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August 10, 2015

EDI Project No: 15Y0146

Assessment and Abandoned Mines Branch (AAM) K-149
Department of Energy, Mines and Resources, Yukon Government
Room 2C Royal Center, 4114-4th Avenue
PO 2703, Whitehorse, YT, Y1A 2C6

Attention: Erik Pit, Type II Project Manager

RE: Mount Nansen Water Resources Investigations – Monthly Report: May 2015 FINAL

Trip dates:	May 4-6, 2015 and May 12-14, 2015
EDI field staff:	*First May Trip*: Joel MacFabe, Brett Pagacz and Danny Skookum *Second May Trip*: Jane Bachman, Dawn Hansen, Scott Dilling and Danny Skookum
Weather during trip:	*First May Trip*: conditions were mostly sunny with light winds and temperatures up to 7°C. *Second May Trip*: conditions were sunny with light winds and temperatures up to 24°C.

The following monthly report includes a summary of site conditions and data collected during EDI's May 2015 trips to Mount Nansen as part of the 2015/16 Water Resources Investigations. Two trips were completed in May 2015 to capture the spring freshet period. See Table 1 for a summary of data included in this report.

Table 1. Summary of information provided in this monthly report.

Report Section	Description
Site Conditions	• Summary of weather and general site conditions
Meteorology	• Statement on station status and identification of any data gaps or QA/QC issues
Hydrology	• Discussion of noteworthy hydrology observations • Statement of QA/QC for the data collected this month
Water Quality	• Summary of noteworthy water quality observations • Statement on QA/QC sample results
Program Recommendations	• Program recommendations for meteorological, hydrology and water quality programs
Additional Trip Information	• Project Safety Concerns • Wildlife sightings • Budget and schedule considerations
List of Attachments	• Site and station photos • Data Tables – hydrology and water quality • Lab Result Reports

SITE CONDITIONS

The two site trips in May 2015 represent early-spring conditions and the spring freshet period. The majority of snow and ice around the Mount Nansen site had melted since the April 2015 trip. During the first May trip, additional sites and stations had begun flowing since April 2015, with increased water levels, but peak freshet flows had not been reached. DES provided daily photos in May from several locations around the Mount Nansen Site to assist with freshet trip planning. The second May trip was scheduled one week later to capture higher flows during the freshet period. Peak freshet flows occurred during the evening of May 10, 2015 (based on continuous discharge and stage data for Victoria Creek). Back Creek had multiple, braided channels flowing overland and entering Victoria Creek at multiple locations upstream of the regular confluence (including above H/WQ-VC-U).

METEOROLOGY

Meteorological data was collected at the ATM-ROAD station throughout the month of May. Northern Avcom informed AAM that the station's modem was deactivated on April 21, 2015 and that a new telemetry system will be installed likely mid-June. In the meantime, AAM continues to download the data manually when on site. As of the writing of this report, data was available up to June 11, 2015. EDI conducted a preliminary QA/QC review of the May 2015 data and all sensors appear to be functioning as expected. Meteorological data will also be summarized and analyzed following the completion of the open-water season, in the October 2015 Monthly Report. This will include data from April 1, 2015 to October 15, 2015 with plots and tables.

HYDROLOGY

Discharge measurements were collected at all stations with suitable conditions, and several continuous stations were re-installed for the open-water period. Significant ice and snow melt allowed for the first measurements of the spring season at H/WQ-DC-DC+105 and H-VC-UMN during the first May trip and H-DC-M and H-DC-R during the second May trip. Hydrology measurements could not be completed at the following stations in May 2015: H-DC-D1b due to ice and snow coverage and at H-BC due to ice conditions and multiple braided channels in the vicinity of the station.

The following re-installations were completed during the first May trip:

- A stilling well, staff gauge and continuous logger were re-established at H-DC-B at the location of the old well (well is pulled during the winter season due to ice build-up in the channel and frequent channel maintenance).
- New continuous data loggers were installed at the existing stilling well locations at H-VC-UMN, H-VC-DBC and H-VC-R.

During the second May trip, re-installations were completed at:

- A hydrometric station was re-established at H-DC-R, consisting of a stilling well, staff gauge and continuous logger (similar to H-DC-B, this well is pulled during the winter due to ice-build up in the channel).
- A new hydrometric station was installed at H-VC-U, approximately 5 m upstream of the 2014/2015 location. The station was re-located due to large amount of sediment accumulation at the previous well location.
- New continuous data loggers were installed at the existing stilling well locations at H-PC-DSP and H-DC-M WP.

The current stilling well location at H-VC-R is under review. During the end of the 2014/2015 program, EDI recommended that this station be relocated to a suitable site downstream of the current location, based on changes to the channel geometry at the station (sediment deposition from the 2014 freshet) and unfavourable ice conditions during the winter period that impact the quality of the continuous logger record. During both of the May 2015 trips, significant flows were occurring in five secondary channels and a new location could not be readily identified. The existing location remains suitable for the current open water period; however, discussions and investigations should continue for consideration of a more suitable location prior to winter.

For the month of May, continuous logger records are available for four stations: H-DC-M WP, H-VC-DBC, H-VC-UMN and H-VC-R. Partial continuous logger records are available at H-DC-B (installed May 5, 2015), H-VC-U (installed May 13, 2015), H-DC-R (installed May 13, 2015) and H-PC-DSP (installed May 12, 2015). See attached data tables for a summary of conditions and hydrometric monitoring tasks completed at each station and for a summary of discharge measurement results for the May 4 - 6, 2015 and May 12 – 14, 2015 periods. Noteworthy observations are included in the subsection below. Quality control and quality assurance for the hydrometric data was conducted on the instantaneous and continuous data.

Noteworthy Observations:

- For both May 2015 trips, discharge measurements were collected with an ADV at all four Victoria Creek stations. During the first site trip, discharge values ranged from 0.317 to 0.450 m^3/s. For the second site trip, discharge values increased significantly, ranging from 1.163 to 2.328 m^3/s. Both site trips represent flow conditions much higher than the April 2015 trip when discharge results ranged from 0.130 – 0.192 m^3/s.
- During the first May trip, discharge measurements were made using salt tracer tests at H-DC-B with an estimated flow rate of 0.032 m^3/s.
- During the second May trip, discharge measurements were made using salt tracer tests throughout Dome Creek at H-DC-B, H-DC-M WP, H-DC-DX+105 and H-DC-R, with flows ranging from 0.003 to 0.118 m^3/s.

- Ice conditions and high flows in Back Creek triggered avulsions and five significant braided channels and waterfalls upstream of the H-BC station. Flow from Back Creek enters Victoria Creek upstream of H-VC-U at multiple locations.
- Ponded water in the parking area near the H-VC-R station was present during the first May trip and water was entering the main channel at the stilling well location. By the time of the second May trip, water in the parking area had receded. Multiple secondary channels were active during both May trips and a new stilling well location is under consideration.
- A large quantity of sediment has accumulated in the weir pond at H-DC-M WP.

WATER QUALITY

Water quality samples and data were collected at all scheduled sites during the May 2015 trips; this included sites specifically scheduled for sampling during the spring freshet including opportunistic sampling of seeps along the mill site and waste rock pile. The pit lake was not scheduled for sampling during the May 2015 trips due to safety concerns associated with the ice break-up at this time of year. The WQ-SEEP LC50 sample scheduled for May 2015, was collected on the second May trip, and the drinking water sample for May 2015 was collected during the first May trip.

See attached data tables for a summary of conditions at each site and a record of where samples were collected during each trip. In situ and laboratory results summary tables are also attached. Parameters that exceeded CCME-AL guidelines and/or the Mount Nansen EQS criteria are highlighted. The lab certificates of analysis are also attached. Many results reflect typical conditions for this time of year when there is increased surface runoff and sediment introduction with the higher flows from snow and ice melt. This often results in elevated concentrations of many total metals at this time of year. Noteworthy observations and comments on sample QA/QC are included in the subsections below.

Noteworthy Observations:

- Back Creek was contributing water to Victoria Creek at multiple locations upstream of the regular confluence (which is downstream of WQ-VC-U). There was a higher incidence of total metals concentrations exceeding the CCME-AL and Mount Nansen EQS criteria during the second May trip (when flows and turbidity were higher) – including aluminum, arsenic, cadmium, chromium, copper, iron, lead, manganese, mercury, silver and zinc.
- All samples from Victoria Creek during the first May trip exceeded the CCME-AL guidelines for total aluminum and iron, while samples from WQ-VC-DBC and WQ-VC-R+150 also exceeded the guideline for total copper. During the second May trip there was an increase in the number of total metals concentrations that exceeded the CCME-AL guidelines due to increased flows and higher turbidity, including aluminum, arsenic, cadmium copper, iron, lead, mercury (only WQ-VC-DBC, WQ-VC-R+150), silver (only WQ-VC-U, WQ-VC-DBC) and zinc (only WQ-VC-DBC). All samples also had total suspended solids above the Mount Nansen EQS. Some

results for WQ-VC-U may be attributed to water from Back Creek entering Victoria Creek upstream of the regular confluence (and upstream of the WQ-VC-U location).

- The upstream and downstream Pony Creek sites had samples that exceeded many parameters including aluminum, arsenic, cadmium (only WQ-PC-D), copper, iron, lead, silver (only WQ-PC-D) and zinc (only WQ-PC-D). The opportunistic seep that was sampled from the Pony Creek waste rock (WQ-PC-WR; detected on May 14, 2015) had a similar list of parameters that exceeded guidelines and/or standards to the WQ-PC-D sample. Of note the WQ-PC-WR samples had much higher metals concentrations than the WQ-PC-D samples, which is to be expected as it was flowing directly out of the waste rock dump at the site.
- Total zinc concentrations in the WQ-SEEP samples no longer exceed the CCME-AL guideline, with a values of 0.0123 mg/L on May 5 and 0.0189 mg/L on May 13 (down from 0.0627 mg/L from the April 2015 trip).
- Three mill seeps were sampled during the May 2015 trips (WQ-MS-S-03, WQ-MS-S-08, WQ-MS-S-A). All had similar parameters that exceeded guideline and/or standard criteria (including aluminum, arsenic, cadmium, copper, iron, lead, manganese, silver and zinc).
- Up to three waste rock seeps were sampled (WQ-WR-SEEP-A, B, C) during the two May 2015 trips. WQ-WR-SEEP-A and –B were sampled on May 6, 2015 and they both had acidic pH, high total suspended solids, and very high concentrations of total and dissolved metals (including total zinc of 23.8 mg/L and 22.0 mg/L) – the most of any sample from the Mount Nansen Site. WQ-WR-SEEP-C (sampled on May 14, 2015) exceeded many of the same guidelines, but at a much lower concentration.
- Of the two lysimeter sampled (WQ-L1 and WQ-L2), the L1 site had higher concentrations of zinc and cadmium, while the L2 site had higher concentrations of aluminum, arsenic, iron, lead, and silver.
- Both the WQ-ADIT-SEEP and WQ-LW-SEEP-01 were dry during both May 2015 trips.

QA/QC Samples

May 4-6, 2015 Trip

Travel Blank Sample – had a sulfate concentration above detection limit, this can occur when samples provided by lab are dated (no contamination is suspected from actual transport or storage). All other parameters were below detection limits.

Field Blank Sample – had a dissolved zinc concentration above detection limit, suggesting potential field sampling contamination (potentially from an improperly tightened lid, dust or wind during sampling, etc.). Looking at other concentrations for zinc during the program, results appear normal and no other sample contamination is suspected. All other parameters were below detection limits – no contamination suspected from sample handling or processing.

Replicate Sample(s) – the average RPD of the replicate sample WQ-VC-UMN-r was 6% with an average difference of 3% for dissolved and 9% for total metals. Total aluminum and chromium had RPD >20%, indicating intrinsically high sample variability. The average RPD of the replicate sample WQ-VC-R+150-r was 5% with an average difference of 2% for dissolved and 6% for total metals. Alkalinity (total and bicarbonate) had RPD>20% (indicating intrinsically high variability within samples). The average RPD of the replicate sample WQ-DC-r was 6% with an average difference of 4% for dissolved and 9% for total metals. Alkalinity (total and bicarbonate) and dissolved cadmium had RPD>20% (indicating intrinsically high sample variability).

May 12-14, 2015 Trip

Travel Blank Sample – had an ammonia concentration above detection limit, this can occur when samples provided by lab are dated. All other parameters were below detection limits (no contamination suspected from travel or storage).

Field Blank Sample – had a chromium concentration that was above detection limit, suggestion some potential field contamination (improperly tightened lid, dust or wind during sampling, etc.). All other parameters were below detection limits (no contamination suspected from sample handling or processing).

Replicate Sample(s) – the average RPD of the replicate sample WQ-PC-D-r was 7% with an average difference of 6% for dissolved and 9% for total metals. Total titanium and lead had RPD >20%, indicating some imprecision in lab analysis or intrinsically high sample variability. Based on the time of year (freshet) with higher flows and runoff, it is likely the latter reason for the higher differences in RPD. The average RPD of the replicate sample WQ-VC-DBC-r was 7% with an average difference of 6% for dissolved and 6% for total metals. Alkalinity (total and bicarbonate) had RPD>20% (indicating intrinsically high variability within samples), and total mercury and dissolved zinc had RPD>50% suggesting errors in lab precision or highly variable conditions. The average RPD of the replicate sample WQ-DC-D1b-r was 3% with an average difference of 2% for dissolved and 3% for total metals. All individual RPD values were below 20% and are considered adequately precise.

PROGRAM RECOMMENDATIONS

- Continue to monitor sediment build-up in the weir pond over the course of the open-water season. Maintenance of the H-DC-M WP weir pond was recommended following the May 2015 trips. AAM has since cleaned out the sediment behind the weir pond (June 11, 2015).
- Discuss and investigate a more suitable location for the H-VC-R continuous station prior to winter.
- Continue to note any channels from Back Creek entering upstream of the regular confluence – as this occurrence would have implications for water quality at WQ-VC-U and hydrology at H-VC-U.
- Continue to monitor the WQ-SEEP (regular standard sampling package monthly and LC50 every second month). Conditions are improving.

- Continue to monitor the WQ-LW-SEEP-01 and WQ-ADIT-SEEP during subsequent summer and fall trips, in order to collect opportunistic samples if flowing (both sites were dry during the May 2015 trips).

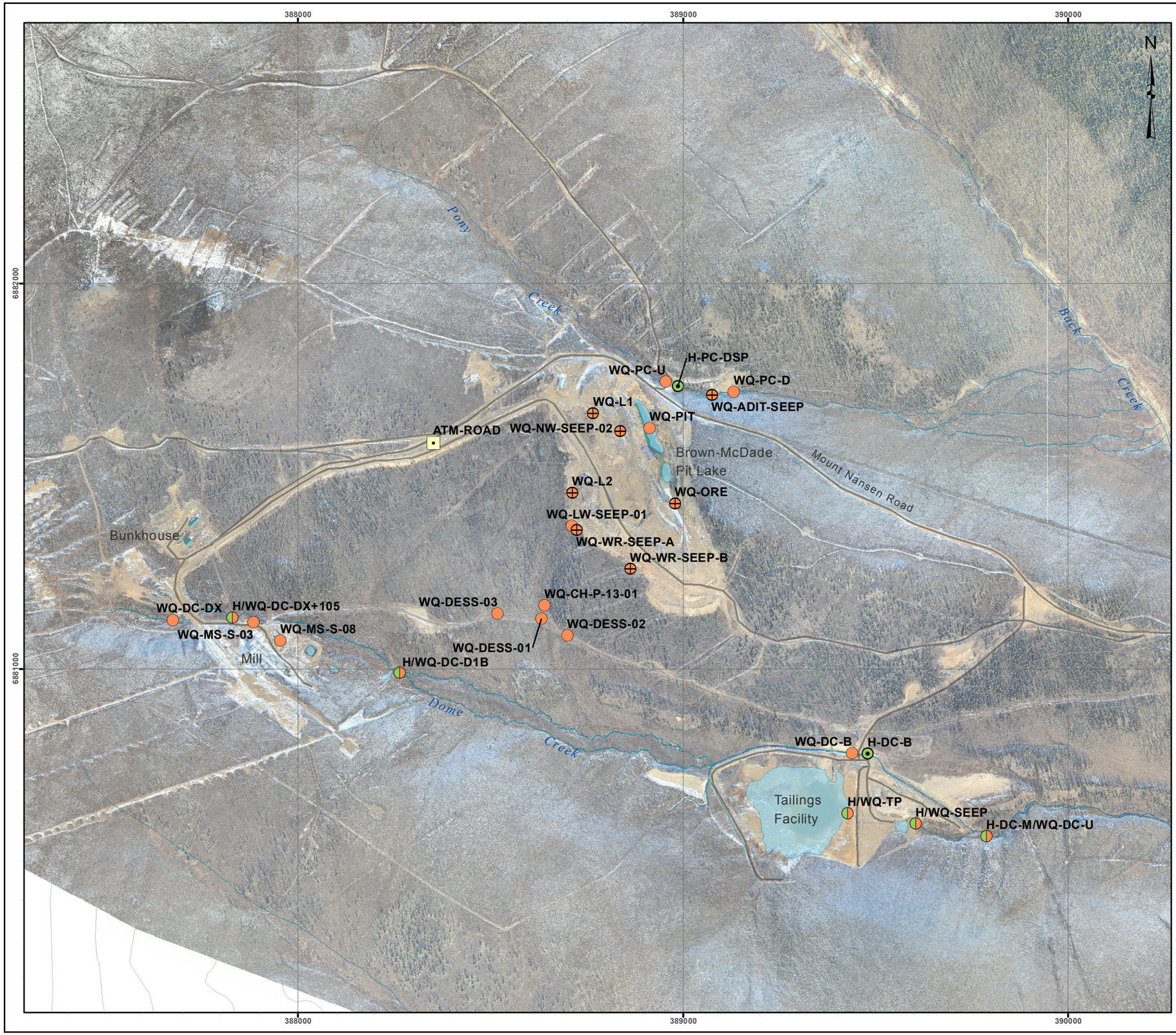
ADDITIONAL TRIP INFORMATION

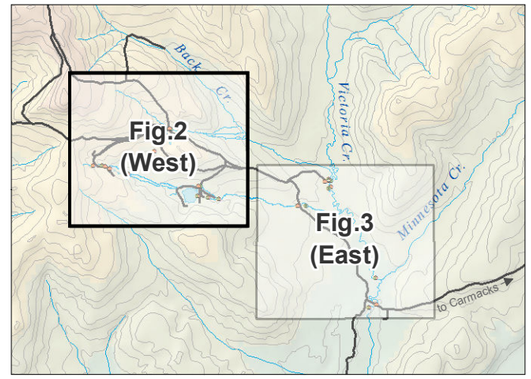
Any changes to project scope (i.e. additional sites sampled):	All sampling and monitoring was conducted within scope.
Any alterations to sample scheduling:	None.
Any events resulting in changes to budget:	None.
Additional Comments:	Site conditions during the two site trips were representative of early-spring and spring freshet, respectively. Water levels were significantly higher on both trips with the majority of ice and snow has now melted at the Mount Nansen site.
Wildlife Sightings:	A black bear was seen during the drive from Carmacks to Mount Nansen site during the first site trip.
Site concerns (safety):	A caribou leg (bait) was discovered during the second trip at the access point to the trail for WQ/H-VC-UMN off the Mount Nansen road. The bait was wired to the base of a tree several meters from a trap line sign and appears to be left from winter. May be a wildlife attractant.

LIST OF ATTACHMENTS

The following information is attached to this monthly report:

- Map of Hydrometric Stations and Water Quality Sites
- Site and Station Photos from the trip
- Data Tables
    - Hydrology – Site Conditions and Tasks Completed
    - Hydrology – Summary Table of Discharge Measurements
    - Water Quality – Site Conditions and Samples Collected
    - Water Quality – Summary Table of In Situ Parameters and Lab Results
- Water Quality – Copies of Lab Certificate of Analysis (COA)
- Water Quality – Copy of Yukon Environmental Health Services Bacteriological Results





Legend

- Atmospheric Station (label e.g. ATM-ROAD)
- Hydrometric Station and Water Quality Site (label e.g. H/WQ-VC-UMN)
- Hydrometric Station (label e.g. H-VC-R)
- Water Quality Site (label e.g. WQ-PC-U)
- Temporary Water Quality Site (label e.g. WQ-MS-S-03)
- Unpaved Road/Access

Mount Nansen Site (West): Hydrometric Stations and Water Quality Sites

Notes:

1:50,000 and 1:250,000 Topographic Spatial Data provided by Geomatics - Yukon Government via online source (Corporate Spatial Warehouse) www.geomaticsyukon.ca.

Watercourse, drainage areas and Mount Nansen Road layers digitized / modified by EDI (2011) using orthophotos provided by Yukon Government, Energy, Mines and Resources (2011).

Imagery provided by Yukon Government - Energy, Mines and Resources - Abandoned Mines Branch.

Project data displayed is site specific. Data collected by EDI Environmental Dynamics Inc. (2014/2015) was obtained using Garmin GPS technology.

This document is not an official land survey and the spatial data presented is subject to change.

