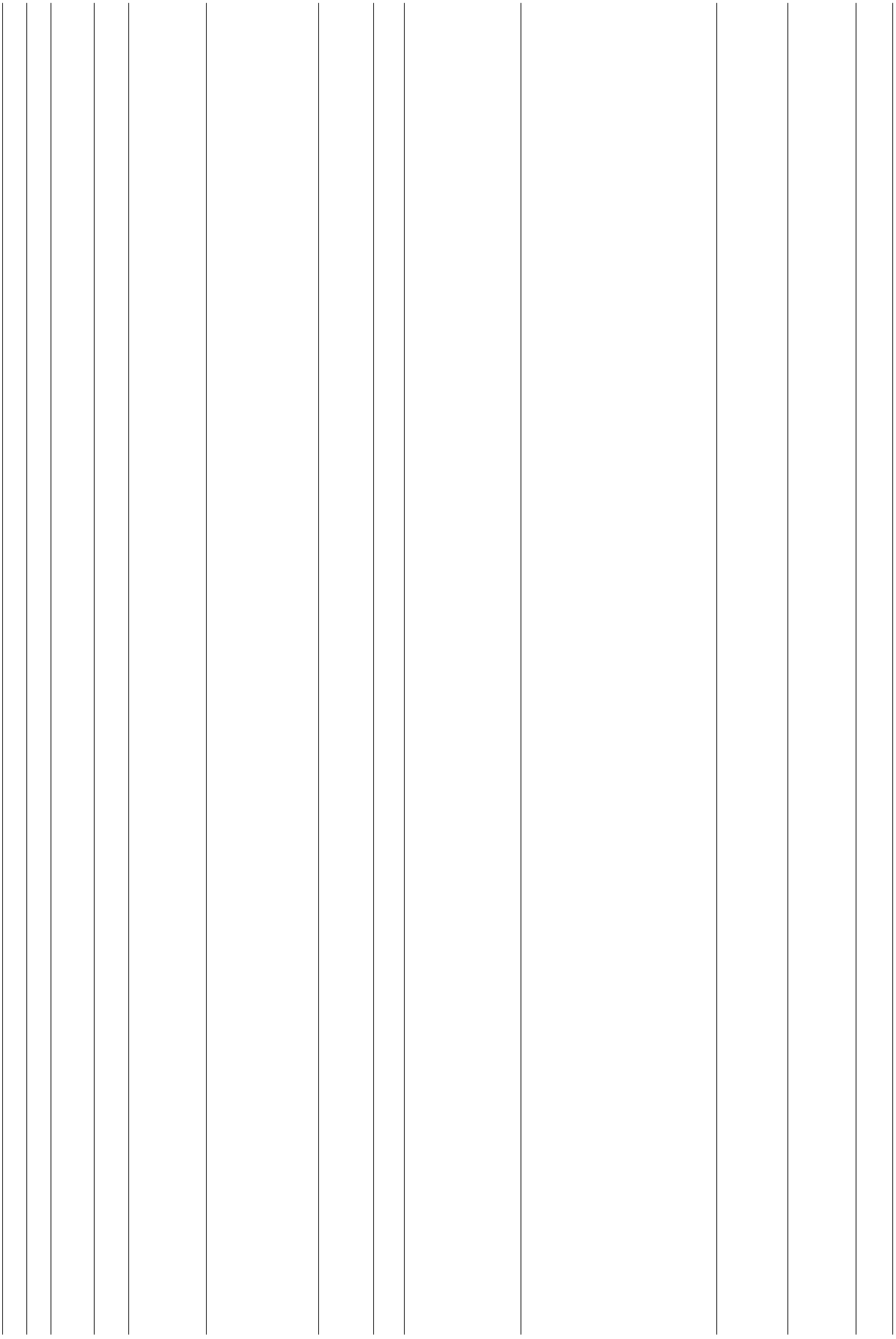
Date	Time	Type of Animal	Number of Animals	Location	Description: Size/Color/Markings and Additional Notes	Reported By (Name)	Was the animal hazed?	What hazing technique was used?	What was the animal's response?	Who performed the hazing?	Has this animal been hazed in 2021?	Reportable Incident (Yes/No)	Notes
24-Feb-21	10:30	Fox	1	Back of Kitchen	Red. Looks very healthy.	Walker Griffin	No	N/A	N/A	N/A	N/A	No	
8-Mar-21	15:45	Lynx	1	Dyno access road		Chris W	No	N/A	N/A	N/A	N/A	No	
13-Mar-21	16:00	Wolf	1	Access road. km 24		Brian Hyde	No	N/A	N/A	N/A	N/A	No	
15-Mar-21	16:30	Wolf	1	Access road. km 15.5		Brian Hyde	No	N/A	N/A	N/A	N/A	No	
27-Mar-21	14:00	Chipmunk	1	Near Gym	Mild outside	I. McAllen ?	No	N/A	N/A	N/A	N/A	No	
27-Mar-21	14:45	Fox	1	A2 Pit Saddle	All black, a bit scruffy.	Ian S	No	N/A	N/A	N/A	N/A	No	Came over the hill by flowmeter as I was walking up. Was nice to see that it was spooked and not comfortable with people.
5-Apr-21	7:00	Fox	1	Pit 1 Barge	healthy adult	Andrew Ward	No	N/A	N/A	N/A	N/A	N/A	
7-Apr-21	16:15	Moose	1	Between km 18 & 19 on the access road		Brian Hyde	No	N/A	N/A	N/A	N/A	No	
19-Apr-21	6:00	Fox	1	By Site Service Office	Red. Looks very healthy.	Hank Schmidt	No	N/A	N/A	N/A	N/A	No	Walked between Site services and gym buildings heading towards the back of Capstone Building.
23-Apr-21	14:00	Bear	1	On hill off km 2	Brown		No	N/A					
1-May-21	13:00	Fox	1	Behind Capstone	Big Healthy Black fox	I. McAllen ?	No	N/A	N/A	N/A	N/A	No	
8-May-21	18:20	Bear	1	Dry Stack	Brown Black Bear	Mike E.	No	N/A	N/A				
8-May-21	9:30	Spruce Grouse	1	WSO on road		Scott M	No	N/A	N/A	N/A	N/A	No	
9-May-21	11:00	Bear	2	Water Storage Pond, km2	Black bear sow, with brown cub	Chris W	No	N/A	N/A				
9-May-21	17:50	Bear	2	Water storage Pond Dam	Black bear sow, with brown cub	Chris W	No	N/A	N/A				
10-May-21	13:30	Bear	1	WS2	Brown Black Bear	Mike E.	No	N/A	N/A	N/A	N/A	No	
11-May-21	8:29	Bear	1	Landfill	small Black Bear	Eric M	No	N/A	N/A	N/A	N/A	No	
13-May-21	14:30	Bear	2	Access Road Km2	Black bear sow, with brown cub	Corey R	Yes	Horn on Truck	Ran away	Corey R	No	No	Ran down into Minto Creek Valley
13-May-21	16:30	Bear	2	Selkirk North	Black bear sow, with brown cub	Eric M	No	N/A	N/A	N/A	N/A	Yes	Ran up hill away from camp
14-May-21	9:30	Bear	1	Access Road Km3	Black bear	Corey R	No	N/A	N/A	N/A	No	No	
16-May-21	16:30	Fox	1	Along A2 ridge	Medium size, Yellow, Unafraid of Humans	Brandon K	Yes	Horn on Truck	Run away	Samantha Stachiw	No	No	Encounter occurred near centre of mine site but the fox was hazed towards Minto north.
16-May-21	18:00	Bear	1	Dry stack by W 36 access road		Brown Black Bear	Scott M	Yes	Bear banners, horn on truck	Corey R/Sean D	Yes	No	slowly moved south on dry stack
17-May-21	9:30	Bear	1	Dry Stack by Haul road		Brown Black Bear	Scott M	Yes	Truck horn	Corey R/Brandon K	Yes	No	
18-May-21	10:00	Bear	1	Access Road by warehouse laydown		Brown Black Bear	Robert M	Yes	Rubber bullet, Cracker shell, Truck horn	Moved off into the bush after a second rubber bullet	Sean D	Yes	No	Took two rubber bullets and a cracker shell to move it away from camp
18-May-21	11:00	Bear	1	Access Road Km6		Black Bear	Doug H	No	N/A	N/A	N/A	N/A	No	On hill be Km6
18-May-21	12:00	Bear	1	WSP Dam		Brown Black Bear	Doug H	No	N/A	N/A	N/A	Yes	No	Walkine on Dam
18-May-21	9:30	Bear	2	Access Road km10		Grizzly	Doug H	No	N/A	N/A	N/A	No	No	
20-May-21	8:30	Bear	1	Outside shop door		Bie	J.M.	N/A	N/A	N/A	N/A	N/A	No	
20-May-21	6:45	Bear	1	STP		Black Bear	Eric M	Yes	Cracker shells					
21-May-21	14:30	Bear	1	Haul Rd		Black Bear	N/A	No	N/A	N/A	N/A	N	No	Was alerted on CH1 while in Minto N, drove to area but no sign of bear
23-May-21	7:45	Bear	1	KM 11 Access Road		Black Bear	Brian H.	No	N/A	N/A	N/A	N	No	Black Bear crossed road towards Yukon R., possible young bear
23-May-21	8:00	Bear	1	KM 12 Access Road		Black Bear	Brian H.	No	N/A	N/A	N/A	N	No	Black Bear crossed road towards Yukon R. believed to be a different bear from 15min earlier, larger
23-May-21	12:00	Bear	1	KM 0.5		Bear	Unknown	No	N/A	N/A	N/A	N	No	Bear reported, Samantha S. went to check but only found a fox
25-May-21	14:30	Bear	2	KM 6		Black bear, 1 cub	Brian H	No	N/A	N/A	N/A	N	No	Bear spotted on road, went into bushes towards creek
27-May-21	9:30	Bear	1	Near Dyno call sign		Brown coloured black bear	Ben (SS)	Yes	honking horn	left area	Ben	Unknown	No	Ben called in bear sighting, bear last seen in SW dump between Dyno and fuel farm. Brian went to investigate but couldn't locate bear
27-May-21	14:00	Bear	1	SW dump		brown coloured bear, could not ID	Brian	No	N/A	N/A	N/A	Unknown	No	Bear spotted from Top of the World, bear eventually disappered into bushes
28-May-21	9:00	Fox	1	Mabou Yards		Red, Fat and looks healthy	Gillian	No	NA	Appears habituated. Not afraid of humans; actual approached worker.				
30-May-21	10:00	Bear	1	Selkirk Tower		Black bear	Todd. E	No	NA					
30-May-21	1:35	Moose & Calf	2	WMA	Moose and calf	Brian H	No	N/A	Was travelling through treeline	N/A	No	No	Moose and calf seen walking through WMA area
30-May-21	5:30	Bear	1	Dry Stack off access road	Youne and small black bear	Rob P.	No	Na		N/A	Possibly	No	
31-May-21	12:15	Bear	1	Between Waste Haul Rd and A2	Black Bear	Kirby	No	N/A	N/A	N/A	Unknown	No	animal last seen in shrubs off road
31-May-21	13:00	Bear	1	Dry Stack near WS5	Black Bear	Unknown	Yes	Banners from 12ea.	Eventually left area headine E	Brad. Tyler	Unknown	No	
1-Jun-21	9:00	Bear	1	KM6	Black Bear	Kirby	No	N/A	N/A	N/A	Unknown	No	
1-Jun-21	13:30	Bear	1	Dyno	Black Bear (brown in colour)	Unknown	no	N/A (was gone when we got there)	N/A	N/A	Unknown	No	N/A
1-Jun-21	14:40	Wood Frogs	2+	W1S	Frequent calls throughout wetland area	Reanna M	No	N/A	N/A	N/A	Unknown	No	
4-Jun-21	6:30	Bear	1	Airport Road access at haul road	Black bear	Unknown	No	N/A	N/A	N/A	Unknown	No	
6-Jun-21	12:30	Bear	3	Airport Road access at haul road	Black bear and two cubs	Eric M	No	N/A	N/A	N/A	Unknown	No	
7-Jun-21	14:30	Bear	1	KM 1.5 on access road	Brown Black Bear, Young	Brandon K	Yes	honking horn	Slowly backed away. Was gone 1 hr later when spot was checked again	Corey	Possibly	No	Possibly same juvenile bear that has caused problems recently.
7-Jun-21	14:30	Bear	1	KM 3 on access road	Brown Black Bear	Brandon K	Yes	honkine horn	Started slowly walkine in oaposite direction	Corey	Unknown	No	
7-Jul-21	19:00	Bear	1	Mill live pile	Brown Black Bear	Heather W.	No	N/A	N/A	N/A	Possibly	No	Heading away from Camp
9-Jul-21	14:04	Deer	2	west side of Caestone trailer	Deer	Ian C	No	N/A	N/A	N/A	No	No	headine north
10-Jun-21	10:50	Bear	1	KM 8 access road	Healthy adult	Brandon K	No	N/A	N/A	N/A	No	No	
12-Jul-21	15:00	Deer	1	KM 15 access road	Adult male with velvet on antlers	Brandon K	No	N/A	N/A	N/A	Unknown	No	
12-Jun-21	6:00	Bear	1	Diversion Ditch	Black Bear	Sean D	Yes	Bear banners, horn on truck	Started slowly walkine in oaposite direction	Sean D	Possibly	No	
12-Jun-21	10:30	Bear	1	Airport Road access at haul road	Brown Black bear	Sean D	No	N/A	N/A	N/A	Possibly	No	Same bie brown coloured black bear
13-Jul-21	10:00	Bear	1	Off KM 2 access road	Brown bear cub. Mother bear wasn't found	Brandon K	Yes	Truck horn	Run away	Corey	No	No	
13-Jun-21	8:00	Bear	1	SW dump	Brown Black Bear	Scott M	No	N/A	Just walked throuah area headine North	N/A	Possibly	No	Same bie brown coloured black bear
14-Jun-21	8:10	Bear	1	SW dump	Brown Black Bear	Eric M	No	N/A	Just walked through area heading North	N/A	Possibly	No	Same big brown coloured black bear
14-Jun-21	8:00	Hare	1	W3	Dark brown	Brandon K	No	N/A	N/A	N/A	N/A	No	
20-Jun-21	11:30	Deer	1	Warehouse	Deer	Reanna M	No	Followed with the truck to make sure it was leavine	Left the area across the dry stacks	N/A	No	No	
26-Jun-21	16:30	Bear	1	W46 trail	3-4 year old grizzly, dark brown	Reanna M	Yes	Shouting and clapping, bear was not deterred	We retreated slowly, bear continued to follow us for several minutes before losing interest	Brian H and myself	Unknown	No	Bear seemed curious; not aggressive. Not scared of humans
16-Jul-21	8:30	Deer	3	MN access road	Adult female with two fawns	Reanna M	No	N/A	Retreated slowly down road towards mine	N/A	Unknown	No	
20-Jul-21	10:00	Bear	1	KM 7.5 access road	Brown black bear	Reanna M	No	N/A	N/A	N/A	Unknown	No	
23-Jul-21	12:00	Deer	3	KM 0.5 access road	Adult female with two fawns	Reanna M	No	N/A	N/A	N/A	Unknown	No	
1-Aug-21	16:00	Bear	1	Across from wetlands, on the bank	Mid size, black bear	Mike, Brandon K	Yes	Truck horn	Bear frieghtened by recreational walker and truck horn. Ran north towards forrest/selkirk towers				
18-Aug-21	9:00	Bear	1	Crossed haul road and accessed Portal & Pads	Brown Black Bear	Aaron B. (Colbalt)	Yes	Truck horn	Bear snooping around Portal & Pads waste recipticles and frightened by horn. Ran up near Portals and disappeared into bushes.	Brian H	Unknown	No	
18-Aug-21	20:20	Bear	1	Minto North drill site near groundwater	Grizzly	Monika Dyl (Geologist)	No	N/A	N/A	N/A	Unknown	No	Radio'd Channel 15 to alert ENV but afterhours so ENV was on Channel 1 - ENV did not receive notice until following morning - Bear left on its own accord as per the drillers.
19-Aug-21	9:30	Bear	1	Air Strip heading towards Paycore laydown	Brown Black Bear	Max (Exploration)	No	N/A	N/A	N/A	Unknown	No	No sign of bear
19-Aug-21	10:30	Bear	1	KM 0.5 access road, heading towards camp	Brown Black Bear	Freight Truck Driver	No	N/A	N/A	N/A	Unknown	No	No sign of bear
17-Sep-21	8:30	Moose	1	Drill water tanks	Young	Cory	No	N/A	N/A	N/A	N/A	No	
24-Sep-21	12:30	Fox	1	Behind Kitchen	Red Fox	John Teuscher	No	N/A	N/A	N/A	Unknown	No	
24-Sep-21	14:30	Fox	1	Electrical behind Mill	Red Fox	Brian Hyde	Yes	Honked horn	went underneath Electrical building	Brian Hyde	Unown	No	black in colour
2-Oct-21	13:30	Fox	1	Mill Entry	Red Fox	Doug H	Yes						
14-Oct-21	12:00	Hare	1	Mill Entry	White Hare	Dani Thorne	No	N/A	N/A	N/A	N/A	N/A	
16-Oct-21	15:00	Deer	4	Dry stack area	Doe, buck, 2 fawn	Dani Thorne	No	N/A	N/A	N/A	N/A	N/A	feeding on browse
17-Oct-21	11:00	Deer	4	side of road off KM 0.7 of access road	Doe, buck, 2 fawn	Dani Thorne	No	N/A	N/A	N/A	N/A	N/A	feedine on browse
6-Nov-21	18:35	Fox	1	Mill Parkine Lot (near waste)	healthy adult. red mild temperatures	Wade Hefford	No	N/A	N/A	N/A	N/A	N/A	
8-Nov-21	9:20	Fox	1	left side of road going up to Mabou Shop	black in colour	Chris Ronay, Mina Gouony	No	N/A	N/A	N/A	N/A	N/A	
10-Nov-21	9:00	Fox	1	South Tower	good condition	N/A	No	N/A	N/A	N/A	N/A	N/A	
11-Nov-21	13:45	Fox	1	Minto North Road - off the road & down the sloped rocks on the left hand side across fr. Main Pit road	black in colour	Dani Thorne	No	N/A	N/A	N/A	N/A	N/A	surfaced from under a large boulder - possible den?

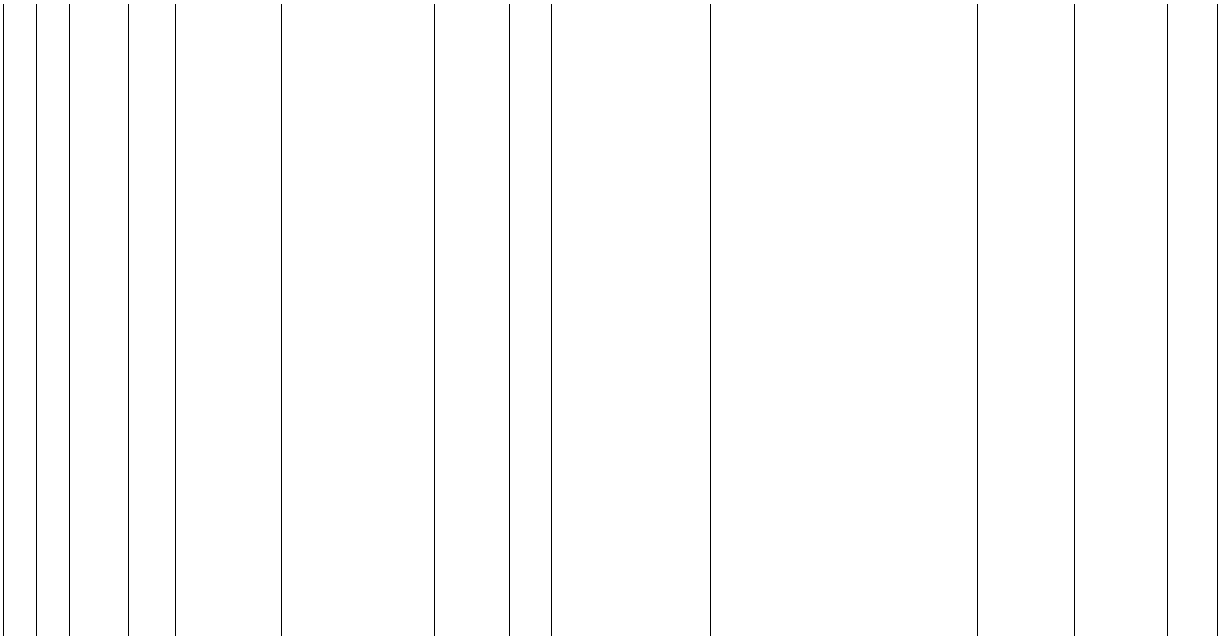












Appendix O – 2021 Socio-Economic Report

2021 Socio-economic Report

Prepared by:
Minto Metals Corp.
March 2022

1.0 Introduction

This report has been prepared by Minto Metals Corp. (formerly Minto Explorations Ltd.) in regard to the Minto Mine, located in central Yukon. The following report summarizes the results of the available socio-economic data at Minto Mine (Minto) during 2021, as required by the Socio-economic Monitoring Program framework.

The Minto Mine Socio-economic Monitoring Program (2014) was developed in conjunction with Selkirk First Nation (SFN) and the Government of Yukon (YG) to monitor the socio-economic effects of Minto Mine's construction, operation, and closure phases on the peoples and communities affected by the development of the mine. The program has two components to meet this purpose: a socio-economic baseline and ongoing monitoring to assess baseline results. Specific data collected and reported for the program includes Yukon census data, Minto-based data relating to all employees (e.g., employment and income), the Selkirk First Nation Household Survey, and Pelly Crossing-specific community-level data. The information from the components above is then used to compile an annual report.

1.1 Selkirk First Nation

The community of Pelly Crossing is home to the Selkirk First Nation. In 2020, the total number of Selkirk First Nation citizens residing within and outside Yukon was 728 (Selkirk First Nation 2020). Pelly Crossing had a population of 396 in 2021 and is the community where most of the Yukon-based Selkirk First Nation citizens reside. The total number of Indigenous citizens living in Pelly Crossing in 2021 was 341, just over 86 percent (%) of the population of Pelly Crossing (Yukon Bureau of Statistics 2021). The 2015 median total individual income of the population aged 15 years and over in Pelly Crossing is $24,576, with the average house price being $265,909 (2016 Stats Can census). The average population age of Pelly Crossing is 37 years of age (2016 Stats Can census).

The Minto Mine is an underground copper mine located 240 km southwest of Pelly Crossing. The mine is situated on Selkirk First Nation Category "A" Settlement Land, over which SFN has ownership of both surface and subsurface rights (including minerals and oil and gas) and exclusive fish and wildlife harvesting rights. An initial *Cooperation Agreement* (CA) between Selkirk First Nation and Minto was agreed upon and signed in 1997 and was later amended in 2009. The agreement serves as a formal document covering governance, business partnerships, training and employment, and royalties of the Minto Mine on Selkirk First Nations land.

1.2. Socio-economic Factors of Yukon

In general, the post-secondary and advanced education and training opportunities available in Yukon and the territories are fewer than those of other Canadian provinces. As per the 2016 Canada Census, 78.3% of the adult population with postsecondary qualifications in Yukon completed their education elsewhere, the highest percentage in any province or territory of the census period, which indicates that many graduates were drawn to the Yukon for job opportunities. The lack of post-secondary and advanced education and training opportunities in Yukon contributes to a shortage of available professional and skilled workers from the territory and not other parts of Canada. Furthermore, the amount of Yukon citizens with mining career-related experience and educational backgrounds would be considered even fewer.

The 2021 Canada Census data indicates that Yukon has a higher population growth than other provinces or territories. Comparing March 31, 2021, to March 31, 2011, the population of Yukon increased by 7,687 people, or 21.8%. Jobs are thought to be the key driving factor for Yukon's population boom. In July 2021, Yukon's unemployment rate was 6.1%, the lowest in the country. The Yukon's population growth and the low unemployment rate could indicate that Yukon citizens have a wider selection of employment opportunities to choose from, and that competition between employers for skilled labor is increasing, which means that employees are outsourced from out of the Territory.

1.3 Socio-economic Factors of Minto

Multiple factors may be contributing to socio-economic impacts at Minto over the past years and into the future, including:

- Implementation of the Socio-economic Monitoring Program (2014), and
- The new role of the Vice President, Environment Social Governance (2021),
- Permitting and regulatory delays,
- Fluctuating copper prices,
- Mine life uncertainty, and
- The news of the sale of the Minto Mine was announced in June 2019.

On October 11, 2018, previous ownership put Minto on temporary care and maintenance while exploring the sale of the property. Mining operations ceased immediately, followed by milling, and the property was then carefully mothballed. As a result, the number of Minto employees dropped significantly (from 182 in 2018 to 76 in 2016). The number of contractors also declined during this time. The decrease was most apparent among semi-skilled, skilled, and professional employees. In June 2019, Minto was sold. The mine was announced to be re-opening on June 6, 2019 and the first day of mining was September 2, 2019. Since then, overall Minto employee counts have increased since the end of the temporary closure. Minto employees outside Yukon have reached levels similar to pre-closure; however, the number of employees residing in Whitehorse, Pelly Crossing, and other Yukon communities remains low.

Before the temporary closure, the number of Yukon employees had an upward trend and represented more than 55% of total employees in 2018. After the re-opening and throughout the COVID-19 pandemic, the proportion of Yukoner employees has remained below 25%.

2.0 Minto and Contractors Safety Statistics

The below table (**Table 2.1**) summarizes the safety statistics for Minto employees and site contractors in 2021. The total incidents include minor first aid treatment at the site, any property damage, near-misses that could have resulted in an incident, medical aid (where treatment is required off-site), business interruptions, and lost-time accidents where a worker could not return to their duties resulting in missed work. There were two lost-time accidents in 2021.

Incident Type	Total Incidents	Minto	Contractors
First Aid	36	15	21
Medical Aid	6	2	4
Property Damage	59	29	30
Near Miss	37	13	24
Lost Time	2	1	1
Business Interruptions	2	1	1
Total	142	61	81

3.0 Employment

As outlined in the CA with SFN, Minto utilizes a preferential hiring recruitment approach. The preferential hiring process requires vacant positions at Minto to be first advertised and offered to candidates in the following consecutive order of priority: SFN, Northern Tutchone (NTC), Pelly Crossing, other First Nation, Yukon, and Western Canada.

3.1.1 Average employment income by residency for Minto employees ($/hour)

Minto	Pelly Crossing	Whitehorse	Yukon	Rest of Canada
As of December 31, 2020	30.13	39.86	38.30	51.61
As of December 31, 2021	36.00	43.74	43.02	49.28

3.1 Employment Income and Distribution

Table 3.1.1 above demonstrates that salaries remain higher for Minto employees residing outside of Yukon; however, average employment income in 2021 increased for Pelly Crossing, Whitehorse, and Yukon residents and decreased for residents from the rest of Canada.

Salaries remain higher for Minto employees residing outside of Yukon for multiple reasons. At the end of 2021, 79% of management positions, 89% of professional jobs, and 75% of skilled posts were held by employees outside of Yukon, indicating that Minto employees outside Yukon primarily have higher-paid positions. Additionally, there are significantly more underground than above-ground contractors at Minto, and underground mining positions typically garnish higher wages than many other above-ground mine sectors. Most underground workers come from outside Yukon.

Multiple factors may be contributing to a lower level of potential skilled, professional, and management Yukon candidates for employment at Minto in Yukon. After a temporary closure, Minto transitioned from surface to underground mining, which relies heavily on specialized, skilled underground workers from elsewhere in Canada due to a lack of necessary skills and experience in the Yukon workforce. There are fewer available skilled labor resources (including underground expertise) in Yukon, and the post-secondary education requirements for these roles cannot be obtained within the territory.

Additionally, Minto's remote location and access dictate a fly-in/fly-out (FIFO) camp operation, which is attractive to candidates who can stay in their current residence and not relocate to the Territory for employment. This approach has become standard practice for the mining industry in Western Canada, and Minto operates to be competitive in this market. Employees expect a FIFO camp model in remote mining locations. Census data from 2006 and 2016 indicate that only 6-7% of the total Yukon population is employed in the mining sector, with the largest Yukon employment category being 'public administration'.

Currently, Minto is focusing efforts on enhancing the skills and employment of Yukon residents through various partnerships with organizations that include SFN, Yukon Mine Training Association, and Yukon University. **Section 5.0** of this report (below) provides additional information regarding these skills and training partnerships.

It should be noted that as operations only re-commenced in late 2019, significant hiring was done in 2020. The number of new hires will decrease in 2021 and onwards.

3.1.2 Average employment income in 2021 by residency for Contractors ($/hour not including OT or UG Bonus)

Contractor	Pelly Crossing	Whitehorse	Yukon	Rest of Canada	Average
Kode					**Did not submit**
Cobalt	$32.00	$39.57	$35.42	$45.20	$38.05
Mabou	-	$67.67	$66.50	$66.59	$66.92
Paycore	-	-	-	$45.00	$45.00
Sodexo	$17.58	$17.58	$17.58	$17.58	$17.58
Major Drilling					**Did not submit**

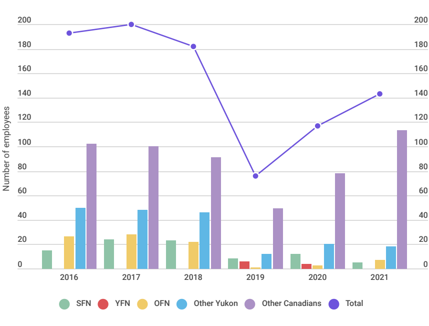
3.1.3 Annual employment income in 2021 for Minto and Contractors

Company	SFN	OFN	YFN	Yukon	Rest of Canada	Average
Minto	$449,542.71	$522,918.47	-	$1,513,336.13	$9,309,929.38	$2,359,145.34
Kode						Did not submit
Cobalt	$3,022.62	$91,295.33	$345,350.62	$829,849.62	$212,312.80	$296,366.20
Mabou	-	$126,120.00	$132,028.00	$122,460.00	$124,485.00	$126,273.25
Paycore	-	$13,163.45	-	-	$590,599.87	$201,254.44
Sodexo	$79,398.36	$1,059,927.92	-	$66,881.63	$150,221.78	$339,107.42
Major Drilling						Did not submit
Total	$531,963.69	$1,813,425.17	$477,378.62	$2,532,527.38	$10,387,548.83	$3,148,568.74

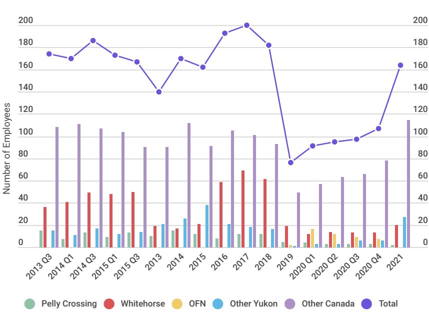
Potential contributing factors to the annual employment income for Minto and contractors, as demonstrated in **Table 3.1.3** above, include:

- Underground mining requires specialized, skilled workers. In 2021, Minto's underground mining contractor was Mabou Mining, located in eastern Canada, which indicates that their hiring pool primarily stemmed from this location.
- Most Sodexo employees are entry-level, non-skilled workers, driving a lower average hourly rate; however, Sodexo committed to hiring from Yukon. Approximately 90% of Sodexo's staff are Yukon residents, and they continue to hire locally with a focus on First Nations employment.

3.1.4 Minto Employment by Group



3.1.5 Minto Employment by Residency



3.1.6 Contractor employment in 2021 by residency

As of December 31, 2021	Pelly Crossing	Whitehorse	Other Yukon	Canada	Total
Kode					**Did not submit**
Cobalt	1	23	8	10	42
Mabou	-	5	11	107	123
Paycore	-	-	-	15	15
Sodexo	8	19	5	1	33
Major Drilling					**Did not submit**
Total	9	47	24	133	213

3.1.7 Minto new hires by group

	SFN	YFN	OFN	Other Yukon	Other Canadians	Total
As of December 31, 2020	14	3	5	26	99	147
As of December 31, 2021	0	0	4	16	98	118

3.1.8 Minto employment by job category and by group

As of December 31, 2021	SFN	YFN	OFN	Other Yukon	Other Canadians	Total
Management	0	0	2	3	19	24
Professional	2	0	0	4	51	57
Skilled	2	0	2	8	37	49
Semi-skilled	1	0	2	2	4	9
Entry level	0	0	1	1	2	4
Total	5	0	7	18	113	143

3.1.9 Contractor employees by group

As of December 31, 2021	SFN	YFN	OFN	Other Yukon	Other Canadians	Total
Kode						Did not submit
Cobalt	1	10	6	19	6	42
Mabou	-	5	4	7	107	123
Paycore	-	-	1	-	14	15
Sodexo	9	-	19	5	-	33
Major Drilling						Did not submit
Total	10	15	30	31	127	213

3.2 Voluntary Exits

There was a total of 53 voluntary exits and turnovers for the 2021 reporting year.

4.0 Business

As part of Minto and SFN's CA, Minto is required to provide SFN with a preferred opportunity notification to negotiate and potentially be awarded a contract to supply the requirement. SFN has developed partnerships with several of Minto's vendors for which the details of financial benefit Minto is not privy to. As such, this section summarizes expenditures by the company that is the primary vendor and does not account for any SFN proportional expenditures resulting from those partnerships.

In 2015, Minto and SFN worked jointly to establish new or maintained contracts to ensure involvement from SFN and support First Nations partners. The contractual arrangements highlighted below represent the majority of the opportunities that SFN and Minto share with service providers. As well as financial gain, SFN also does benefit from employment opportunities on some contracts.

The six procurement rights must be met in selecting such vendor relationships:

- Right Materials (to fill a need)
- Right Place (Yukon preference)
- Right Quantity and Quality (high quality and ability to supply)
- Right Supplier (service, technical and aftermarket support, value-added service)
- Right Moment (product available when needed)
- Right Price (competitive commercial price)

As of March 2022, Minto Mine has active agreements with the following companies:

Company Name	Service Provided
39539 Northwest Joint Venture	Vacuum truck rental
Air North Charter & Training Ltd.	Flights
Alkan Air	Air service
ALX Exploration Services Inc.	Chemicals & supplies
Capital Helicoptors	Helicopter service
Chieftain Energy LP	Fuel haul and lubricants
Cobalt Construction Inc.	Surface mining/road construction/maintenance
Dyno Nobel	Mine explosives
Fountain Tire Mine Service Ltd.	Tire technician and consignment tires
G-P Distributing Inc.	Food services
Hurlburt Enterprises	Water, septic & related supplies
Hy-Tech Drilling Ltd.	Diamond drilling
JDS Energy and Mining Inc.	Underground mining and mechanics
KBL Environmental Ltd.	Waste services
Kode Contracting	Construction services
Lynden	Transportation services/Ore haul
Mabou Mining Inc.	Construction services
Major Drilling Ground International Inc.	Longhole drilling
Minto Exploration Ltd.	Exploration
Multicrete Systems Inc.	Shotcrete & concrete
Pacific Northwest (Yukon)	Freight
Paycore Enterprises Ltd.	Diamond drilling
Quadra Chemicals	Chemicals
Sodexo Canada Ltd.	Food and camp services
Thyssen Mining Construction of Canada Ltd.	Underground construction of chute
Tintina Air	Air service

Minto selects the appropriate local vendors based on vendors that meet selection criteria that support Minto's corporate social responsibility. Such partnerships are built on transparency, human rights and labor compliance, supplier status, financial, geographical, and environmental compliance. The framework for successful local suppliers is based on common shared goals, continuous improvement, and vendors that support Minto's policies and procedures.

Total Spent on Yukon Vendors

Year	Total
2021	$72,123,142.02

In addition to supporting First Nations partners, Minto also strives to support Yukon-based companies and service providers based on their ability to service needs and meet commercial acceptance criteria. Minto follows best practice guidelines and the six procurement rights in selecting potential suppliers in analyzing a business for suitability.

Minto will continue to maintain and increase spending with local suppliers to support the mining industry. Minto is committed to sustainability in developing relationships for long-term mutual benefit.

4.1 Yukon Business Names by Group

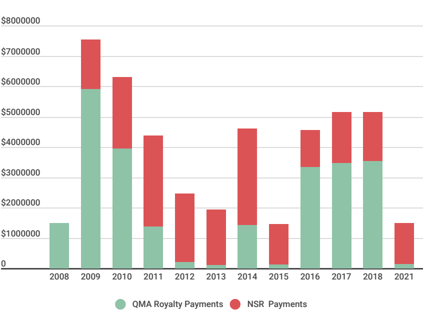
See the attached **Appendix "A"** for a listing of all Yukon business names by group. Not all businesses have been captured due to employee expenditures and reimbursed through expenses, and all contractor purchased items are excluded.

4.2 Minto Capital and Operating Expenditures

4.3 Property Taxes and Other Fees (2021)

	SFN	Yukon	U.S.	Total
Land Leases	74,216.88			74,216.88
Property taxes		283,789.89		283,789.89
Landing fees	30,580.00			30,580.00
Trappers' Compensation	10,000.00			10,000.00
Skagway municipal taxes			39,019.00 USD	39,019.00
Total	114,796.88	283,789.89	39,019.00 USD	437,605.77

4.4. Royalty and Net Smelter Payments



Note: There was no payment of royalties in 2019 or 2020, as operations only recommenced in late 2019. As no concentrate was received at the smelter in 2020, combined with the costs for re-starting the mine, there was no royalty in 2020.

5.0 Capacity, Training, and Education

Minto is dedicated to working with various partners to support capacity building, training, and educational initiatives for the Minto community. Through a combination of "on-the-job" training and mentoring, combined with external training opportunities (e.g., Front Line Supervisor course and Northern Safety Network courses), Minto continues to create a workplace that enhances current employee skills and supports the ongoing development of a more advanced local labor force.

The coronavirus pandemic is a global health issue that challenges our collective ability to live and function as we normally would. During the COVID-19 pandemic, Minto's primary focus was on reducing the potential for the spread of COVID-19 at the Minto Mine site and keeping employees safe and in good health. Due to this, many "non-essential" capacity building, training, and educational initiatives have been postponed to maintain social-distancing standards and other health measures.

In the past, Minto has worked with the Centre for Northern Innovation in Mining (CNIM) on programs that have led directly to increased employment of local Yukon residents. Two specific initiatives include interviewing candidates, supporting recruitment as part of the Introduction to Underground Mining course, and providing a site tour and presentations on recruitment for the Workplace Readiness Course held in Pelly Crossing. Minto has also partnered with Yukon University to host courses in the Environmental Monitoring Certificate Program, where students were hosted for two segments in the Fall of 2020 and will be hosted again in 2022.

Minto has multiple partnerships with Yukon University to support mining sector training programs, including courses on Underground Mine Training, Introduction to Mining, Surface Mine Training, and First Line Supervisor training. Additionally, Minto partnered with the Yukon Northern Mine Remediation Program in 2021 to offer a high school course at Pelly Crossing and has supported offering this course in 2022 due to popular demand.

Currently, Minto is rolling out leadership training to all employees titled "It's My Business" to invest in employees and their skills. The program's focus will be on understanding various learning styles, leadership thinking, accountability, and responsibility.

5.1 Selkirk First Nation and Other First Nation Specific Training

Minto is proud to partner with the community of Pelly Crossing and the Selkirk First Nation to promote education and employment. Minto often invites young people from Pelly Crossing to come and learn about mining in the territory. Minto participates in Yukon University's Workforce Readiness Program in Pelly Crossing and Environmental Monitoring Certificate Program. These programs provide members of SFN with the opportunity to obtain skills and enter or re-enter the workforce.

Due to Minto ramping up and hiring in late-2019, and the hindrance of the COVID-19 pandemic, on-the-job operational training has been primarily focused on ensuring all employees are safely equipped for their roles within the mine. Selkirk First Nation citizens and all staff have been provided with health and safety training for the site-specific to their work area. Safety training ranges from working with hazardous materials and confined spaces to Red Cross first-aid courses and First Line Supervisor Certification by the Yukon Workers' Compensation Health and Safety Board. Much of this skills training is transferable to other mining operations and, more broadly, to other industries.

Minto's approach to community investment is based upon opportunities to further build and maintain the company's social license, maintain good relationships with their partners and maintain a local presence and good reputation in the communities where they operate and where their employees live and work. The goal of the approach is to strengthen accountability and working partnerships with stakeholders while providing a foundation to understand and consider the community's needs, opinions, and interests.

Minto employed several community engagement methods with different levels of involvement from the community and other stakeholders (limited engagement in 2021 due to COVID-19). A Community Engagement Plan (CEP) was developed in 2015 and is currently being updated. The CEP is intended to help guide the company in engaging with stakeholders through various initiatives. The CEP will provide a framework that aligns the engagement activities and sets out targets for future endeavors. It will be reviewed and updated annually to ensure that commitments are being met and to layout future engagement initiatives.

The CEP includes a table of Minto's engagement methods with SFN and the proposed frequency of these engagements. Examples of community and cultural engagement initiatives in 2021 include:

- Christmas turkey distribution,
- Contribution to the Yukon Native Language Centre on behalf of SFN Elder,
- Job fairs, and
- Mine tour with SFN citizens and various Minto departments.

Minto advertised for SFN summer students; however, due to a combination of factors, the program was unsuccessful in hiring SFN students for the 2021 season. Two Yukoners were hired through the program. In 2022, Minto has changed the program to adapt to SFN's recommendations.

Minto arranged for an opportunity for SFN students to have on-site learning related to mine reclamation for two weeks in the summer of 2021; however, due to a spike in COVID numbers, the program was cancelled. Similar to the Northern Mine Remediation course, this program would have offered an opportunity for students to obtain credit at high school. This program will be revisited in the future.

In 2021, Minto contributed $11,500.70 to SFN's cultural and community wellbeing.

See the following link for Appendix A - List of Yukon Companies 2021
https://infogram.com/appendix-a-list-of-yukon-companies-2021docx-1h8n6m39ow8oz4x?live

Made with infogram

Appendix P – 2021 Geotechnical Annual Review

2021 Geotechnical Annual Review

Minto Mine, Yukon

Minto Explorations Ltd.

SRK Consulting (Canada) Inc. ■ 1CM002.073 ■ October 2021

srk consulting

FINAL

2021 Geotechnical Annual Review

Minto Mine, Yukon

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Useful Definitions

This list contains definitions of symbols, units, abbreviations, and terminology that may be unfamiliar to the reader.

DSTSF	Dry Stack Tailings Storage Facility
MWD	Main Waste Dump
MVFE	Mill Valley Fill Extension
SWD	Southwest Dump
TDD	Tailings Diversion Ditch
WSP	Water Storage Pond

1 Introduction

1.1 Purpose of Review

On September 2-3, 2021, SRK Consulting (Canada) Inc. completed a geotechnical inspection of the Minto Mine site. The purpose of the inspection was to document the physical condition of the site based on visual observations and to provide geotechnical assessment, noting potential signs of physical instability such as erosion, differential settlement, sloughing or bulging of material, seepage, etc. The inspection is documented in the photographic compilation provided in Appendix A. This report summarizes the findings and recommendations.

This report is in partial fulfillment of the requirements of Minto Explorations Ltd.'s existing Water License QZ14-031 Clause 100 and Quartz Licence QML-001 Paragraph 13.2 that require the physical stability of all engineered structures, works and installations be inspected by an independent engineer after the spring thaw of each year (by June). In 2021, the June independent engineer inspection by SRK was unable to be completed due to COVID travel restrictions in the Yukon. As a result, the June inspection was completed internally by Minto as part of their routine quarterly inspections and SRK undertook the next scheduled quarterly visual inspection in September 2021.

1.2 Site Conditions

The Minto Mine was in production from July 2007 to late 2018 when the mine was placed in temporary care and maintenance. In 2019, the mine transitioned back into production with underground mining starting on September 2, 2019 and milling on October 10, 2019. Waste rock produced from underground is either disposed of underground or in the SAT Dump in the Main Pit.

The 2021 geotechnical inspection was completed by Peter Mikes, PEng (YK) and Kisa Elmer, PEng (YK), of SRK. SRK staff were accompanied by Klaus Gil, Senior Tailings Engineer with Minto, throughout the visit. Mr. Gil was SRK's primary contact for information while on-site about the activities during the past year and provided background and support during review of the instrumentation data. Weather during the site inspection was partly cloudy with estimated temperatures between 5°C and 20°C with dry ground conditions on site.

1.3 Scope

The following engineered structures, works, and installations were inspected during the site visit:

- Dry Stack Tailings Storage Facility (DSTSF) and Mill Valley Fill Extension (MVFE) (Stage 1 and 2)
- Tailings Diversion Ditch (TDD)
- Main Waste Dump (MWD), including Main Waste Dump Expansion, and Main Waste Dump Wrap
- Southwest Waste Dump (SWD)
- Reclamation Overburden Dump

- Ore stockpiles
- Mill and camp site
- Fuel containment facility
- Water Storage Pond (WSP) Dam
- Big Creek Bridge
- Main Pit Dump
- Main Pit including South Wall Buttress, In-Pit Dump, and SAT Dump
- Area 2 Pit
- Area 118 Pit and Backfill Dump
- Minto North Pit

As a part of the inspection, SRK reviewed, previous year's reports, instrumentation data, design reports and monitoring guidance documents as required to guide the inspections. The instrumentation data was reviewed prior to the inspection to check for indications of unusual performance or change in trends. Section 4 of this report presents a list of data reviewed, including the last data collection date.

2 Site Inspection Observations

A summary of SRK's observations during the site inspection is provided in Table 1. Site observations are listed per each inspection area. A photographic record of the observations is provided in Appendix A.

Table 1: Site Inspection Observations

Area Number	Name	Inspection Observations
1	Dry Stack Tailings Storage Facility (DSTSF)	▪ No observations of global instability. ▪ No signs of further instability of the slump of the cover material observed in 2019 at the south end, near the grade transition point of the old TDD alignment (see Photo 1-2, Appendix A). Slump was observed in 2019 to be approx. 25 m wide with the cracks at the top of the slump appear to be self-healing. ▪ Variable vegetation establishment was observed across the areas of the covered and regraded WR Shell that were seeded in 2019. ▪ Settlement cracking noted in the 2020 inspection the in southern portion of the cover (orientated parallel to the southern crest) was not observed and was obscured by vegetation. ▪ Multiple erosion gullies observed on the north and east slopes of the cover (see Photo 1-7, Appendix A). ▪ The protective cover over Piezometer DSP-06 and Thermistor DST-11 was observed to be displaced during the inspection and the instrumentation exposed. The cover should be replaced following each reading to prevent damage and prevent rain entering the borehole and influencing the thermistor readings.
2	Mill Valley Fill Extension (MVFE)	▪ No observations of global instability. ▪ Multiple erosion gullies within the cover soil observed on the north and east slopes of the cover where runoff concentrates (see Photos 2-3, 2-4, and 2-5, Appendix A). ▪ The excavated slope to the south of the Minto Creek Seepage Collection System (MCSCS) that is excavated into permafrost soils has no observable changes compared to the previous years' inspection. The access road headed down to the MCSCS was upgraded in the past year with an armoured ditch constructed to direct surface runoff away from the MCSCS. ▪ No signs of seepage visible at the toe of the MVFE. The MCSCS appears to be functioning as per design, with no signs of seepage below the system.
3	Tailings Diversion Ditch (TDD)	▪ Construction of the TDD Intake Structure and Overflow Spillway into the Area 2 Stage 3 Pit remains incomplete with construction of the intake channel side-slopes and riprap placement remaining. ▪ Runoff from the Underground Access Road flows into the TDD Intake Structure and has deposited sediments in the basin (Photos 3-1 and 3-2, Appendix A). A berm is also present that prevents use of the overflow spillway into the Area 2 Pit. Any flow that overtops the TDD Intake Structure would be directed down the Underground Access Road to the north. Most of this flow would bypass the DSTSF to the west, but some flow would pass between gaps in the road berm and flow overtop the DSTSF cover. ▪ Conditions in the TDD remain the same as previous inspections with no major obstructions or signs of instability along the TDD were observed. ▪ Minor vegetation was observed in the upper portion of the unarmoured ditch (see Photos 3-3 and 3-4, Appendix A). The vegetation growth will be required to be removed within the next year and should continue to be monitored as part of routine inspections.

Area Number	Name	Inspection Observations
		■ Remaining armoured portion of the ditch was generally free from vegetation (see Photo 3-5, Appendix A). ■ TDD outlet showed no signs of instability or obstructions (see Photo 3-6, Appendix A).
4	Main Waste Dump (MWD)	■ No observations of global instability. ■ Erosion gullies observed in cover material. ■ Trees have been planted in portions of the MWD Expansion area where resloping and cover placement have been completed. ■ The longitudinal crack noted in the 2019 inspection in the resloped area above the former PAG Oxide stockpile (Photo 4-23, Appendix A) was not observed in the 2020 or 2021 inspection. The cracking was approx. 50 m long with the area below the cracks appearing with a concave slope due to potential differential settlement.
5	Main Waste Dump Wrap	■ Differential settlement, cracking and small sinkholes are prevalent on the top bench, likely attributed to snow within the fill during winter construction (Photo 5-1, Appendix A). The condition of the area is consistent with the previous year's inspection. ■ In 2020, the upper lift of the MWD Wrap was partially resloped. Since the 2020 inspection, waste rock has been excavated from the toe of the wrap resulting in an over-excavated slope and a risk of surficial slope failures/rockfall. Coarse rock is present at the base of the slope that acts as a small barrier to rockfall, but until the wrap has been regraded, traffic should be restricted near the toe. (Photo 5-2, Appendix A).
6	Southwest Waste Dump (SWD)	■ A crack approx. 180 m long observed along the access road immediately west (upslope) of areas where overburden stockpiles are present. – The crack was first observed in the 2019 annual inspection. In the past year, the crack has grown in length by approximately 40 m to the south and is up to 40 cm wide (up from 35 cm wide in 2020 annual inspection) and has an approximate 20 cm vertical displacement (up from 10 cm in the 2020 inspection. See Photos 6-3, 6-4, and 6-5, Appendix A. – The crack is located above survey hub SWD12 and any large-scale slope deformation would be expected to be detected by SWD012 located downslope of the crack. The survey hub has shown a steady total displacement rate of 0.65 mm/day in the past year (See Section 3.4), which is a slight deceleration compared to the movement rate at the time of the inspection in 2020 (0.70 mm/day). – The crack should continue to be visually monitored as part of routine inspections for any change in condition.
7	Reclamation Overburden Dump (ROD)	■ Conditions are the same as noted in previous years' inspections. ■ Vegetation has established in many areas the dump area on suitable overburden piles (Photo 7-1 and 7-2, Appendix A). ■ Previous notes include: – Slumping, settlement, and tension cracks are expected in the dump as it is constructed with frozen overburden and thawing is expected – Discontinuous tension cracks and differential settlement have been observed along the perimeter crest – Ground undulation is typically 0.3 m and is prevalent throughout the facility ■ This area was not inspected on foot during the 2021 inspection
8	Ore Stockpiles	■ The ore stockpiles were investigated briefly in passing and appeared to be in good condition. No obvious signs of instability were noted.

Area Number	Name	Inspection Observations
9	Mill Site	▪ No observations of global instability of the highwall north of the mill were observed Minor erosion and spalling of loose rocks is ongoing. A fence was installed at the base of the slope in 2019 as a mitigation with no evidence of fence damage observed due to falling materials
10	Camp Site	▪ Observations were consistent with previous years' inspection. ▪ No signs of instability were observed. ▪ The erosion gully noted in the 2020 inspection was repaired with fill and the camp pad graded to direct runoff to the north (Photo 10-1, Appendix A). ▪ No change was observed to the erosion gullies located between the camp and main access road (Photo 10-4, Appendix A).
11	Fuel Containment Facility	▪ The highwall to the north of the facility did not show signs of global instability. ▪ Significant new rutting that has exposed the base liner between the access ramp and the sump occurred within the past year (Photos 11-2 to 11-5, Appendix A. The rutting also has cause damage to the access ramp. ▪ Several areas of exposed geotextile were observed with one tear in the geotextile found with approximate dimensions of 5 cm x 8 cm (Photo 11-5, Appendix A). No damage to the liner beneath the liner could be felt, however liner damage cannot be ruled out. In addition, there could be other areas along the ruts where damage has occurred but could not be detected due to sloughing of the rut edges that may have covered up liner damage. ▪ An investigation is recommended to assess for potential damage to the liner. The damaged geosynthetics should be repaired and additional sand material should be placed within the facility to fill the ruts. The investigation should be completed carefully using hand shovels to expose the geotextile/liner along the ruts to allow for the condition of the materials to be carefully inspected. ▪ The equipment that caused the rutting appeared to have driven straight down the ramp to the sump, then backed up and turned around at the base of the ramp prior to traveling back up the ramp. Areas where the equipment tires turned over top of the liner would be most susceptible to damage and particular attention should be paid during the investigation in these areas. ▪ No change in condition of the exposed liner on the sides of the facility were observed.
12	Water Storage Pond (WSP) Dam	▪ The water level within the pond (~713.4 m) was approximately 4 m higher compared to the 2020 inspection. Otherwise, observations are consistent with previous years' inspection. ▪ No observations of global instability. ▪ Some deadfall/logs are accumulating on the upstream slope of the dam (Photos 12-5 and 12-6, Appendix A). ▪ Some of the rip rap used to armour the upstream and downstream slopes was observed to be weak and friable. ▪ No change in appearance was noted in the small potential sinkhole or animal burrow observed in 2019 at the downstream slope, near the southern edge and approximately 5 m NW of WDT-8 and approximately 50 m downstream of the crest. Dimensions are approximately 0.3 m diameter and was able to lower measuring tape to about 1.4m below ground surface (Photo 12-5, Appendix A). No action is required to address this feature. If it is an animal burrow, it does not appear to be active and at this location, would not develop deep enough though the embankment or abutment to be able to act as a preferential pathway. ▪ Seepage water downstream of the dam was clear and no accumulation of sediments was observed (Photo 12-8 to 12-10, Appendix A). ▪ Seepage flow at the weir outlet was estimated to be less than 1 L/s however a portion of the flow appeared to be by-passing the weir to the south (Photo 12-9,

Area Number	Name	Inspection Observations
		Appendix A). The seepage then reports to the collection sump at W17 and is pumped back to the WSP.
13	Big Creek Bridge	■ Observations of the bridge are consistent with previous years' inspection ■ The bridge abutments and road approaches are in good condition, with no signs of instability observed. ■ The tree growing in western abutment should be removed as it impedes the inspections and could trap debris/impede flow during a larger flood event.
14	Main Pit Dump, SAT Dump, In-Pit Dumps, and W-15 Sump	■ No observations of global instability. ■ SAT dump showed no signs of cracking or movement (Photo 14-7, Appendix A). ■ The longitudinal cracking on the crest of the In-Pit Dump above the SAT Dump is filling with sediment with no signs of additional movement (see Photo 14-8, Appendix A). ■ The condition of the cracks in the MPD appear to be unchanged compared to the 2020 inspection. ■ Top bench of the Main Pit Dump has an undulating surface with some differential settlement. ■ During the inspection, waste rock material was being excavated from the south side of the top bench of the Main Pit Dump to be processed and used as road construction material. If significant volume of material is expected to be used is it recommended that the north end of the dump be used as the source material as it would reduce the driving force in the area of the dump that is currently moving. ■ Evidence of overtopping of the W15 Sump and pooling on the access road north of the sump was observed. The water appears to have infiltrated through a sinkhole beneath haul road, which would infiltrate into the pit.
15	Area 2 Pit	■ Observations were consistent with previous years' inspection. ■ No observations of global instability. ■ The cracks observed along the access road on the northeast side of the pit rim appears to have widened compared to the previous inspection. This road has been barricaded from use. No signs of instability were observed below the access road from across the pit. ■ The erosion gully in the wall of the Stage 3 pit does not appear to have increased in size (Photo 15-6, Appendix A).
16	Area 118 Pit and Backfill Dump	■ Observations were consistent with previous years' inspection. ■ No observations of global instability.
17	Minto North Pit	■ Observations were consistent with previous years' inspection. ■ Mining at the pit was completed in October 2016. ■ The failure of the south pit wall (Photo 17-1, Appendix A) occurred one day following completion of mining in the pit and removal of all equipment and personnel and was predicted based on pit wall monitoring. No additional pit slope failures have occurred since.

3 Monitoring and Instrumentation Data

Minto's Physical Monitoring Program (PMP) is a component of the Environmental Monitoring, Surveillance and Reporting Plan. The objective of the PMP is to monitor the performance of key mine infrastructure and workings. The PMP consists of two main components: regular geotechnical inspections, and instrumentation to measure ground conditions and deformations. The PMP was last updated in February 2021 and specifies the inspection and monitoring frequencies.

Table 2 lists instrumentation data reviewed as part of the inspection, with the date of the most recent data. Changes to the list of instrumentation compared to the last inspection are listed below the table in the notes. Instrumentation plots are provided in the appendices. Appendix B provides a site-wide summary of the survey hub data indicating the current movement rates and directions for each hub.

Table 2: Summary of Instrumentation Data

Facility	Instrumentation Type	List of Reviewed Instrumentation	Last Reading Date
Area 2 Pit	Survey Hubs	A210, A215, A216, A217, A218, DS01, DS02, DS03, DS04	August 2021
	Inclinometers	A2I-1	June 2021
	Ground Temperature Cables	A2T-1	June 2021
DSTSF and MVFE	Survey Hubs	DSSH06, DSSH10, DSSH12, DSSH14, DSSH15, DSSH18, DSSH19, DSSH20, DSSH24, DSSH26, DSSH27, DSSH28, DSSH29, DSSH31, DSSH32, MV1, MV2.	Varies between May 31 and July 30, 2021
	Inclinometer	DSI-24	June 2021
	Piezometers	**Active:** DSP-05B, DSP-06(A and B), DSP-07 Sensors #1 through 4 **Non-functional[1]**: DSP-05A, DSP-07 Sensors #5 and #6	June 2021
	Ground Temperature Cables	DST-10, DST-11, DST-13, DST-14, DST-15	June 2021
MWD	Survey Hubs	**Active**: MWDH01, MWDH02, MWDH03, MWDH04 **Non-functional[2]**: MWDH05, MWDH06	Varies between Feb. and May 2021
	Inclinometers	MDI-2	May 2021
SWD	Survey Hubs	SWD-01, SWD-06, SWD-07, SWD-08, SWD-09, SWD-10, SWD-11, SWD-12	Varies between June and August 2021
	Piezometers	**Active**: SDP-2 (A and B), SDP-3 (A and B)	June 2021
	Ground Temperature Cables	**Active**: SDT-1, SDT-2, SDT-3	June 2021
Main Pit	Survey Hubs	**Active**: M79, M80, M81, M82, M83, M84, M88, M89, M92, M93, M94, M95, M96, M97, M98 **In-active[3]**: M89, M96	Varies between March and August 2021
WSP	Survey Hubs	WSP-1, WSP-3, WSP-4, WSP-5	August 2021

Facility	Instrumentation Type	List of Reviewed Instrumentation	Last Reading Date
	Piezometers	WDP-2, WDP-3, WDP-3A, WDP-4, WDP-5, WDP-6, WDP-7, WDP-8, WDP-9, WDP-10, WDP-11, WDP-12, WDP-13	August 2021
	Ground Temperature Cables	WDT-1, WDT-2, WDT-3, WDT-4, WDT-5, WDT-6, WDT-7, WDT-8	August 2021

Notes:

[1] Piezometers DSP-7 Sensors 5 and 6 have not produced a successful reading since February 8, 2020. Piezometer DSP-05a has not produced a successful reading since November 11, 2018. Piezometer DSP-06b began to produce successful readings on November 22, 2020 after not producing a reading since November 11, 2018.

[2] Survey hubs MWDH05 and MWDH06 were destroyed in the fall of 2020 because of regrading of the Main Waste Dump Wrap. These two hubs showed some settlement but no significant movement since their installation.

[3] Main Waste Dump Survey hubs M89 and M96 were not monitored in the past year. Since installation, both hubs had not shown any movement and were removed from the monitoring program.

3.1 Area 2 Pit

Area 2 Pit instrumentation data is provided in Appendix C and includes a ground temperature cable (A2T-1) and an inclinometer (A2I-1) that were installed in 2013 in the southeast corner of the planned Area 2 Stage 3 Pit, as well as ten survey hubs installed at various locations around the perimeter of the pit.

The inclinometer data is shown in Figure 1 of Appendix C. The data shows a shear zone developing between depths of 36 m and 50 m starting in the fall of 2017, which corresponds to the mining of the Area 2 Stage 3 Pit. The observed shear zone includes multiple discrete zones between 36 and 50 m. The movement rate then slowed, and since 2019 shows a slight acceleration trend that has increased the movement rate from approximately 0.1 mm/day in 2019 to 0.15 mm/day in 2021.

The ground temperature data is sown in Figure 2 of Appendix C. A2T-1 is measured at the same location as the inclinometer and indicates permafrost conditions are present to an approximate depth of 60 m below ground surface.

Survey hub movement data are presented in Figure 3 of Appendix C. Four survey hubs (DS01 through DS04) are located near the Underground Shop along the east crest of the pit that are monitored weekly because of their proximity to the Underground Shop. Data from these hubs show steady and decreasing movement rates that range between 0.03 and 0.3 mm/day. No signs of additional cracking or deformation were noted in the area during the site inspection (Section 2). The movement is likely due to mining of the Area 2 Stage 3 Pit and changes to the thermal ground regime resulting in thawing of permafrost soils. The other survey hubs on the west and northern portion of the Area 2 Pit also show steady or decreasing movement rates ranging from 0.01 mm/day to 0.11 mm/day.

3.2 Dry Stack Tailings Storage Facility and Mill Valley Fill Extension

Instrumentation data for the DSTSF and MVFE are provided in Appendix D.

Movements in the DSTSF were first identified in early 2009. The MVFE Stage 1 was designed to mitigate the movement with construction of the facility occurring between January 2012 and 2013. The survey hubs used to monitor rates of the DSTSF showed a deceleration ranging from 20 to 60 percent since the start of the MVFE Stage 1 placement. Construction of a second extension (MVFE Stage 2) began in late 2015 and was completed in the summer of 2016. The MVFE Stage 2 doubled the size of the Stage 1 buttress and resulted in further decreases to the movement rates.

Survey Hubs

Survey hub movement data are presented in Figure 1 to 18 of Appendix D. Following construction of the MVFE Stage 2, the survey hubs were expected to slow with the movement rates asymptotically approaching zero. The timing for when no movement is expected is uncertain. The hubs have generally been performing as expected since the construction of the MVFE Stage 2. Rates of movement within the DSTSF are substantially lower compared to before the construction of the MVFE Stage 2 with most survey hubs continuing to show a decelerating trend with the rate of deceleration decreasing in the past year. Several hubs show steady movement, but additional time is needed to evaluate if deceleration has stopped. Two survey hubs show possible acceleration trends:

- DSSH12 (Figure 4) shows an apparent acceleration in the last reading on July 31, 2021, with the horizontal movement rate increasing from 0.13 mm/day to 0.4 mm/day. Additional readings are needed to confirm the trend. A seasonal increase in movement was also observed in 2019 with the hub subsequently continuing to decelerate.
- DSSH26 (Figure 11) shows an apparent acceleration in the last reading on May 31, 2021 with the horizontal movement rate increasing from 0.07 mm/day to 0.25 mm/day. Additional readings are needed to confirm the trend because the hub may have shifted because of the spring thaw and settlement of the cover beneath the hub. This hub has previous shown a deceleration trend since its installation in 2015.

Two additional hubs (ASH05 and ASH06) are located further to the south of the DSTSF on the airport access road (Appendix D, Figure 19). ASH05 shows no significant movement trend. ASH06 showed slight movement in the spring of 2017, which is believed to be the result of disturbance caused by a nearby pipeline installation. The hub showed no significant movement in the past year.

Piezometers

Piezometric data from the DSTSF are presented in Figures 20 to 22 in Appendix D.

DSP-05B (Figure 20, Appendix D) showed an increase in pore pressure that appears to have peaked near the beginning of 2018 and has since fluctuated between 793 m and 798 m. This sensor is located approximately 2 m below the tailings in the foundation. DSP-05A, located approximately 2 m above the base of the tailings continued to show a gradual increase in pore pressure until November 2018 when the sensor became unresponsive. Readings measured at DSP-05A were significantly less than those at DSP-05B. Temperatures at both sensors are approximately at the freezing point of water (less than 0.5°C) and the excess pore pressures are believed to be the result of an increase in the unfrozen water

being unable to dissipate as a result of unfrozen conditions in the surrounding soils. As the survey hubs in the vicinity of the sensor show decelerating movement, no additional action is recommended.

DSP-06 (Figure 21, Appendix D) also includes two vibrating wire piezometers: DSP-06A is 2 m above the base of the tailings and DSP06B is 2 m below the base of the tailings. DSP-06A shows no pore pressure, while DSP-06B showed a gradual increasing pore pressure trend that peaked in February 2019 and has since decreased.

All sensors at DSP-07 (Figure 22, Appendix D) have shown continued increases in pore pressure since their installation in 2015. Readings in 2019 all showed steady pore pressures, but since 2020, the sensors resumed an increasing trend, except for DSP-07-03 that shows a decrease in pore pressures. All sensors are in zones with significant amounts of ground ice with ground temperatures ranging from -1° to -0.6°. Survey hubs in the vicinity of these sensors also show decelerating movement.

Ground Temperature Cables

Ground temperature profiles are provided in Figures 23 to 27 of Appendix D. The profiles indicate that warm permafrost is present at all locations, except in the lower portions of DST-11 and DST-13 that are below the depth of permafrost. DST-11 is located near the crest of the DSTSF, while DST-13 is located approximately 300 m east of the DSTSF in an undisturbed location.

Inclinometers

Inclinometer data from DSI-24 are presented in Figure 28 of Appendix D. The inclinometer is located between the MVFES2 and the DSTSF. The profile plot indicates a main shear zones at depths of 45 m and 53 m. The last reading collected on June 19, 2021 shows an increase in the movement rate (0.19 mm/day), which had previously shown a deceleration trend with an average movement rate of 0.055 mm/day in 2021. Additional readings are needed to confirm if the acceleration is real, or due to variability, or is an erroneous reading.

3.3 Main Waste Dump

The MWD instrumentation data are provided in Appendix E and includes an inclinometer and six survey hubs that were installed in the summer of 2018 following construction of the MWD Wrap.

Displacements in MDI-2 increased during the winter of 2017-18 (likely related to the construction of the MWD Wrap), with a movement rate of approximately 0.07 mm/day primarily occurring between the depths of 22 and 28 m below ground surface. The movement rate has slowed since completion of the dump, with a current rate of 0.01 mm/day over the past year.

Six survey hubs were installed on the MWD Wrap in August 2018. Hubs MWDH01, MWDH02, MWDH03 and MWDH04 show no current movement. Survey hubs MWDH05 and MWDH06 were destroyed in the fall of 2020 during regrading of the Main Waste Dump Wrap. These two hubs showed some settlement but no significant movement during their monitoring period.

3.4 Southwest Waste Dump

Instrumentation data for the SWD are provided in Appendix F.

Survey hub movement data are presented in Figure 1 to 9 of Appendix F. Survey Hub SWD07 shows a possible acceleration trend, SWD10 shows no significant movement, SWD12 shows a steady displacement rate, and the remainder show decreasing movement rates.

Survey hubs SWD12 and SWD09 are located downslope of the longitudinal crack observed during site inspection (See Figure A-4 and Photos 6-3, 6-4 and 6-5 in Appendix A for crack location and photographs). The movement of these hubs may be due creep or thawing of ice-rich soils present beneath the lower portions of the dump near the valley bottom (east side). In addition, the stockpiled cover material downslope of the crack likely contributes a driving force to the movement. The future spreading of the cover will likely reduce the driving force and movement rate. The foundation soils the upper (western) portion of the dump consists of colluvial soils with low ice content (EBA 2008). The survey hub movement direction is perpendicular to the dump crest with no indication of down valley movement (towards the Main Pit). The crack location was plotted overtop of an interpreted overburden isopach plan (Figure 14, Appendix F). The isopach indicates that the overburden is generally thin in the in the area of the crack and downslope; however, this is based on one drillhole in the vicinity of the crack and the accuracy of that borehole was unable to be confirmed at this time. The survey hubs are recommended to continue to be monitored at a quarterly basis.

Ground temperature data for the SWD are presented in Figures 10 to 12 of Appendix F, with the temperature cable locations shown in Figure 1. The profiles indicate that warm permafrost is present at all locations with time graphs generally indicating a warming trend.

Piezometric data for the SWD are presented in Figure 13 of Appendix F. The pore pressures for all piezometers show a decreasing trend.

3.5 Main Pit and Main Pit Dump

The initial indication of movement in the Main Pit south wall was observed in April 2009. A waste rock buttress was subsequently designed and constructed. Substantial completion of the buttress (South Wall Buttress) was completed in 2013. A detailed assessment and history of the physical stability associated with the Main Pit south wall is provided in the letter report “Detailed Review of Foundation Performance at Select Mine Waste Facilities and Main Pit South Wall” (SRK 2012b).

The Main Pit is a disposal location for waste rock with an NP:AP ratio less than 3 (referred to as “SAT” material at Minto) with the material to be placed below the final water elevation of the pit. In addition to the South Wall Buttress, several In-Pit Dumps have been constructed in the pit at various times that did not have the same stringent compaction requirements. The In-Pit Dump noted in Appendix A was end dumped into the pit water with a high dump height and significant cracking and settlement has been observed since. In April 2015, construction of a new dump (SAT Dump) began that will be constructed on top of the tailings and will also buttress the In-Pit Dump.

In February 2017, construction of the Main Pit Dump (MPD) began over areas of the south wall of the Main Pit that do not contain SAT. Placement of waste in the MPD occurred intermittently throughout the 2017 and 2018, with a large volume of material placed in the fall of 2017 and over the winter of 2017-18. MPD construction stopped following the completion of the Area 2 Stage 3 Pit in the Spring of 2018.

Survey hub movement data for the Main Pit Dump are presented in Figures 1 to 14 of Appendix G, with the footprints of the MPD are provided in Figure 1 of Appendix G. All hubs show either no significant changes in horizontal movement, or a decelerating movement trend. The highest movement rate of 1.3 mm/day occurs at hub M97, which is located at the top of the MPD, and has decreased from a rate of 1.6 mm/day in July 2020.

3.6 Water Storage Pond Dam

Instrumentation data for the WSP Dam are provided in Appendix H and consists of eight ground temperature cables, 13 vibrating wire piezometers, and five survey hubs.

Survey hub movement data are presented in Figure 1 and 2 of Appendix H. No significant movement was observed.

Ground temperature data are presented in Figures 3 to 10 of Appendix H. All temperature sensors are above zero and have shown an increasing trend since installation that appears to be stabilizing. Temperatures at depth are typically within the range of observed groundwater temperatures in nearby Westbay monitoring wells MW-12-05 and MW-12-06.

Piezometric data are presented in Figures 11 to 14 of Appendix H. In general, pressures continue to follow historical patterns and fluctuate with the pond water elevation.

4 Recommendations

A summary of the recommendations is provided in Table 4 with the priority rankings (1 to 4) defined by the descriptions in Table 3.

Table 3: General Description of Priority Rankings

Priority	Description
1	A high probability or actual safety issue considered immediately dangerous to life, health or the environment, or a significant regulatory concern.
2	If not corrected, could likely result in safety issues leading to injury, environmental impact or significant regulatory action; or, a repetitive deficiency that demonstrates a systematic breakdown of procedures.
3	Single occurrences of deficiencies or non-conformances that alone would not be expected to result in safety issues.
4	Best Management Practice as a suggestion for continuous improvement towards industry best practices that could further reduce potential risks. This typically includes ongoing construction items within the appropriate construction cycle.

Notes: Based on the Health, Safety and Reclamation Code (HSRC) for Mines in British Columbia.

Table 4: Summary of Recommendations

Area	ID No.	Recommendations	Priority (Table 3)	Recommended Deadline
General	2021-01	▪ The 2020 inspection recommended an InSAR satellite survey study to be completed to increase the understanding of movement of the various waste facilities at site (DSTSF, SWD, and Main Pit Dump). At this time of this inspection, Minto has proceeded with the study that is being undertaken by SRK and 3VGeomatics, but the study results are not yet available for consideration in this report.	4	End of 2021
	2021-02	▪ Several instrumentation cables and PVC pipes were observed to be exposed with no protective covers. Minto staff responsible for obtaining readings should be reminded to replace the cover following readings to prevent water ingress and damage due to freeze thaw.	3	End of 2021
DSTSF and MVFE	2021-03	▪ As part of the routine visual inspections, continue to monitor the following for any changes in condition: – the cracking present at the south end of the DSTSF, as well as – erosion gullies observed in the cover material on the northern and eastern slopes.	4	n/a
TDD	2021-04	▪ Implement upgrades to the TDD Intake Structure to prevent future sedimentation accumulation within the channel next freshet. The upgrades should be completed in a manner that meets the design objectives documented in the SRK design memo and should consider the following: – Raising the elevation of the TDD intake pipes to prevent sediments from entering the pipes. – Regrading of the Underground Access Road to prevent sedimentation from entering the intake structure. Runoff from the road should be directed to the opposite side of the road and conveyed into the Area 2 Pit (via a sump/pipeline system, lined channel/slope, or equivalent). – Flows that exceeds the capacity of the TDD Intake Structure will flow down the Underground Access Road to the north. Either a berm should be constructed along the access road to prevent this water from flowing onto the DSTSF cover, or the Underground Access Road should be regraded to direct overtopping flows to the Area 2 Pit.	2	Construction should be implemented as soon as practical in 2022 (Frozen ground conditions make completion of the investigation in 2021 impractical).
MWD Wrap	2021-05	▪ Complete the regrading of MWD Wrap to grade over the over-steepened slope at the toe of the dump. In its current state, there is a higher risk of surficial slope failures and rockfall. Coarse rock is present at the base of the slope that acts as a small barrier to rockfall, but until the wrap has been regraded, traffic should be restricted near the toe.	3	Measures to ensure that equipment and personnel are kept away from dump toe should be implemented by the end of 2021. There is no recommended deadline for completion of the dump regrading.
SWD	2021-06	▪ Continue to monitor the cracking upslope of the cover soil stockpiles as part of the routine inspections specified in the PMP.	4	n/a

Area	ID No.	Recommendations	Priority (Table 3)	Recommended Deadline
Fuel Containment Facility	**2021-07**	▪ **An investigation is needed to inspect the condition of the geotextile and liner in the area along the new rutting in the facility.** The inspection should be completed using hand shovels to carefully expose the geosynthetics to allow for a thorough assessment of the condition of the geosynthetic materials. All areas of damaged geosynthetics should be repaired by a qualified professional and new sand material should be used to fill in the ruts after the repairs have been made.	**2**	Construction should be implemented as soon as practical in 2022. (Frozen ground conditions make completion of the investigation in 2021 impractical).
WSP	2021-08	▪ Continue to monitor the identified potential sinkhole located 5 m NW of WDT-08 as part of the routine visual inspections for any change in condition. Photographs records should be maintained to aid in monitoring.	4	n/a
	2021-09	▪ Deadfall/logs should be removed from the upstream face of the dam. Should any extreme precipitation event occur, the deadfall could plug/reduce the conveyance capacity of the spillway resulting in uncontrolled overtopping of the dam.	3	Prior to Freshet 2022.
Main Pit Dump, SAT Dump & In-Put Dumps	2021-10	▪ Waste rock materials being processed for construction material should be excavated from the northern edge of the top bench instead of the south end as observed during the inspection to assist in unloading of the dump in the area currently experiencing movement.	4	n/a
	2021-11	▪ The sinkhole north of the W15 Sump should be filled and the erosion channel graded to minimize infiltration into the pit in the event of any future overtopping of the sump.	3	**CLOSED** Sinkhole filled and area graded in October 2021.
Area 2 Pit	2021-12	▪ Continue to monitor the crests and slopes as part of the monthly visual inspection for signs of worsening cracking to determine if any slope stabilization measures are required.	4	n/a

Closure

This report, 2021 Geotechnical Annual Review, was prepared by

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Principal Consultant

and reviewed by

Kisa Elmer, P.Eng
Consultant

All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

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EBA Engineering Consultants, Ltd., 1994. Geotechnical Evaluation for Mill & Camp site (0201-95-11509), Minto Project, Report to Minto Explorations Ltd.

EBA Engineering Consultants, Ltd., 2008. Geotechnical Design Proposed Southwest Waste Dump, Minto Mine, Yukon. EBA Project No. W14101068.005. September.

SRK Consulting (Canada) Inc., 2012a. 2012 Geotechnical Annual Review, Minto Mine, YT. Prepared for Minto Explorations Ltd. SRK Project Number: 1CM002.006.400. November.

SRK Consulting (Canada) Inc., 2012b. Letter Report: Detailed Review of Foundation Performance at the South Waste Dump and Stability of the Main Pit South Wall. Prepared for Minto Explorations, Ltd. SRK Project Number: 219500.050. November 19.