0 50 100 200 300 400 500
Metres

Map Scale = 1:10,000 (printed on 11 x 17)
Map Projection: NAD 1983 UTM Zone 8N

Drawn: LG	Checked: MM / JB	Date: 08/05/2015	**FIGURE 2**

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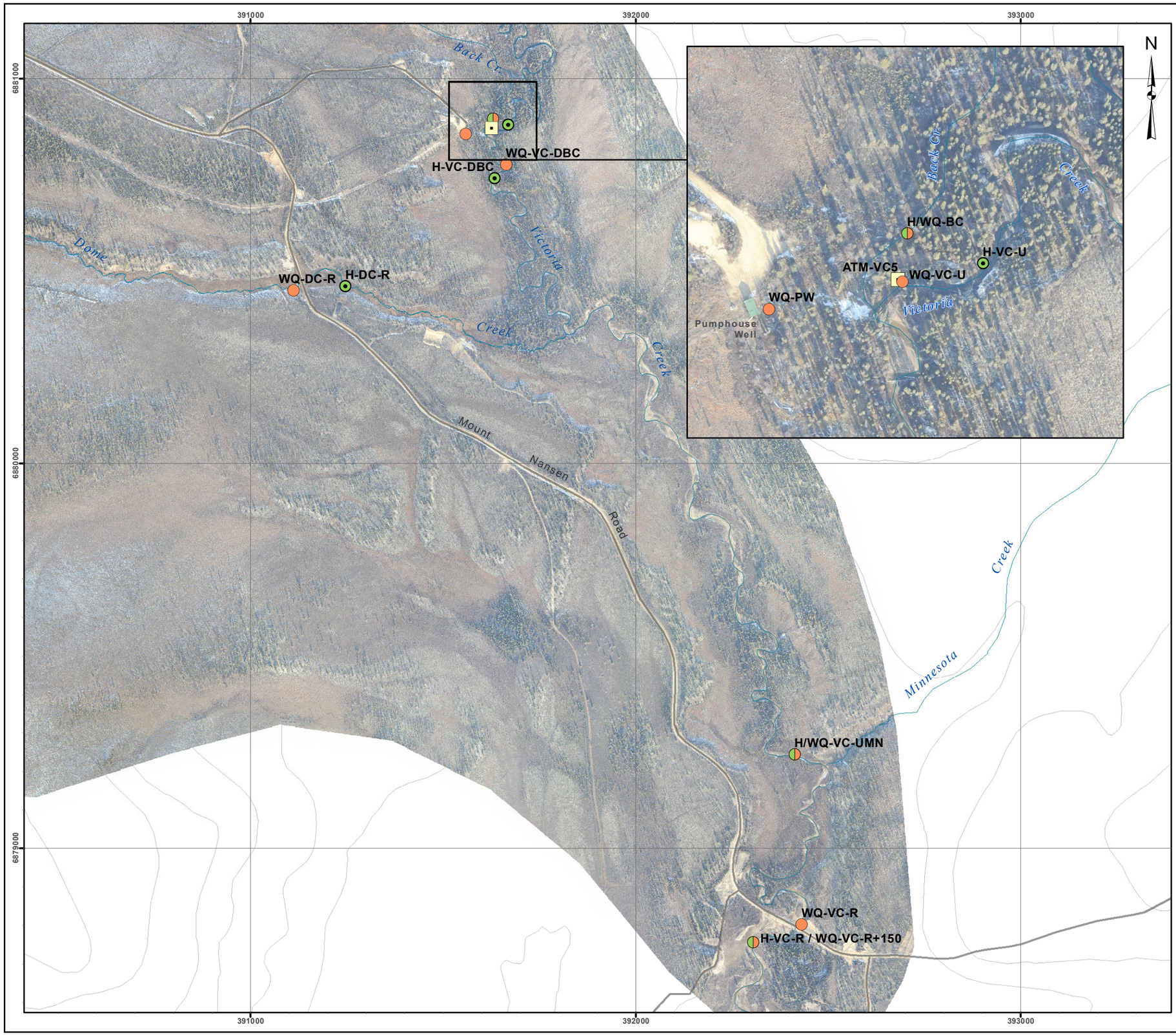

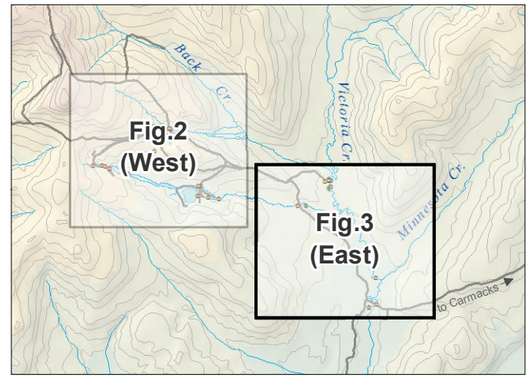

Legend

- Atmospheric Station (label e.g. ATM-ROAD)
- Hydrometric Station and Water Quality Site (label e.g. H/WQ-VC-UMN)
- Hydrometric Station (label e.g. H-VC-R)
- Water Quality Site (label e.g. WQ-PC-U)
- Temporary Water Quality Site (label e.g. WQ-MS-S-03)
- Unpaved Road/Access

Mount Nansen Site (East): Hydrometric Stations and Water Quality Sites

Notes:

1:50,000 and 1:250,000 Topographic Spatial Data provided by Geomatics - Yukon Government via online source (Corporate Spatial Warehouse) www.geomaticsyukon.ca.

Watercourse, drainage areas and Mount Nansen Road layers digitized / modified by EDI (2011) using orthophotos provided by Yukon Government, Energy, Mines and Resources (2011).

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0 50 100 200 300 400 500
Metres

Map Scale = 1:10,000 (printed on 11 x 17)
Map Projection: NAD 1983 UTM Zone 8N

Drawn:	Checked:	Date:	
LG	MM / JB	08/05/2015	**FIGURE 3**

Yukon EDI

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Dome Creek Sites/Stations, Mill Seeps and DESS Seeps

Photo 1. H/WQ-DC-DX+105, looking downstream (May 6, 2015).

Photo 2. H/WQ-DC-DX+105, looking downstream (May 14, 2015).

Photo 3. WQ-DC-DX, looking upstream (May 6, 2015).

Photo 4. WQ-DC-DX, looking across channel (May 14, 2015).

Photo 5. H-DC-R, looking upstream (May 5, 2015).

Photo 6. WQ-DC-R, looking downstream (May 13, 2015).

Photo 7. WQ-MS-S-03, looking upstream (May 6, 2015).

Photo 8. WQ-MS-S-03 –looking upstream (May 14, 2015).

Photo 9. WQ-MS-S-08 - overview (May 6, 2015).

Photo 10. WQ-MS-S-08 – overview (May 14, 2015).

Photo 11. H-DC-B station location, looking downstream (May 5, 2015).

Photo 12. H-DC-B, looking downstream (May 14, 2015).

Photo 13. WQ-DC-B, looking upstream (May 5, 2015).

Photo 14. WQ-DC-B–looking upstream (May 14, 2015)

Photo 15. H-DC-M WP looking downstream (May 5, 2015).

Photo 16. H-DC-M WP, looking upstream (May 14, 2015).

Photo 17. WQ-DC-U looking downstream from sample site (May 5, 2015).

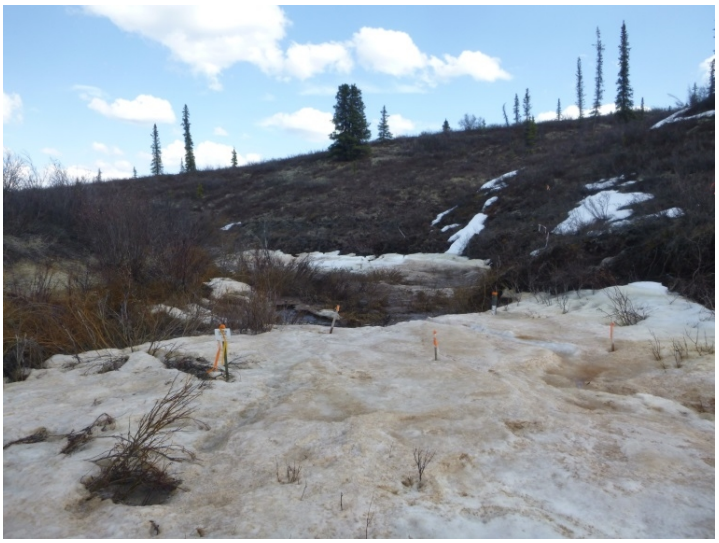

Photo 18. WQ-DC-U, looking downstream at sample site (May 14, 2015).

Photo 19. H/WQ-DC-D1b, looking downstream (May 6, 2015).

Photo 20. WQ-DC-D1b, looking downstream (May 13, 2015).

Photo 21. WQ-CH-P-13-01, looking upstream (May 6, 2015).

Photo 22. WQ-CH-P-13-01, looking upstream (May 13, 2015).

Photo 23. WQ-DESS-01, looking upstream (May 6, 2015).

Photo 24. WQ-DESS-01, looking across seep along road (May 13, 2015).

Photo 25. WQ-DESS-02, looking across seep at road (May 6, 2015).

Photo 26. WQ-DESS-02, looking across seep at road (May 13, 2015).

Photo 27. WQ-DESS-03, looking across seep at road (May 6, 2015).

Photo 28. WQ-DESS-03, looking across seep at road (May 13, 2015).

Photo 29. WQ-LW-SEEP-01, site location (May 6, 2015).

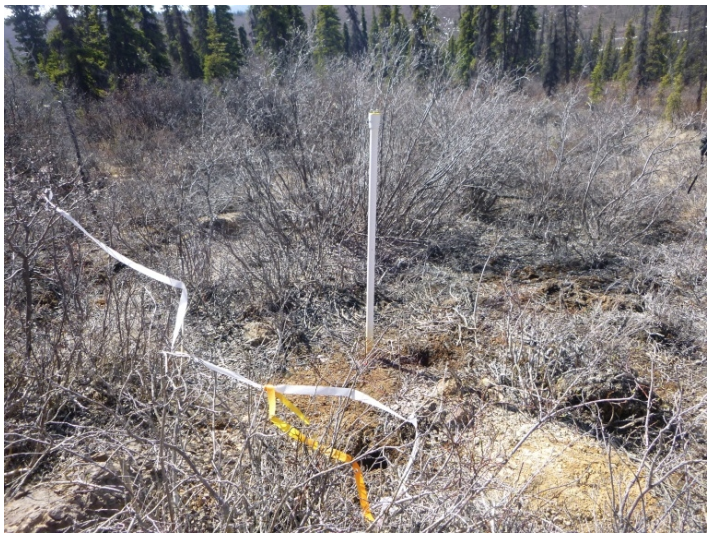

Photo 30. WQ-LW-SEEP-01, site location (May 13, 2015).

Victoria Creek Sites/Stations

Photo 31. H-VC-U, looking upstream (May 5, 2015).

Photo 32. H-VC-U, looking upstream (May 13, 2015).

Photo 33. H-VC-DBC, looking downstream (May 5, 2015).

Photo 34. H-VC-DBC, looking downstream (May 13, 2015).

Photo 35. H-VC-UMN, looking downstream (May 4, 2015).

Photo 36. H-VC-UMN, looking downstream (May 12, 2015).

Photo 37. H-VC-R, looking at water ponding in parking area (stilling well in channel (May 4, 2015).

Photo 38. H-VC-R, looking downstream, ADV measurement location (May 4, 2015).

Photo 39. H-VC-R, looking upstream, with water from parking area flowing into creek at stilling well location (May 4, 2015).

Photo 40. H-VC-R, looking downstream at stilling well (May 12, 2015).

Photo 41. H-VC-R, overview of Victoria Creek at Road, looking downstream from above road crossing (May 12, 2015).

Pony Creek Sites/Stations & Adit Seep

Photo 42. H-PC-DSP, looking across at culvert outlet (May 5, 2015).

Photo 43. H-PC-DSP, looking across at culvert outlet (May 12, 2015).

Photo 44. WQ-PC-U, looking upstream (May 5, 2015).

Photo 45. WQ-PC-U (May 12, 2015).

Photo 46. WQ-PC-D, looking upstream (May 5, 2015).

Photo 47. WQ-PC-D, looking downstream (May 12, 2015).

Photo 48. WQ-ADIT-SEEP (May 5, 2015).

Photo 49. WQ-ADIT-SEEP (May 12, 2015).

Photo 50. WQ-PC-WR – upstream view of opportunistic Pony Creek waste rock seep – (*culvert on Pony Creek near adit in upper left photo)* (May 14, 2015).

Photo 51. WQ-PC-WR – looking across and downstream to where it enters Pony Creek below the adit (May 14, 2015).

Back Creek Sites/Stations

Photo 52. H/WQ-BC, looking upstream, showing overflow conditions (May 5, 2015).

Photo 53. H/WQ-BC, looking upstream (May 13, 2015).

Photo 54. Multiple braided channels of Back Creek entering Victoria Creek upstream of normal confluence (May 5, 2015).

Photo 55. Victoria Creek upstream of WQ-VC-U showing Back Creek entering upstream of normal confluence – small waterfall dropping down into creek (May 13, 2015).

Pit Lake/Tailings Pond/Seepage Pond Discharge

Photo 56. H/WQ-SEEP (May 5, 2015).

Photo 57. H/WQ-SEEP (May 13, 2015).

Photo 58. WQ-TP sampling location (May 5, 2015)

Photo 59. WQ-TP sampling location (May 13, 2015).

Photo 60. H-TP staff gauges (May 5, 2015).

Photo 61. H-TP staff gauges (May 13, 2015).

Photo 62. WQ-PIT sampling location (May 4, 2015).

Photo 63. WQ-PIT sampling location, (May 12, 2015).

Pump House Well

Photo 64. H/WQ-PW
(May 6, 2015).

No Photo Taken

Photo 65. H/WQ-PW
(May 14, 2015).

Additional Freshet Sites
(lysimeters, waste rock seeps and mill seeps)

Photo 66. WQ-L1 lysimeter overview
(May 6, 2015).

Photo 67. WQ-L1 lysimeter overview
(May 14, 2015).

Photo 68. WQ-L2 lysimeter overview (May 6, 2015).

Photo 69. WQ-L2 lysimeter overview (May 14, 2015).

Photo 70. WQ-MS-S-A seep looking upstream across stream (May 6, 2015).

Photo 71. WQ-MS-S-A looking downstream (May 14, 2015).

Photo 72. WQ-NW-SEEP-02 looking at pipe outlet (May 4, 2015).

Photo 73. WQ-NW-SEEP-02 looking at pipe outlet (with sample collection bag on outlet) (May 12, 2015).

Photo 74. WQ-ORE looking downstream of seep (May 4, 2015).

Photo 75. WQ-ORE looking upstream at seepage area (May 12, 2015).

Photo 76. WQ-WR-SEEP-A looking downstream at seepage area (May 6, 2015).

Photo 77. WQ-WR-SEEP-C looking upstream at seepage area (May 14, 2015).

Photo 78. WQ-WR-SEEP-B looking upstream at seepage area (May 6, 2015).

Photo 79. WQ-WR-SEEP-B looking upstream at seepage area (May 14, 2015).

Measurement ID	Hydrometric Identifier (HID)	Measurement Date	Measurement Time	Discharge Measurement Method	Discharge (m^3/s)	Discharge Data Flag	Surveyed Water Elevation (m)	Survey Data Flag	Comments
294	ATM-VC5	05/05/2015	13:01	N					Data downloaded.
295	ATM-VC5	13/05/2015	13:17	N					Data downloaded. Mount Nansen weather station is the back-up barometric logger for the hydrometric network. The weather station was not transmitting therefore a back-up barologger was deployed temporarily at ATM-VC and named ATM-VC6 (Solinst Barologger Edge S/N: 0012041756). ATM-VC6 will be removed when the weather station is repaired.
296	H-BC	05/05/2015		N		X			Conditions not suitable for hydrometric measurement due to multi-channel braiding and poor ice conditions.
293	H-BC	13/05/2015		N		X			No discharge estimate possible. Back Creek is avulsing into Victoria Creek upstream of H-VC-U (downstream of H-VC-REF); at least five significant avulsion channels and waterfalls contributing flow to Victoria Creek. Back Creek appears to be near peak flow, but water is not contained in a single channel feasible for measurement. Estimated less than 10% of flow is discharging to Victoria Creek at normal Back Creek/Victoria Creek confluence downstream of H-VC-U.
268	H-DC-B	05/05/2015	18:20	SS	0.353		2.0055		Site conditions still suitable. Ice on edge of banks. Installed well and staff gauge at old site: Zone 8 E 389508 N 6880762, 62.042927 -137.112766. New BM1 installed, BM2 and BM3 still in same places. Logger activated at 18:23.
283	H-DC-B	14/05/2015	08:18	SS	0.037		2.0165		Minor ice on bank.
302	H-DC-D1b	05/05/2015		N		X			Channel conditions not appropriate for discharge measurement due to ice.
303	H-DC-D1b	13/05/2015	14:40	N		X			Channel conditions not appropriate for discharge measurement due to ice.
275	H-DC-DX+105	06/05/2015	10:40	V	0.0003			N	Still ice covering most of the channel.
282	H-DC-DX+105	14/05/2015	10:06	SS	0.003				Moderate flow, near bankfull conditions. No vegetation in channel.
272	H-DC-M	05/05/2015	15:50	N		X		N	The channel appears to be more confined downstream, but still has additional other water inputs; therefore could not install logger. Water is flowing ontop of ice. Water in well up to 13 cm from top of logger rod. Water outside of well is 5 cm above top of staff. Logger rod is frozen in the well. There is 33 cm of water in the well to the top of ice in the well.
298	H-DC-M WP	05/05/2015	15:50	N		X			Well is still encased in ice, with water just outside. Direct read cable downloaded at 16:04 (SN 1045354). Logger rod frozen in well.
284	H-DC-M WP	13/05/2015	17:40	SS	0.118				Accumulated sediment to be excavated from weir pond.
300	H-DC-R	05/05/2015		N		X			Stilling well not installed due to ice conditions and braided channels in floodplain; channel not confined.
285	H-DC-R	13/05/2015	09:22	V	0.005	E	0.754		Stilling well, staff gauge and level logger installed. Salt tracer conducted in main channel; volumetric measuring to determine flow in secondary side channel on north side of valley bottom; add discharge values together (SS+V = total) for this date/time.
285	H-DC-R	13/05/2015	09:22	SS	0.051	E	0.754		Stilling well, staff gauge and level logger installed. Salt tracer conducted in main channel; volumetric measuring to determine flow in secondary side channel on north side of valley bottom; add discharge values together (SS+V = total) for this date/time.
276	H-PC-DSP	05/05/2015	15:25	V	0.0056	B		N	Logger rod frozen in well.
281	H-PC-DSP	12/05/2015	17:44	V	0.017	M	2.465		Level logger installed (serial number: 0022041814). No ice remains at culvert.

Measurement ID	Hydrometric Identifier (HID)	Measurement Date	Measurement Time	Discharge Measurement Method	Discharge (m^3/s)	Discharge Data Flag	Surveyed Water Elevation (m)	Survey Data Flag	Comments
273	H-PW	06/05/2015	14:27	V	0.0027			N	The hose was found upstream further away from building.
290	H-PW	13/05/2015	12:01	V	0.003			N	
277	H-SEEP	05/05/2015	16:30	V	0.0027			N	No ice present at site. Hose is no longer pumping into barrel. Hose is pointed up so that water pumps outside of barrel. SEEP pump (in shack) total liters = 0.23154; liters/min = 179.888 at 16:20.
291	H-SEEP	13/05/2015	17:56	V	0.003				Seep pump (in shack) total liters = 226388 L; liters/min = 225.356 at 18:08.
271	H-VC-DBC	05/05/2015	11:32	ADV-MID	0.3172		1.806		Solinst gold (SN 1049137) downloaded at 11:22, pulled at 11:37. Solinst edge (SN 0022037327) deployed at 11:53 at 15 min interval, linear, metre, degree celsius. Measurement - 1st line on logger to top of rod = 116.0 cm and top of rod to bed = 123.0 cm.
287	H-VC-DBC	13/05/2015	11:10	ADV-MID	1.1626		1.968		Downstream cobble point bars visible. Channel appears stable. No evidence of high water marks above banks.
269	H-VC-R	04/05/2015	13:57	ADV-MID	0.4497		2.128		Solinst gold logger downloaded May 4. Returned to site on May 5, 2015 pulled the solinst gold logger at 09:10, deployed solinst edge logger at 09:27. Appears to be an increasing flow in the parking lot around 6 inches deep while previous day was 4 inches deep. Lots of braiding in creek and use of secondary channels. ADV was done at a site downstream of regular winter/spring ADV site, where channel was combined. Ice was present on edge of bank.
289	H-VC-R	12/05/2015		ADV-MID	2.3277	SH-L	2.2575		Sediment accumulation at base of well including gravel inside well. Investigated possible new location for stilling well; no suitable location was found. Stilling well will remain in place until water levels recede and the channel morphology is more visible. Numerous side channels were active at time of visit.
274	H-VC-U	05/05/2015	13:15	ADV-MID	0.3678			N	Water became visibly more turbid with in the hour spent at the site. Ice along right and left down stream bank. Well and logger not installed, due to influence from Back Creek and multiple channels/inputs occurring at the site.
286	H-VC-U	13/05/2015	14:14	ADV-MID	1.29		2.2525		New stilling well, staff gauge and level logger installed approximately 5m upstream of old well.
270	H-VC-UMN	04/05/2015	16:10	ADV-MID	0.4178		1.7785		New solinst logger (SN 22041807) deployed at 17:37. Ice on right downstream bank at sample site, above and below, more covered downstream.
288	H-VC-UMN	14/05/2015		ADV-MID	2.0521		1.841		Velocity-area measurement conducted approximately 25 m upstream of H-VC-UMN stilling well where the channel was safe to wade.