Appendix A Photographs

Note: Big Creek Bridge located off map near the 19km marker on the main site access road

No.	Inspection Area Name
1	Dry Stack Tailings Storage Facility (DSTSF)
2	Mill Valley Fill Extension (MVFE) Stages 1 and 2
3	Tailings Diversion Ditch (TDD)
4	Main Waste Dump (MWD) and Expansion
5	Main Waste Dump (MWD) Wrap
6	Southwest Waste Dump (SWD)
7	Reclamation Overburden Dump
8	Ore Stockpiles
9	Mill Site
10	Camp Site
11	Fuel Containment Facility
12	Water Storage Pond (WSP) Dam
13	Big Creek Bridge
14	Main Pit, Main Pit Dump (MPD), South Wall Buttress, In-Pit Dumps
15	Area 2 Pit
16	Area 118 Pit and Backfill Dump
17	Minto North Pit

GlobalMapper File: \\VAN-SVR0\Projects\01_SITES\Minto\!040_AutoCAD\GeotechInstrumentation\Minto2020.gmw

2021 Inspection GPS Track Log

srk consulting

MINTO

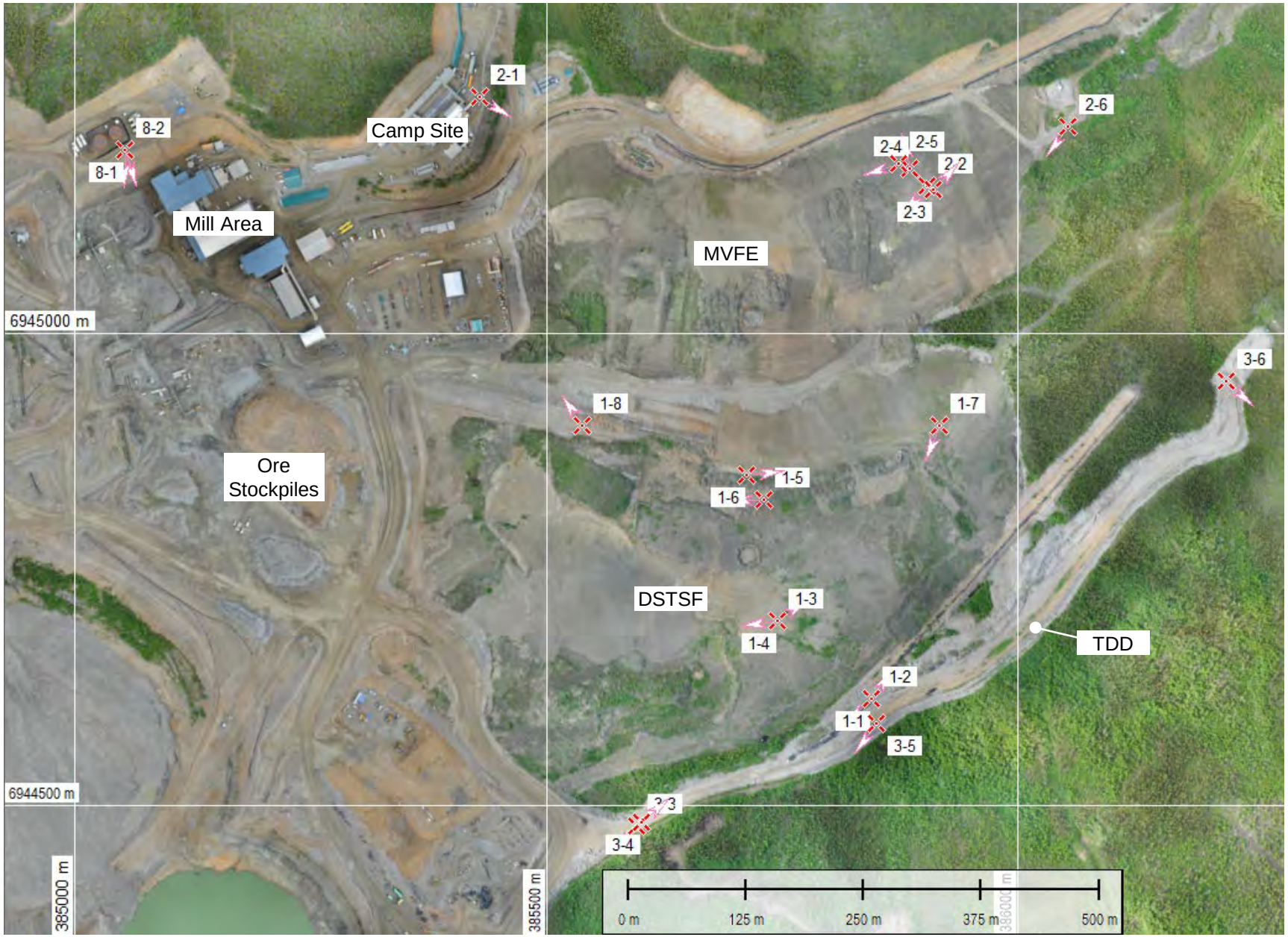
Site Inspection Photo Log

Inspection Areas and Photo Log

Job No: 1CM002.073
Filename: AppA-InspectionAreaTrackLog.pptx

Minto Mine

Date: October 2021 | Approved: PHM | Figure: **A-P-1**



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MINTO

Site Inspection Photolog

DSTSF, MVFE TDD, and Ore Stockpile Photo Locations

Job No: 1CM002.073

Filename: AppA_PhotoLocations_Landscape.pptx

Minto Mine

Date: October 2021

Approved: PHM

Figure: **A-P-2**

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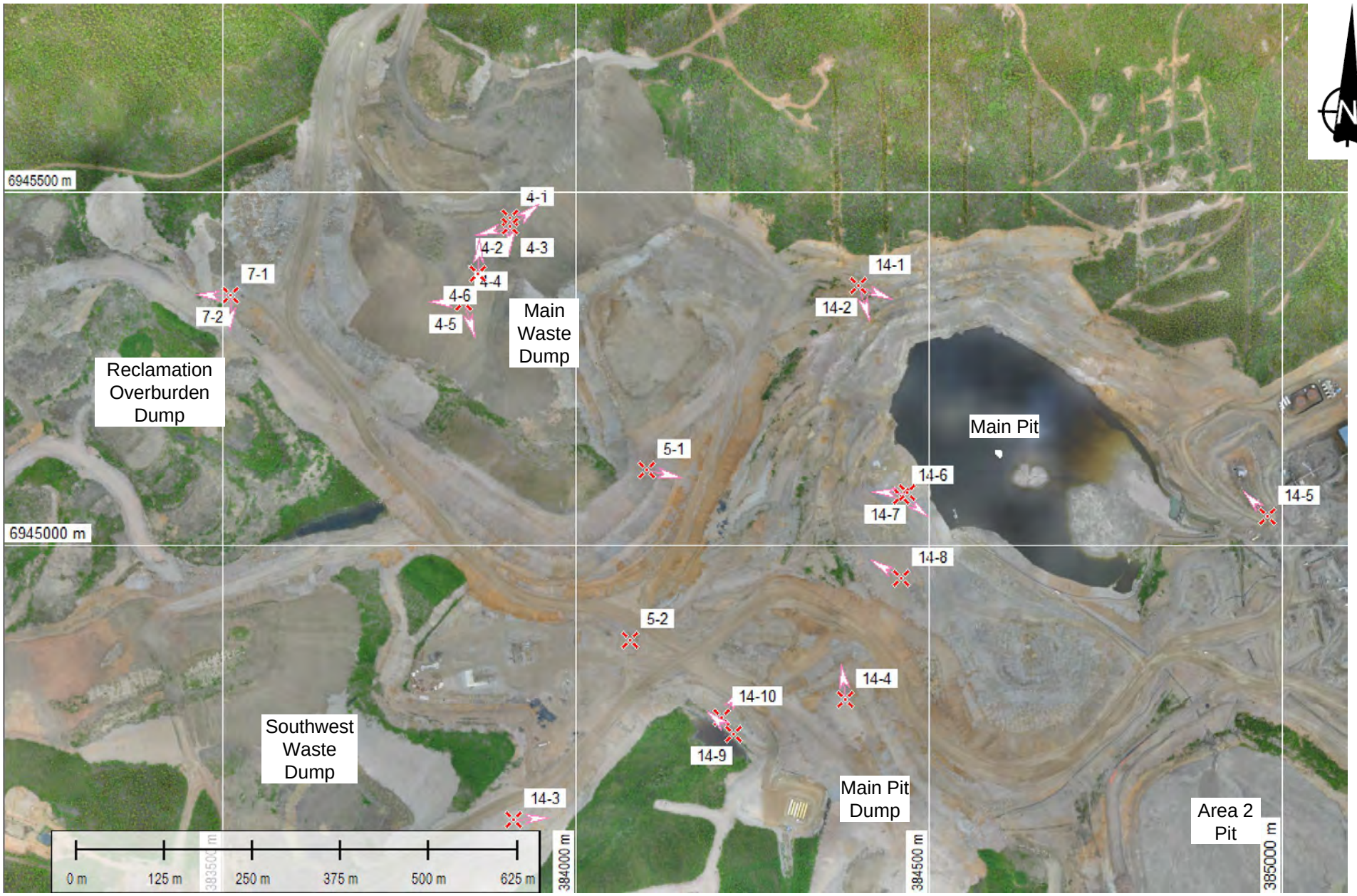

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srk consulting

MINTO

Site Inspection Photolog

Main Waste Dump (MWD), Main Pit Dump (MPD), and Reclamation Overburden Dump (ROD)

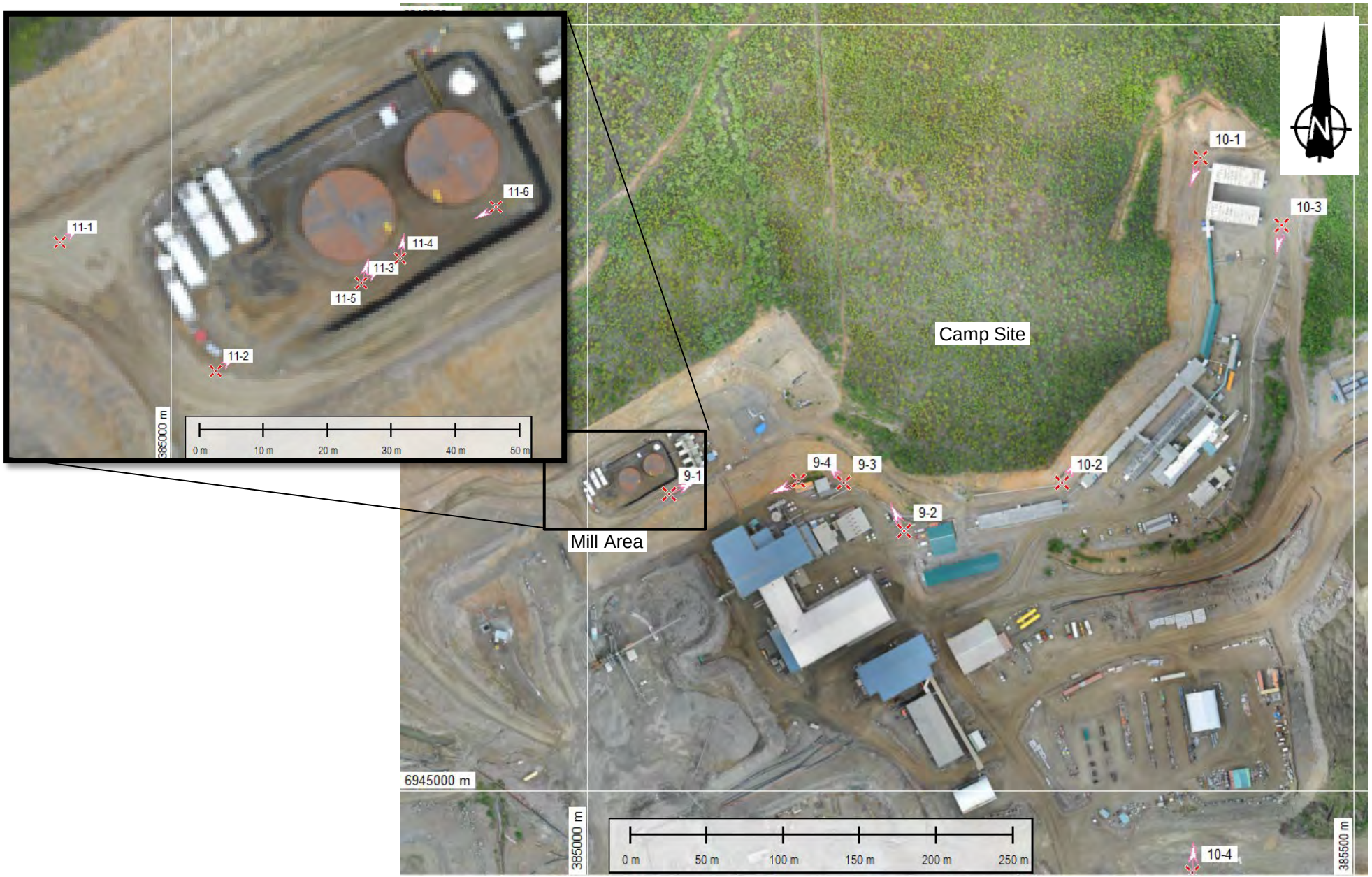
Job No: 1CM002.073

Filename: AppA_PhotoLocations_Landscape.pptx

Minto Mine

Date:	Approved:	Figure:
October 2021	PHM	**A-P-3**

srk consulting	MINTO	Site Inspection Photo Log **Southwest Waste Dump Photo Locations**		
Job No: 1CM002.073 Filename: AppA_PhotoLocations_Portrait.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021	Approved: PHM	Figure: **A-P-4**



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MINTO

Site Inspection Photolog

Mill Area, Camp Area, and Fuel Containment Facility

Job No: 1CM002.073

Filename: AppA_PhotoLocations_Landscape.pptx

Minto Mine

Date: October 2021

Approved: PHM

Figure: **A-P-5**

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srk consulting

MINTO

Site Inspection Photolog

Water Storage Pond (WSP) Dam

Job No: 1CM002.073

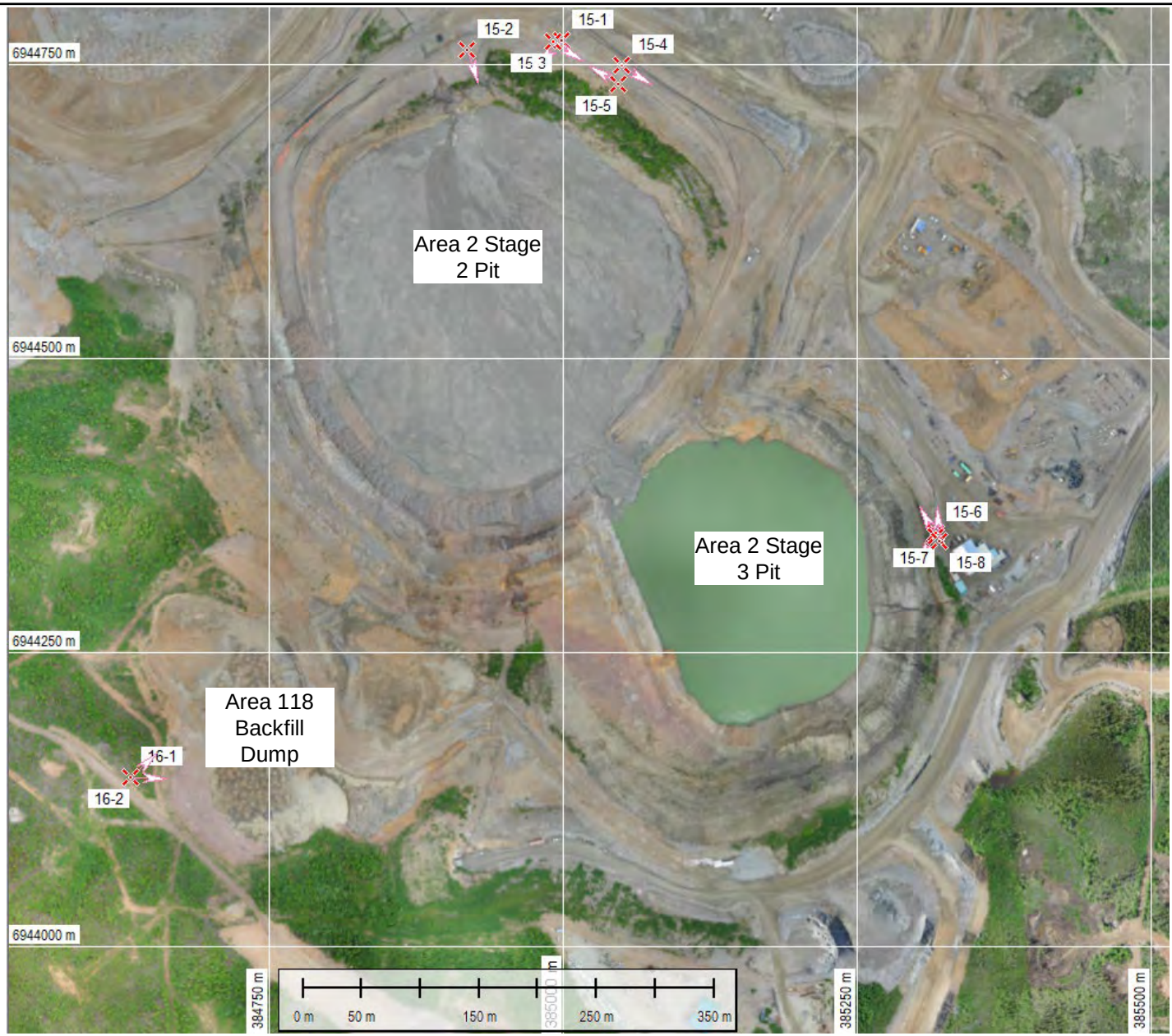
Filename: AppA_PhotoLocations_Landscape.pptx

Minto Mine

Date: October 2021

Approved: PHM

Figure: **A-P-6**



srk consulting	MINTO	Site Inspection Photolog
		Area 2 Pit, Area 118 Pit & Backfill Dump
Job No: 1CM002.073 Filename: AppA_PhotoLocations_Landscape.pptx	Minto Mine	Date: October 2021 / Approved: PHM / Figure: **A-P-7**

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srk consulting	MINTO	Site Inspection Photolog
		Minto North Pit
Job No: 1CM002.073 Filename: AppA_PhotoLocations_Landscape.pptx	Minto Mine	Date: October 2021 / Approved: PHM / Figure: **A-P-8**

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Photo 1-1: Southwest corner of DSTSF (looking west)

Photo 1-2: Southeast end of the DSTSF from TDD road (looking east)

srk consulting	MINTO	Site Inspection Photo Log **Dry Stack Tailings Storage Facility (DSTSF)**
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021 | Approved: PHM | Figure: **A-01-01**

Photo 1-3: Covered DSTSF surface in a well naturally-vegetated area.

Photo 1-4: Covered DSTSF surface in an area with no vegetation.

srk consulting	MINTO	Site Inspection Photo Log		
		Dry Stack Tailings Storage Facility (DSTSF)		
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021	Approved: PHM	Figure: **A-01-02**

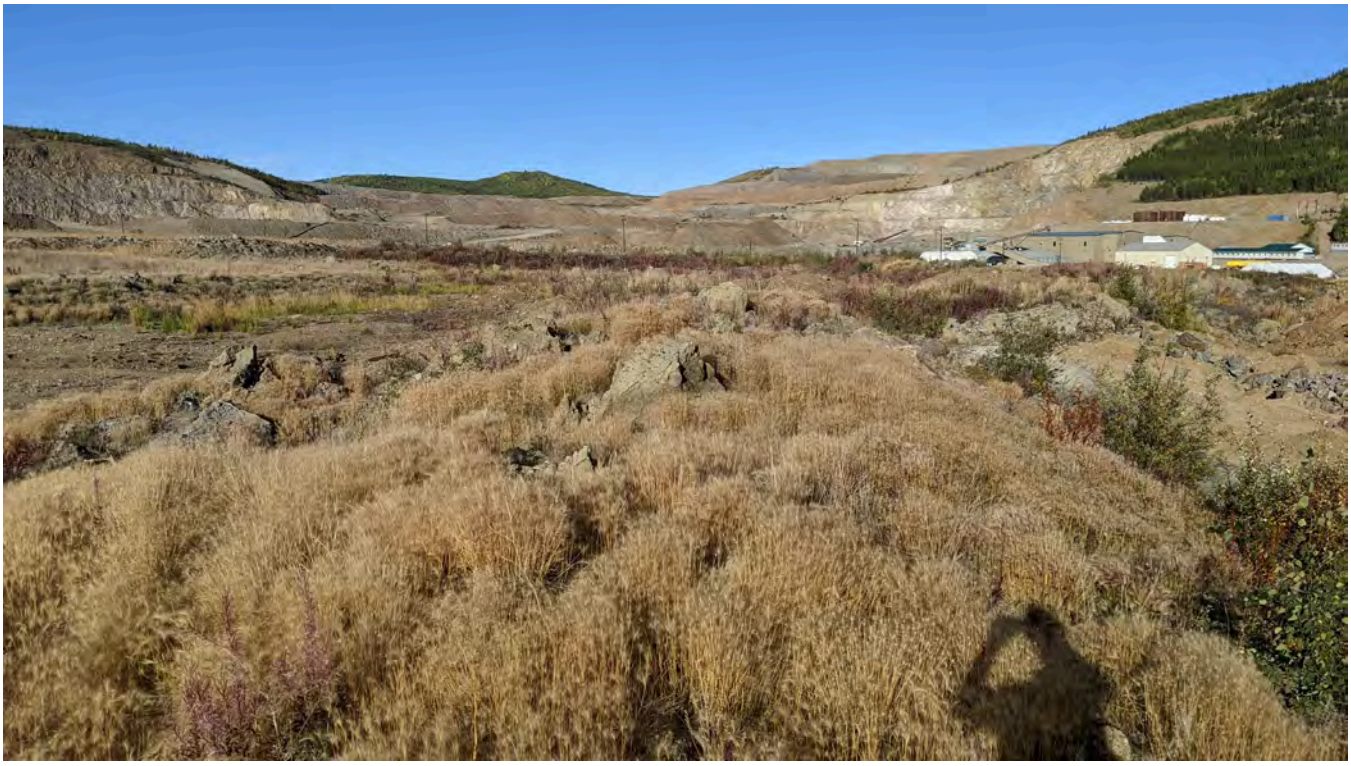


Photo 1-5: Area of stockpiled cover material south of the ungraded waste rock shell.

Photo 1-6: DSTSF crest along the northern end looking east. A 2m high overburden stockpile is on the right side of the picture.

srk consulting	MINTO	Site Inspection Photo Log **Dry Stack Tailings Storage Facility (DSTSF)**		
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021	Approved: PHM	Figure: **A-01-03**

Photo 1-7: Erosion gully on regraded cover slope at the northeast corner of the DSTSF.

Photo 1-8: Piezometer DSP-06 and Thermistor DST-11 on the DSTSF waste rock crest. The instrumentation was found to be uncovered and exposed to the elements. Precipitation down the borehole could influence the instrumentation readings.

Photo 2-1: Overview of the MVFE from the camp site (looking southeast).

Photo 2-2: Looking west across Tier C, minor erosion gullies visible down Tier B of the MVFE.

srk consulting	MINTO	Site Inspection Photo Log		
		Mill Valley Fill Extension (MVFE)		
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021	Approved: PHM	Figure: **A-02-01**

Photo 2-3: Erosion gullies – looking east towards the WSP.

Photo 2-4: Erosion gullies, looking north towards the main access road.

srk consulting	MINTO	Site Inspection Photo Log		
		Mill Valley Fill Extension (MVFE)		
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021	Approved: PHM	Figure: **A-0\2-02**

Photo 2-5: View of the north regraded, covered, and vegetated slopes of the MVFE looking towards camp.

Photo 2-6: The road down to the MVFE Sump has been upgraded with a armored drainage channel constructed on the south side of the road to prevent sediment transport to the MVFE Sump area.

srk consulting	MINTO	Site Inspection Photo Log		
		Mill Valley Fill Extension (MVFE)		
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021	Approved: PHM	Figure: **A-02-03**

Photo 3-1: TDD Intake Channel. Photo taken from the Airport Access Road looking upstream. Grading of the Underground Access Road results in surface runoff being directed into TDD intake. The intake area was cleaned-out prior to the inspection.

Photo 3-2: TDD Intake Channel. View of the location where the Underground Access Road runoff enters the TDD area. The overflow spillway is non functional. Flows that exceed the TDD intake will continue down the Underground access road. Most of this flow would be directed west of the DSTSF.

srk consulting	MINTO	Site Inspection Photo Log		
		Tailings Diversion Ditch (TDD)		
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021	Approved: PHM	Figure: **A-03-01**

Photo 3-3: Vegetation in the upper portion of the TDD looking upstream.

Photo 3-4: Vegetation in the upper portion of the TDD looking downstream.

Photo 3-5: Typical view of the lower portion of the TDD with riprap. Sparce vegetation growing in the channel.

Photo 3-6: TDD Outlet. No flow was observed at the time of the inspection.

srk consulting	MINTO	Site Inspection Photo Log
		Tailings Diversion Ditch (TDD)
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021 | Approved: PHM | Figure: **A-03-03**

Photo 4-1: MWD regraded slope (looking southeast). A stockpile of cover soil is visible that is located above a portion of the dump that remains to be regraded.

Photo 4-2: MWD regraded slope (looking northeast). Photo is in the location of the cracking of the cover soil noted in the 2019 inspection. The crack was not observed in the 2020 or 2021 inspection. The cover surface in this area has a concave slope.

srk consulting	MINTO	Site Inspection Photo Log **Main Waste Dump (MWD)**
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021 | Approved: PHM | Figure: **A-04-01**

Photo 4-3: Upper portion of the MWD has been planted with trees in 2021.

Photo 4-4: Regraded MWD slope looking towards the Reclamation Overburden Dump.

Photo 4-5: View from the top of the MWD Expansion looking down to the top of the original MWD.

Photo 4-6: Stockpiled cover material at the top of the MWD Expansion.

srk consulting	MINTO	Site Inspection Photo Log		
		Main Waste Dump (MWD)		
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021	Approved: PHM	Figure: **A-04-03**

Photo 5-1: Cracking on the crest of the lower bench of the MWD Wrap.

Photo 5-2: Waste Rock excavated from the toe of the MWD Wrap (looking north) that has resulted in an over-steepened slope.

Photo 6-1: Overview of the north end of the SWD and ROD from the Main Waste Dump.

Photo 6-2: Overview of the SWD from the Main Waste Dump.

srk consulting	MINTO	Site Inspection Photo Log **Southwest Waste Dump (SWD)**
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021 | Approved: PHM | Figure: **A-6-01**

Photo 6-3: Longitudinal cracking along the crest of the SWD first observed in 2019.

Photo 6-4: Longitudinal cracking along the crest of the SWD first observed in 2019..

srk consulting	MINTO	Site Inspection Photo Log		
		Southwest Waste Dump (SWD)		
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021	Approved: PHM	Figure: **A-6-02**

Photo 6-5: Longitudinal cracking along the crest of the SWD first observed in 2019 at its widest point.

Photo 6-6: Regraded SWD slope below the longitudinal cracks.

srk consulting	MINTO	Site Inspection Photo Log		
		Southwest Waste Dump (SWD)		
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021	Approved: PHM	Figure: **A-6-03**

Photo 6-5: HGW Pad at the south end of the SWD

Photo 6-6: Overview of the SWD taken from the south end of the SWD..

srk consulting	MINTO	Site Inspection Photo Log **Southwest Waste Dump (SWD)**
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021 | Approved: PHM | Figure: **A-6-04**

Photo 7-1: Reclamation Overburden Dump looking south.

Photo 7-2: Reclamation Overburden Dump looking west.

srk consulting	MINTO	Site Inspection Photo Log **Reclamation Overburden Dump**
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021 | Approved: PHM | Figure: **A-07-01**

Photo 8-1: Crusher Stockpile west of the mill.

Photo 8-2: Ore Stockpiles south of the mill.

srk consulting	MINTO	Site Inspection Photo Log **Ore Stockpiles**
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021 | Approved: PHM | Figure: **A-08-01**

Photo 9-1: Highwall behind the mill area taken from the Fuel Tank Farm looking east.

Photo 9-2: Highwall behind the mill area looking northwest from near the south end of camp.

srk consulting	MINTO	Site Inspection Photo Log **Mill Site**
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021 | Approved: PHM | Figure: **A-9-01**

Photo 9-3: Historical seepage location located at the northeast corner of the mill area. No seepage was observed at the time of the inspection.

Photo 9-4: Minor slope erosion on the highwall.

srk consulting	MINTO	Site Inspection Photo Log		
		Mill Site		
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021	Approved: PHM	Figure: **A-09-02**

Photo 10-1: Highwall behind Selkirk Manor looking south from the north end of camp.

Photo 10-2: Highwall behind camp looking northwest from near the south end of camp.

srk consulting	MINTO	Site Inspection Photo Log		
		Camp Site		
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021	Approved: PHM	Figure: **A-10-01**

Photo 10-3: Repaired erosion gulley noted in the 2020 inspection at the north end of camp. (looking south).

Photo 10-4: Historical erosion gullies below the camp pad. The condition of the gullies is unchanged from previous inspections and the camp pad is graded to prevent runoff entering the top of the gullies.

srk consulting	MINTO	Site Inspection Photo Log **Camp Site**
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021 | Approved: PHM | Figure: **A-10-02**

Photo 11-1: Highwall behind Fuel Containment Facility.

Photo 11-2: Entrance ramp to the facility with a new large rut near the edge and new rutting between the ramp and sump (far end).

srk consulting	MINTO	Site Inspection Photo Log		
		Fuel Containment Facility		
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021	Approved: PHM	Figure: **A-11-01**

Photo 11-3: Tire ruts between the ramp and sump has exposed the base geotextile and liner in areas.

Photo 11-4: Exposed geosynthetics in the rut. A thin plastic is present overtop of the geotextile (that overtops the liner) that appears to be a sacrificial warning layer to prevent liner damage.

Photo 11-5: A small geotextile tear was found in the rut that is approximately 5cm x 8 cm. Liner damage could not be detected within the tear.

Photo 11-6: View of the ruts and liner along the side wall of the facility.

srk consulting	MINTO	Site Inspection Photo Log		
		Fuel Containment Facility		
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021	Approved: PHM	Figure: **A-11-03**

Photo 12-1: Overview of the WSP from the MVFE looking northeast.

Photo 12-2: WSP Crest taken from the north abutment looking south.

srk consulting	MINTO	Site Inspection Photo Log		
		Water Storage Pond		
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021	Approved: PHM	Figure: **A-12-01**

Photo 12-3: WSP spillway looking downstream.

Photo 12-4: WSP spillway looking south from the dam crest.

srk consulting	MINTO	Site Inspection Photo Log **Water Storage Pond**
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021 | Approved: PHM | Figure: **A-12-02**

Photo 12-5: Upstream north abutment. The water level in the pond is higher than the previous year, which has resulted in the accumulation of logs across the upstream face of the dam.

Photo 12-6: Accumulation of logs along the south abutment of the dam.

Photo 12-7: Potential minor sinkhole or burrow on the downstream south abutment near ground temperature cable WDT-08. No apparent change in condition since first observed in the 2019 inspection.

Photo 12-8: Seepage at the toe of the dam immediately upstream of the seepage collection sump. Seepage was clear with no signs of sediment transport.

Photo 12-9: View of the seepage weir downstream of the dam.

Photo 12-10: Ponding seepage downstream of the WDP Dam looking south. Seepage was clear with no signs of sediment transport.

srk consulting	MINTO	Site Inspection Photo Log **Water Storage Pond**
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021 | Approved: PHM | Figure: **A-12-05**

Photo 13-1: Western bridge abutment.

Photo 13-2: Western abutment. A Tree is growing on the upstream side of the western abutment.

srk consulting	MINTO	Site Inspection Photo Log		
		Big Creek Bridge		
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021	Approved: PHM	Figure: **A-13-01**

Photo 13-3: Big Creek looking upstream from the western abutment. An eddy is present upstream of the west abutment. The condition of the eddy and creek is the same as the 2020 inspection.

Photo 13-4: Downstream end of the eastern abutment. A rope is suspended from the bridge by the Minto Environmental department for environmental monitoring of the creek.

srk consulting	MINTO	Site Inspection Photo Log		
		Big Creek Bridge		
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021	Approved: PHM	Figure: **A-13-02**

Photo 14-1: Main Pit and Main Pit Dump looking south.

Photo 14-2: Main Pit looking east.

srk consulting	MINTO	Site Inspection Photo Log **Main Pit, Main Pit Dump (MPD), South Wall Buttress & In-Pit Dumps**		
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021	Approved: PHM	Figure: **A-14-01**

Photo 14-3: Veiw of the Main Pit Dump from the Southwest Dump.

Photo 14-4: West wall of the Main Pit.

srk consulting	MINTO	Site Inspection Photo Log **Main Pit, Main Pit Dump (MPD), South Wall Buttress & In-Pit Dumps**
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021 | Approved: PHM | Figure: **A-14-02**

Photo 14-5: Vent raise located west of the Main Pit.

Photo 14-6: Main Pit Reclaim Barge and In-Pit Dumps.

srk consulting	MINTO	Site Inspection Photo Log **Main Pit, Main Pit Dump (MPD), South Wall Buttress & In-Pit Dumps**
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021 | Approved: PHM | Figure: **A-14-03**

Photo 14-7: SAT Dump. An additional lift of SAT material has been placed on the SAT Dump in the past year. If the Main Dam does not proceed, this additional material will need to be relocated below the long-term water level.

Photo 14-8: Historical cracking of the In-Pit Dump above the SAT Dump. The cracks are filling-in and near-by survey hubs indicate no current movement.

srk consulting	MINTO	Site Inspection Photo Log **Main Pit, Main Pit Dump (MPD), South Wall Buttress & In-Pit Dumps**
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021 | Approved: PHM | Figure: **A-14-04**

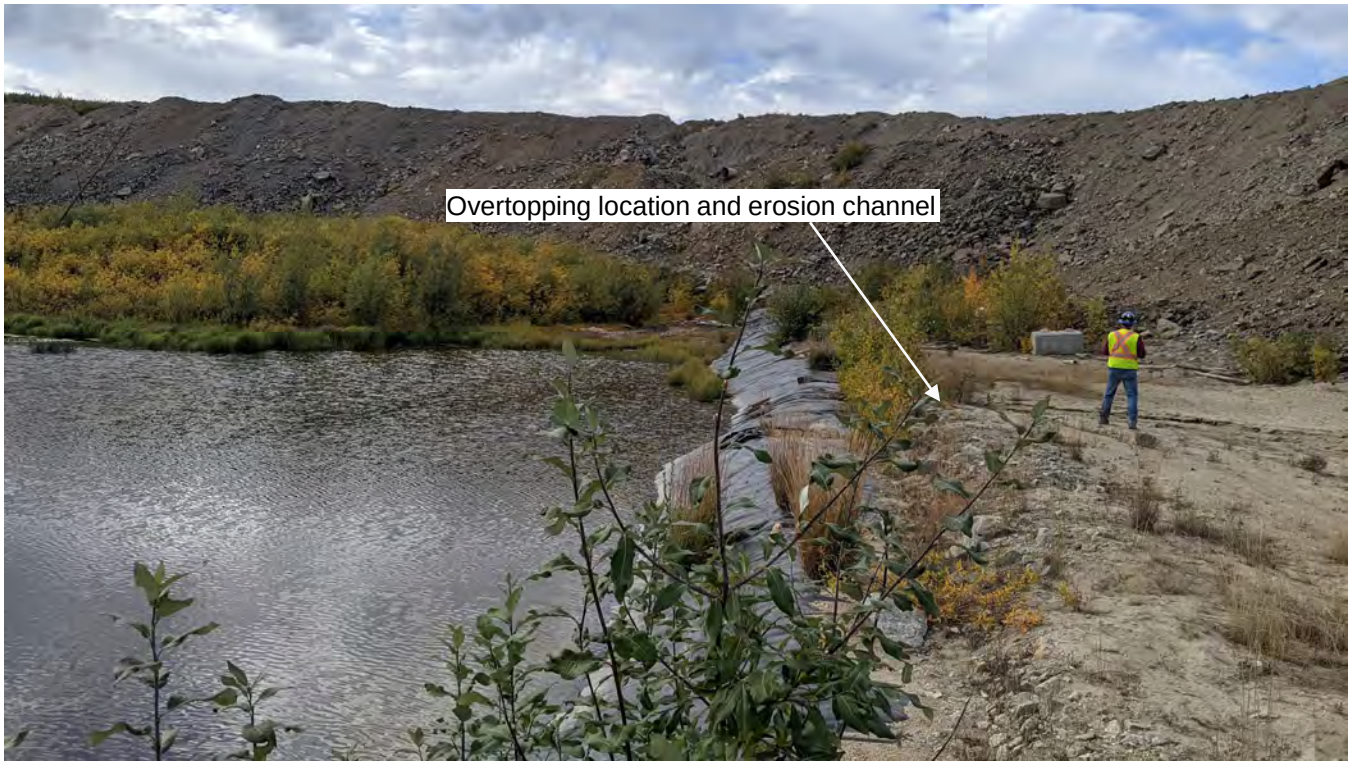


Photo 14-9: W15 Sump south of the Main Pit. The sump appears to have overtopped in the past year with water infiltrating through a sinkhole into the pit.

Photo 14-10: Lower end of the erosion channel and sinkhole beneath the haul road..

srk consulting	MINTO	Site Inspection Photo Log **Main Pit, Main Pit Dump (MPD), South Wall Buttress & In-Pit Dumps**		
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021	Approved: PHM	Figure: **A-14-05**

Photo 15-1: Area 2 Stage 2 Pit backfilled with tailings looking southwest

Photo 15-2: Area 2 Stage 2 Pit looking south.

srk consulting	MINTO	Site Inspection Photo Log		
		Area 2 Pit		
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021	Approved: PHM	Figure: **A-15-01**

Photo 15-3: Cracking along inactive access road along pit rim.

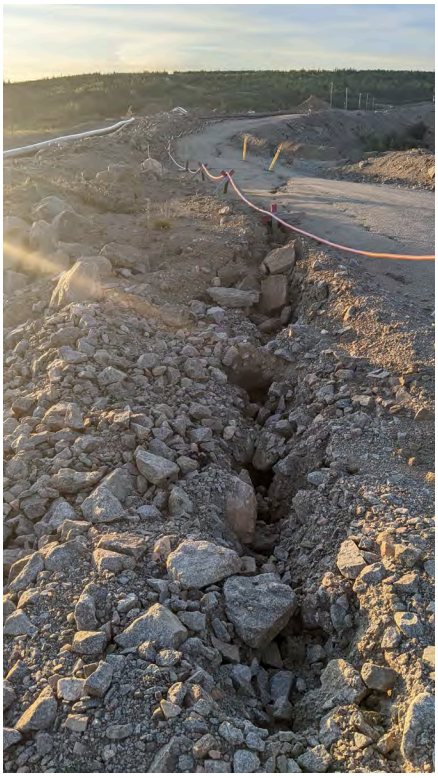


Photo 15-4: Cracking along inactive access road along pit rim.

Photo 15-5: Cracking along the pit rim.

Photo 15-6: Area 2 Stage 3 Pit looking south.

srk consulting	MINTO	Site Inspection Photo Log		
		Area 2 Pit		
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021	Approved: PHM	Figure: **A-15-03**

Photo 15-7: Cracking along the Area 2 Stage 3 Pit rim.

Photo 15-8: Cracking along the Area 2 Stage 3 Pit rim near the Underground Shop.

srk consulting	MINTO	Site Inspection Photo Log		
		Area 2 Pit		
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021	Approved: PHM	Figure: **A-15-04**

Photo 16-1: South end of the Area 118 Pit

Photo 16-2: North end of the Area 118 Pit

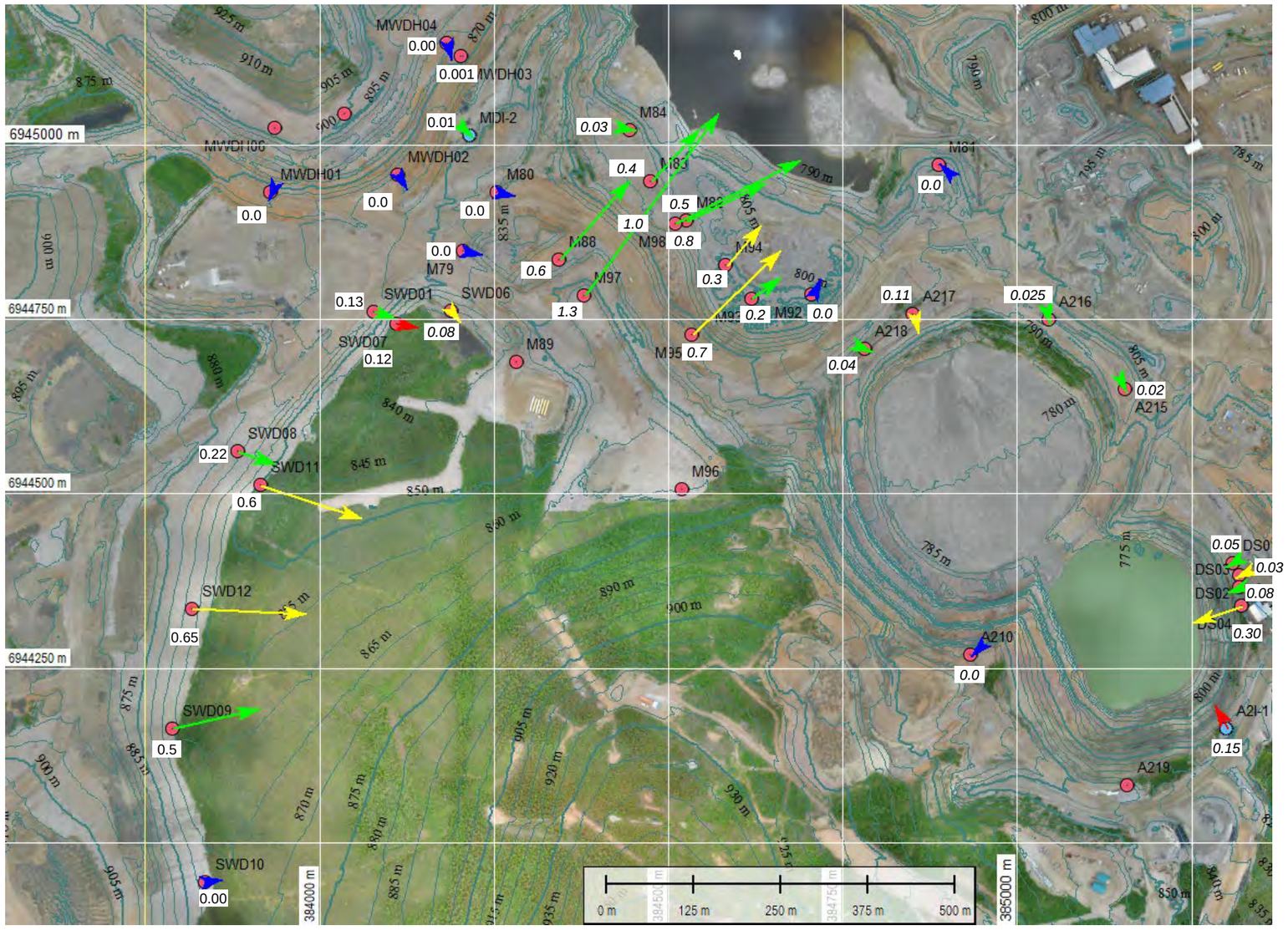
srk consulting	MINTO	Site Inspection Photo Log		
		Area 118 and Backfill Dump		
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021	Approved: PHM	Figure: **A-16-01**

Photo 17-1: Previous pit wall failure in Minto North Pit (looking southwest).

Photo 17-2: North pit wall.

srk consulting	MINTO	Site Inspection Photo Log		
		Minto North Pit		
Job No: 1CM002.073 Filename: MintoAGI_Photolog.pptx	Minto Mine Geotechnical Annual Review	Date: October 2021	Approved: PHM	Figure: **A-17-01**

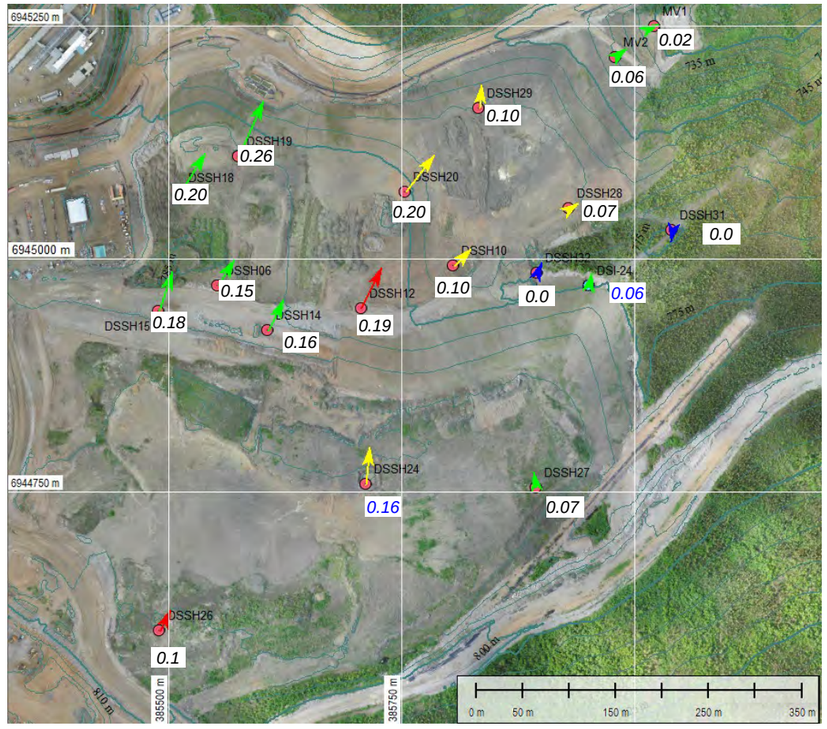
Appendix B Survey Hub Summary



a) Southwest Dump and Main Pit Areas

LEGEND

- Survey Hubs - Active
- Survey Hubs - Destroyed
- 0.5 Total Movement Rate (mm/day)
- 0.5 Horizontal Movement Rate (mm/day)
- Movement Vector - No Current Movement
- Movement Vector - Decelerating Movement
- Movement Vector - Steady Movement
- Movement Vector - Accelerating Movement



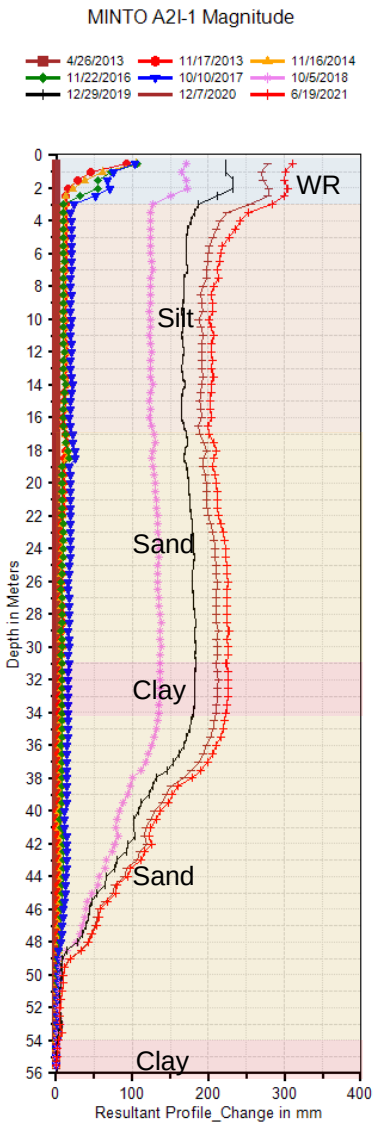
b) Dry Stack Tailings Storage Facility

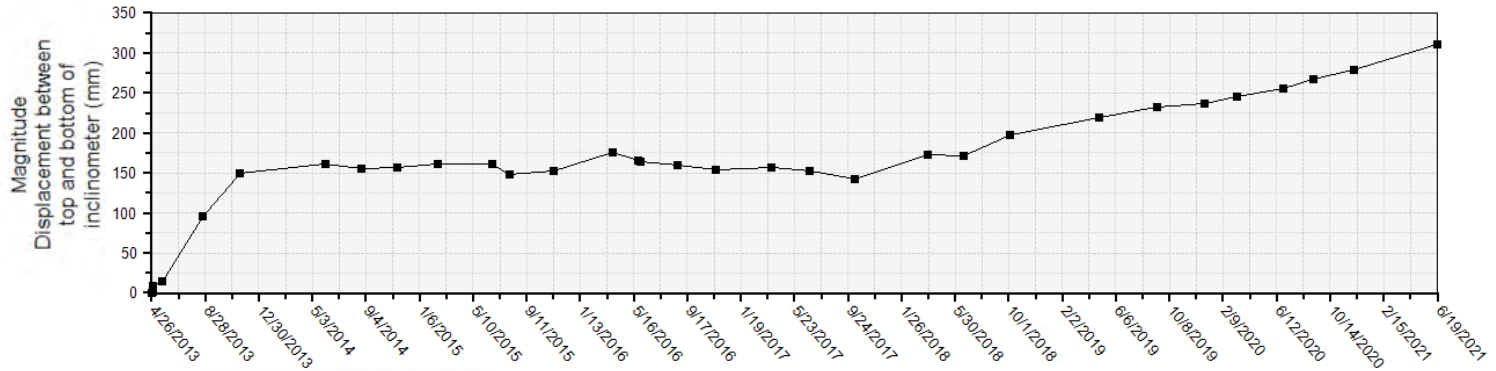
Notes:

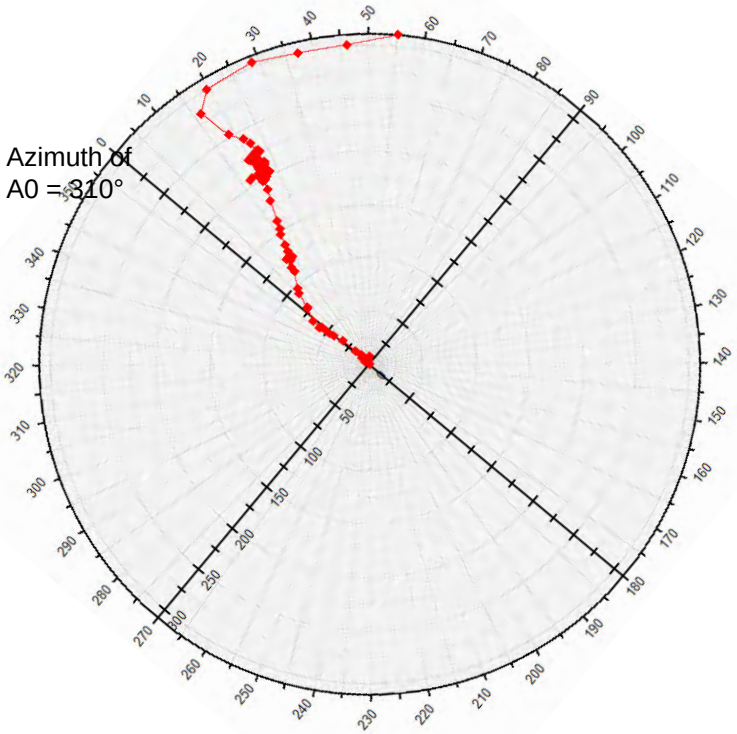
1. Movement vectors have been scaled by a factor of 250 (i.e. length equals 250 times the current velocity in mm/day) except for the blue vectors where no current movement is observed. The length of the blue vectors is arbitrary and is included to show the direction of past movement.

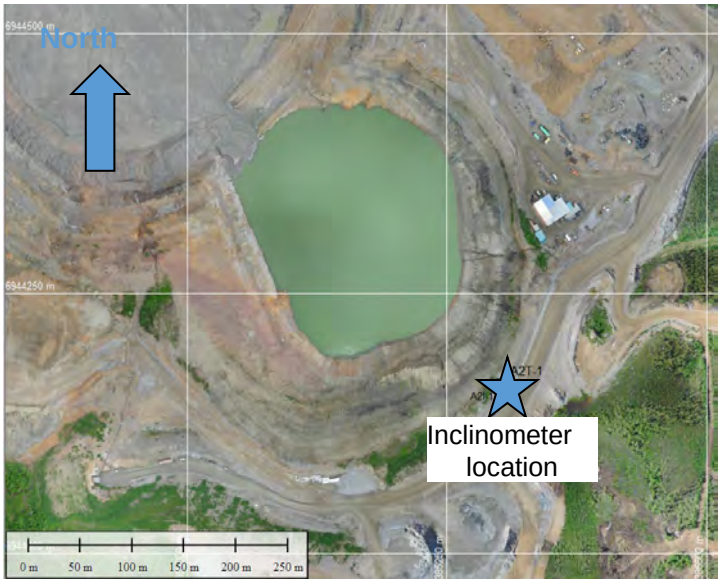
srk consulting	MINTO	2021 Survey Hub Data
		Survey Hub Summary
Job No: 1CM002.073 Filename: MintoSurveySummary11x17.pptx	Minto Mine	Date: October 2021 · Prepared by: PHM · Figure: 1

Appendix C Area 2 Pit Instrumentation Data









Notes

1. Inclinometer software (DigiPro2 v2.12.4) plots A0 as 0 degrees. The plot above has been rotated such that the orientation matches the plan (north is up).

Source files:

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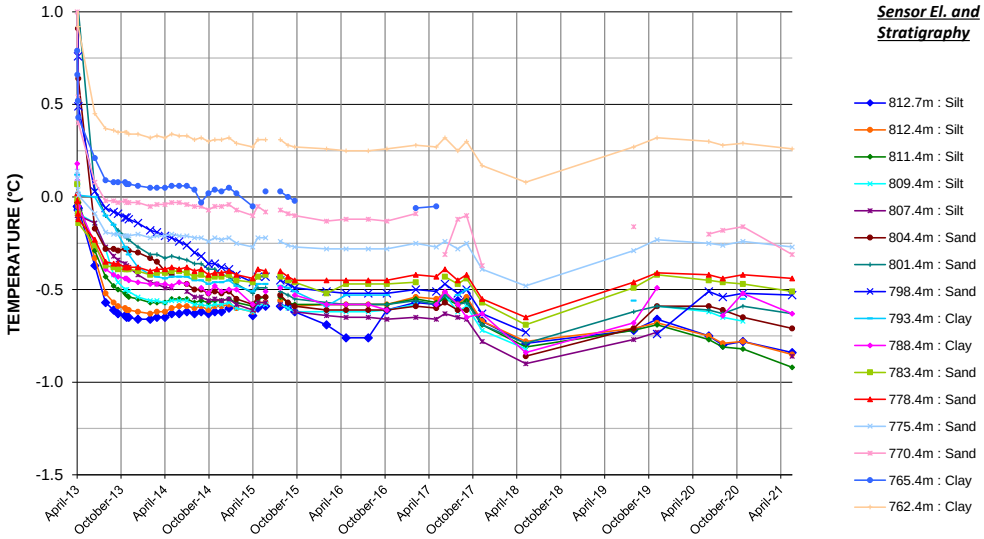
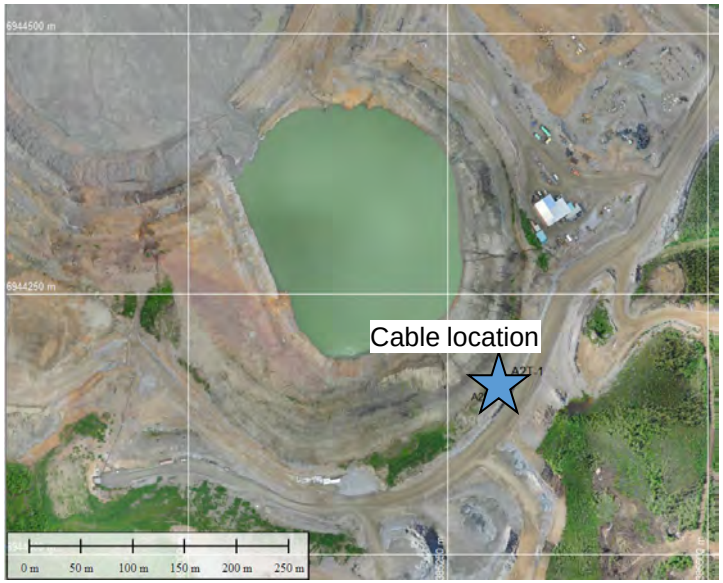
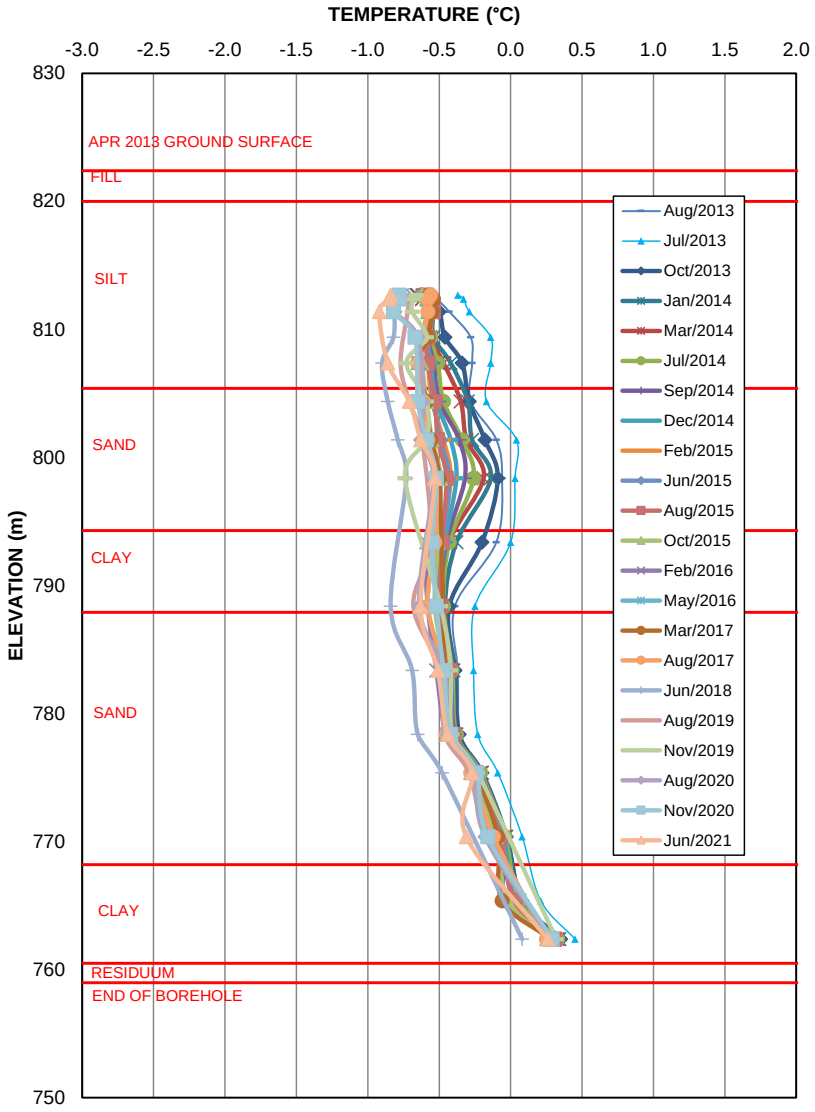
2. Instrumentation data: \\VAN-SVR0\Projects\01_SITES\Minto\!020_Site_Wide_Data\Geotechnical\Geotech Monitoring Data\Minto SI Instrumentation Database.dpw

srk consulting	MINTO	Area 2 Pit Instrumentation Data		
		Inclinometer A2I-1		
Job No: 1CM002.073 Filename: ApC_2021Area2Pit.pptx	Minto Mine	Date: October 2021	Prepared by PHM	Figure: 1







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2. Excel instrumentation data: \\VAN-SVR0\Projects\01_SITES\Minto\!020_Site_Wide_Data\Geotechnical\Geotech Monitoring Data\GTC + Piezometer Instrumentation – Area 2 Pit_SRK_.xlsm

srk consulting

MINTO

Job No: 1CM002.073

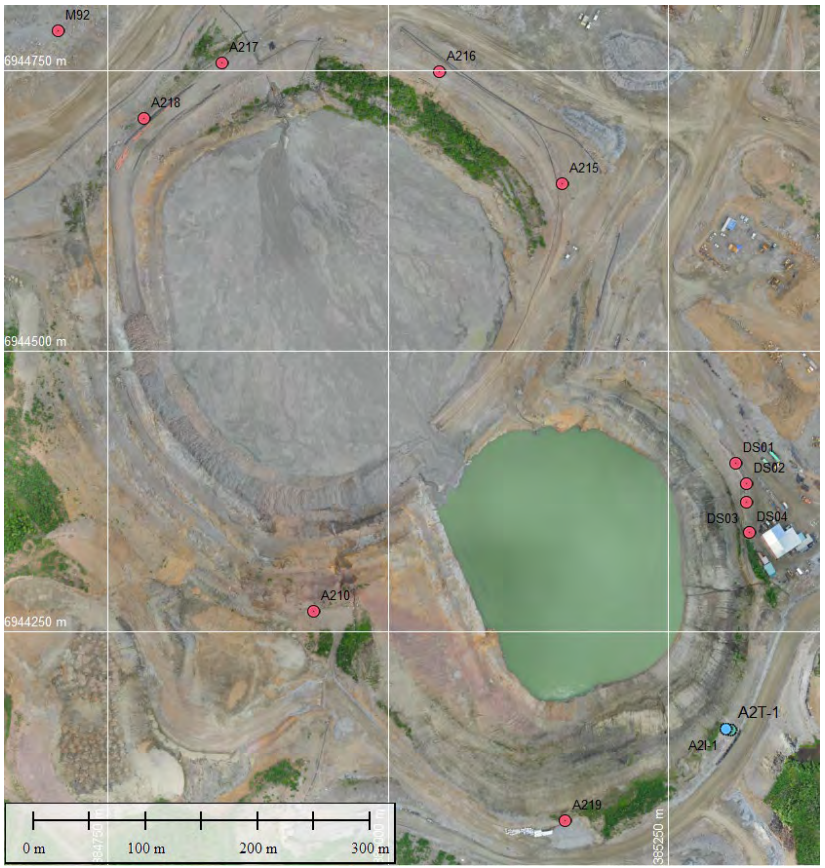
Filename: ApC_2021Area2Pit.pptx

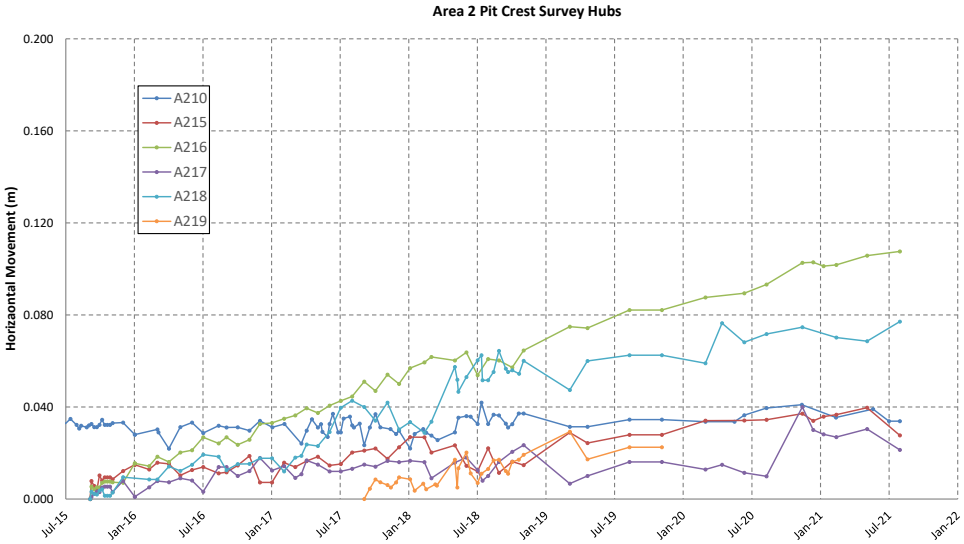
Minto Mine

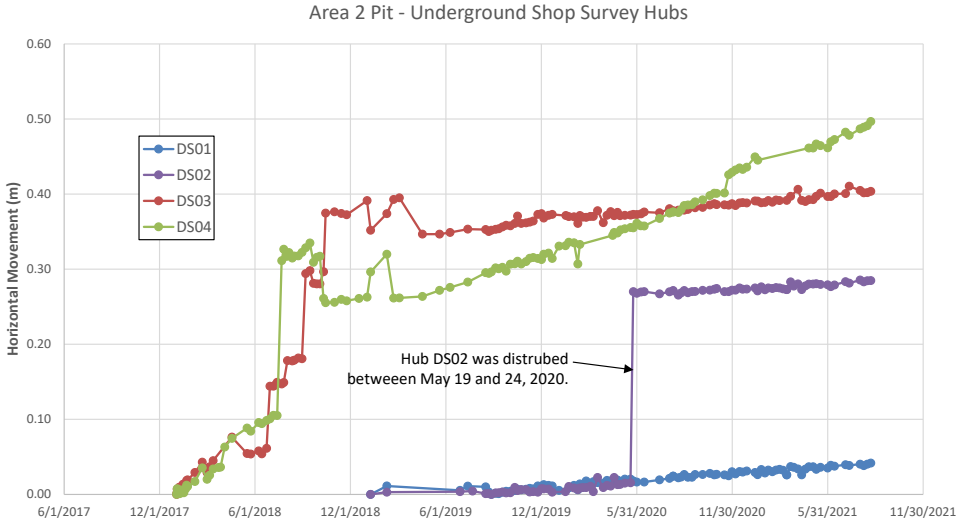
Area 2 Pit Instrumentation Data

Ground Temperature Cable – A2T-1

Date:	Prepared by	Figure:
October 2021	PHM	2







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MINTO

Area 2 Pit Instrumentation Data

Survey Hubs

Job No: 1CM002.073

Filename: ApC_2021Area2Pit.pptx

Minto Mine

Date:	Prepared by	Figure:
October 2021	PHM	3

Appendix D DSTSF Instrumentation Data

Active Survey Hubs					
Survey Hub	Last Reading	Movement Rate (mm/day)		Bearing (over past year)	Comments
		Current (as of last reading)	One year prior to last reading		
DSSH06	7/30/2021	0.15	0.24	30	Decelerating, movement direction shifting to the east.
DSSH10	5/31/2021	0.10	0.10	42	Steady movement rate for the past two years. No apparent vertical displacement.
DSSH12	7/30/2021	0.19	0.19	26	Possible acceleration trend. Additional readings needed to confirm. Vertical displacement rate continues to show deceleration.
DSSH14	5/31/2021	0.16	0.16	24	Slight deceleration trend observable in the horizontal displacement data. Movement direction shifted towards the east by 2 degrees in past year.
DSSH15	5/31/2021	0.18	0.19	18	Slight deceleration trend observable.
DSSH18	5/31/2021	0.20	0.20	32	Deceleration trend observable in the horizontal displacement graph.
DSSH19	5/31/2021	0.26	0.26	24	Slight deceleration trend observable.
DSSH20	5/31/2021	0.20	0.20	38	Total displacement graph shows an apparent acceleration trend due to an increase in settlement. Horizontal displacement graph shows a deceleration trend. Movement direction shifted towards the east by 6 degrees in past year (likely due to settlement).
DSSH24	5/31/2021	0.16	0.16	5	Steady movement rate in the past year. Less variability in the total displacement graph due to the reduction in the reading frequency in 2019. Rate of settlement is decreasing.
DSSH26	5/31/2021	0.25	0.07	27	Possible acceleration trend in the horizontal displacement graph. Additional readings needed to confirm.
DSSH27	2/2/2021	0.07	0.16	180	Decelerating.
DSSH28	7/30/2021	0.07	0.07	32	Steady movement rate.
DSSH29	5/31/2021	0.10	0.10	6	Vertical settlement has increased in past year, while the horizontal displacement is steady, with the last reading indicating no significant movement.
DSSH31	5/31/2021	0.00	0.00	277	No significant horizontal movement trend
DSSH32	5/31/2021	0.00	0.00	24	No significant horizontal movement trend
MV1	5/31/2021	0.02	0.05	61	Decelerating
MV2	5/31/2021	0.06	0.09	51	Slight deceleration trend observable in the horizontal displacement data.

Notes:
1. See subsequent figures for each survey hub for the interpretations of the movement rates with time.
2. Blue text indicates horizontal movement rates, while the black text are total movement rates.
3. Bearing direction is measured from true north.

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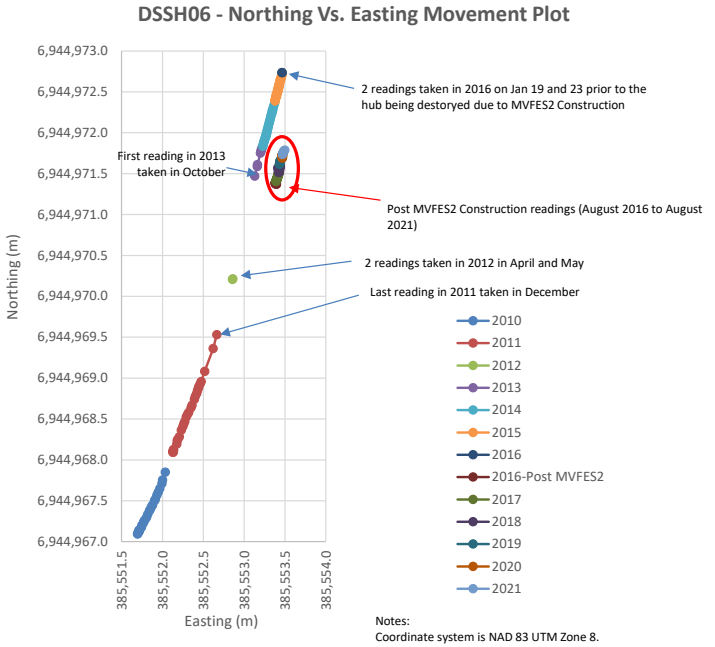
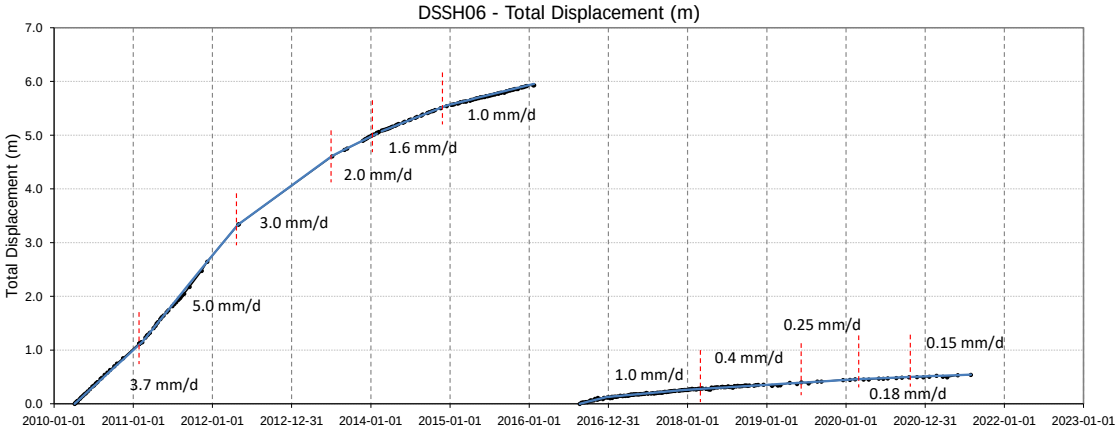
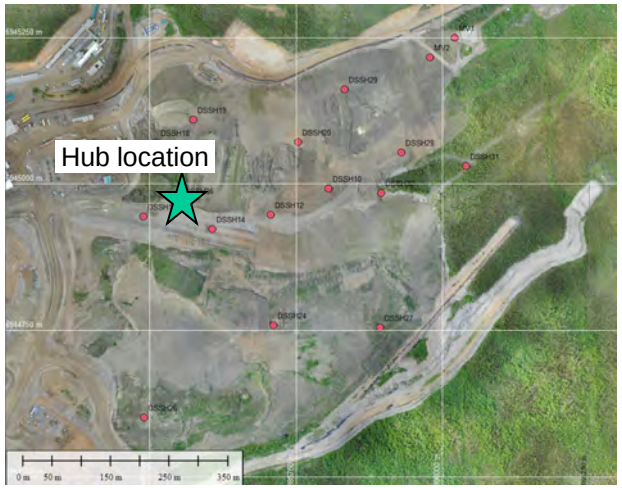
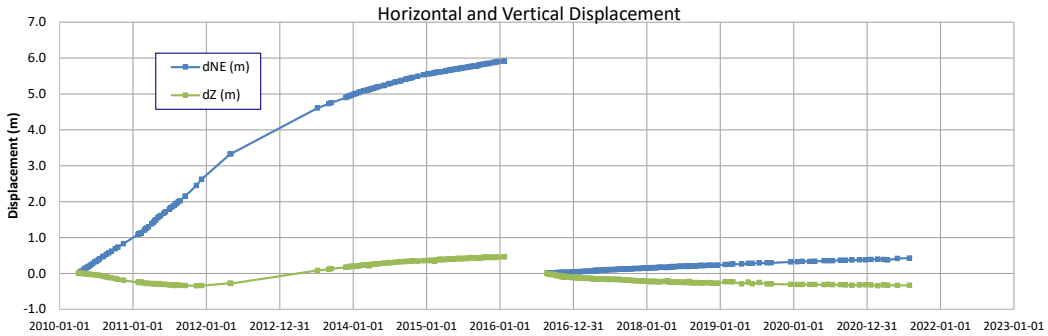


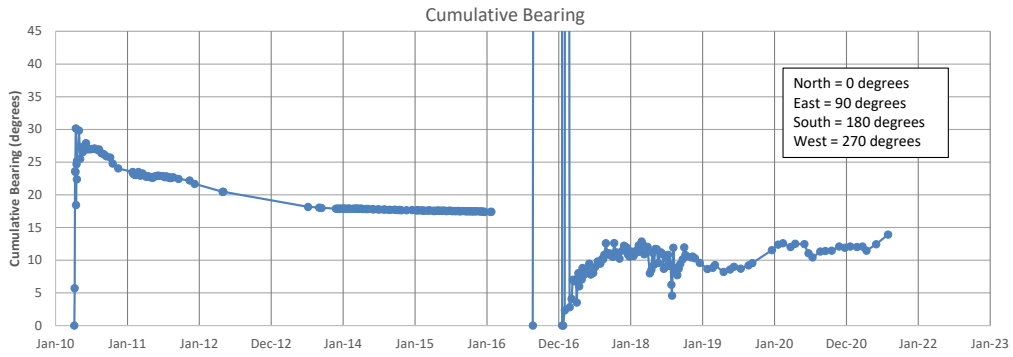


Note:

1. The survey hub was removed in January 2016 prior to MVFES2 construction. The hub was reinstalled in August 2016 following completion of construction.







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MINTO

DSTSF Instrumentation Data

DSTSF – DSSH06

Job No: 1CM002.073

Filename: ApD_2021DSTSFLandscape.pptx

Minto Mine

Date: October 2021

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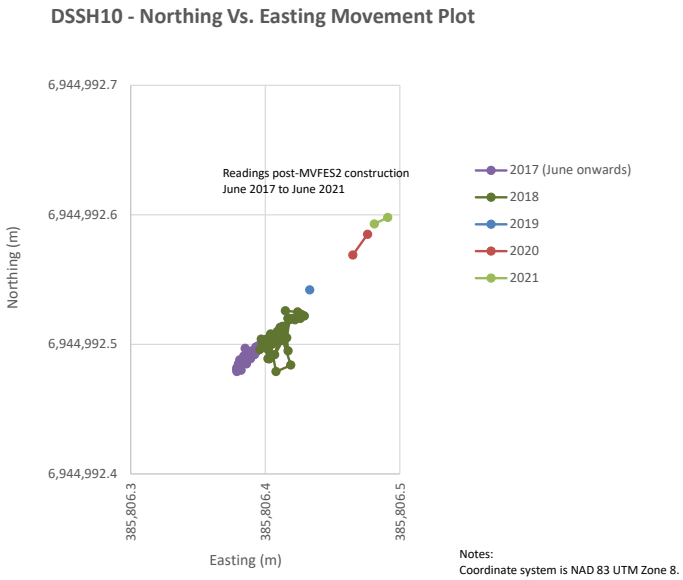
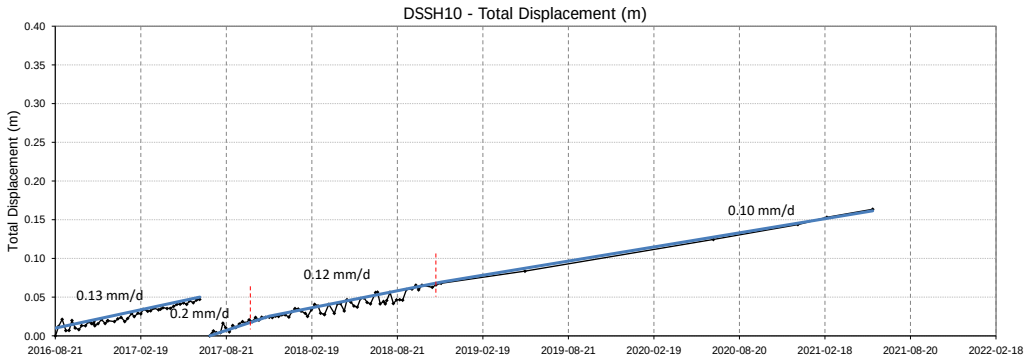
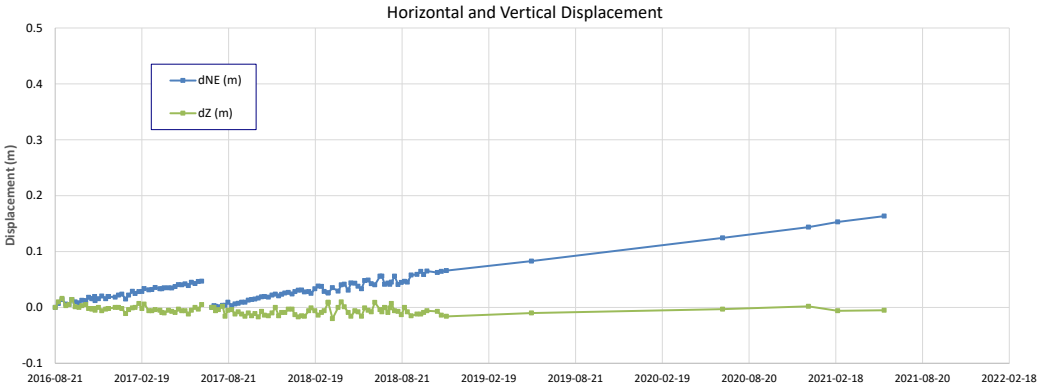
Figure: **2**

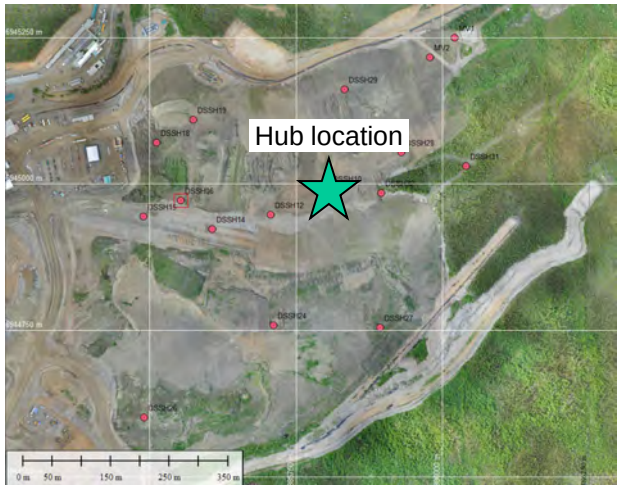


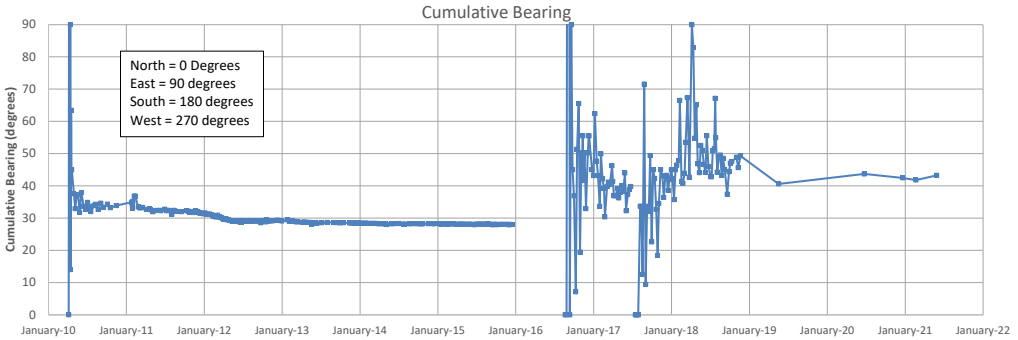




Note:

1. The survey hub was removed in December 2016 prior to MVFES2 construction. The hub was reinstalled in August 2016 following completion of construction and was repositioned in June 2017.