Discharge Measurement Method Legend

Measurement Method ID	Measurement Method	Measurement Description
ADV-MID	Mid Section Method - Acoustic Doppler Velocimeter	Cross-sectional velocity using an ADV, mid-section method.
SS	Brine Salt Slug Tracer	Salt dilution gauging using a brine salt slug.
V	Volumetric	Volumetric measurement obtained by filling a graduated contained at a culvert, pipe outlet or weir.
W	Weir	Measurement obtained by a rated structure (v-notch weir).
N	None	No measurement could be obtained.
SD	Dry Salt Slug Tracer	Salt dilution gauging using a dry salt slug.
HWM	High Water Mark - Indirect Method	Indirect method using high water mark in the slope-area calculation for estimating high discharges.
ADCP	Acoustic Doppler Current Profiler	Cross-sectional velocity using an ADCP, mid-section method.
SC	Constant Rate Salt Tracer	Salt dilution gauging using the constant rate method.
CM-MID	Mid Section Method - Current Meter	Cross-sectional velocity using a velocimeter (Swoffer or Pygmy AA)

Hydrometric Stations

Hydrometric ID	Hydrometric Stations
ATM-VC5	Atmospheric Barologger (5) at Victoria Creek
H-BC	Back Creek
H-DC-B	Diversion Channel at Bridge
H-DC-D1B	Dome Creek at D1b
H-DC-DX	Dome Creek at DX
H-DC-DX+105	Dome Creek at DX+105
H-DC-M-WP	Middle Dome Creek at Weir Pond
H-DC-R	Dome Creek at Road
H-PC-DSP	Pony Creek Downstream of Pit
H-SEEP	Seepage Pond Outflow
H-TP	Tailings Pond
H-VC-DBC	Victoria Creek Downstream of Back Creek
H-VC-R	Victoria Creek at Road
H-VC-U	Upper Victoria Creek
H-VC-UMN	Victoria Creek Upstream of Minnesota Creek

Discharge Data Flag Legend

Discharge Data Flag	Discharge Data Flag Description
E	Estimated value
B	Backwater effects (ice related)
F	Instrument malfunction
M	Manual measurement
A	Automated measurement (logged)
ML	Missing length data
MD	Missing depth data
MW	Missing width data
O	Outside of measurement reporting range
S	Suspect data
X	Poor channel conditions for discharge measurement
MI	Missing Data
SH-L	Data logger Shift
SH-SG	Staff Gauge Shift
UR	Under review

Survey Data Flag Legend

Survey Flag	Survey Flag Description
S	Suspect data
MI	Missing data
UR	Under review
F	Instrument Malfunction
O	Outside measurement Accuracy (+/-0.003 m)
N	No survey conducted

Water Quality Site	Sample Collected? (Y/N)	Measurement Date	Comments
WQ-ADIT-SEEP	N	05-May-15	No flow or water observed at site.
WQ-ADIT-SEEP	N	12-May-15	No flow or water observed at site.
WQ-BC	Y	05-May-15	Still ice covered at regular sample location. However, creek was found flowing just upstream of regular site, towards and into Victoria Creek upstream of the normal confluence – sample was collected from flowing portion of stream.
WQ-BC	Y	13-May-15	Flow is braided throughout the area due to high flows and continued presence of ice (up to 30 cm thick) that remains in the Back Creek channel. Sample collected from open water lead next to regular sample site.
WQ-CH-P-13-01	Y	06-May-15	Small trickle of water present at sample site– suitable for collection. Similar quantity flow to WQ-DESS-01.
WQ-CH-P-13-01	Y	13-May-15	Flow at this site was moderate/high; the flow volume was not confined, and therefore could not be estimated.
WQ-DC-B	Y	05-May-15	Channel mostly open, with some ice along right downstream bank.
WQ-DC-B	Y	14-May-15	Channel mostly open, with some ice along right downstream bank. Flow was moderate-high and clear.
WQ-DC-D1b	Y	06-May-15	Ice cover still at site. However, water was flowing under a thin layer of ice at the sample location and was easily removed to expose water for sample collection.
WQ-DC-D1b	Y	13-May-15	Site is largely ice-covered with water within and under ice. A significant amount of water flows outside the confined banks due to the remaining presence of ice in channel.
WQ-DC-DX	Y	06-May-15	Ice covering sample site. Had to chip away ice to access water flowing beneath.
WQ-DC-DX	Y	14-May-15	Channel is now largely ice-free (some ice patches 1-10 cm). The flow level was moderate with light turbidity.
WQ-DC-DX+105	Y	06-May-15	Some ice upstream and downstream of sample site. Open lead at site.
WQ-DC-DX+105	Y	13-May-15	Small amounts of ice/snow remain at the site on right bank; water flow was high, and water was clear.
WQ-DC-R	Y	05-May-15	Ice covering sample site. Had to chip away ice to access water. Good flow beneath ice.
WQ-DC-R	Y	12-May-15	Discontinuous ice present on site; some water flowing over ice. Water level was moderately high.
WQ-DC-U	Y	05-May-15	Sample taken from open channel in middle of stream near regular location. Stream is flowing over ice. Thick ice and snow still covering areas (stilling well top just exposed).
WQ-DC-U	Y	13-May-15	Sample taken from open channel in middle of stream near regular location. Ice of variable thickness (0 – 50 cm) still present at site.
WQ-DESS-01	Y	06-May-15	Small trickle of water present at sample site – suitable for collection. Flow estimated at 0.22 L/s.
WQ-DESS-01	Y	13-May-15	Water levels had increased from previous week, and a sample was collected. The flow rate was 0.319 L/s.

Water Quality Site	Sample Collected? (Y/N)	Measurement Date	Comments
WQ-DESS-02	N	06-May-15	Site frozen to substrate, no flow observed.
WQ-DESS-02	Y	13-May-15	Very low flow.
WQ-DESS-03	Y	06-May-15	Slow trickle of water present at sample site– suitable for collection. Flow estimated at 0.37 L/s.
WQ-DESS-03	Y	13-May-15	Water levels had increased from previous week, and a sample was collected. The flow was not confined, and therefore could not be estimated.
WQ-L1	Y	06-May-15	Water in pipe with approximately 2 cm of ice on top. Layers of ice/slush present. Successfully collected sample with peristaltic pump. Total volume in L1 was 7.8 L (including samples).
WQ-L1	Y	14-May-15	Ice and small amount of water present. Collected only partial sample (total and diss. metals, diss. mercury, half general chemistry sample). Insufficient water for in situ data collection.
WQ-L2	Y	06-May-15	Water in pipe with ice plug on top. Successfully collected sample with peristaltic pump. Total volume in L2 was 8.8 L (including samples).
WQ-L2	Y	14-May-15	Ice and small amount of water present. Collected only partial sample (total and diss. metals, diss. mercury, and half general chemistry sample). Insufficient water for in situ field data.
WQ-LW-SEEP-01	N	06-May-15	Seep was dry.
WQ-LW-SEEP-01	N	14-May-15	Seep was dry.
WQ-MS-S-03	Y	06-May-15	Some ice upstream and downstream of sample site. Open lead at site.
WQ-MS-S-03	Y	13-May-15	All ice melted at site; water level was moderate. Wire was noted in channel upstream of sample site.
WQ-MS-S-08	N	06-May-15	Ice present at site, no flow observed.
WQ-MS-S-08	Y	14-May-15	There was a moderate to high amount of flow at this seep; none was noted on the previous sample trip. Flow appears to be coming from below - at mill building.
WQ-MS-S-A	Y	06-May-15	Opportunistic mill seep sample. Ice thickness variable, a thin open channel.
WQ-MS-S-A	Y	14-May-15	Opportunistic mill seep sample; sample collected at same location as last trip and there was considerably more flow than noted on the previous trip.
WQ-NW-SEEP-02	Y	05-May-15	40cm snow found at site and ice in barrel. Attached ziploc bag to pipe outlet, collected 1.1 L of water over 19.7 hr period. Insufficient water for cyanide or cyanate samples, all other samples collected.
WQ-NW-SEEP-02	Y	14-May-15	Approximately 4 L of water was collected between 8:02 May 13 and 07:35 May 14.
WQ-ORE	Y	04-May-15	Small seep, with water flowing down the road leading into the Pit – sample collected.
WQ-ORE	Y	12-May-15	Small seep, with water flowing down the road leading into the Pit. Flow was low, and water was moderately turbid.

Water Quality Site	Sample Collected? (Y/N)	Measurement Date	Comments
WQ-PC-D	Y	05-May-15	Some ice and snow present on edges of channel.
WQ-PC-D	Y	12-May-15	Ice/snow remains on RBD, but all snow and ice melted from LDB. Water level in the creek was high.
WQ-PC-U	Y	05-May-15	Water flowing with no ice present at sample site. Thin ice over pond area just downstream.
WQ-PC-U	Y	12-May-15	Water flowing with no ice present at sample site.
WQ-PC-WR-01	Y	14-May-15	New seep identified at base of road embankment 35 m downstream of culvert near adit. Coming out of waste rock area.
WQ-PIT-1	N	-	Not scheduled for May 2015 due to ice safety concerns.
WQ-PIT-2	N	-	Not scheduled for May 2015 due to ice safety concerns.
WQ-PIT-3	N	-	Not scheduled for May 2015 due to ice safety concerns.
WQ-PW	Y	06-May-15	Drinking water samples and bacteriological samples collected. Only one sample required for May 2015.
WQ-SEEP	Y	05-May-15	Conditions normal, water free flowing from pipe outlet. LC50 could not be collected due to lab not having sufficient fish stock for the test.
WQ-SEEP	Y	13-May-15	Readings on the flow meter were fluctuating; Denison indicated there may be something stuck in culvert or pump. LC50 samples collected (lab holding time exceeded by 1 day due to long weekend - sample still processed).
WQ-TP	Y	05-May-15	The pond is covered in ice with some melt water on the surface. Chipped through multiple layers of ice to collect sample.
WQ-TP	Y	13-May-15	Ice free at sample site, but pond had 50% ice coverage. Water level was very low.
WQ-VC-DBC	Y	05-May-15	Sample collected from regular location. More open water and higher water levels than April 2015 trip. Water light grey in colour.
WQ-VC-DBC	Y	13-May-15	Sample collected from regular location. Water level was very high, but flow remained within bank confines.
WQ-VC-R	N	04-May-15	Winter/early-spring samples are collected from the WQ-VC-R+150 site due to thick overflow ice at the WQ-VC-R site during the winter.
WQ-VC-R	N	12-May-15	Winter/late spring samples are collected from the WQ-VC-R+150 site due to thick overflow ice at the WQ-VC-R site during the winter.
WQ-VC-R+150	Y	04-May-15	Samples were collected from the regular winter sampling location - WQ-VC-R+150 (downstream of road crossing ~150 m). Flow levels had increased from the previous trip.
WQ-VC-R+150	Y	12-May-15	Samples were collected from the regular winter sampling location - WQ-VC-R+150 (downstream of road crossing ~150 m). Flow levels were high; nearby side channels now wetted.
WQ-VC-U	Y	05-May-15	Sample collected from regular location. Flow levels have increased from the previous trip. Samples likely affected by Back Creek which is entering Victoria Creek in several areas upstream of the regular confluence.

Water Quality Site	Sample Collected? (Y/N)	Measurement Date	Comments
WQ-VC-U	Y	13-May-15	Sample collected from regular location. Flow levels were very high. Samples likely affected by Back Creek which contributes to Victoria Creek in several areas upstream of the regular confluence.
WQ-VC-UMN	Y	04-May-15	Sample collected from regular location. Channel more open than previous trip.
WQ-VC-UMN	Y	12-May-15	Sample collected from regular location. Water levels were high, and water was entering creek from RDB approximately 40 m upstream of sample site.
WQ-WR-SEEP-A	Y	06-May-15	Opportunistic sample collected from water seepage at base of waste rock, approximately 15 metres south-southeast from WQ-LW-SEEP-01. Seep is within a small depression that is recharged slowly from ground.
WQ-WR-SEEP-A	N	14-May-15	Seep was dry.
WQ-WR-SEEP-B	Y	06-May-15	Opportunistic sample collected from water seepage at base of waste rock, approximately 170 metres south-southeast from WQ-WR-SEEP-A. Larger seep than WQ-WR-SEEP-A, flow estimate of 0.12 L/S.
WQ-WR-SEEP-B	N	14-May-15	No water present for sampling. Ground is moist at site.
WQ-WR-SEEP-C	Y	14-May-15	New seep identified. Water may be source from runoff/spring melt. Flows down a trench at base of waste rock pile.
QA/QC Samples			
Replicate 1	Y	04-May-15	Collected from WQ-VC-R+150-r.
Replicate 2	Y	04-May-15	Collected from WQ-VC-UMN-r.
Replicate 3	Y	05-May-15	Collected from WQ-DC-R-r.
Field Blank	Y	04-May-15	Filled with de-ionized water in the field (at WQ-VC-UMN).
Travel Blank	Y	-	Lab filled bottles were transported to and from field.
Replicate 1	Y	13-May-15	Replicate sample collected at WQ-VC-DBC.
Replicate 2	Y	12-May-15	Collected replicate sample at WQ-PC-D-r.
Replicate 3	Y	13-May-15	Collected replicate from WQ-DC-D1b-r.
Field Blank	Y	12-May-15	Filled with de-ionized water in the field (at WQ-VC-R+150).
Travel Blank	Y	-	Lab filled bottles were transported to and from field.

Summary of Water Quality Results for the May 4-6, 2015 Trip.

Analyte	Units	CCME-WATER-F-AL	Mount Nansen Effluent Discharge Standards	Sample ID WQ Site ID Date Sampled Detection Limit	0146-150505-019 WQ-PC-U 5/5/2015 2:45:00 PM	0146-150505-026 WQ-PC-D 5/5/2015 4:50:00 PM	0146-150505-020 WQ-BC 5/5/2015 1:45:00 PM	0146-150505-022 WQ-VC-U 5/5/2015 12:20:00 PM	0146-150505-021 WQ-VC-DBC 5/5/2015 11:35:00 AM	0146-150504-034 WQ-VC-UMN 5/4/2015 4:05:00 PM	0146-150504-036 WQ-VC-UMN-r 5/4/2015 4:45:00 PM	QA/QC WQ-VC-UMN Replicate Analysis	0146-150504-037 WQ-VC-R+150 5/4/2015 1:25:00 PM	0146-150504-035 WQ-VC-R+150-r 5/4/2015 1:30:00 PM	QA/QC WQ-VC-R+150 Replicate Analysis	0146-150506-005 WQ-DC-DX 5/6/2015 11:10:00 AM	0146-150506-031 WQ-DC-DX+105 5/6/2015 10:23:00 AM	0146-150506-032 WQ-MS-S-03 5/6/2015 10:25:00 AM	0146-150506-002 WQ-DC-D1b 5/6/2015 9:25:00 AM	0146-150505-029 WQ-DC-B 5/5/2015 5:15:00 PM	0146-150505-030 WQ-TP 5/5/2015 4:46:00 PM	0146-150505-028 WQ-SEEP 5/5/2015 4:25:00 PM	0146-150505-027 WQ-DC-U 5/5/2015 3:55:00 PM	0146-150505-023 WQ-DC-R 5/5/2015 10:20:00 AM	0146-150505-024 WQ-DC-R-r 5/5/2015 10:35:00 AM
Temperature (in-situ)	°C	-	-	-	1.3	0	0	0.1	0.1	0.2	-	-	0.4	-	-	0.8	0.9	1	0.5	0.9	2.1	3.2	0.3	0.2	-
Specific Conductivity (in-situ)	µS/cm	-	-	-	184.1	205.7	193.4	167.2	166.6	231.7	-	-	209.3	-	-	1832.0	147.9	1074.0	873.2	785.1	1522.0	1585.0	899.9	851.4	-
pH (in-situ)	pH	6.5 - 9.0	6.0 - 8.5	-	7.61	7.62	7.68	7.56	7.54	7.57	-	-	7.54	-	-	7.72	7.71	7.12	7.6	7.61	7.44	6.92	7.84	8.09	-
Turbidity (In-situ)	NTU	-	-	-	30.6	25	59.9	14.32	9.74	6.22	-	-	8.23	-	-	4.6	5.87	3.55	1.2	41.5	2.65	18.75	62.9	3.48	-
Dissolved Oxygen (in-situ - Pit only)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Colour, True	CU	15	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Conductivity	µS/cm	-	-	2	173	210	198	168	171	234	214	9%	217	215	1%	181	143	1050	863	810	748	1540	901	846	840
Hardness (as CaCO3)	mg/L	-	-	0.5	87.8	99.4	94.5	84.1	82.2	114	111	3%	101	102	1%	75.8	68.9	605	505	464	346	856	501	474	465
pH (lab)	pH	6.5 - 9.0	6.0 - 8.5	0.1	7.74	7.75	8.05	8.07	8.09	8.1	8.07	0%	8.09	8.09	0%	7.93	7.5	8.24	8.33	8.18	7.64	8	8.2	8.25	8.24
Total Suspended Solids	mg/L	-	50	3	9.3	17.3	24.7	24	10	6	8.7	<2xDL	6	6	<2xDL	15.3	4	4.7	<3.0	***155***	4	48.7	***148***	<3.0	<3.0
Total Dissolved Solids	mg/L	-	-	1	106	121	101	92.2	82.3	132	129	2%	120	112	7%	103	82.4	714	594	553	507	1190	621	582	562
Alkalinity, Bicarbonate (as CaCO3)	mg/L	-	-	1	39.2	40.6	58.8	70.9	57.4	71.7	68.4	5%	67.1	53.7	22%	47	29.8	193	160	123	24.8	194	125	130	105
Alkalinity, Carbonate (as CaCO3)	mg/L	-	-	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<DL	<1.0	<1.0	<DL	<1.0	<1.0	<1.0	3.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Hydroxide (as CaCO3)	mg/L	-	-	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<DL	<1.0	<1.0	<DL	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	-	-	1	39.2	40.6	58.8	70.9	57.4	71.7	68.4	5%	67.1	53.7	22%	47	29.8	193	163	123	24.8	194	125	130	105
Ammonia, Total (as N)	mg/L	0.75	-	0.005	0.0078	0.0085	<0.0050	<0.0050	<0.0050	0.0061	0.005	<2xDL	<0.0050	0.0051	<DL	0.0073	0.0081	0.0292	0.109	0.048	0.218	***4.14***	0.537	0.414	0.417
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<DL	<0.50	<0.50	<DL	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<2.5	<1.0	<0.50	<0.50
Fluoride (F)	mg/L	0.12	-	0.02	0.056	0.057	0.059	0.049	0.047	0.053	0.046	<2xDL	0.057	0.054	<2xDL	0.053	0.069	***0.191***	***0.124***	0.077	***0.133***	<0.10	0.046	0.075	0.074
Nitrate (as N)	mg/L	13	-	0.005	<0.0050	0.0104	0.0232	0.0287	0.0287	0.0103	0.0089	<2xDL	0.0075	0.0073	<2xDL	<0.0050	<0.0050	<0.010	<0.0050	0.0097	0.0873	0.317	0.047	0.0395	0.0396
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<DL	<0.0010	<0.0010	<DL	<0.0010	<0.0010	<0.0020	<0.0010	<0.0010	0.0033	0.0154	0.0024	0.0021	0.0021
Sulfate (SO4)	mg/L	-	-	0.5	46	55.5	28.8	17	15.9	45.6	45.1	1%	40.8	40.6	0%	34.8	32.3	379	314	312	351	703	360	327	326
Cyanide, Weak Acid Diss	mg/L	-	0.1	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<DL	<0.0050	<0.0050	<DL	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0084	<0.0050	<0.0050	<0.0050
Cyanide, Total	mg/L	-	0.3	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<DL	<0.0050	<0.0050	<DL	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.053	<0.0050	<0.0050	<0.0050
Cyanate	mg/L	-	-	0.2	0.26	0.28	<0.20	<0.20	0.25	<0.20	<2.0	<DL	<0.20	<0.20	<DL	<0.20	0.27	<0.20	<0.20	<2.0	<0.20	0.33	0.21	<0.20	<0.20
Thiocyanate (SCN)	mg/L	-	-	0.5	1.18	1.09	<0.50	<0.50	<0.50	<0.50	<0.50	<DL	0.54	0.54	<2xDL	0.9	1.44	<0.50	<0.50	0.52	<0.50	3.75	0.66	0.54	0.52
Aluminum (Al)-Total	mg/L	0.1	-	0.003	***1.25***	***0.99***	***1.57***	***0.432***	***0.356***	***0.242***	***0.315***	26%	***0.331***	***0.355***	7%	***0.225***	***0.498***	0.0778	0.0207	***2.66***	0.067	0.0567	***1.89***	0.0391	0.0319
Antimony (Sb)-Total	mg/L	-	0.15	0.0001	0.00065	0.00113	0.00062	0.00022	0.00017	0.00035	0.00036	<2xDL	0.00035	0.00037	<2xDL	0.00093	0.00191	0.0157	0.00849	0.00249	0.0114	0.00068	0.00231	0.00259	0.00227
Arsenic (As)-Total	mg/L	0.005	-	0.0001	***0.00942***	***0.0156***	***0.0118***	0.00327	0.00258	0.00367	0.00387	5%	0.00341	0.00377	10%	***0.0128***	***0.0131***	***0.078***	***0.0107***	***0.0224***	***0.0141***	***0.0732***	***0.0335***	***0.0148***	***0.013***
Barium (Ba)-Total	mg/L	-	1.0	0.00005	0.0491	0.0488	0.086	0.0654	0.0642	0.0581	0.0579	0%	0.0585	0.0626	7%	0.0166	0.0307	0.0154	0.0237	0.0766	0.00655	0.0674	0.0746	0.0473	0.0449
Beryllium (Be)-Total	mg/L	-	-	0.00002	0.00005	0.000051	0.000064	0.000024	0.00002	<0.000020	<0.000020	<DL	<0.000020	0.000021	<DL	<0.000020	0.000037	<0.000020	<0.000020	0.000092	0.000031	<0.000020	0.000078	<0.000020	<0.000020
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.000050	0.000072	0.00016	0.000065	<0.000050	<0.000050	<0.000050	<DL	<0.000050	<0.000050	<DL	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<DL	<0.010	<0.010	<DL	<0.010	<0.010	<0.010	0.013	0.012	0.022	0.061	0.014	0.015	0.014
Cadmium (Cd)-Total *(Lab Result)*	mg/L	0.00009	0.02	0.00001	0.000138	***0.00179***	***0.000268***	0.0000767	0.0000714	0.0000584	0.0000642	9%	0.0000684	0.000081	17%	0.0000396	***0.000634***	***0.00415***	***0.00126***	0.000294	***0.0176***	***0.000487***	0.000348	0.000171	0.000164
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	*mg/L*	-	-	*0.00001*	*0.000142*	*0.000158*	*0.000151*	*0.000137*	*0.000135*	*0.000177*	*0.000173*	-	*0.000160*	*0.000161*	-	*0.000126*	*0.000116*	*0.000370*	*0.000370*	*0.000370*	*0.000370*	*0.000370*	*0.000370*	*0.000370*	*0.000370*
Calcium (Ca)-Total	mg/L	-	-	0.05	26.7	30.3	26.2	21.6	21.7	30.1	30.9	3%	26.4	28.4	7%	21.1	20.9	162	130	112	121	256	130	124	118
Chromium (Cr)-Total	mg/L	0.0089	0.04	0.0001	0.00111	0.00104	0.00166	0.00056	0.00057	0.00044	0.00062	34%	0.00051	0.00055	8%	0.00041	0.00047	0.00016	0.00012	0.00455	0.0001	0.00056	0.00373	0.00021	<0.00050
Cobalt (Co)-Total	mg/L	-	-	0.0001	0.00072	0.00066	0.00075	0.00027	0.00024	0.00022	0.00025	<2xDL	0.00024	0.00028	<2xDL	0.00017	0.00018	0.001	0.00029	0.00192	0.00171	0.00769	0.0025	0.00125	0.00118
Copper (Cu)-Total *(Lab Result)*	mg/L	0.002	0.2	0.0005	***0.00481***	***0.0126***	***0.00519***	***0.00299***	***0.00247***	0.00204	0.00200	<2xDL	***0.00246***	***0.00253***	3%	***0.00261***	***0.00681***	0.00344	0.00245	***0.00796***	***0.0608***	***0.00447***	***0.00762***	0.00181	0.00207
Copper (Cu)-Total (Hardness Adjusted Guideline)	*mg/L*	-	-	*0.0005*	*0.00212*	*0.00235*	*0.00225*	*0.00204*	*0.00200*	*0.00264*	*0.00259*	-	*0.00238*	*0.00241*	-	*0.00200*	*0.00200*	*0.00400*	*0.00400*	*0.00400*	*0.00400*	*0.00400*	*0.00400*	*0.00400*	*0.00400*
Iron (Fe)-Total	mg/L	0.3	1.0	0.01	***1.44***	***1.31***	***2.26***	***0.659***	***0.544***	***0.375***	***0.414***	10%	***0.534***	***0.57***	7%	***0.434***	***0.448***	***1.51***	0.255	***7.2***	0.216	***17.5***	***8.78***	***0.668***	***0.629***
Lead (Pb)-Total *(Lab Result)*	mg/L	0.001	0.1	0.00005	***0.00328***	***0.00694***	***0.00765***	0.00208	0.00155	0.00104	0.00114	9%	0.00115	0.00123	7%	0.000461	***0.00217***	0.00371	0.00053	0.00295	0.00283	0.000536	0.0039	0.00134	0.000902
Lead (Pb)-Total (Hardness Adjusted Guideline)	*mg/L*	-	-	*0.00005*	*0.00270*	*0.00316*	*0.00296*	*0.00255*	*0.00248*	*0.00376*	*0.00363*	-	*0.00322*	*0.00326*	-	*0.00224*	*0.00198*	*0.00700*	*0.00700*	*0.00700*	*0.00700*	*0.00700*	*0.00700*	*0.00700*	*0.00700*
Lithium (Li)-Total	mg/L	-	-	0.0005	<0.0010	0.001	0.0014	<0.0010	<0.0010	<0.0010	<0.0010	<DL	0.0011	<0.0010	<DL	<0.0010	<0.0010	0.0086	0.0046	0.0044	0.0023	0.0013	0.0036	0.0021	0.0018
Magnesium (Mg)-Total	mg/L	-	-	0.1	5.62	6.38	7.51	6.87	6.97	9.35	9.63	3%	8.53	8.87	4%	5.64	4.49	53.5	42.5	40	12	53.8	44.1	37.9	36.3
Manganese (Mn)-Total	mg/L	-	0.5	0.00005	0.235	0.22	0.274	0.105	0.0973	0.087	0.0961	10%	0.0687	0.0721	5%	0.0154	0.0292	***1.23***	***0.873***	***0.661***	***1.74***	***6.76***	***1.52***	***1.39***	***1.3***
Mercury (Hg)-Total	mg/L	0.000026	0.005	0.00001	0.0000163	0.0000128	0.0000117	0.0000063	0.0000058	<0.0000050	<0.0000050	<DL	0.0000064	0.0000062	<2xDL	0.0000101	0.0000177	<0.0000050	<0.0000050	<0.000025	0.000006	<0.0000050	<0.000025	<0.0000050	<0.0000050
Molybdenum (Mo)-Total	mg/L	0.0073	-	0.00005	0.000128	0.000126	0.000741	0.000448	0.000407	0.000339	0.000376	10%	0.000322	0.000317	2%	0.000056	0.000064	0.000318	0.000209	0.000286	0.000446	0.00104	0.000381	0.000288	0.000283
Nickel (Ni)-Total *(Lab Result)*	mg/L	0.025	0.3	0.0005	0.00144	0.00156	0.00166	0.00089	0.00085	0.00066	0.00073	<2xDL	0.00103	0.00109	<2xDL	0.00057	0.00125	0.00227	0.00077	0.00403	0.00177	0.00273	0.00377	0.00098	0.0009
Nickel (Ni)-Total (Hardness Adjusted Guideline)	*mg/L*	-	-	*0.0005*	*0.08658*	*0.09514*	*0.09155*	*0.08379*	*0.08235*	*0.10558*	*0.10347*	-	*0.09630*	*0.09703*	-	*0.07743*	*0.07201*	*0.15000*	*0.15000*	*0.15000*	*0.15000*	*0.15000*	*0.15000*	*0.15000*	*0.15000*
Phosphorus (P)-Total	mg/L	-	-	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<DL	<0.050	<0.050	<DL	0.08	0.062	<0.050	<0.050	0.155	<0.050	<0.050	0.131	<0.050	<0.050
Potassium (K)-Total	mg/L	-	-	0.1	2.36	2.42	1.62	1.17	1.21	1.34	1.4	4%	1.52	1.62	6%	11.6	6.12	3.53	3.98	3.08	3.6	5.85	3.36	3.08	2.96
Selenium (Se)-Total	mg/L	0.001	-	0.0001	<0.000050	<0.000050	0.000052	<0.000050	0.000051	<0.000050	<0.000050	<DL	<0.000050	<0.000050	<DL	0.000066	<0.000050	<0.000050	<0.000050	0.000165	0.000052	0.00019	0.000145	0.000052	0.000067
Silicon (Si)-Total	mg/L	-	-	0.05	4.93	4.52	7.75	5.11	5.05	4.77	4.97	4%	4.79	5.16	7%	6.28	4.76	6.36	5.73	8.16	1.05	7.56	7.4	4.35	4.14
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	0.000065	***0.000103***	***0.000156***	0.000033	0.000023	0.000023	0.000024	<2xDL	0.000026	0.00003	<2xDL	0.000054	0.000078	0.000052	0.000021	0.000055	0.000074	0.000075	0.00008	0.000043	0.000044
Sodium (Na)-Total	mg/L	-	-	0.05	1.84	1.94	2.18	2.02	1.99	2.41	2.58	7%	2.38	2.44	2%	0.879	0.798	4.4	3.65	4.13	3.28	32.3	7.55	6.95	6.66
Strontium (Sr)-Total	mg/L	-	-	0.0002	0.192	0.207	0.221	0.222	0.221	0.229	0.228	0%	0.2	0.21	5%	0.0597	0.0582	0.364	0.3	0.362	0.232	0.758	0.421	0.389	0.377
Sulfur (S)-Total	mg/L	-	-	0.5	16.4	19.4	10.6	6.27	6.04	16.6	16.9	2%	14.6	15.5	6%	12.9	12.2	141	119	112	121	266	133	123	118
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	0.000018	0.000017	0.000032	0.000013	<0.000010	<0.000010	<0.000010	<DL	<0.000010	<0.000010	<DL	<0.000010	0.000018	0.00009	0.000015	0.000044	0.000061	<0.000010	0.000036	<0.000010	0.000011
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	mg/L	-	-	0.0003	0.0327	0.0281	0.0413	0.0124	0.0103	0.00693	0.00889	25%	0.0083	0.00862	4%	0.0119	0.00724	0.00319	0.00062	0.142	<0.00030	0.00257	0.0991	0.00106	<0.0012
Uranium (U)-Total	mg/L	0.015	-	0.00001	0.00019	0.000192	0.000903	0.000544	0.000499	0.000379	0.000391	3%	0.000342	0.000363	6%	0.000033	0.000061	0.00343	0.00157	0.00162	0.000284	0.00149	0.00176	0.00126	0.00115
Vanadium (V)-Total	mg/L	-	-	0.0005	0.00248	0.00202	0.00339	0.00119	0.00098	0.00076	0.00083	<2xDL	0.0008	0.0009	<2xDL	0.00106	0.00096	<0.00050	<0.00050	0.0102	<0.00050	0.00238	0.00875	<0.00050	<0.00050
Zinc (Zn)-Total	mg/L	0.03	0.3	0.003	0.0133	***0.167***	0.0227	0.0069	0.0059	0.0071	0.0078	<2xDL	0.0094	0.0095	<2xDL	0.0056	***0.0794***	***1.11***	***0.235***	***0.0507***	***0.92***	0.0123	***0.0511***	0.0258	0.0233
Dissolved Metals Filtration Location	-	-	-	n/a	FIELD *	FIELD *	FIELD *	FIELD *	FIELD *	FIELD	FIELD	-	FIELD	FIELD	-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.001	***0.205***	***0.186***	0.0348	0.0385	0.0394	0.0214	0.0206	4%	0.0542	0.055	1%	0.0168	***0.312***	0.0243	0.0109	0.0891	0.0052	0.0174	0.0737	0.0217	0.0234
Antimony (Sb)-Dissolved	mg/L	-	-	0.0001	0.00029	0.00039	0.00015	<0.00010	<0.00010	0.00029	0.00027	<2xDL	0.00025	0.00027	<2xDL	0.00083	0.00159	0.0155	0.00842	0.00206	0.0109	0.00052	0.00173	0.0023	0.00221
Arsenic (As)-Dissolved	mg/L	0.005	0.15	0.0001	0.00353	0.00373	0.0012	0.00065	0.00058	0.00232	0.00232	0%	0.00204	0.00206	1%	***0.0106***	***0.00991***	***0.0596***	***0.00974***	***0.00502***	***0.00532***	***0.0497***	***0.00712***	***0.0118***	***0.0113***
Barium (Ba)-Dissolved	mg/L	-	-	0.00005	0.0402	0.0391	0.0619	0.0605	0.0598	0.0563	0.0535	5%	0.0563	0.0579	3%	0.0147	0.0271	0.0146	0.0237	0.0325	0.00575	0.0644	0.0356	0.0446	0.046
Beryllium (Be)-Dissolved	mg/L	-	-	0.00002	0.000028	0.000029	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<DL	<0.000020	<0.000020	<DL	<0.000020	0.000032	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<DL	<0.000050	<0.000050	<DL	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<DL	<0.010	<0.010	<DL	<0.010	<0.010	<0.010	0.013	<0.010	0.019	0.057	0.014	0.012	0.013
Cadmium (Cd)-Dissolved *(Lab Result)*	mg/L	0.00009	-	0.00001	0.000102	***0.00152***	0.0000913	0.0000502	0.0000411	0.0000417	0.000046	<2xDL	0.000049	0.0000398	<2xDL	0.0000336	***0.00056***	***0.00153***	***0.00102***	0.0000863	***0.0171***	0.000251	0.0000772	0.00011	0.00014
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	*mg/L*	-	-	*0.00001*	*0.000142*	*0.000158*	*0.000151*	*0.000137*	*0.000135*	*0.000177*	*0.000173*	-	*0.000160*	*0.000161*	-	*0.000126*	*0.000116*	*0.000370*	*0.000370*	*0.000370*	*0.000370*	*0.000370*	*0.000370*	*0.000370*	*0.000370*
Calcium (Ca)-Dissolved	mg/L	-	-	0.05	26.3	29.7	25.8	22.1	21.5	30.1	29.4	2%	26.3	26.5	1%	21.1	20.4	154	129	116	119	254	127	125	122
Chromium (Cr)-Dissolved	mg/L	0.0089	-	0.0001	0.00024	0.0002	0.00017	<0.00010	0.00014	0.00012	0.00013	<2xDL	0.00016	0.00017	<2xDL	0.00011	0.00029	<0.00010	<0.00010	0.00012	<0.00010	0.00036	0.00017	0.00013	0.00013
Cobalt (Co)-Dissolved	mg/L	-	-	0.0001	0.0004	0.00033	0.0002	0.00011	0.00011	0.00013	0.00014	<2xDL	0.00016	0.00017	<2xDL	<0.00010	0.00014	0.00089	0.00029	0.00044	0.00163	0.00745	0.00128	0.00121	0.00116
Copper (Cu)-Dissolved *(Lab Result)*	mg/L	0.002	-	0.0002	***0.00333***	***0.00997***	0.00225	0.00195	0.00196	0.00152	0.00155	2%	0.00197	0.00197	0%	***0.00231***	***0.00651***	0.00224	0.00209	0.0015	***0.0449***	0.00178	0.00153	0.00153	0.00155
Copper (Cu)-Diss. (Hardness Adjusted Guideline)	*mg/L*	-	-	*0.00200*	*0.00212*	*0.00235*	*0.00225*	*0.00204*	*0.00200*	*0.00264*	*0.00259*	-	*0.00238*	*0.00241*	-	*0.00200*	*0.00200*	*0.00400*	*0.00400*	*0.00400*	*0.00400*	*0.00400*	*0.00400*	*0.00400*	*0.00400*
Iron (Fe)-Dissolved	mg/L	0.3	-	0.01	***0.339***	0.296	0.104	0.111	0.11	0.082	0.079	4%	0.185	0.189	2%	0.06	0.245	***1.08***	0.207	***0.74***	0.011	***15.3***	***0.964***	***0.492***	***0.482***
Lead (Pb)-Dissolved *(Lab Result)*	mg/L	0.001	-	0.00005	0.0002	0.000685	0.000178	0.000101	0.000089	0.000087	0.000081	<2xDL	0.000096	0.000095	<2xDL	0.000134	0.000765	0.00039	0.000193	0.000075	0.000087	<0.000050	0.000066	0.000267	0.000255
Lead (Pb)-Diss. (Hardness Adjusted Guideline)	*mg/L*			*0.00005*	*0.00270*	*0.00316*	*0.00296*	*0.00255*	*0.00248*	*0.00376*	*0.00363*	-	*0.00322*	*0.00326*	-	*0.00224*	*0.00198*	*0.00700*	*0.00700*	*0.00700*	*0.00700*	*0.00700*	*0.00700*	*0.00700*	*0.00700*
Lithium (Li)-Dissolved	mg/L	-	-	0.0005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<DL	<0.0010	<0.0010	<DL	<0.0010	<0.0010	0.008	0.0047	0.0026	0.0023	0.0012	0.0023	0.0021	0.0018
Magnesium (Mg)-Dissolved	mg/L	-	-	0.1	5.39	6.13	7.3	7.01	6.92	9.37	9.16	2%	8.48	8.57	1%	5.63	4.37	53.4	44.4	42.5	11.8	53.9	44.8	39.4	38.9
Manganese (Mn)-Dissolved	mg/L	-	-	0.00005	0.212	0.18	0.228	0.0884	0.078	0.0779	0.0803	3%	0.0613	0.061	0%	0.0116	0.0233	1.17	0.867	0.538	1.69	6.67	1.38	1.34	1.34
Mercury (Hg)-Dissolved	mg/L	0.000026	-	0.00001	0.0000108	0.0000094	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<DL	<0.0000050	<0.0000050	<DL	0.0000095	0.0000179	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum (Mo)-Dissolved	mg/L	0.0073	-	0.00005	0.000076	0.000073	0.000584	0.000387	0.000368	0.000294	0.000318	8%	0.000262	0.000264	1%	<0.000050	0.000061	0.000281	0.000197	0.000162	0.000419	0.000922	0.000275	0.000267	0.000252
Nickel (Ni)-Dissolved *(Lab Result)*	mg/L	0.025	-	0.0005	0.00089	0.00103	0.00081	0.00064	0.00061	0.00055	0.00056	<2xDL	0.00084	0.00087	<2xDL	<0.00050	0.00117	0.00216	0.00081	0.00082	0.00167	0.00262	0.00108	0.00095	0.00091
Nickel (Ni)-Diss. (Hardness Adjusted Guideline)	*mg/L*			*0.0005*	*0.08658*	*0.09514*	*0.09155*	*0.08379*	*0.08235*	*0.10558*	*0.10347*	-	*0.09630*	*0.09703*	-	*0.07743*	*0.07201*	*0.15000*	*0.15000*	*0.15000*	*0.15000*	*0.15000*	*0.15000*	*0.15000*	*0.15000*
Phosphorus (P)-Dissolved	mg/L	-	-	0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<DL	<0.050	<0.050	<DL	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	mg/L	-	-	0.1	2.19	2.28	1.23	1.13	1.12	1.34	1.3	3%	1.45	1.48	2%	11.8	5.91	3.49	3.93	2.93	3.44	5.75	3.04	3.08	3.08
Selenium (Se)-Dissolved	mg/L	0.001	-	0.0001	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<DL	<0.000050	<0.000050	<DL	0.000063	0.000055	<0.000050	<0.000050	<0.000050	<0.000050	0.000193	0.000058	<0.000050	<0.000050
Silicon (Si)-Dissolved	mg/L	-	-	0.05	3.24	3.38	4.52	4.6	4.61	4.48	4.39	2%	4.39	4.47	2%	6.2	4.41	6.19	5.74	4.4	1	7.4	4.28	4.37	4.27
Silver (Ag)-Dissolved	mg/L	0.0001	-	0.00001	0.000016	0.000016	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<DL	<0.000010	<0.000010	<DL	0.000033	0.000033	<0.000010	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	0.000013	0.000015
Sodium (Na)-Dissolved	mg/L	-	-	0.05	1.87	1.96	2.14	2.02	2.02	2.44	2.51	3%	2.41	2.37	2%	0.91	0.819	4.3	3.67	3.99	3.24	31.6	7.51	6.9	6.78
Strontium (Sr)-Dissolved	mg/L	-	-	0.0002	0.193	0.21	0.222	0.225	0.222	0.226	0.221	2%	0.201	0.208	3%	0.0623	0.0579	0.349	0.3	0.357	0.226	0.724	0.413	0.379	0.377
Sulfur (S)-Dissolved	mg/L	-	-	0.5	16.2	19.5	10.6	6.26	5.95	16.7	16.4	2%	14.8	14.9	1%	12.8	12	130	115	113	116	251	129	119	118
Thallium (Tl)-Dissolved	mg/L	0.0008	-	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<DL	<0.000010	<0.000010	<DL	<0.000010	0.000012	0.000076	0.000015	<0.000010	0.000059	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Dissolved	mg/L	-	-	0.0003	0.0027	0.00226	0.00078	0.00056	0.00058	0.00038	0.0004	<2xDL	0.00065	0.0006	<2xDL	0.00032	0.00262	<0.00030	0.0003	0.00084	<0.00030	<0.0015	0.00086	<0.00090	<0.00090
Uranium (U)-Dissolved	mg/L	0.015	-	0.00001	0.000168	0.000161	0.000773	0.000502	0.000457	0.000365	0.00035	4%	0.000321	0.000317	1%	0.000019	0.000056	0.00313	0.00152	0.00145	0.000231	0.00143	0.0016	0.00119	0.00117
Vanadium (V)-Dissolved	mg/L	-	-	0.001	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<DL	<0.00050	<0.00050	<DL	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.0014	<0.00050	<0.00050	<0.00050
Zinc (Zn)-Dissolved	mg/L	0.03	-	0.001	0.0066	***0.138***	0.0039	0.003	0.0059	0.0056	0.0054	4%	0.0061	0.0068	11%	0.0075	***0.0768***	***1.07***	***0.238***	0.0236	***0.899***	0.0109	0.0164	0.0237	0.0225

Applied Guidelines: 'Federal CCME Canadian Environmental Quality Guidelines (January 2015), CCME: Freshwater Aquatic Life 'Mount Nansen Effluent Discharge Standards

COLOUR KEY:
Exceeds CCME Guideline
Exceeds MN Effluent Discharge Standards
Exceeds both CCME and MN Standards
Exceeds Hardness Dependent Calculated Guideline (CCME)
Data flag for Detection Limit Adjustment --> Please refer to the lab COA report and lab excel report for more info
QA/QC Codes: RPD - Relative Percent Difference, <DL - below detection limit, and <2XDL - less than two times the detection limit.