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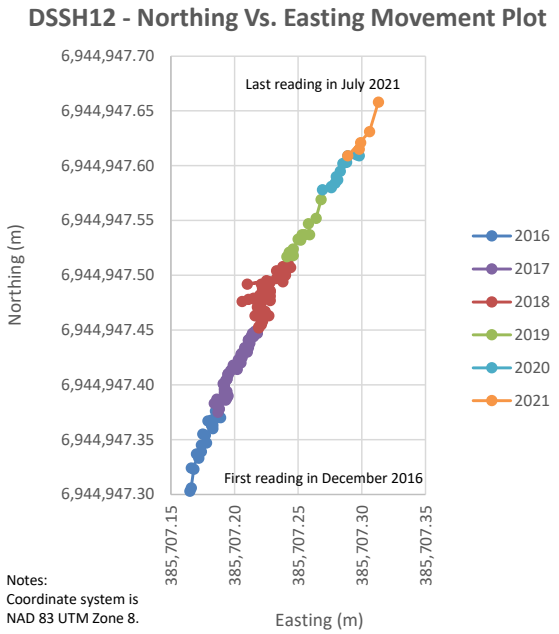
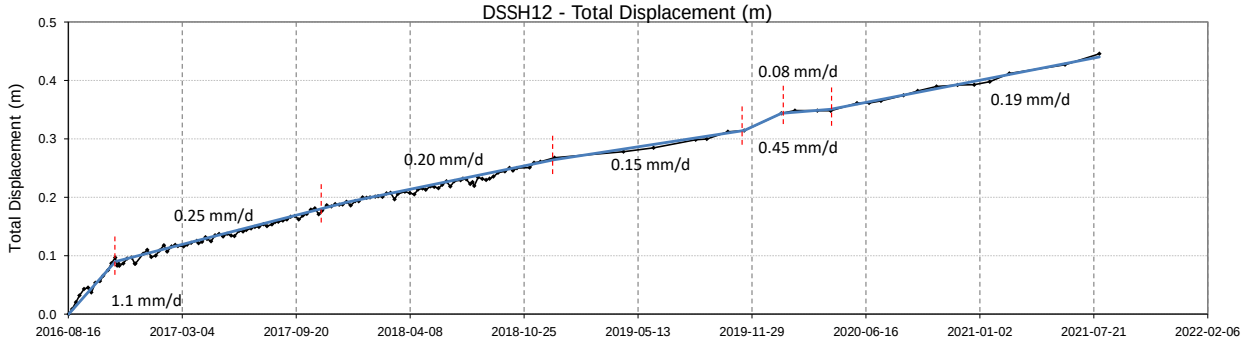
		Survey Hub – DSSH10
Job No: 1CM002.073 Filename: ApD_2021DSTSFLandscape.pptx	Minto Mine	Date: October 2021 / Prepared by: PHM / Figure: **3**

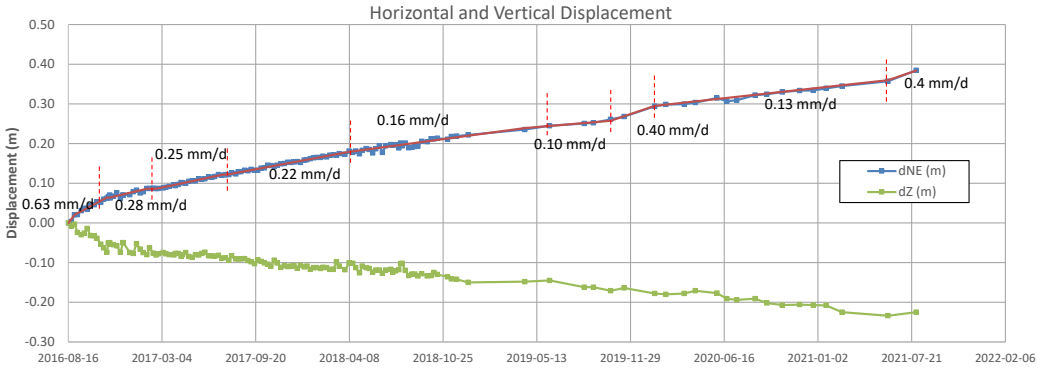


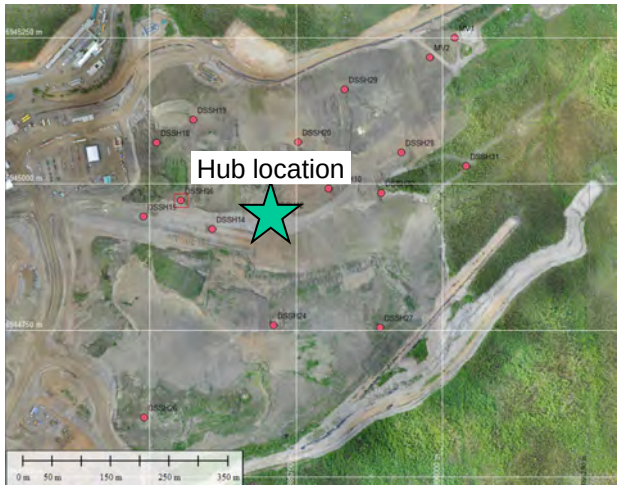
Notes:
Coordinate system is NAD 83 UTM Zone 8.

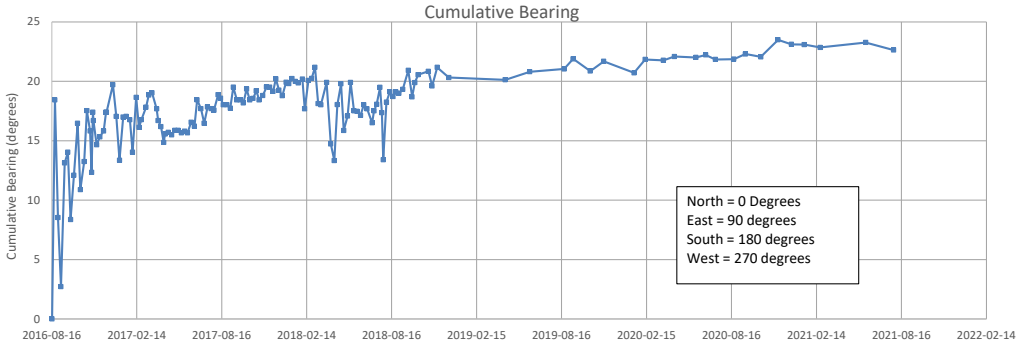
Note:

1. The survey hub was removed in January 2016 prior to MVFES2 construction. The hub was reinstalled in December 2016 following completion of construction.









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MINTO

DSTSF Instrumentation Data

Survey Hub – DSSH12

Job No: 1CM002.073

Filename: ApD_2021DSTSFLandscape.pptx

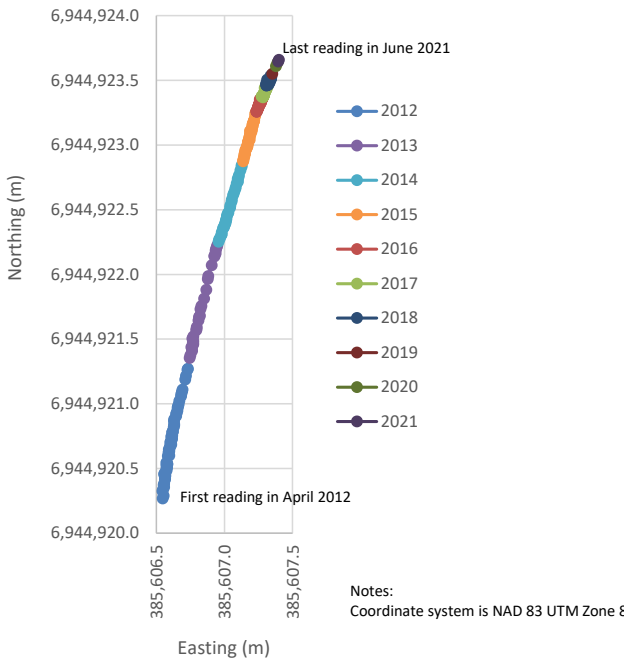
Minto Mine

Date: October 2021

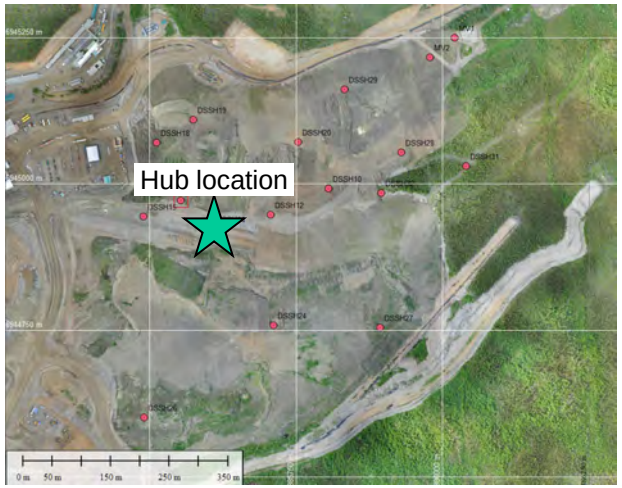
Prepared by: PHM

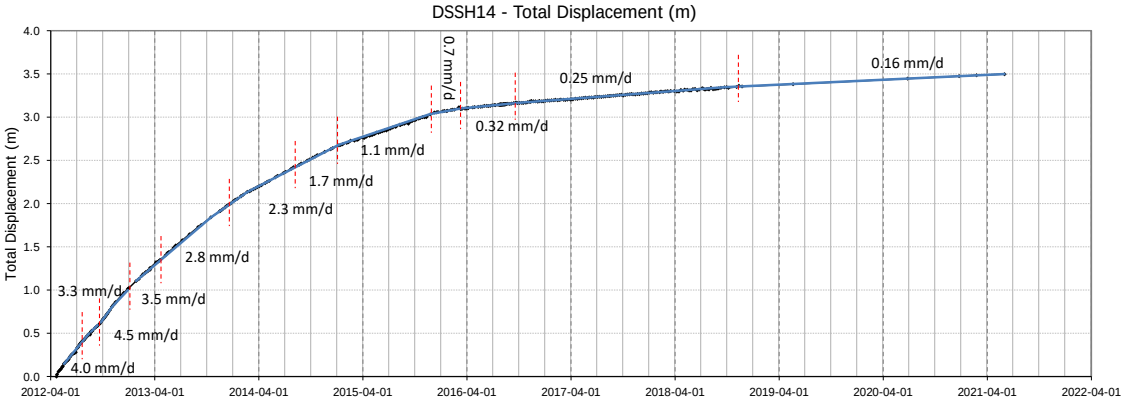
Figure: 4

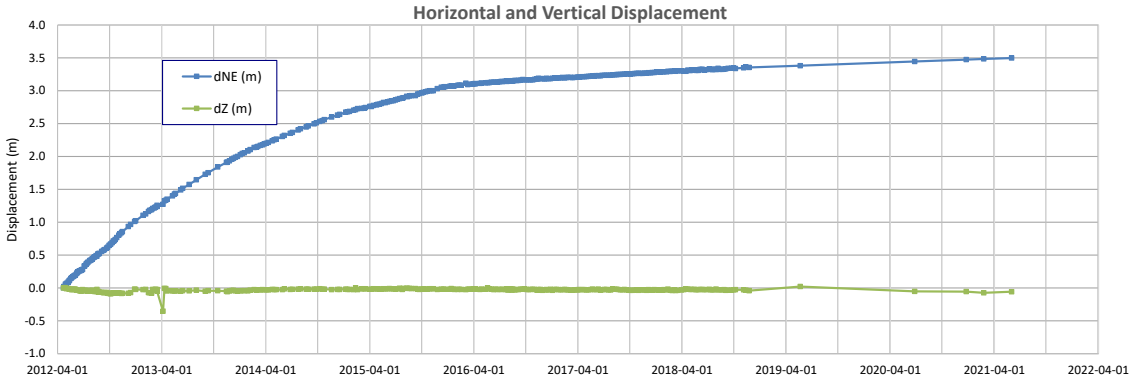
DSSH14 - Northing Vs. Easting Movement Plot

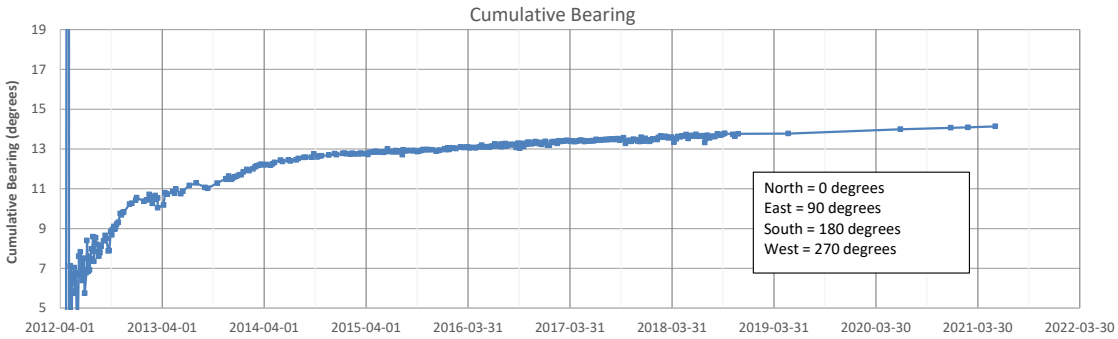


Notes:
Coordinate system is NAD 83 UTM Zone 8









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MINTO

DSTSF Instrumentation Data

Survey Hub – DSSH14

Job No: 1CM002.073

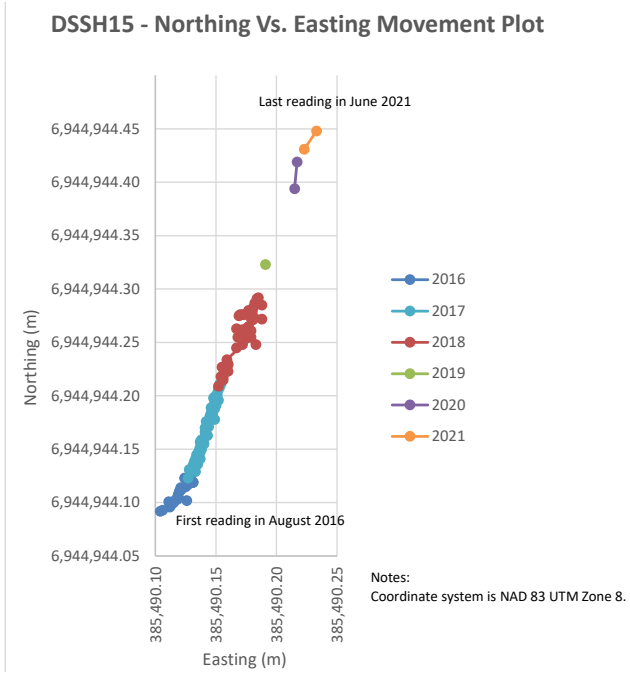
Filename: ApD_2021DSTSFLandscape.pptx

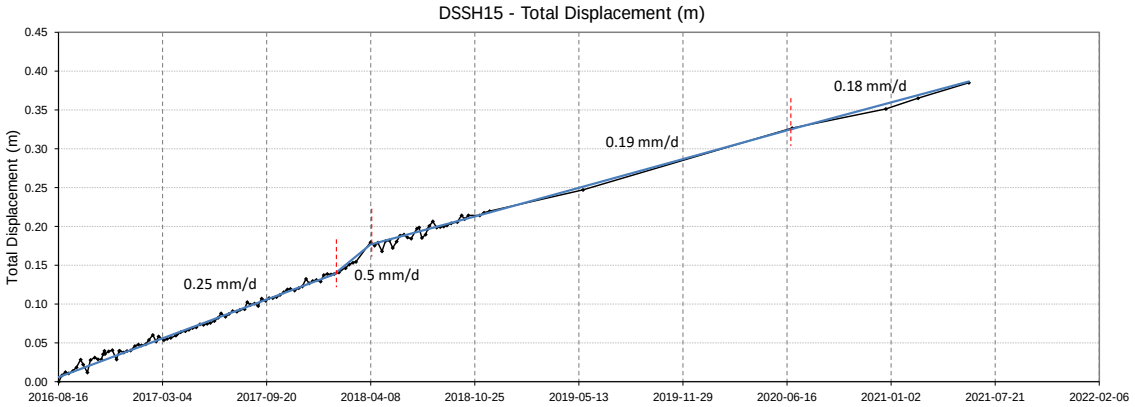
Minto Mine

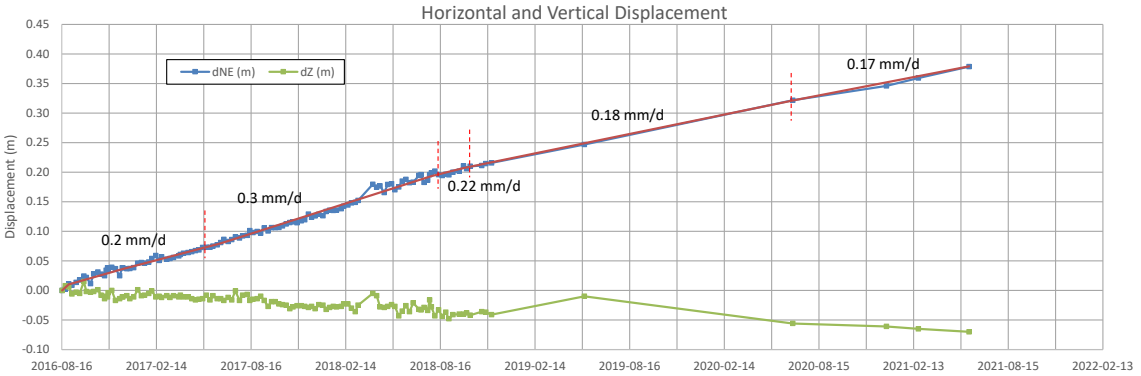
Date: October 2021

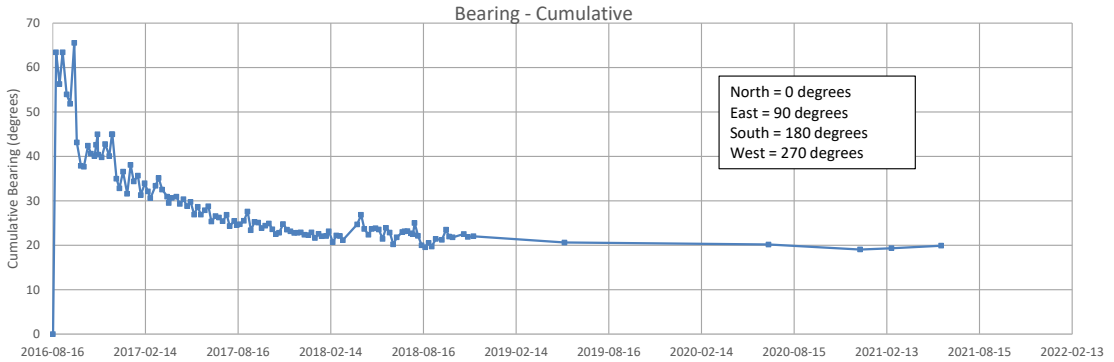
Prepared by: PHM

Figure: 5



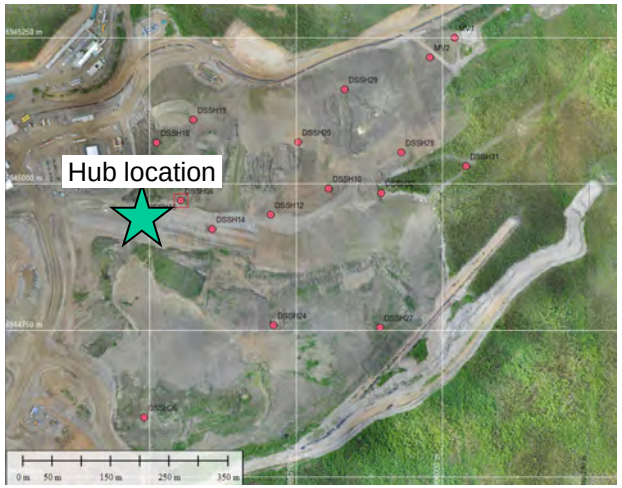






Note:

1. The survey hub was removed in February 2016 prior to MVFES2 construction. The hub was reinstalled in August 2016 following completion of construction.



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DSTSF Instrumentation Data

Survey Hub – DSSH15

Job No: 1CM002.073

Filename: ApD_2021DSTSFLandscape.pptx

Minto Mine

Date: October 2021

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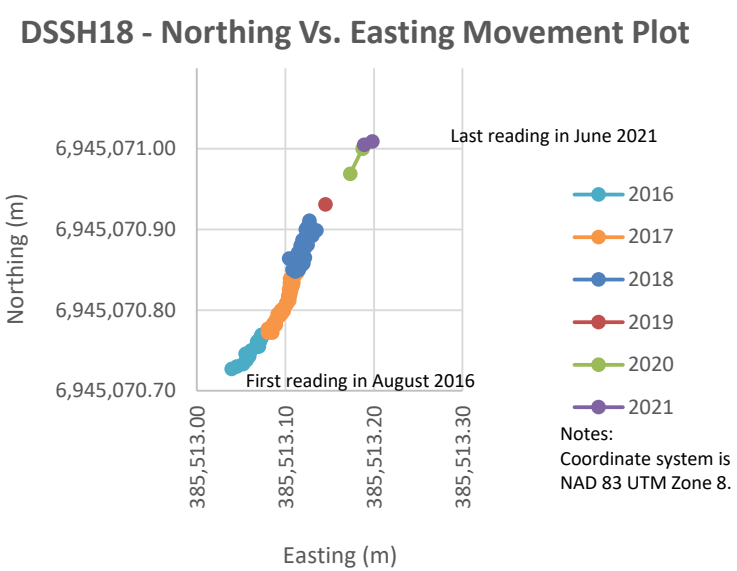
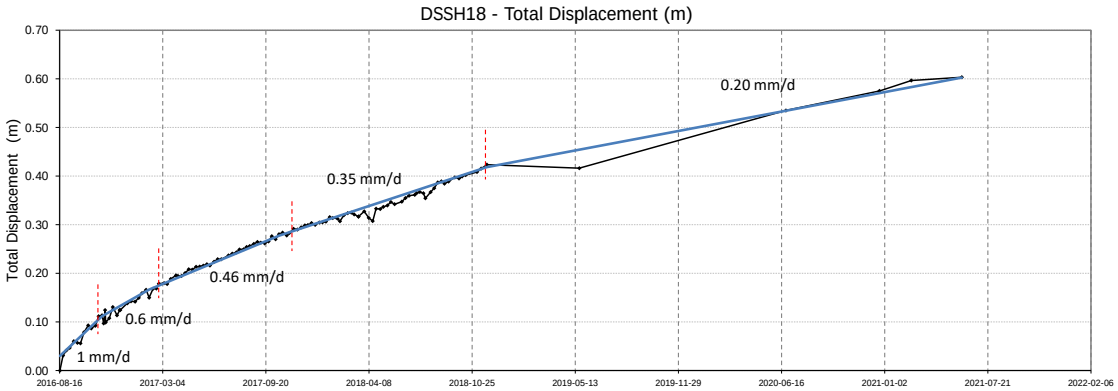
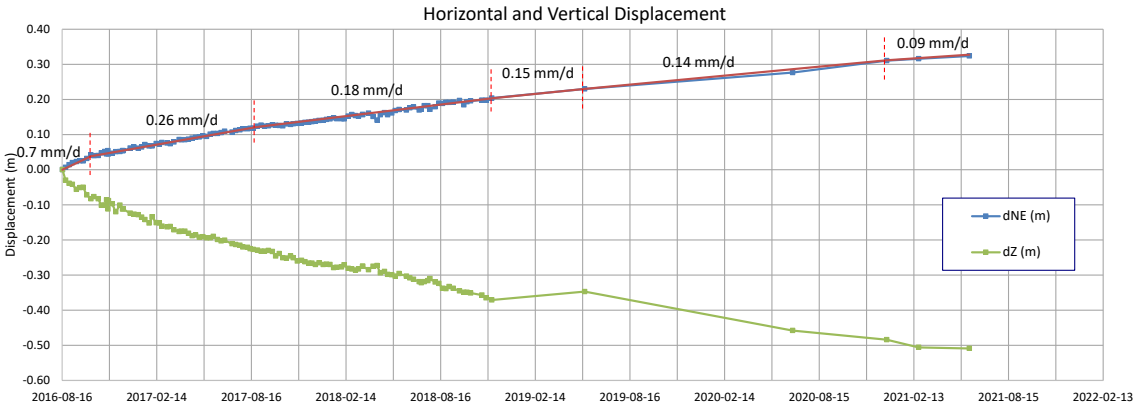
Figure: 6

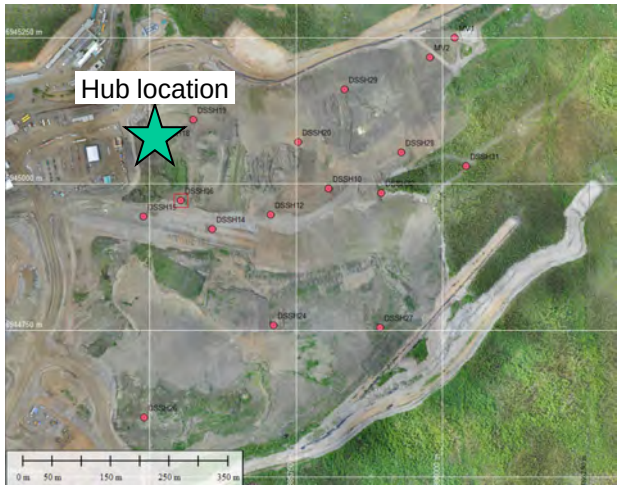


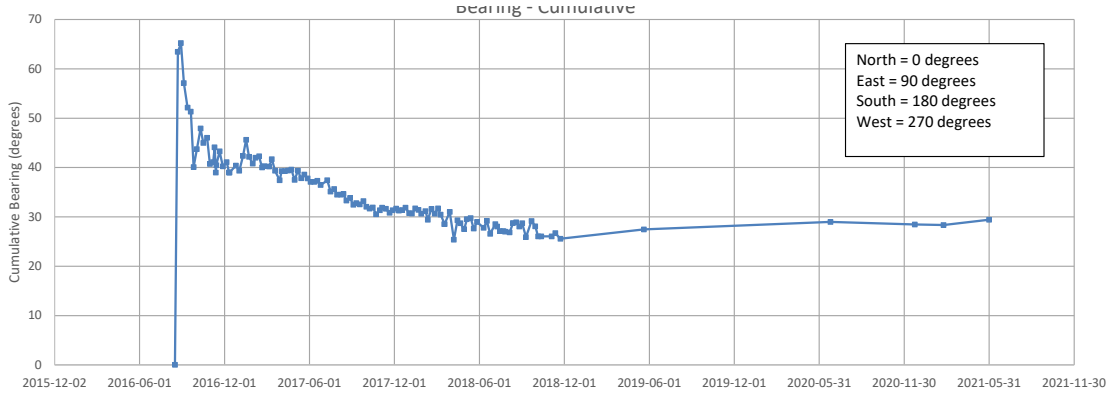




Note:

1. The survey hub was removed in December 2015 prior to MVFES2 construction. The hub was reinstalled i August 2016 following completion of construction.





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DSTSF Instrumentation Data

Survey Hub – DSSH18

Job No: 1CM002.073

Filename: ApD_2021DSTSFLandscape.pptx

Minto Mine

Date: October 2021

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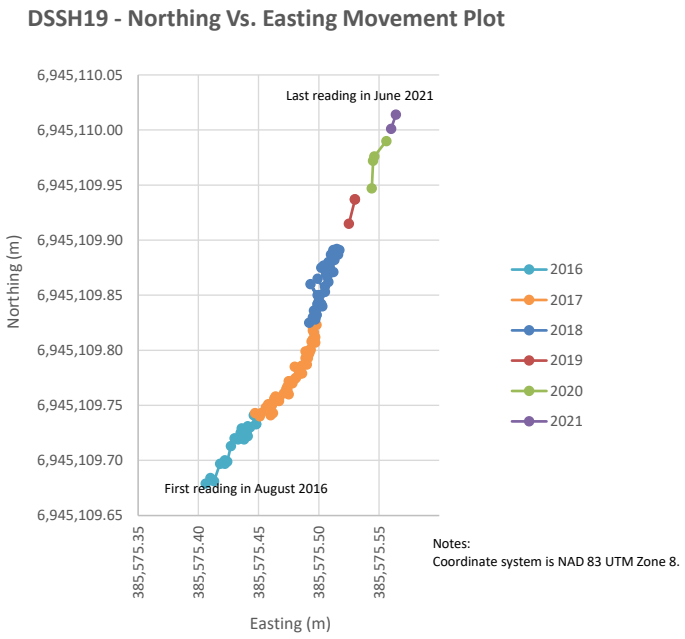
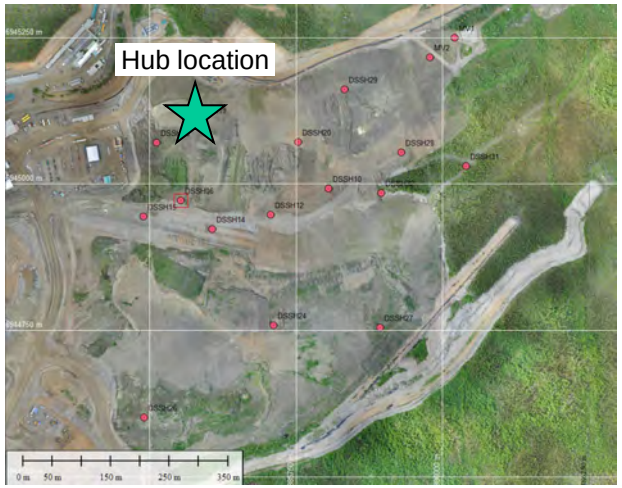
Figure: 7

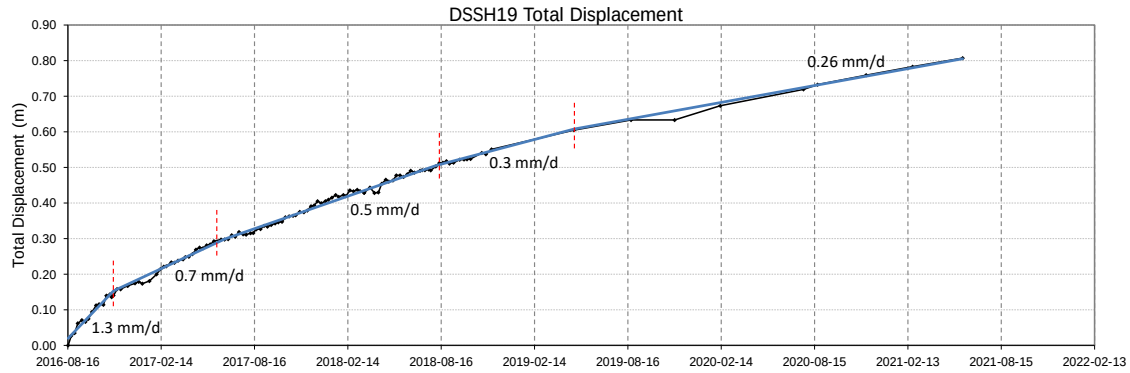


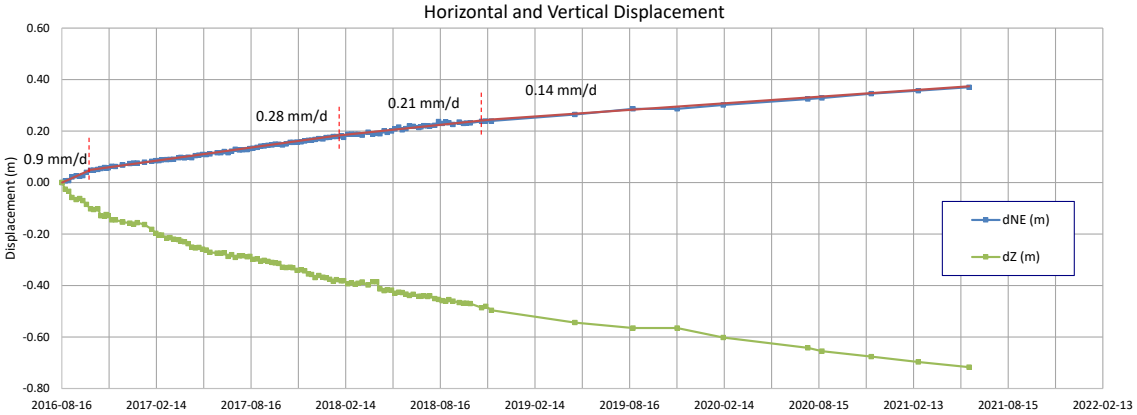
Notes:
Coordinate system is NAD 83 UTM Zone 8.

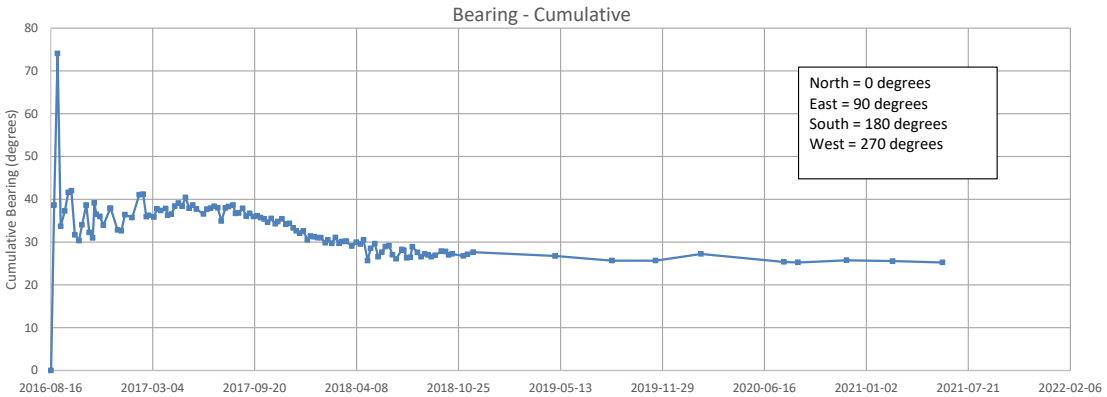
Note:

1. The survey hub was removed in December 2015 prior to MVFES2 construction. The hub was reinstalled in August 2016 following completion of construction.









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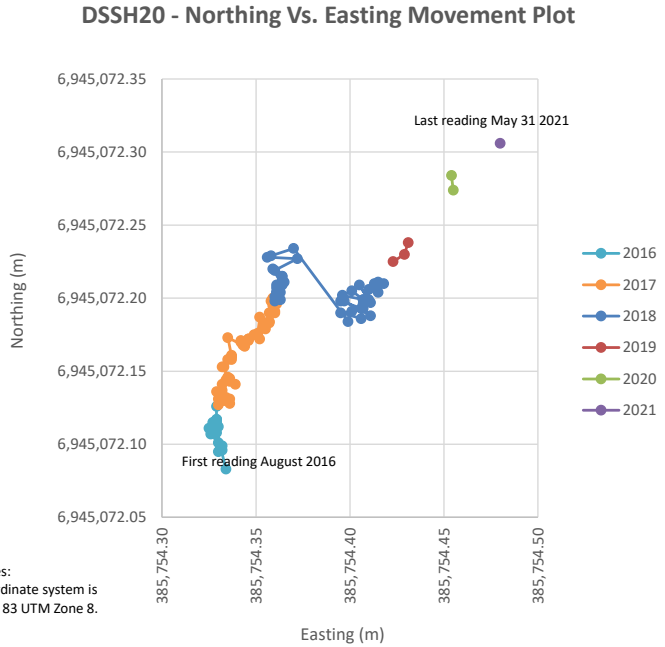
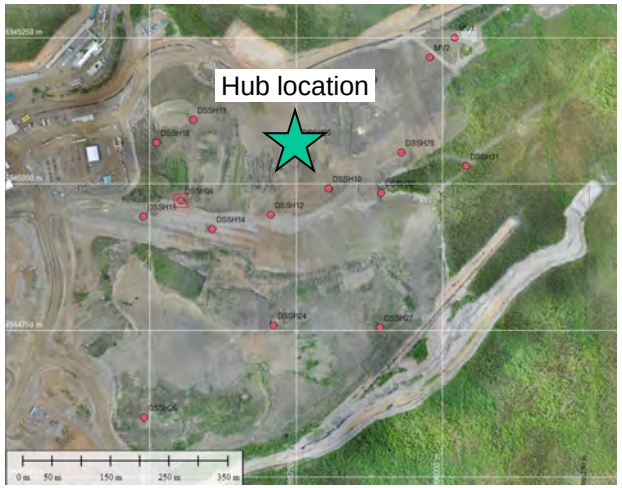
Job No: 1CM002.073 Filename: ApD_2021DSTSFLandscape.pptx	Minto Mine	Date: October 2021 / Prepared by PHM / Figure: **8**

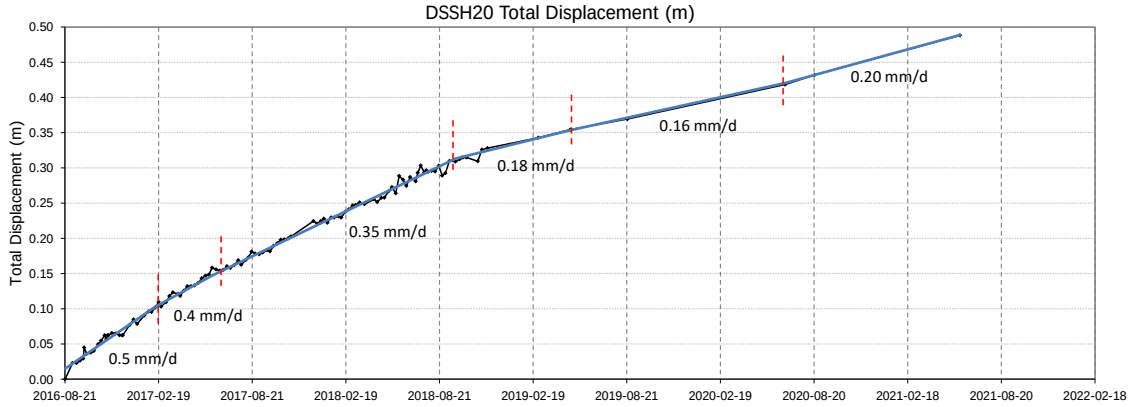


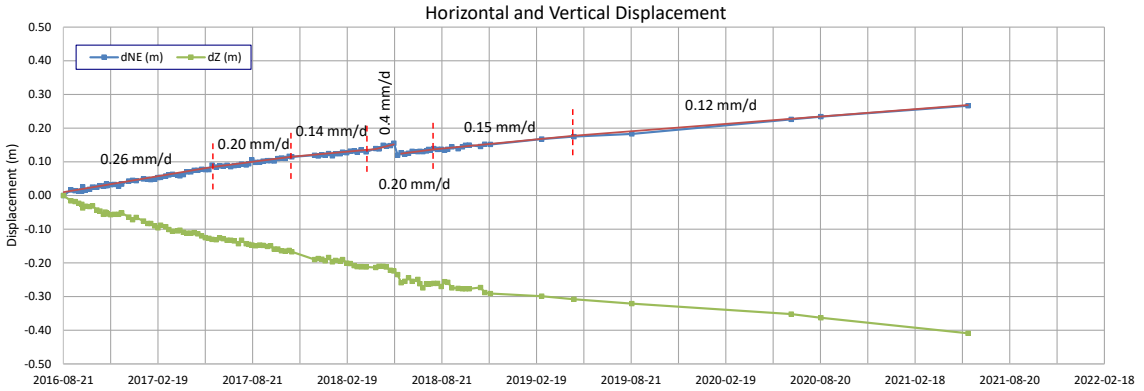
Notes:
Coordinate system is
NAD 83 UTM Zone 8.

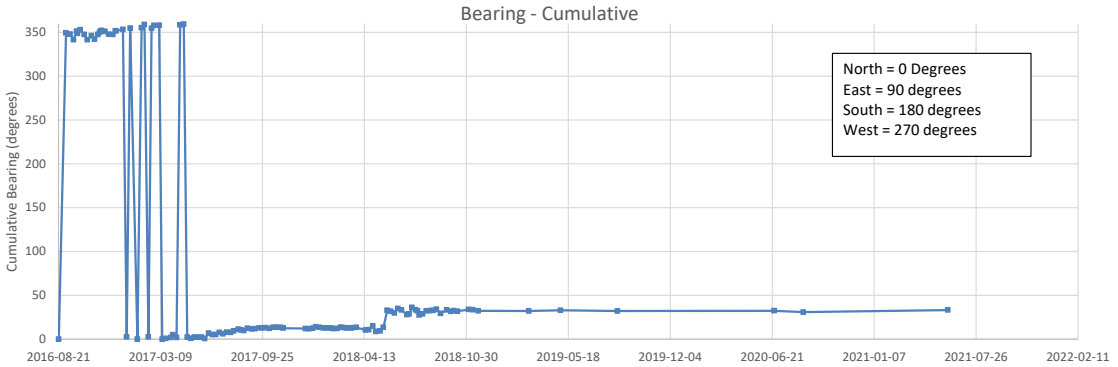
Note:

1. The survey hub was removed in December 2015 prior to MVFES2 construction. The hub was reinstallec August 2016 following completion of construction.









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MINTO

DSTSF Instrumentation Data

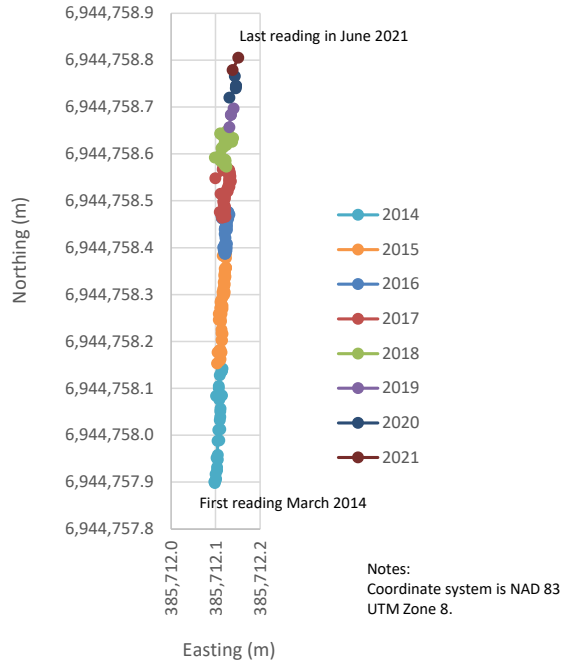
Survey Hub – DSSH20

Job No: 1CM002.073
Filename: ApD_2021DSTSFLandscape.pptx

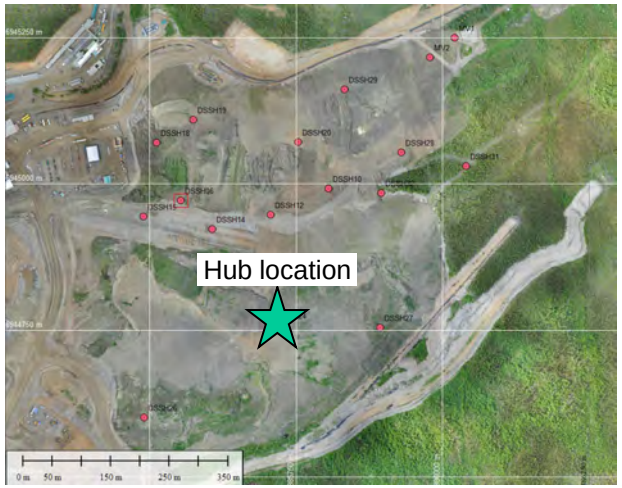
Minto Mine

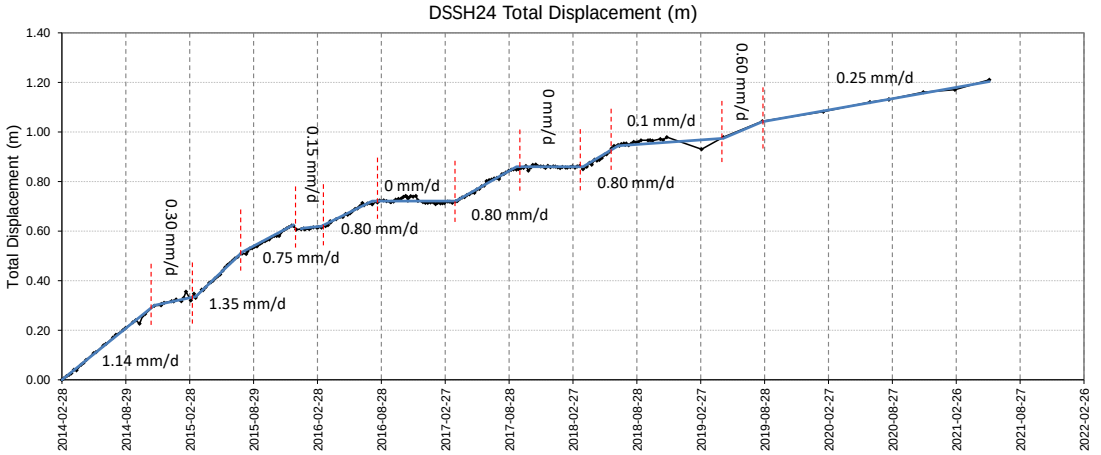
Date: October 2021
Prepared by: PHM
Figure: 9

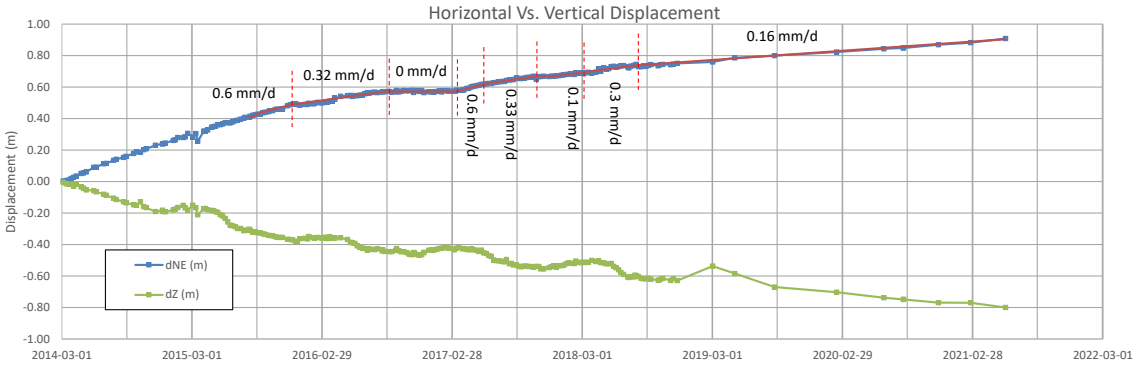
DSSH24 - Northing Vs. Easting Movement Plot

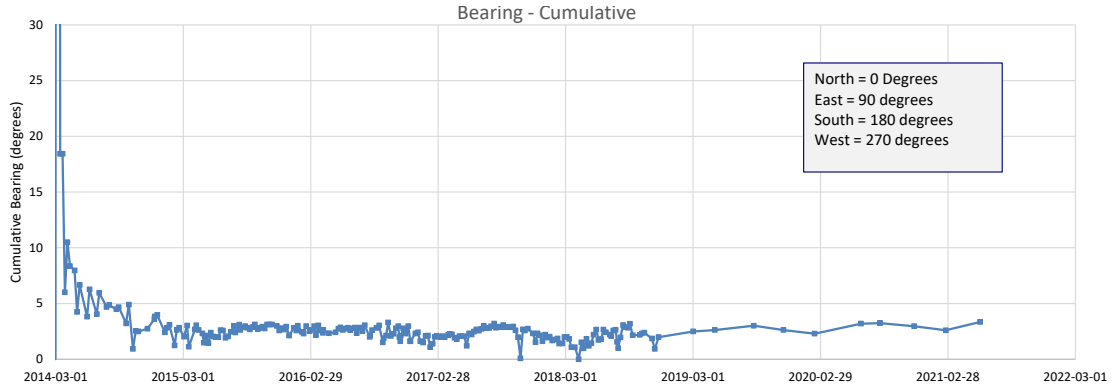


Notes:
Coordinate system is NAD 83
UTM Zone 8.









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2. Excel instrumentation data: \\VAN-SVR0\Projects\01_SITES\Minto\!020_Site_Wide_Data\Geotechnical\Geotech Monitoring Data\DSTFSurveyHubMonitoring_SRK.xlsm

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DSTSF Instrumentation Data

Survey Hub – DSSH24

Job No: 1CM002.073

Filename: ApD_2021DSTSFLandscape.pptx

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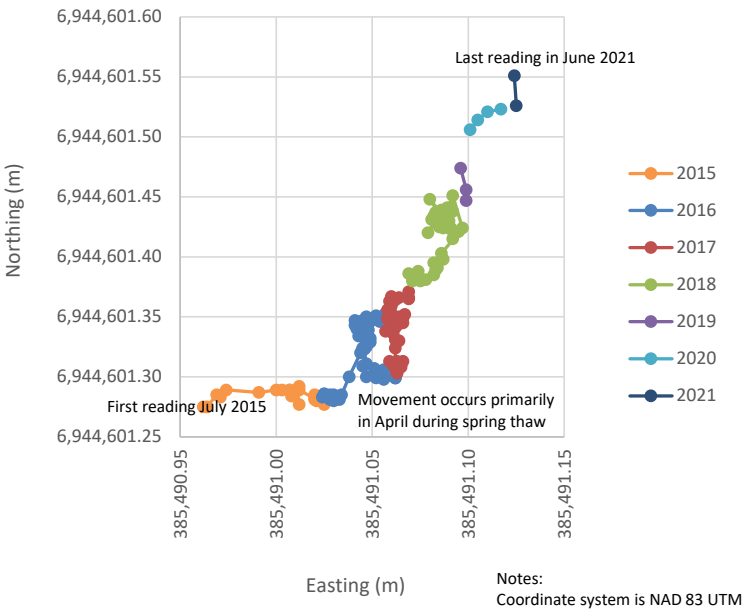
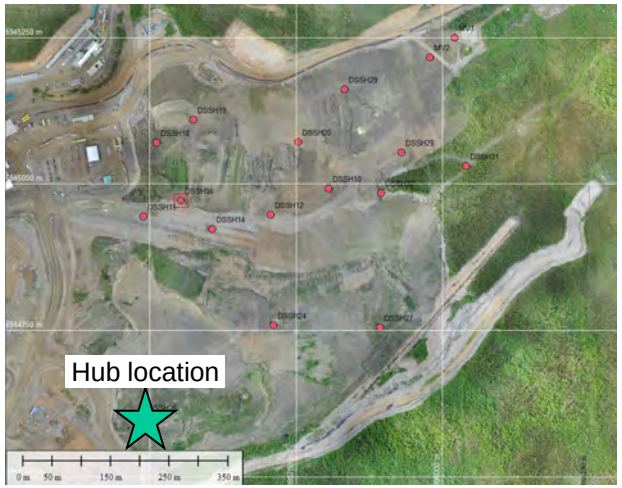
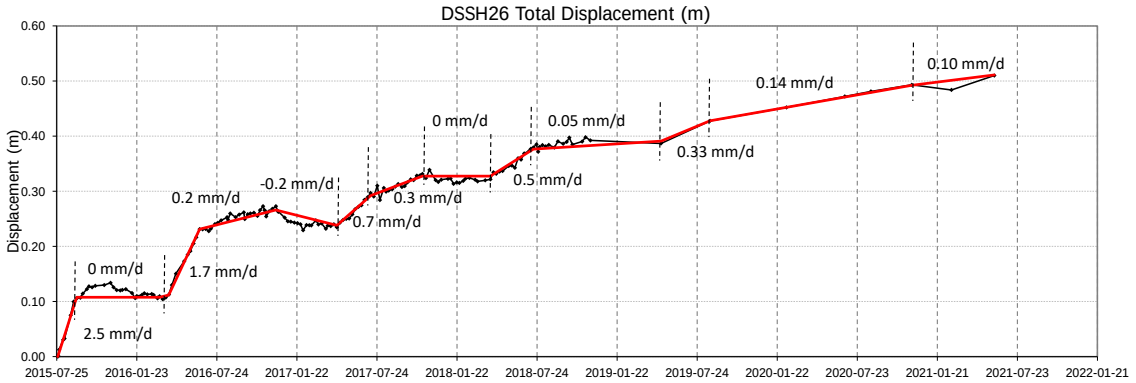
Figure: **10**

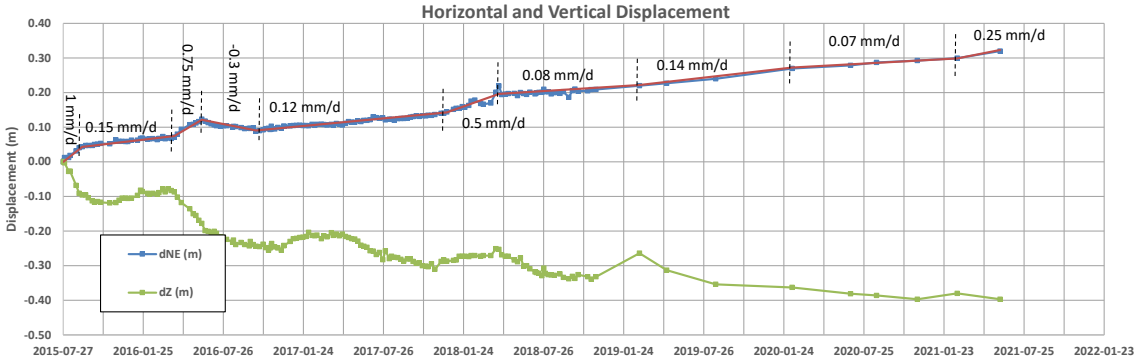
DSSH26 - Northing Vs. Easting Movement Plot

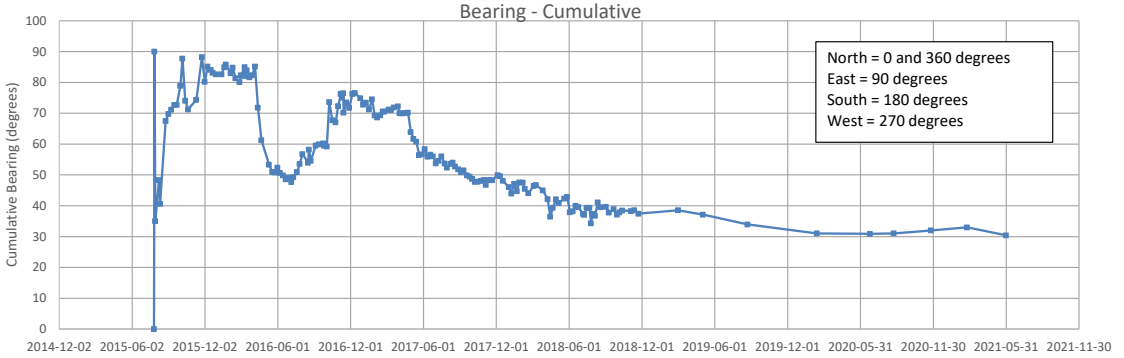


Notes:
Coordinate system is NAD 83 UTM Zone 8.









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DSTSF Instrumentation Data

Survey Hub – DSSH26

Job No: 1CM002.073

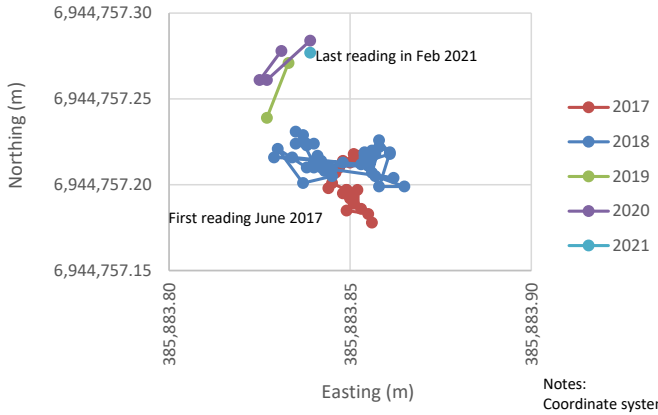
Filename: ApD_2021DSTSFLandscape.pptx

Minto Mine

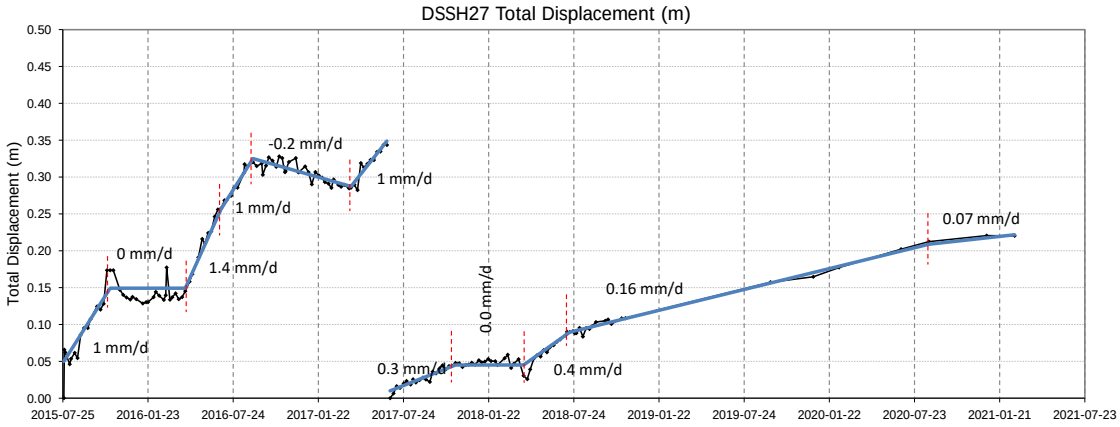
Date: October 2021

Prepared by PHM

Figure: **11**

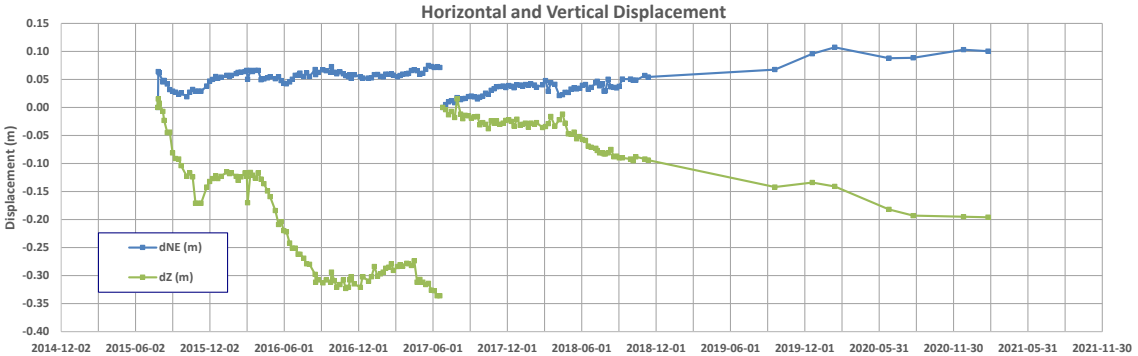


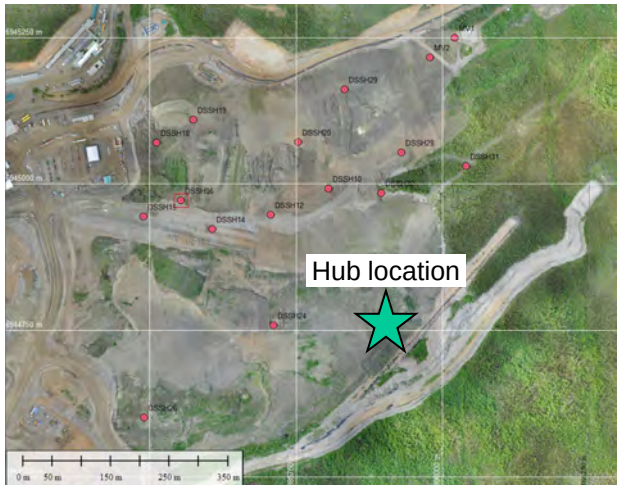
Notes:
Coordinate system is NAD 83 UTM Zo

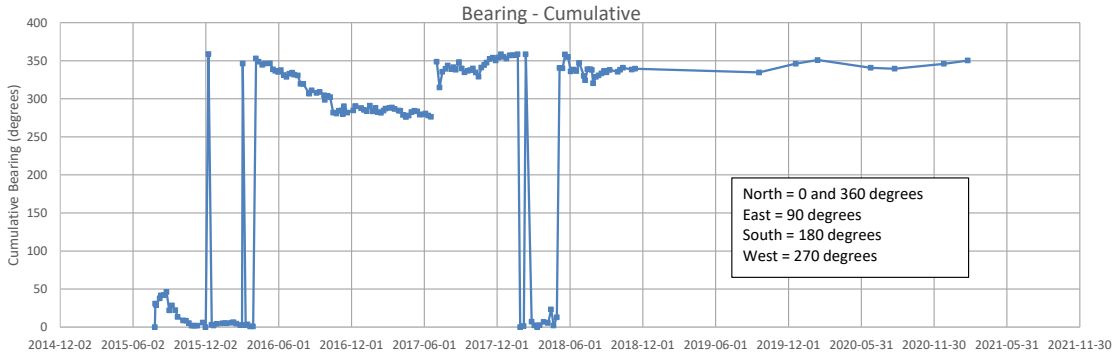


Note:

1. The survey hub was repositioned in June 2017.







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DSTSF Instrumentation Data

Survey Hub – DSSH27

Job No: 1CM002.073

Filename: ApD_2021DSTSFLandscape.pptx

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Date: October 2021

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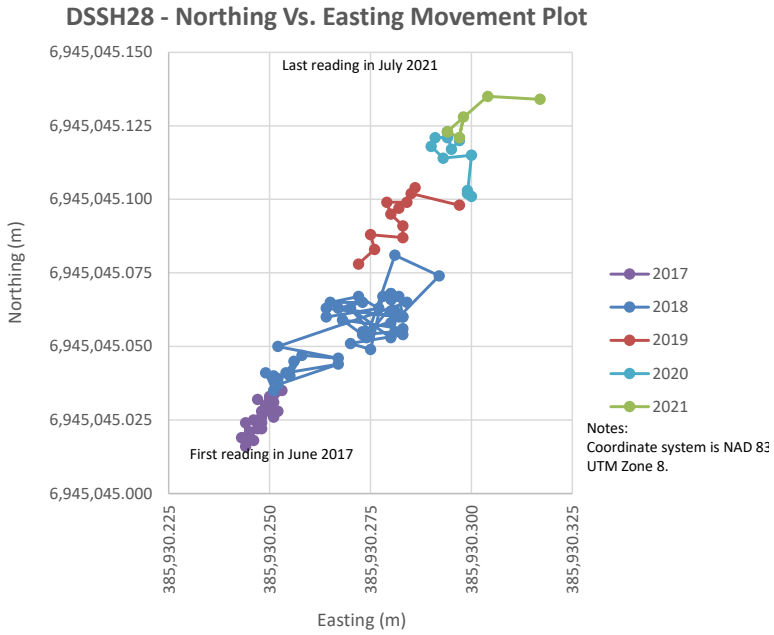
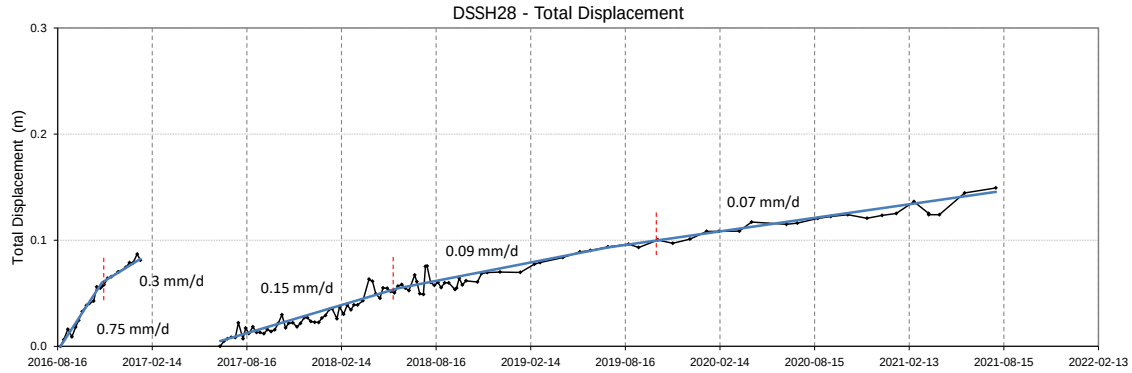
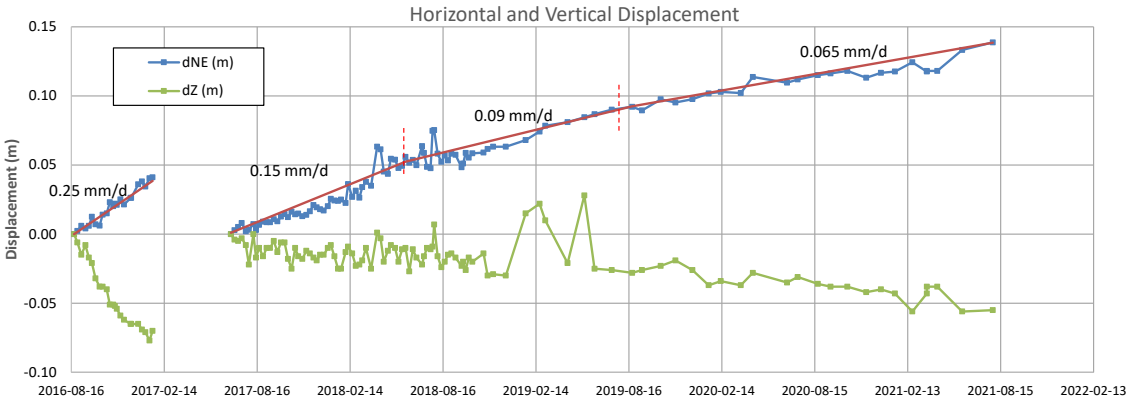
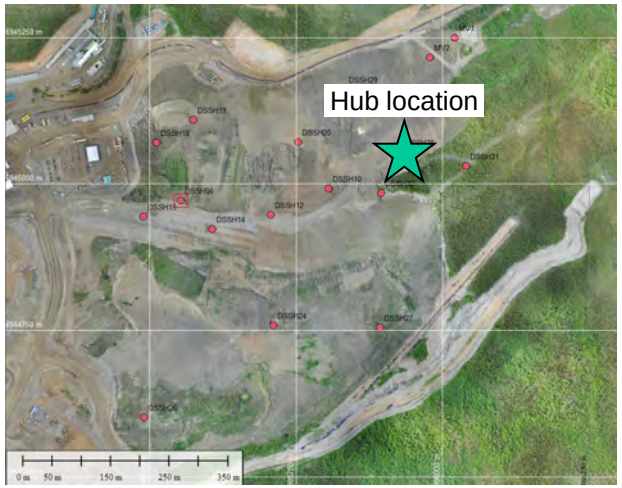
Figure: **12**

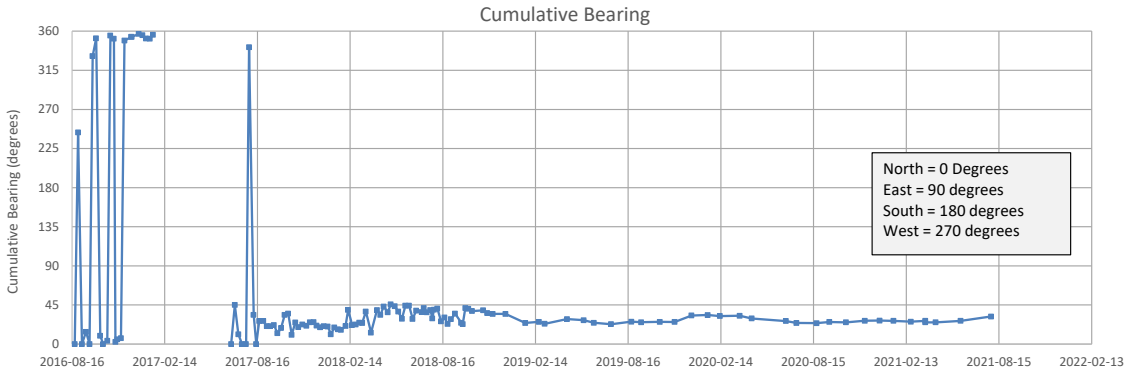


Notes:
Coordinate system is NAD 83 UTM Zone 8.









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DSTSF Instrumentation Data

Survey Hub – DSSH28

Job No: 1CM002.073

Filename: ApD_2021DSTSFLandscape.pptx

Minto Mine

Date: October 2021

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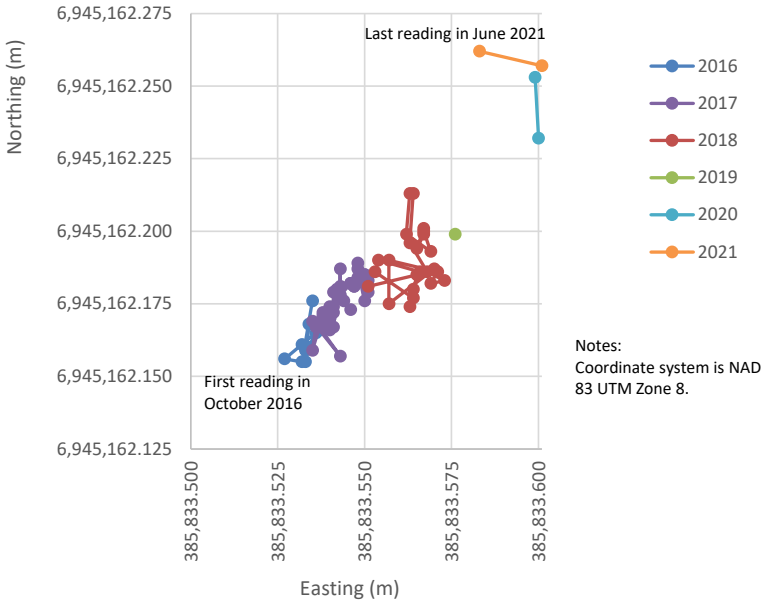
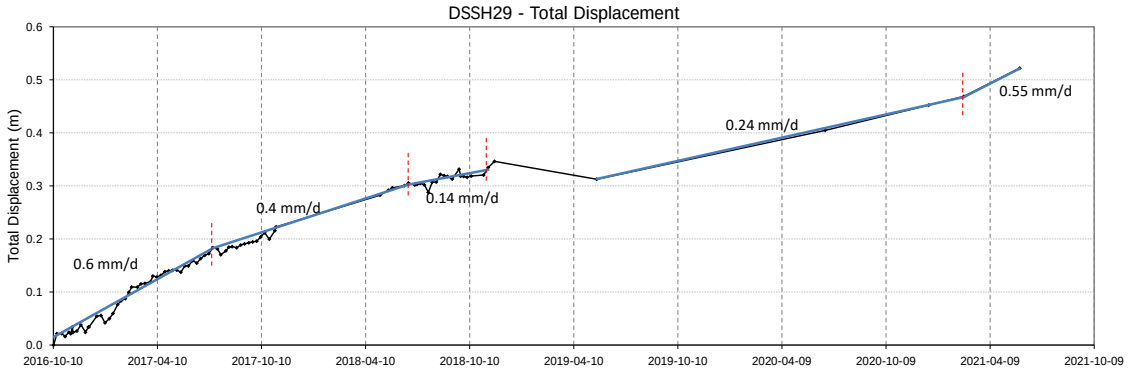
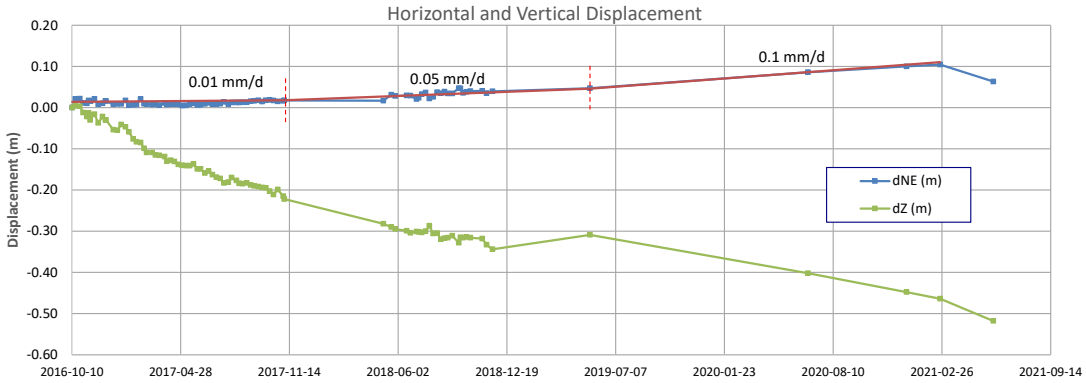
Figure: 13

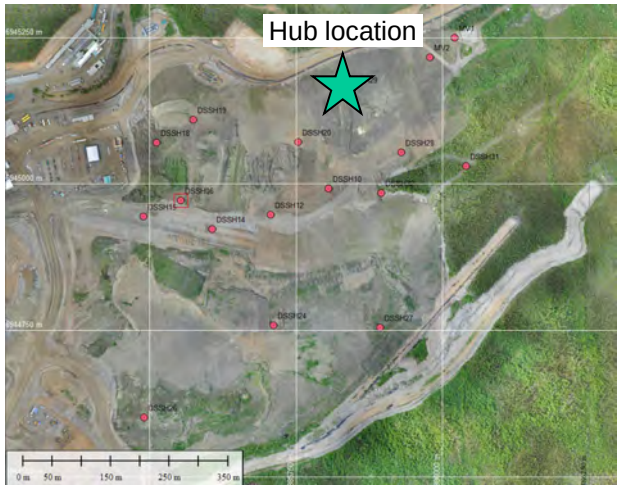
DSSH29 - Northing Vs. Easting Movement Plot

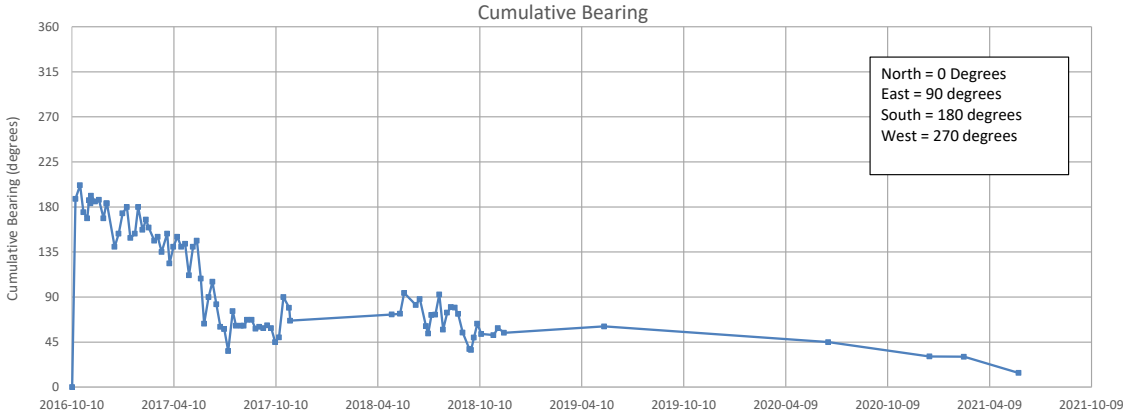


Notes:
Coordinate system is NAD 83 UTM Zone 8.









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DSTSF Instrumentation Data

Survey Hub – DSSH29

Job No: 1CM002.073

Filename: ApD_2021DSTSFLandscape.pptx

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Date: October 2021

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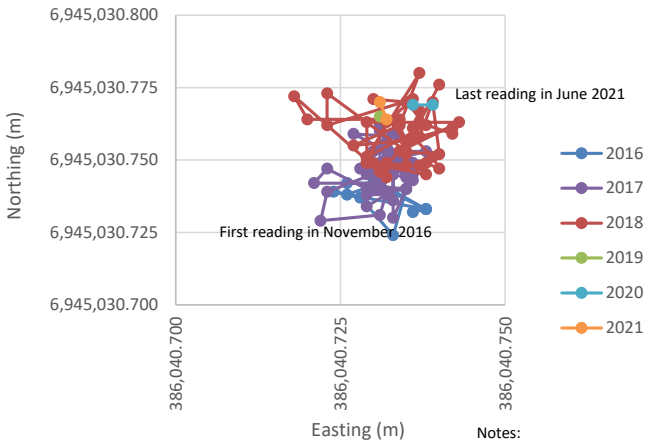
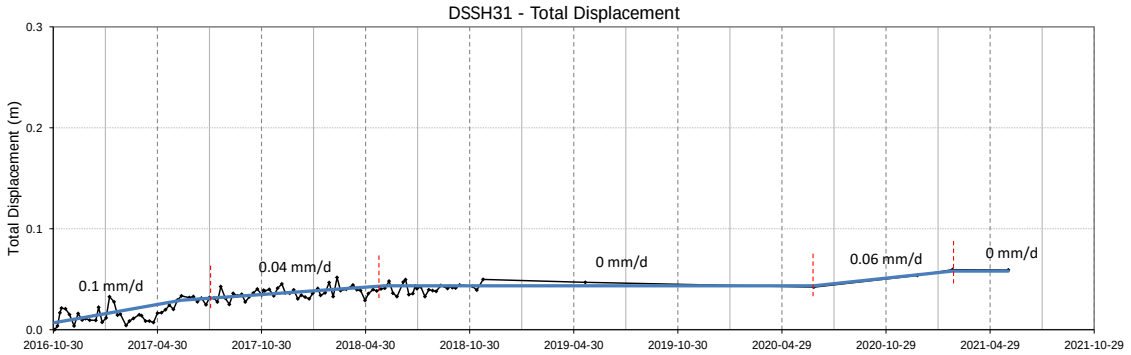
Figure: 14

DSSH31 - Northing Vs. Easting Movement Plot

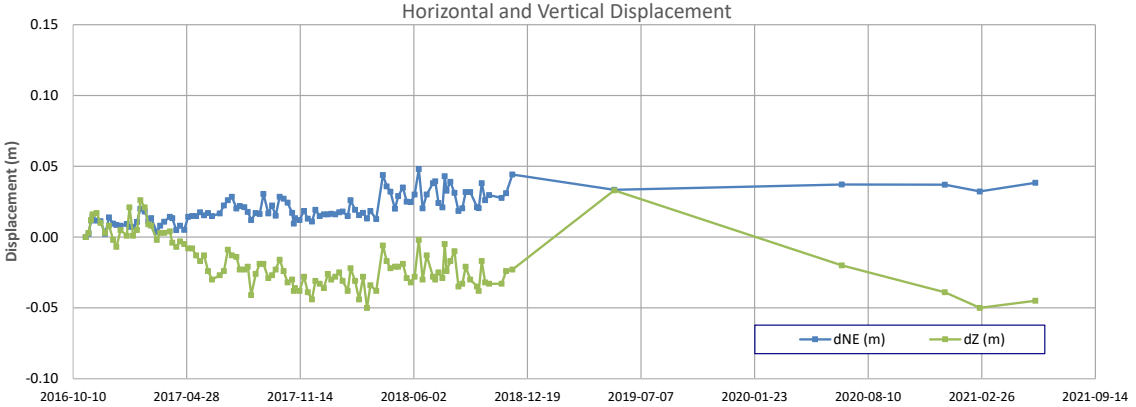


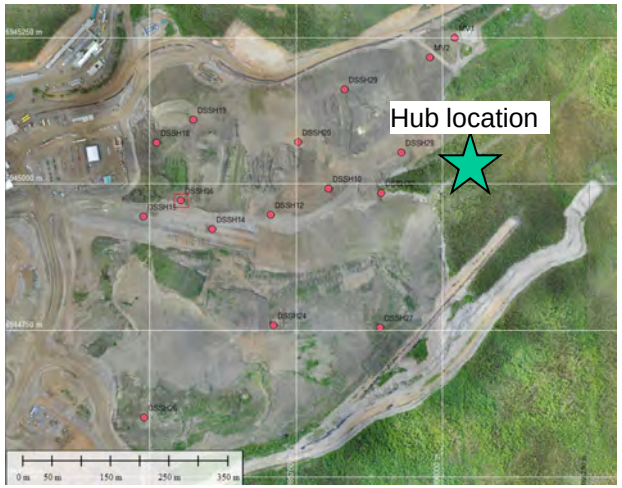
Notes:
Coordinate system is NAD 83 UTM Zone 8.