Notes:

QA/QC Travel/Field Blank Analysis- Travel blank had a sulfate concentration above detection limit, this can occur when samples provided by lab are dated. The field blank sample had a dissolved zinc concentration that was above detection limit, suggestion some potential field contamination (improperly tightened lid, dust or wind during sampling, etc.). Looking at other concentrations for zinc during the program, results appear normal and no other sample contamination is suspected.

QA/QC Replicate Analysis - the average RPD of the replicate sample WQ-VC-UMN-r was 6% with an average difference of 3% for dissolved and 9% for total metals. Total aluminum and chromium had RPD >20%, indicating intrinsically high sample variability.

The average RPD of the replicate sample WQ-VC-R+150-r was 5% with an average difference of 2% for dissolved and 6% for total metals. Alkalinity (total and bicarbonate) had RPD>20% (indicating intrinsically high variability within samples).

The average RPD of the replicate sample WQ-DC-r was 6% with an average difference of 4% for dissolved and 9% for total metals. Alkalinity (total and bicarbonate) and dissolved cadmium had RPD>20% (indicating intrinsically high sample variability).

See methodology document for details on QA/QC methods.

Summary of Water Quality Results for the May 4-6, 2015 Trip.

Analyte	Units	CCME-WATER-F-AL	Mount Nansen Effluent Discharge Standards	Sample ID WQ Site ID Date Sampled Detection Limit	QA/QC WQ-DC-R Replicate Analysis	0146-150506-003 WQ-CH-P-13-01 5/6/2015 8:20:00 AM	0146-150506-001 WQ-DESS-01 5/6/2015 8:45:00 AM	0146-150506-006 WQ-DESS-03 5/6/2015 8:15:00 AM	0146-150506-009 WQ-WR-SEEP-A 5/6/2015 11:55:00 AM	0146-150506-010 WQ-WR-SEEP-B 5/6/2015 12:45:00 PM	0146-150506-004 WQ-MS-S-A 5/6/2015 9:45:00 AM	0146-150504-033 WQ-ORE 5/4/2015 6:30:00 PM	0146-150505-025 WQ-NW-SEEP-02 5/5/2015 8:18:00 AM	0146-150506-018 WQ-L1 5/6/2015 1:20:00 PM	0146-150506-016 WQ-L2 5/6/2015 12:00:00 PM	0146-150506-041 WQ-PW 5/6/2015 2:20:00 PM	0146-150504-FIELD-BLANK FIELD BLANK 5/4/2015 4:25:00 PM	0146-1505-TRAVEL BLANK TRAVEL BLANK
Temperature (in-situ)	°C	-	-	-	-	0.9	0	3.4	2.4	5.9	0.4	3.2	2.4	2.6	3.1	1.3	-	-
Specific Conductivity (in-situ)	µS/cm	-	-	-	-	634.4	368.3	105.5	2764.0	1690.0	1151.0	743.9	350.5	2520.0	276.1	380.9	-	-
pH (in-situ)	pH	6.5 - 9.0	6.0 - 8.5	-	-	***4.82***	***5.53***	***6.14***	***4.73***	***3.68***	8.15	7.32	7.72	6.48	7.2	7.41	-	-
Turbidity (In-situ)	NTU	-	-	-	-	11.25	0.53	4.24	156	310	484	235	38.6	10.3	4.44	0.12	-	-
Dissolved Oxygen (in-situ - Pit only)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Colour, True	CU	15	-	5	-	-	-	-	-	-	-	-	-	-	-	<5.0	-	-
Conductivity	µS/cm	-	-	2	1%	659	373	56.7	2750	1820	1160	757	346	2650	270	377	<2.0	<2.0
Hardness (as CaCO3)	mg/L	-	-	0.5	2%	301	180	30.5	1830	692	702	391	163	2520	165	196	<0.50	-
pH (lab)	pH	6.5 - 9.0	6.0 - 8.5	0.1	0%	***5.03***	***5.71***	***6.12***	***4.63***	***3.31***	8.31	7.93	7.53	7.85	7.98	7.66	***5.49***	***5.55***
Total Suspended Solids	mg/L	-	50	3	<DL	23.3	<3.0	<3.0	***136***	***136***	***279***	7.3	18	5.3	<3.0	-	<3.0	<3.0
Total Dissolved Solids	mg/L	-	-	1	3%	423	231	27.8	2700	1340	844	518	214	2700	174	214	<1.0	<1.0
Alkalinity, Bicarbonate (as CaCO3)	mg/L	-	-	1	21%	<1.0	3.5	5.6	<1.0	<1.0	159	46.7	17.7	49.7	56.7	-	<1.0	<1.0
Alkalinity, Carbonate (as CaCO3)	mg/L	-	-	1	<DL	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0
Alkalinity, Hydroxide (as CaCO3)	mg/L	-	-	1	<DL	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	-	-	1	21%	<1.0	3.5	5.6	<1.0	<1.0	161	46.7	17.7	49.7	56.7	177	<1.0	<1.0
Ammonia, Total (as N)	mg/L	0.75	-	0.005	1%	0.013	0.0066	0.006	<0.0050	0.0649	0.0111	<0.0050	0.014	0.0246	0.184	-	<0.0050	<0.0050
Chloride (Cl)	mg/L	120	-	0.5	<DL	<0.50	<0.50	<0.50	<5.0	<2.5	<1.0	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	mg/L	0.12	-	0.02	<2xDL	0.065	0.054	0.05	***0.78***	***0.24***	0.112	***0.363***	0.078	***0.37***	***0.302***	0.094	<0.020	<0.020
Nitrate (as N)	mg/L	13	-	0.005	0%	0.008	<0.0050	<0.0050	<0.050	<0.025	0.03	0.117	0.155	0.056	0.091	0.137	<0.0050	0.0094
Nitrite (as N)	mg/L	0.06	-	0.001	<2xDL	<0.0010	<0.0010	<0.0010	<0.010	<0.0050	<0.0020	0.0011	0.0029	<0.010	0.0077	<0.0010	<0.0010	<0.0010
Sulfate (SO4)	mg/L	-	-	0.5	0%	316	162	10.2	2030	1010	499	342	139	1790	77.2	35.4	<0.30	0.43
Cyanide, Weak Acid Diss	mg/L	-	0.1	0.005	<DL	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	<0.0050	<0.0050	-	<0.0050	<0.0050
Cyanide, Total	mg/L	-	0.3	0.005	<DL	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	<0.0050	<0.0050	-	<0.0050	<0.0050
Cyanate	mg/L	-	-	0.2	<DL	<0.20	0.21	0.24	<0.20	0.52	<0.20	<0.20	-	<0.20	0.25	-	<0.20	<0.20
Thiocyanate (SCN)	mg/L	-	-	0.5	<2xDL	1.01	1.18	1.49	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	-	<0.50	<0.50
Aluminum (Al)-Total	mg/L	0.1	-	0.003	20%	***0.396***	***0.273***	***0.279***	***7.94***	***3.7***	***6.05***	0.0511	***0.403***	0.0097	0.0944	<0.010	<0.0030	<0.0030
Antimony (Sb)-Total	mg/L	-	0.15	0.0001	13%	<0.00010	<0.00010	<0.00010	0.00147	0.00683	0.101	0.00754	0.00268	0.00192	0.00212	<0.00050	<0.00010	<0.00010
Arsenic (As)-Total	mg/L	0.005	-	0.0001	13%	0.00212	0.00163	0.00134	***0.0462***	***0.194***	***0.806***	***0.0644***	***0.0194***	***0.00547***	***0.0165***	0.00038	<0.00010	<0.00010
Barium (Ba)-Total	mg/L	-	1.0	0.00005	5%	0.0179	0.0171	0.0384	0.0236	0.0203	0.128	0.00291	0.0124	0.00698	0.00551	0.088	<0.000050	<0.000050
Beryllium (Be)-Total	mg/L	-	-	0.00002	<DL	0.000041	0.000034	0.000023	0.00201	0.00078	0.00029	<0.000020	0.000032	<0.000040	<0.000020	-	<0.000020	<0.000020
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<DL	<0.000050	<0.000050	<0.000050	0.0473	0.00172	0.00429	0.00011	0.000209	<0.00010	<0.000050	-	<0.000050	<0.000050
Boron (B)-Total	mg/L	-	-	0.01	<2xDL	<0.010	<0.010	<0.010	<0.050	<0.050	0.033	<0.010	<0.010	<0.020	<0.010	<0.10	<0.010	<0.010
Cadmium (Cd)-Total ***(Lab Result)***	mg/L	0.00009	0.02	0.00001	4%	***0.00714***	***0.00318***	***0.0000622***	***0.306***	***0.271***	***0.0128***	***0.00211***	***0.00128***	***0.00583***	***0.000268***	<0.00020	<0.0000050	<0.0000050
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	*mg/L*	-	-	*0.00001*	-	*0.000370*	*0.000258*	*0.000059*	*0.000370*	*0.000370*	*0.000370*	*0.000370*	*0.000238*	*0.000370*	*0.000240*	*0.000277*	*0.000370*	*0.000370*
Calcium (Ca)-Total	mg/L	-	-	0.05	5%	78.1	46.6	9.23	386	134	171	128	58.1	552	41.4	45.5	<0.050	<0.050
Chromium (Cr)-Total	mg/L	0.0089	0.04	0.0001	<DL	0.00024	0.0002	0.00021	0.00236	0.00056	0.00782	0.00016	0.00043	0.00031	0.00014	<0.0020	<0.00010	<0.00010
Cobalt (Co)-Total	mg/L	-	-	0.0001	6%	0.00012	<0.00010	<0.00010	0.0277	0.0486	0.00469	<0.00010	0.00031	<0.00020	<0.00010	-	<0.00010	<0.00010
Copper (Cu)-Total ***(Lab Result)***	mg/L	0.002	0.2	0.0005	<2xDL	0.00260	0.00274	***0.0036***	***1.47***	***0.455***	***0.104***	0.0012	***0.0434***	0.0021	0.00332	<0.0010	<0.00050	<0.00050
Copper (Cu)-Total (Hardness Adjusted Guideline)	*mg/L*			*0.0005*	-	*0.00400*	*0.00391*	*0.00200*	*0.00400*	*0.00400*	*0.00400*	*0.00400*	*0.00359*	*0.00400*	*0.00363*	*0.00400*	*0.00400*	*0.00400*
Iron (Fe)-Total	mg/L	0.3	1.0	0.01	6%	0.185	0.15	0.107	***1.14***	***49.8***	***18.4***	0.203	***0.881***	0.022	0.1114	<0.030	<0.010	<0.010
Lead (Pb)-Total ***(Lab Result)***	mg/L	0.001	0.1	0.00005	39%	0.000113	0.000059	<0.000050	***0.00998***	***0.0659***	***0.698***	***0.00767***	***0.0131***	0.00053	0.00236	0.00062	<0.000050	<0.000050
Lead (Pb)-Total (Hardness Adjusted Guideline)	*mg/L*	-	-	*0.00005*	-	*0.00700*	*0.00672*	*0.00100*	*0.00700*	*0.00700*	*0.00700*	*0.00700*	*0.00593*	*0.00700*	*0.00602*	*0.00700*	*0.00700*	*0.00700*
Lithium (Li)-Total	mg/L	-	-	0.0005	<2xDL	0.0012	<0.0010	<0.0010	0.0099	0.0056	0.0088	0.0026	<0.0010	0.0056	0.0015	-	<0.0010	<0.0010
Magnesium (Mg)-Total	mg/L	-	-	0.1	4%	33.8	16.7	1.92	198	81.6	63.4	20	5.67	171	9.8	20.1	<0.10	<0.10
Manganese (Mn)-Total	mg/L	-	0.5	0.00005	7%	0.399	0.143	0.00323	***26.2***	***36.5***	***1.04***	0.322	0.153	0.066	0.0131	<0.0020	<0.00010	<0.00010
Mercury (Hg)-Total	mg/L	0.000026	0.005	0.00001	<DL	0.0000113	0.00001	0.0000153	***0.0000349***	0.0000222	***0.000112***	0.0000151	0.0000101	0.0000063	<0.0000050	<0.00020	<0.0000050	<0.0000050
Molybdenum (Mo)-Total	mg/L	0.0073	-	0.00005	2%	<0.000050	<0.000050	<0.000050	0.00179	<0.00025	0.000979	0.0002	0.000197	0.00011	0.00014	-	<0.000050	<0.000050
Nickel (Ni)-Total ***(Lab Result)***	mg/L	0.025	0.3	0.0005	<2xDL	0.00439	0.00391	0.00156	0.0231	0.0118	0.00698	<0.00050	<0.00050	<0.0010	<0.00050	-	<0.00050	<0.00050
Nickel (Ni)-Total (Hardness Adjusted Guideline)	*mg/L*	-	-	*0.0005*	-	*0.15000*	*0.14940*	*0.02500*	*0.15000*	*0.15000*	*0.15000*	*0.15000*	*0.13855*	*0.15000*	*0.13984*	*0.15000*	*0.15000*	*0.15000*
Phosphorus (P)-Total	mg/L	-	-	0.05	<DL	<0.050	<0.050	<0.050	0.055	0.364	0.23	<0.050	0.066	<0.050	<0.050	-	<0.050	<0.050
Potassium (K)-Total	mg/L	-	-	0.1	4%	2.38	2.11	1.77	2.03	4.19	7.12	2.39	1.74	4.54	2.54	0.98	<0.10	<0.10
Selenium (Se)-Total	mg/L	0.001	-	0.0001	<2xDL	<0.000050	<0.000050	<0.000050	0.00028	<0.00025	0.000312	0.000074	0.000141	0.00031	0.000056	<0.0010	<0.000050	<0.000050
Silicon (Si)-Total	mg/L	-	-	0.05	5%	3.21	3.16	2.63	4.95	4.23	19.1	3.65	2.07	1.85	1.47	-	<0.050	<0.050
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	<2xDL	0.000013	<0.000010	<0.000010	***0.000711***	***0.00194***	***0.0106***	***0.000117***	***0.000234***	0.000049	0.000053	-	<0.000010	<0.000010
Sodium (Na)-Total	mg/L	-	-	0.05	4%	1.92	1.39	0.99	24.9	0.27	4.08	0.472	0.291	0.52	0.29	5.7	<0.050	<0.050
Strontium (Sr)-Total	mg/L	-	-	0.0002	3%	0.192	0.119	0.0441	0.712	0.208	0.339	0.127	0.134	0.769	0.108	-	<0.00020	<0.00020
Sulfur (S)-Total	mg/L	-	-	0.5	4%	115	60.6	4.24	673	309	184	127	53	680	27.8	-	<0.50	<0.50
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	<DL	<0.000010	<0.000010	<0.000010	0.000099	0.000129	0.000461	0.000021	0.000046	0.000053	<0.000010	-	<0.000010	<0.000010
Tin (Sn)-Total	mg/L	-	-	0.0001	<DL	<0.00010	<0.00010	<0.00010	0.00139	<0.00050	0.00045	<0.00010	<0.00010	<0.00020	<0.00010	-	<0.00010	<0.00010
Titanium (Ti)-Total	mg/L	-	-	0.0003	<DL	0.00258	0.00086	0.00091	<0.0048	0.0016	0.197	<0.00030	0.00468	<0.00060	0.00069	-	<0.00030	<0.00030
Uranium (U)-Total	mg/L	0.015	-	0.00001	9%	0.000012	0.000013	0.000010	0.000247	0.000706	0.00271	0.000199	0.0001173	0.00148	0.000185	0.0019	<0.000010	<0.000010
Vanadium (V)-Total	mg/L	-	-	0.0005	<DL	<0.00050	<0.00050	<0.00050	<0.0025	<0.0025	0.0257	<0.00050	0.0008	<0.0010	<0.00050	-	<0.00050	<0.00050
Zinc (Zn)-Total	mg/L	0.03	0.3	0.003	10%	***2.28***	***1.13***	0.0099	***23.8***	***22.9***	***1.06***	***0.13***	***0.0667***	***0.272***	0.0124	<0.050	<0.0030	<0.0030
Dissolved Metals Filtration Location	-	-	-	n/a	-	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	-	FIELD	-
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.001	8%	***0.336***	***0.265***	***0.27***	***7.17***	***2.98***	0.0129	0.0014	0.0073	0.0034	0.005	-	<0.0010	-
Antimony (Sb)-Dissolved	mg/L	-	-	0.0001	4%	<0.00010	<0.00010	<0.00010	<0.00050	<0.00050	0.0299	0.00614	0.00088	0.0023	0.00209	-	<0.00010	-
Arsenic (As)-Dissolved	mg/L	0.005	0.15	0.0001	4%	0.00154	0.0016	0.00134	0.00214	***0.0136***	***0.0619***	***0.0525***	0.00446	***0.00596***	***0.0159***	-	<0.00010	-
Barium (Ba)-Dissolved	mg/L	-	-	0.00005	3%	0.0142	0.0159	0.0181	0.0172	0.00336	0.0164	0.00205	0.00804	0.0101	0.00617	-	<0.000050	-
Beryllium (Be)-Dissolved	mg/L	-	-	0.00002	<DL	0.000035	0.000031	0.000022	0.00169	0.00068	<0.000020	<0.000020	<0.000020	<0.000040	<0.000020	-	<0.000020	-
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<DL	<0.000050	<0.000050	<0.000050	0.00726	<0.00025	<0.000050	<0.000050	<0.000050	<0.00010	<0.000050	-	<0.000050	-
Boron (B)-Dissolved	mg/L	-	-	0.01	<2xDL	<0.010	<0.010	<0.010	<0.050	<0.050	0.027	<0.010	<0.010	<0.020	<0.010	-	<0.010	-
Cadmium (Cd)-Dissolved ***(Lab Result)***	mg/L	0.00009	-	0.00001	24%	***0.00609***	***0.0032***	***0.0000649***	***0.318***	***0.278***	***0.00371***	***0.00203***	***0.00103***	***0.00742***	***0.000305***	-	<0.0000050	-
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	*mg/L*	-	-	*0.00001*	-	*0.000370*	*0.000258*	*0.000059*	*0.000370*	*0.000370*	*0.000370*	*0.000370*	*0.000238*	*0.000370*	*0.000240*	*0.000277*	*0.000370*	*0.000370*
Calcium (Ca)-Dissolved	mg/L	-	-	0.05	2%	69	45.4	9.09	395	136	174	125	56.4	683	47.7	-	<0.050	-
Chromium (Cr)-Dissolved	mg/L	0.0089	-	0.0001	<2xDL	0.00015	0.00015	0.00018	<0.00050	<0.00050	<0.00010	<0.00010	<0.00010	<0.00020	0.00011	-	<0.00010	-
Cobalt (Co)-Dissolved	mg/L	-	-	0.0001	4%	<0.00010	<0.00010	<0.00010	0.0276	0.0513	0.00026	<0.00010	0.0002	<0.00020	<0.00010	-	<0.00010	-
Copper (Cu)-Dissolved ***(Lab Result)***	mg/L	0.002	-	0.0002	1%	0.00245	0.00261	***0.00346***	***1.45***	***0.433***	***0.0111***	0.00068	***0.0227***	0.00273	0.00343	-	<0.00020	-
Copper (Cu)-Diss. (Hardness Adjusted Guideline)	*mg/L*	-	-	*0.00200*	-	*0.00400*	*0.00391*	*0.00200*	*0.00400*	*0.00400*	*0.00400*	*0.00400*	*0.00359*	*0.00400*	*0.00363*	*0.00400*	*0.00400*	*0.00400*
Iron (Fe)-Dissolved	mg/L	0.3	-	0.01	2%	0.058	0.128	0.1	0.116	***42.5***	0.028	<0.010	0.01	<0.010	<0.010	-	<0.010	-
Lead (Pb)-Dissolved ***(Lab Result)***	mg/L	0.001	-	0.00005	5%	<0.000050	<0.000050	<0.000050	0.00116	0.00223	0.0017	0.000055	0.000105	<0.00010	0.000106	-	<0.000050	-
Lead (Pb)-Diss. (Hardness Adjusted Guideline)	*mg/L*			*0.00005*	-	*0.00700*	*0.00672*	*0.00100*	*0.00700*	*0.00700*	*0.00700*	*0.00700*	*0.00593*	*0.00700*	*0.00602*	*0.00700*	*0.00700*	*0.00700*
Lithium (Li)-Dissolved	mg/L	-	-	0.0005	<2xDL	0.0012	<0.0010	<0.0010	0.0086	<0.0050	0.0058	0.0026	<0.0010	0.0067	0.0017	-	<0.0010	-
Magnesium (Mg)-Dissolved	mg/L	-	-	0.1	1%	31.4	16.1	1.9	205	85.6	65.2	19.1	5.37	199	11.2	-	<0.10	-
Manganese (Mn)-Dissolved	mg/L	-	-	0.00005	0%	0.305	0.139	0.0028	26.9	37.1	0.285	0.303	0.136	0.108	0.00718	-	<0.00010	-
Mercury (Hg)-Dissolved	mg/L	0.000026	-	0.00001	<DL	0.0000104	0.0000107	0.0000131	<0.0000050	0.0000074	<0.0000050	0.0000081	<0.0000050	<0.0000050	<0.0000050	-	<0.0000050	-
Molybdenum (Mo)-Dissolved	mg/L	0.0073	-	0.00005	6%	<0.000050	<0.000050	<0.000050	0.00027	<0.00025	0.000436	0.000212	0.000149	<0.00010	0.000146	-	<0.000050	-
Nickel (Ni)-Dissolved ***(Lab Result)***	mg/L	0.025	-	0.0005	<2xDL	0.00387	0.003	0.00145	0.021	0.0112	0.00104	<0.00050	<0.00050	<0.0010	<0.00050	-	<0.00050	-
Nickel (Ni)-Diss. (Hardness Adjusted Guideline)	*mg/L*			*0.0005*	-	*0.15000*	*0.14940*	*0.02500*	*0.15000*	*0.15000*	*0.15000*	*0.15000*	*0.13855*	*0.15000*	*0.13984*	*0.15000*	*0.15000*	*0.15000*
Phosphorus (P)-Dissolved	mg/L	-	-	0.05	<DL	<0.050	<0.050	<0.050	<0.050	0.076	<0.050	<0.050	<0.050	<0.050	<0.050	-	<0.050	-
Potassium (K)-Dissolved	mg/L	-	-	0.1	0%	2.24	2.02	1.75	2.09	3.53	4.51	2.32	1.41	5.89	2.97	-	<0.10	-
Selenium (Se)-Dissolved	mg/L	0.001	-	0.0001	<DL	<0.000050	<0.000050	<0.000050	<0.00025	<0.00025	0.000113	0.000059	0.000116	0.00037	0.000072	-	<0.000050	-
Silicon (Si)-Dissolved	mg/L	-	-	0.05	2%	3.17	3.11	2.65	4.92	2.83	4.01	3.5	0.678	2.29	1.58	-	<0.050	-
Silver (Ag)-Dissolved	mg/L	0.0001	-	0.00001	<2xDL	<0.000010	<0.000010	<0.000010	***0.000367***	***0.0002***	0.000029	<0.000010	<0.000010	<0.000020	0.00002	-	<0.000010	-
Sodium (Na)-Dissolved	mg/L	-	-	0.05	2%	1.82	1.37	0.987	4.66	<0.25	3.97	0.562	0.312	0.61	0.361	-	<0.050	-
Strontium (Sr)-Dissolved	mg/L	-	-	0.0002	1%	0.175	0.117	0.0435	0.649	0.181	0.327	0.123	0.129	0.915	0.124	-	<0.00020	-
Sulfur (S)-Dissolved	mg/L	-	-	0.5	1%	99.9	58.2	4.18	660	302	180	121	50.8	777	31.9	-	<0.50	-
Thallium (Tl)-Dissolved	mg/L	0.0008	-	0.00001	<DL	<0.000010	<0.000010	<0.000010	0.000076	<0.000055	0.000046	0.000016	0.000014	0.000059	<0.000010	-	<0.000010	-
Tin (Sn)-Dissolved	mg/L	-	-	0.0001	<DL	<0.00010	<0.00010	<0.00010	<0.00050	<0.00050	<0.00010	<0.00010	<0.00010	<0.00020	<0.00010	-	<0.00010	-
Titanium (Ti)-Dissolved	mg/L	-	-	0.0003	<DL	0.00042	0.00068	0.00068	<0.0015	<0.0015	0.00079	<0.00030	<0.00030	<0.00060	<0.00030	-	<0.00030	-
Uranium (U)-Dissolved	mg/L	0.015	-	0.00001	2%	<0.000010	<0.000010	<0.000010	0.000162	0.000504	0.00235	0.000187	0.000125	0.00169	0.000194	-	<0.000010	-
Vanadium (V)-Dissolved	mg/L	-	-	0.001	<DL	<0.00050	<0.00050	<0.00050	<0.0025	<0.0025	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	-	<0.00050	-
Zinc (Zn)-Dissolved	mg/L	0.03	-	0.001	5%	***2.05***	***1.15***	0.0111	***25.1***	***22.9***	***0.275***	***0.124***	***0.0364***	***0.317***	0.0181	-	0.0013	-