DSSH31 - Total Displacement

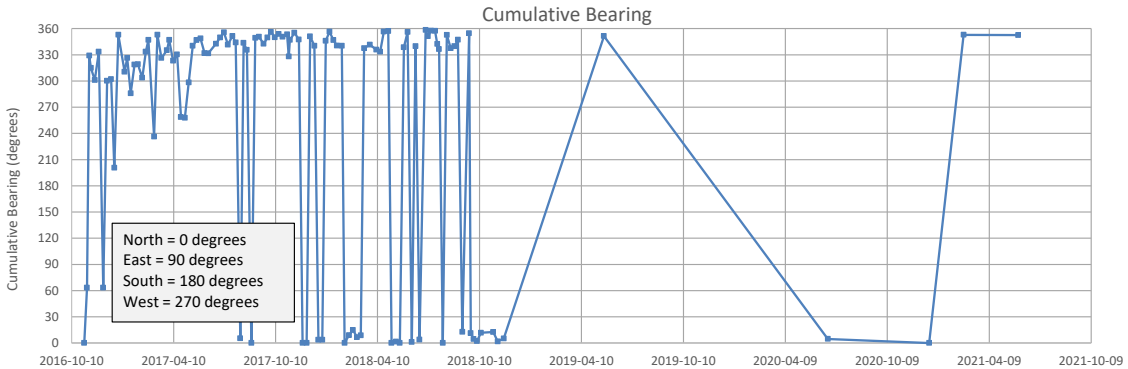


Horizontal and Vertical Displacement





Cumulative Bearing



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Job No: 1CM002.073

Filename: ApD_2021DSTSFLandscape.pptx

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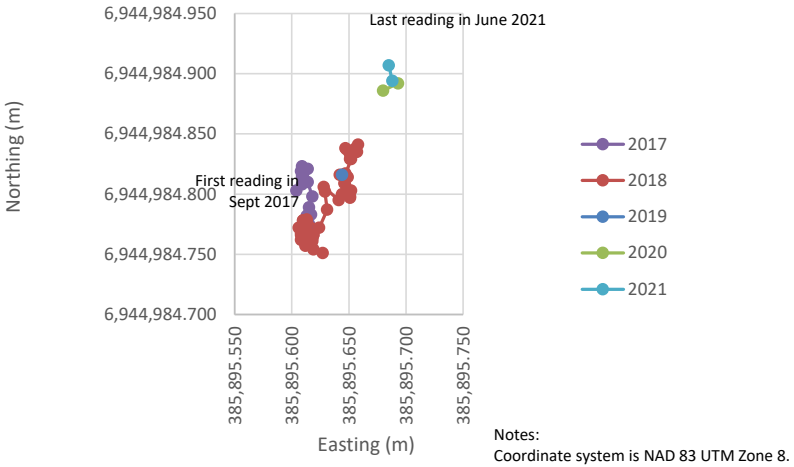
DSTSF Instrumentation Data

Survey Hub – DSSH31

Date:	Prepared by	Figure:
October 2021	PHM	15

DSSH32 - Northing Vs. Easting Movement Plot



Notes:
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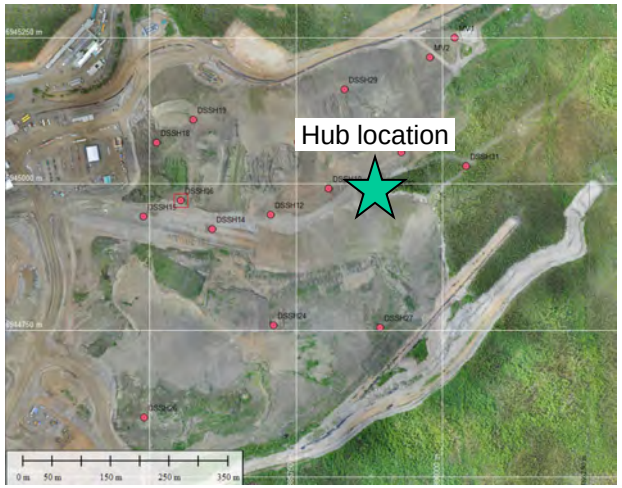

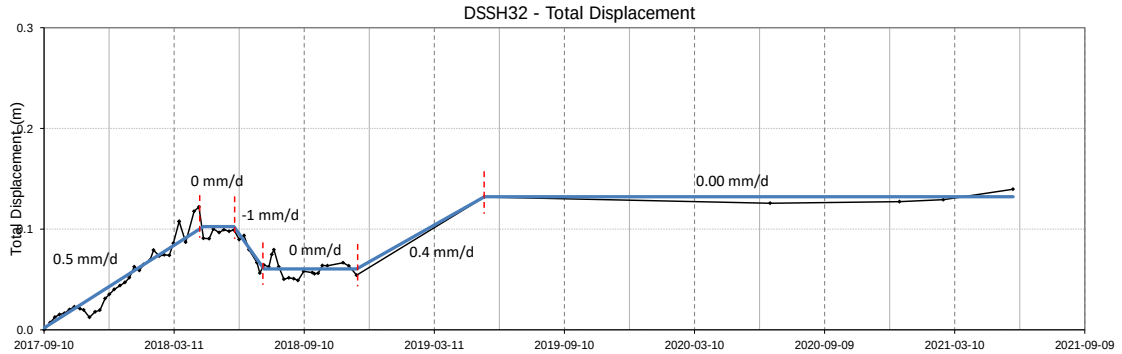

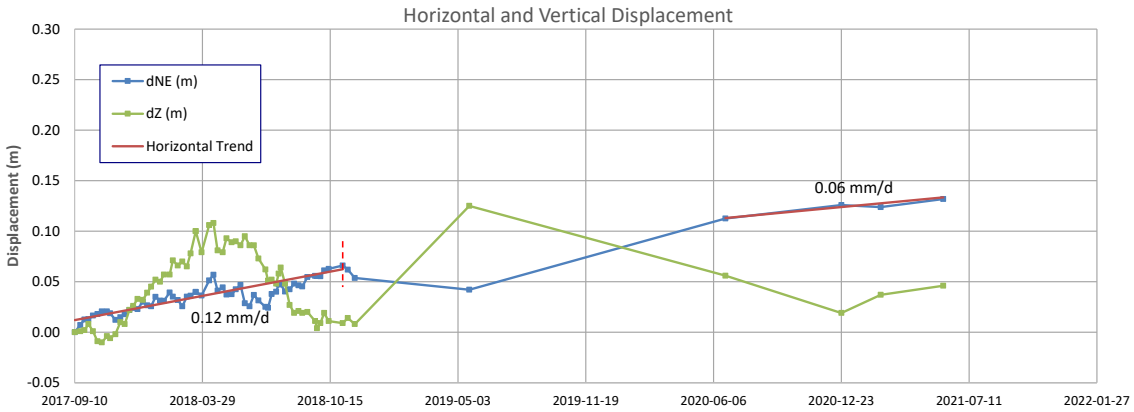

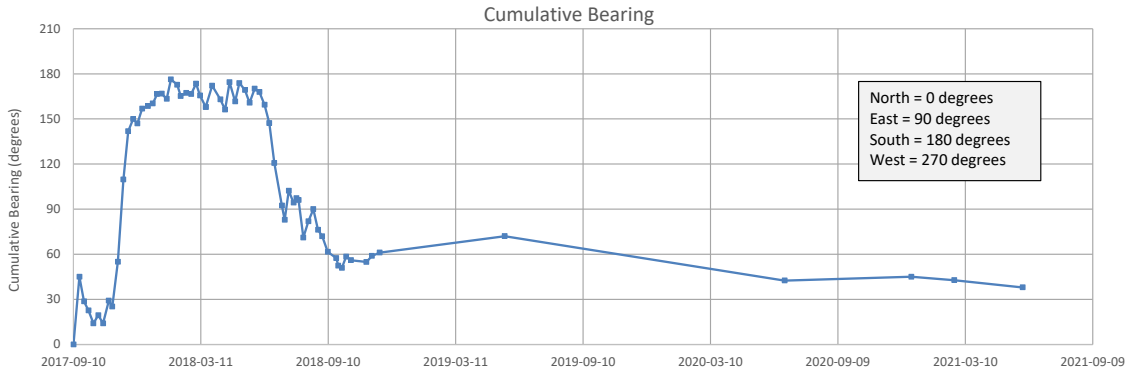

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DSTSF Instrumentation Data

Survey Hub – DSSH32

Job No: 1CM002.073

Filename: ApD_2021DSTSFLandscape.pptx

Minto Mine

Date: October 2021

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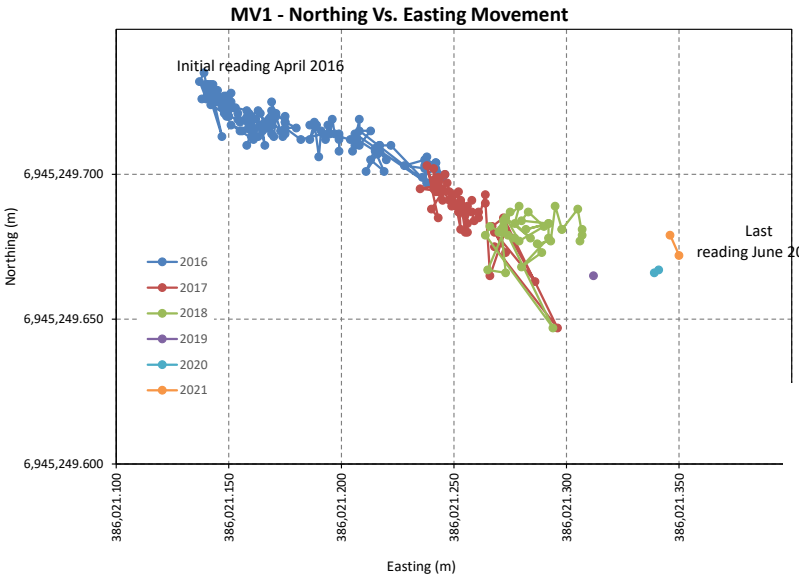
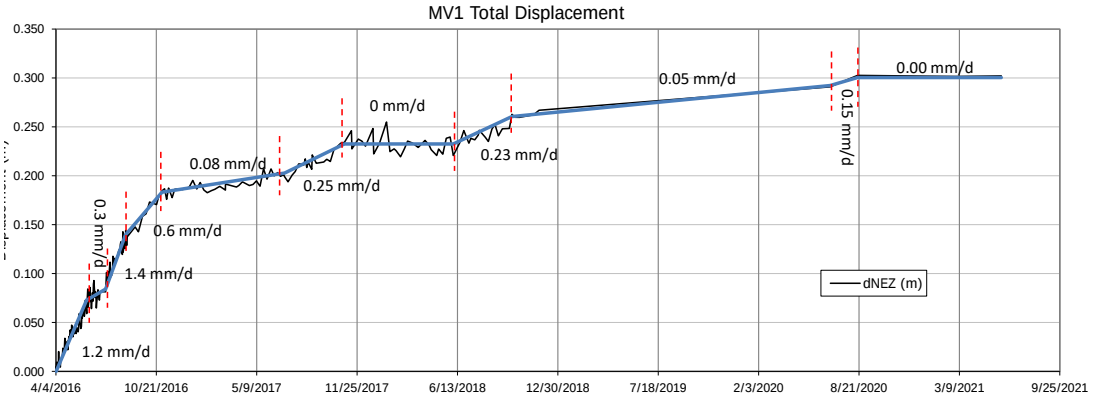
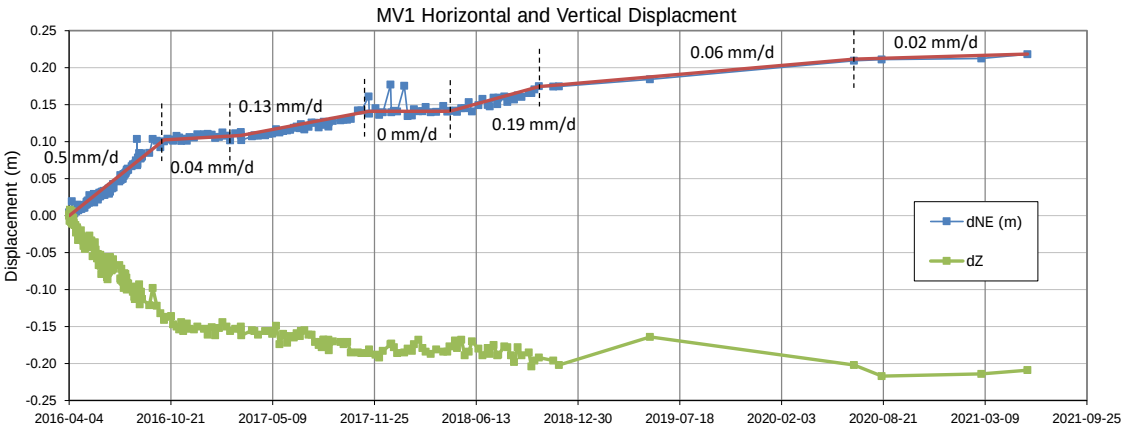
Figure: **16**







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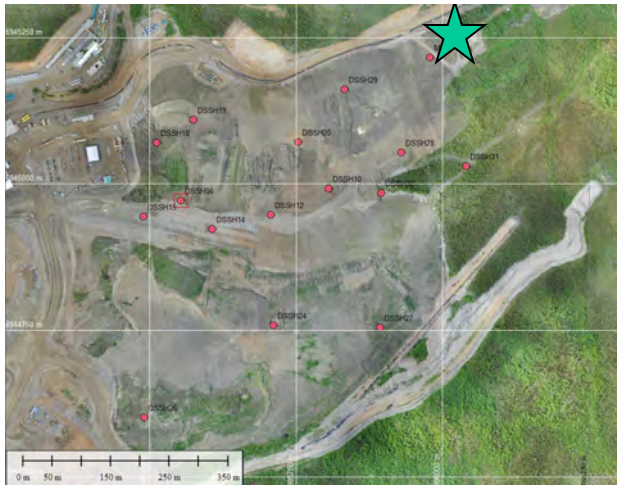

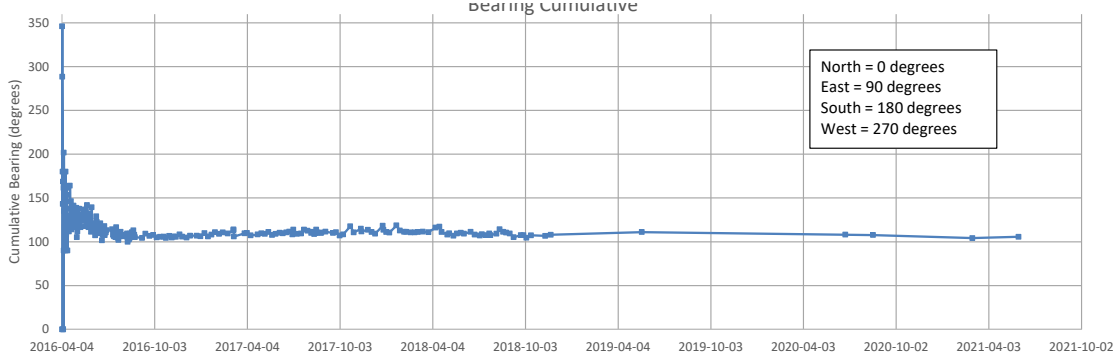

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DSTSF Instrumentation Data

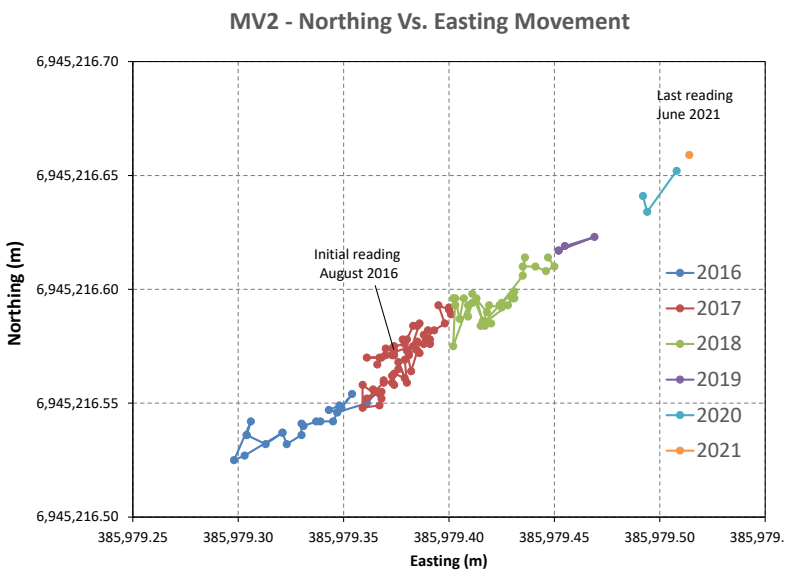
Survey Hub – MV1

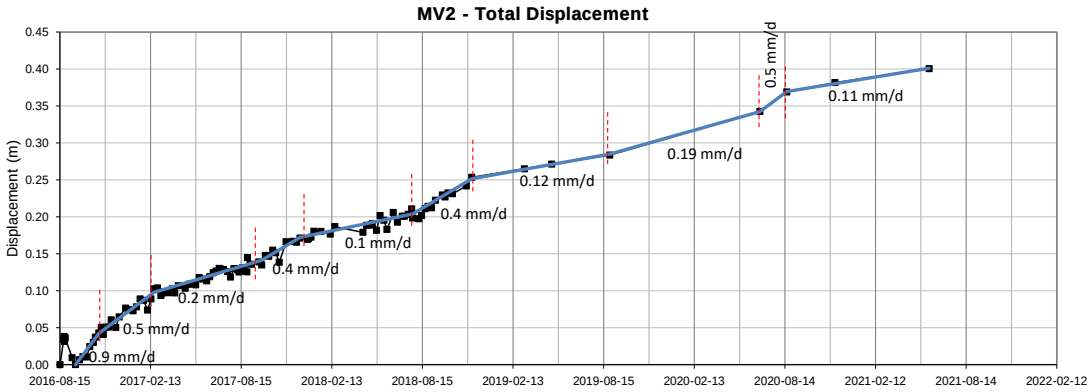
Job No: 1CM002.073

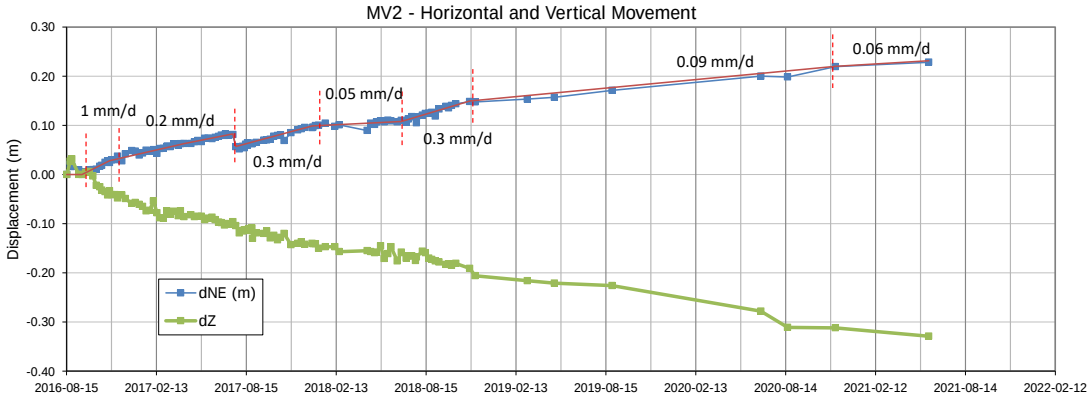
Filename: ApD_2021DSTSFLandscape.pptx

Minto Mine

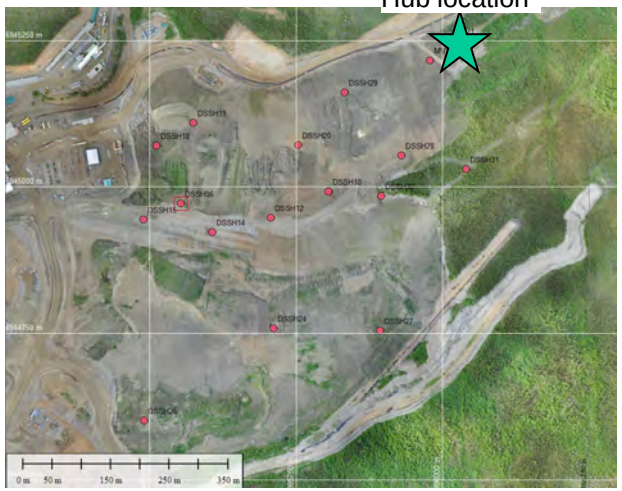
Date:	Prepared by	Figure:
October 2021	PHM	17

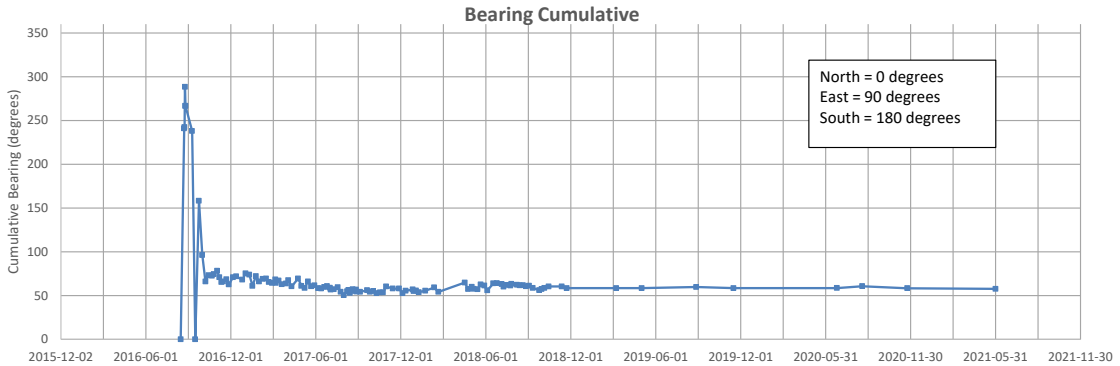






Hub location





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DSTSF Instrumentation Data

Survey Hub – MV2

Job No: 1CM002.073

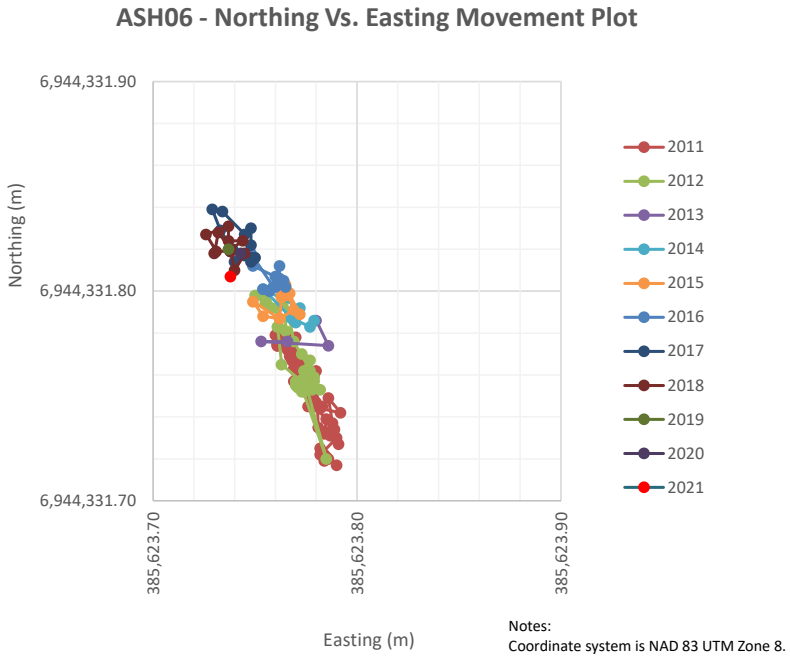
Filename: ApD_2021DSTSFLandscape.pptx

Minto Mine

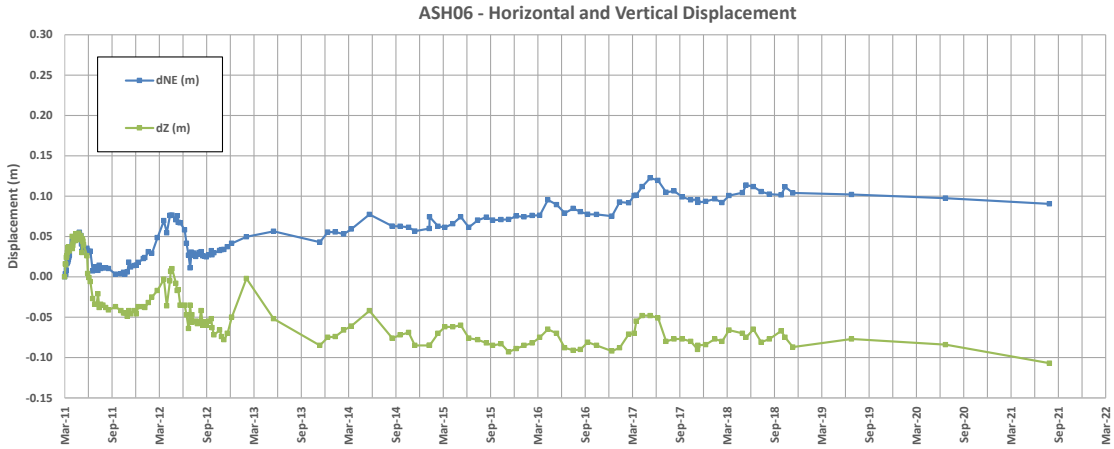
Date: October 2021

Prepared by PHM

Figure: **18**

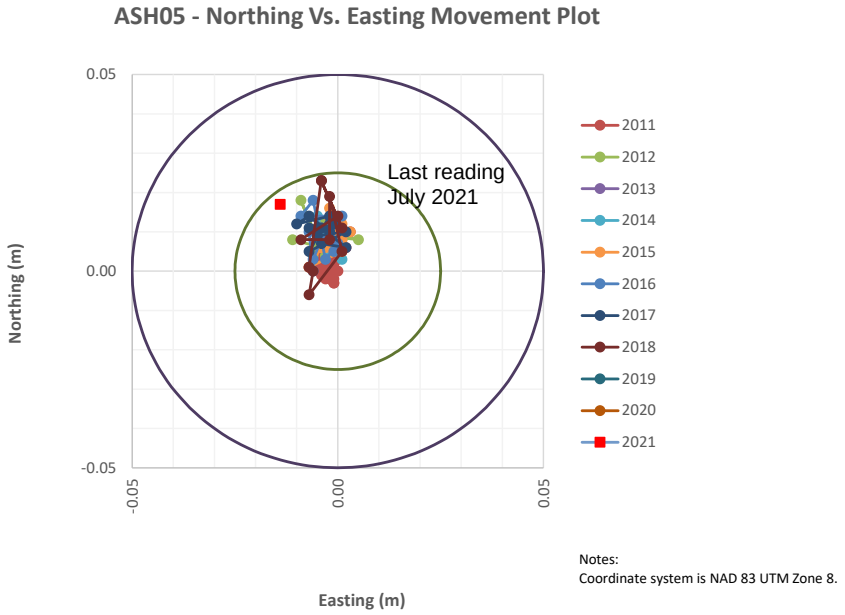


Notes:
Coordinate system is NAD 83 UTM Zone 8.



Notes:

1. Minto's survey reading comments on January 14, 2017 notes ASH06 may have been disturbed as a result of a pipeline installation.



Notes:
Coordinate system is NAD 83 UTM Zone 8.

Source files:

1. GlobalMapper: \\VAN-SVR0\Projects\01_SITES\Minto\!040_AutoCAD\GeotechInstrumentation\2020Instrumentation.gmp
2. Excel instrumentation data: \\VAN-SVR0\Projects\01_SITES\Minto\!020_Site_Wide_Data\Geotechnical\Geotech Monitoring Data\DSTFSurveyHubMonitoring_SRK.xlsm

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MINTO

DSTSF Instrumentation Data

Survey Hubs – ASH05 and ASH06

Job No: 1CM002.073

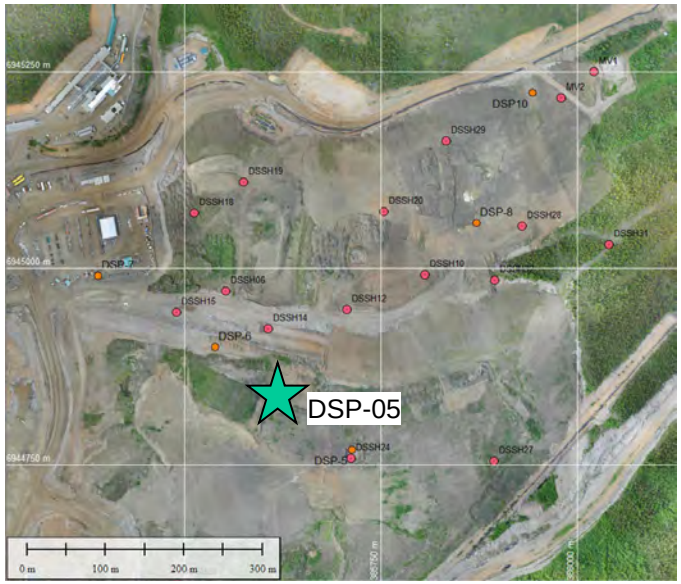
Filename: ApD_2021DSTSFLandscape.pptx

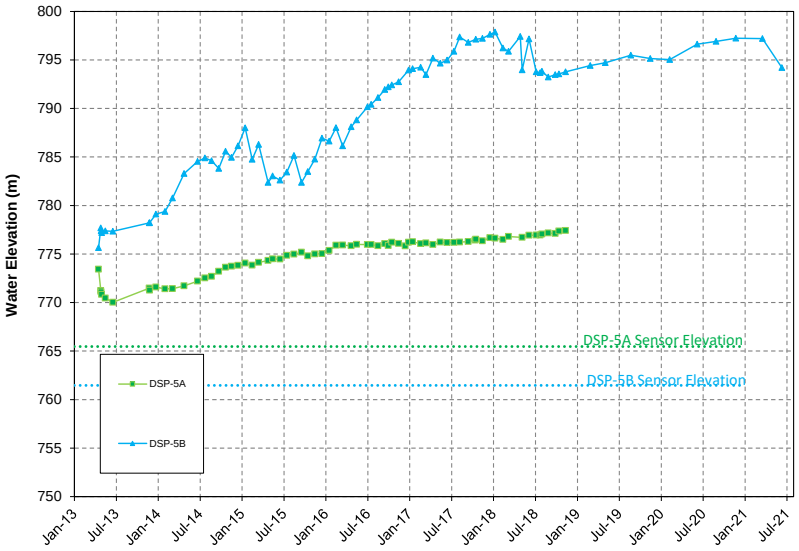
Minto Mine

Date: October 2021

Prepared by: PHM

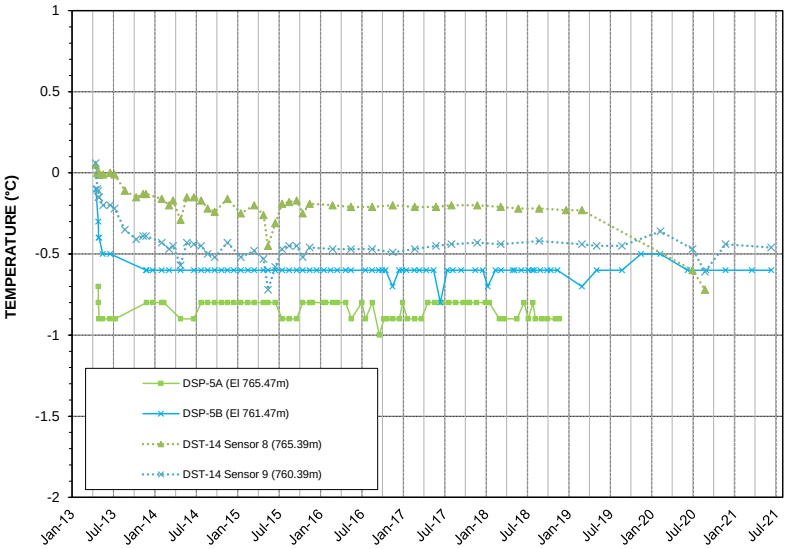
Figure: **19**





Notes:

1. The pore pressure sensors at DSP-05 are located approximately 2 m above original ground in tailings (A) and 2 m below original ground.
2. The bottom sensor at DSP-05 (B) shows an increase in pore pressure that peaked in 2018, and is since fluctuating between 793 and 797 m. The sensor is located in an area of silt with stratified ice lenses and the temperature at the sensor is near the freezing point of water -0.6°. The temperature plot also shows thermistor data from nearby ground temperature cable DST-14 for sensors at similar elevations.
3. Sensors at DSP-05A also shows gradual increasing pore pressure trend, with the sensor becoming malfunctional in February 2019.



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2. Excel instrumentation data: \\VAN-SVR0\Projects\01_SITES\Minto\!020_Site_Wide_Data\Geotechnical\Geotech Monitoring Data\DSTFSurveyHubMonitoring_SRK.xlsm

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DSTSF Instrumentation Data

Piezometer – DSP-05

Job No: 1CM002.073

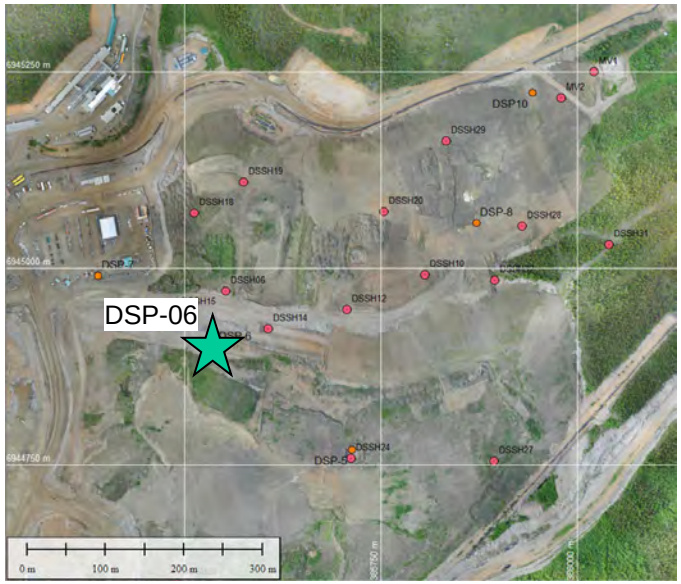
Filename: ApD_2021DSTSFLandscape.pptx

Minto Mine

Date: October 2021

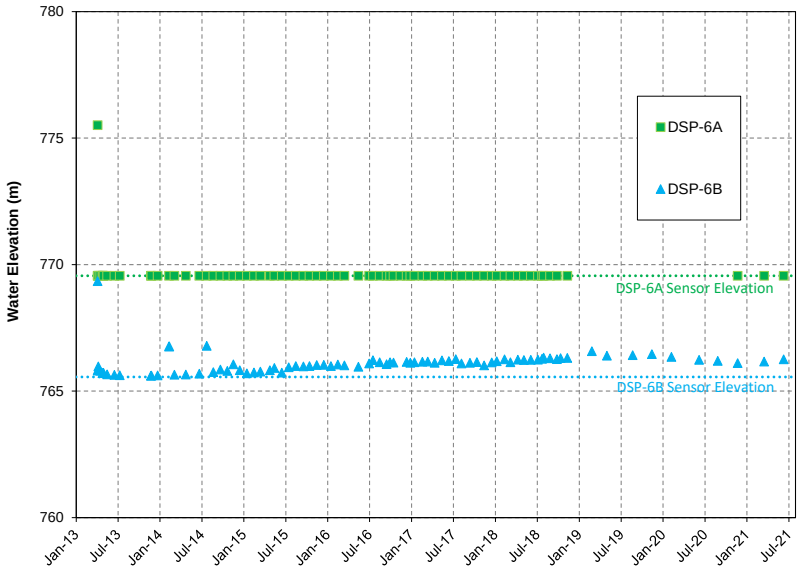
Prepared by PHM

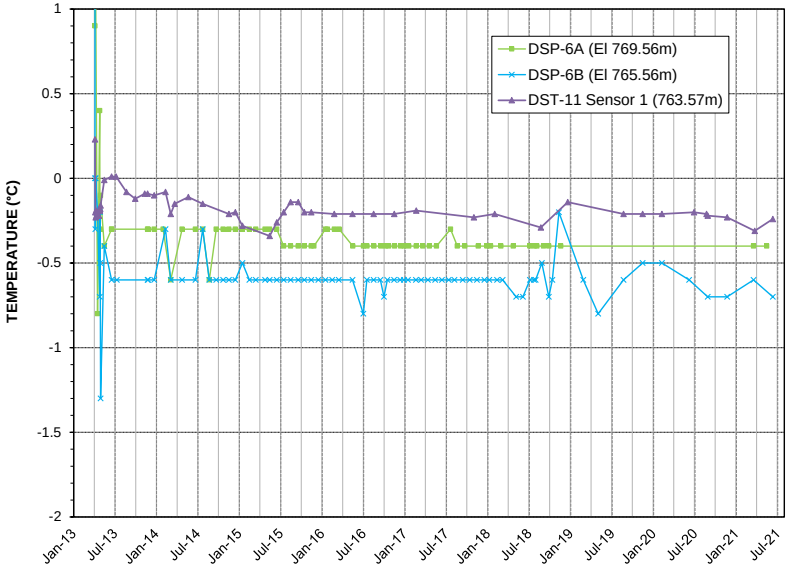
Figure: **20**



Notes:

1. The pore pressure sensors at DSP-06 are located approximately 2 m above original ground in tailings (A) and 2 m below original ground (B).
2. DSP-06A shows no pore pressure (pore pressure equal to the sensor elevation).
3. The bottom sensor at DSP-06B showed a gradual increasing pore pressure trend that peaked in February 2019 and has since decreased.





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MINTO

DSTSF Instrumentation Data

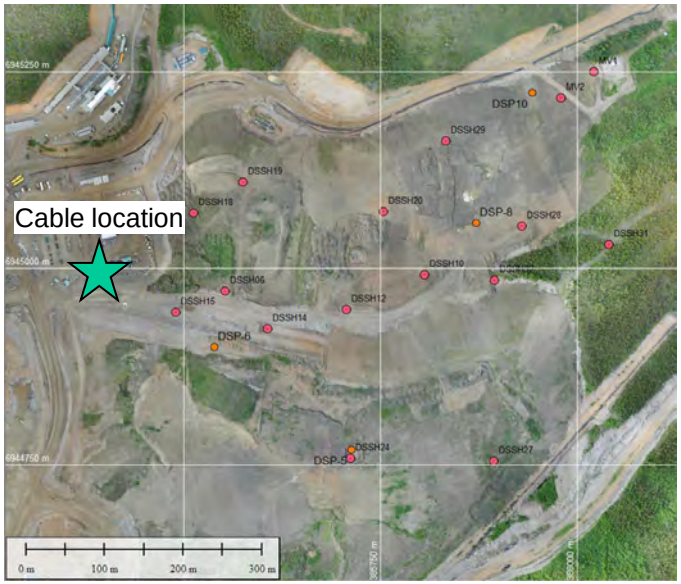
Piezometer – DSP-06

Job No: 1CM002.073

Filename: ApD_2021DSTSFLandscape.pptx

Minto Mine

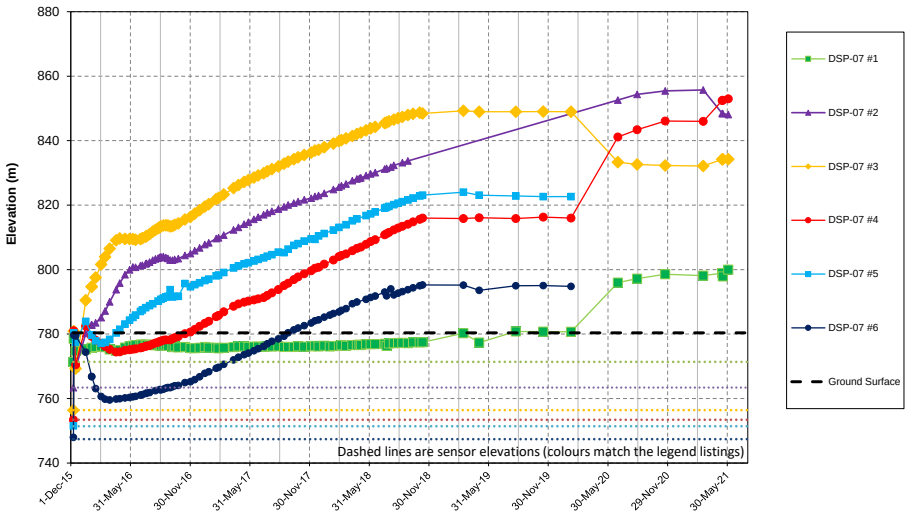
Date:	Prepared by	Figure:
October 2021	PHM	21

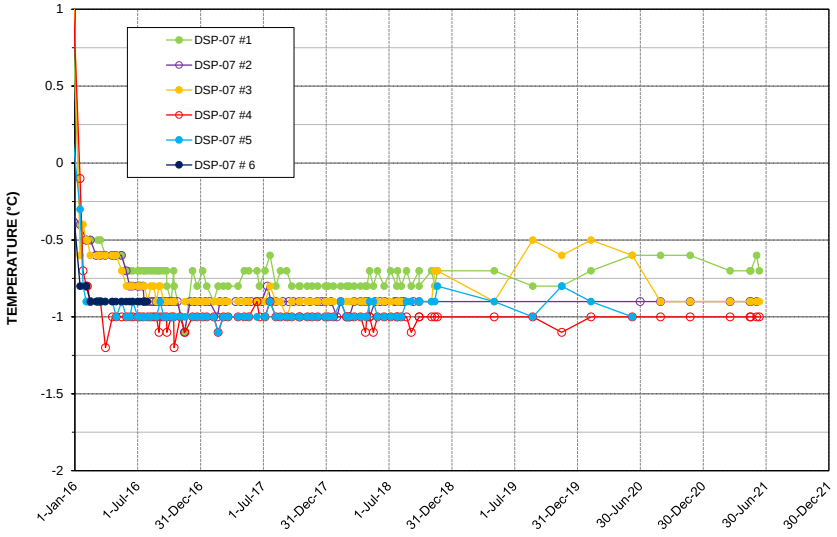


Sensor #	Stratigraphy, Ice Description	Ice Description
1	Silt. Some clay, little sand, trace gravel, soft, wet, medium plastic, varved.	Vr, Ice/moisture content up to 50%.
2	Sand, few gravel, loose, unrounded, no fines.	Vr. Mostly no visible ice, some small random ice lenses up to 1.5 cm thick.
3	Clay, some silt, trace gravel and sand, wet, high plastic. (MC=50%)	Vr; Approx. 50% ice, lenses between 2 and 20 mm thick, parallel and nearly horizontal, interbedded with clay.
4		
5		
6	Weathered Bedrock; Highly weathered granite. Rust staining. Friable.	Nbn. No excess ice.

Notes:

1. Sensors #5 and #6 are no longer operational.





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DSTSF Instrumentation Data

Piezometer – DSP-07

Job No: 1CM002.073

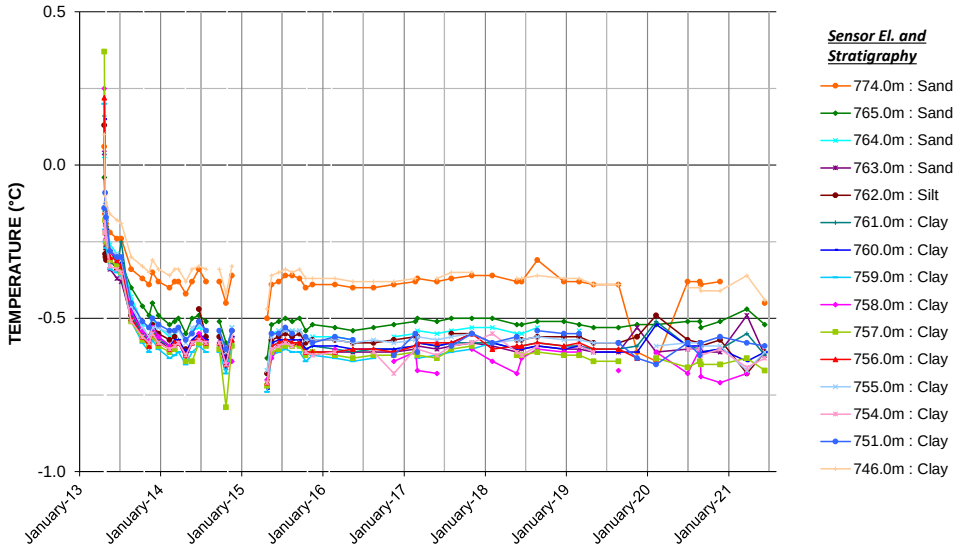
Filename: ApD_2021DSTSFLandscape.pptx

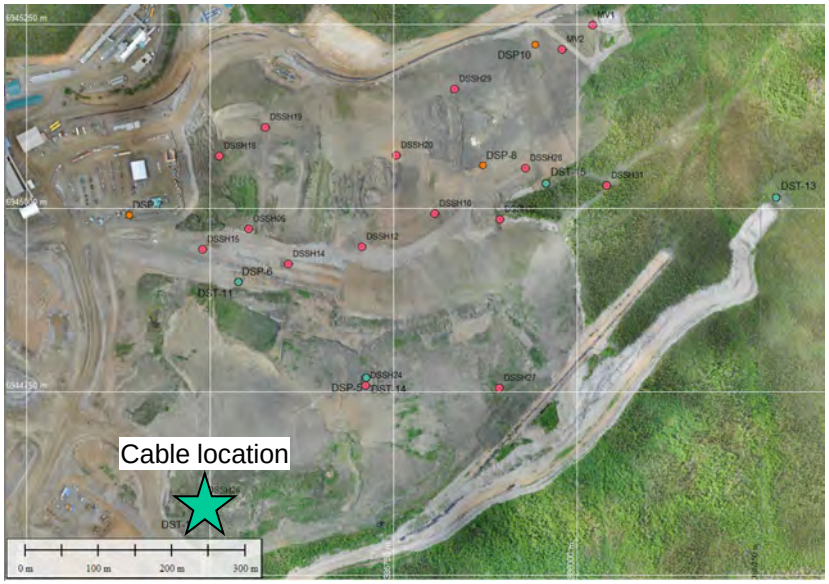
Minto Mine

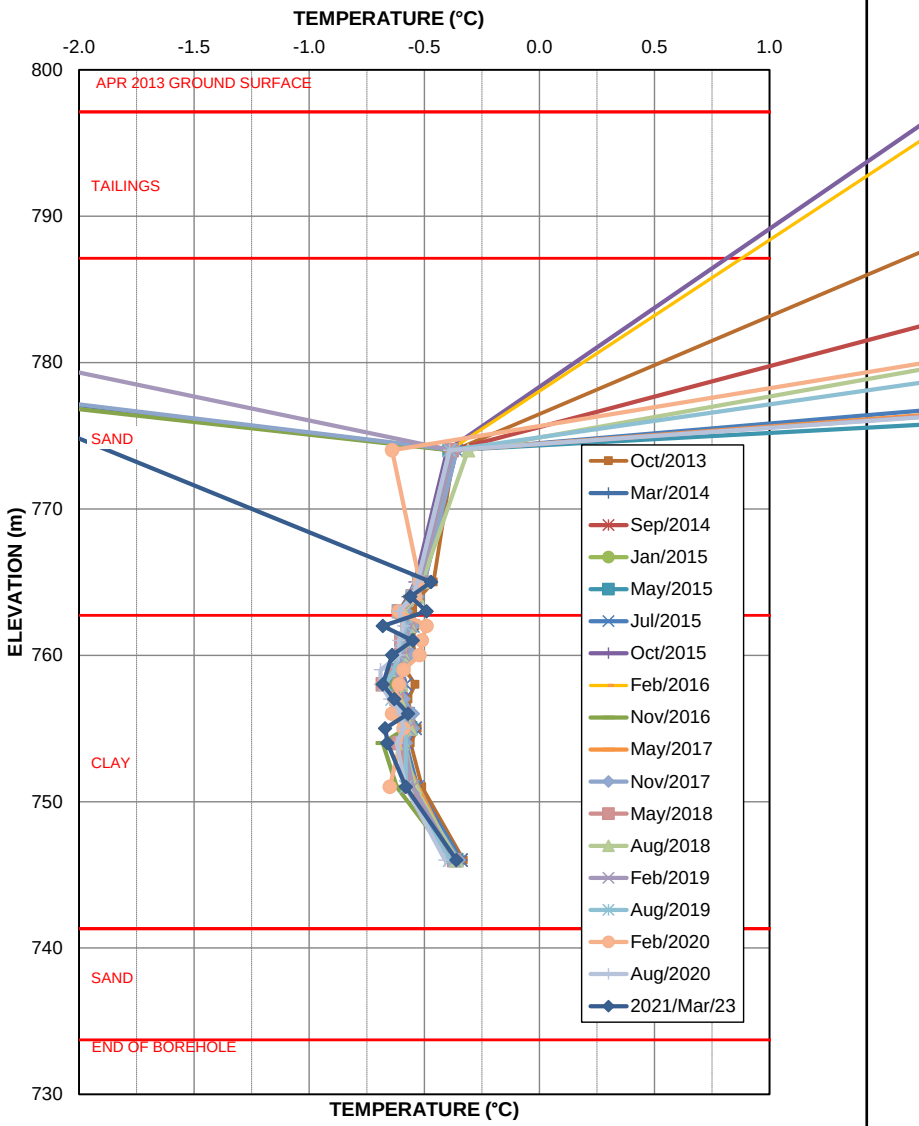
Date: October 2021

Prepared by PHM

Figure: 22







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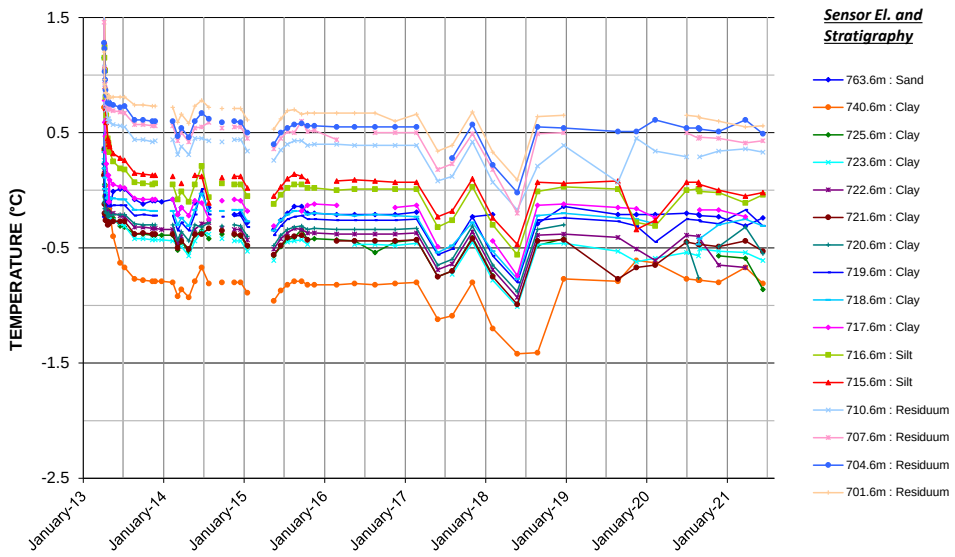
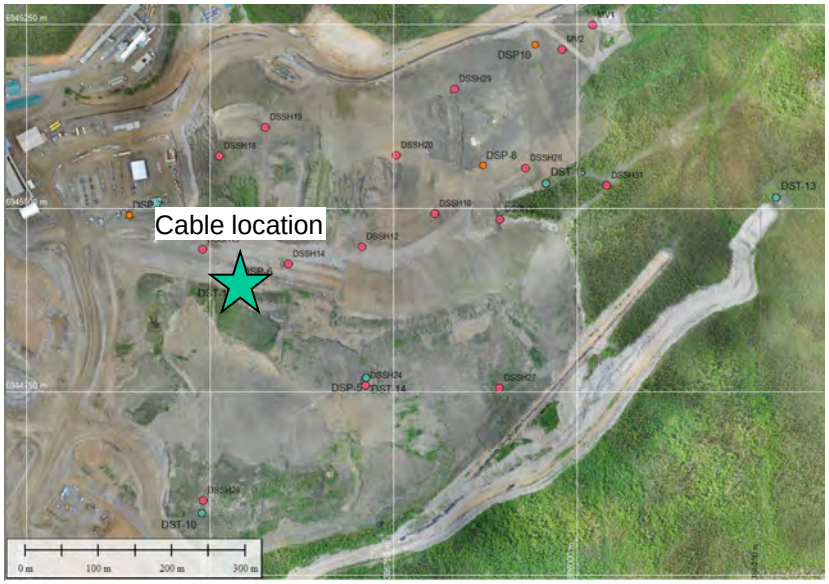
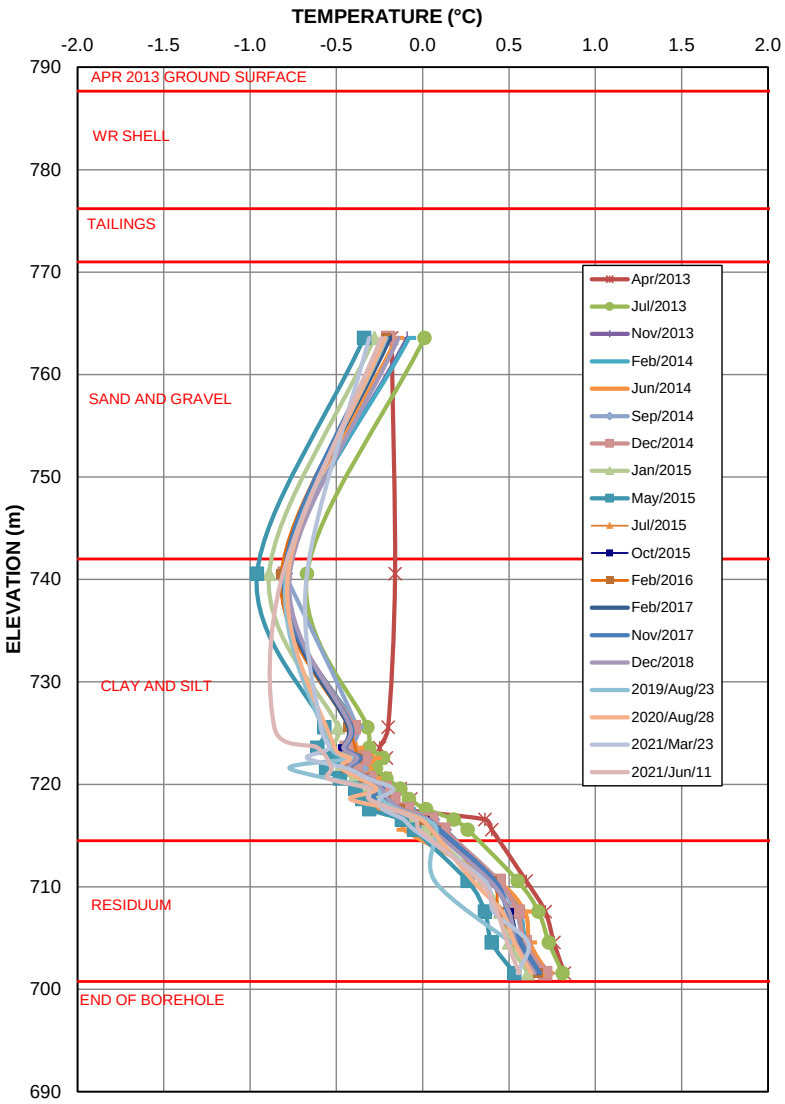
srk consulting	MINTO	DSTSF Instrumentation Data
Job No: 1CM002.073 Filename: ApD_2021DSTSFLandscape.pptx	Minto Mine	**Temperature Cable – DST-10**
		Date: October 2021 / Prepared by: PHM / Figure: **23**







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MINTO

DSTSF Instrumentation Data

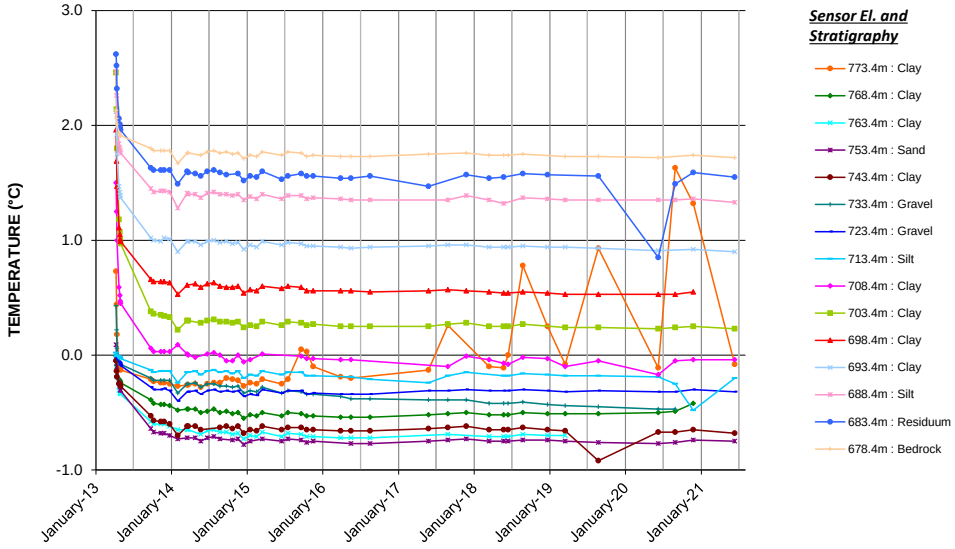
Temperature Cable – DST-11

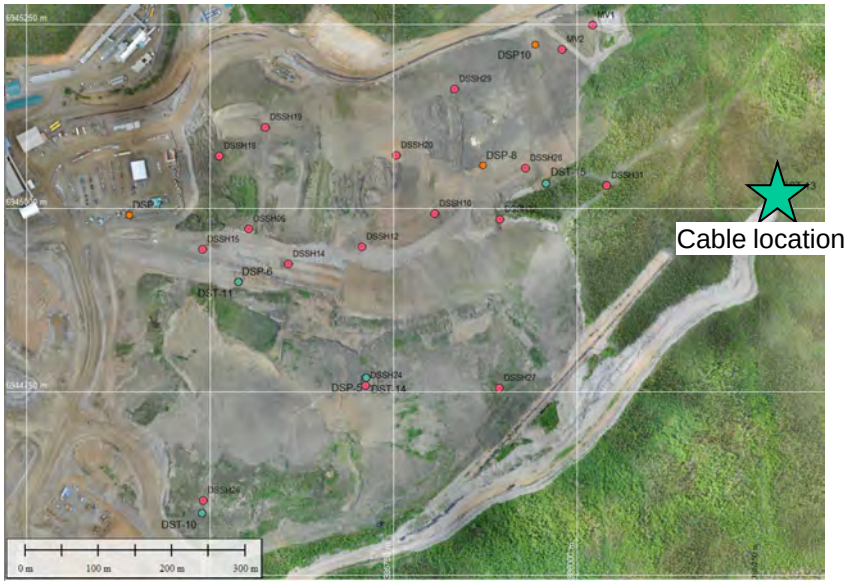
Job No: 1CM002.073

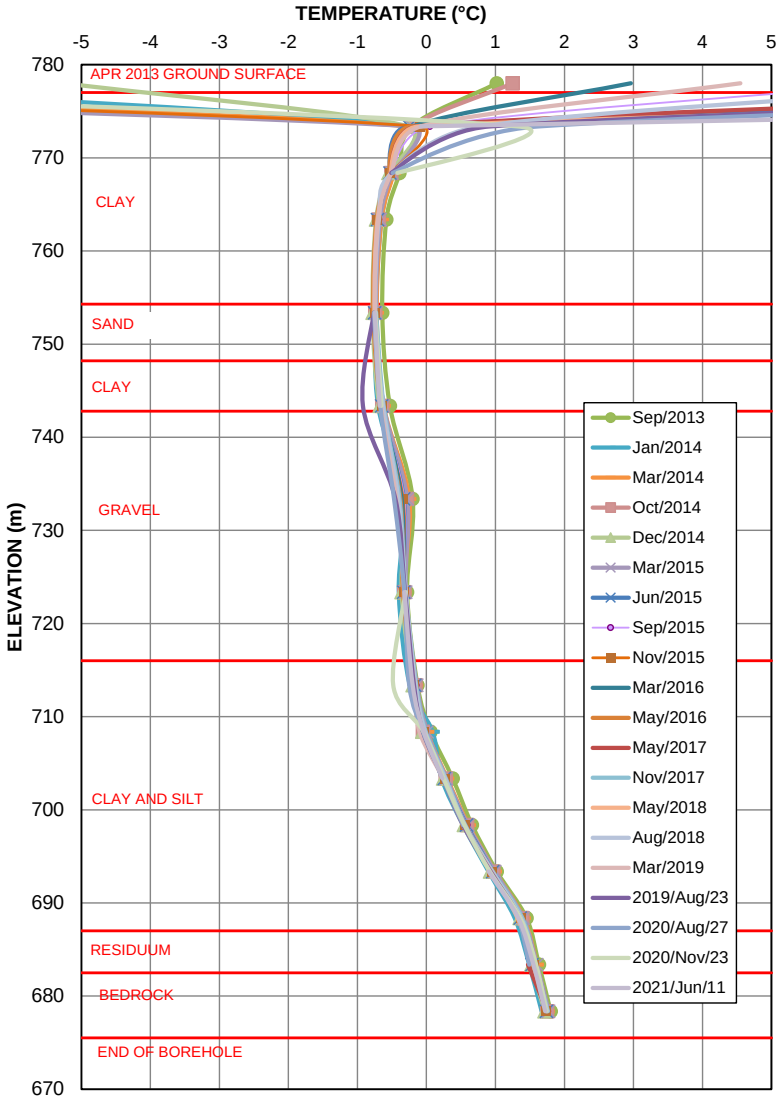
Filename: ApD_2021DSTSFLandscape.pptx

Minto Mine

Date:	Prepared by	Figure:
October 2021	PHM	24







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MINTO

DSTSF Instrumentation Data

Temperature Cable – DST-13

Job No: 1CM002.073

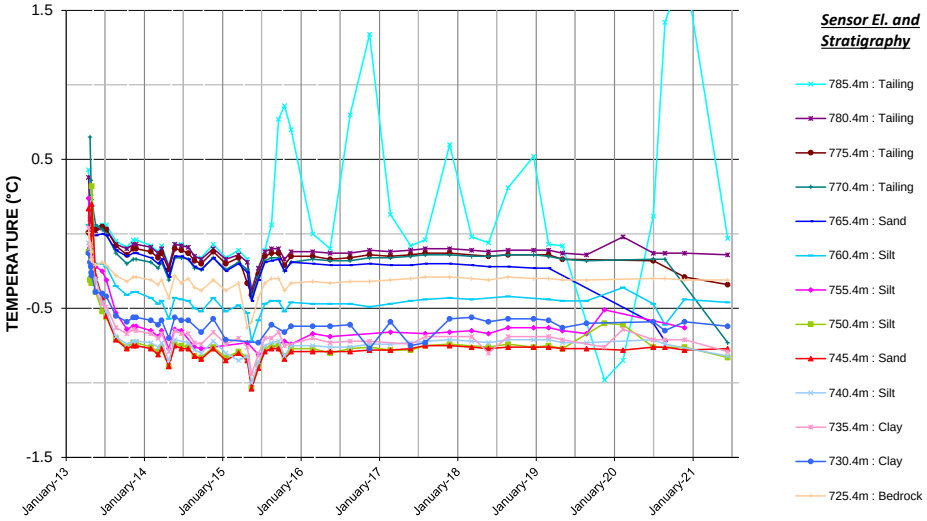
Filename: ApD_2021DSTSFLandscape.pptx

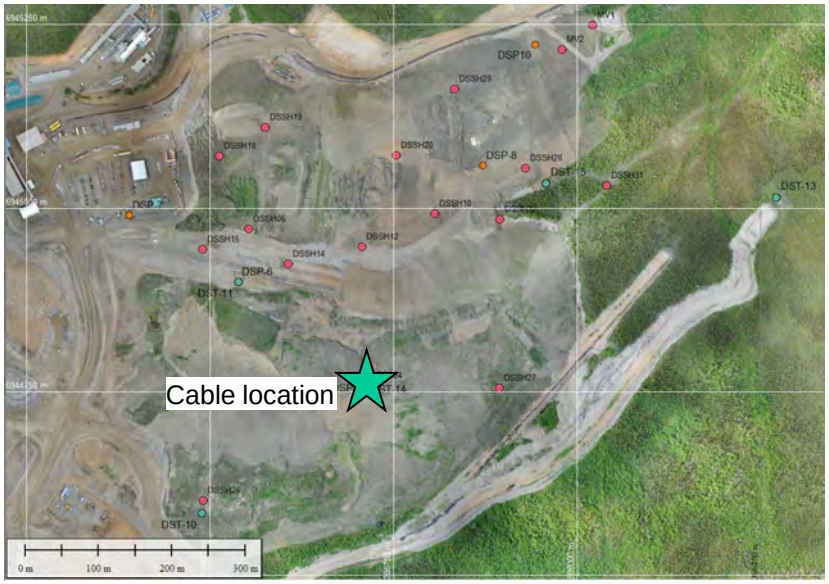
Minto Mine

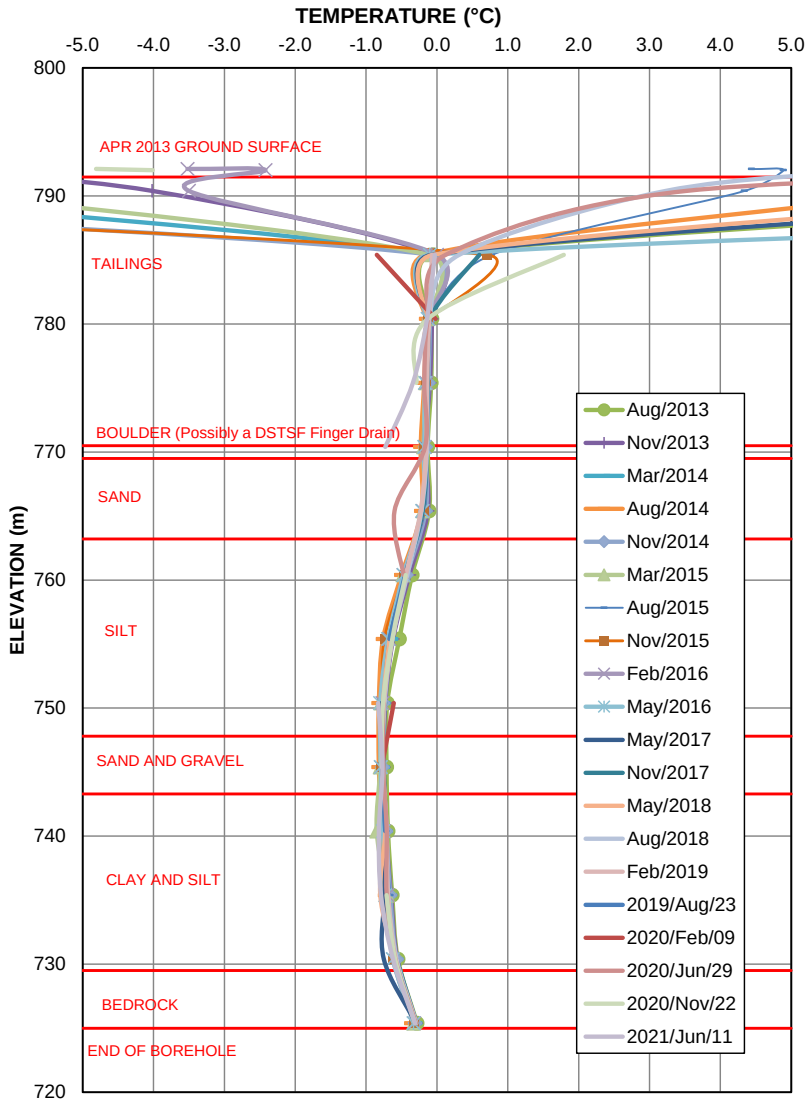
Date: October 2021

Prepared by PHM

Figure: **25**







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MINTO

DSTSF Instrumentation Data

Temperature Cable– DST-14

Job No: 1CM002.073

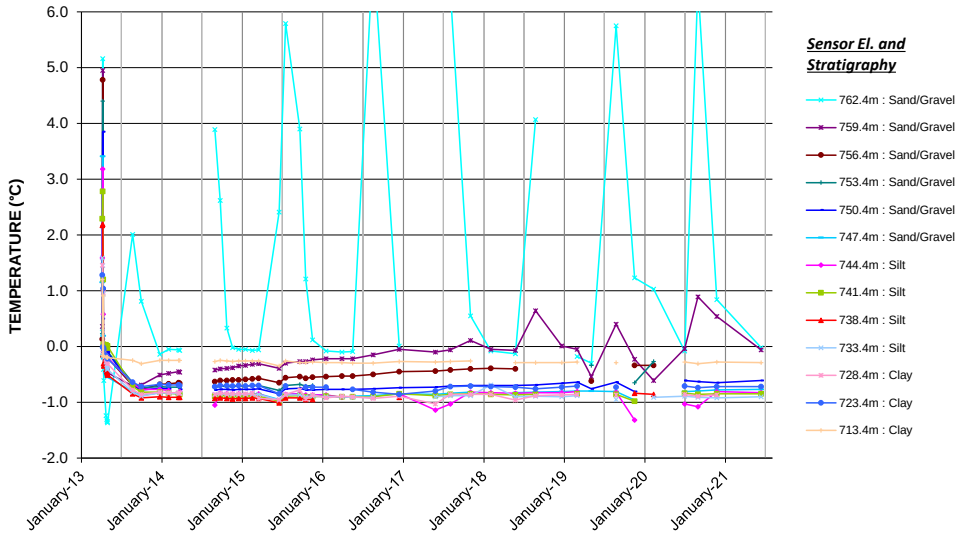
Filename: ApD_2021DSTSFLandscape.pptx

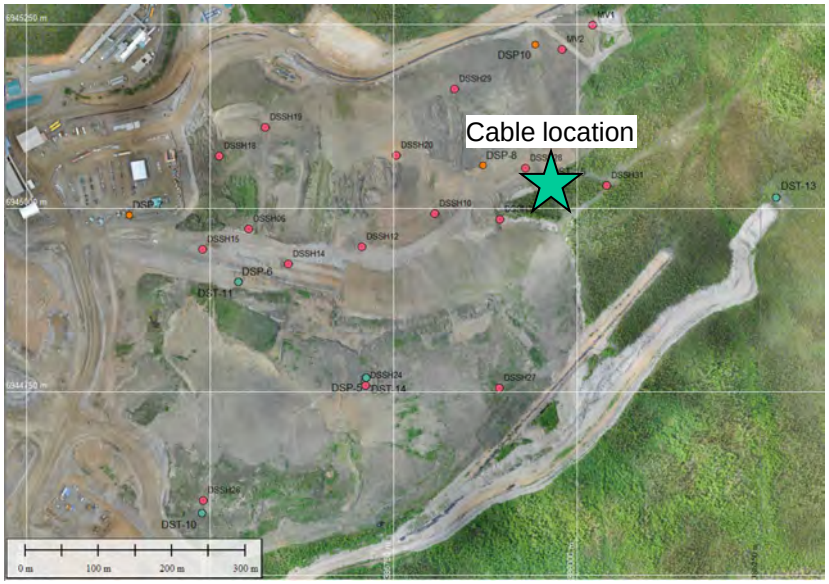
Minto Mine

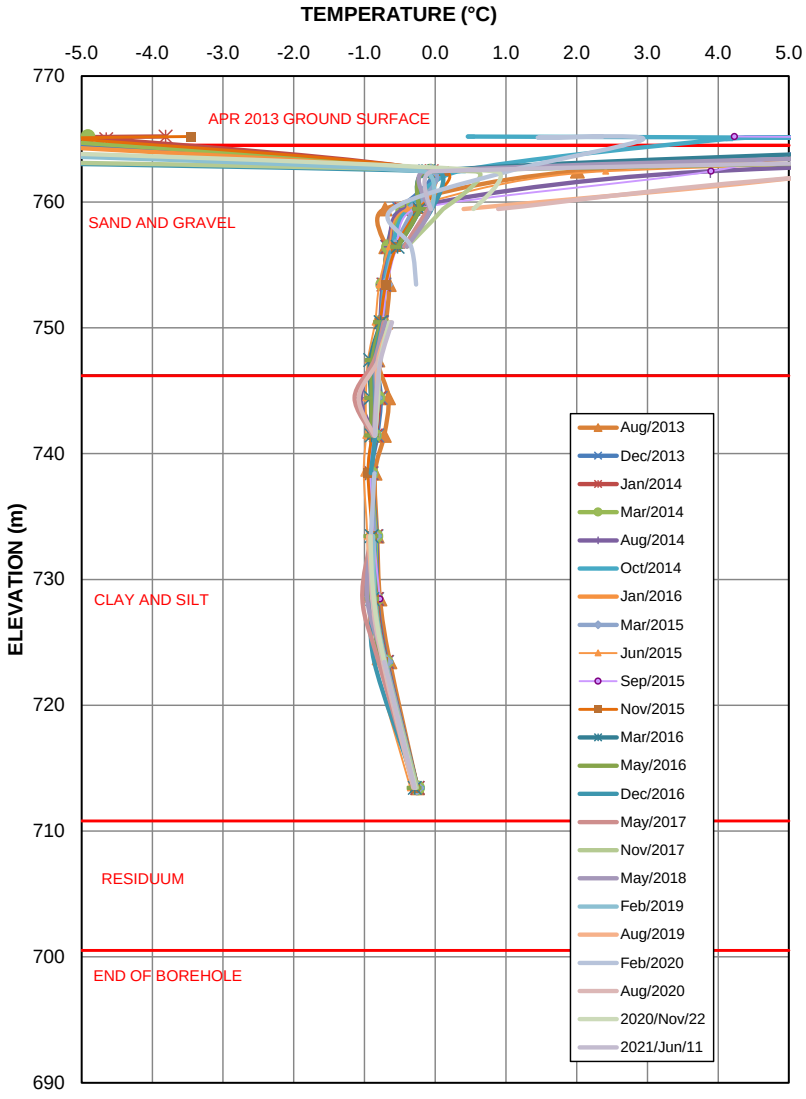
Date: October 2021

Prepared by PHM

Figure: **26**







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MINTO

DSTSF Instrumentation Data

Temperature Cable – DST-15

Job No: 1CM002.073

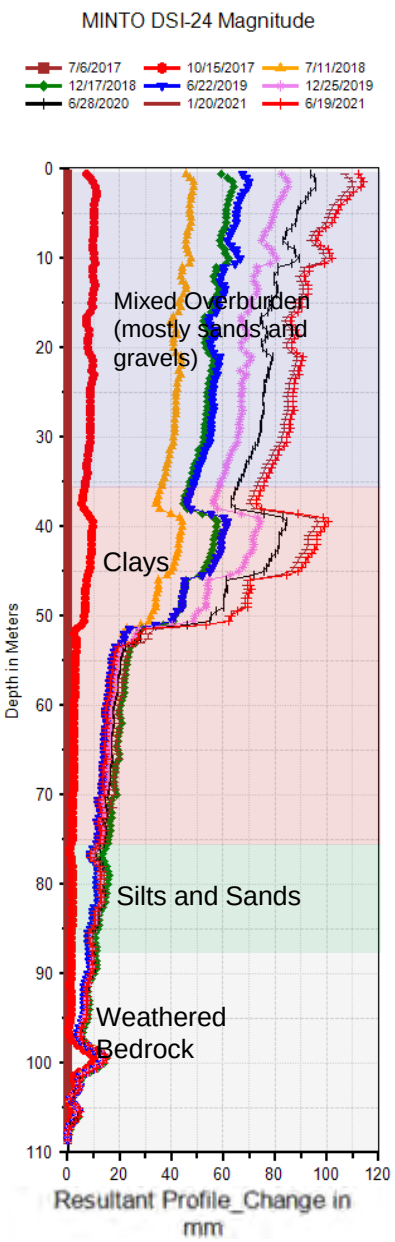
Filename: ApD_2021DSTSFLandscape.pptx

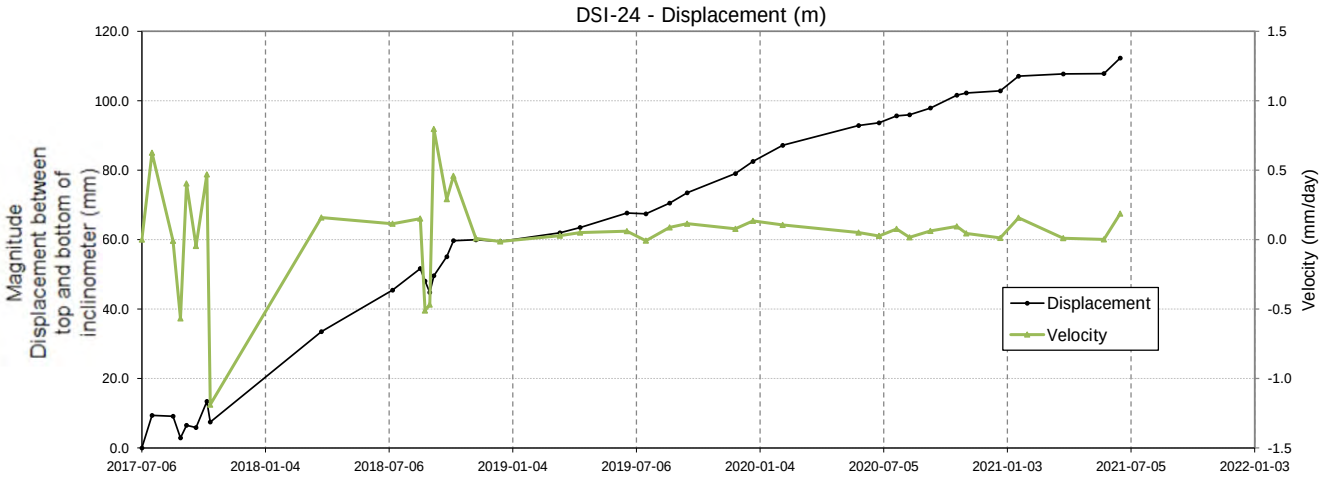
Minto Mine

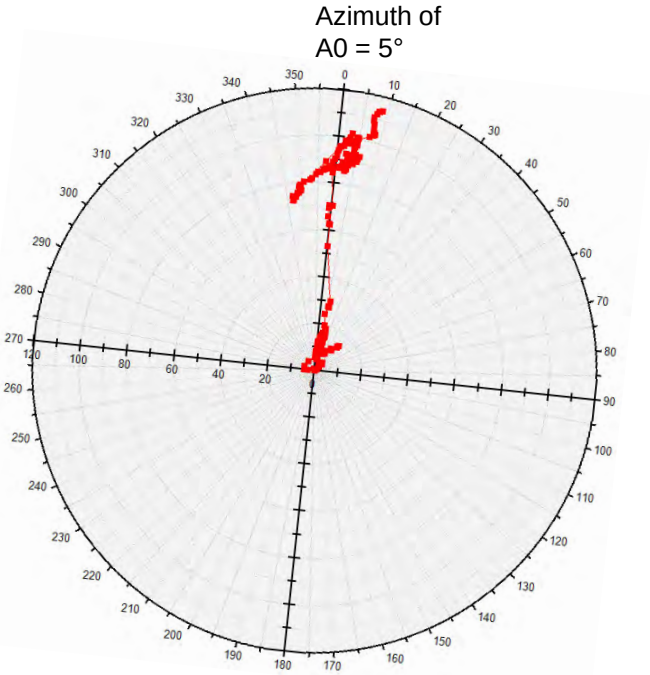
Date: October 2021

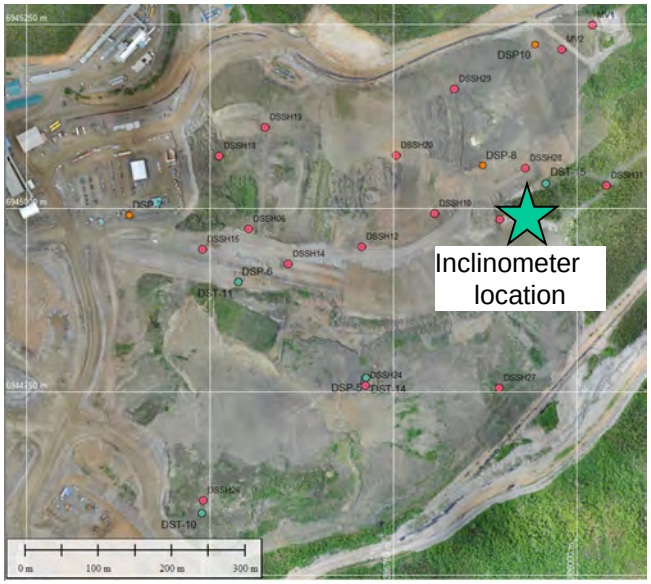
Prepared by PHM

Figure: **27**









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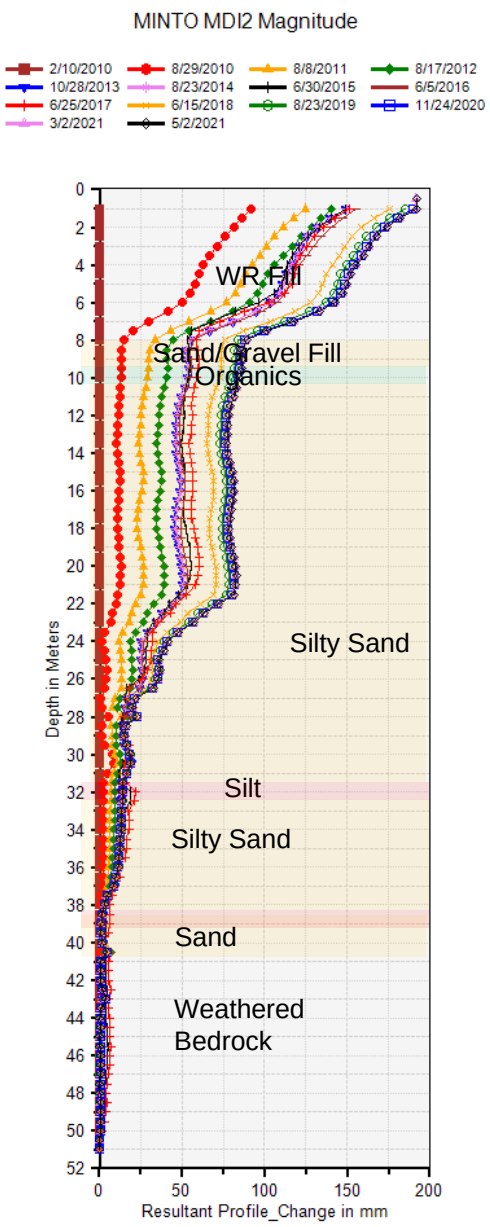
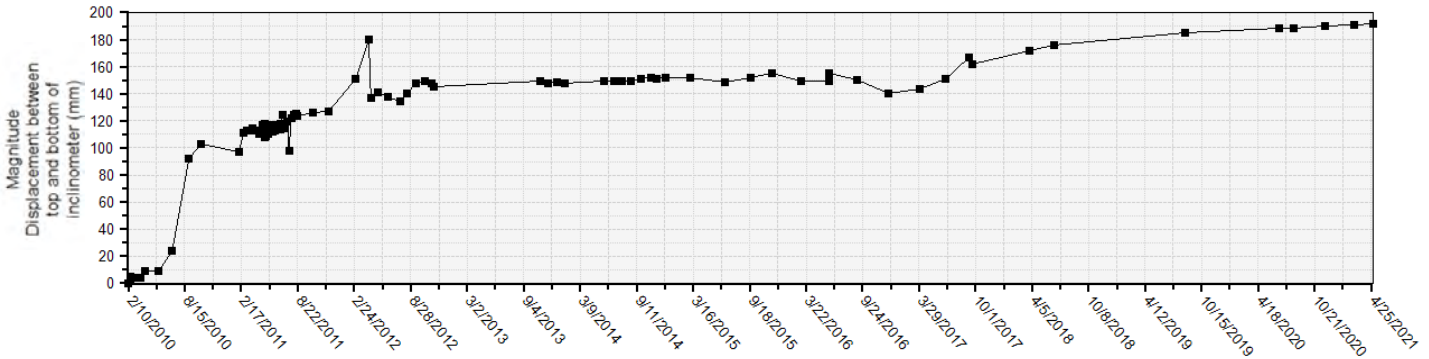
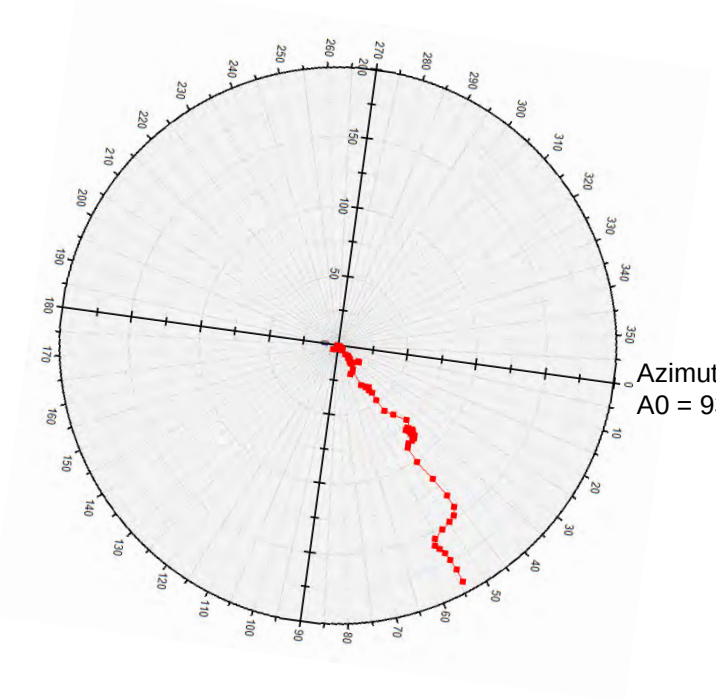
srk consulting	MINTO	DSTSF Instrumentation Data	
		Inclinometer – DSI-24	
Job No: 1CM002.073 Filename: ApD_2021DSTSFLandscape.pptx	Minto Mine	Date: October 2021	Prepared by PHM	Figure: **28**

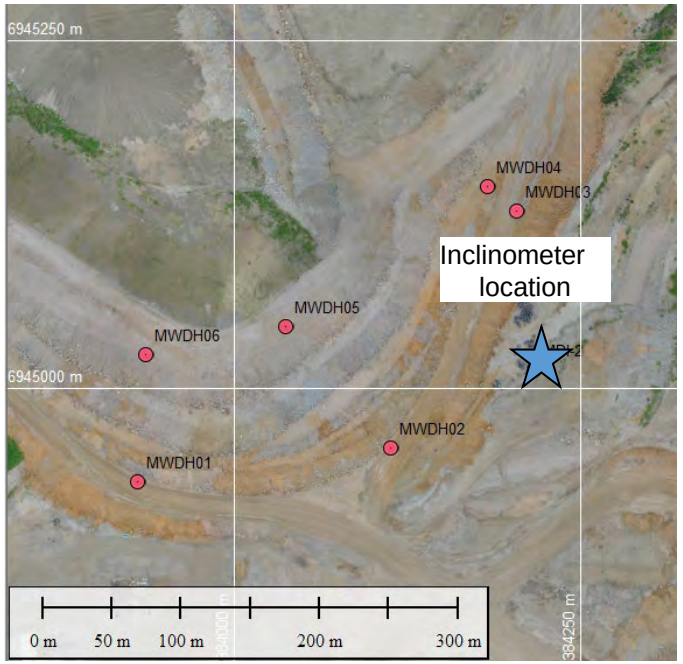
Appendix E MWD Instrumentation Data







Azimuth of
A0 = 93°



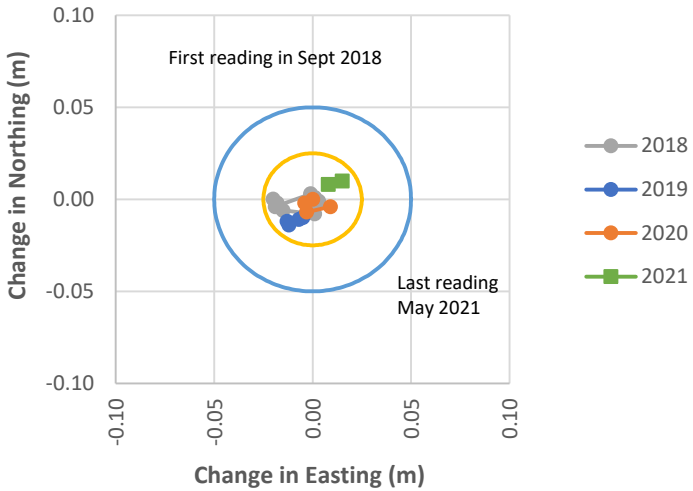
Note: Inclinometer software (DigiPro2 v2.12.4) plots A0 as 0 degrees. The plot above has been rotated such that the orientation matches the plan (north is up).