Applied Guidelines: 'Federal CCME Canadian Environmental Quality Guidelines (January 2015), CCME: Freshwater Aquatic Life 'Mount Nansen Effluent Discharge Standards

COLOUR KEY:

Exceeds CCME Guideline

Exceeds MN Effluent Discharge Standards

Exceeds both CCME and MN Standards

Exceeds Hardness Dependent Calculated Guideline (CCME)

Data flag for Detection Limit Adjustment --> Please refer to the lab COA report and lab excel report for more info

QA/QC Codes: RPD - Relative Percent Difference, <DL - below detection limit, and <2XDL - less than two times the detection limit.

Summary of Water Quality Results for the May 12-14 2015 Trip.

Analyte	Units	CCME-WATER-F-AL	Mount Nansen Effluent Discharge Standards	Sample ID WQ Site ID Date Sampled Detection Limit	0146-150512-023 WQ-PC-U 5/12/2015 5:15:00 PM	0146-150514-004 WQ-PC-WR 5/14/2015 9:25:00 AM	0146-150512-024 WQ-PC-D 5/12/2015 4:25:00 PM	0146-150512-022 WQ-PC-D-r 5/12/2015 4:30:00 PM	QA/QC WQ-PC-D Replicate Analysis	0146-150513-025 WQ-VC-U 5/13/2015 11:25:00 AM	0146-150513-026 WQ-BC 5/13/2015 11:40:00 AM	0146-150513-028 WQ-VC-DBC 5/13/2015 11:00:00 AM	0146-150513-027 WQ-VC-DBC-r 5/13/2015 11:05:00 AM	QA/QC WQ-VC-DBC Replicate Analysis	0146-150512-034 WQ-VC-UMN 5/12/2015 3:30:00 PM	0146-150512-036 WQ-VC-R+150 5/12/2015 2:35:00 PM	0146-150513-003 WQ-MS-S-03 5/13/2015 3:25:00 PM	0146-150514-018 WQ-MS-S-A 5/14/2015 10:00:00 AM	0146-150514-033 WQ-MS-S-08 5/14/2015 10:10:00 AM	0146-150514-020 WQ-DC-DX 5/14/2015 10:40:00 AM	0146-150513-005 WQ-DC-DX+105 5/13/2015 3:40:00 PM	0146-150513-002 WQ-DESS-01 5/13/2015 1:25:00 PM	0146-150513-032 WQ-DESS-02 5/13/2015 2:00:00 PM	0146-150513-001 WQ-DESS-03 5/13/2015 1:05:00 PM	0146-150513-030 WQ-CH-P-13-01 5/13/2015 1:45:00 PM
Temperature (in-situ)	°C	-	-	-	0.4	1.1	1.8	-	-	0.1	0.1	0.2	-	-	0.5	0.3	2.7	7.5	11.3	0.2	4.0	1.7	5.2	1.9	1.7
Specific Conductivity (in-situ)	µS/cm	-	-	-	128.3	214.7	132.0	-	-	95.3	104.2	96.1	-	-	118.0	114.5	986.0	1346.0	2315.0	83.9	86.4	503.8	965.0	50.8	812.6
pH (in-situ)	pH	6.5 - 9.0	6.0 - 8.5	-	7.3	7.23	7.39	-	-	7.52	7.61	7.53	-	-	7.56	7.45	7.19	8	8.05	8.29	7.51	5.91	7.71	6.43	5.2
Turbidity (In-situ)	NTU	-	-	-	2.27	9.85	4.70	-	-	76.50	329.00	91.10	-	-	40.90	25.60	45.00	23.30	34.30	23.40	5.55	1.78	6.49	1.28	1.52
Dissolved Oxygen (in-situ - Pit only)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Colour, True	CU	15	-	5	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Conductivity	µS/cm	-	-	2	130	222	136	138	1%	98.2	107	109	93.3	16%	122	118	1070	1370	2330	87.1	89.9	466	986	52.1	829
Hardness (as CaCO3)	mg/L	-	-	0.5	62.4	107	65.2	64.3	1%	48.7	53.3	48.8	49.5	1%	59.2	57.6	653	867	1640	42.7	42.5	268	568	27.6	466
pH (lab)	pH	6.5 - 9.0	6.0 - 8.5	0.1	7.59	7.58	7.60	7.60	0%	7.75	7.72	7.82	7.81	0%	7.75	7.71	8.16	8.19	8.41	7.54	7.58	***5.96***	8.00	***6.31***	***5.55***
Total Suspended Solids	mg/L	-	50	3	29.3	31.3	3.3	<3.0	<DL	***130***	***339***	***145***	***159***	9%	***52.7***	38.7	***155***	32	31.3	***121***	8	4	<3.0	<3.0	5.3
Total Dissolved Solids	mg/L	-	-	1	74.9	134	76.1	75.3	1%	50.9	60.6	53.5	49.5	8%	69.1	62.9	749	1040	1940	48.4	49.2	337	714	25.5	580
Alkalinity, Bicarbonate (as CaCO3)	mg/L	-	-	1	33.4	30.3	27.9	27.3	2%	37.4	42.8	41.9	33.9	21%	42.9	35.4	228	119	405	28.2	29.1	3.7	81.4	6.3	2.1
Alkalinity, Carbonate (as CaCO3)	mg/L	-	-	1	<1.0	<1.0	<1.0	<1.0	<DL	<1.0	<1.0	<1.0	<1.0	<DL	<1.0	<1.0	<1.0	<1.0	24.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Hydroxide (as CaCO3)	mg/L	-	-	1	<1.0	<1.0	<1.0	<1.0	<DL	<1.0	<1.0	<1.0	<1.0	<DL	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	-	-	1	33.4	30.3	27.9	27.3	2%	37.4	42.8	41.9	33.9	21%	42.9	35.4	228	119	430	28.2	29.1	3.7	81.4	6.3	2.1
Ammonia, Total (as N)	mg/L	0.75	-	0.005	0.0138	0.0091	0.0081	0.008	<2xDL	0.009	0.0193	0.0094	0.0098	<2xDL	0.0135	0.0112	0.0368	0.0095	0.085	0.0154	0.0071	0.0145	0.0098	0.0121	0.0316
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.50	<0.50	<0.50	<DL	<0.50	<0.50	<0.50	<0.50	<DL	<0.50	<0.50	<1.0	<2.5	<5.0	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50
Fluoride (F)	mg/L	0.12	-	0.02	0.049	0.056	0.048	0.046	<2xDL	0.045	0.052	0.044	0.045	<2xDL	0.044	0.045	***0.206***	<0.10	0.092	0.031	0.055	0.058	0.045	0.046	0.058
Nitrate (as N)	mg/L	13	-	0.005	<0.0050	0.0291	<0.0050	<0.0050	<DL	0.0284	0.0271	0.0283	0.0291	3%	0.0214	0.0184	<0.010	<0.025	0.157	<0.0050	<0.0050	0.0056	0.143	<0.0050	<0.0050
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<DL	<0.0010	<0.0010	<0.0010	<0.0010	<DL	<0.0010	<0.0010	<0.0020	<0.0050	0.016	<0.0010	<0.0010	<0.0010	0.0063	<0.0010	<0.0010
Sulfate (SO4)	mg/L	-	-	0.5	28.9	72.4	32.7	32.4	1%	8.84	13.2	8.69	9.24	6%	19.8	18.5	374	666	1130	13	13	236	446	8.64	413
Cyanide, Weak Acid Diss	mg/L	-	0.1	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<DL	<0.0050	<0.020	<0.0050	<0.0050	<DL	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050
Cyanide, Total	mg/L	-	0.3	0.005	<0.0050	<0.0050	<0.0050	<0.0050	<DL	<0.0050	<0.020	<0.0050	<0.0050	<DL	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0050	<0.0050
Cyanate	mg/L	-	-	0.2	<0.20	<0.20	<0.20	<2.0	<DL	<0.20	<0.20	<0.20	<0.20	<DL	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.23	<0.20
Thiocyanate (SCN)	mg/L	-	-	0.5	0.74	0.51	0.75	0.75	<2xDL	0.55	0.51	0.51	0.51	<2xDL	0.56	0.6	<0.50	<0.50	<0.50	0.78	0.77	0.8	0.54	1.44	0.8
Aluminum (Al)-Total	mg/L	0.1	-	0.003	***0.169***	***0.582***	***0.189***	***0.171***	10%	***2.71***	***11.1***	***3.47***	***3.26***	6%	***1.59***	***0.891***	***1.65***	***0.416***	***0.509***	***2.68***	***0.227***	***0.242***	0.0232	***0.294***	***0.261***
Antimony (Sb)-Total	mg/L	-	0.15	0.0001	0.00033	0.00149	0.00097	0.00084	14%	0.00068	0.00203	0.00075	0.00073	3%	0.00048	0.00036	0.0236	0.0363	0.0796	0.00148	0.00177	<0.00010	0.00017	<0.00010	<0.00010
Arsenic (As)-Total	mg/L	0.005	-	0.0001	0.00325	***0.0131***	***0.0056***	0.00459	20%	***0.0143***	***0.0686***	***0.019***	***0.018***	5%	***0.00911***	***0.00611***	***0.231***	***0.117***	***0.135***	***0.0318***	***0.0116***	0.00142	0.00394	0.00131	0.0012
Barium (Ba)-Total	mg/L	-	1.0	0.00005	0.0292	0.0347	0.0287	0.0283	1%	0.0911	0.24	0.11	0.106	4%	0.0652	0.056	0.0516	0.0321	0.0419	0.0673	0.0262	0.0175	0.0251	0.0366	0.0147
Beryllium (Be)-Total	mg/L	-	-	0.00002	<0.000020	0.000066	0.000023	0.000021	<2xDL	0.000127	0.000439	0.000141	0.00014	1%	0.000069	0.000052	0.00008	0.000025	<0.000040	0.000085	<0.000020	0.000041	<0.000020	0.000025	0.000038
Bismuth (Bi)-Total	mg/L	-	-	0.0005	<0.000050	0.000067	<0.000050	<0.000050	<DL	0.00024	0.000976	0.000237	0.000252	<2xDL	0.000101	0.000102	0.000293	0.000257	0.00037	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<DL	<0.010	<0.010	<0.010	<0.010	<DL	<0.010	<0.010	<0.010	0.051	0.051	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Total *(Lab Result)*	mg/L	0.00009	0.02	0.00001	0.0000581	***0.00572***	***0.000499***	***0.000503***	1%	***0.00031***	***0.00128***	***0.000387***	***0.00038***	2%	***0.000198***	***0.000108***	***0.00675***	***0.0146***	***0.0198***	***0.00025***	***0.000237***	***0.00452***	0.0000213	0.0000468	***0.0077***
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	*mg/L*	-	-	*0.00001*	*0.000107*	*0.000168*	*0.000111*	*0.000110*	-	*0.000087*	*0.000094*	*0.000087*	*0.000088*	-	*0.000103*	*0.000100*	*0.000370*	*0.000370*	*0.000370*	*0.000078*	*0.000078*	*0.000359*	*0.000370*	*0.000054*	*0.000370*
Calcium (Ca)-Total	mg/L	-	-	0.05	18.7	32	18.3	18.8	3%	13.4	17.3	13.8	14	1%	16.2	15.2	165	203	319	12.6	11.6	66.4	176	8.19	113
Chromium (Cr)-Total	mg/L	0.0089	0.04	0.0001	0.00025	0.00063	0.0003	0.00027	<2xDL	0.00344	***0.0138***	0.00427	0.00422	1%	0.00198	0.0013	0.00167	0.00056	0.00103	0.00336	0.00042	0.00026	0.00017	0.00031	0.00026
Cobalt (Co)-Total	mg/L	-	-	0.0001	0.00028	0.00073	0.00013	0.00013	<2xDL	0.00158	0.00626	0.00202	0.00198	2%	0.00084	0.0006	0.00224	0.00151	0.00144	0.00162	0.00013	0.00045	0.00011	<0.00010	0.00014
Copper (Cu)-Total *(Lab Result)*	mg/L	0.002	0.2	0.0005	0.00188	***0.108***	***0.0101***	***0.0108***	7%	***0.00808***	***0.0252***	***0.00958***	***0.00928***	3%	***0.00547***	***0.00425***	***0.0629***	***0.0195***	***0.0323***	***0.00672***	***0.00428***	0.00265	0.00055	***0.00349***	0.00214
Copper (Cu)-Total (Hardness Adjusted Guideline)	*mg/L*	-	-	*0.0005*	*0.00200*	*0.00251*	*0.00200*	*0.00200*	-	*0.00200*	*0.00200*	*0.00200*	*0.00200*	-	*0.00200*	*0.00200*	*0.00400*	*0.00400*	*0.00400*	*0.00200*	*0.00200*	*0.00400*	*0.00400*	*0.00200*	*0.00400*
Iron (Fe)-Total	mg/L	0.3	1.0	0.01	0.297	***1.0***	***0.315***	0.264	18%	***3.93***	***16.7***	***5.01***	***4.71***	6%	***2.3***	***1.42***	***7.56***	***1.15***	***1.41***	***4.34***	***0.318***	0.221	0.036	0.107	0.077
Lead (Pb)-Total *(Lab Result)*	mg/L	0.001	0.1	0.00005	0.000353	***0.00471***	0.0016	0.00109	38%	***0.0125***	***0.0583***	***0.0151***	***0.0158***	5%	***0.00658***	***0.00405***	***0.0551***	***0.0653***	***0.089***	***0.0038***	***0.00233***	0.000107	0.000091	<0.000050	<0.000050
Lead (Pb)-Total (Hardness Adjusted Guideline)	*mg/L*	-	-	*0.00005*	*0.00175*	*0.00347*	*0.00185*	*0.00181*	-	*0.00100*	*0.00100*	*0.00100*	*0.00100*	-	*0.00100*	*0.00100*	*0.00700*	*0.00700*	*0.00700*	*0.00100*	*0.00100*	*0.00700*	*0.00700*	*0.00100*	*0.00700*
Lithium (Li)-Total	mg/L	-	-	0.0005	<0.0010	<0.0010	<0.0010	<0.0010	<DL	0.0022	0.0063	0.0022	0.0021	<2xDL	0.0012	<0.0010	0.0097	0.007	0.0172	0.0019	<0.0010	0.0014	<0.0010	<0.0010	0.0017
Magnesium (Mg)-Total	mg/L	-	-	0.1	3.74	5.91	3.85	3.9	1%	4.4	6.48	4.64	4.68	1%	4.88	4.52	53.9	78.8	188	3.87	2.81	23.5	30.6	1.71	45.4
Manganese (Mn)-Total	mg/L	-	0.5	0.00005	0.178	0.274	0.0283	0.0263	7%	0.198	***0.717***	0.247	0.233	6%	0.15	0.126	***1.46***	***1.01***	***0.573***	0.164	0.0271	0.44	0.018	0.00256	***0.566***
Mercury (Hg)-Total	mg/L	0.000026	0.005	0.00001	0.0000059	0.0000088	0.0000138	0.0000087	<2xDL	0.0000154	***0.000033***	0.0000204	***0.000041***	67%	***0.0000336***	***0.0000346***	***0.0000283***	0.0000081	0.0000176	0.0000205	0.0000137	0.0000059	<0.0000050	***0.0000311***	***0.0000318***
Molybdenum (Mo)-Total	mg/L	0.0073	-	0.00005	0.000086	0.000094	0.000088	0.000098	<2xDL	0.000531	0.00115	0.000506	0.000505	0%	0.000381	0.000349	0.000388	0.000471	0.00093	0.000092	0.000084	<0.000050	0.000091	<0.000050	<0.000050
Nickel (Ni)-Total *(Lab Result)*	mg/L	0.025	0.3	0.0005	0.00079	0.00151	0.00088	0.00078	<2xDL	0.00287	0.00978	0.00344	0.0034	1%	0.00189	0.00144	0.00336	0.00342	0.0056	0.00269	0.00068	0.00392	<0.00050	0.00155	0.00523
Nickel (Ni)-Total (Hardness Adjusted Guideline)	*mg/L*	-	-	*0.0005*	*0.06679*	*0.10062*	*0.06905*	*0.06833*	-	*0.02500*	*0.02500*	*0.02500*	*0.02500*	-	*0.02500*	*0.02500*	*0.15000*	*0.15000*	*0.15000*	*0.02500*	*0.02500*	*0.15000*	*0.15000*	*0.02500*	*0.15000*
Phosphorus (P)-Total	mg/L	-	-	0.05	<0.050	<0.050	<0.050	<0.050	<DL	0.123	0.362	0.145	0.133	<2xDL	0.093	<0.050	0.152	<0.050	0.05	0.211	<0.050	<0.050	0.054	<0.050	<0.050
Potassium (K)-Total	mg/L	-	-	0.1	1.42	1.27	1.39	1.45	4%	1.35	2.72	1.5	1.51	1%	1.28	1.18	3.69	4.58	7.54	2.79	2.48	1.91	5.35	1.5	2.52
Selenium (Se)-Total	mg/L	0.001	-	0.0001	<0.000050	<0.000050	<0.000050	<0.000050	<DL	0.000069	0.000139	0.000054	0.000065	<2xDL	0.000055	0.000062	0.00008	0.000227	***0.00319***	0.000086	0.000061	0.000054	<0.000050	<0.000050	<0.000050
Silicon (Si)-Total	mg/L	-	-	0.05	2.8	3.96	2.87	2.9	1%	7.54	21.2	8.85	8.83	0%	5.63	4.31	9.26	4.28	4.88	5.87	2.4	3.18	6.54	2.95	3.46
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	0.000018	***0.00011***	0.000046	0.000039	<2xDL	***0.000142***	***0.000644***	***0.000157***	***0.000182***	15%	0.000089	0.000063	***0.00112***	***0.0014***	***0.00281***	0.000095	0.000087	0.000012	<0.000010	<0.000010	<0.000010
Sodium (Na)-Total	mg/L	-	-	0.05	1.42	1.73	1.44	1.5	4%	1.37	1.9	1.44	1.41	2%	1.47	1.39	4.29	5.51	10.6	0.755	0.727	1.66	4.68	1.01	2.38
Strontium (Sr)-Total	mg/L	-	-	0.0002	0.133	0.162	0.131	0.134	2%	0.14	0.153	0.131	0.138	5%	0.127	0.123	0.387	0.445	0.943	0.0404	0.0393	0.169	0.364	0.0403	0.274
Sulfur (S)-Total	mg/L	-	-	0.5	10.2	24.2	10.8	11.7	8%	3.22	4.85	3.37	3.33	1%	6.97	6.61	127	219	391	4.72	4.58	81.7	159	3.27	146
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	<0.000010	0.000011	<0.000010	<0.000010	<DL	0.000065	0.000214	0.000067	0.00007	4%	0.000033	0.000026	0.000177	0.000128	0.000503	0.000063	0.000018	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<DL	<0.00010	0.00026	<0.00010	<0.00010	<DL	<0.00010	<0.00010	0.0001	<0.00010	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	mg/L	-	-	0.0003	<0.0045	0.0138	0.004	0.00289	32%	0.0979	0.306	0.119	0.102	15%	0.052	0.0294	0.0915	<0.021	0.0218	0.124	0.00596	0.00088	<0.00090	0.0007	0.00035
Uranium (U)-Total	mg/L	0.015	-	0.00001	0.000111	0.000192	0.000096	0.000092	4%	0.000597	0.00164	0.000639	0.000649	2%	0.000392	0.000345	0.00372	0.00302	0.00767	0.000156	0.000045	0.000014	0.000241	0.000011	<0.000010
Vanadium (V)-Total	mg/L	-	-	0.0005	<0.00050	0.0011	<0.00050	<0.00050	<DL	0.00733	0.0294	0.00939	0.00904	4%	0.00405	0.00268	0.0072	0.00147	0.0021	0.0105	0.00076	<0.00050	<0.00050	<0.00050	<0.00050
Zinc (Zn)-Total	mg/L	0.03	0.3	0.003	0.0048	***0.446***	***0.0427***	***0.0417***	2%	0.0288	***0.127***	***0.0378***	***0.0353***	7%	0.0185	0.0125	***1.24***	***1.21***	***2.14***	0.0257	0.0248	***1.46***	<0.0030	0.009	***2.6***
Dissolved Metals Filtration Location		-	-	n/a	FIELD	FIELD	FIELD	FIELD	<DL	FIELD	FIELD	FIELD	FIELD	<DL	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.001	***0.105***	***0.152***	0.0882	***0.106***	18%	0.0776	***0.104***	0.0826	0.0815	1%	0.0748	0.0731	0.0086	0.0049	0.0037	0.0664	0.0784	***0.231***	0.0115	***0.302***	***0.258***
Antimony (Sb)-Dissolved	mg/L	-	-	0.0001	0.0003	0.00072	0.00077	0.00077	0%	0.0001	0.00016	<0.00010	<0.00010	<DL	0.00016	0.00015	0.0162	0.0273	0.0675	0.00058	0.0014	<0.00010	0.00014	0.00011	<0.00010
Arsenic (As)-Dissolved	mg/L	0.005	0.15	0.0001	0.00251	0.0026	0.00298	0.00347	15%	0.00072	0.00153	0.00074	0.0007	6%	0.00146	0.00137	***0.0722***	***0.0444***	***0.0681***	0.00443	***0.00709***	0.00123	0.00366	0.00135	0.00117
Barium (Ba)-Dissolved	mg/L	-	-	0.00005	0.0274	0.0279	0.0228	0.0265	15%	0.0389	0.0368	0.0394	0.0395	0%	0.0381	0.0395	0.0165	0.0251	0.0343	0.0144	0.0209	0.0171	0.0243	0.037	0.0143
Beryllium (Be)-Dissolved	mg/L	-	-	0.00002	<0.000020	0.000051	0.000023	<0.000020	<DL	0.000021	<0.000020	<0.000020	<0.000020	<DL	<0.000020	<0.000020	<0.000020	<0.000020	<0.000040	<0.000020	<0.000020	0.000038	<0.000020	0.000024	0.000037
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.000050	<0.000050	<0.000050	<0.000050	<DL	<0.000050	<0.000050	<0.000050	<0.000050	<DL	<0.000050	<0.000050	<0.000050	<0.000050	<0.00010	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<0.010	<0.010	<DL	<0.010	<0.010	<0.010	<0.010	<DL	<0.010	<0.010	<0.010	0.049	0.048	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved *(Lab Result)*	mg/L	0.00009	-	0.00001	0.000077	***0.00542***	***0.000432***	***0.000487***	12%	0.0000489	0.0000919	0.0000526	0.0000487	8%	0.0000488	0.0000475	***0.00115***	***0.0138***	***0.019***	0.0000223	***0.000134***	***0.00444***	0.0000133	0.000053	***0.00771***
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	*mg/L*	-	-	*0.00001*	*0.000107*	*0.000168*	*0.000111*	*0.000110*	-	*0.000087*	*0.000094*	*0.000087*	*0.000088*	-	*0.000103*	*0.000100*	*0.000370*	*0.000370*	*0.000370*	*0.000078*	*0.000078*	*0.000359*	*0.000370*	*0.000054*	*0.000370*
Calcium (Ca)-Dissolved	mg/L	-	-	0.05	18.8	33	19.4	19.2	1%	13.1	14.8	13.2	13.4	2%	16.1	15.6	171	213	336	11.9	12.2	68.1	177	8.24	113
Chromium (Cr)-Dissolved	mg/L	0.0089	-	0.0001	0.00013	0.00014	0.00013	0.00013	<2xDL	0.00014	0.00019	0.00013	0.00012	<2xDL	0.00014	0.00015	<0.00010	<0.00010	<0.00020	0.00018	0.00016	0.00014	<0.00010	0.00021	0.00011
Cobalt (Co)-Dissolved	mg/L	-	-	0.0001	0.00025	0.00037	<0.00010	<0.00010	<DL	0.00011	0.00018	0.00011	0.00011	<2xDL	0.00014	0.00015	0.00091	0.00129	0.00108	0.00011	<0.00010	0.00043	0.0001	<0.00010	0.00012
Copper (Cu)-Dissolved *(Lab Result)*	mg/L	0.002	-	0.0002	0.00185	***0.0921***	***0.00834***	***0.00974***	15%	***0.00303***	***0.00349***	***0.00309***	***0.00309***	0%	***0.0026***	***0.00264***	0.00164	***0.00735***	***0.0218***	0.00187	***0.00381***	0.00241	0.00051	***0.00364***	0.00179
Copper (Cu)-Diss. (Hardness Adjusted Guideline)	*mg/L*	-	-	*0.00200*	*0.00200*	*0.00251*	*0.00200*	*0.00200*	-	*0.00200*	*0.00200*	*0.00200*	*0.00200*	-	*0.00200*	*0.00200*	*0.00400*	*0.00400*	*0.00400*	*0.00200*	*0.00200*	*0.00400*	*0.00400*	*0.00200*	*0.00400*
Iron (Fe)-Dissolved	mg/L	0.3	-	0.01	0.222	0.232	0.161	0.159	1%	0.157	0.209	0.155	0.151	3%	0.158	0.212	***1.39***	0.019	<0.010	0.091	0.103	0.195	0.011	0.119	0.067
Lead (Pb)-Dissolved *(Lab Result)*	mg/L	0.001	-	0.00005	0.000099	0.000225	0.000538	0.000512	5%	0.00013	0.000443	0.000153	0.000119	<2xDL	0.000129	0.000115	0.000206	0.000949	0.0062	0.000066	0.000345	<0.000050	<0.000050	<0.000050	<0.000050
Lead (Pb)-Diss. (Hardness Adjusted Guideline)	*mg/L*			*0.00005*	*0.00175*	*0.00347*	*0.00185*	*0.00181*	2%	*0.00100*	*0.00100*	*0.00100*	*0.00100*	-	*0.00100*	*0.00100*	*0.00700*	*0.00700*	*0.00700*	*0.00100*	*0.00100*	*0.00700*	*0.00700*	*0.00100*	*0.00700*
Lithium (Li)-Dissolved	mg/L	-	-	0.0005	<0.0010	<0.0010	<0.0010	<0.0010	-	<0.0010	<0.0010	<0.0010	<0.0010	<DL	<0.0010	<0.0010	0.0086	0.0067	0.0163	<0.0010	<0.0010	0.0013	<0.0010	<0.0010	0.0015
Magnesium (Mg)-Dissolved	mg/L	-	-	0.1	3.79	6	4.06	3.99	2%	3.86	3.95	3.86	3.92	2%	4.62	4.53	55	81.5	195	3.14	2.94	23.9	30.4	1.71	44.9
Manganese (Mn)-Dissolved	mg/L	-	-	0.00005	0.169	0.21	0.0187	0.0204	9%	0.0479	0.106	0.0471	0.046	2%	0.0598	0.0659	1.24	0.977	0.533	0.0289	0.0102	0.43	0.0144	0.00502	0.545
Mercury (Hg)-Dissolved	mg/L	0.000026	-	0.00001	0.0000058	0.0000059	0.000007	0.0000067	<2xDL	0.0000078	0.0000098	0.0000084	0.0000074	<2xDL	0.0000074	0.0000077	<0.0000050	<0.0000050	0.0000056	0.0000096	0.0000114	0.0000059	<0.0000050	0.0000134	0.0000054
Molybdenum (Mo)-Dissolved	mg/L	0.0073	-	0.00005	0.000082	0.000067	0.000069	0.000076	<2xDL	0.000285	0.000354	0.000284	0.000264	7%	0.000243	0.000245	0.000296	0.000401	0.00085	<0.000050	0.000062	<0.000050	0.000068	<0.000050	<0.000050
Nickel (Ni)-Dissolved *(Lab Result)*	mg/L	0.025	-	0.0005	0.00071	0.00115	0.00069	0.00078	<2xDL	0.00069	0.00088	0.00073	0.00074	<2xDL	0.00071	0.00077	0.00208	0.003	0.0049	<0.00050	0.00057	0.00359	<0.00050	0.00156	0.00515
Nickel (Ni)-Diss. (Hardness Adjusted Guideline)	*mg/L*			*0.0005*	*0.06679*	*0.10062*	*0.06905*	*0.06833*	-	*0.02500*	*0.02500*	*0.02500*	*0.02500*	-	*0.02500*	*0.02500*	*0.15000*	*0.15000*	*0.15000*	*0.02500*	*0.02500*	*0.15000*	*0.15000*	*0.02500*	*0.15000*
Phosphorus (P)-Dissolved	mg/L	-	-	0.05	<0.050	<0.050	<0.050	<0.050	<DL	<0.050	<0.050	<0.050	<0.050	<DL	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	mg/L	-	-	0.1	1.52	1.28	1.52	1.48	3%	0.92	0.96	0.9	0.92	2%	1.05	1.1	3.33	4.7	7.96	2.63	2.62	2	5.51	1.59	2.48
Selenium (Se)-Dissolved	mg/L	0.001	-	0.0001	<0.000050	<0.000050	<0.000050	<0.000050	<DL	<0.000050	<0.000050	<0.000050	<0.000050	<DL	<0.000050	<0.000050	<0.000050	0.000264	***0.00341***	<0.000050	0.000065	<0.000050	<0.000050	<0.000050	<0.000050
Silicon (Si)-Dissolved	mg/L	-	-	0.05	2.67	3.46	2.88	2.83	2%	3.19	3.18	3.18	3.26	2%	2.94	3.05	6.33	3.68	4.02	2.23	2.25	3.18	6.47	2.98	3.38
Silver (Ag)-Dissolved	mg/L	0.0001	-	0.00001	<0.000010	0.000023	0.000015	0.000016	<2xDL	<0.000010	0.000016	<0.000010	<0.000010	<DL	<0.000010	<0.000010	<0.000010	0.000077	***0.0003***	0.000015	0.000035	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Dissolved	mg/L	-	-	0.05	1.39	1.65	1.26	1.49	17%	1.23	1.35	1.24	1.24	0%	1.4	1.37	4.27	5.69	10.9	0.617	0.751	1.61	4.56	1.08	2.35
Strontium (Sr)-Dissolved	mg/L	-	-	0.0002	0.134	0.173	0.131	0.13	1%	0.129	0.116	0.127	0.122	4%	0.125	0.12	0.382	0.443	0.926	0.0346	0.0384	0.172	0.34	0.0403	0.269
Sulfur (S)-Dissolved	mg/L	-	-	0.5	10.1	24.9	11.4	11.4	0%	3.42	4.84	3.36	3.37	0%	6.86	6.59	128	222	391	4.74	4.74	80.5	154	3.23	141
Thallium (Tl)-Dissolved	mg/L	0.0008	-	0.00001	<0.000010	<0.000010	<0.000010	<0.000010	<DL	<0.000010	<0.000010	<0.000010	<0.000010	<DL	<0.000010	<0.000010	0.00008	0.000093	0.000455	<0.000010	0.000012	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Dissolved	mg/L	-	-	0.0003	<0.0012	0.00077	0.00094	0.00099	<2xDL	0.00091	0.00195	0.00103	0.00092	<2xDL	0.00072	0.00071	<0.00030	<0.00030	<0.00060	0.00096	0.00105	0.00054	<0.00030	0.00068	0.00036
Uranium (U)-Dissolved	mg/L	0.015	-	0.00001	0.000105	0.000135	0.00008	0.000081	1%	0.000285	0.000386	0.000284	0.000265	7%	0.000255	0.000228	0.00348	0.00286	0.00757	0.000023	0.000037	0.00001	0.000217	0.000012	<0.000010
Vanadium (V)-Dissolved	mg/L	-	-	0.001	<0.00050	<0.00050	<0.00050	<0.00050	<DL	<0.00050	<0.00050	<0.00050	<0.00050	<DL	<0.00050	<0.00050	<0.00050	<0.00050	<0.0010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc (Zn)-Dissolved	mg/L	0.03	-	0.001	0.0038	***0.421***	***0.0385***	***0.0381***	1%	0.0033	0.0041	0.0046	0.0026	56%	0.0038	0.0043	***1.08***	***1.1***	***2.07***	0.0024	0.0214	***1.4***	0.0041	0.0103	***2.61***

Applied Guidelines: 'Federal CCME Canadian Environmental Quality Guidelines (January 2015), CCME: Freshwater Aquatic Life 'Mount Nansen Effluent Discharge Standards

COLOUR KEY:
🟥 ***Exceeds CCME Guideline***
🟦 ***Exceeds MN Effluent Discharge Standards***
🟪 ***Exceeds both CCME and MN Standards***
🟩 ***Exceeds Hardness Dependent Calculated Guideline (CCME)***
⬜ Data flag for Detection Limit Adjustment --> Please refer to the lab COA report and lab excel report for more info
QA/QC Codes: RPD - Relative Percent Difference, <DL - below detection limit, and <2XDL - less than two times the detection limit.

Notes:
* Due to low water volumes at L1 and L2 - cyanide samples were not collected, neither was the total mercury sample, however this analysis could be conducted on the total metals sample, however since a different preservative was used and there was no glass container the results may be biased low.
QA/QC Travel/Field Blank Analysis - Travel blank had an ammonia concentration above detection limit, this can occur when samples provided by lab are dated. The field blank sample had a chromium concentration that was above detection limit, suggestion some potential field contamination (improperly tightened lid, dust or wind during sampling, etc.).
Looking at other concentrations for chromium during the program, results appear normal and no other sample contamination is suspected.
QA/QC Replicate Analysis - the average RPD of the replicate sample WQ-PC-D-r was 7% with an average difference of 6% for dissolved and 9% for total metals. Total titanium and lead had RPD >20%, indicating some imprecision in lab analysis or intrinsically high sample variability. Based on the time of year (freshet) with higher flows and runoff, it is likely the later reason for the higher differences in RPD.
The average RPD of the replicate sample WQ-VC-DBC-r was 7% with an average difference of 6% for dissolved and 6% for total metals. Alkalinity (total and bicarbonate) had RPD>20% (indicating intrinsically high variability within samples), and total mercury and dissolved zinc had RPD>50% suggesting errors in lab precision or highly variable conditions.
Based on the time of year (freshet) with higher flows and runoff, it is likely the later reason for the higher differences in RPD. The two samples from WQ-VC-DBC had high TSS which suggests intrinsically high variability.
The average RPD of the replicate sample WQ-DC-D1b-r was 3% with an average difference of 2% for dissolved and 3% for total metals. All individual RPD values were below 20% and are considered adequately precise.

Summary of Water Quality Results for the May 12-14 2015 Trip.