Source files:

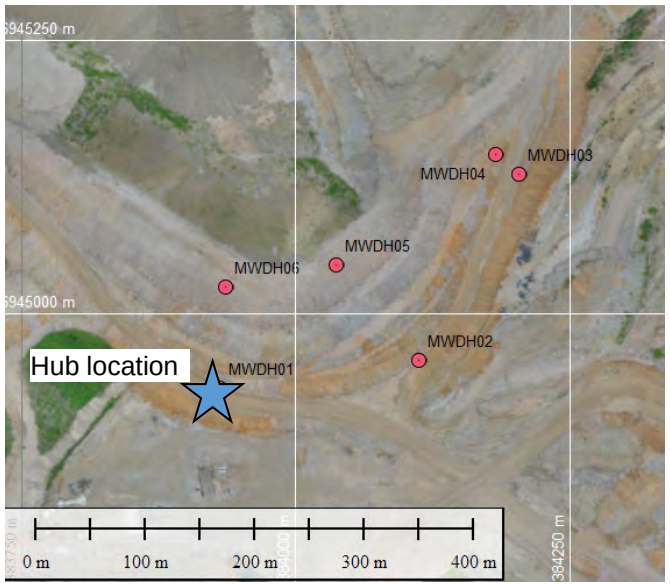
1. AutoCAD: \\VAN-SVR0\Projects\01_SITES\Minto\!040_AutoCAD\GeotechInstrumentation\GeotechInstrumentation.dwg
2. Instrumentation data: \\VAN-SVR0\Projects\01_SITES\Minto\!020_Site_Wide_Data\Geotechnical\Geotech Monitoring Data\Minto SI Instrumentation Database.dpw

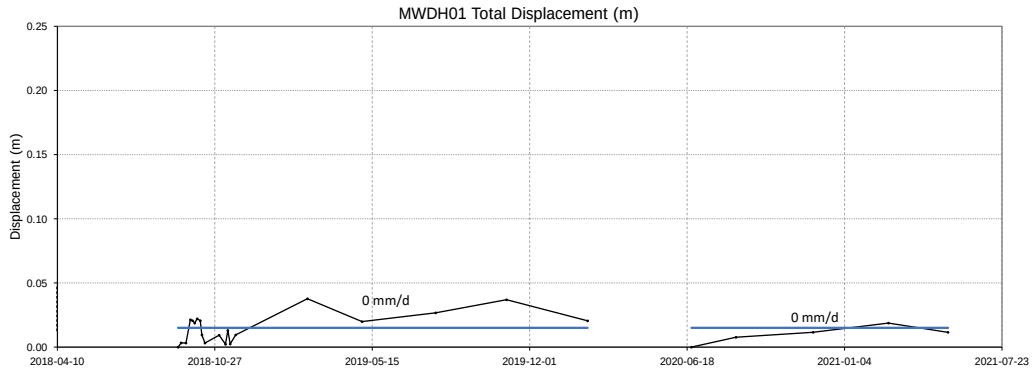
srk consulting	MINTO	MWD Instrumentation Data	
Job No: 1CM002.073 Filename: ApE_2021MWDInstrumentation.pptx	Minto Mine	**Inclinometer – MDI-2**	
		Date: October 2021	Prepared by PHM
		Figure: **1**	

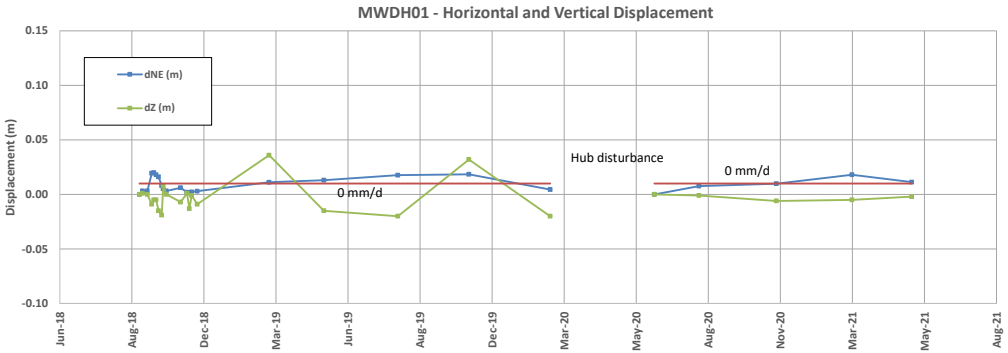
MWDH01 - Northing Vs. Easting Movement Plot

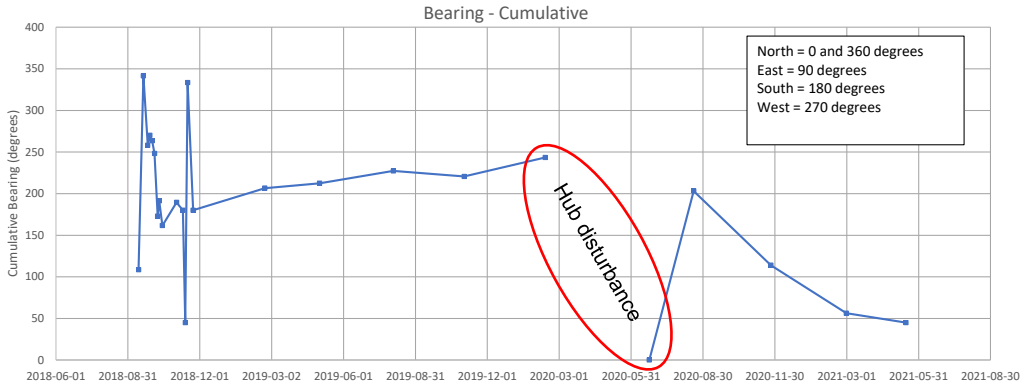


Note: Survey hub was disturbed sometime between February and June 2020. Plot above resets the change in displacement to 0 on June 2020.









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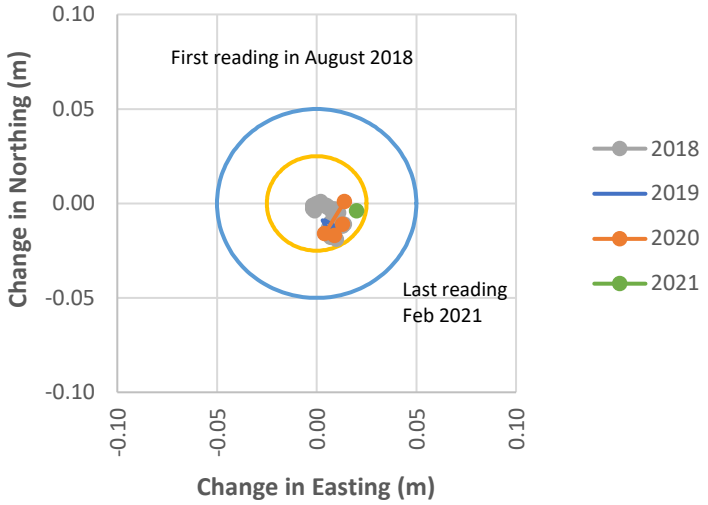
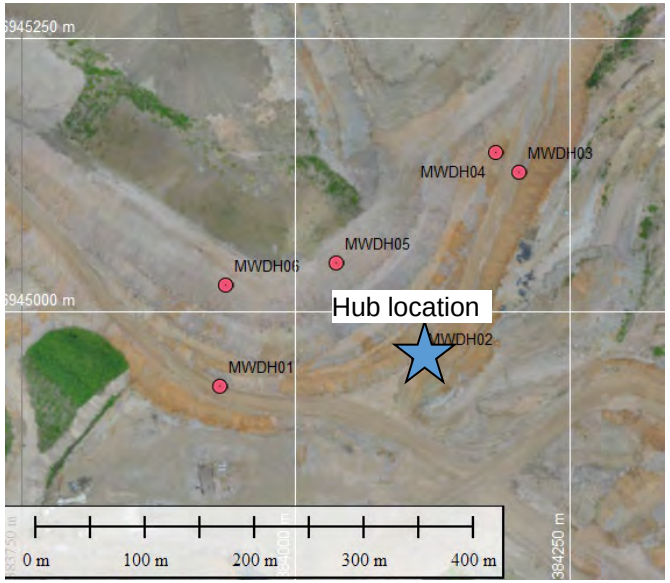
MWD Instrumentation Data

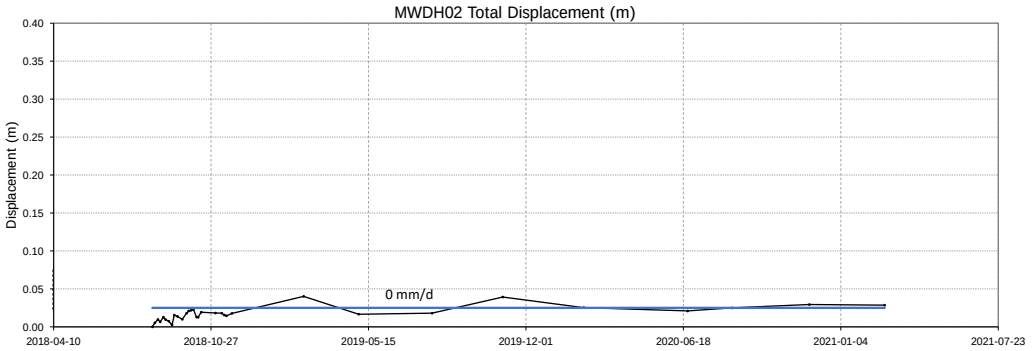
Survey Hub – MWDH01

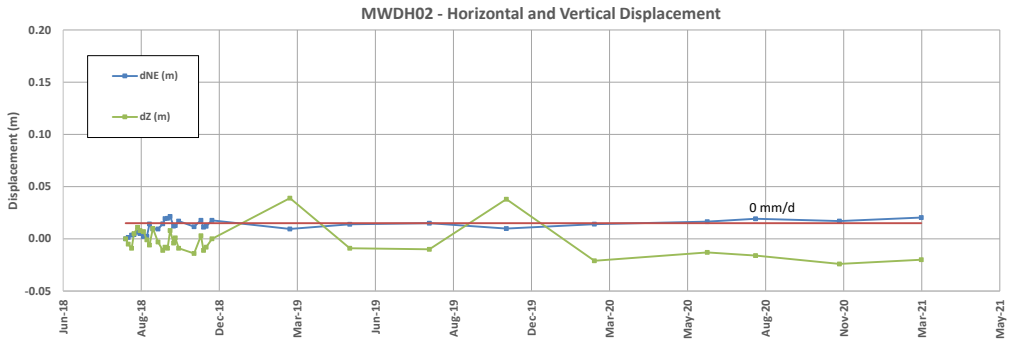
Job No: 1CM002.073	Minto Mine	Date: October 2021	Prepared by PHM	Figure: 2
Filename: ApE_2021MWDInstrumentation.pptx			

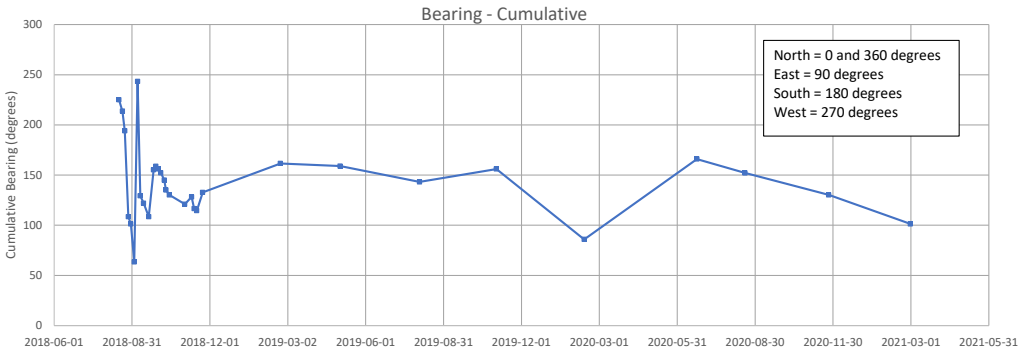
MWDH02 - Northing Vs. Easting Movement Plot











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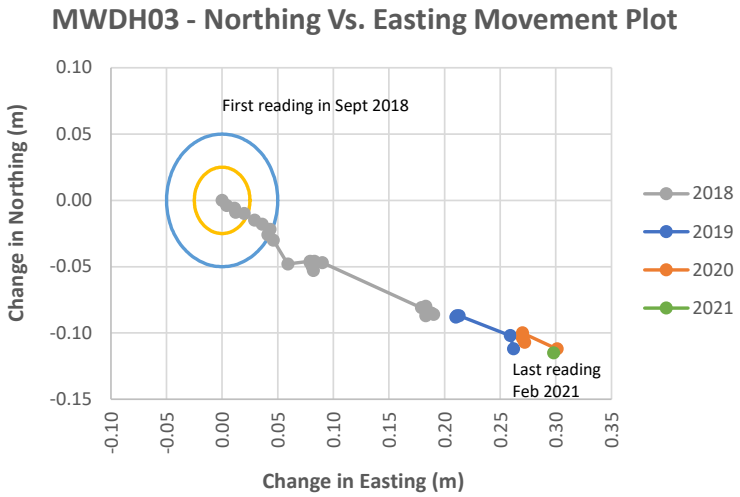
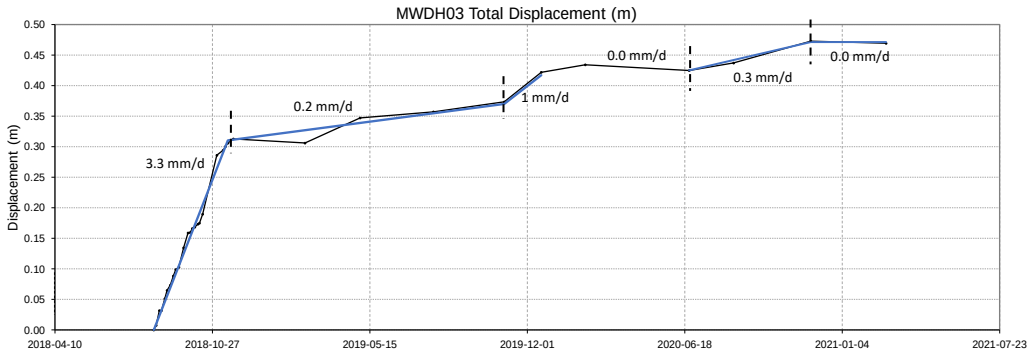
MWD Instrumentation Data

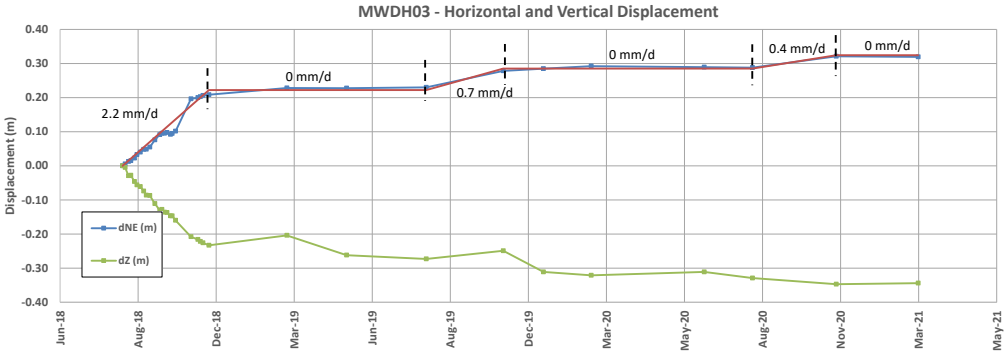
Survey Hub – MWDH02

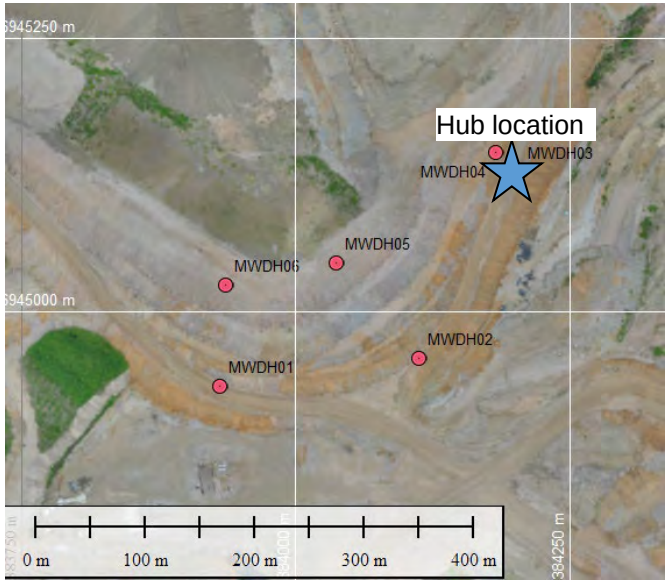
Job No: 1CM002.073	Minto Mine	Date: October 2021	Prepared by PHM	Figure: 3
Filename: ApE_2021MWDInstrumentation.pptx			

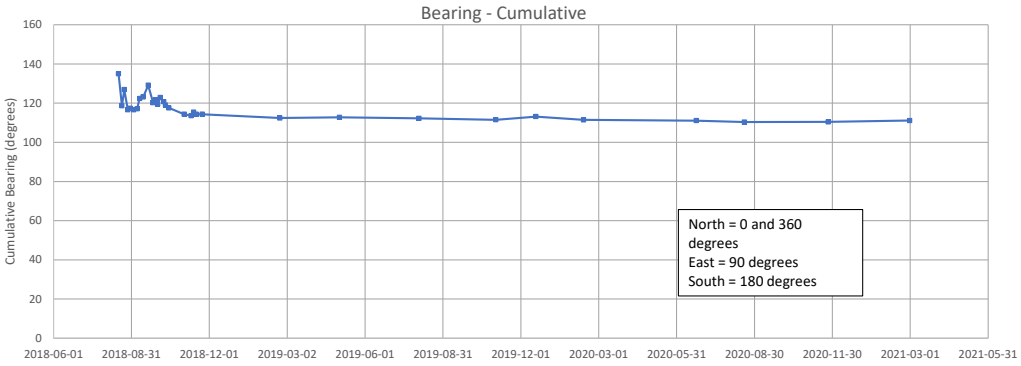




Hub movement occurs primarily in the fall and is likely due to frost heave.







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MWD Instrumentation Data

Survey Hub – MWDH03

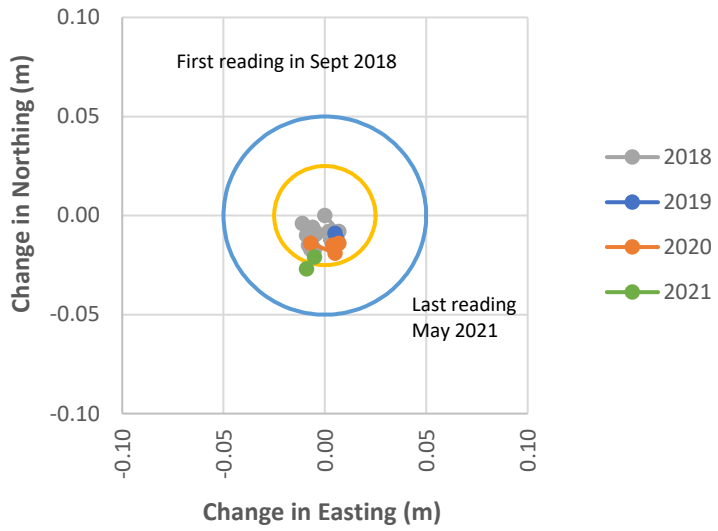
Job No: 1CM002.073

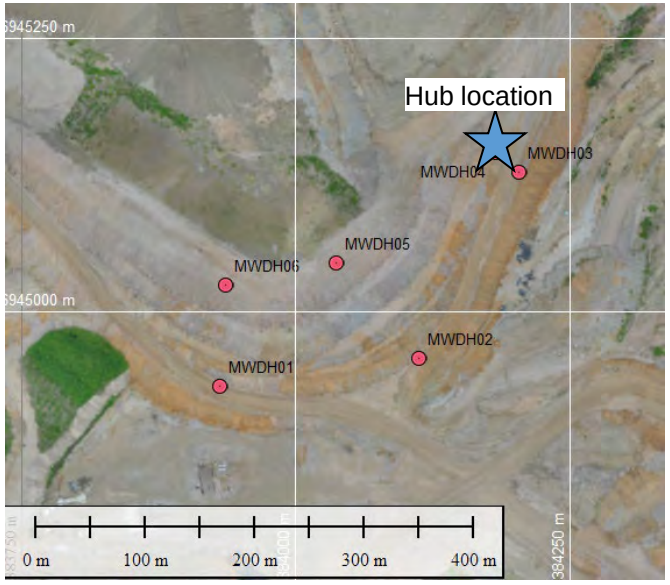
Filename: ApE_2021MWDInstrumentation.pptx

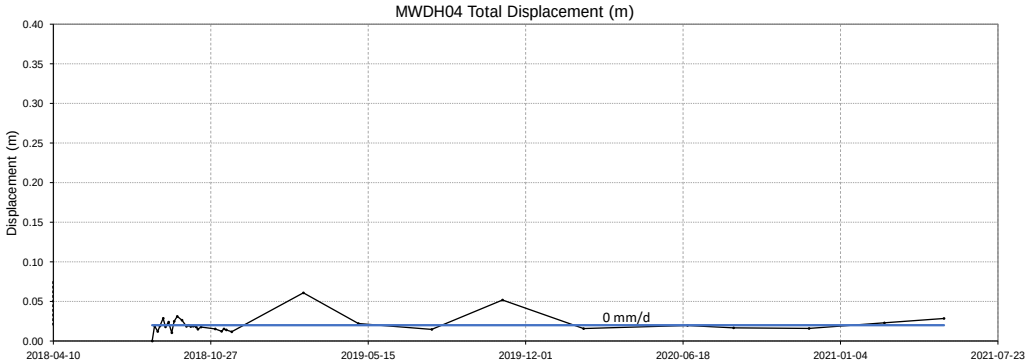
Minto Mine

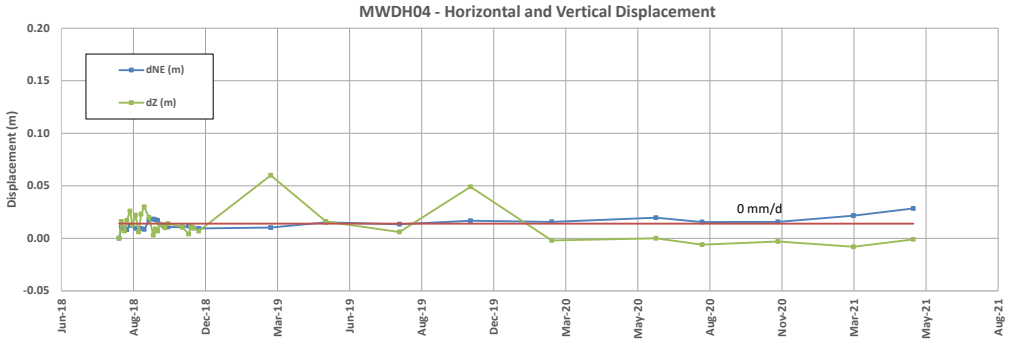
Date:	Prepared by	Figure:
October 2021	PHM	4

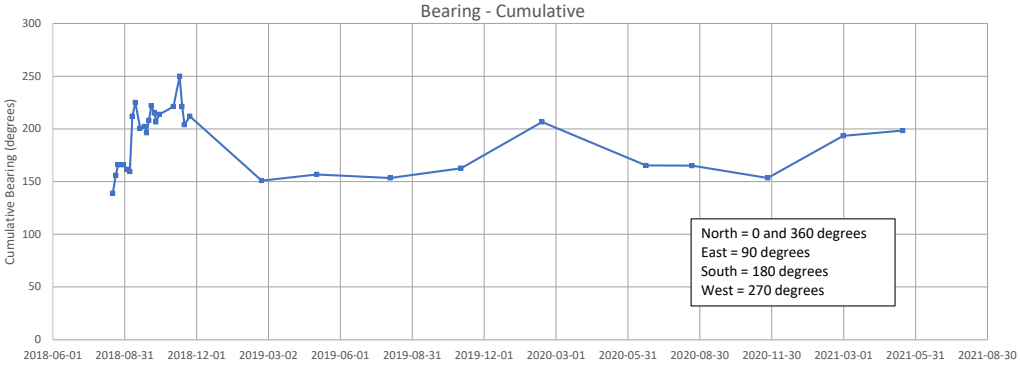
MWDH04 - Northing Vs. Easting Movement Plot











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MWD Instrumentation Data

Survey Hub – MWDH04

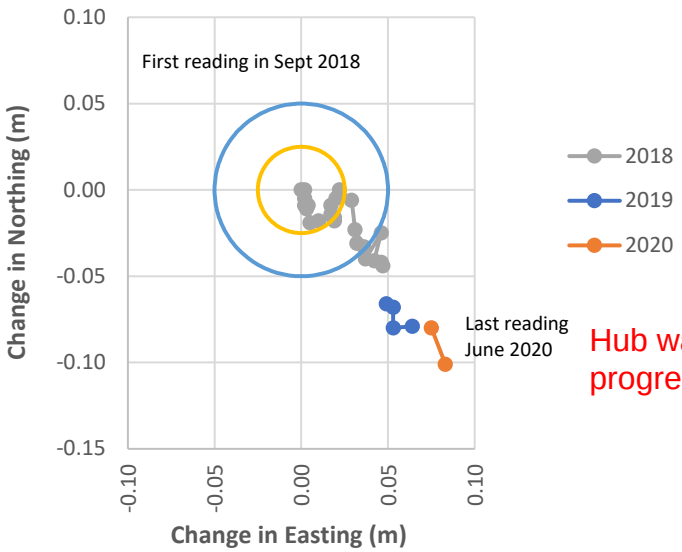
Job No: 1CM002.073

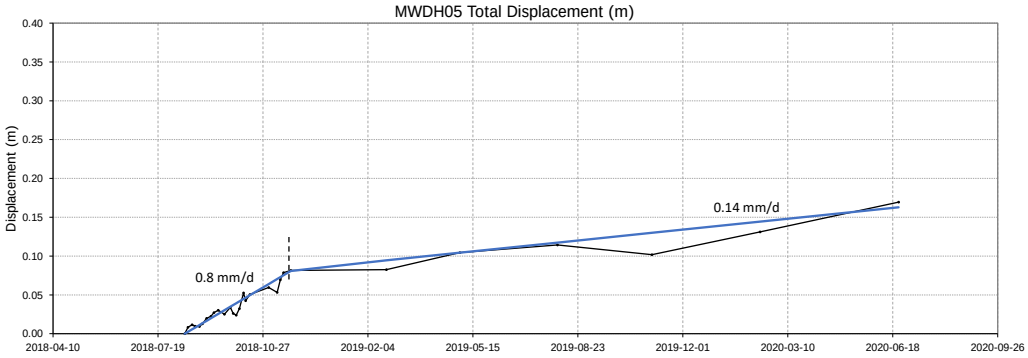
Filename: ApE_2021MWDInstrumentation.pptx

Minto Mine

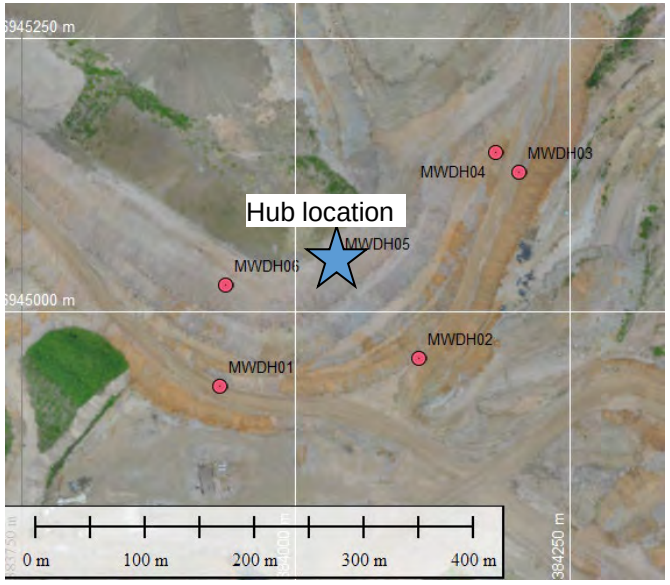
Date:	Prepared by	Figure:
October 2021	PHM	5

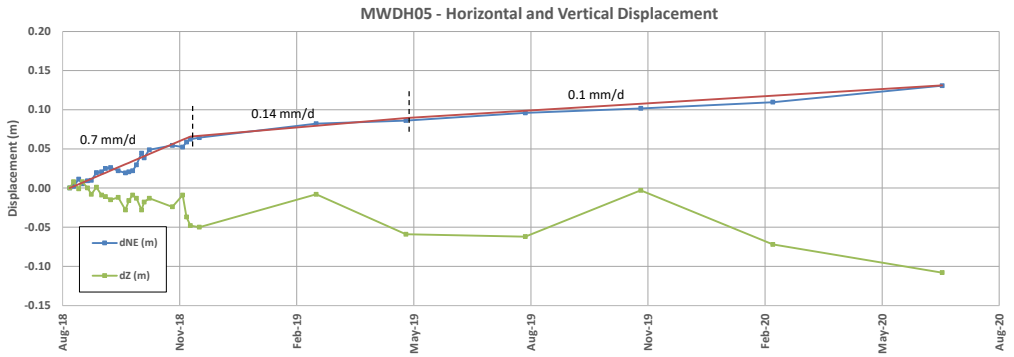
MWDH05 - Northing Vs. Easting Movement Plot

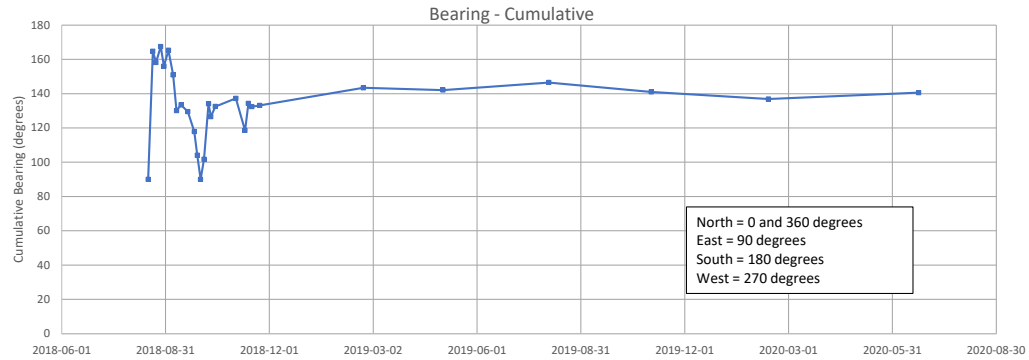




Hub was destroyed in the summer of 2020 due to progressive reclamation and resloping of the MWD Wrap.







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MWD Instrumentation Data

Survey Hub – MWDH05

Job No: 1CM002.073

Filename: ApE_2021MWDInstrumentation.pptx

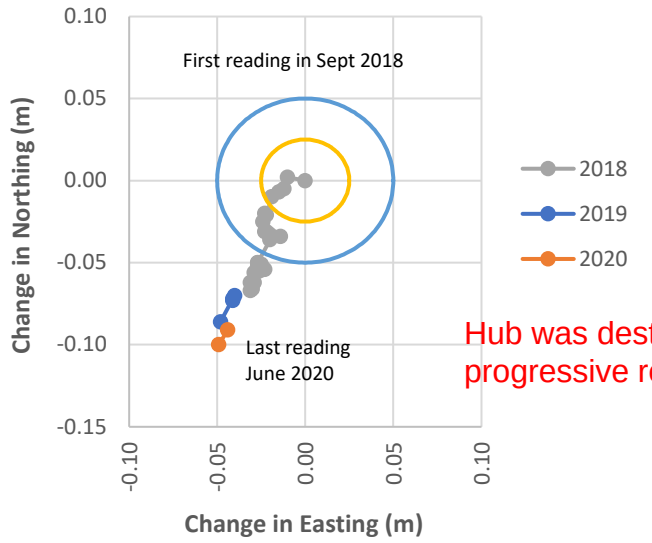
Minto Mine

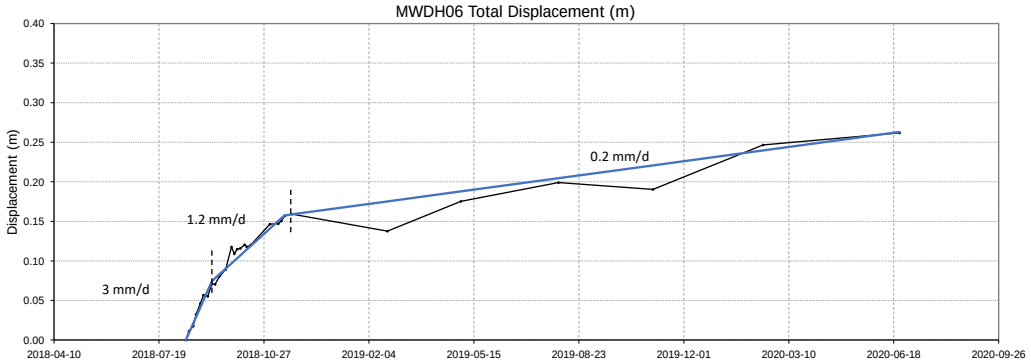
Date: October 2021

Prepared by: PHM

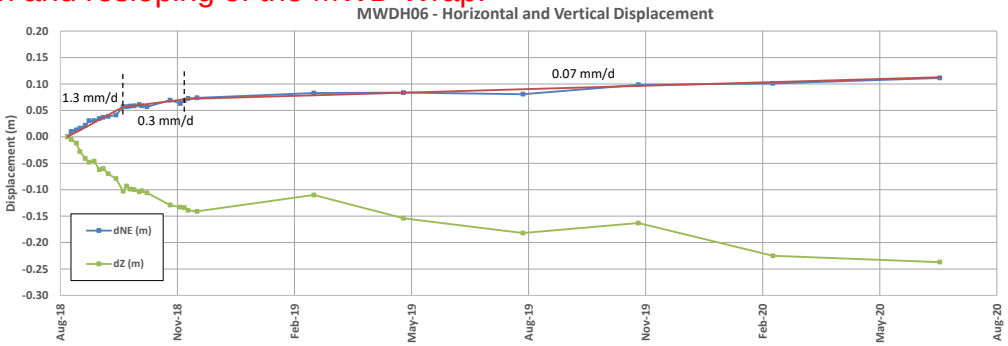
Figure: 6

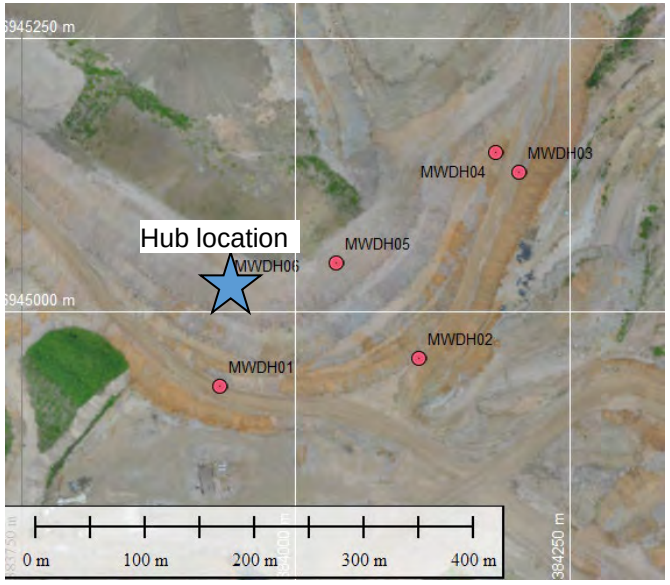
MWDH06 - Northing Vs. Easting Movement Plot

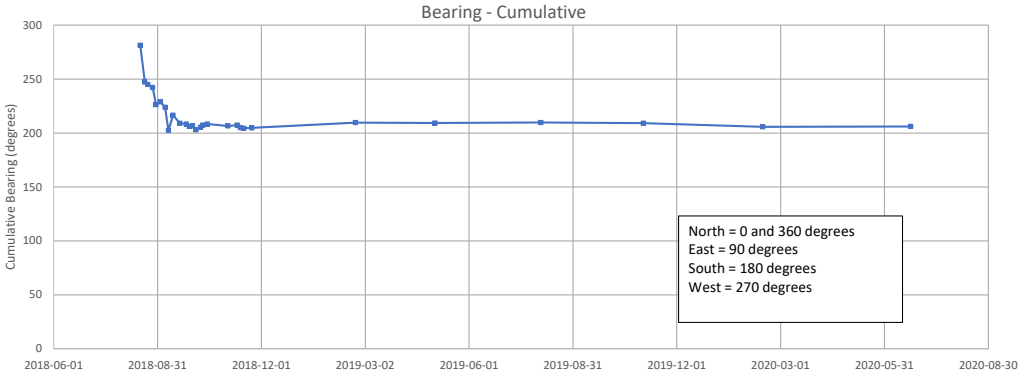




Hub was destroyed in the summer of 2020 due to progressive reclamation and resloping of the MWD Wrap.







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MWD Instrumentation Data

Survey Hub – MWDH06

Job No: 1CM002.073

Filename: ApE_2021MWDInstrumentation.pptx

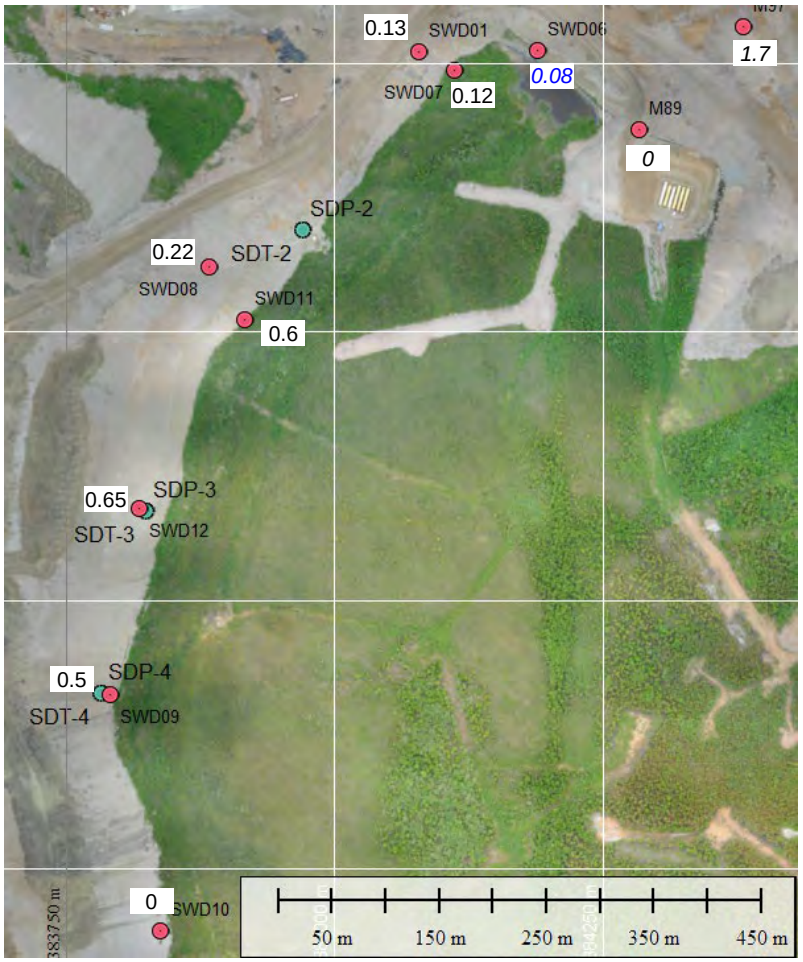
Minto Mine

Date: October 2021

Prepared by: PHM

Figure: 7

Appendix F SWD Instrumentation Data



Legend/Notes

1. *Values in black are total movement rates in units of mm/day*
2. *Values in blue are horizontal movement rates in mm/day.*
3. *Survey hubs with no movement rates listed have been inactive for over one year.*

South West Dump Active Survey Hubs

Survey Hub	Last Reading	Movement Rate (mm/day)		Bearing (over past year)	Comments
		Current (as of last reading)	One year prior to last reading		
SWD-01	8/11/2021	0.13	0.13	110	Slight decelleration trend observable (horizontal rate reduced from 0.1mm/day to 0.06 mm/day).
SWD-06	8/11/2021	0.08	0.08	143	Horizontal movement rate listed. Similar pattern of seasonal fluctuation due to freeze/thaw of survey hub.
SWD-07	8/11/2021	0.12	0.07	102	Possible acceleration trend. Difficult to determine due to seasonal freeze/thaw fluctuations.
SWD-08	8/11/2021	0.22	0.26	108	Slight decelleration trend observable.
SWD-09	8/11/2021	0.50	0.80	77	Slight decelleration trend observable.
SWD-10	8/11/2021	-	-	-	No significant movement
SWD-11	8/11/2021	0.60	0.60	108	Similar pattern of seasonal fluctuation due to freeze/thaw of survey hub.
SWD-12	6/23/2020	0.65	0.70	93	Steady displacement since installation in Fall 2018

Source files:

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2. Excel instrumentation data: \\VAN-SVR0\Projects\01_SITES\Minto\!020_Site_Wide_Data\Geotechnical\Geotech Monitoring Data\SWD_ASH_WSP_SurveyHubMonitoring_SRK.xlsm

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SWD Instrumentation Data

Southwest Dump Survey Hub Summary

Job No: 1CM002.073

Filename: ApF_2021SWD Instrumentation.pptx

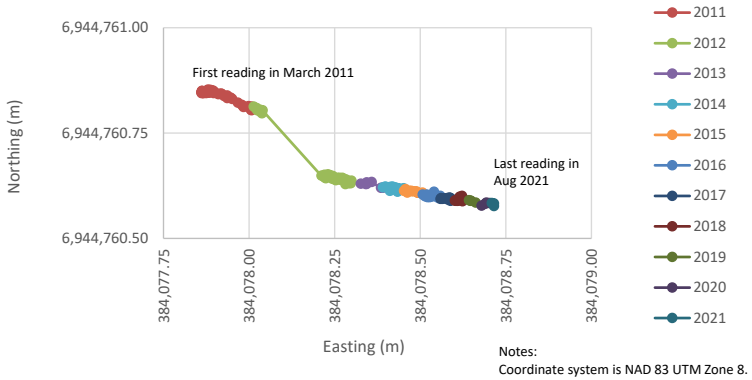
Minto Mine

Date: October 2021

Prepared by PHM

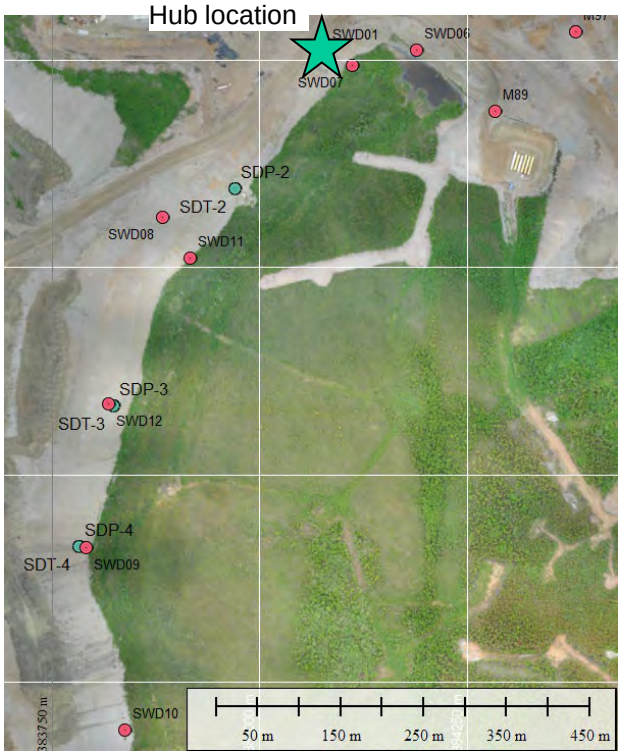
Figure: 1

SWD01 - Northing Vs. Easting Movement Plot

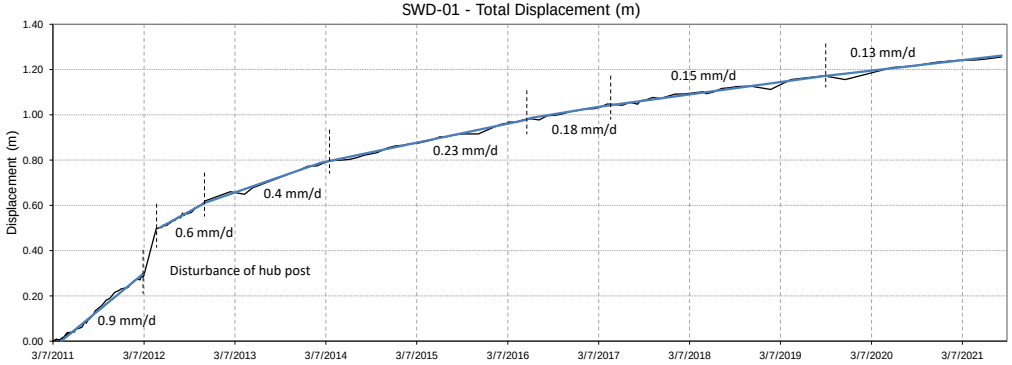


Notes:
Coordinate system is NAD 83 UTM Zone 8.

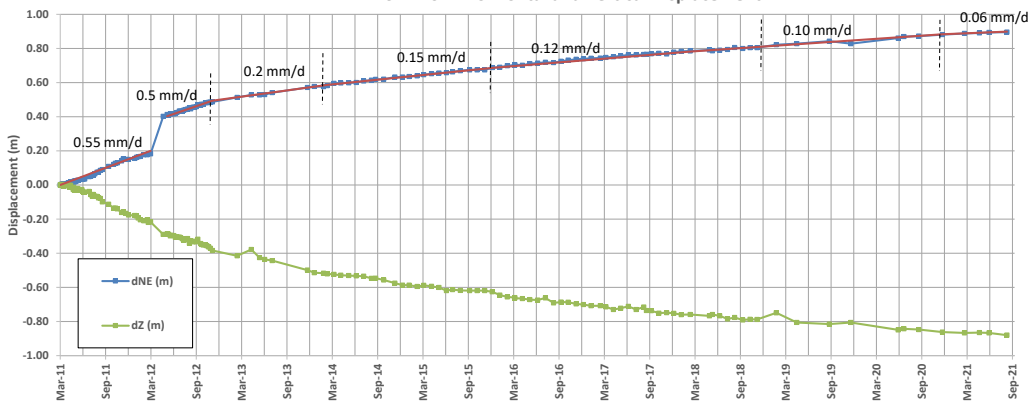
Hub location



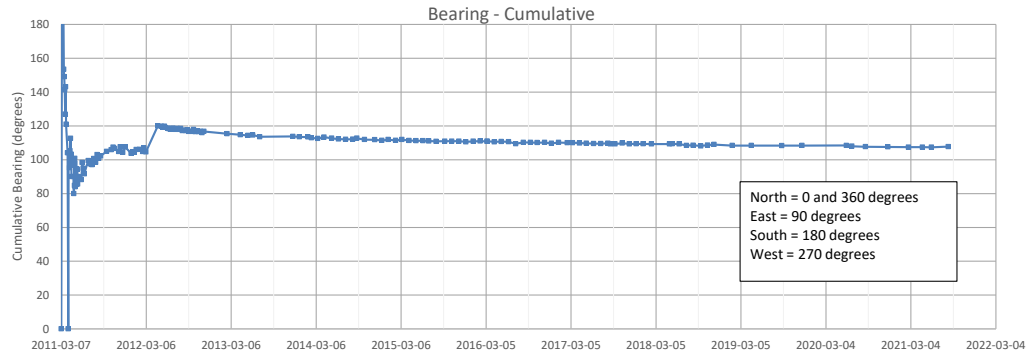
SWD-01 - Total Displacement (m)



SWD-01 - Horizontal and Vertical Displacement



Bearing - Cumulative



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SWD Instrumentation Data

Survey Hub – SWD-01

Job No: 1CM002.073

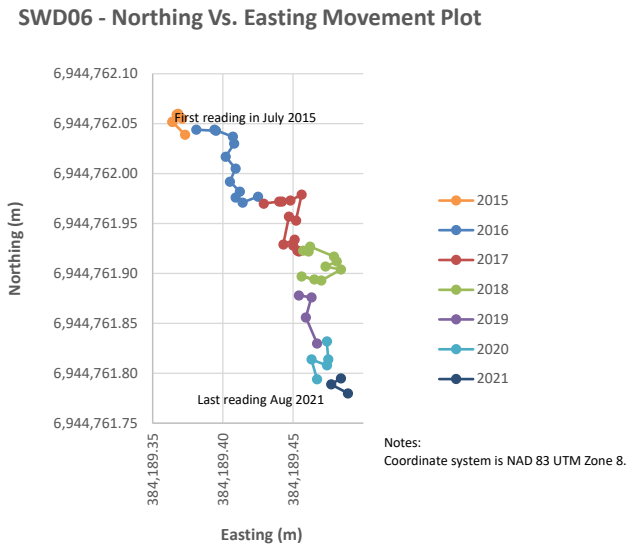
Filename: ApF_2021SWD Instrumentation.pptx

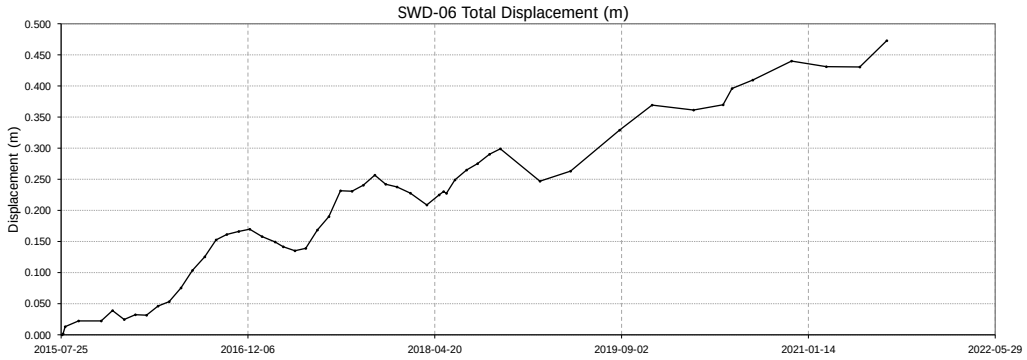
Minto Mine

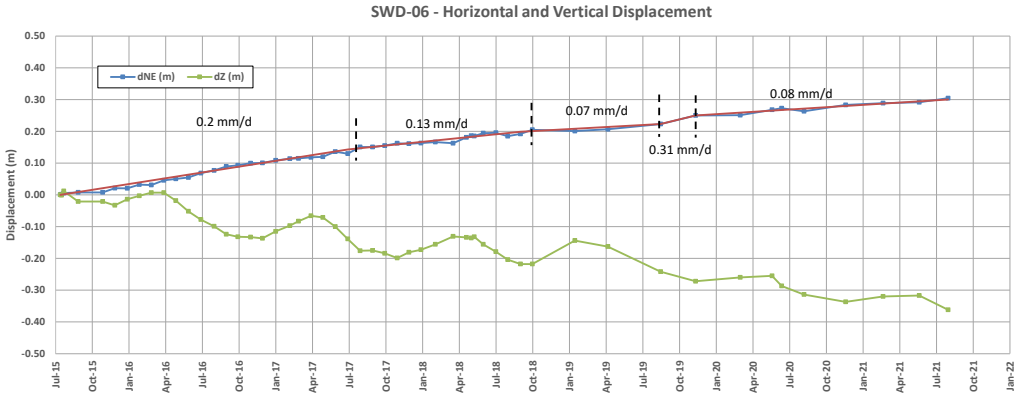
Date: October 2021

Prepared by: PHM

Figure: 2

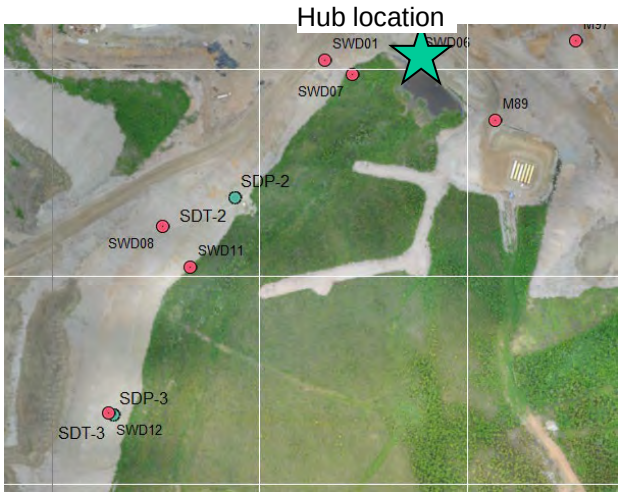


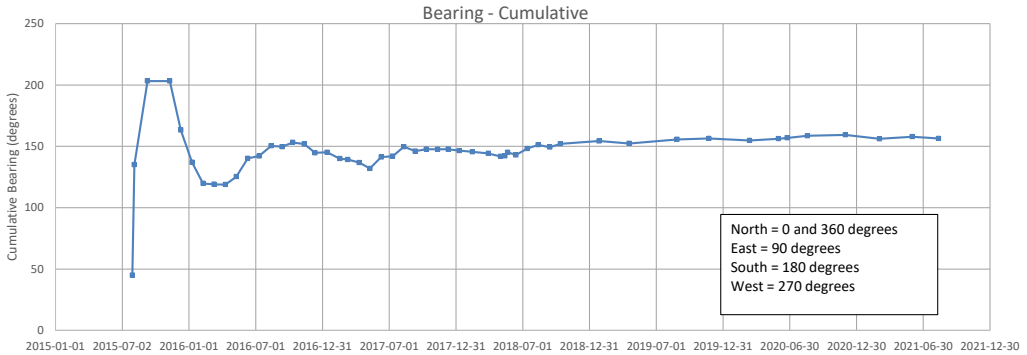




Notes

1. *Hub is a replacement for SWD-01A that was disturbed by frost heave.*
2. *The hub consists of a lock-block on surface, and as a result, seasonal ground movement as a result freeze/thaw cycles may occur that is not indicative of large-scale ground movement. As a result, the horizontal displacement plot is likely to be the most useful plot for monitoring movement.*





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SWD Instrumentation Data

Survey Hub – SWD-06

Job No: 1CM002.073

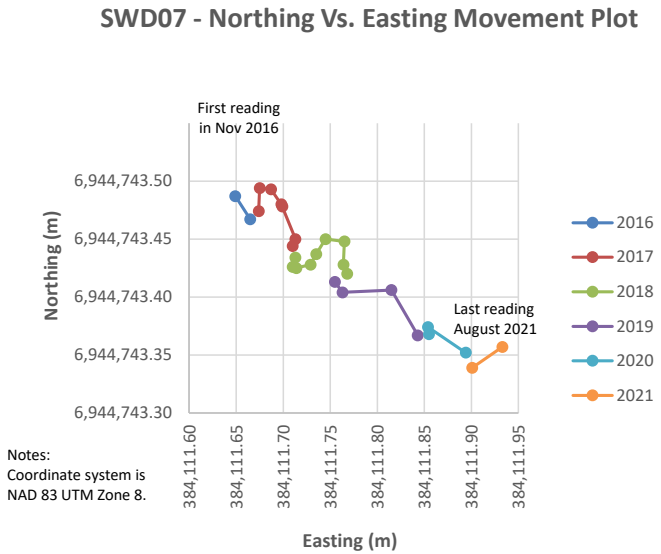
Filename: ApF_2021SWD Instrumentation.pptx

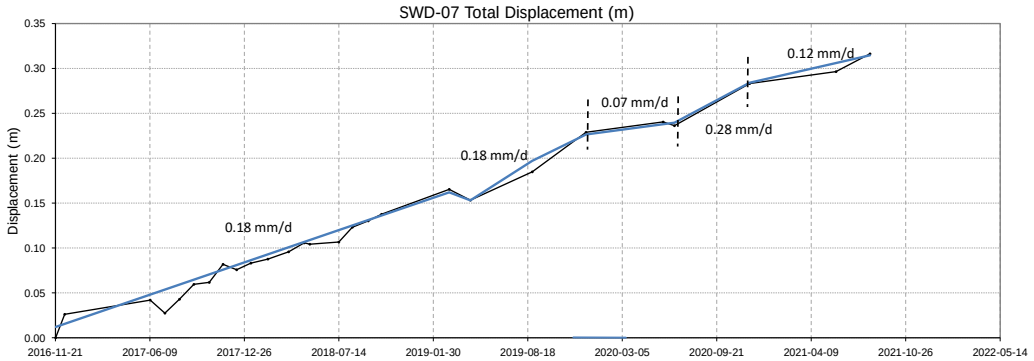
Minto Mine

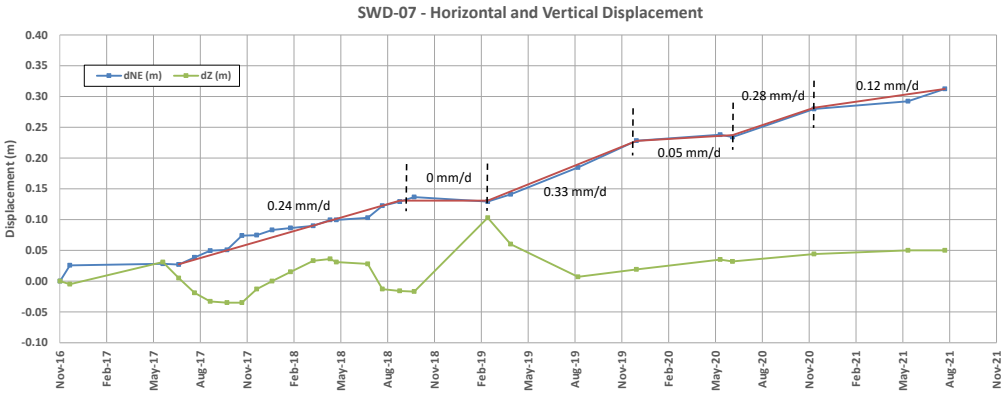
Date: October 2021

Prepared by PHM

Figure: **3**

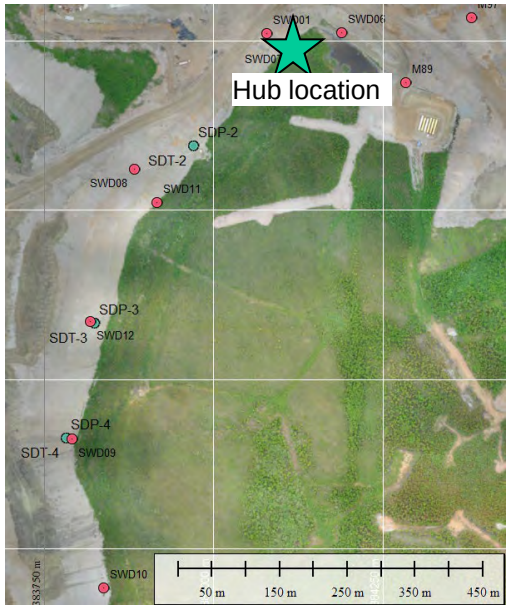


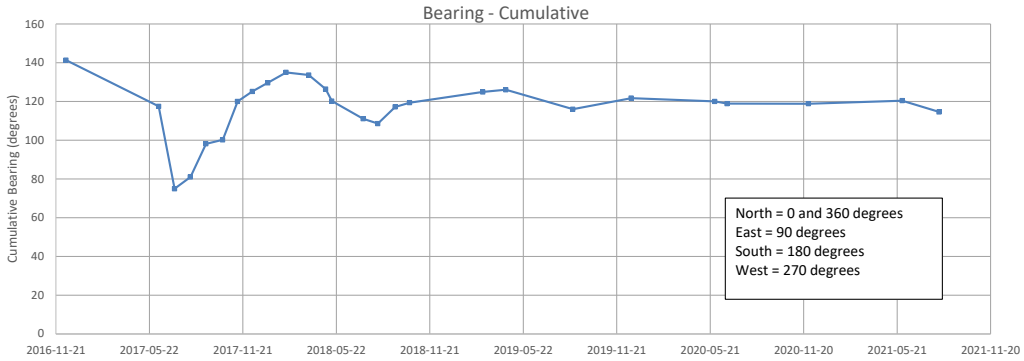




Notes

1. *Hub is a replacement for SWD-02A that was disturbed by frost heave.*





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MINTO

SWD Instrumentation Data

Survey Hub – SWD-07

Job No: 1CM002.073

Filename: ApF_2021SWD Instrumentation.pptx

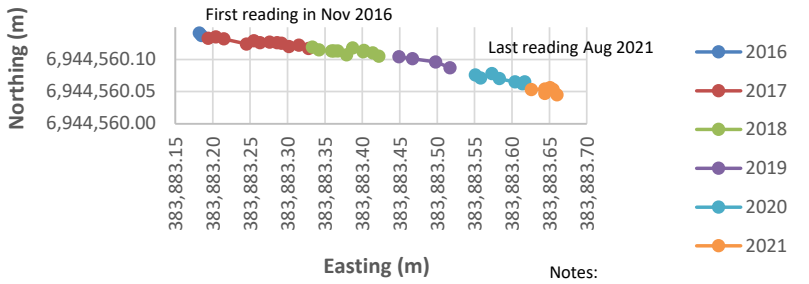
Minto Mine

Date: October 2021

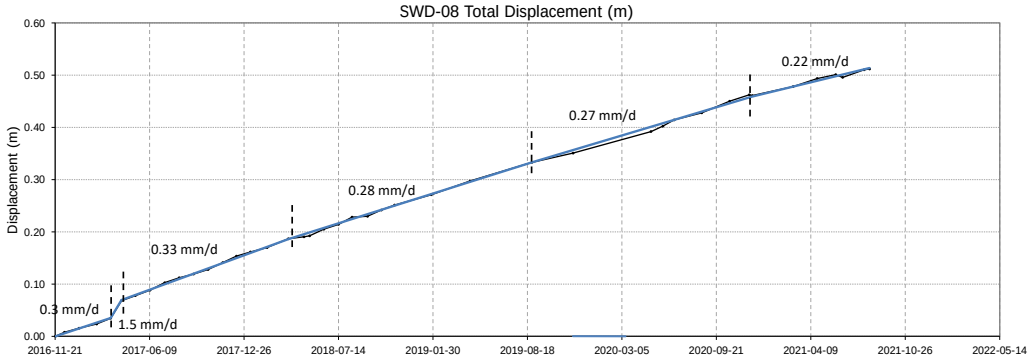
Prepared by PHM

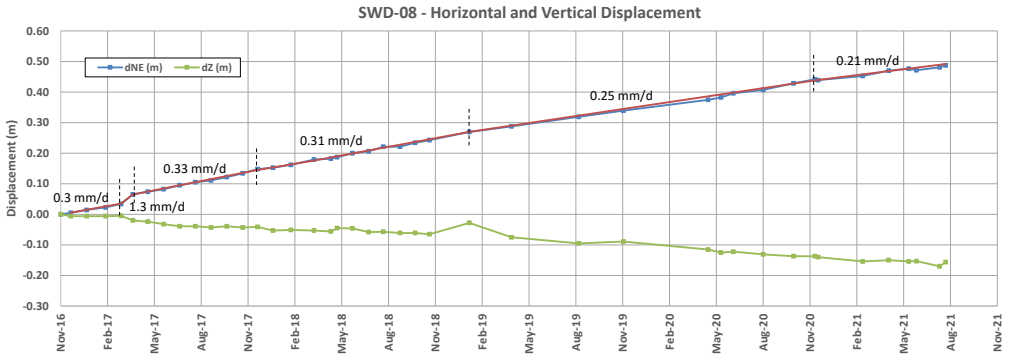
Figure: 4

SWD08 - Northing Vs. Easting Movement Plot



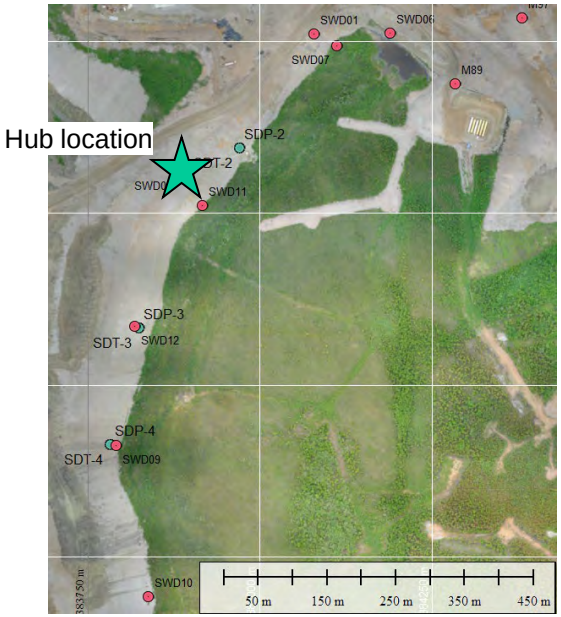
Notes:
Coordinate system is NAD 83 UTM Zone 8.

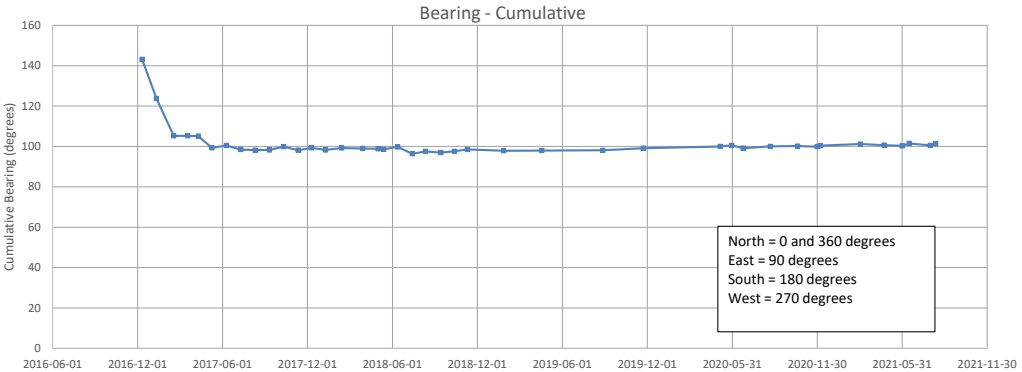




Notes

1. *Hub is a replacement for SWD-02 that was disturbed as a result of regrading of the SWD.*





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SWD Instrumentation Data

Survey Hub – SWD-08

Job No: 1CM002.073

Filename: ApF_2021SWD Instrumentation.pptx

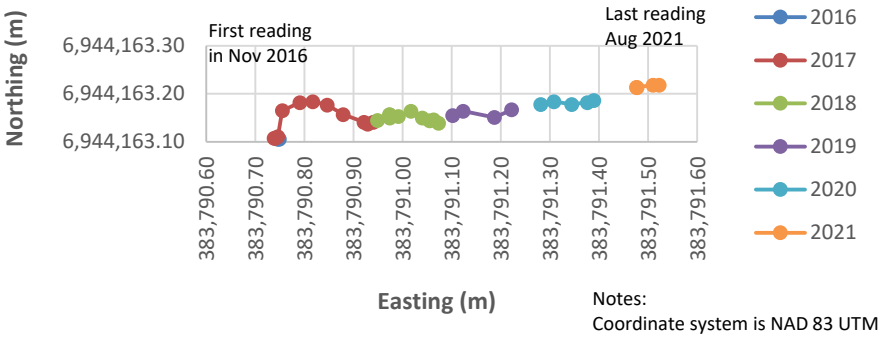
Minto Mine

Date: October 2021

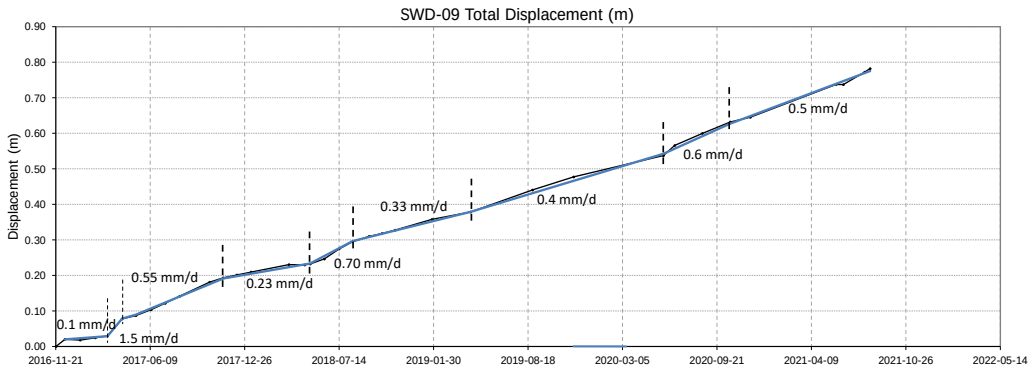
Prepared by: PHM

Figure: **5**

SWD09 - Northing Vs. Easting Movement Plot

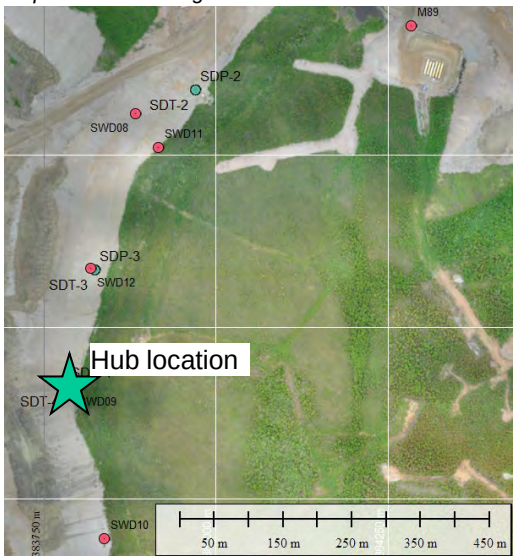


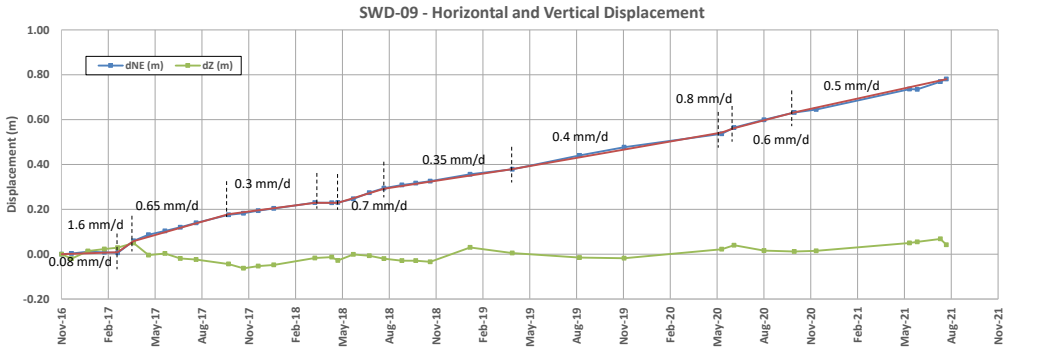
Notes:
Coordinate system is NAD 83 UTM Zone 8.

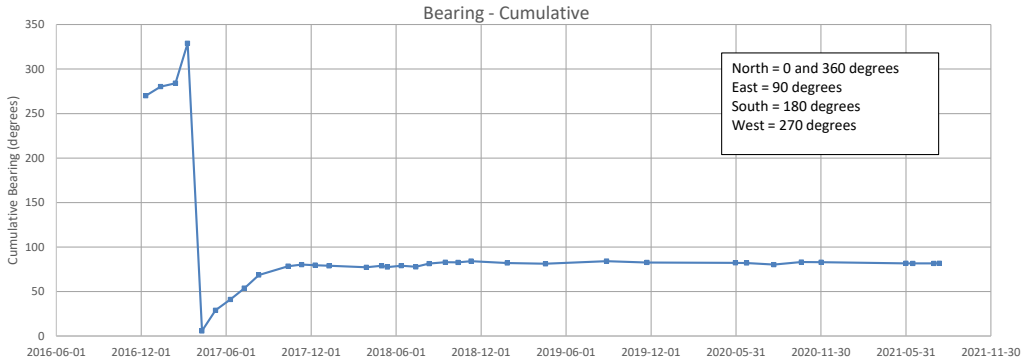


Notes

1. *Hub is a replacement for SWD-04A that was disturbed by frost heave.*
2. *The hub consists of a large boulder on surface, and as a result, seasonal ground movement as a result freeze/thaw cycles may occur that is not indicative of large-scale ground movement. As a result, the horizontal displacement plot is likely to be the most useful plot for monitoring movement.*







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SWD Instrumentation Data

Survey Hub – SWD-09

Job No: 1CM002.073

Filename: ApF_2021SWD Instrumentation.pptx

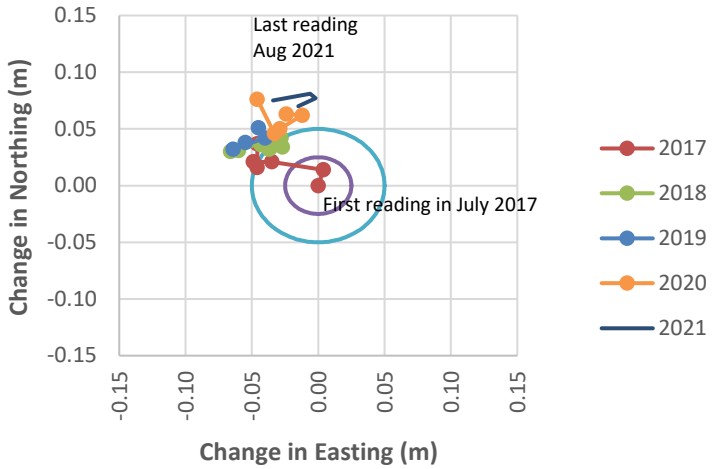
Minto Mine

Date: October 2021

Prepared by PHM

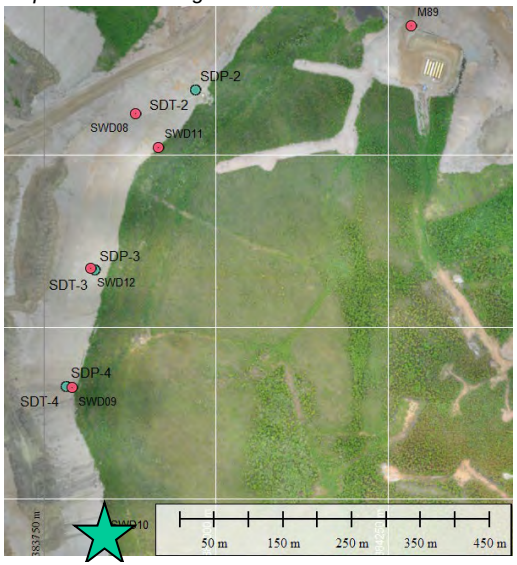
Figure: 6

SWD10 - Northing Vs. Easting Movement Plot

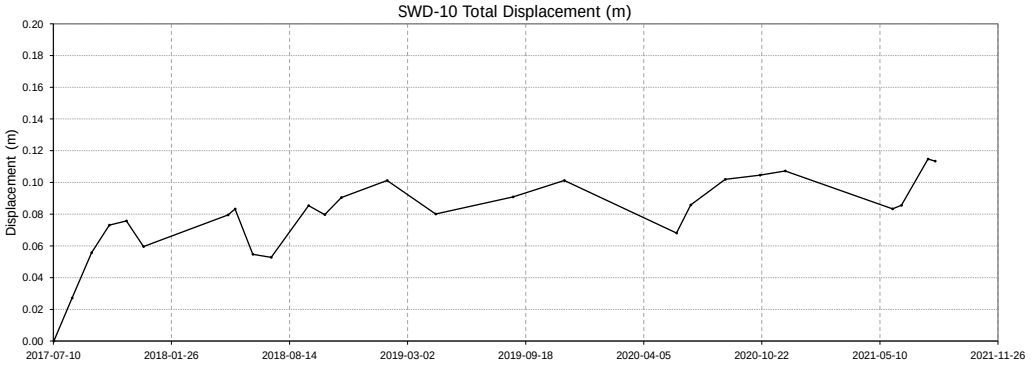


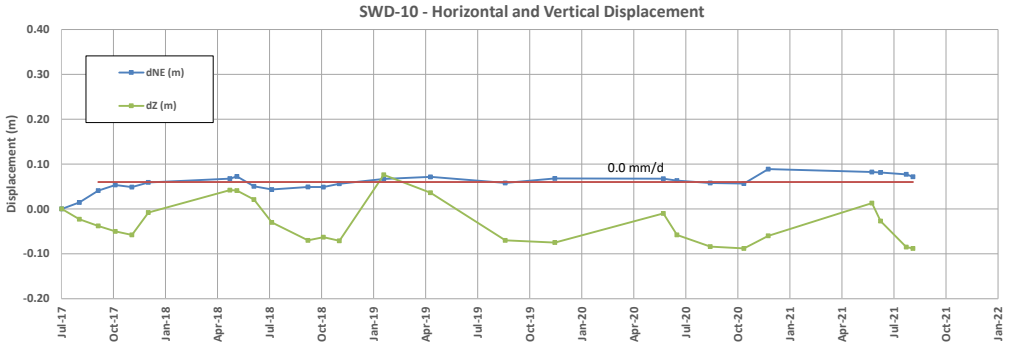
Notes

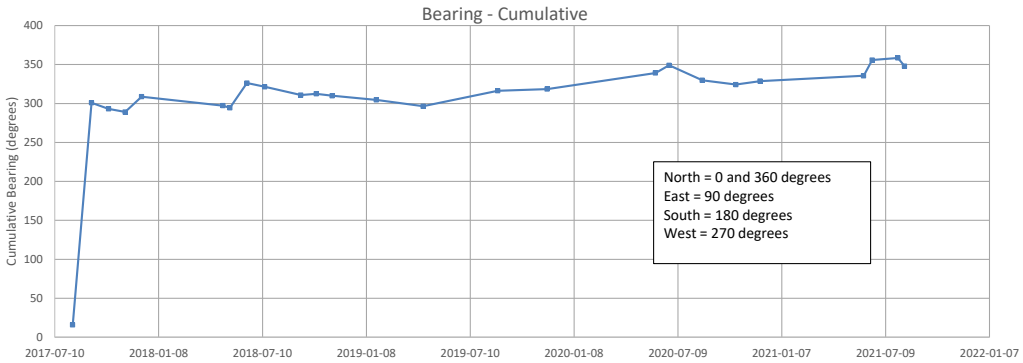
1. *Hub is a replacement for SWD-05A that was disturbed by frost heave.*
2. *The hub consists of a large boulder on surface, and as a result, seasonal ground movement as a result freeze/thaw cycles may occur that is not indicative of large-scale ground movement. As a result, the horizontal displacement plot is likely to be the most useful plot for monitoring movement.*



Hub location







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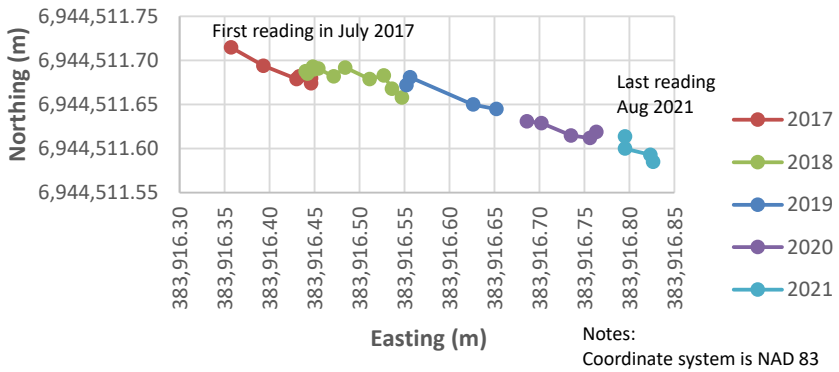
SWD Instrumentation Data

Survey Hub – SWD-10

Job No: 1CM002.073	Minto Mine	Date: October 2021	Prepared by PHM	Figure: 7
Filename: ApF_2021SWD Instrumentation.pptx			

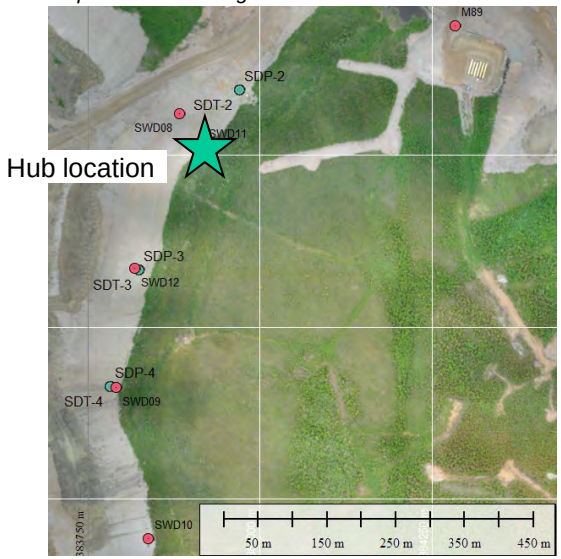
SWD11 - Northing Vs. Easting Movement Plot

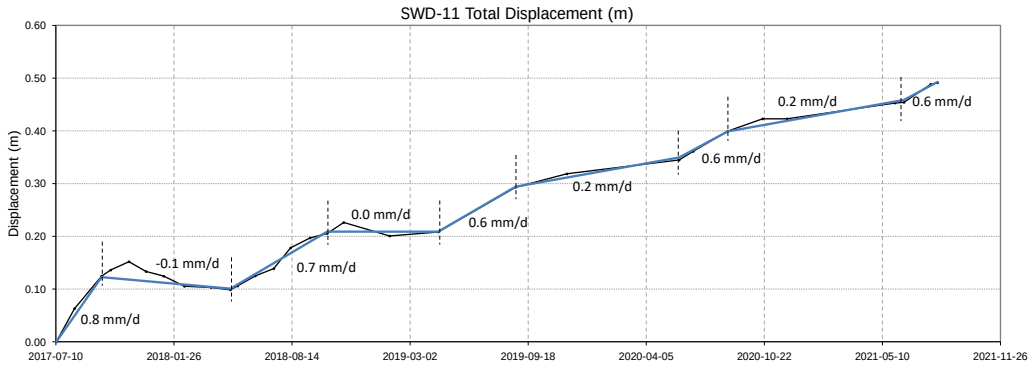


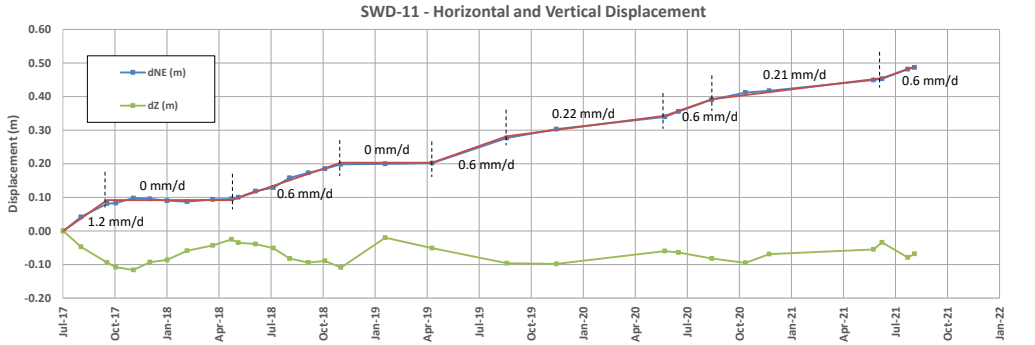
Notes:
Coordinate system is NAD 83 UTM Zone 8.

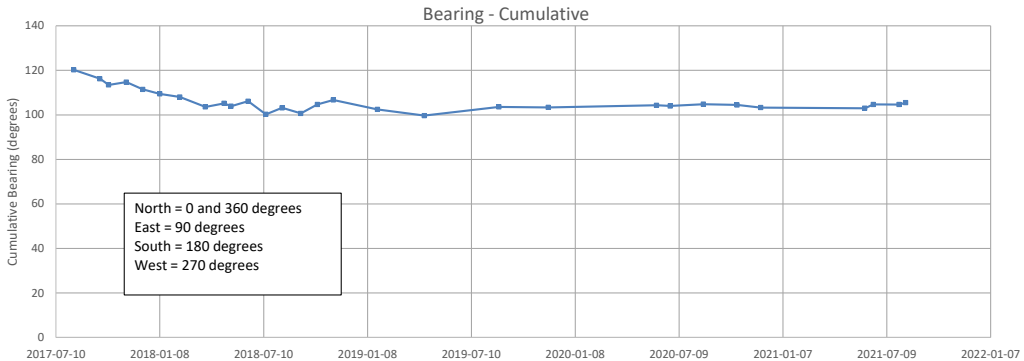
Notes

1. *Hub is a replacement for SWD-03A that was disturbed by frost heave.*
2. *The hub consists of a large boulder on surface, and as a result, seasonal ground movement as a result freeze/thaw cycles may occur that is not indicative of large-scale ground movement. As a result, the horizontal displacement plot is likely to be the most useful plot for monitoring movement.*









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SWD Instrumentation Data

Survey Hub – SWD-11

Job No: 1CM002.073

Filename: ApF_2021SWD Instrumentation.pptx

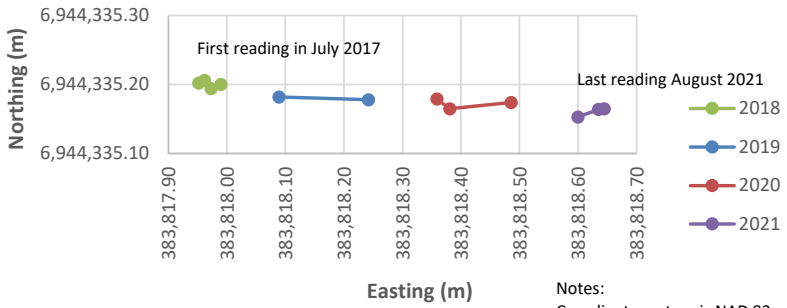
Minto Mine

Date: October 2021

Prepared by PHM

Figure: **8**

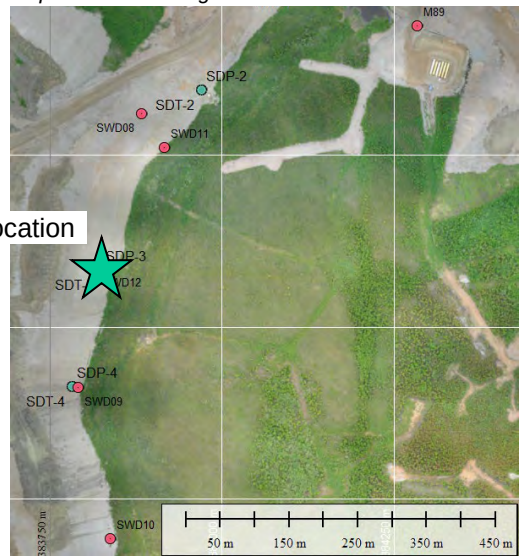
SWD12 - Northing Vs. Easting Movement Plot

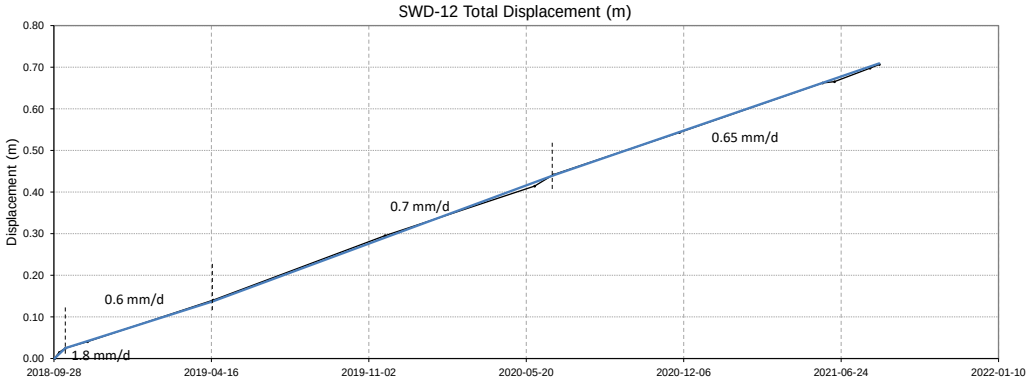


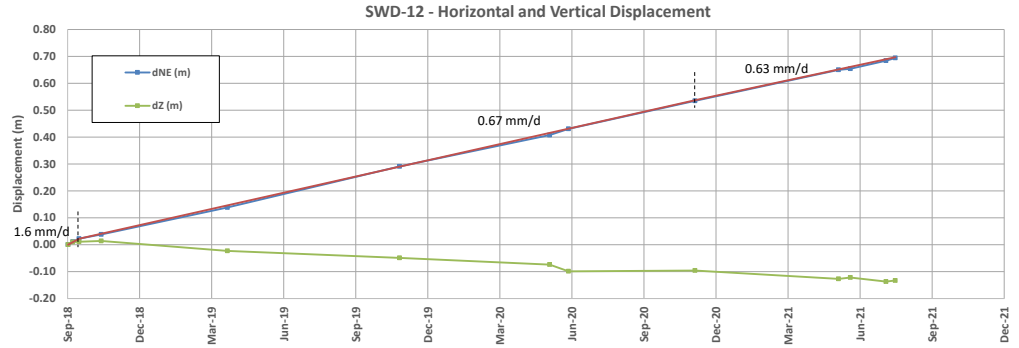
Notes:
Coordinate system is NAD 83 UTM Zone 8.

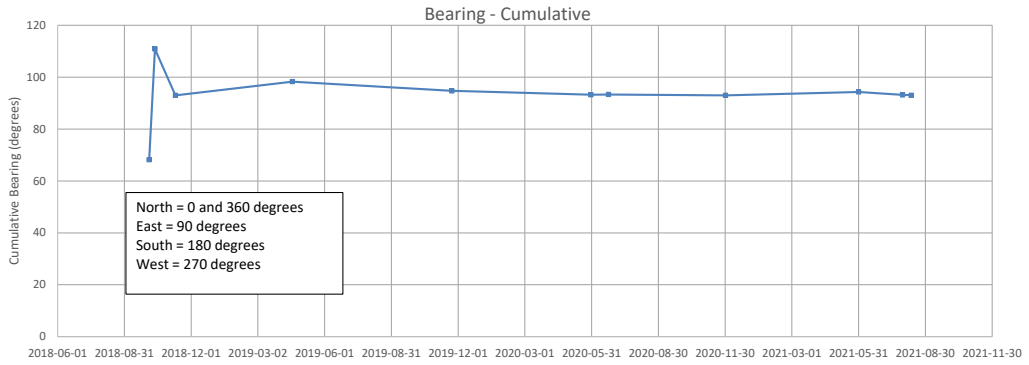
Notes

1. *Hub is a replacement for inclinometer SDI-3 that sheared off in August 2017.*
2. *The hub consists of a large boulder on surface, and as a result, seasonal ground movement as a result freeze/thaw cycles may occur that is not indicative of large-scale ground movement. As a result, the horizontal displacement plot is likely to be the most useful plot for monitoring movement.*









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MINTO

SWD Instrumentation Data

Survey Hub – SWD-12

Job No: 1CM002.073

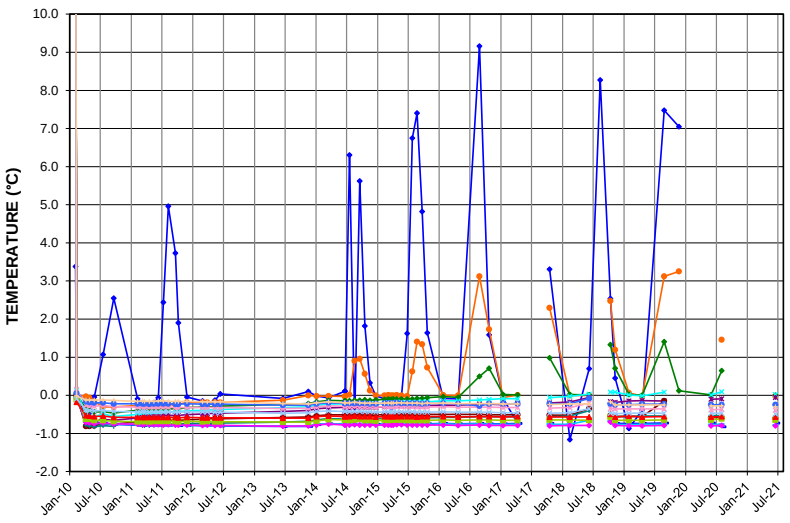
Filename: ApF_2021SWD Instrumentation.pptx

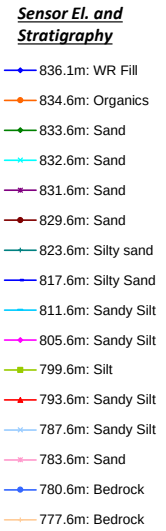
Minto Mine

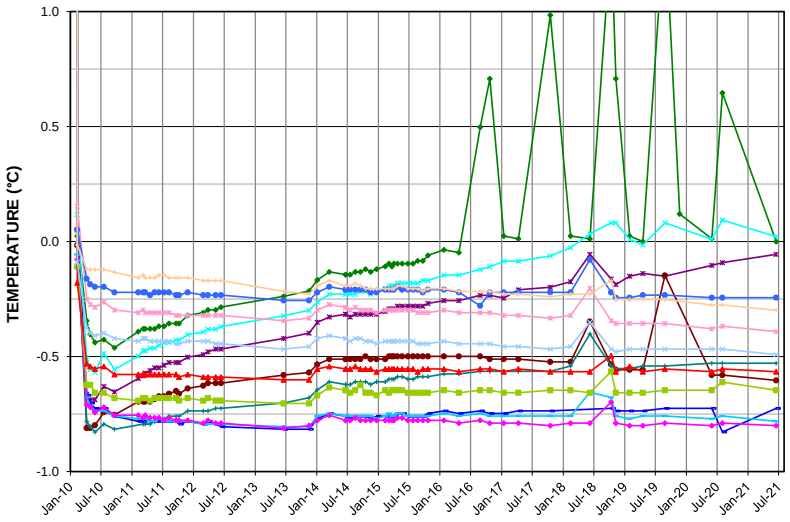
Date: October 2021

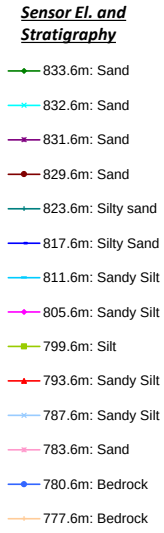
Prepared by PHM

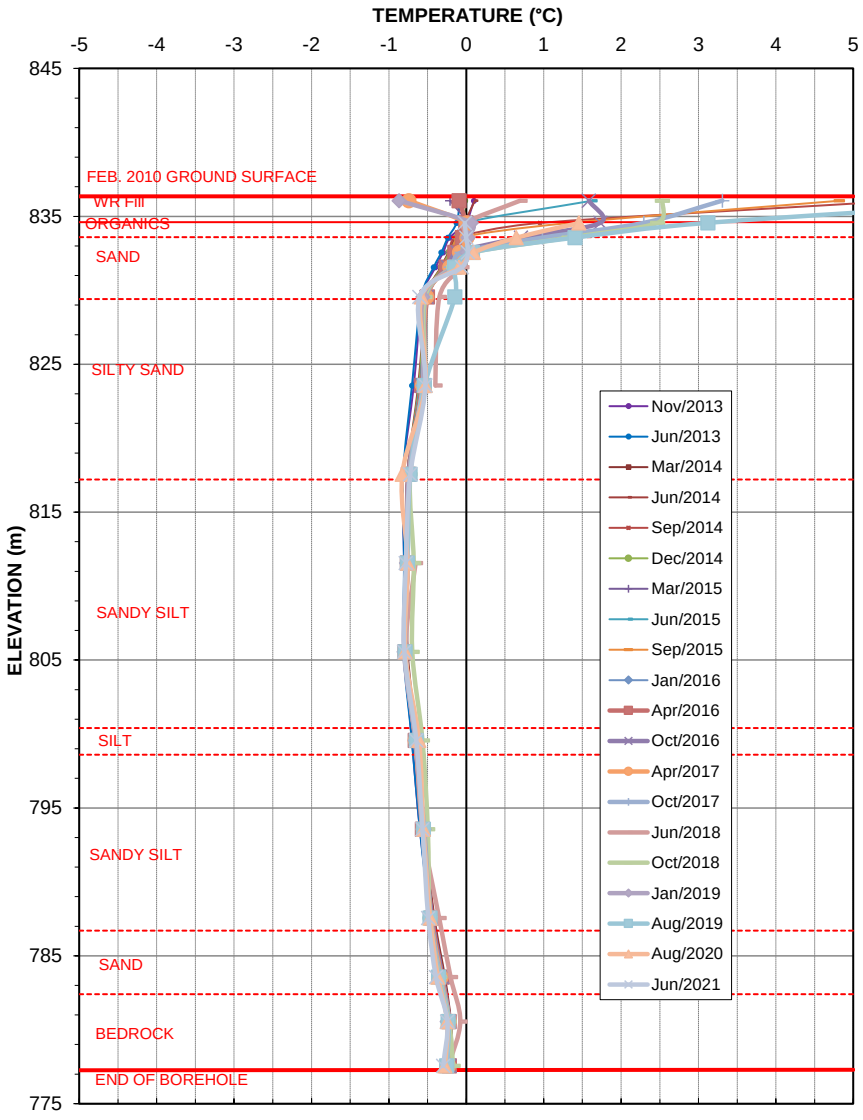
Figure: 9











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SWD Instrumentation Data

Temperature Cable – SDT-1

Job No: 1CM002.073

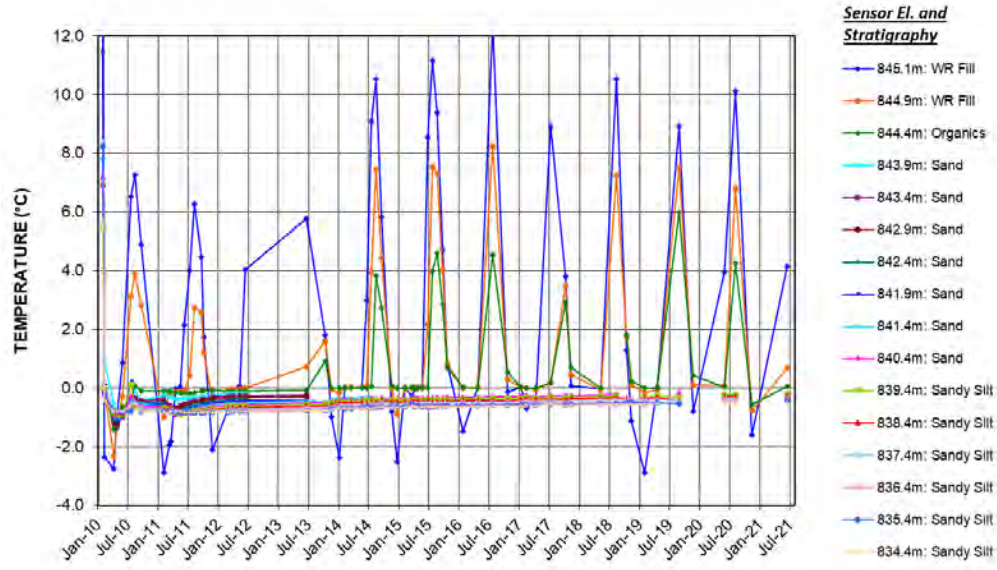
Filename: ApF_2021SWD Instrumentation.pptx

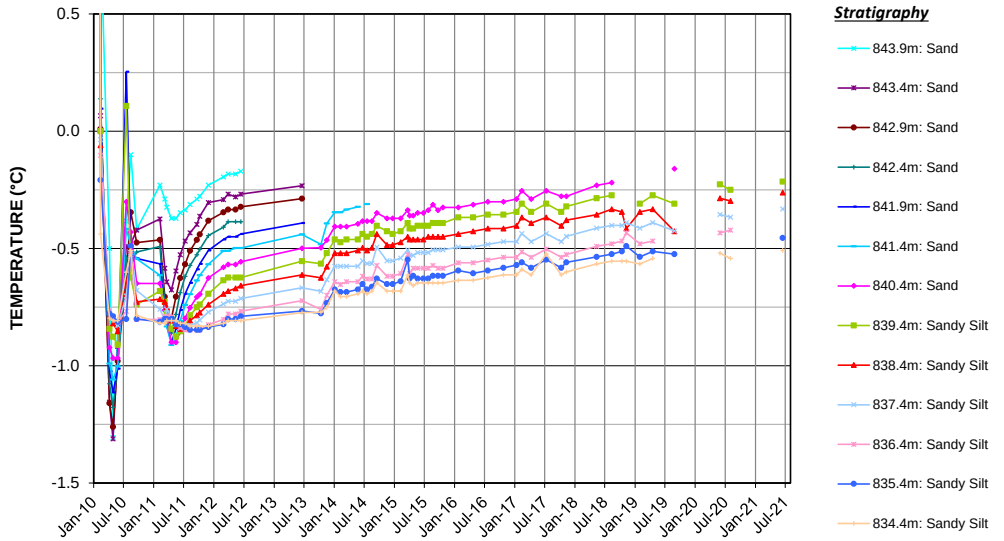
Minto Mine

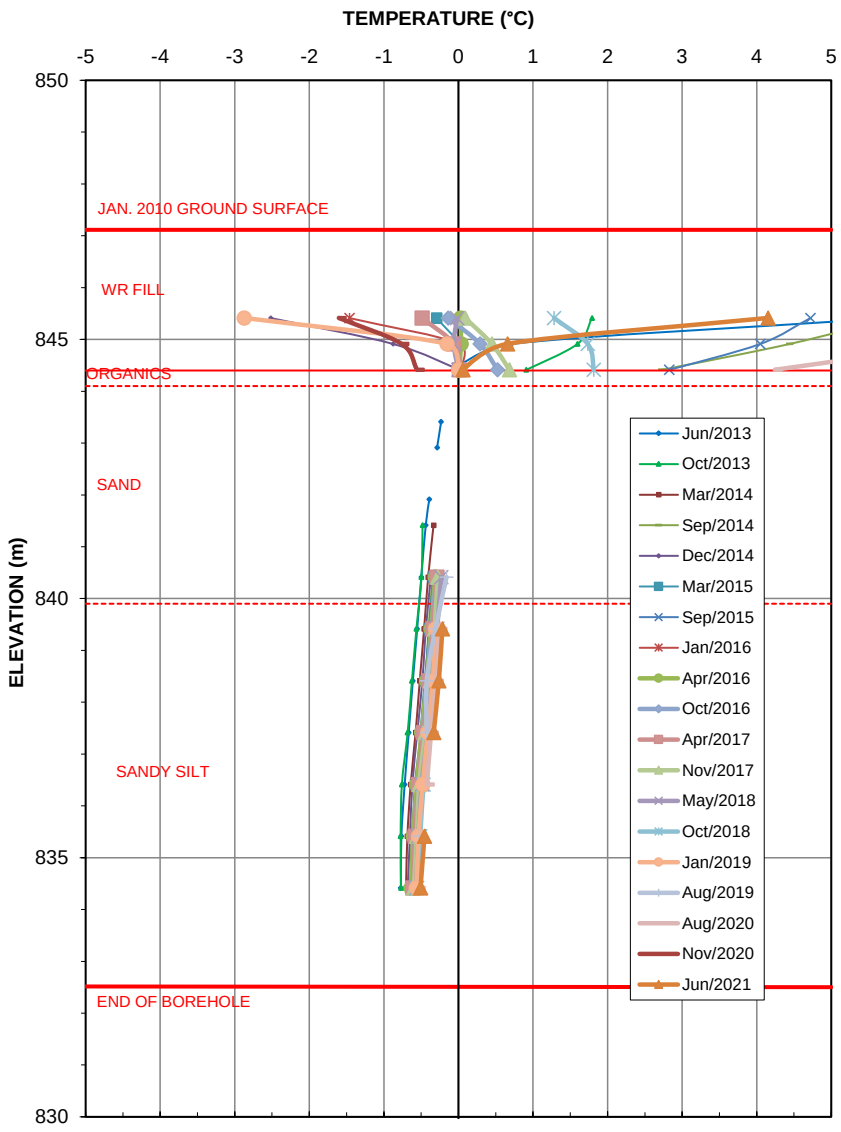
Date: October 2021

Prepared by PHM

Figure: **10**







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SWD Instrumentation Data

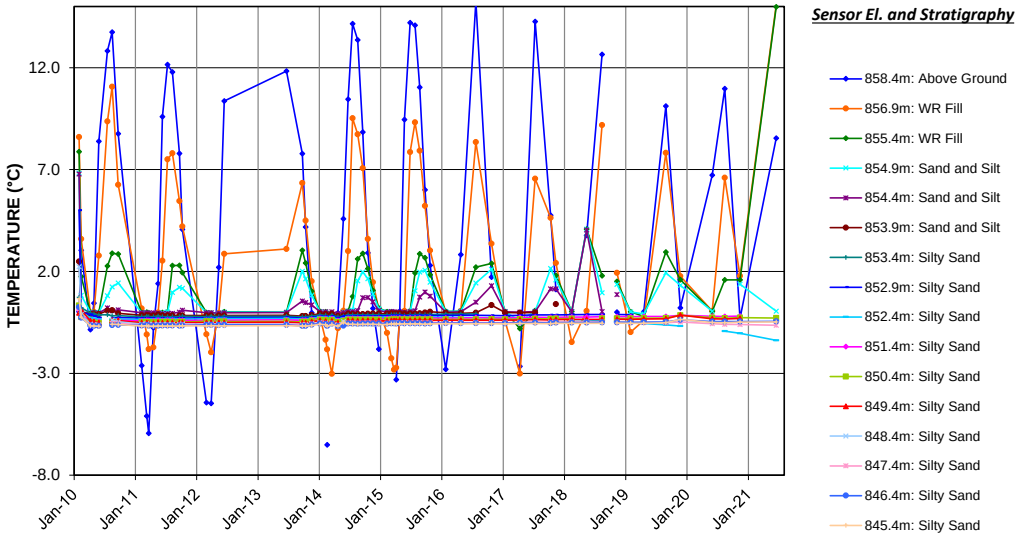
Temperature Cable – SDT-2

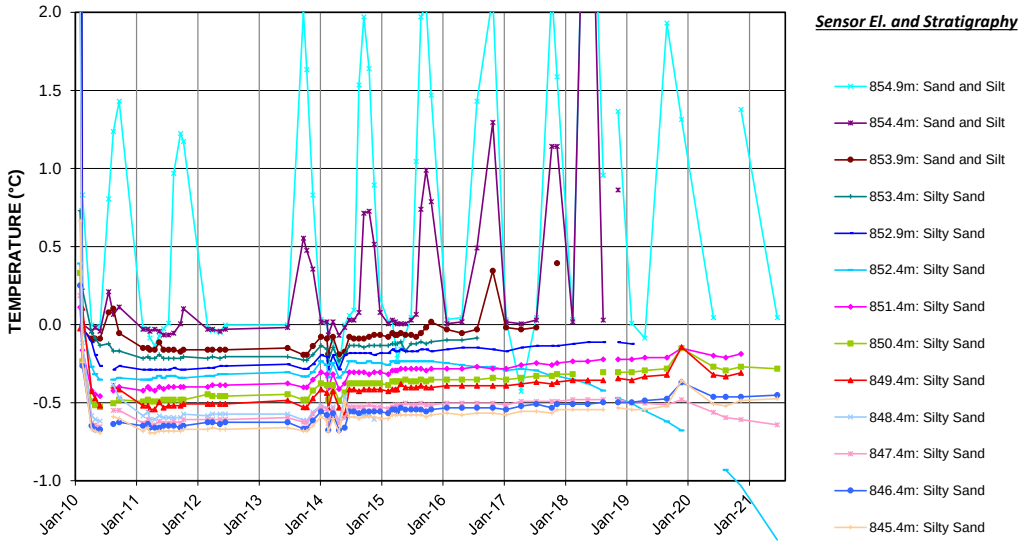
Job No: 1CM002.073

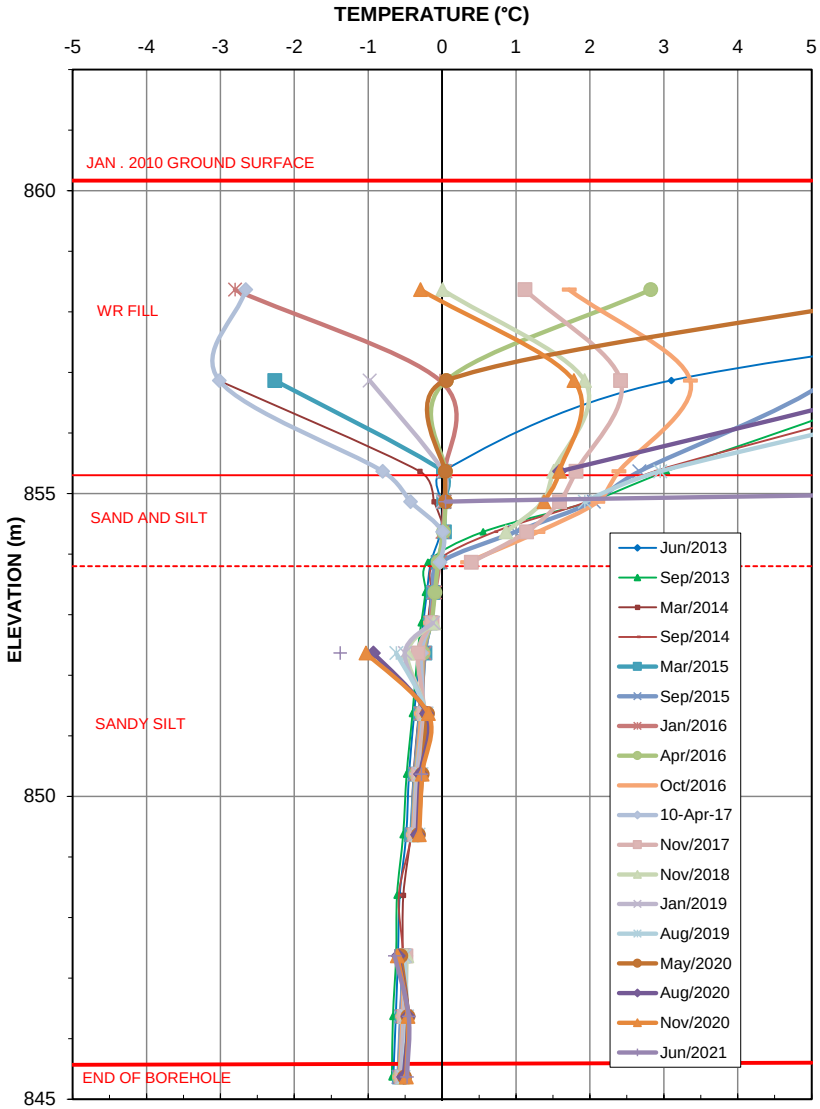
Filename: ApF_2021SWD Instrumentation.pptx

Minto Mine

Date:	Prepared by	Figure:
October 2021	PHM	11







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Job No: 1CM002.073

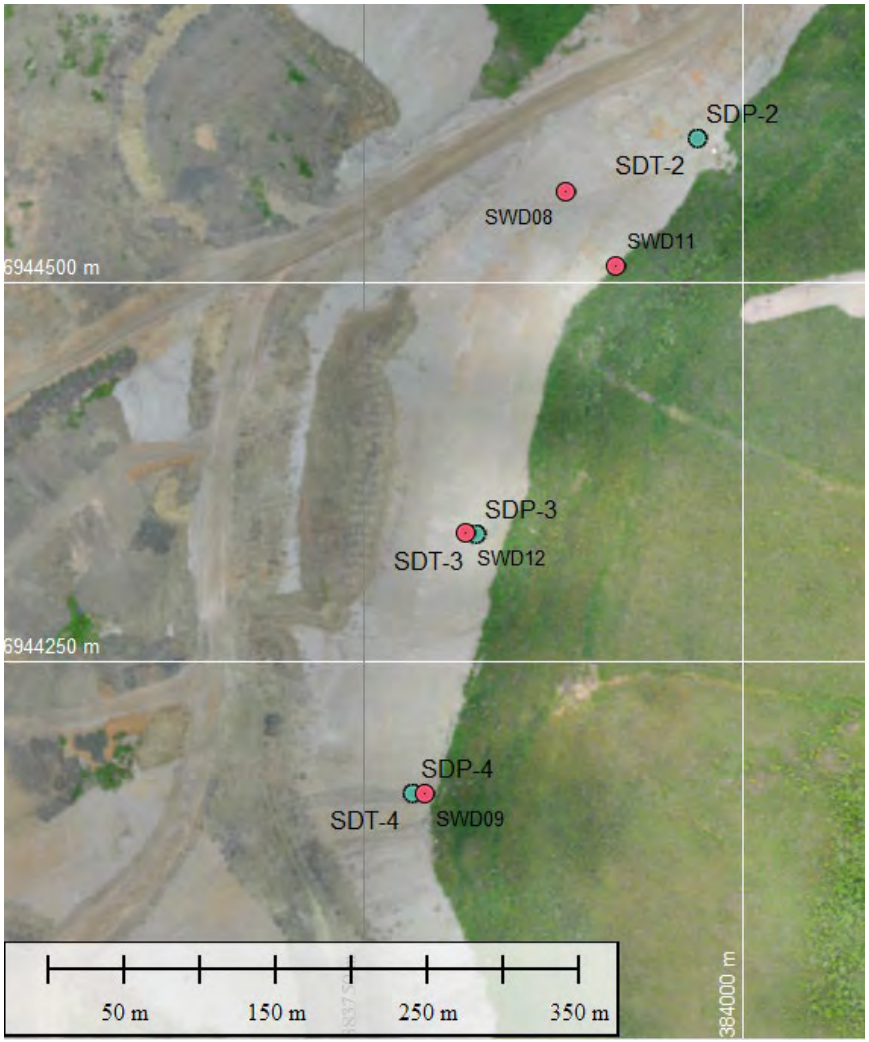
Filename: ApF_2021SWD Instrumentation.pptx

Minto Mine

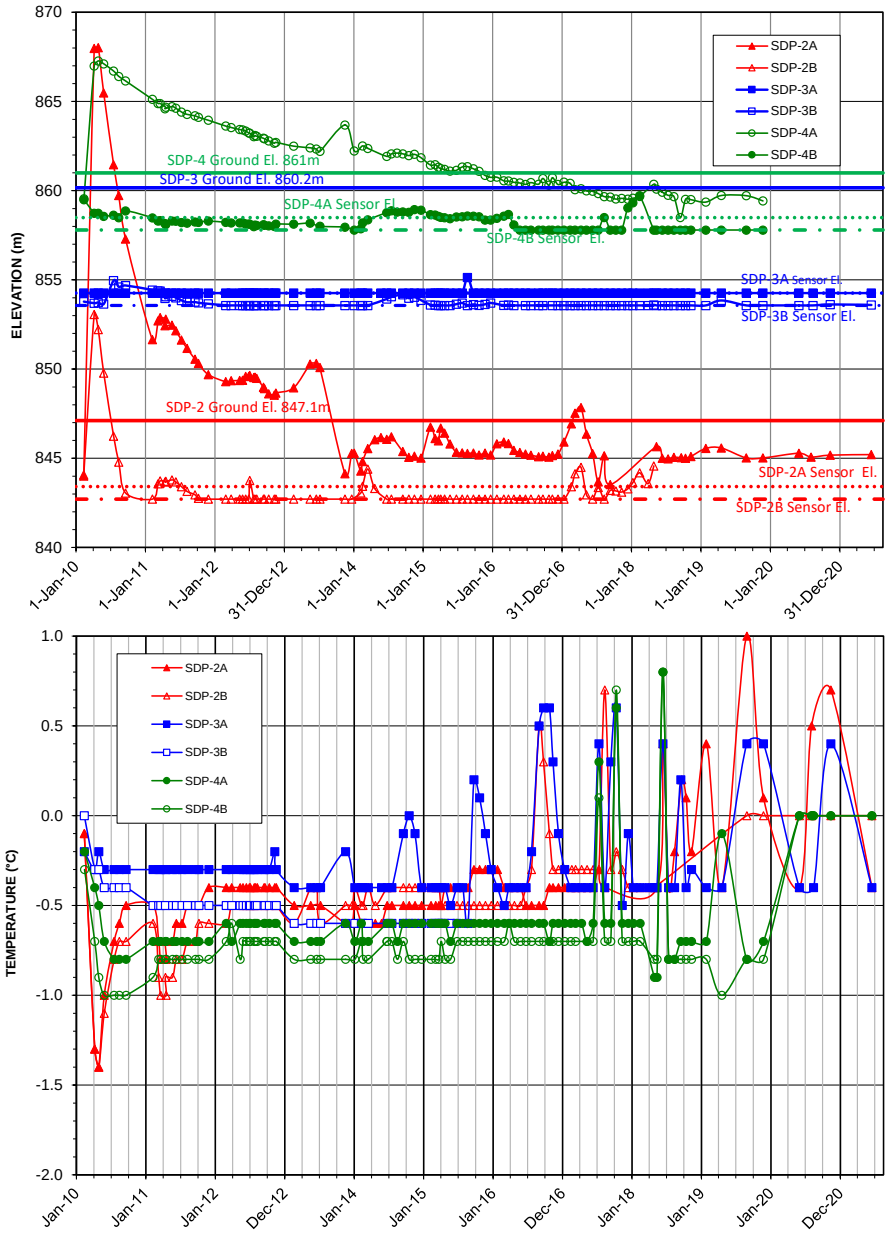
SWD Instrumentation Data

Temperature Cable – SDT-3

Date:	Prepared by	Figure:
October 2021	PHM	12



Southwest Dump Piezometers and Ground Temperature Cables



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SWD Instrumentation Data

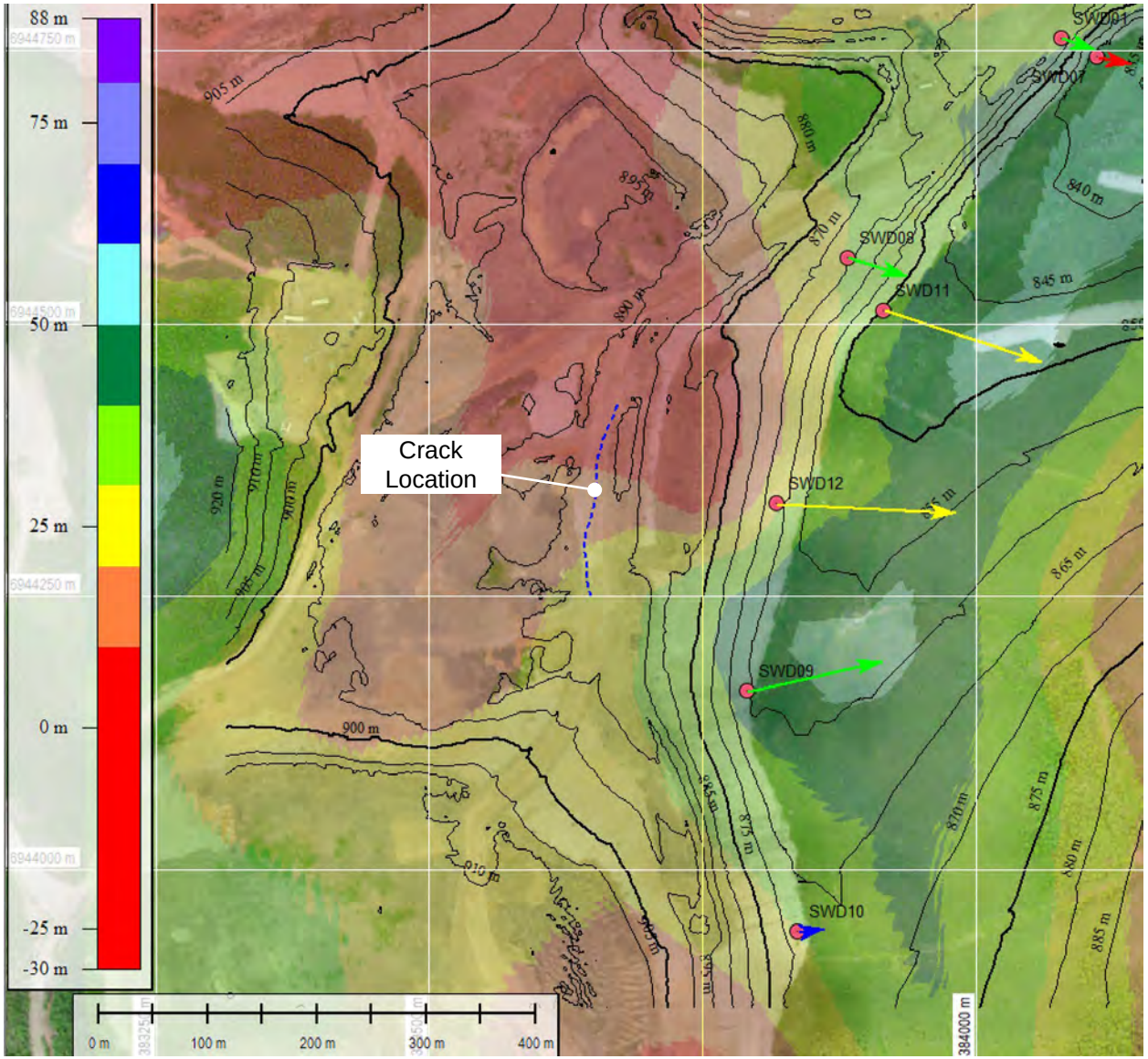
Southwest Dump Piezometers

Job No: 1CM002.073

Filename: ApF_2021SWD Instrumentation.pptx

Minto Mine

Date:	Prepared by	Figure:
October 2021	PHM	13



Movement Vector - No Current Movement

Movement Vector - Decelerating Movement

Movement Vector - Steady Movement

Movement Vector - Accelerating Movement

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Job No: 1CM002.073

Filename: ApF_2021SWD Instrumentation.pptx

Minto Mine

SWD Instrumentation Data

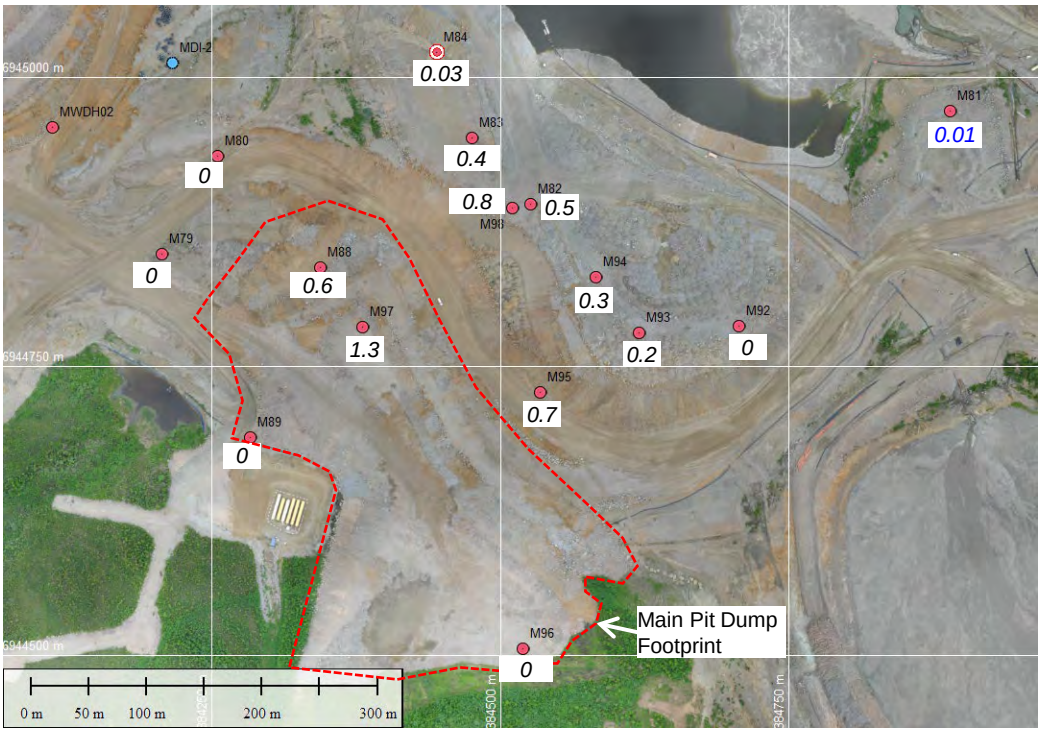
Southwest Dump Crack Location Compared to Overburden Isopach

Date:	Prepared by	Figure:
October 2021	PHM	14

Appendix G Main Pit Instrumentation Data

Legend/Notes

1. *Values in black are total movement rates in units of mm/day*
2. *Values in blue are horizontal movement rates in mm/day.*



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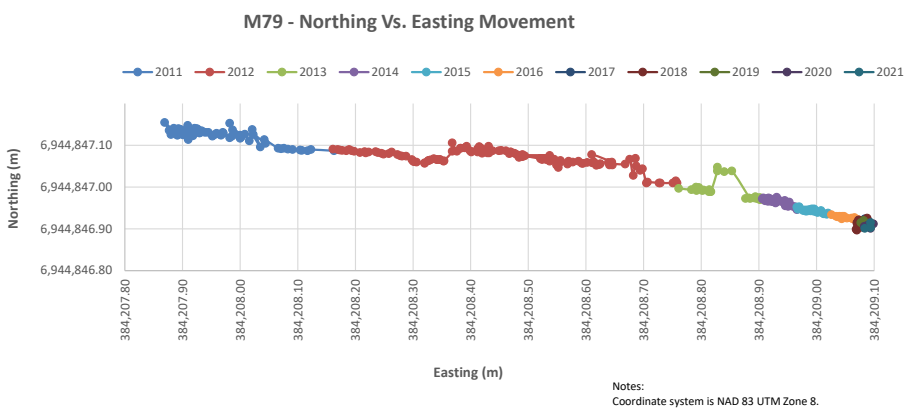
Main Pit Active Survey Hubs

Survey Hub	Last Reading	Movement Rate (mm/day)		Bearing (over past year)	Comments
		Current (as of last reading)	One year prior to last reading		
M79	8/10/2021	0	0	n/a	No significant movement.
M80	8/10/2021	0	0	n/a	No significant movement.
M81	8/9/2021	0.01	0.01	345	No significant horizontal movement (horizontal rates listed).
M82	8/9/2021	0.5	0.8	64	Decelerating since completion of MPD.
M83	8/9/2021	0.4	0.6	43	Decelerating since completion of MPD.
M84	5/15/2021	0.03	0.1	98	Decelerating.
M88	8/9/2021	0.6	0.8	42	Slight deceleration trend observable.
M92	8/10/2021	0	0	n/a	No significant movement.
M93	8/10/2021	0.2	0.3	52	Decelerating.
M94	8/10/2021	0.3	0.3	41	Steady movement, vertical deplacement rate is decellerating, movement direction is turning north.
M95	8/10/2021	0.7	0.7	46	Steady movement.
M97	3/17/2021	1.3	1.6	36	Decelerating.
M98	7/12/2020	0.8	1.2	63	Decelerating.



Notes:
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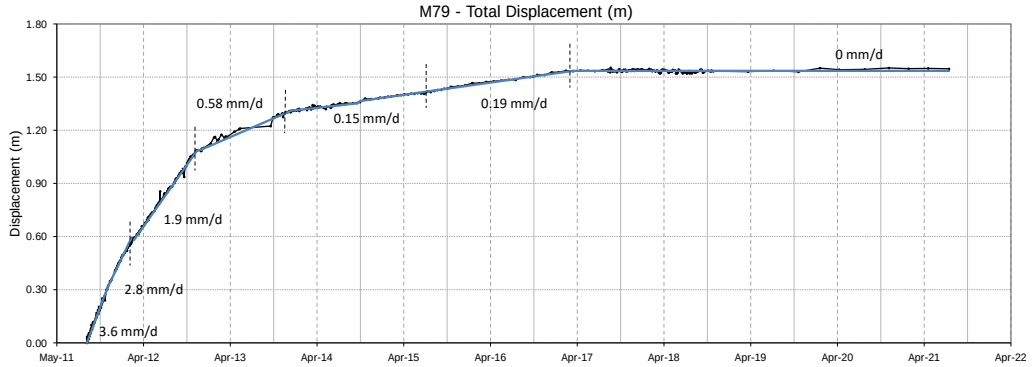

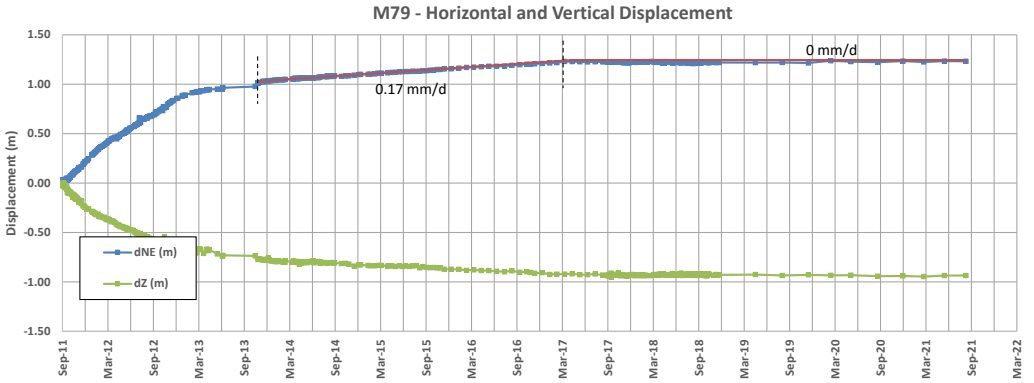

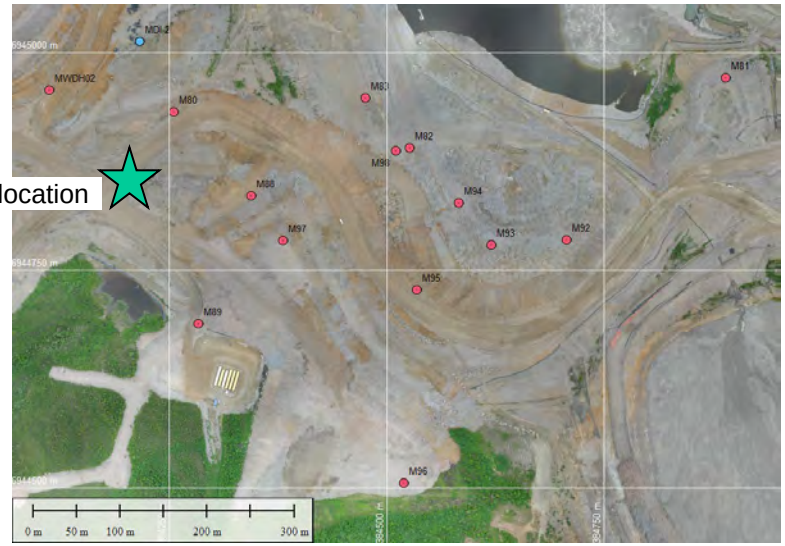

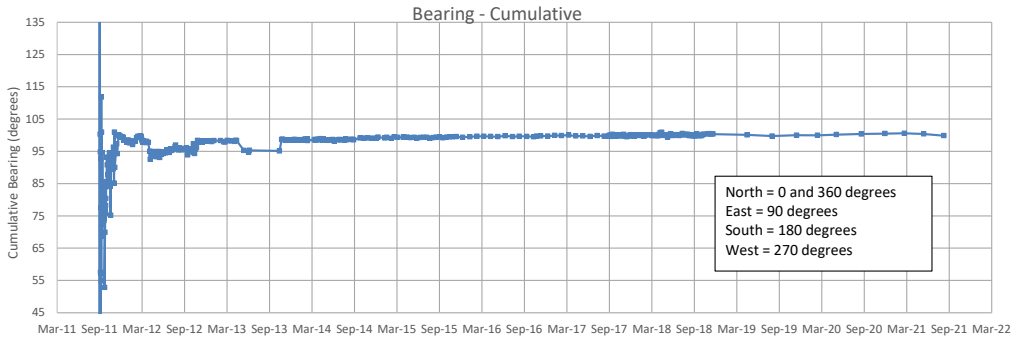

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Main Pit Instrumentation Data

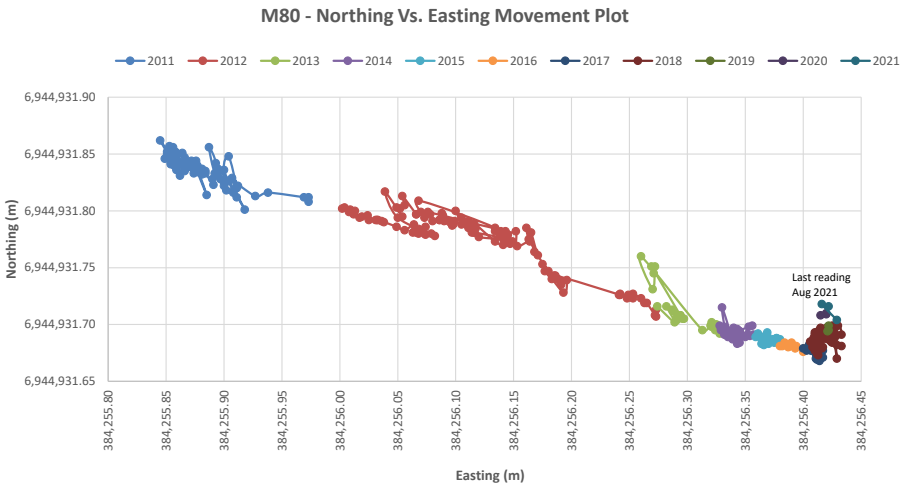
Survey Hub – M79

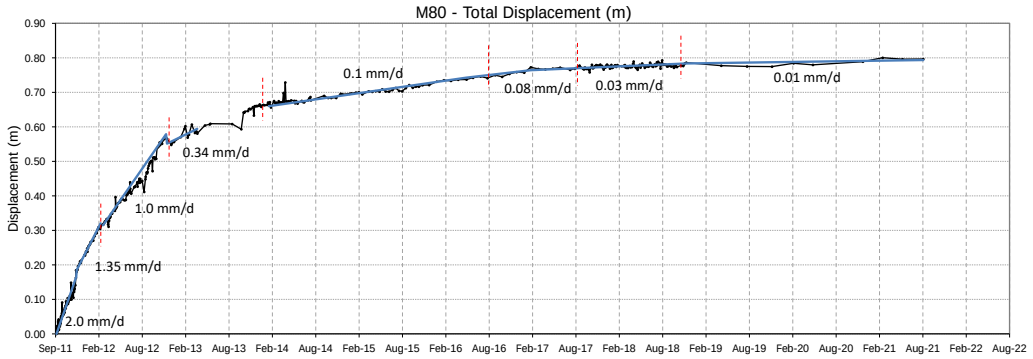
Job No: 1CM002.073

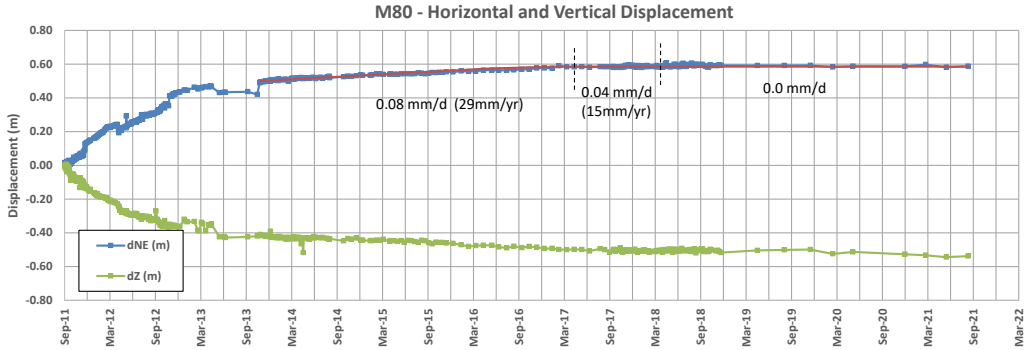
Filename: ApG_2021MainPitInstrumentation.pptx

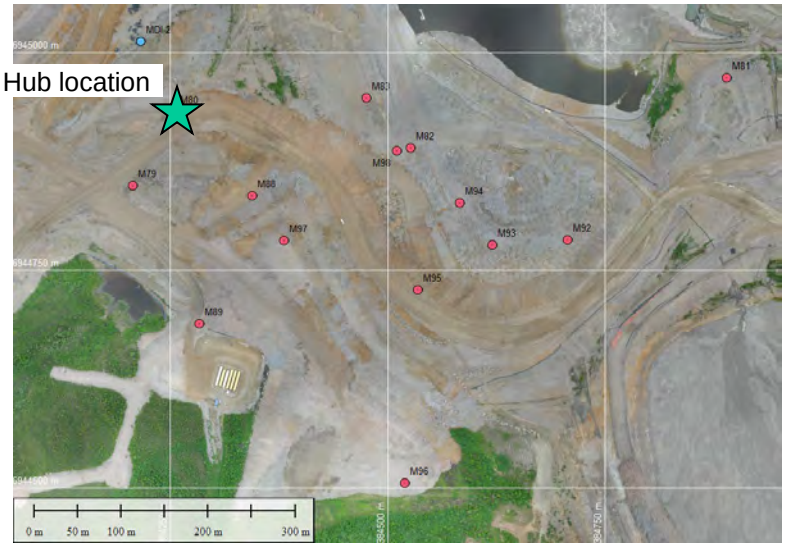
Minto Mine

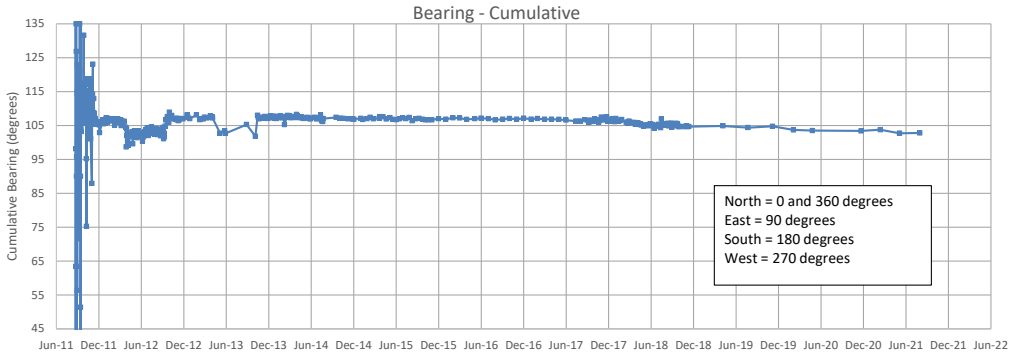
Date:	Prepared by:	Figure:
October 2021	PHM	2











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Main Pit Instrumentation Data

Survey Hub – M80

Job No: 1CM002.073

Filename: ApG_2021MainPitInstrumentation.pptx

Minto Mine

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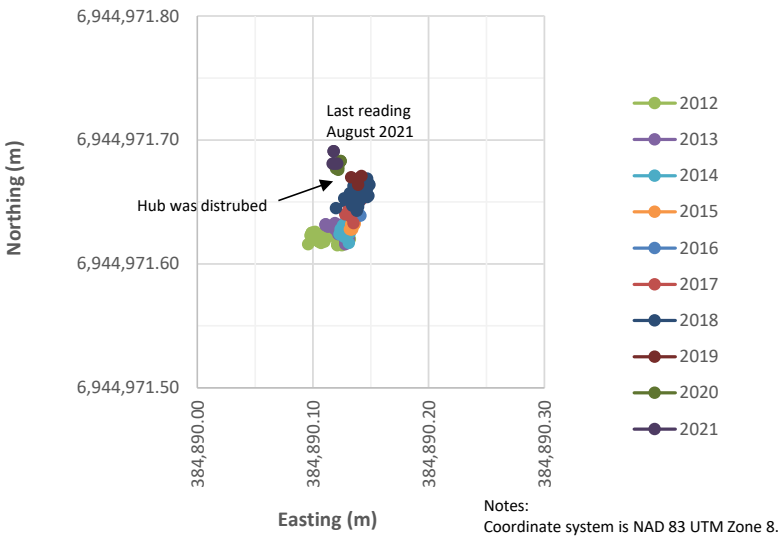
October 2021	PHM	3

M81 - Northing Vs. Easting Movement Plot



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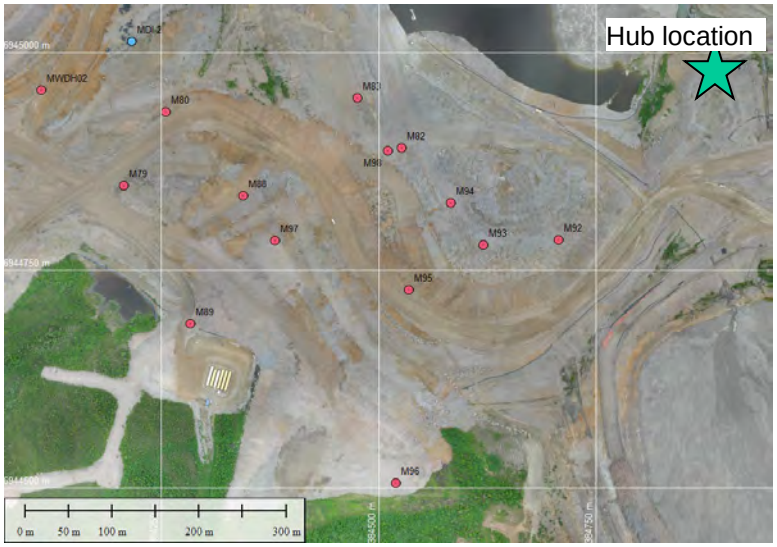

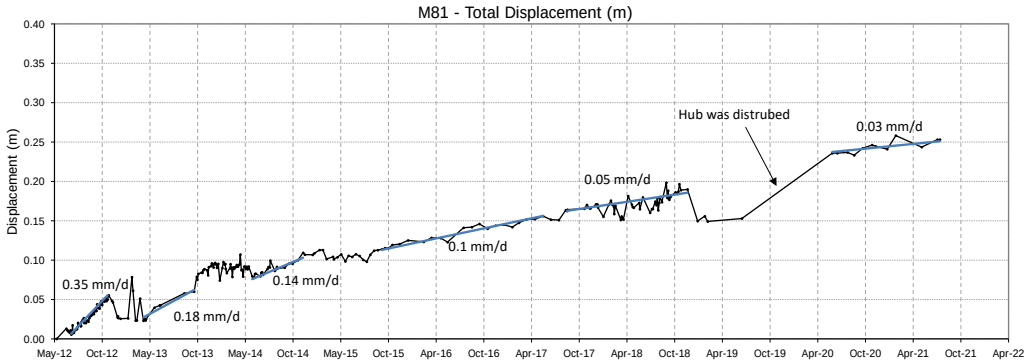

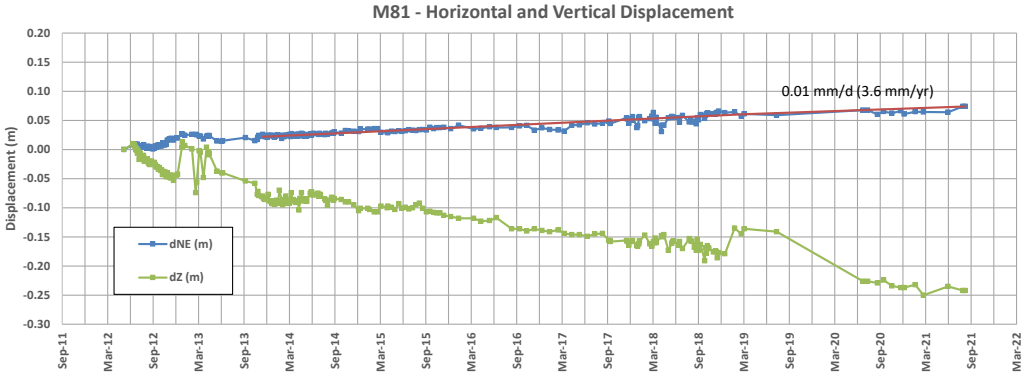

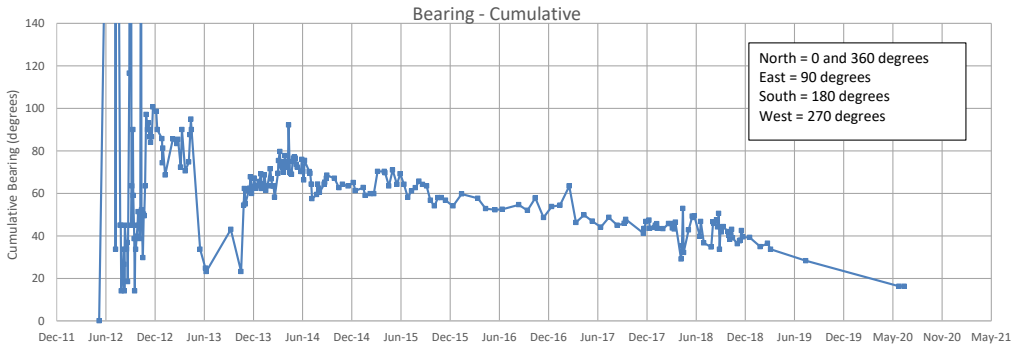

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Main Pit Instrumentation Data

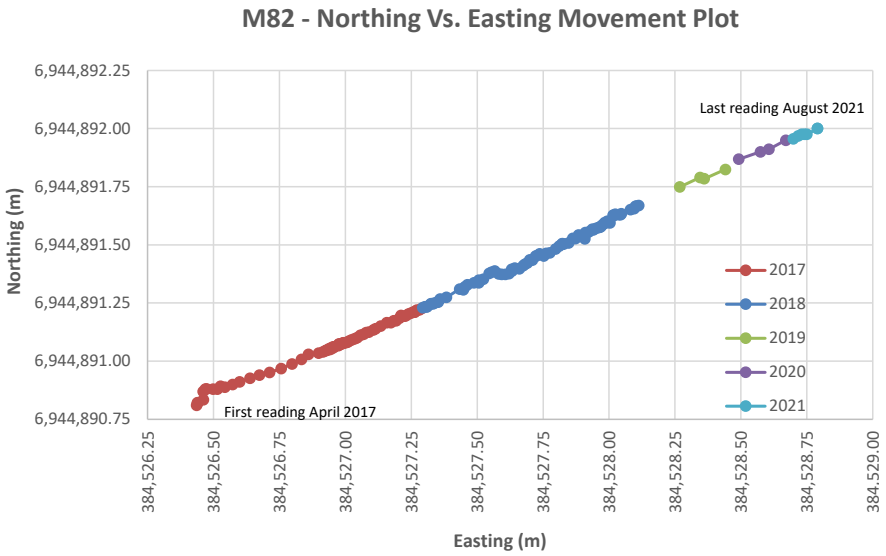
Survey Hub – M81

Job No: 1CM002.073

Filename: ApG_2021MainPitInstrumentation.pptx

Minto Mine

Date:	Prepared by	Figure:
October 2021	PHM	4



Notes:
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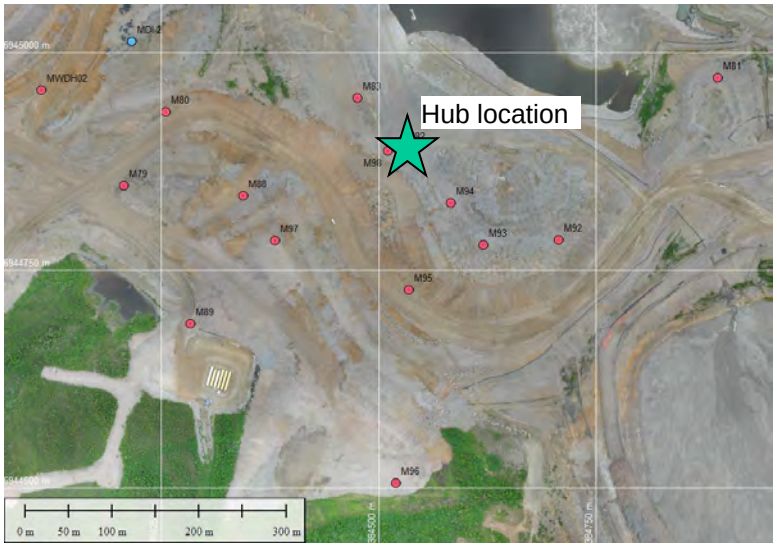

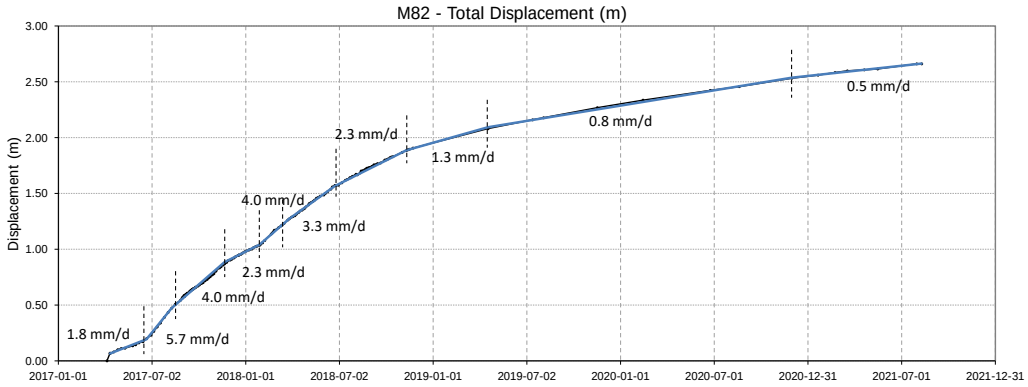

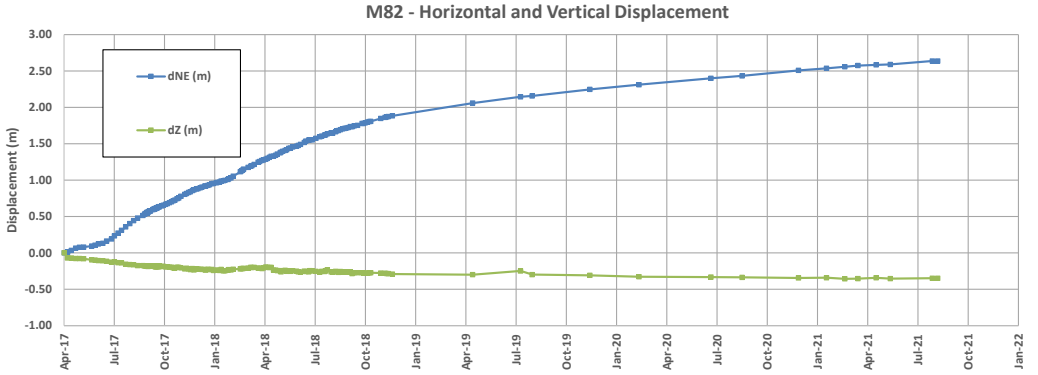

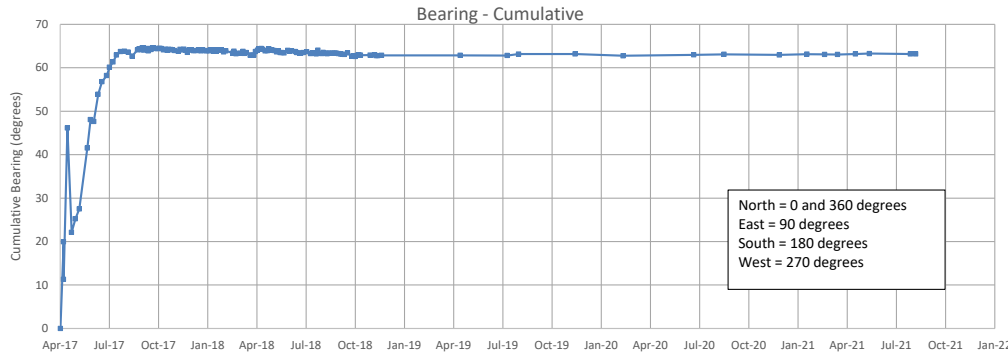

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Main Pit Instrumentation Data

Survey Hub – M82

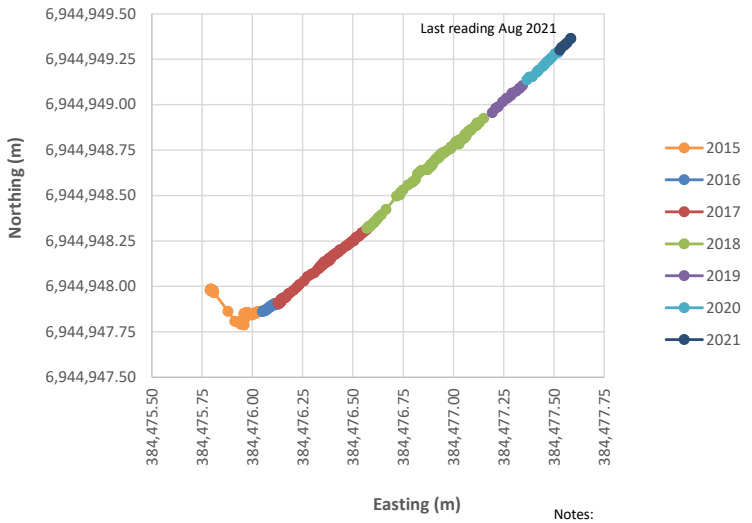
Job No: 1CM002.073

Filename: ApG_2021MainPitInstrumentation.pptx

Minto Mine

Date:	Prepared by	Figure:
October 2021	PHM	5

M83 - Northing Vs. Easting Movement Plot



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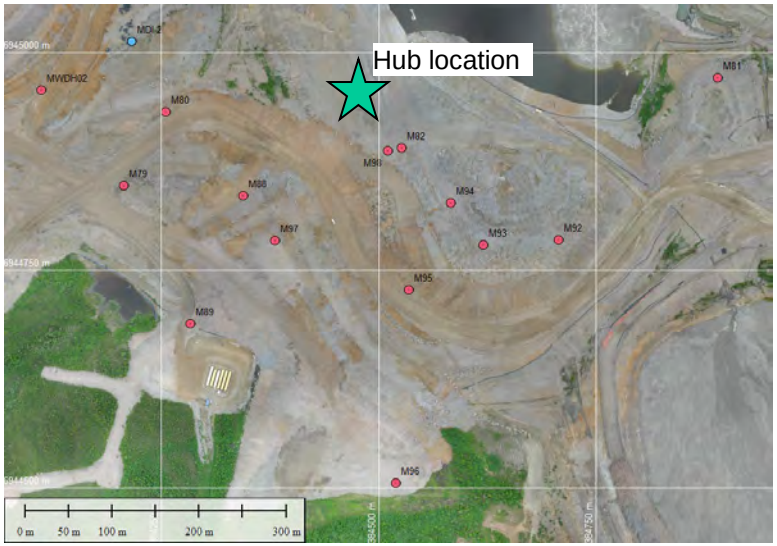

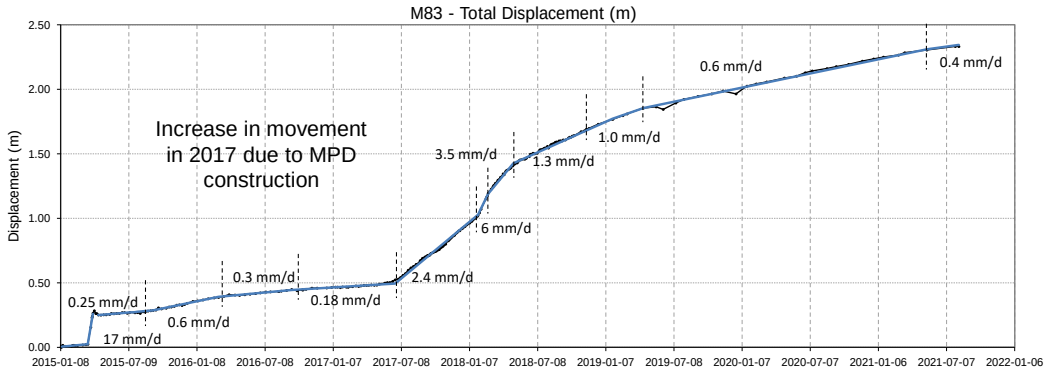

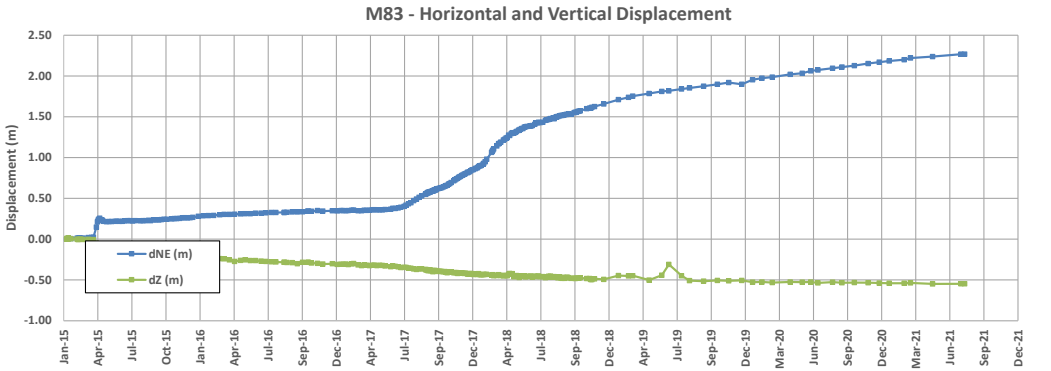

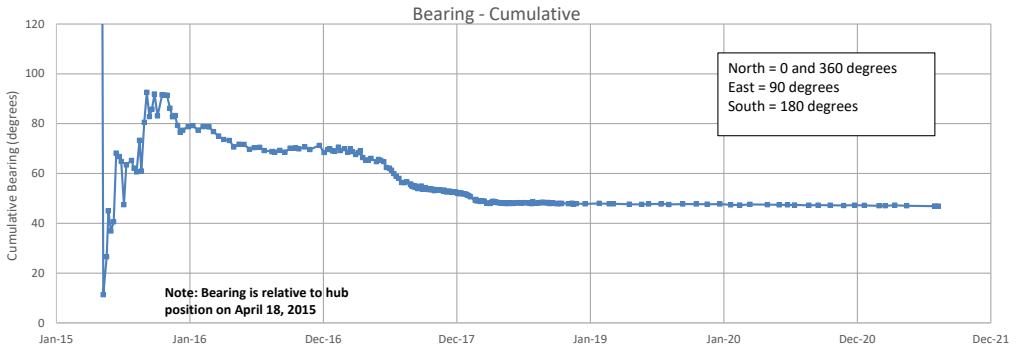

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Main Pit Instrumentation Data

Survey Hub – M83

Job No: 1CM002.073

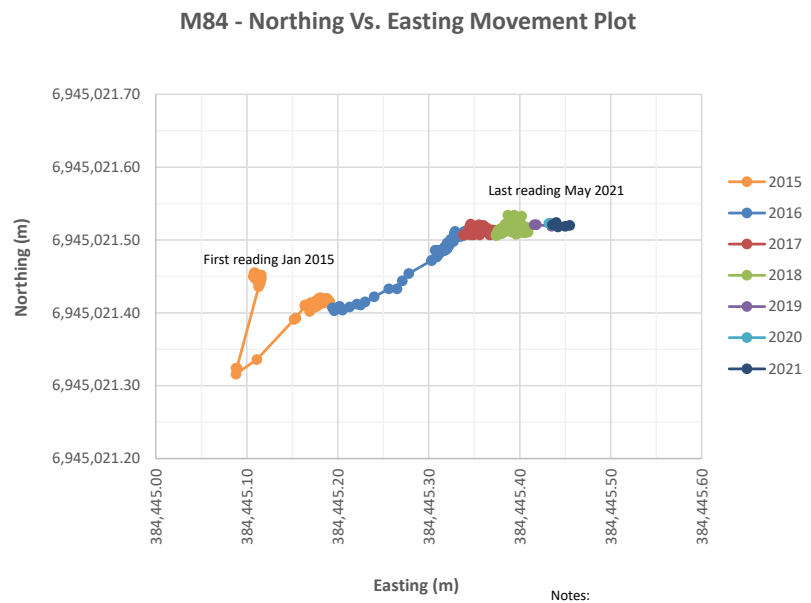
Filename: ApG_2021MainPitInstrumentation.pptx

Minto Mine

Date: October 2021

Prepared by PHM

Figure: **6**



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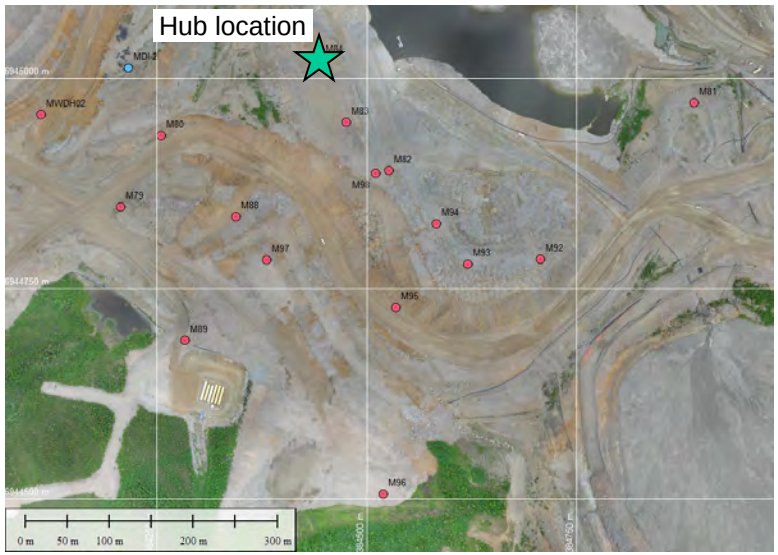

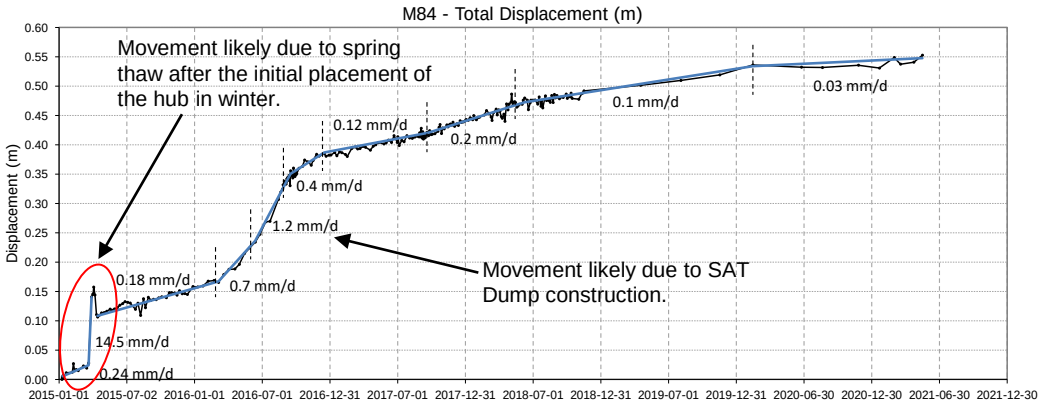

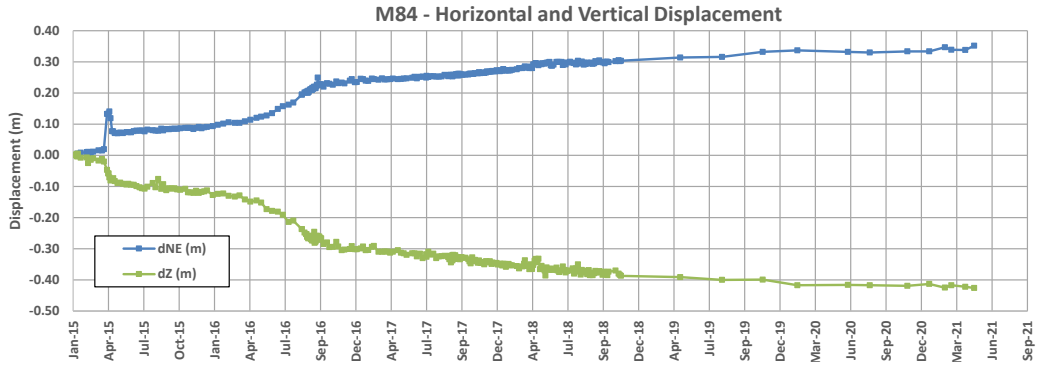

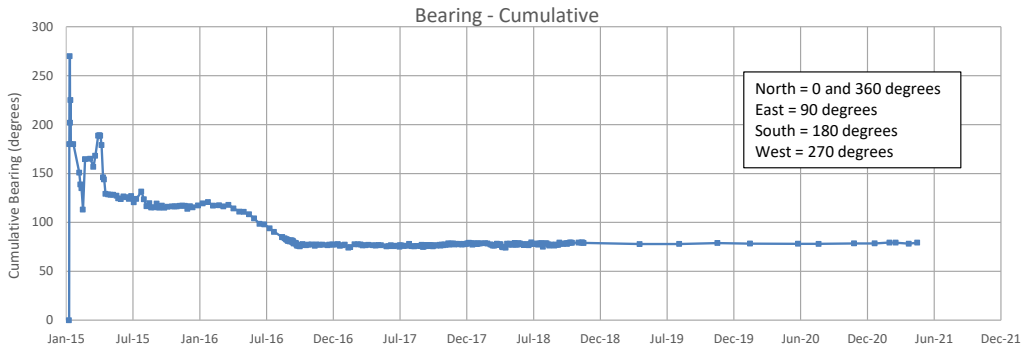

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Main Pit Instrumentation Data

Survey Hub – M84

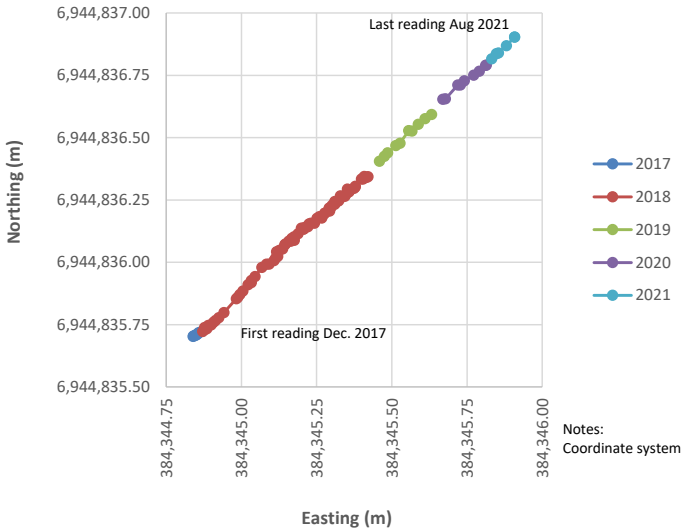
Job No: 1CM002.073

Filename: ApG_2021MainPitInstrumentation.pptx

Minto Mine

Date:	Prepared by	Figure:
October 2021	PHM	7

M88 - Northing Vs. Easting Movement Plot



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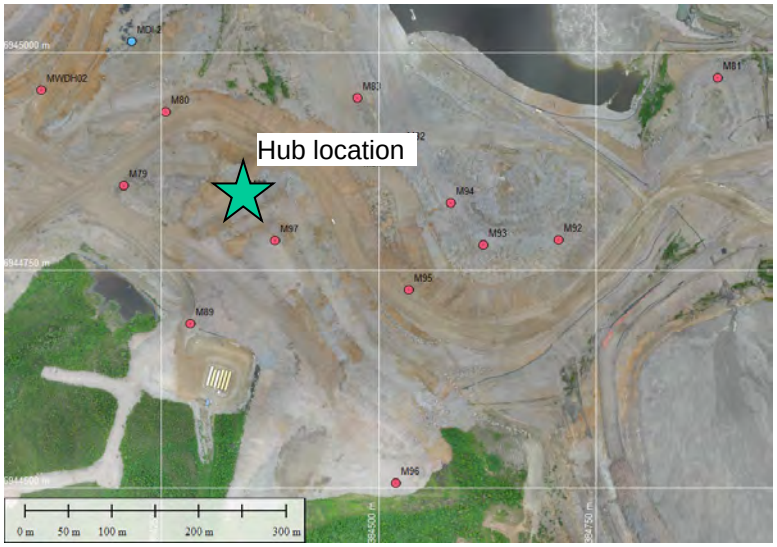

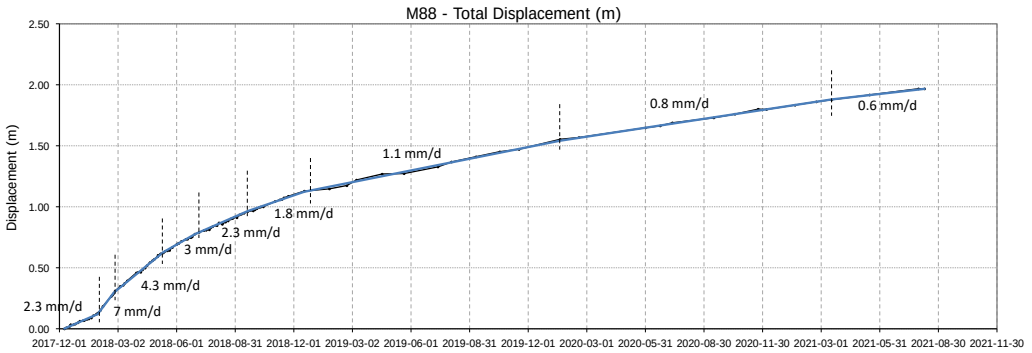

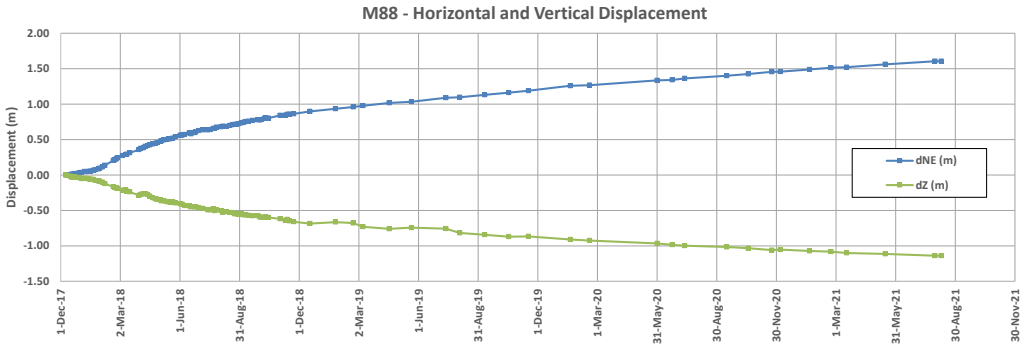

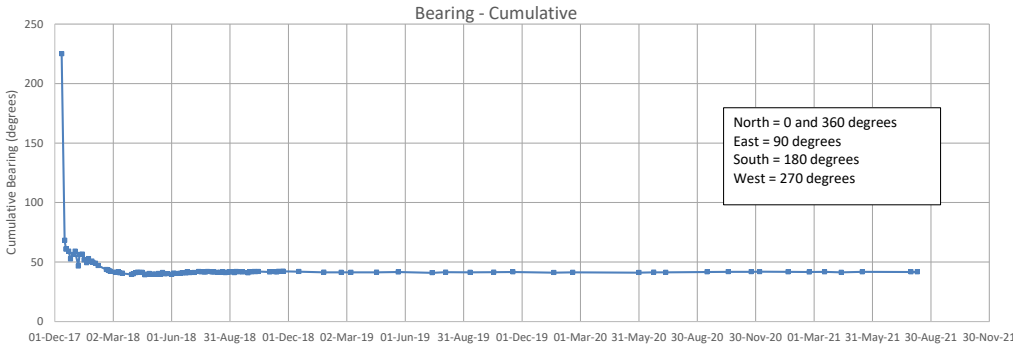

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Main Pit Instrumentation Data

Survey Hub – M88

Job No: 1CM002.073

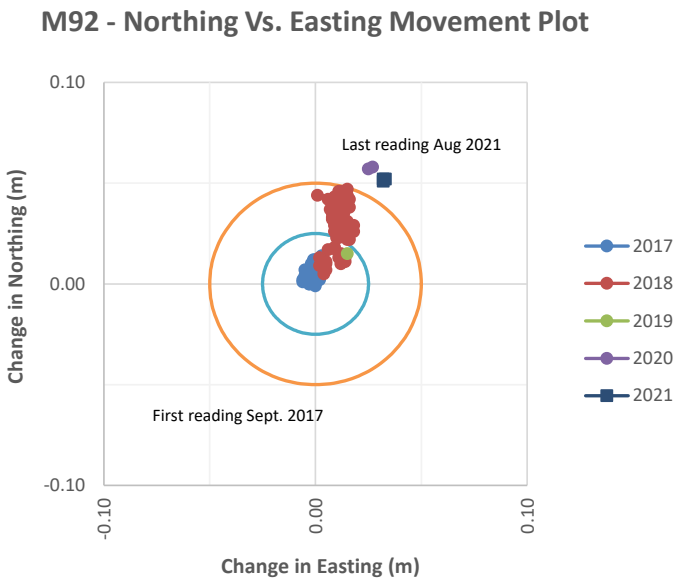
Filename: ApG_2021MainPitInstrumentation.pptx

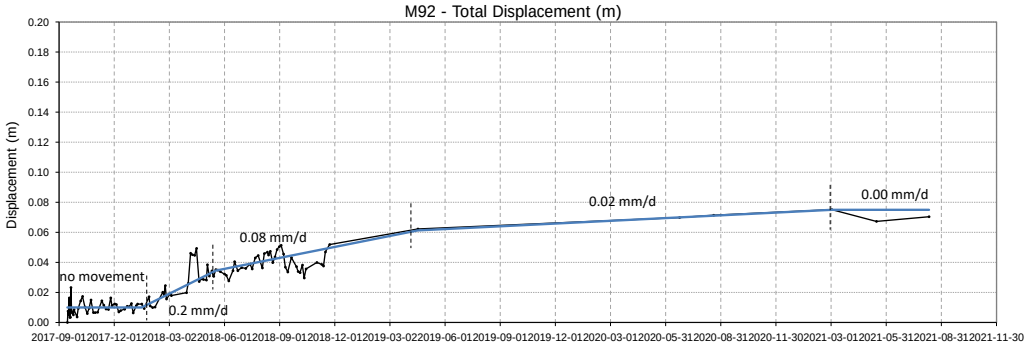
Minto Mine

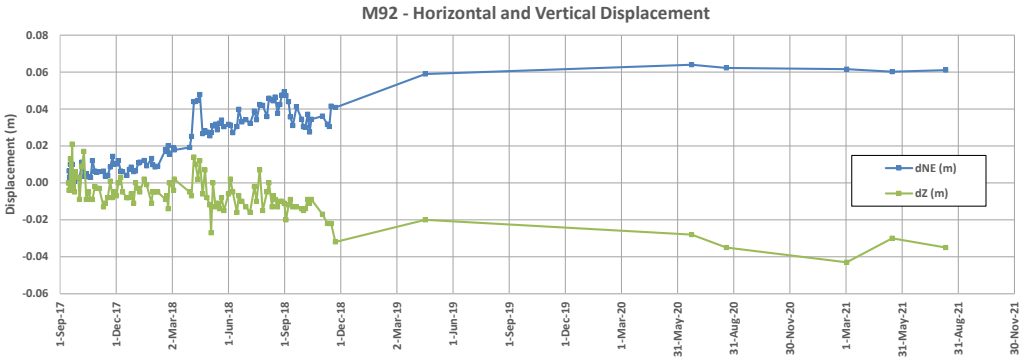
Date: October 2021

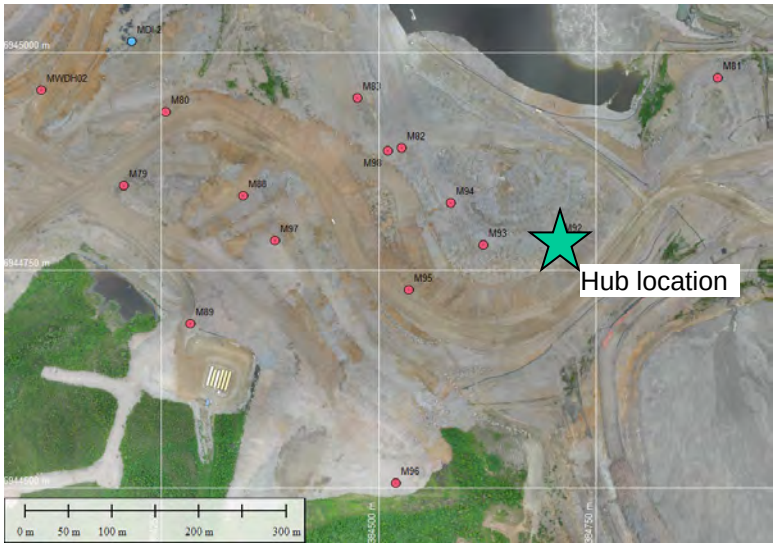
Prepared by PHM

Figure: **8**









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MINTO

Main Pit Instrumentation Data

Survey Hub– M92

Job No: 1CM002.073

Filename: ApG_2021MainPitInstrumentation.pptx

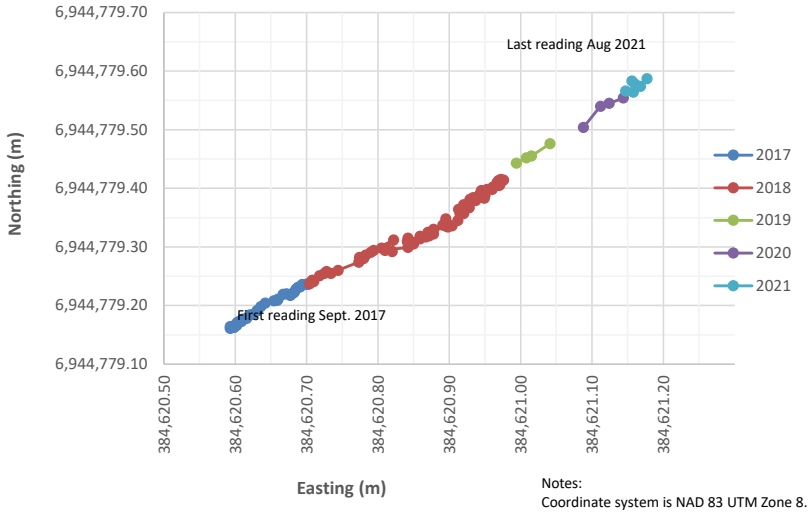
Minto Mine

Date: October 2021

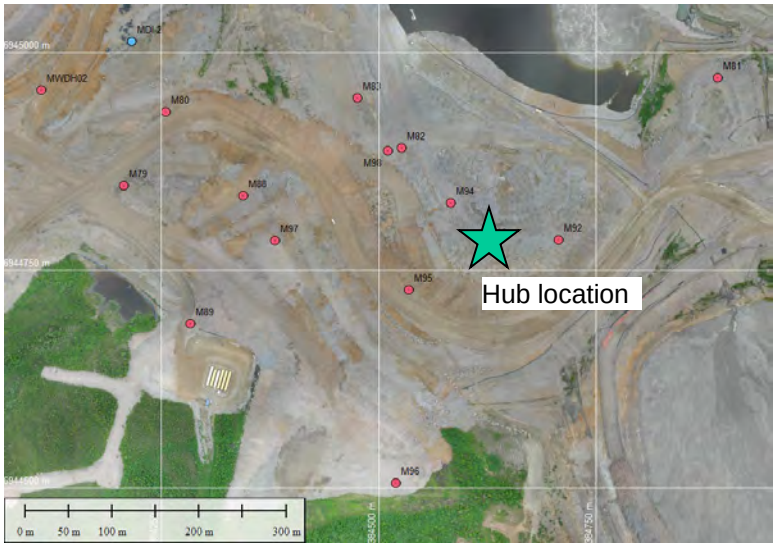
Prepared by PHM

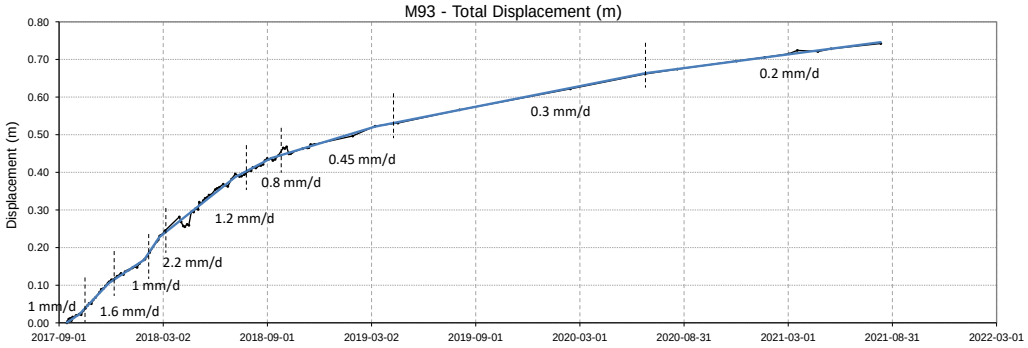
Figure: **9**

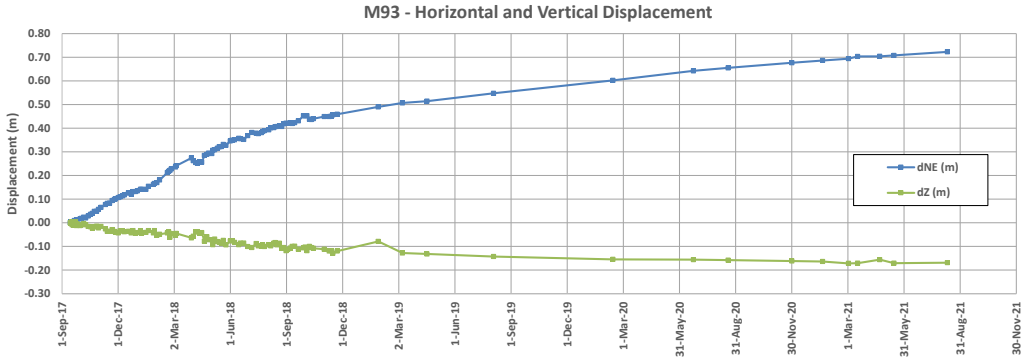
M93 - Northing Vs. Easting Movement Plot

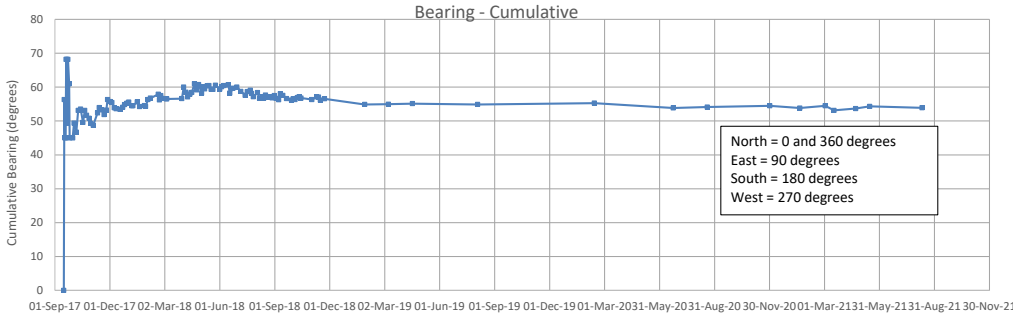


Notes:
Coordinate system is NAD 83 UTM Zone 8.









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srk consulting

MINTO

Main Pit Instrumentation Data

Survey Hub – M93

Job No: 1CM002.073

Filename: ApG_2021MainPitInstrumentation.pptx

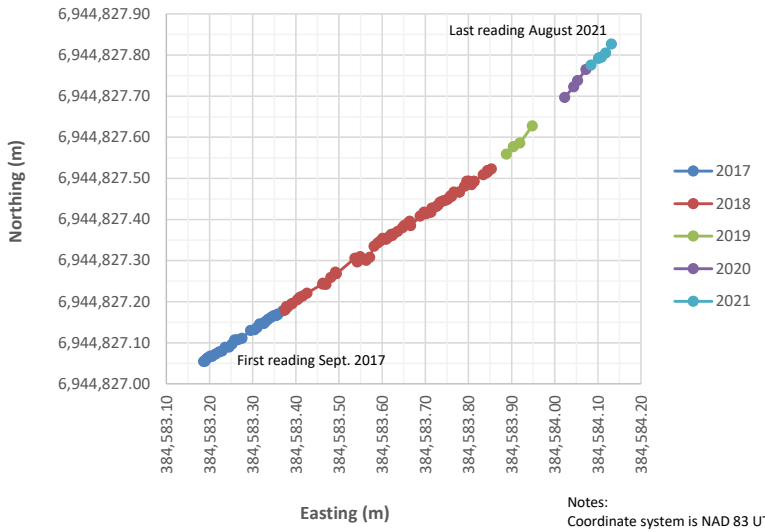
Minto Mine

Date: October 2021

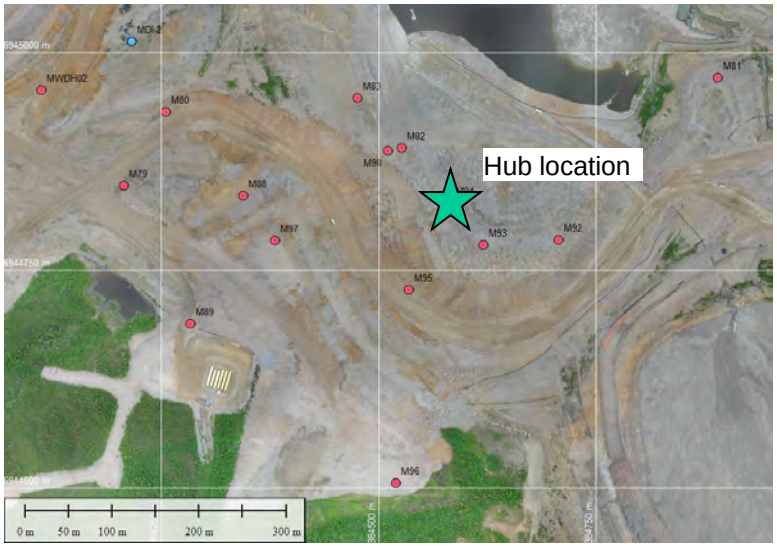
Prepared by PHM

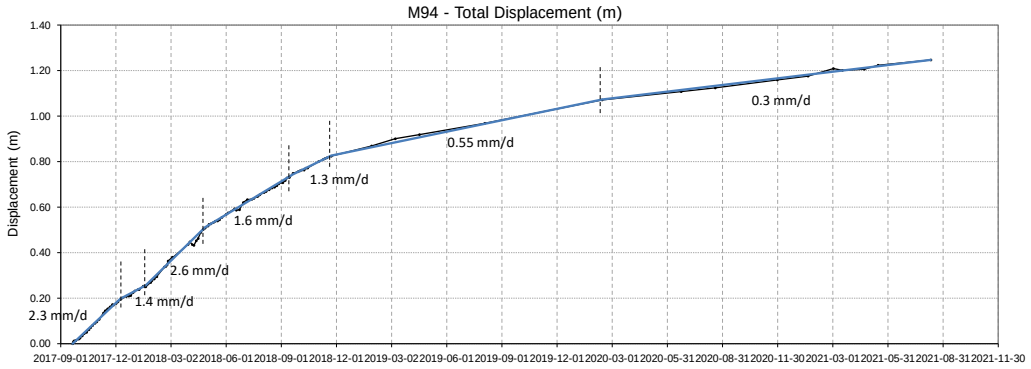
Figure: **10**

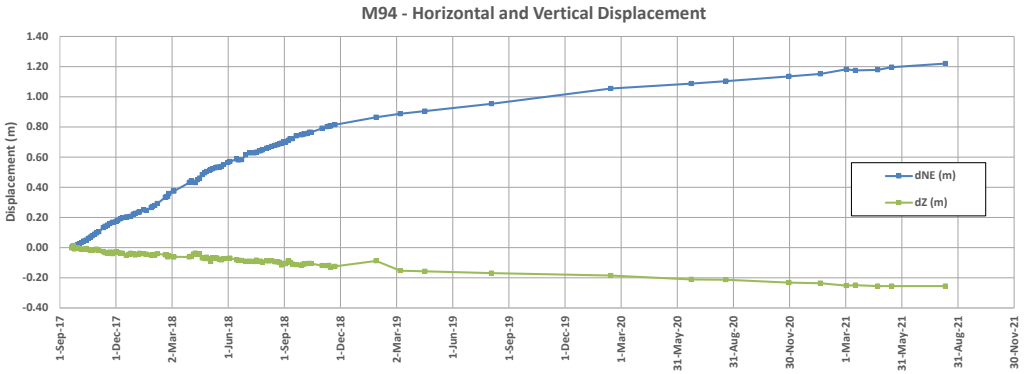
M94 - Northing Vs. Easting Movement Plot

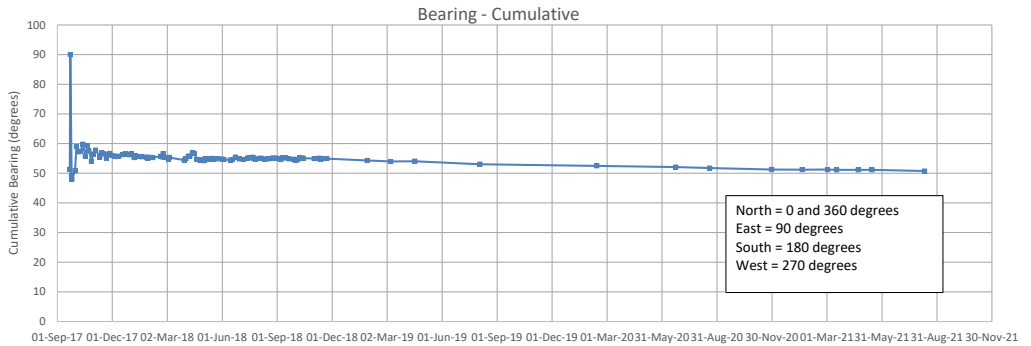


Notes:
Coordinate system is NAD 83 UTM Zone 8.









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MINTO

Main Pit Instrumentation Data

Survey Hub – M94

Job No: 1CM002.073

Filename: ApG_2021MainPitInstrumentation.pptx

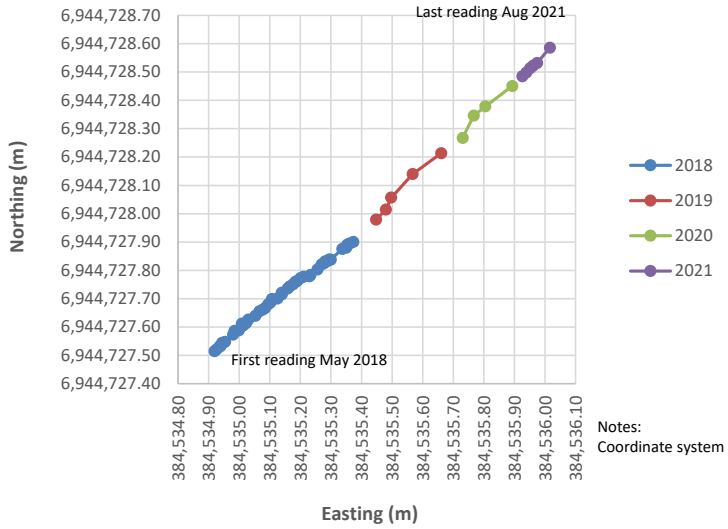
Minto Mine

Date: October 2021

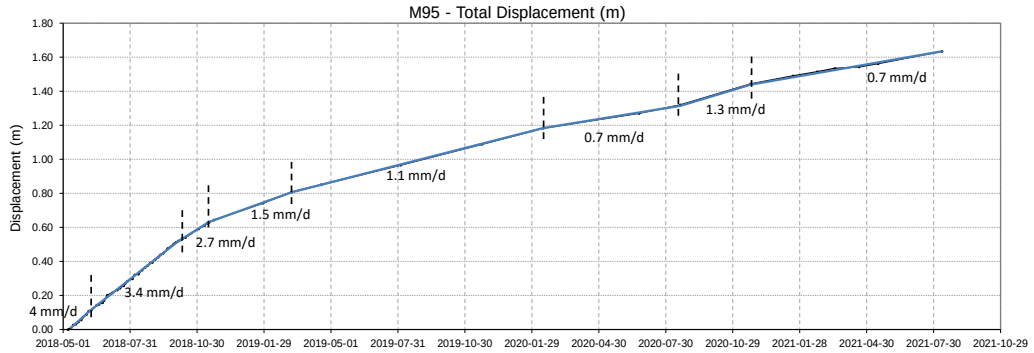
Prepared by PHM

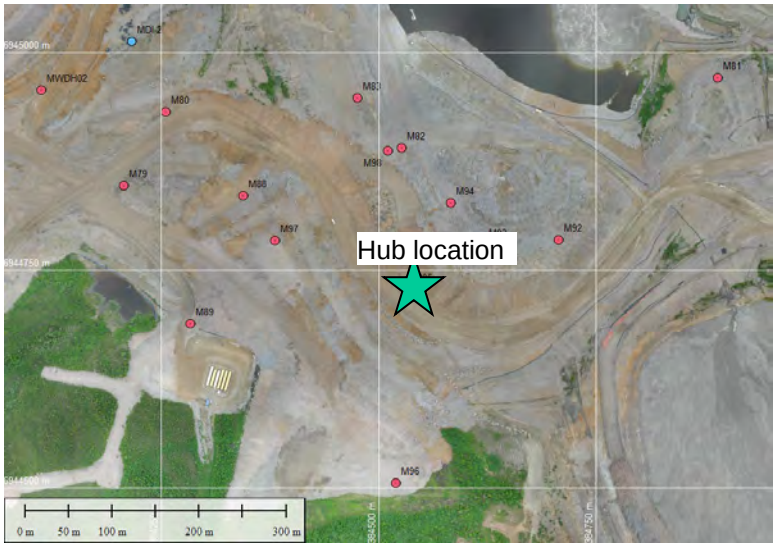
Figure: **11**

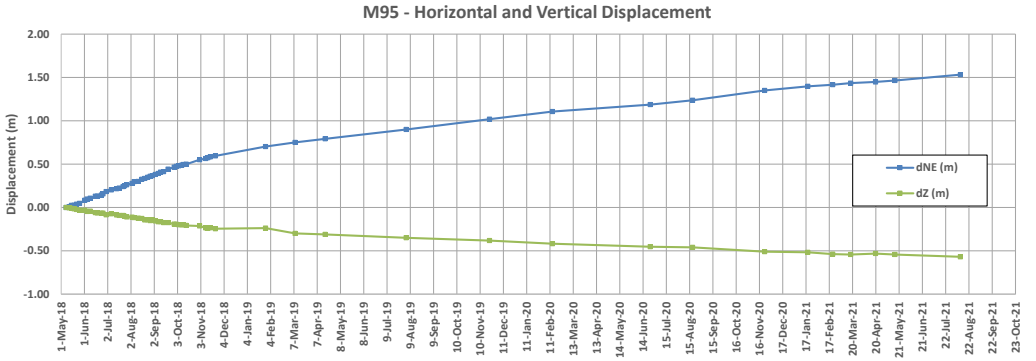
M95 - Northing Vs. Easting Movement Plot

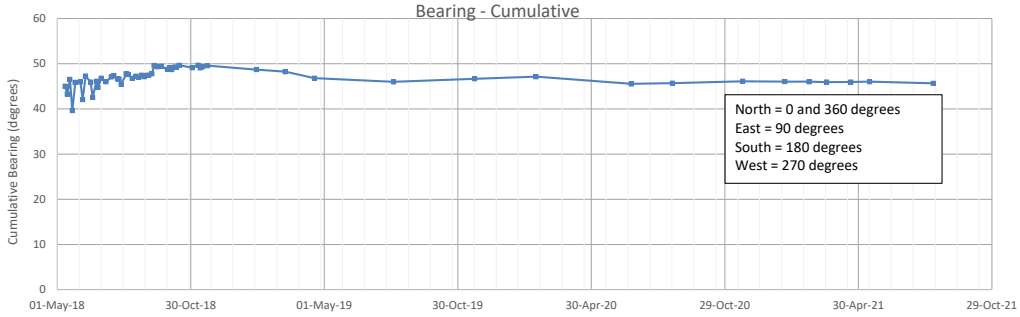


Notes:
Coordinate system is NAD 83 UTM Zone









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MINTO

Main Pit Instrumentation Data

Survey Hub – M95

Job No: 1CM002.073

Filename: ApG_2021MainPitInstrumentation.pptx

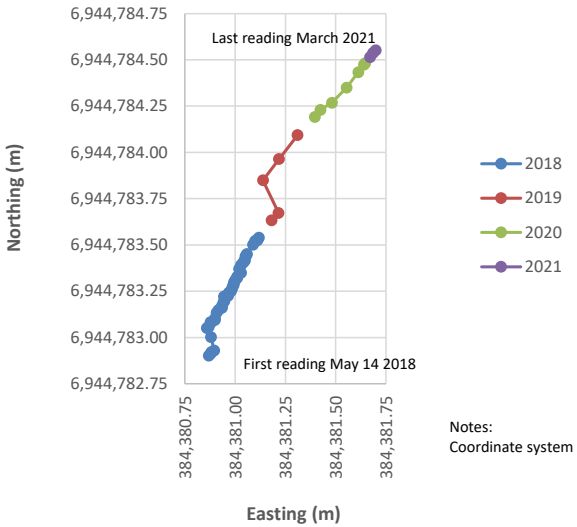
Minto Mine

Date: October 2021

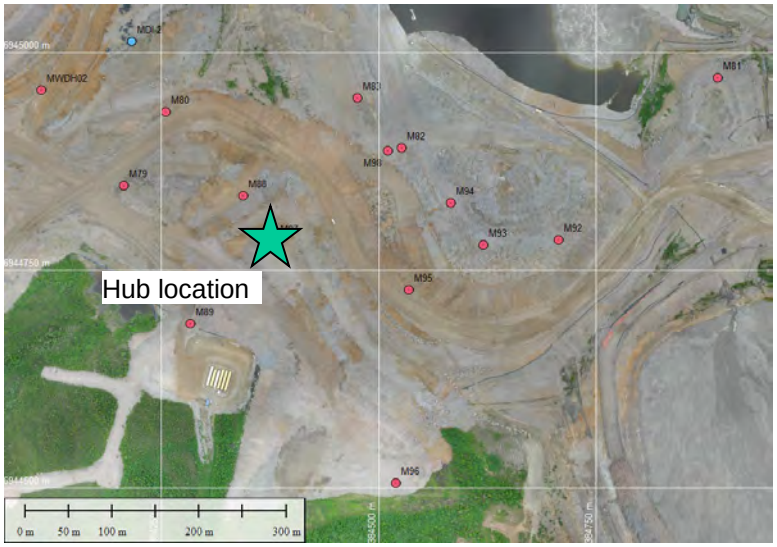
Prepared by PHM

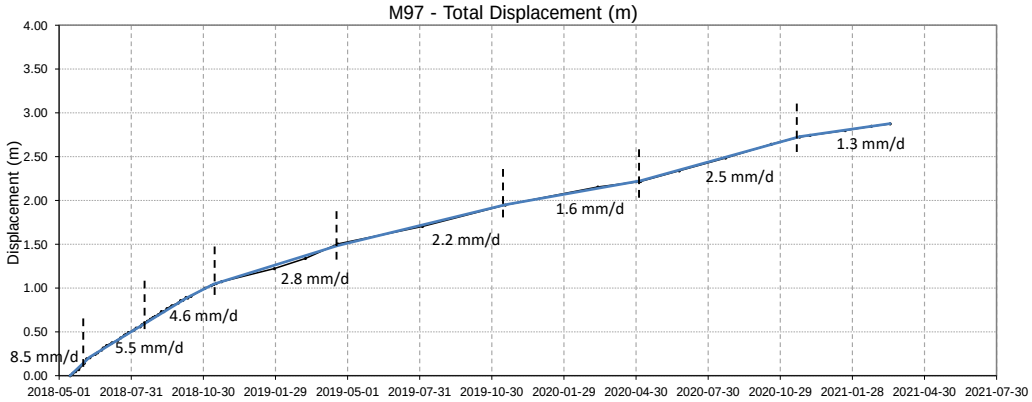
Figure: **12**

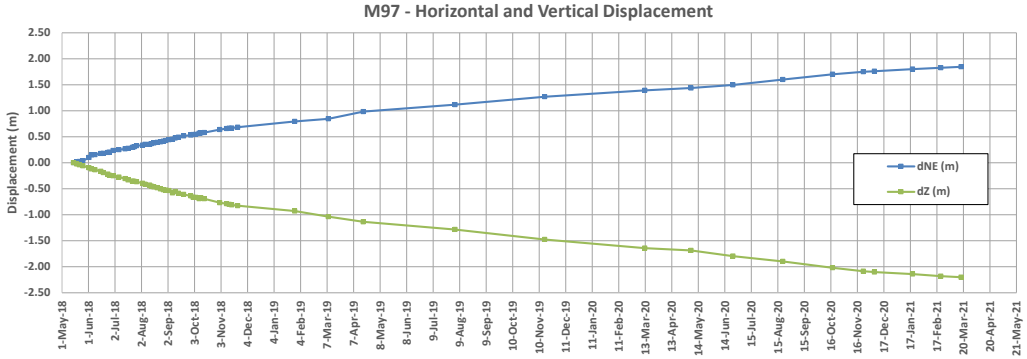
M97 - Northing Vs. Easting Movement Plot

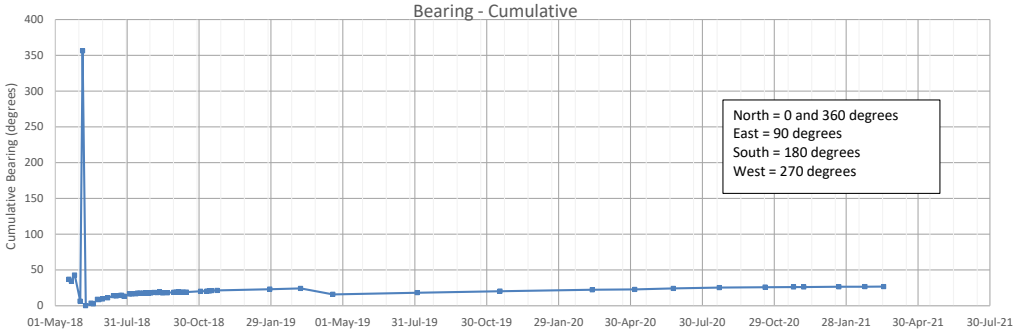


Notes:
Coordinate system is NAD 83 UTM Zone 8.









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MINTO

Main Pit Instrumentation Data

Survey Hub – M97

Job No: 1CM002.073

Filename: ApG_2021MainPitInstrumentation.pptx

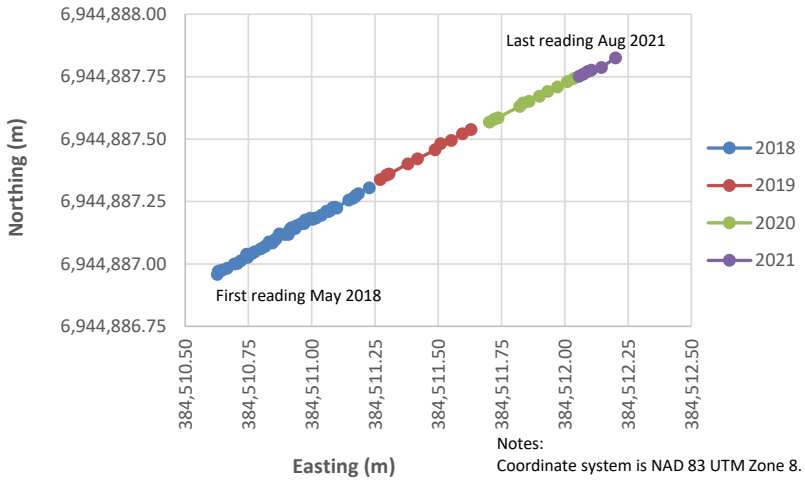
Minto Mine

Date: October 2021

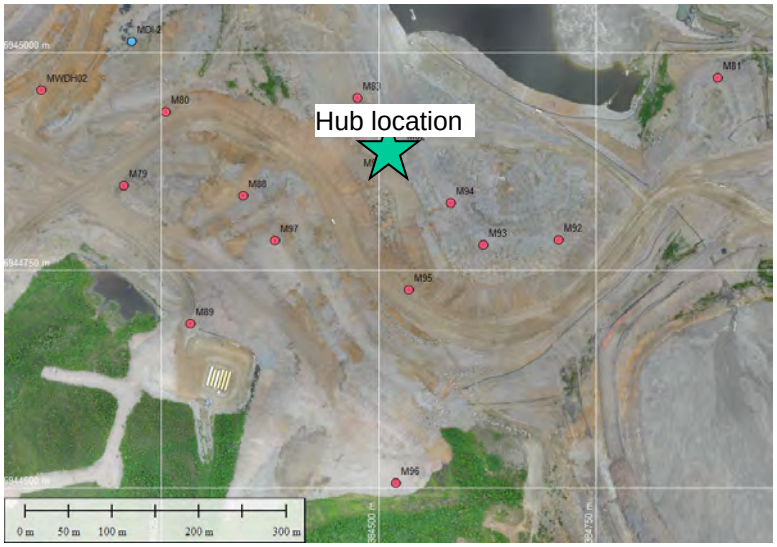
Prepared by PHM

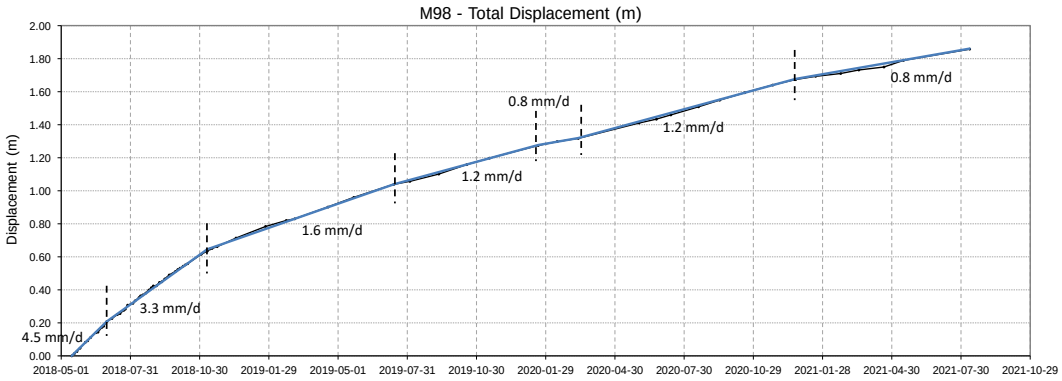
Figure: **13**

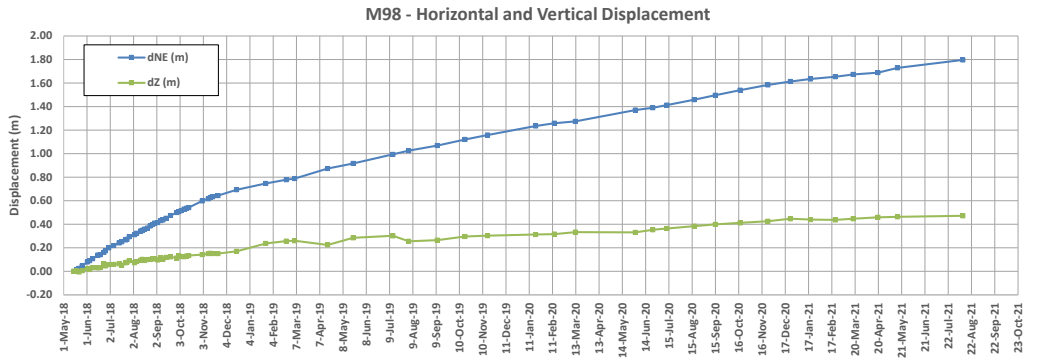
M98 - Northing Vs. Easting Movement Plot

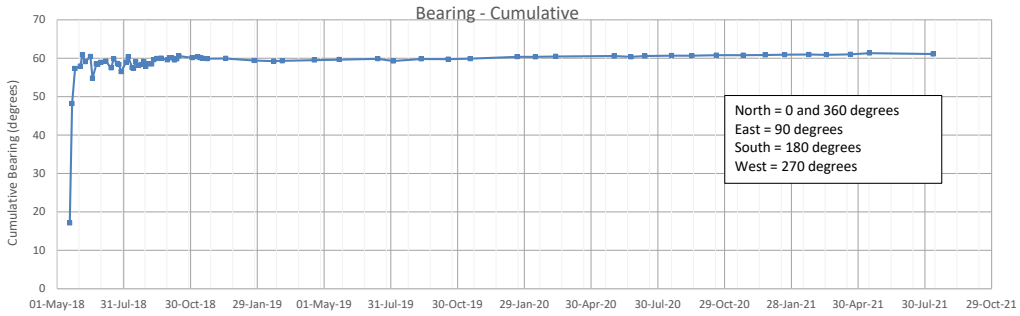


Notes:
Coordinate system is NAD 83 UTM Zone 8.









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MINTO

Main Pit Instrumentation Data

Survey Hub – M98

Job No: 1CM002.073

Filename: ApG_2021MainPitInstrumentation.pptx

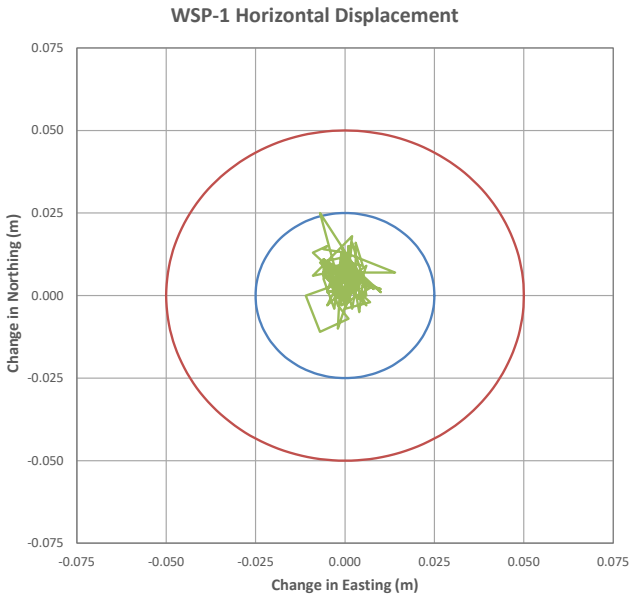
Minto Mine

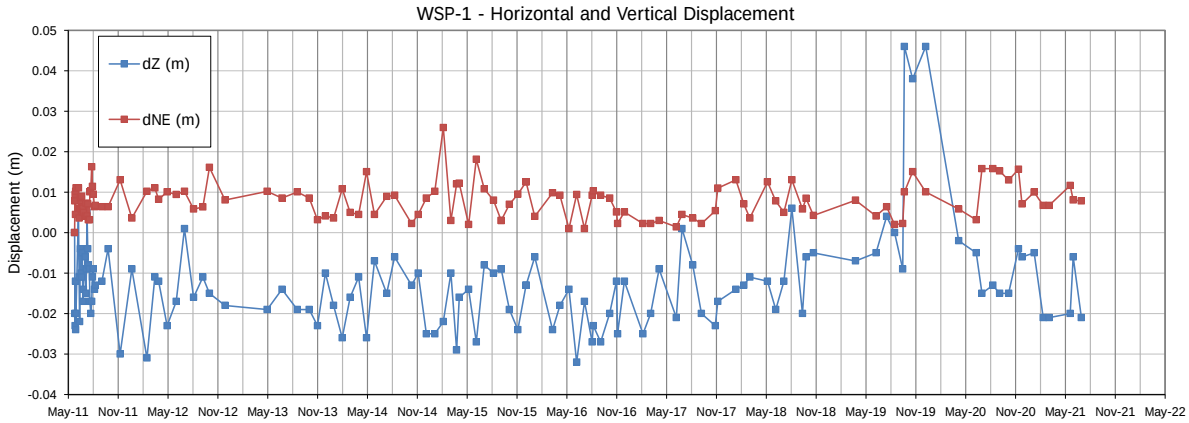
Date: October 2021

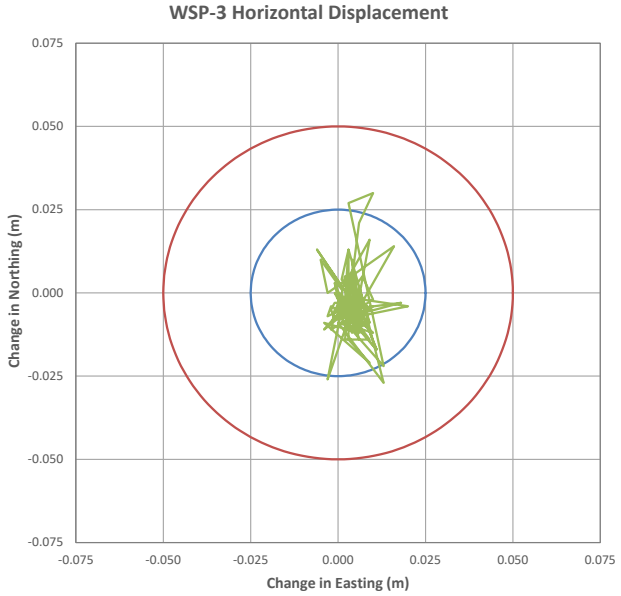
Prepared by PHM

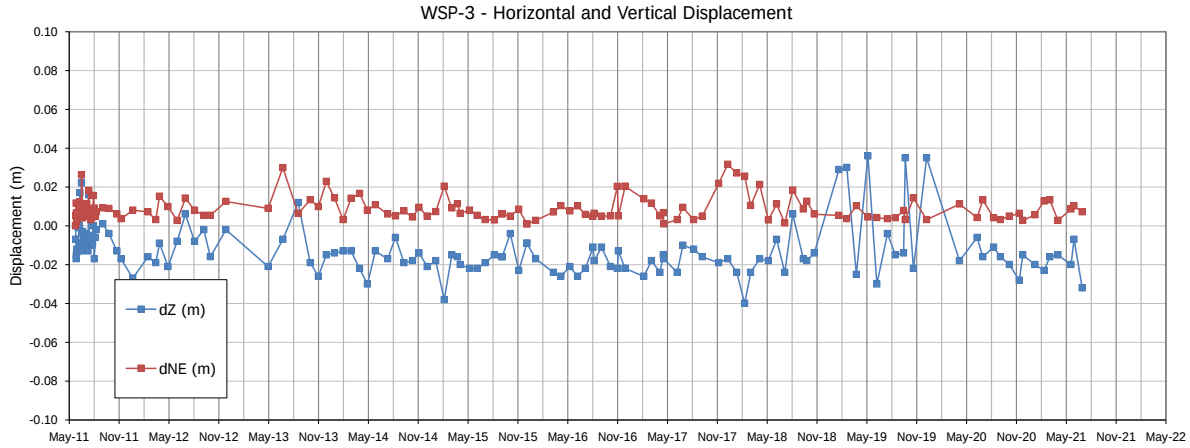
Figure: **14**

Appendix H WSP Instrumentation Data









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MINTO

Water Storage Pond Data

Survey Hubs – WSP-1 and WSP-3

Job No: 1CM002.073

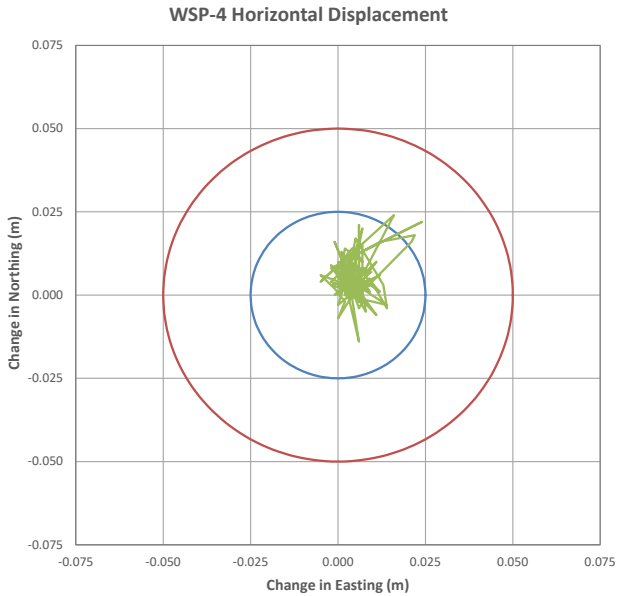
Filename: ApH_WaerStoragePond2021.pptx

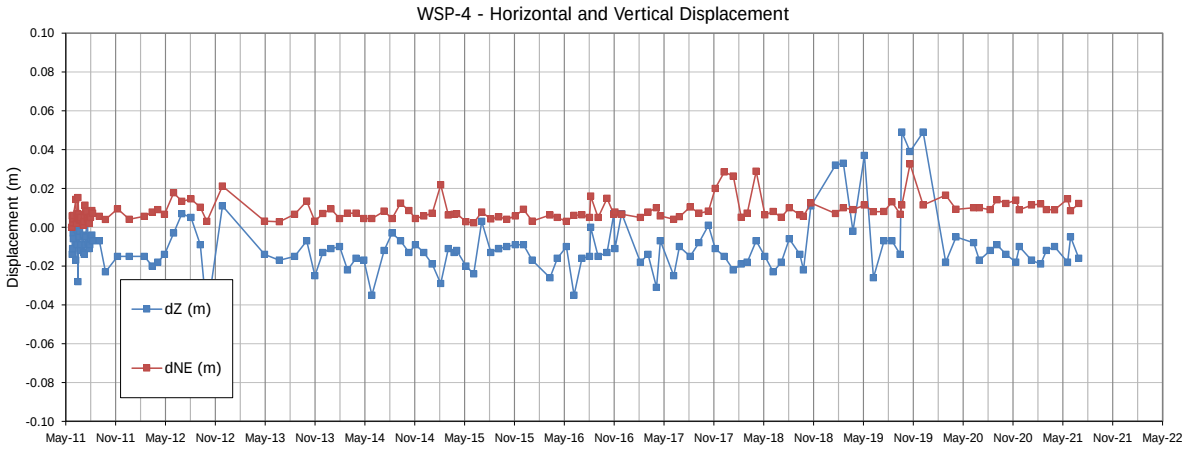
Minto Mine

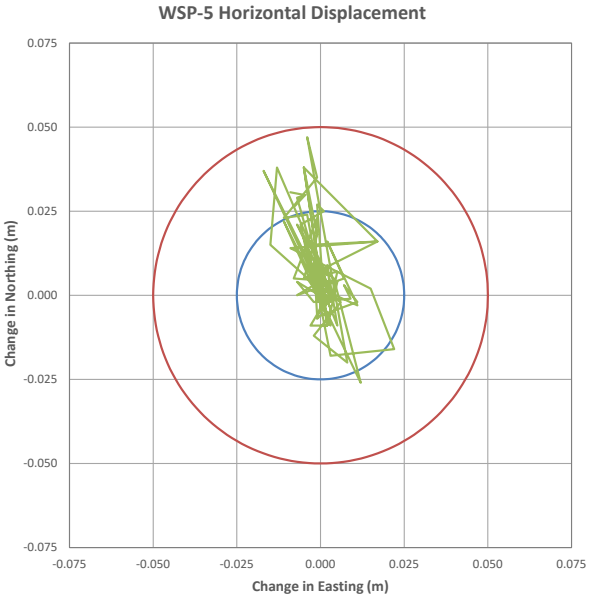
Date: October 2021

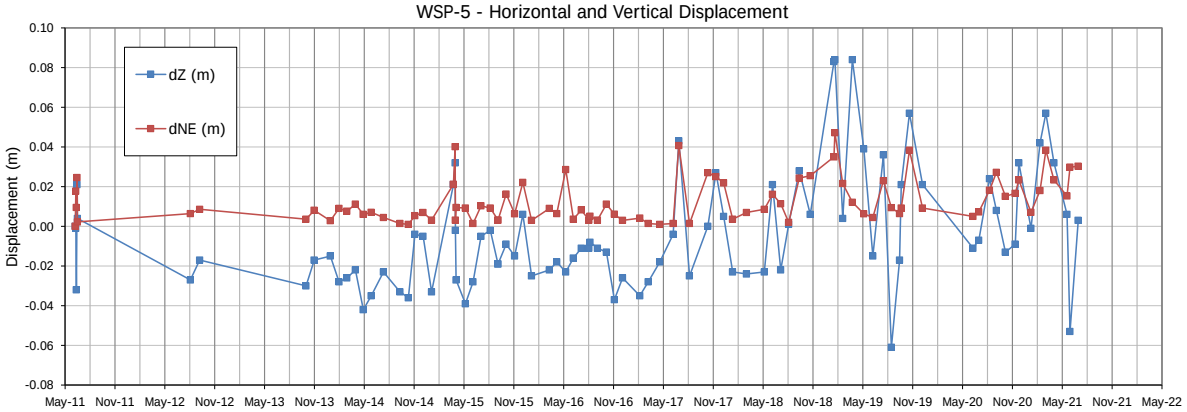
Prepared by PHM

Figure: **1**









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MINTO

Water Storage Pond Data

Survey Hubs – WSP-4 and WSP-5

Job No: 1CM002.073

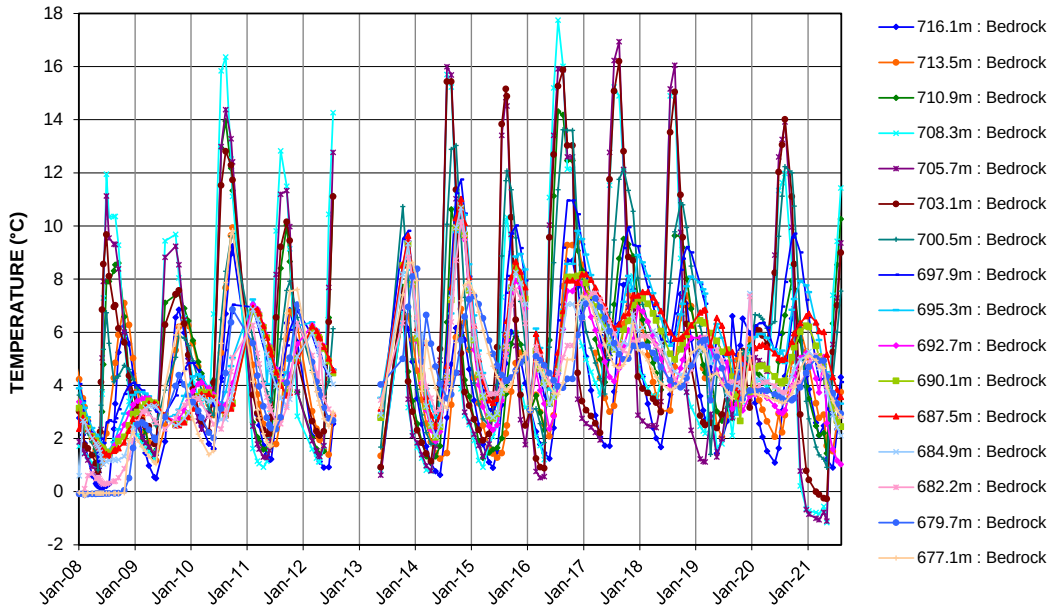
Filename: ApH_WaerStoragePond2021.pptx

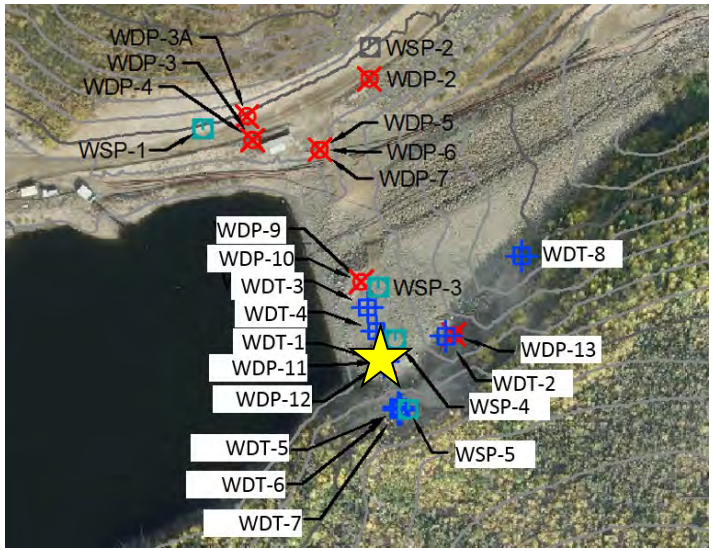
Minto Mine

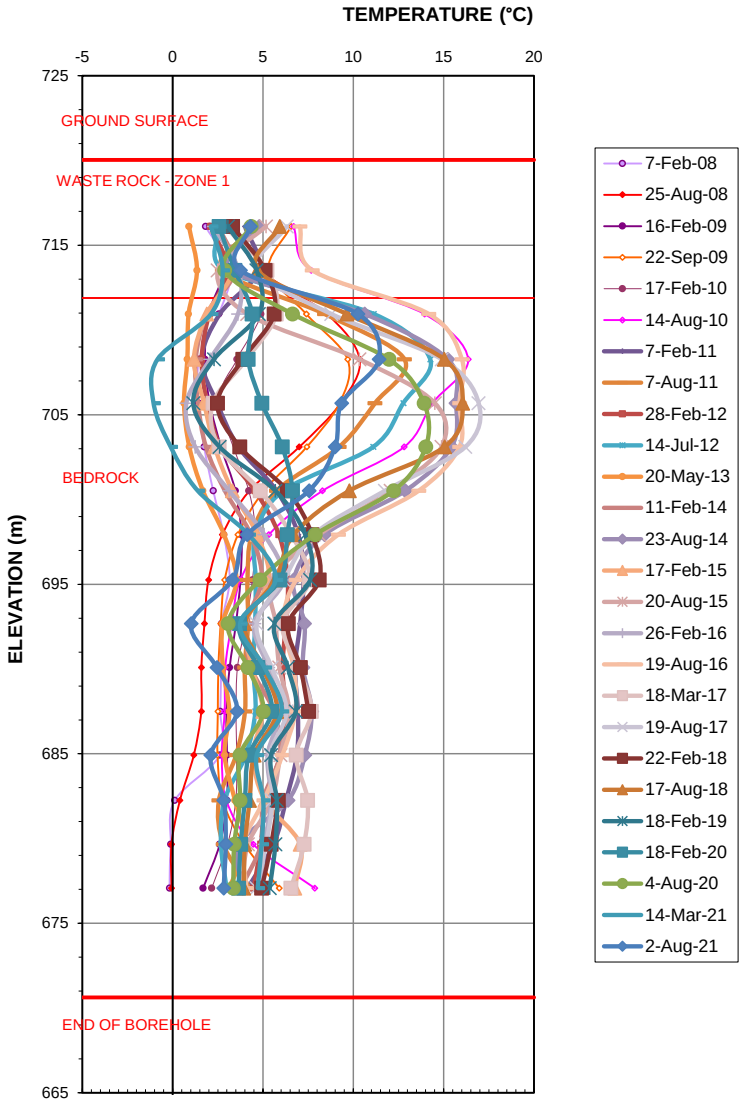
Date: October 2021

Prepared by PHM

Figure: **2**







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MINTO

Water Storage Pond Data

Temperature Cable – WDT-1

Job No: 1CM002.073

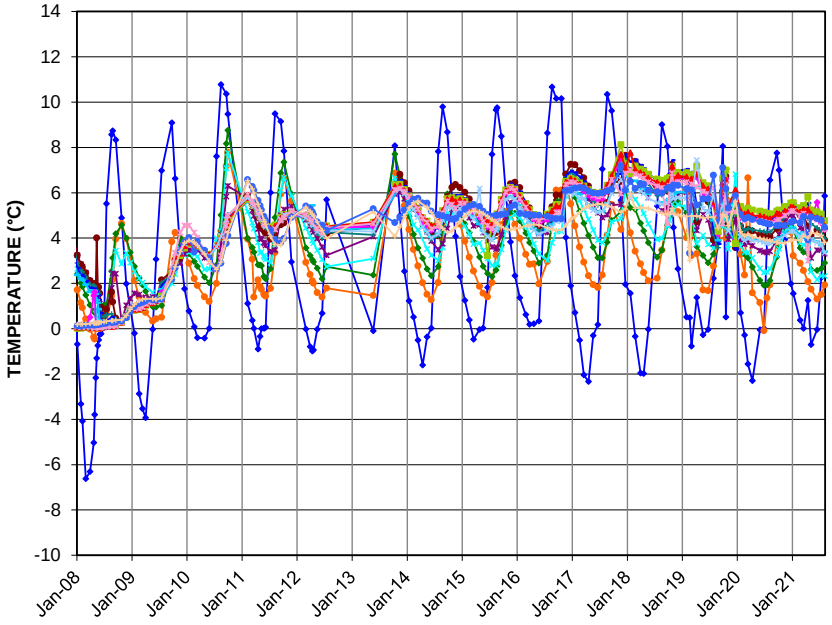
Filename: ApH_WaerStoragePond2021.pptx

Minto Mine

Date: October 2021

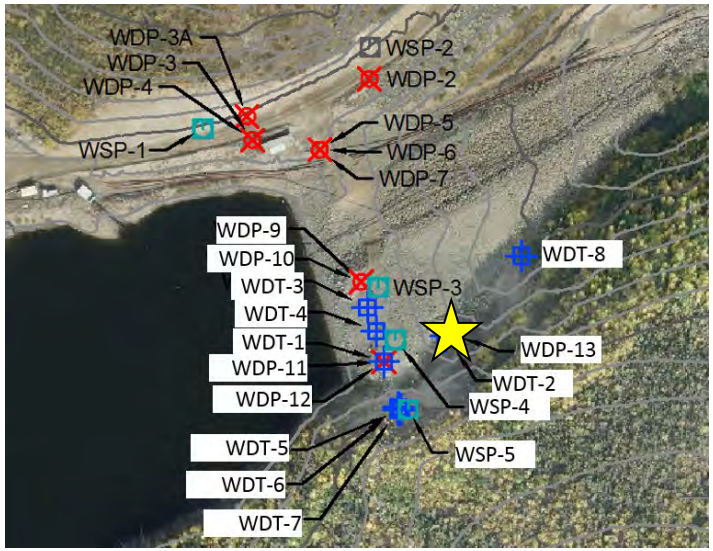
Prepared by: PHM

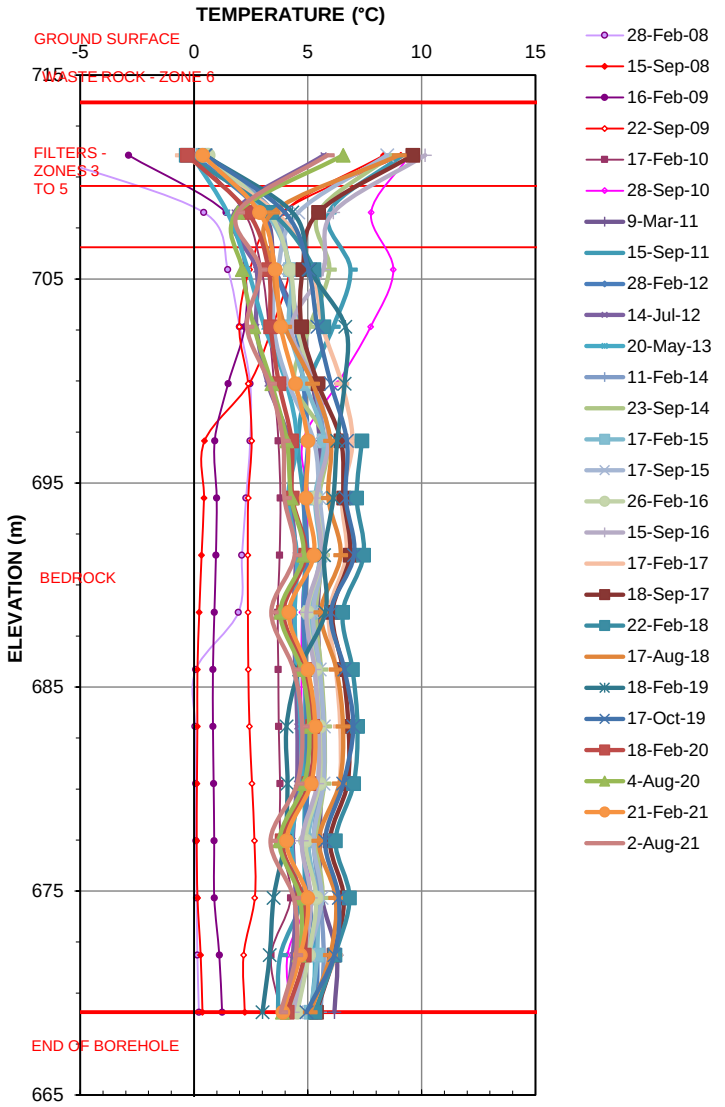
Figure: 3



Sensor El. and Stratigraphy

- 711.1m : Waste Rock-Zone
- 708.3m : Filters-Zones 3 to 5
- 705.5m : Bedrock
- 702.7m : Bedrock
- 699.9m : Bedrock
- 697.1m : Bedrock
- 694.3m : Bedrock
- 691.5m : Bedrock
- 688.7m : Bedrock
- 685.9m : Bedrock
- 683.1m : Bedrock
- 680.3m : Bedrock
- 677.5m : Bedrock
- 674.7m : Bedrock
- 671.9m : Bedrock
- 669.1m : Bedrock





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- 15-Sep-08
- 16-Feb-09
- 22-Sep-09
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- 15-Sep-11
- 28-Feb-12
- 14-Jul-12
- 20-May-13
- 11-Feb-14
- 23-Sep-14
- 17-Feb-15
- 17-Sep-15
- 26-Feb-16
- 15-Sep-16
- 17-Feb-17
- 18-Sep-17
- 22-Feb-18
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- 2-Aug-21

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MINTO

Water Storage Pond Data

Temperature Cable – WDT-2

Job No: 1CM002.073

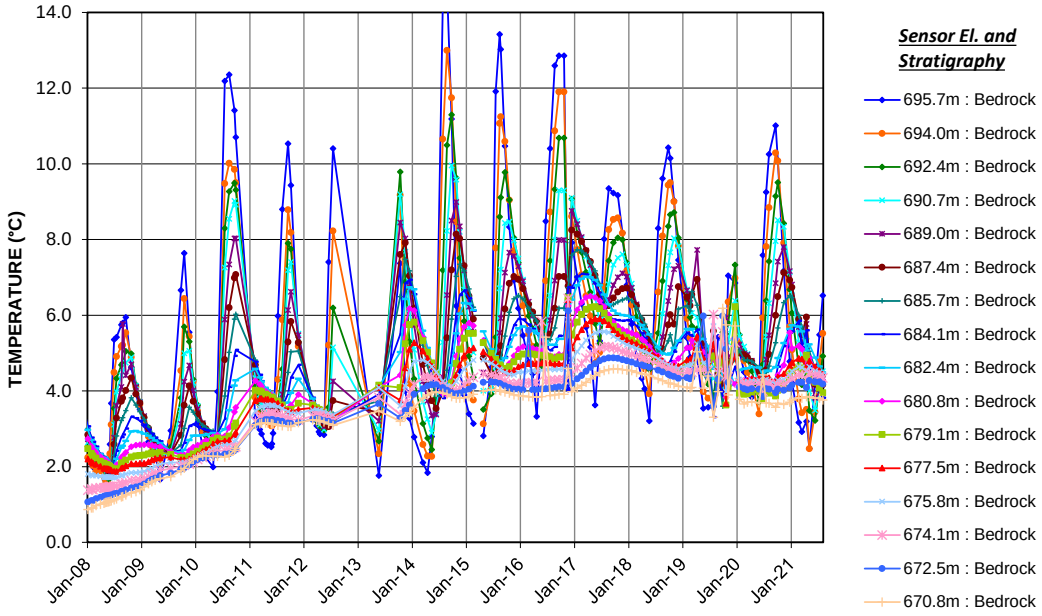
Filename: ApH_WaerStoragePond2021.pptx

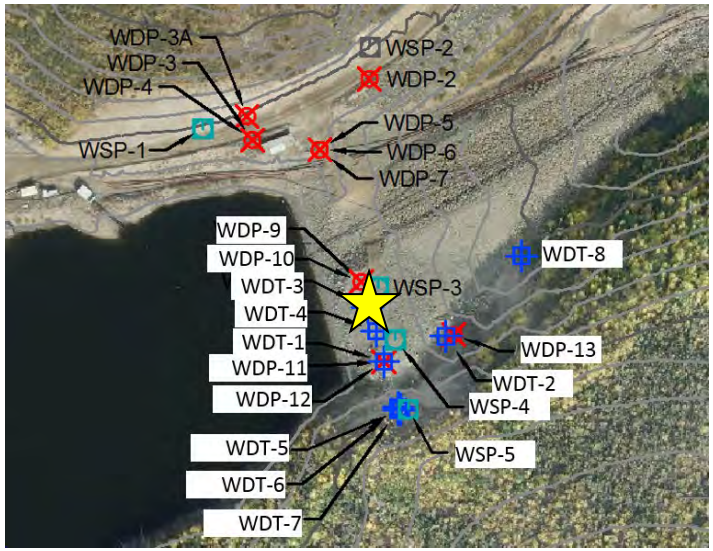
Minto Mine

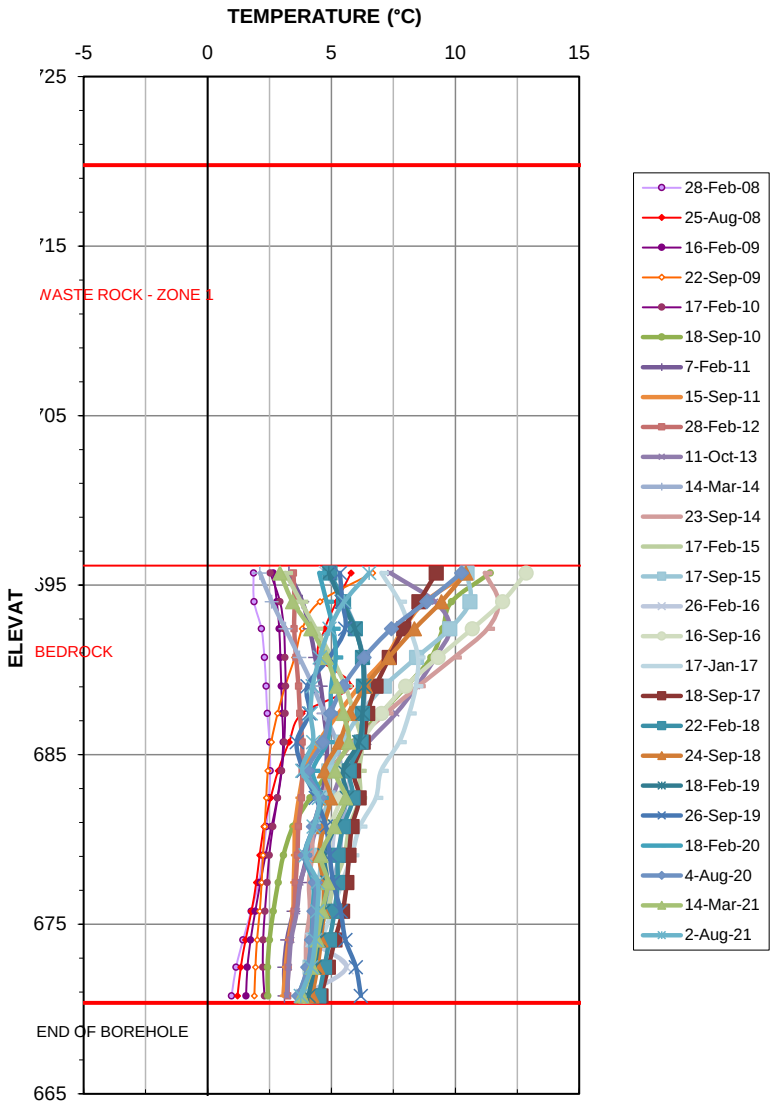
Date: October 2021

Prepared by PHM

Figure: 4







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srk consulting

MINTO

Water Storage Pond Data

Temperature Cable – WDT-3

Job No: 1CM002.073

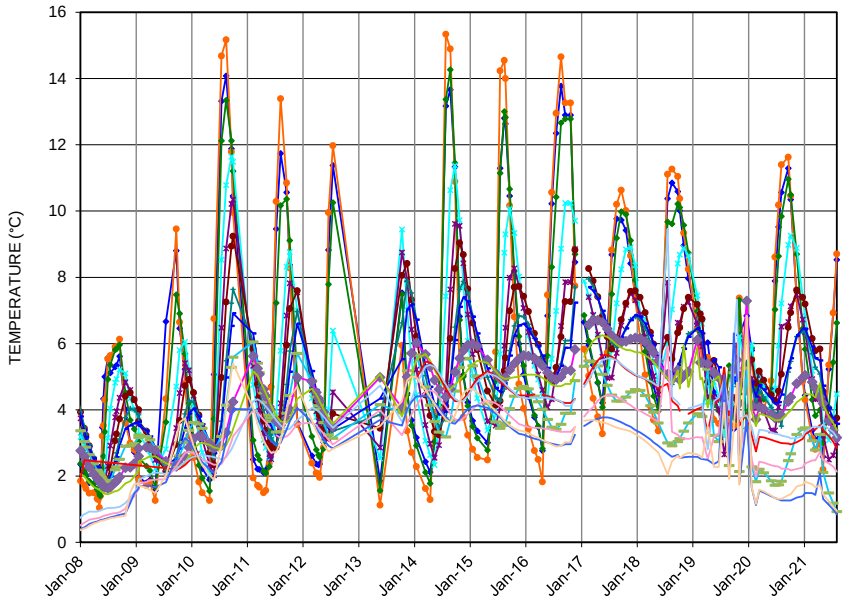
Filename: ApH_WaerStoragePond2021.pptx

Minto Mine

Date: October 2021

Prepared by PHM

Figure: 5



Sensor El. and Stratigraphy

- 702.1m : Bedrock
- 700.0m : Bedrock
- 697.8m : Bedrock
- 695.7m : Bedrock
- 693.6m : Bedrock
- 691.4m : Bedrock
- 689.3m : Bedrock
- 687.2m : Bedrock
- 685.1m : Bedrock
- 683.0m : Bedrock
- 680.8m : Bedrock
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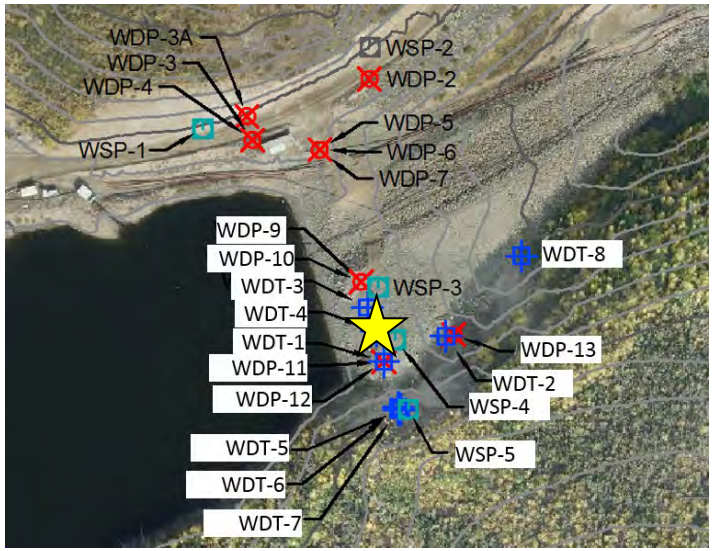
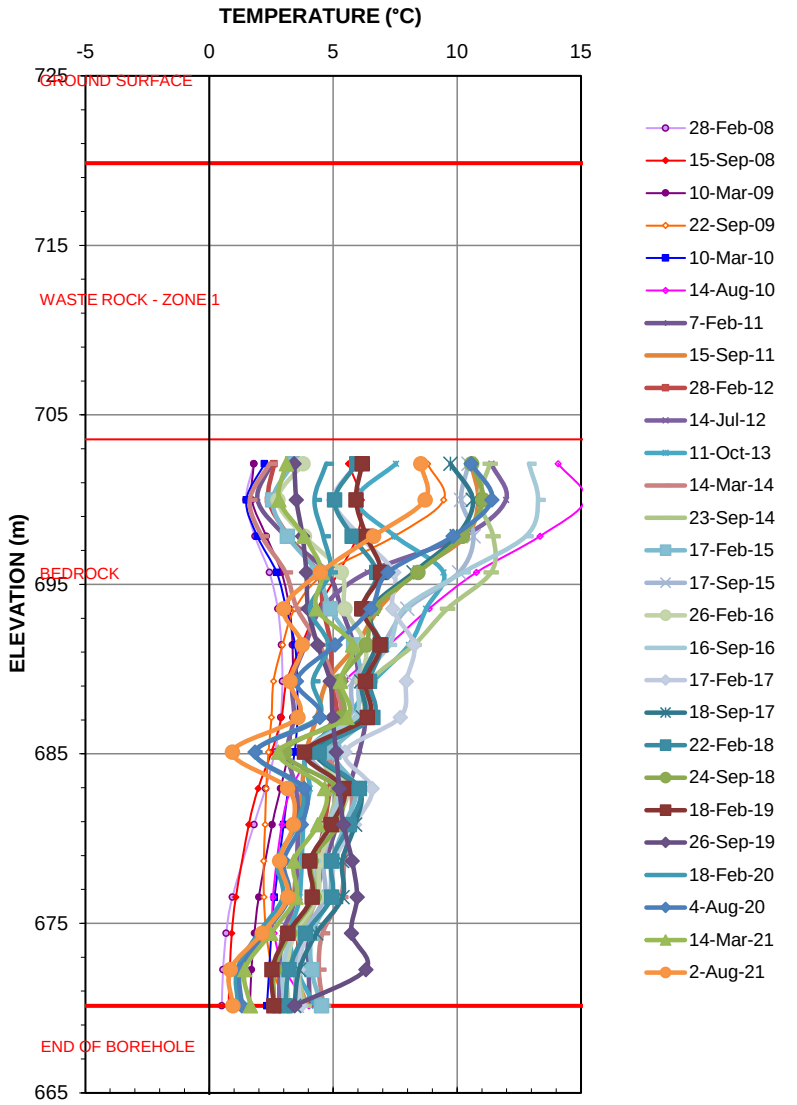
- 670.1m : Bedrock





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MINTO

Water Storage Pond Data

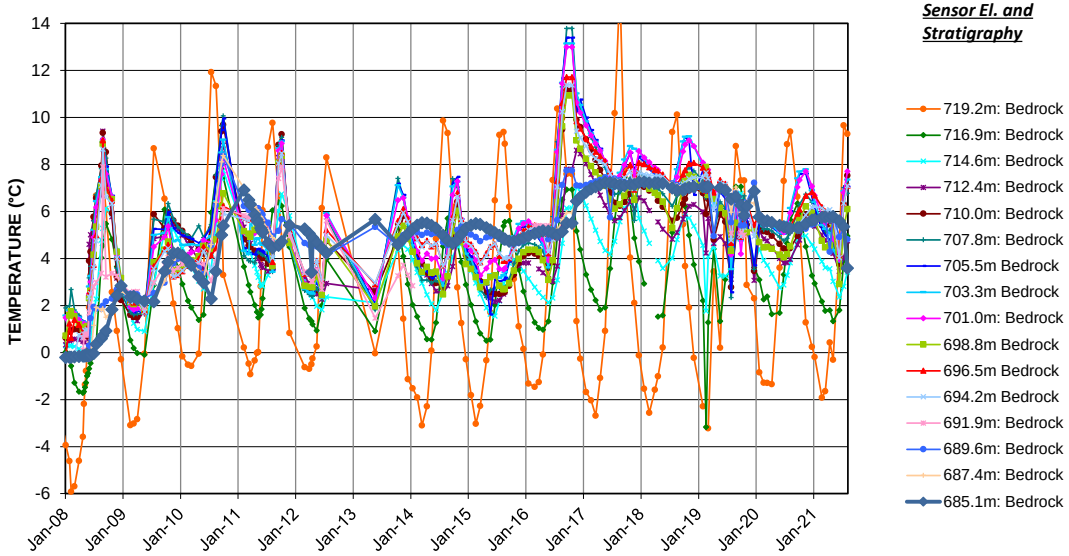
Temperature Cable – WDT-4

Job No: 1CM002.073

Filename: ApH_WaerStoragePond2021.pptx

Minto Mine

Date:	Prepared by	Figure:
October 2021	PHM	6



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714.6m: Bedrock
712.4m: Bedrock
710.0m: Bedrock
707.8m: Bedrock
705.5m Bedrock
703.3m Bedrock
701.0m: Bedrock
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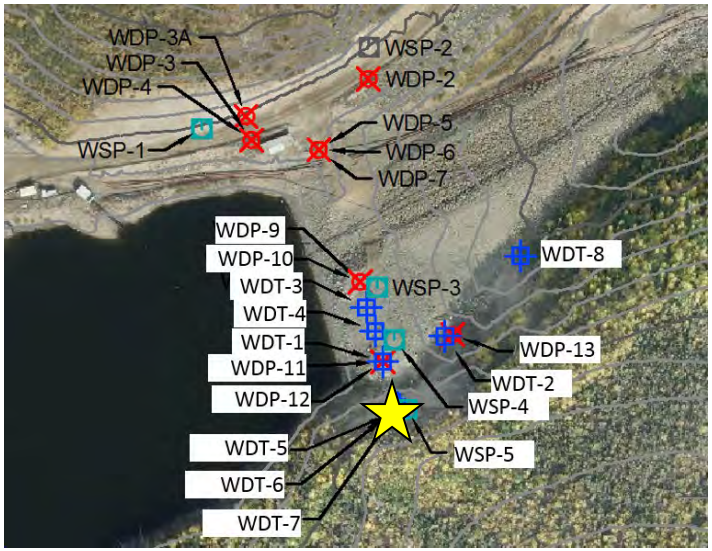

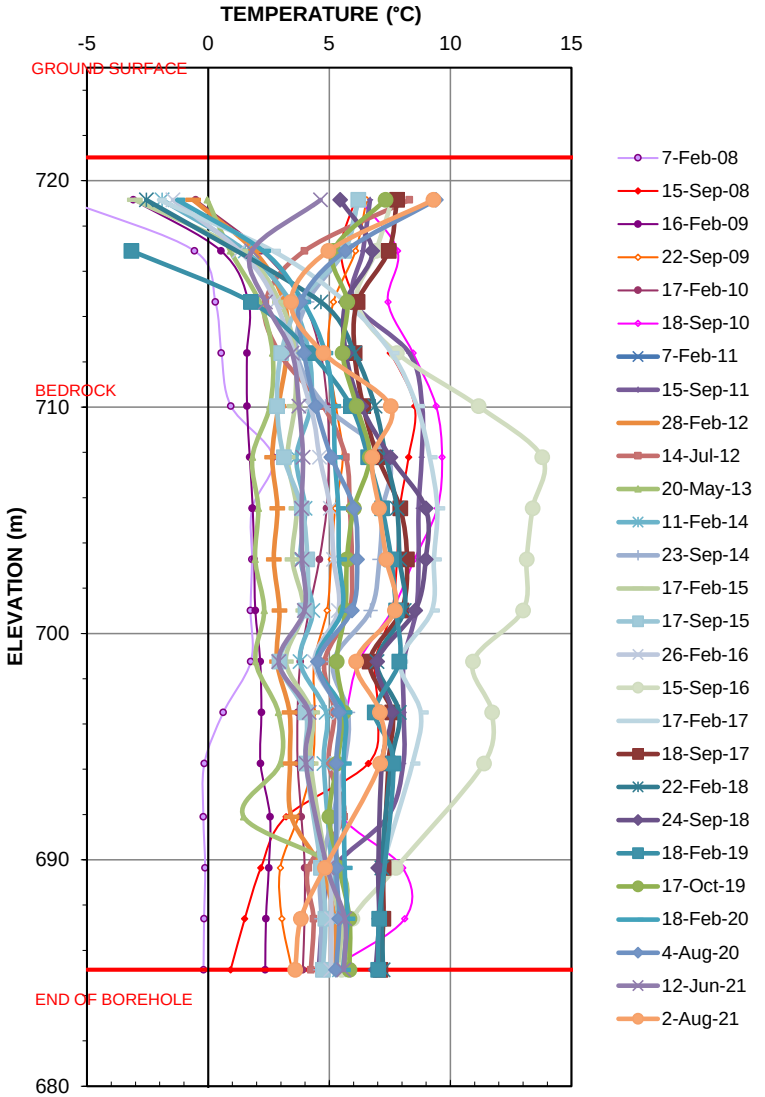

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20-May-13
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23-Sep-14
17-Feb-15
17-Sep-15
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17-Feb-17
18-Sep-17
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2-Aug-21

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MINTO

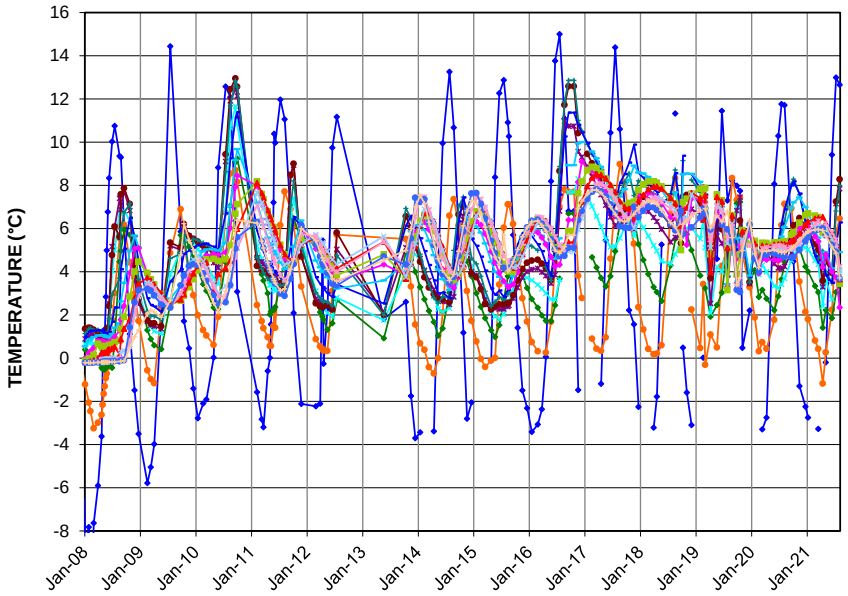
Water Storage Pond Data

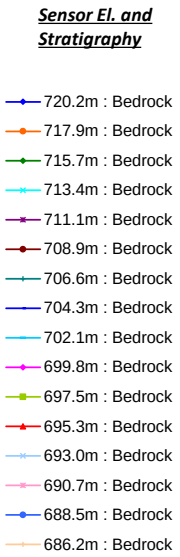
Temperature Cable – WDT-5

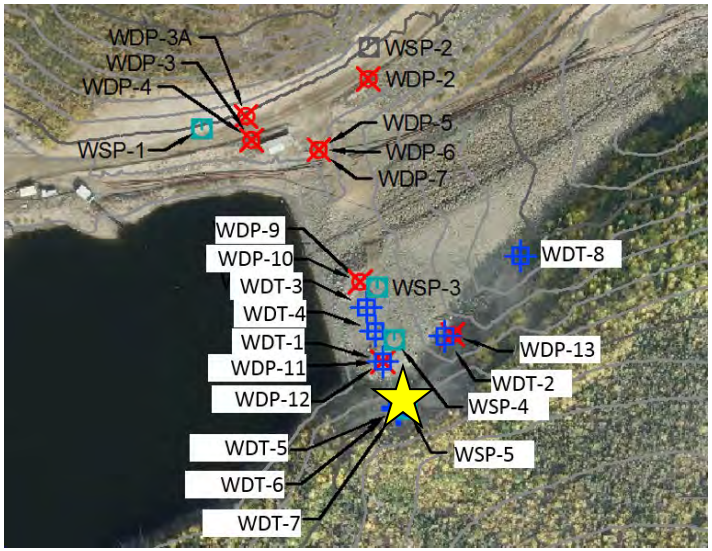
Job No: 1CM002.073
Filename: ApH_WaerStoragePond2021.pptx

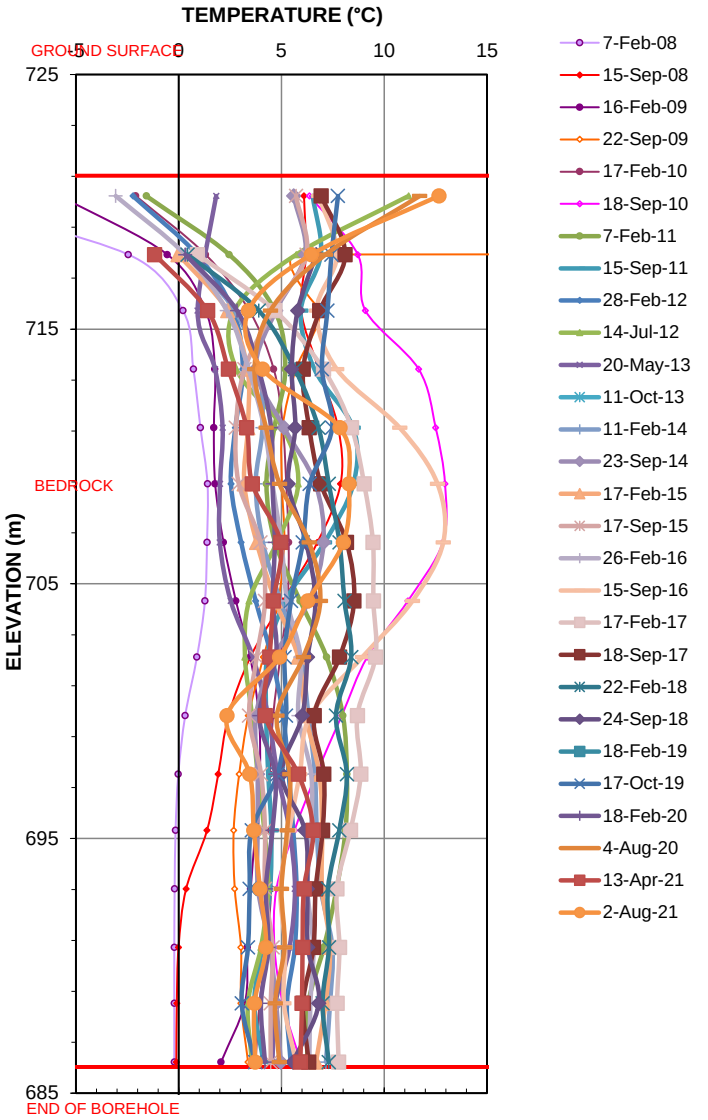
Minto Mine

Date: October 2021
Prepared by: PHM
Figure: 7









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srk consulting

MINTO

Water Storage Pond Data

Temperature Cable – WDT-6

Job No: 1CM002.073

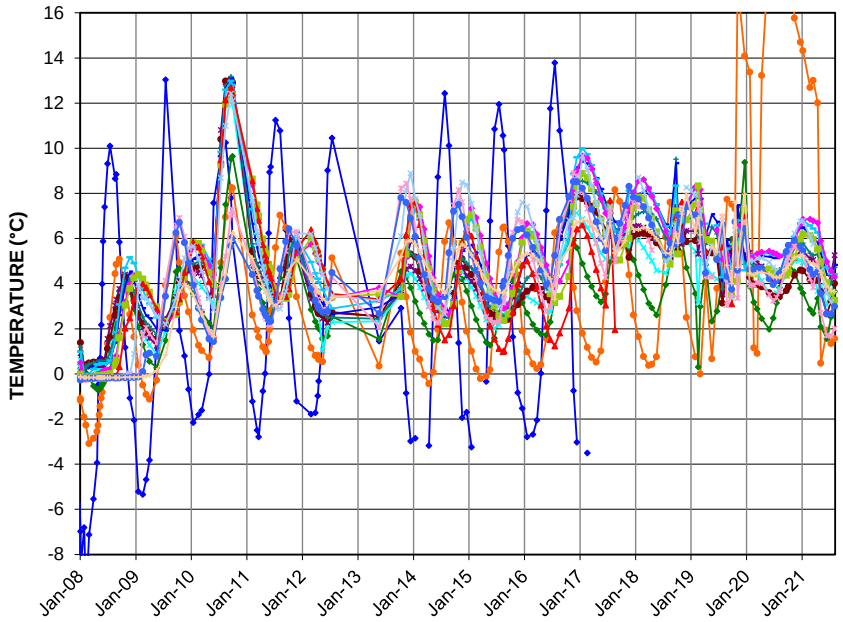
Filename: ApH_WaerStoragePond2021.pptx

Minto Mine

Date: October 2021

Prepared by: PHM

Figure: **8**



Sensor El. and Stratigraphy

- 720.1m : Bedrock
- 717.9m : Bedrock
- 715.6m : Bedrock
- 713.4m : Bedrock
- 711.0m : Bedrock
- 708.8m : Bedrock
- 706.5m : Bedrock
- 704.3m : Bedrock
- 702.0m : Bedrock
- 699.7m : Bedrock
- 697.5m : Bedrock
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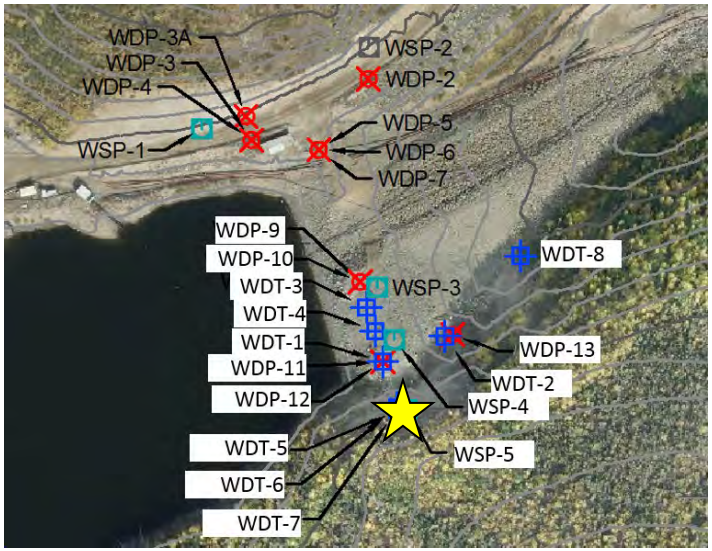
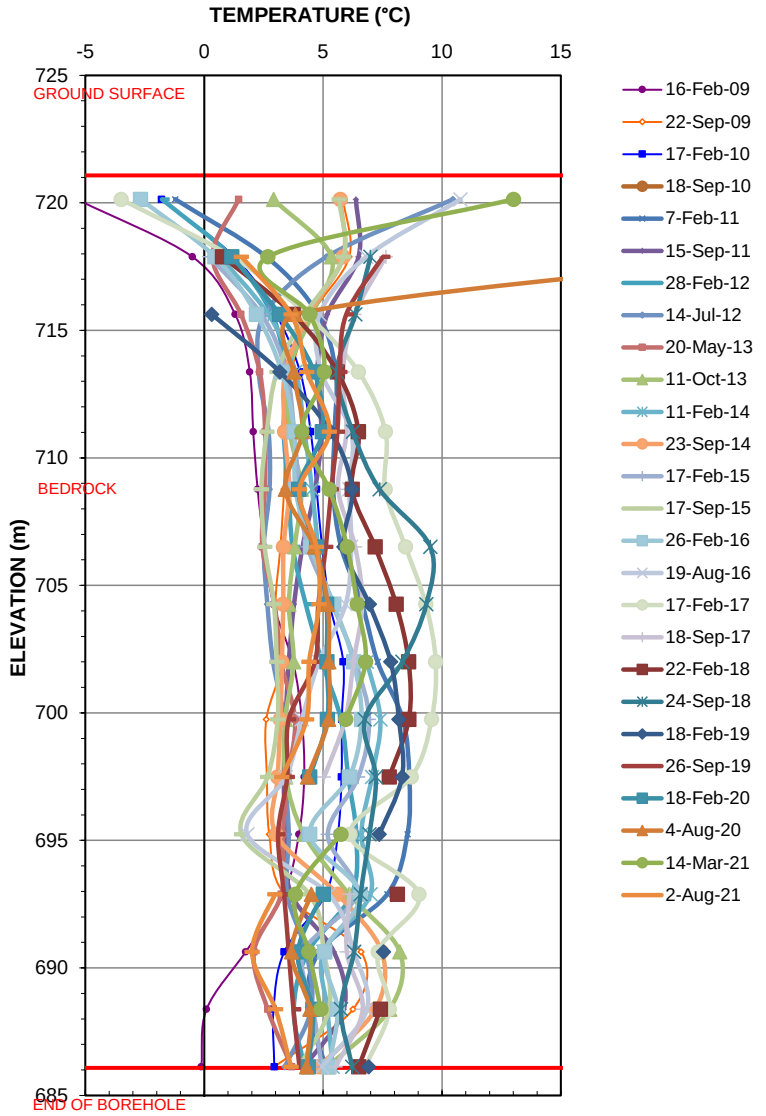
- 686.1m : Bedrock





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MINTO

Water Storage Pond Data

Temperature Cable – WDT-7

Job No: 1CM002.073

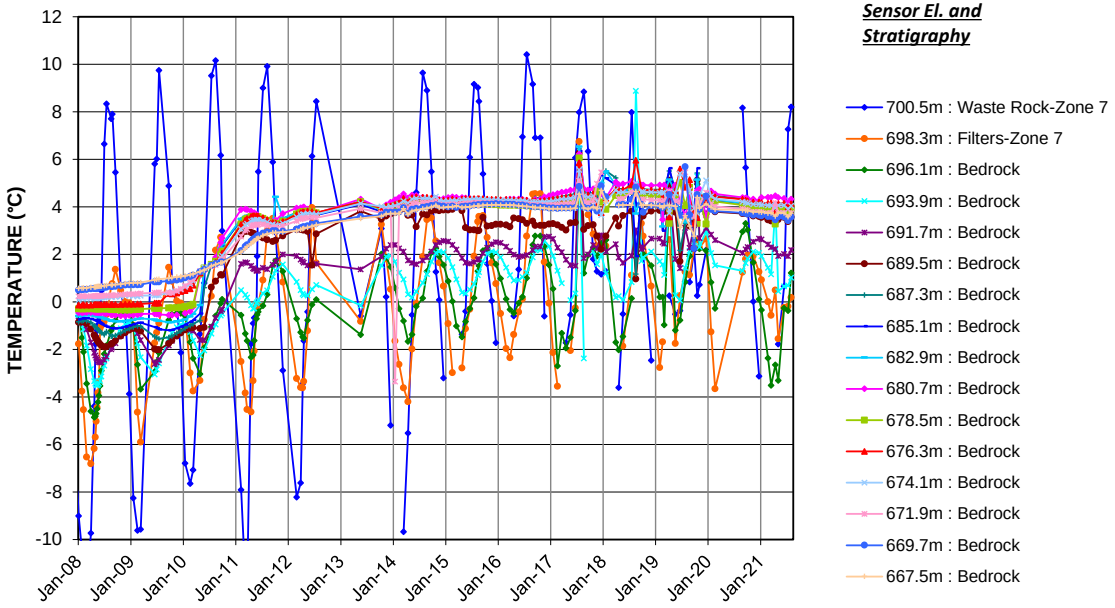
Filename: ApH_WaerStoragePond2021.pptx

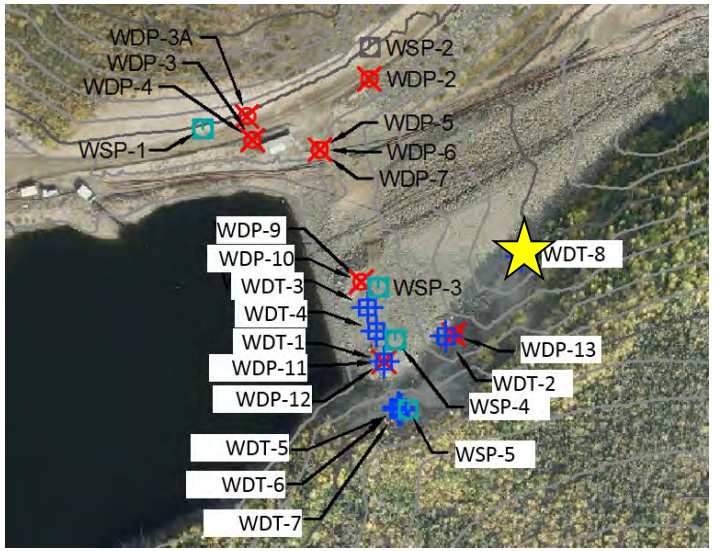
Minto Mine

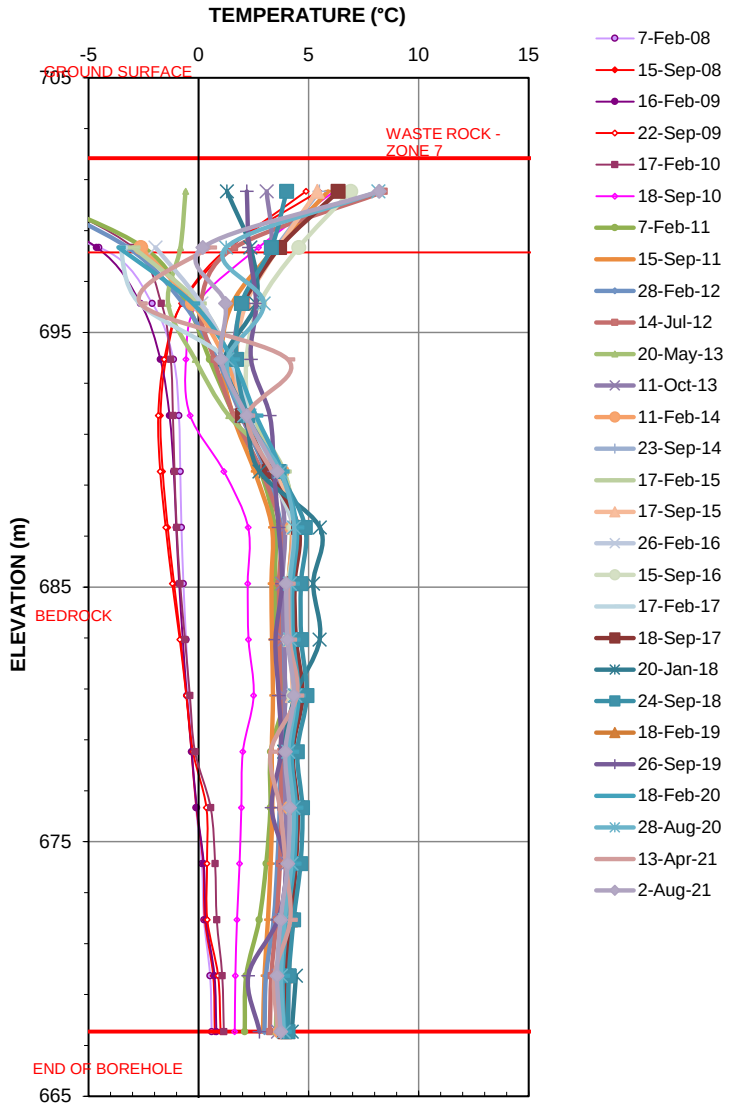
Date: October 2021

Prepared by PHM

Figure: **9**







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MINTO

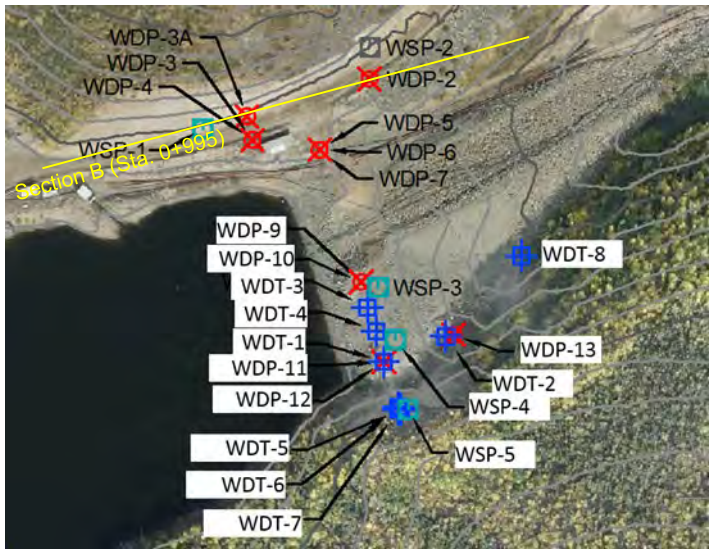
Water Storage Pond Data

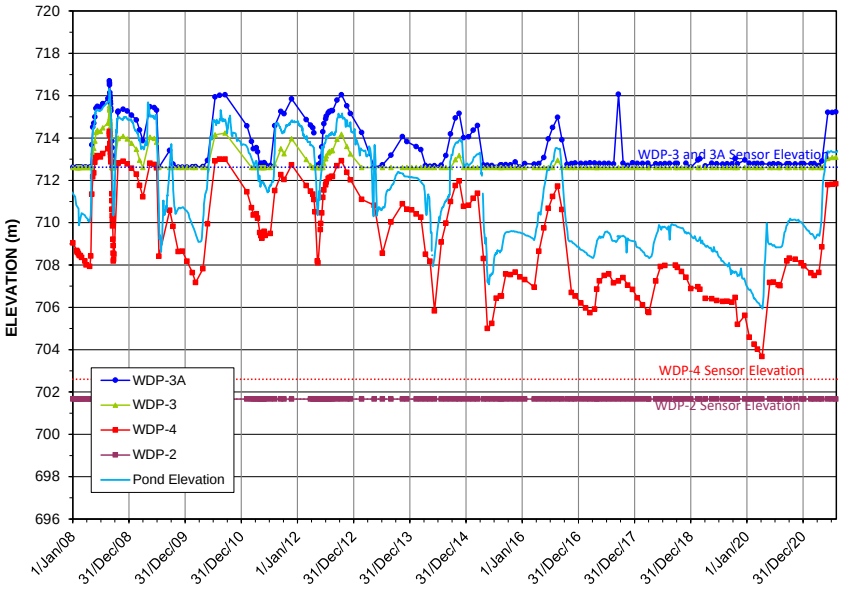
Temperature Cable – WDT-8

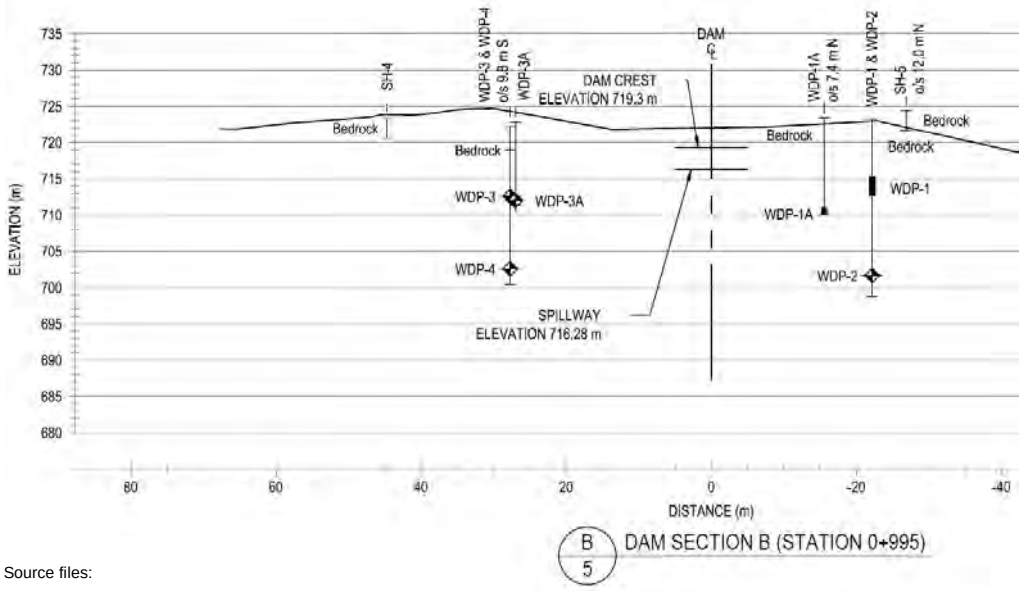
Job No:	1CM002.073
Filename:	ApH_WaerStoragePond2021.pptx

Minto Mine

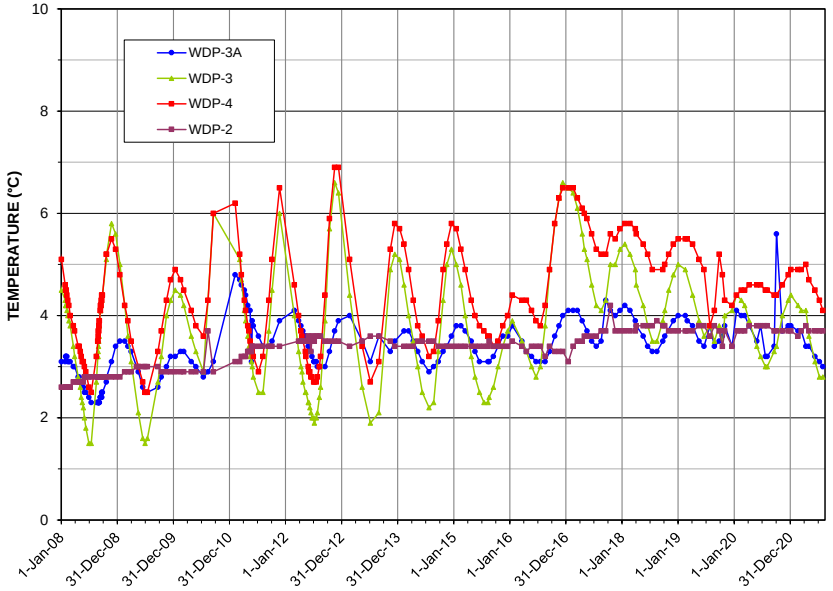
Date:	Prepared by	Figure:
October 2021	PHM	10







B
5
DAM SECTION B (STATION 0+995)



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3. Cross Section B from EBA (2011) report: Water Storage Pond Dam Geotechnical Instrumentation and Seepage Data Review" dated December 23, 2011.

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MINTO

Water Storage Pond Data

Piezometers – Left Abutment

Job No: 1CM002.073

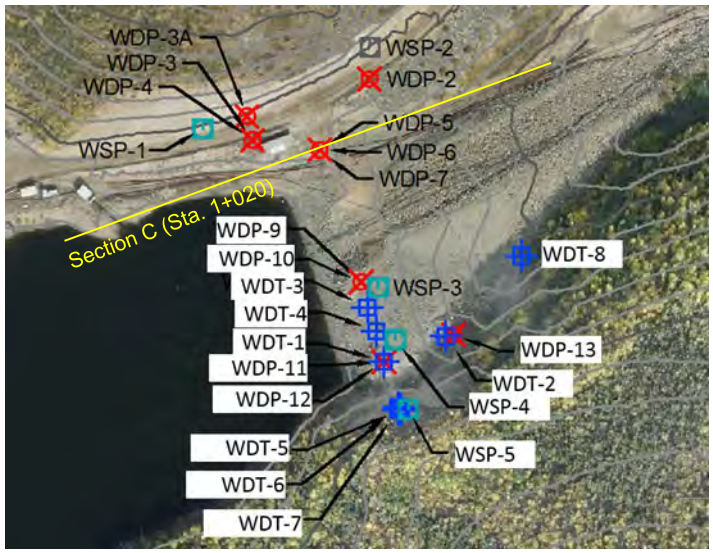
Filename: ApH_WaerStoragePond2021.pptx

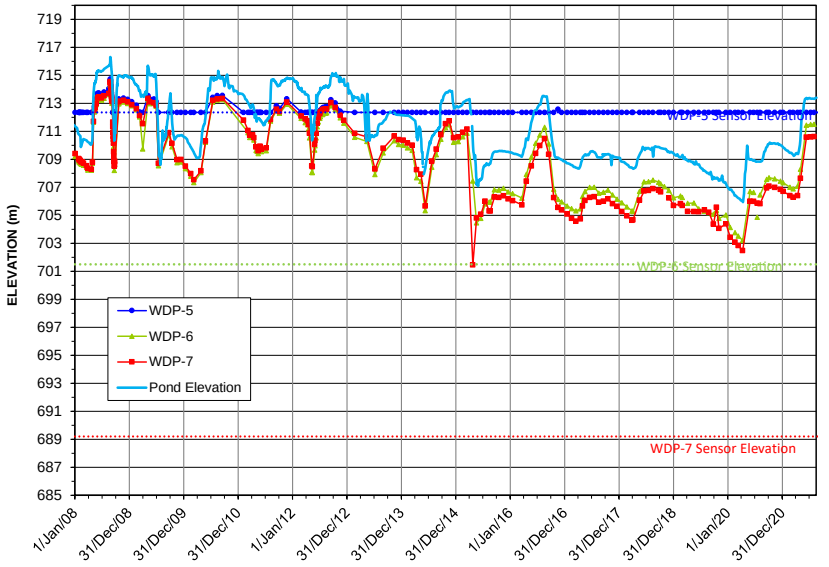
Minto Mine

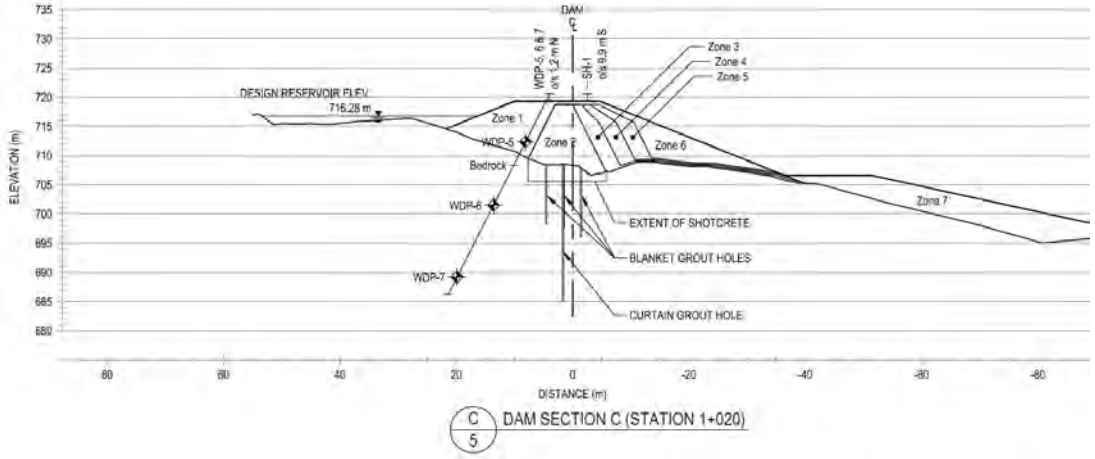
Date: October 2021

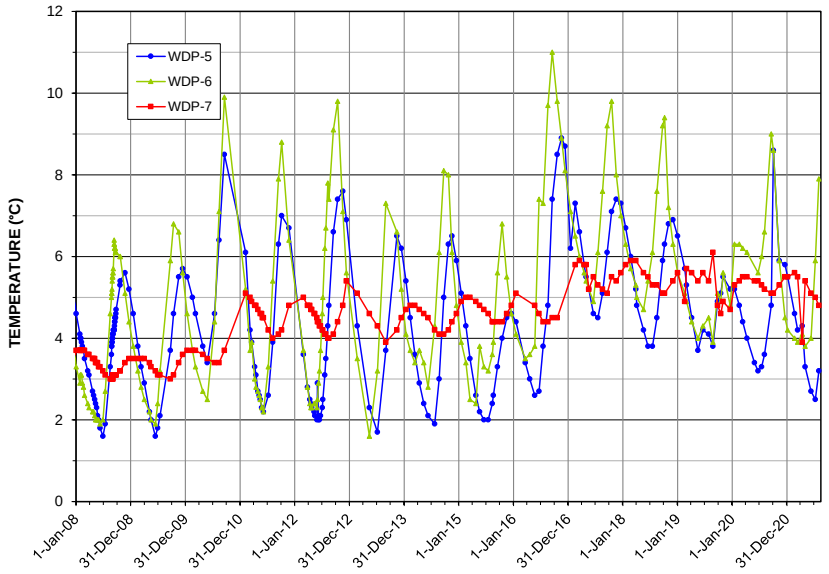
Prepared by PHM

Figure: **11**









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3. Dam section from EBA (2011) report: Water Storage Pond Dam Geotechnical Instrumentation and Seepage Data Review" dated December 23, 2011.

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MINTO

Water Storage Pond Data

Piezometers – Section C (Station 1+020)

Job No: 1CM002.073

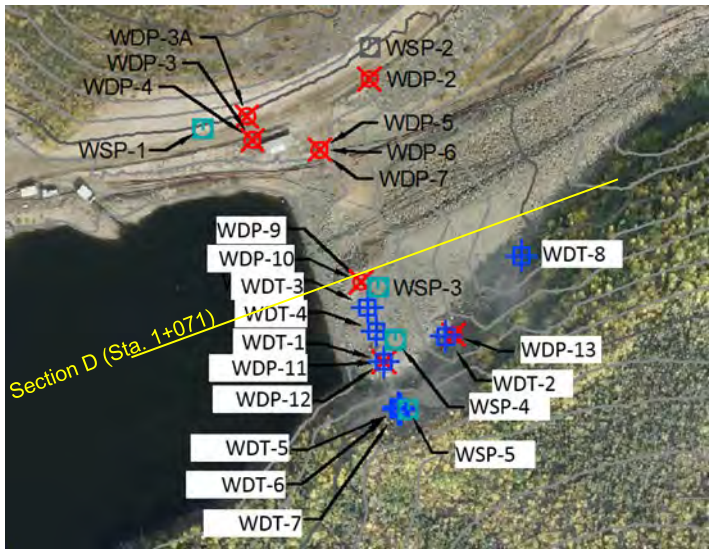
Filename: ApH_WaerStoragePond2021.pptx

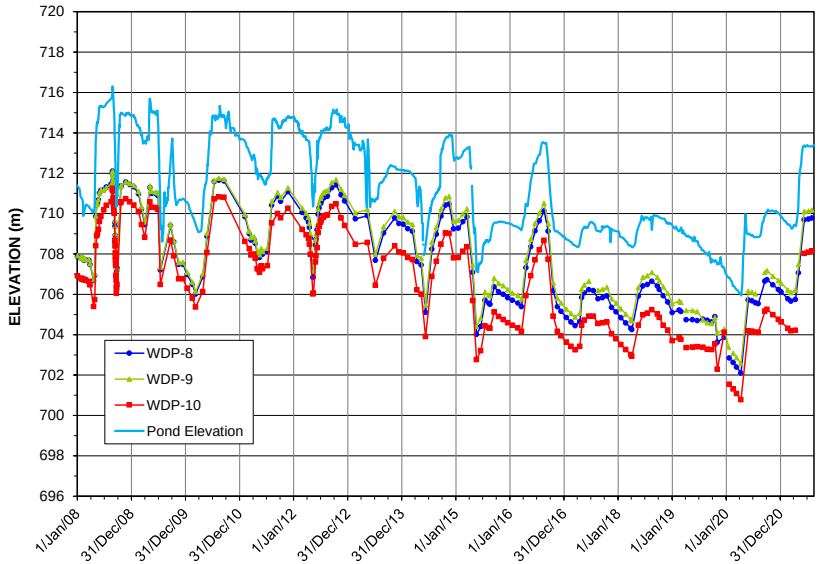
Minto Mine

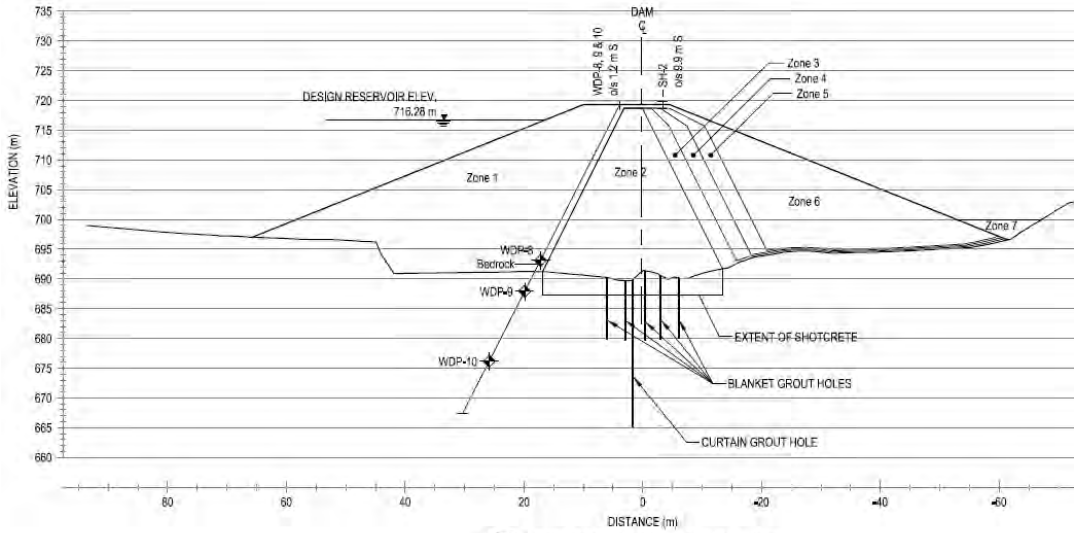
Date: October 2021

Prepared by PHM

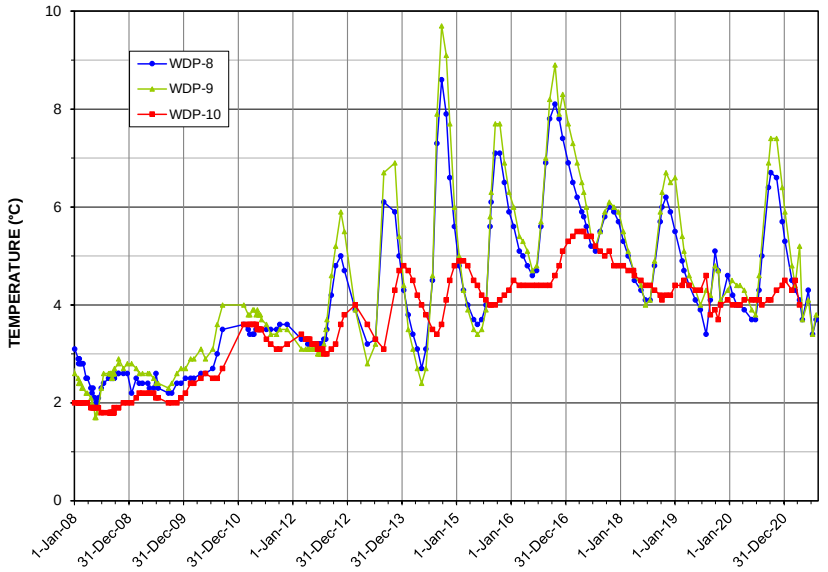
Figure: 12







D-5 DAM SECTION D (STATION 1+071)



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3. Dam section from EBA (2011) report: Water Storage Pond Dam Geotechnical Instrumentation and Seepage Data Review" dated December 23, 2011.

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MINTO

Water Storage Pond Data

Piezometers – Section D (Station 1+071)

Job No: 1CM002.073

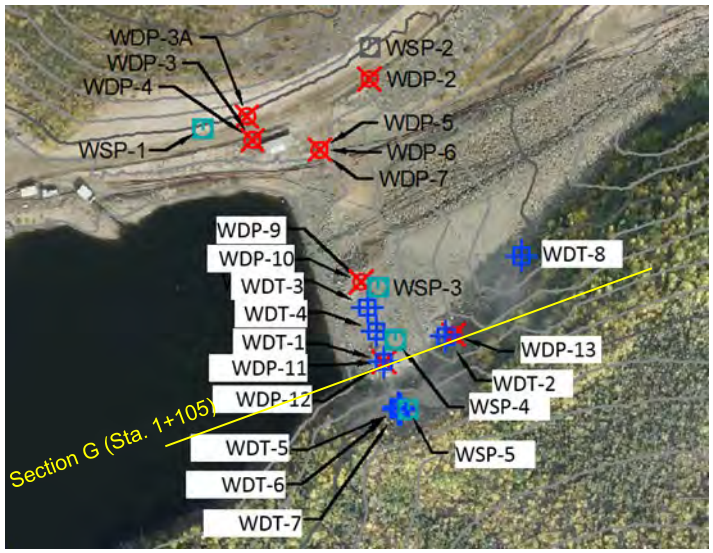
Filename: ApH_WaerStoragePond2021.pptx

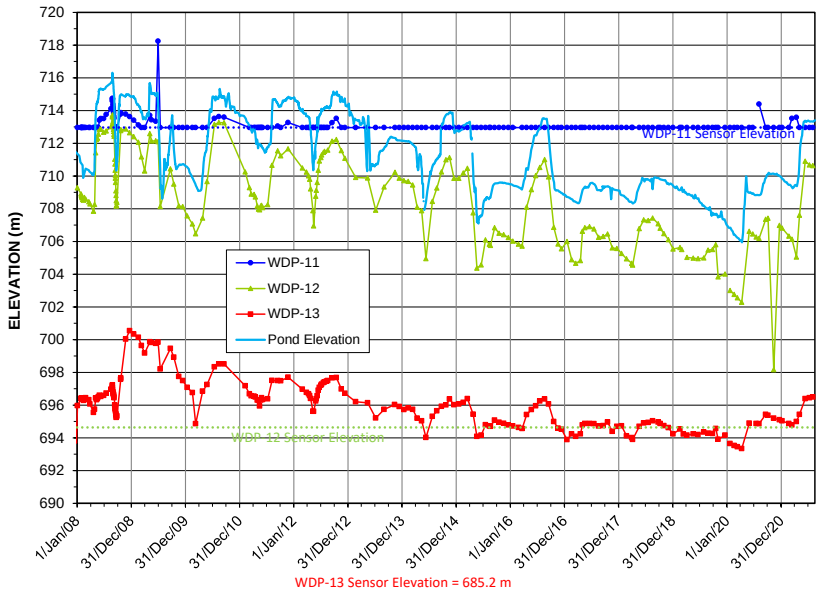
Minto Mine

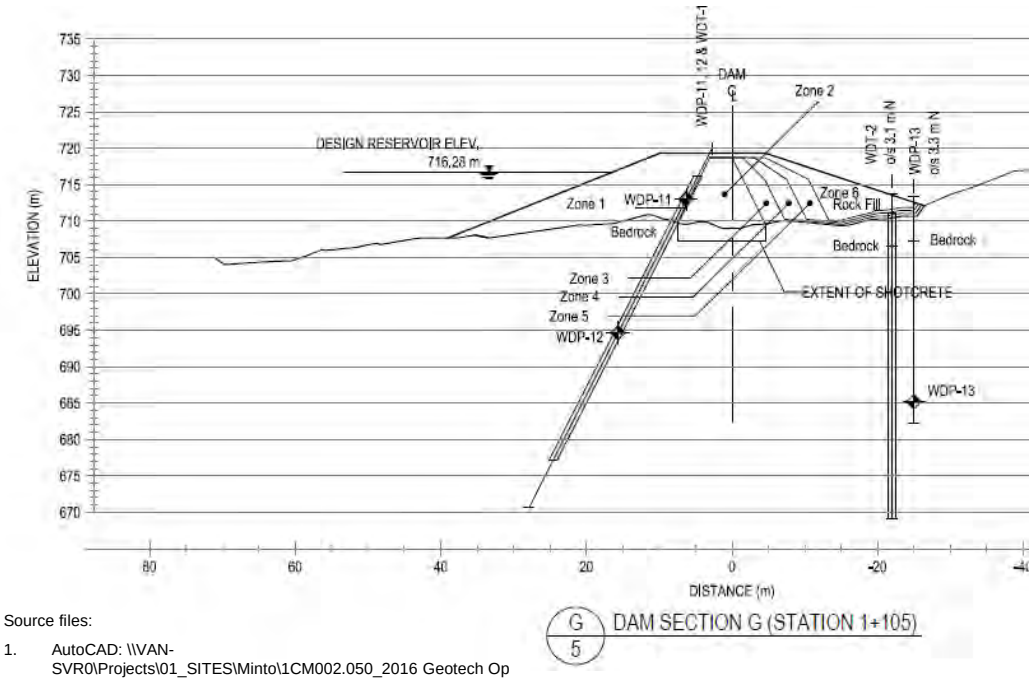
Date: October 2021

Prepared by PHM

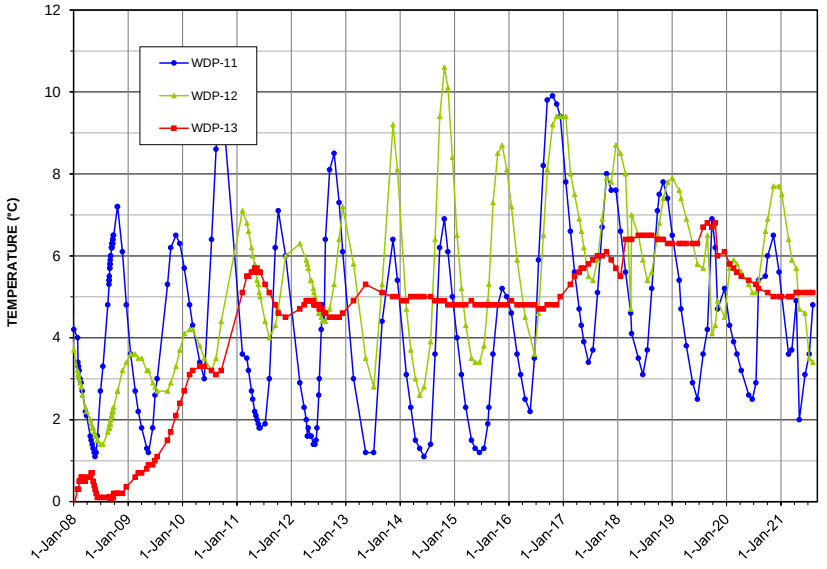
Figure: 13







G/5 DAM SECTION G (STATION 1+105)



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3. Dam section from EBA (2011) report: Water Storage Pond Dam Geotechnical Instrumentation and Seepage Data Review" dated December 23, 2011.

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MINTO

Water Storage Pond Data

Piezometers – Section G (Station 1+105)

Job No: 1CM002.073

Filename: ApH_WaerStoragePond2021.pptx

Minto Mine

Date: October 2021

Prepared by PHM

Figure: 14

Appendix Q – 2021 Invasive Species Report

Invasive Species Report 2021

The 2021 Invasive Species Monitoring Program began on June 27 and was completed by June 30, 2021. The program consisted of surveys and long-term photo documentation in high traffic areas onsite, such as the Waste Management Area, the Dry Stack Tailing Facility (DSTF), the Propane Farm, the Dyno call road and the Pelly Yard, as well as areas with lower visitor traffic including the Southwest Dump, Minto North, and the W15 wetland area, and the length of the Access Road from the mine site to the barge landing.

The survey focused on the high-risk species as listed by the Yukon Invasive Species Council (YISC) (Table 1), but also identified lower risk invasive species, such as foxtail barley (*Hordum jubatum*). High-risk species identified during the 2021 survey included narrowleaf hawksbeard, sweet clover (yellow and white) and smooth brome (photos in Appendix A). As per the EMSRP, the observed high-risk species were reported to the YISC Spotter's Network.

Table 1. Common and scientific names of Yukon invasive plant species.

Common Name	Latin Name	Common Name	Latin Name
Common tansy	*Tanacetum vulgare*	Smooth brome	*Bromus inermis*
Creeping thistle	*Cirsium arvense*	Spotted knapweed	*Centaurea stoebe*
Dalmatian toadflax	*Linaria dalmatica*	Scentless chamomile	*Tripleurospermum perforata*
Great butter and eggs	*Linaria vulgaris*	Foxtail barley	*Hordeum jubatum*
Hawkweeds	*Crepis tectorum*	Altai wild rye	*Leymus angustus*
Leafy spurge	*Euphorbia esula*	Crested wheat grass	*Agropyron cristatum*
Oxeye daisy	*Leucanthemum vulgare*	Quackgrass	*Elymus repens*
Perennial sow-thistle	*Sonchus arvensis*	Reed canary grass	*Phalaris arundinacea*
Sweetclover	*Melilotus alba (white) officinale (ellow)*	Bird vetch	*Vicia cracca*
		Lucerne	*Medicago falcata*

Survey Methods

The invasive species monitoring program included two types of surveys focused on different areas, including a meander survey for numerous areas on-site and a visual survey of the access road from a vehicle.

Meander Surveys

Meander surveys were traversed on foot and instances of invasive species were documented. Invasive species were identified, photographed, and located using new or pre-existing waypoints with a GPS. The 2021 survey routes, long-term photo sites, and species' locations can be observed in Appendix B. In addition, the coverage, distribution, and density of invasive species at each survey location was documented and long-term monitoring photos were taken at locations consistent with previous years.

Access Road Survey

For this survey, Minto Environment staff drove the length of the Access Road (27 km) at low speed to document any invasive species growing along the roadside. Photos were taken several points, including the barge landing (km 27), the Big Creek bridge (km 19), and the gravel pit (km 12.5) to support long-term monitoring efforts.

Long-term Photo Monitoring

Monitoring locations were consistent with previous years' surveys and served to document the change over time occurring at the various sites susceptible to invasive species introduction. Four photos were taken at each location facing different directions, roughly north, east, south, and west. These photos enable staff to track the movement of invasive plant species across the landscape and the rate at which species of concern can advance.

Results

The findings of the meander survey for each area are found in Table 2 below. The results generally found widespread narrowleaf hawksbeard (NLHB), instances of foxtail barley (FTB) and isolated patches of sweet clover (SC). Soil texture was found to be coarse at all locations.

Density is an estimate of plants per square meter on a scale of 1 to 4, where 1 is one or fewer plants per square meter and 4 is more than ten. Distribution (Dist.) refers to how plants are grouped in an area on a scale of 1 (a single plant) to 10 (continuous).

Table 2: Meander Survey Results

Area	Way Point	Invasive Species	% coverage	Dist.	Density	Comments
Minto North	WP1	NLHB	25	6	3	
	WP2	NLHB	10	2	1	
	WP3	FTB	10	2	2	
Camp Area	WP36	FTB	1	8	3	Selkirk Towers
		NLHB	>1	2	2	Sporadic throughout
Propane Farm		NLHB	5	2	1	East side
WMA		NLHB	5	2	1	Along roadside
		FTB	5	1	1	Along roadside
	WP17	NLHB	50	2	1	
	WP15	NLHB	2	1	1	
Active Rec Area	WP33	NLHB	5	2	1	
		FTB	5	1	1	
Dyno Road		NLHB	25	7	2	Along roadside
		FTB	10	5	1	Along roadside
	WP9	NLHB	60	6	2	
Dry Stack Tailing Facility		NLHB	>1	1	1	
		FTB	2	1	1	
	WP21	NLHB	80	7	3	
Mill Valley Fill	WP23	NLHB	80	7	3	
		FTB	25	3	2	
W15 Wetland	WP34	NLHB	5	1	1	
		SC	5	2	1	On hillside near road
Pelly Yard	WP3	SC	5	2	1	
		NLHB	5	2	1	
	WP11	SC	5	2	1	
		NLHB	5	2	1	
IROB	WP7	NLHB	50	8	3	
		FTB	5	1	1	
SWD		NLHB	20	3	3	
		FTB	>1	1	1	Scattered individuals
		SC	5	2	2	Occasional patches

The results of the Access Road survey can be viewed in Table 3. The abundance of observed infestations was based on three predefined classes: continuous (plants form a continuous mat along highway), sporadic (scattered patches), or rare (a single occurrence).

Table 3: Access Road Survey Results

KM	Invasive Species	Abundance	Comments
Barge	SC	Sporadic	
	FTB	Rare	
	NLHB	Continuous	
25	NLHB	Sporadic	
23	SC	Rare	
18	SC	Sporadic	
	NLHB	Continuous	
	SB	Rare	KM 18 -> KM 19
17.5	SC	Continuous	
17	NLHB	Sporadic	
15	SC	Sporadic	
14	SC	Rare	
	NLHB	Rare	
13	NLHB	Sporadic	
12.5 Gravel Pit	FTB	Sporadic	

Narrowleaf hawksbeard (NLHB) were visible throughout the length of the road in single plants, and instances of smooth brome (SB) were found near Minto Creek and Big Creek. White sweet clover was sporadic from kilometre 14 to 27, with continuous dense patches between kilometres 15 and 18. Foxtail barley was rare, occurring as sparse individual plants from the barge to the kilometre 12.5 gravel pit.

Actions

The limited occurrence of smooth brome was removed completely from the Big Creek bridge. The patches of sweet clover growing in the Pelly Yard and near the W15 wetland were hand-pulled, while more substantial patches near Selkirk Towers, the warehouse and the Southwest Dump were cut with the brush saw. Photos of removal efforts can be viewed in Appendix B.

After re-visiting areas where removal efforts were completed (roughly one month later), it was found that most of the patches of sweet clover were able to recover, flower and go to seed, despite being mowed with the brush saw.

Recommendations

In accordance with the EMSRP, invasive plant surveys will continue in 2022, particularly along invasive species pathways such as roads with high visitor traffic, recently exposed areas, and areas that have been recently reclaimed.

It is recommended that the invasive species surveys continue to be conducted earlier in the summer months, as previously, the study had been completed in August-September, which caused difficulty identifying some species after they had gone to seed. Early/mid-July is recommended for identifying sweet clover, as it begins to flower during this time. Environmental staff should track incidental observations of invasive species throughout the growing season.

Control measures should be considered for areas in proximity to active reclamation, such as the Pelly Yard. Manual controls such as hand-pulling can be utilized for small infestations, while mowing can be applied to the larger infestations to slow the spread into more vulnerable areas. Any sweet clover removal efforts should be closely monitored and repeated throughout the growing season due to the plant's ability to regenerate and flower after mowing. Sweet clover has a two-year life cycle and thus will require several years of removal efforts to completely remove a population. If sweet clover becomes established in newly or sparsely revegetated areas, it could have detrimental impacts to reclamation success.

Newly placed overburden should be seeded as soon as possible to prevent invasive species colonization. Any vehicles or equipment entering the site should be cleaned and inspected to ensure they are not transporting additional unwanted species to site.

Appendix A

Invasive Species Identified at the Minto Mine in 2021

Figure 1. Narrowleaf hawksbeard (*Crepis tectorum*) in the Southwest Dump.

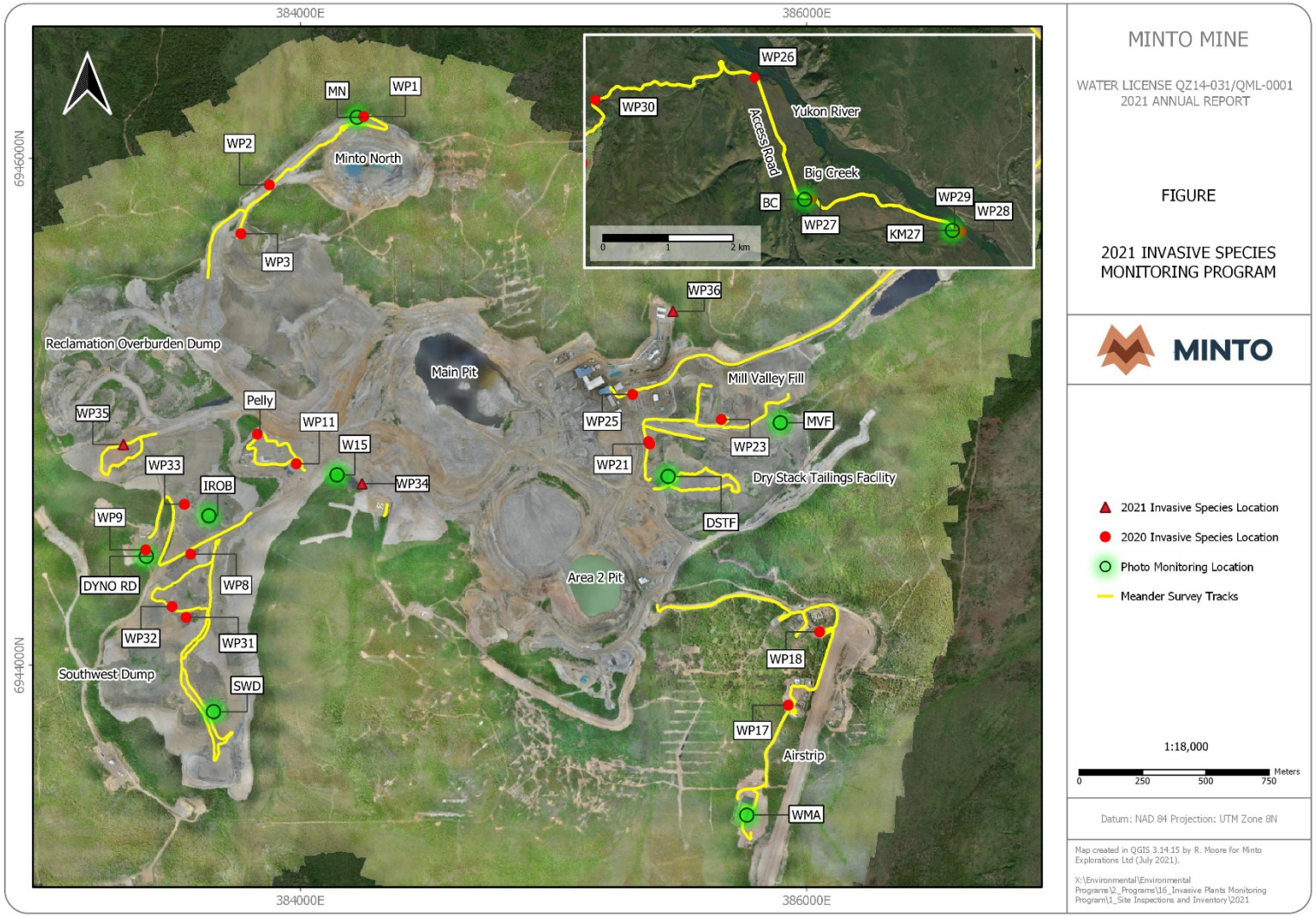
Figure 2. Yellow sweet clover (*Melilotus officinalis*) pulled from the Pelly Yard.

Figure 3. Foxtail barley (*Hordeum jubatum*) at Minto North.

Figure 4. Smooth brome (*Bromis inermis*) at KM 19 on the Access Road.

Appendix B

2021 Invasive Species Monitoring: Survey Tracks and Waypoints



Appendix C

Invasive Species Removal Efforts

Figure 1. Mowing yellow sweet clover (*Melilotus officinalis*) in the Southwest Dump.

Figure 2. Removing sweet clover from the area surrounding Selkirk Towers.