Analyte	Units	CCME-WATER-F-AL	Mount Nansen Effluent Discharge Standards	Sample ID WQ Site ID Date Sampled Detection Limit	0146-150513-029 WQ-DC-D1b 5/13/2015 2:49:00 PM	0146-150513-031 WQ-DC-D1b-r 5/13/2015 2:45:00 PM	QA/QC WQ-DC-D1b Replicate Analysis	0146-150513-006 WQ-TP 5/13/2015 6:15:00 PM	0146-150513-009 WQ-SEEP 5/13/2015 5:40:00 PM	0146-150514-017 WQ-DC-B 5/14/2015 8:15:00 AM	0146-150513-010 WQ-DC-U 5/13/2015 5:10:00 PM	0146-150512-021 WQ-DC-R 5/12/2015 6:30:00 PM	0146-150514-019 WQ-NW-SEEP-02 5/14/2015 7:40:00 AM	0146-150514-013 WQ-WR-SEEP-C 5/14/2015 12:45:00 PM	0146-150512-035 WQ-ORE 5/12/2015 12:25:00 PM	0146-150514-014 WQ-L1 * 5/14/2015 1:45:00 PM	0146-150514-015 WQ-L2 * 5/14/2015 11:30:00 AM	0146-150512-FIELD BLANK FIELD BLANK 5/12/2015 2:35:00 PM	0146-150512-TRAVEL-BLANK TRAVEL BLANK
Temperature (in-situ)	°C	-	-	-	0.0	-	-	10.0	3.1	0.0	1.8	0.2	5.6	0.5	10.4	-	-	-	-
Specific Conductivity (in-situ)	µS/cm	-	-	-	473.4	-	-	1233.0	1380.0	621.5	520.2	491.3	1385.0	2154.0	2024.0	-	-	-	-
pH (in-situ)	pH	6.5 - 9.0	6.0 - 8.5	-	7.9	-	-	7.14	6.62	7.39	7.82	7.75	7.17	7.64	6.98	-	-	-	-
Turbidity (In-situ)	NTU	-	-	-	43.20	-	-	5.07	21.10	4.60	53.90	9.17	3.87	6.25	26.00	-	-	-	-
Dissolved Oxygen (in-situ - Pit only)	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Colour, True	CU	15	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Conductivity	µS/cm	-	-	2	473	475	0%	226	1350	527	514	573	1400	2130	2090	2590	40	<2.0	<2.0
Hardness (as CaCO3)	mg/L	-	-	0.5	257	251	2%	98.9	748	284	282	298	815	1450	1410	1680	2.93	<0.50	-
pH (lab)	pH	6.5 - 9.0	6.0 - 8.5	0.1	8.09	8.12	0%	7.40	7.92	8.03	8.08	8.09	7.69	8.10	7.74	7.88	7.19	***5.69***	***5.46***
Total Suspended Solids	mg/L	-	50	3	48	49.3	3%	29.3	38	7.3	***157***	12.7	10	9.3	***324***	-	-	<3.0	<3.0
Total Dissolved Solids	mg/L	-	-	1	296	305	3%	133	1000	335	329	370	1090	1790	1860	2290	13.8	<1.0	<1.0
Alkalinity, Bicarbonate (as CaCO3)	mg/L	-	-	1	84.8	101	17%	14.6	174	80.1	63.4	90.4	27.5	112	37.3	54.7	7	<1.0	<1.0
Alkalinity, Carbonate (as CaCO3)	mg/L	-	-	1	<1.0	<1.0	<DL	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Hydroxide (as CaCO3)	mg/L	-	-	1	<1.0	<1.0	<DL	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	-	-	1	84.8	101	17%	14.6	174	80.1	63.4	90.4	27.5	112	37.3	54.7	7	<1.0	<1.0
Ammonia, Total (as N)	mg/L	0.75	-	0.005	0.0898	0.087	3%	0.146	***3.59***	0.0349	0.199	0.258	0.0332	0.0083	<0.0050	-	-	<0.0050	0.0121
Chloride (Cl)	mg/L	120	-	0.5	<0.50	<0.50	<DL	<0.50	1.3	<0.50	<0.50	<0.50	<2.5	<2.5	<2.5	<5.0	<0.50	<0.50	<0.50
Fluoride (F)	mg/L	0.12	-	0.02	0.079	0.078	<2xDL	0.068	0.055	0.07	0.057	0.064	***0.24***	0.12	***0.24***	***0.39***	0.054	<0.020	<0.020
Nitrate (as N)	mg/L	13	-	0.005	<0.0050	<0.0050	<DL	0.0221	0.262	0.0066	0.0141	0.019	0.115	12.5	0.052	0.093	0.0148	<0.0050	<0.0050
Nitrite (as N)	mg/L	0.06	-	0.001	<0.0010	<0.0010	<DL	0.0012	0.0145	<0.0010	0.0012	0.0016	<0.0050	0.0272	<0.0050	<0.010	<0.0010	<0.0010	<0.0010
Sulfate (SO4)	mg/L	-	-	0.5	150	150	0%	83.7	574	183	186	202	772	1170	1290	1680	8.35	<0.30	<0.30
Cyanide, Weak Acid Diss	mg/L	-	0.1	0.005	<0.0050	<0.0050	<DL	<0.010	0.0141	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	-	<0.0050	<0.0050
Cyanide, Total	mg/L	-	0.3	0.005	<0.0050	<0.0050	<DL	<0.010	0.137	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	-	-	<0.0050	<0.0050
Cyanate	mg/L	-	-	0.2	<0.20	<0.20	<DL	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-	-	<0.20	<0.20
Thiocyanate (SCN)	mg/L	-	-	0.5	<0.50	<0.50	<DL	<0.50	3.22	0.67	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	<0.50	<0.50
Aluminum (Al)-Total	mg/L	0.1	-	0.003	***0.611***	***0.697***	13%	0.0941	0.067	***0.261***	***2.85***	***0.127***	0.0803	0.0562	***0.694***	0.0732	***0.288***	<0.0030	<0.0030
Antimony (Sb)-Total	mg/L	-	0.15	0.0001	0.0151	0.0148	2%	0.0119	0.00068	0.00144	0.0029	0.00194	0.00195	0.00318	0.0139	0.0021	0.00143	<0.00010	<0.00010
Arsenic (As)-Total	mg/L	0.005	-	0.0001	***0.113***	***0.115***	2%	***0.054***	***0.0558***	***0.00683***	***0.036***	***0.0232***	***0.00642***	***0.00985***	***0.15***	***0.0114***	***0.0124***	<0.00010	<0.00010
Barium (Ba)-Total	mg/L	-	1.0	0.00005	0.0332	0.0334	1%	0.00469	0.0608	0.0288	0.0731	0.0399	0.00968	0.00913	0.0294	0.00538	0.00493	<0.000050	<0.000050
Beryllium (Be)-Total	mg/L	-	-	0.00002	0.000038	0.000038	<2xDL	<0.000020	<0.000020	<0.000020	0.000097	<0.000020	<0.000020	<0.000040	0.000056	<0.000040	<0.000020	<0.000020	<0.000020
Bismuth (Bi)-Total	mg/L	-	-	0.0005	0.000414	0.000327	<2xDL	0.000288	<0.000050	<0.000050	0.000084	<0.000050	<0.000050	<0.00010	0.00096	0.00011	0.000108	<0.000050	<0.000050
Boron (B)-Total	mg/L	-	-	0.01	<0.010	<0.010	<DL	0.01	0.057	<0.010	0.011	0.01	<0.010	<0.020	<0.020	<0.020	<0.010	<0.010	<0.010
Cadmium (Cd)-Total *(Lab Result)*	mg/L	0.00009	0.02	0.00001	***0.0017***	***0.00163***	4%	***0.00265***	***0.000584***	0.000205	***0.000432***	0.000169	***0.00765***	***0.0124***	***0.0314***	***0.00357***	***0.000292***	<0.0000050	<0.0000050
Cadmium (Cd)-Total (Hardness Adjusted Guideline)	*mg/L*	*-*	*-*	*0.00001*	*0.000347*	*0.000340*	*-*	*0.000157*	*0.000370*	*0.000370*	*0.000370*	*0.000370*	*0.000370*	*0.000370*	*0.000370*	*0.000370*	*0.000040*	*0.000370*	*0.000370*
Calcium (Ca)-Total	mg/L	-	-	0.05	69.2	68.2	1%	39.9	225	69.3	78.1	81.9	260	342	490	310	6.59	<0.050	<0.050
Chromium (Cr)-Total	mg/L	0.0089	0.04	0.0001	0.00102	0.00097	5%	0.00026	0.00061	0.0004	0.00448	0.00033	0.00015	<0.00020	0.00047	<0.00020	0.0002	0.00028	<0.00010
Cobalt (Co)-Total	mg/L	-	-	0.0001	0.00065	0.00065	0%	0.00042	0.00644	0.00055	0.00217	0.00091	0.0003	<0.00020	0.00069	<0.00020	0.0001	<0.00010	<0.00010
Copper (Cu)-Total *(Lab Result)*	mg/L	0.002	0.2	0.0005	***0.0105***	***0.011***	5%	***0.0297***	***0.00625***	0.00249	***0.00815***	0.00186	***0.0496***	***0.01***	***0.0235***	0.0033	***0.00289***	<0.00050	<0.00050
Copper (Cu)-Total (Hardness Adjusted Guideline)	*mg/L*	*-*	*-*	*0.0005*	*0.00400*	*0.00400*	*-*	*0.00234*	*0.00400*	*0.00400*	*0.00400*	*0.00400*	*0.00400*	*0.00400*	*0.00400*	*0.00400*	*0.00200*	*0.00400*	*0.00400*
Iron (Fe)-Total	mg/L	0.3	1.0	0.01	***3.59***	***3.88***	8%	***0.47***	***12.7***	***1.09***	***6.92***	***1.25***	0.196	***0.326***	***2.94***	0.256	***0.474***	<0.010	<0.010
Lead (Pb)-Total *(Lab Result)*	mg/L	0.001	0.1	0.00005	***0.0784***	***0.0765***	2%	***0.0284***	0.000633	0.000841	***0.0113***	0.00419	0.0023	***0.00771***	***0.0757***	0.00552	***0.0101***	<0.000050	<0.000050
Lead (Pb)-Total (Hardness Adjusted Guideline)	*mg/L*	*-*	*-*	*0.00005*	*0.00700*	*0.00700*	*-*	*0.00314*	*0.00700*	*0.00700*	*0.00700*	*0.00700*	*0.00700*	*0.00700*	*0.00700*	*0.00700*	*0.00100*	*0.00700*	*0.00700*
Lithium (Li)-Total	mg/L	-	-	0.0005	0.0022	0.0023	<2xDL	<0.0010	0.0017	0.0021	0.0031	0.0013	0.0034	0.0048	0.0064	0.0037	<0.0010	<0.0010	<0.0010
Magnesium (Mg)-Total	mg/L	-	-	0.1	17.7	17.3	2%	5.2	43.2	23.7	22.3	21.4	49.2	137	31.2	118	1.57	<0.10	<0.10
Manganese (Mn)-Total	mg/L	-	0.5	0.00005	***0.585***	***0.604***	3%	***0.672***	***6.61***	0.475	***0.798***	***1.09***	0.286	0.115	***0.952***	0.0533	0.0323	0.00016	<0.00010
Mercury (Hg)-Total	mg/L	0.000026	0.005	0.00001	***0.0000266***	0.0000111	<2xDL	0.0000087	<0.0000050	0.0000098	***0.0000298***	<0.0000050	0.0000069	0.0000108	0.0000132	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum (Mo)-Total	mg/L	0.0073	-	0.00005	0.000226	0.000182	<2xDL	0.000584	0.0009916	0.000181	0.000302	0.0002046	0.000055	0.00028	0.00011	<0.00010	<0.000050	<0.000050	<0.000050
Nickel (Ni)-Total *(Lab Result)*	mg/L	0.025	0.3	0.0005	0.0012	0.00119	<2xDL	0.0009	0.00283	0.00113	0.004	0.00089	0.00066	0.0018	0.0012	<0.0010	<0.00050	<0.00050	<0.00050
Nickel (Ni)-Total (Hardness Adjusted Guideline)	*mg/L*	*-*	*-*	*0.0005*	*0.15000*	*0.15000*	*-*	*0.09478*	*0.15000*	*0.15000*	*0.15000*	*0.15000*	*0.15000*	*0.15000*	*0.15000*	*0.15000*	*0.02500*	*0.15000*	*0.15000*
Phosphorus (P)-Total	mg/L	-	-	0.05	0.055	0.056	<2xDL	<0.050	<0.050	<0.050	0.238	<0.050	<0.050	0.052	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	mg/L	-	-	0.1	2.36	2.38	1%	1.96	4.92	2.02	2.26	2.16	2.2	2.1	2.63	2.24	0.53	<0.10	<0.10
Selenium (Se)-Total	mg/L	0.001	-	0.0001	0.000075	0.000059	<2xDL	<0.000050	0.000172	0.000063	0.000152	0.000066	0.00034	***0.00118***	0.00019	0.00021	<0.000050	<0.000050	<0.000050
Silicon (Si)-Total	mg/L	-	-	0.05	4.26	4.38	3%	0.634	6.29	3.04	6.92	2.86	2.88	5.09	5.57	1.37	0.658	<0.050	<0.050
Silver (Ag)-Total	mg/L	0.0001	0.1	0.00001	***0.00127***	***0.00129***	2%	***0.000547***	0.0001	0.000028	***0.000199***	0.00008	0.000087	***0.000138***	***0.00103***	***0.000121***	***0.00016***	<0.000010	<0.000010
Sodium (Na)-Total	mg/L	-	-	0.05	1.63	1.63	0%	1.73	27.2	2.58	3.23	4.14	1.22	6.06	1.49	0.33	0.052	<0.050	<0.050
Strontium (Sr)-Total	mg/L	-	-	0.0002	0.172	0.167	3%	0.0876	0.645	0.219	0.224	0.224	0.522	0.813	0.302	0.463	0.0186	<0.00020	<0.00020
Sulfur (S)-Total	mg/L	-	-	0.5	51.6	51.2	1%	35.4	201	62.5	64.9	70.8	260	395	430	412	4.29	<0.50	<0.50
Thallium (Tl)-Total	mg/L	0.0008	-	0.00001	0.000061	0.000058	5%	0.000066	<0.000010	<0.000010	0.000049	<0.000010	0.000039	0.000067	0.000127	0.000044	0.00002	<0.000010	<0.000010
Tin (Sn)-Total	mg/L	-	-	0.0001	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	<0.00020	<0.00020	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	mg/L	-	-	0.0003	0.0287	0.0318	10%	0.00057	<0.0027	0.0071	0.131	0.00398	0.00057	<0.00060	0.00384	<0.00060	0.00322	<0.00030	<0.00030
Uranium (U)-Total	mg/L	0.015	-	0.00001	0.000673	0.000666	1%	0.000123	0.00126	0.000882	0.000972	0.000721	0.000365	0.00259	0.00638	0.00119	0.000831	<0.000010	<0.000010
Vanadium (V)-Total	mg/L	-	-	0.0005	0.0029	0.00297	2%	<0.00050	0.00184	0.00108	0.0109	0.00077	<0.00050	<0.0010	0.0018	<0.0010	0.00063	<0.00050	<0.00050
Zinc (Zn)-Total	mg/L	0.03	0.3	0.003	***0.221***	***0.219***	1%	***0.187***	0.0189	0.0206	***0.057***	0.0167	***0.426***	***1.15***	***1.74***	***0.203***	0.0263	<0.0030	<0.0030
Dissolved Metals Filtration Location		-	-	n/a	FIELD	FIELD	<DL	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	-
Aluminum (Al)-Dissolved	mg/L	0.1	-	0.001	0.0089	0.009	1%	0.02	0.0292	***0.149***	0.0344	0.0281	0.0143	0.0051	0.0475	<0.0020	0.0054	<0.0010	-
Antimony (Sb)-Dissolved	mg/L	-	-	0.0001	0.0042	0.00415	1%	0.00707	0.00053	0.00144	0.00141	0.00124	0.00168	0.00217	0.00346	0.00168	<0.00010	<0.00010	-
Arsenic (As)-Dissolved	mg/L	0.005	0.15	0.0001	***0.0119***	***0.0122***	2%	***0.0164***	***0.0131***	***0.00523***	***0.00609***	***0.0111***	0.00247	0.00274	***0.0149***	0.00453	0.00088	<0.00010	-
Barium (Ba)-Dissolved	mg/L	-	-	0.00005	0.0185	0.0186	1%	0.00295	0.0574	0.03	0.0243	0.0354	0.00912	0.00835	0.0131	0.00764	0.0011	<0.000050	-
Beryllium (Be)-Dissolved	mg/L	-	-	0.00002	<0.000020	<0.000020	<DL	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000040	<0.000040	<0.000040	<0.000020	<0.000020	-
Bismuth (Bi)-Dissolved	mg/L	-	-	0.0005	<0.000050	<0.000050	<DL	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.00010	<0.00010	<0.00010	<0.000050	<0.000050	-
Boron (B)-Dissolved	mg/L	-	-	0.01	<0.010	<0.010	<DL	<0.010	0.05	<0.010	0.01	0.01	<0.010	<0.020	<0.020	<0.020	<0.010	<0.010	-
Cadmium (Cd)-Dissolved *(Lab Result)*	mg/L	0.00009	-	0.00001	***0.000433***	***0.000421***	3%	***0.0023***	***0.00039***	0.000104	0.0000621	0.000062	***0.00759***	***0.012***	***0.0254***	***0.00676***	***0.0000522***	<0.0000050	-
Cadmium (Cd)-Diss. (Hardness Adjusted Guideline)	*mg/L*	*-*	*-*	*0.00001*	*0.00347*	*0.00340*	*-*	*0.00157*	*0.00370*	*0.00370*	*0.00370*	*0.00370*	*0.00370*	*0.00370*	*0.00370*	*0.00370*	*0.00400*	*0.00370*	-
Calcium (Ca)-Dissolved	mg/L	-	-	0.05	72.6	71.1	2%	33.1	228	72.7	76.8	83.4	250	351	513	414	0.996	<0.050	-
Chromium (Cr)-Dissolved	mg/L	0.0089	-	0.0001	<0.00010	<0.00010	<DL	<0.00010	0.00031	0.00013	<0.00010	<0.00010	<0.00010	<0.00020	<0.00020	<0.00020	<0.00010	<0.00010	-
Cobalt (Co)-Dissolved	mg/L	-	-	0.0001	0.0002	0.00019	<2xDL	0.00034	0.00626	0.0005	0.00057	0.00083	0.00028	<0.00020	0.00023	<0.00020	<0.00010	<0.00010	-
Copper (Cu)-Dissolved *(Lab Result)*	mg/L	0.002	-	0.0002	0.00199	0.00197	1%	***0.0177***	0.00314	0.00189	0.00115	0.00121	***0.0355***	***0.00597***	***0.00431***	0.00217	0.00072	<0.00020	-
Copper (Cu)-Diss. (Hardness Adjusted Guideline)	*mg/L*	*-*	*-*	*0.00200*	*0.00400*	*0.00400*	*-*	*0.00234*	*0.00400*	*0.00400*	*0.00400*	*0.00400*	*0.00400*	*0.00400*	*0.00400*	*0.00400*	*0.00200*	*0.00400*	-
Iron (Fe)-Dissolved	mg/L	0.3	-	0.01	0.225	0.217	4%	0.061	***10.8***	***0.856***	***0.48***	***0.524***	0.012	0.039	<0.010	<0.010	<0.010	<0.010	-
Lead (Pb)-Dissolved *(Lab Result)*	mg/L	0.001	-	0.00005	0.000666	0.00063	6%	0.0013	<0.000050	0.000257	0.000257	0.000262	0.000081	0.00027	0.00012	<0.00010	0.000085	<0.000050	-
Lead (Pb)-Diss. (Hardness Adjusted Guideline)	*mg/L*			*0.00005*	*0.00700*	*0.00700*	*-*	*0.00314*	*0.00700*	*0.00700*	*0.00700*	*0.00700*	*0.00700*	*0.00700*	*0.00700*	*0.00700*	*0.00100*	*0.00700*	-
Lithium (Li)-Dissolved	mg/L	-	-	0.0005	0.0019	0.0019	<2xDL	<0.0010	<0.0010	0.0015	0.0011	0.0013	0.0033	0.0046	0.0057	0.0055	<0.0010	<0.0010	-
Magnesium (Mg)-Dissolved	mg/L	-	-	0.1	18.4	17.9	3%	3.96	43.6	24.8	22	21.9	46.1	140	32.2	157	0.11	<0.10	-
Manganese (Mn)-Dissolved	mg/L	-	-	0.00005	0.484	0.487	1%	0.521	5.48	0.411	0.626	1.01	0.277	0.0893	0.64	0.0685	0.00183	<0.00010	-
Mercury (Hg)-Dissolved	mg/L	0.000026	-	0.00001	0.0000087	<0.0000050	<DL	<0.0000050	<0.0000050	0.0000071	<0.0000050	<0.0000050	<0.0000050	0.0000065	<0.0000050	0.0000069	<0.0000050	<0.0000050	-
Molybdenum (Mo)-Dissolved	mg/L	0.0073	-	0.00005	0.000123	0.000117	<2xDL	0.000397	0.000793	0.000165	0.000176	0.000215	<0.000050	0.00028	<0.00010	<0.00010	<0.000050	<0.000050	-
Nickel (Ni)-Dissolved *(Lab Result)*	mg/L	0.025	-	0.0005	0.00056	0.00056	<2xDL	0.0007	0.00253	0.00099	0.00068	0.00077	0.00064	0.0017	<0.0010	<0.0010	<0.00050	<0.00050	-
Nickel (Ni)-Diss. (Hardness Adjusted Guideline)	*mg/L*			*0.0005*	*0.15000*	*0.15000*	*-*	*0.09478*	*0.15000*	*0.15000*	*0.15000*	*0.15000*	*0.15000*	*0.15000*	*0.15000*	*0.15000*	*0.02500*	*0.15000*	-
Phosphorus (P)-Dissolved	mg/L	-	-	0.05	<0.050	<0.050	<DL	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	-
Potassium (K)-Dissolved	mg/L	-	-	0.1	2.32	2.26	3%	1.54	5.03	2.19	1.98	2.21	2.18	2.1	2.44	3.5	<0.10	<0.10	-
Selenium (Se)-Dissolved	mg/L	0.001	-	0.0001	<0.000050	<0.000050	<DL	<0.000050	0.000162	0.000056	<0.000050	0.000052	0.000289	***0.00117***	0.00015	0.00033	<0.000050	<0.000050	-
Silicon (Si)-Dissolved	mg/L	-	-	0.05	3.09	3.04	2%	0.441	6.11	2.99	2.52	2.61	2.66	5.16	4.29	1.62	0.059	<0.050	-
Silver (Ag)-Dissolved	mg/L	0.0001	-	0.00001	0.000015	0.000014	<2xDL	0.000061	0.000011	<0.000010	<0.000010	0.000011	0.000028	<0.000020	<0.000020	<0.000020	<0.000010	<0.000010	-
Sodium (Na)-Dissolved	mg/L	-	-	0.05	1.65	1.63	1%	1.29	26.1	2.6	3.08	4.07	1.19	5.78	1.54	0.42	<0.050	<0.050	-
Strontium (Sr)-Dissolved	mg/L	-	-	0.0002	0.168	0.165	2%	0.0655	0.631	0.225	0.206	0.228	0.502	0.797	0.306	0.65	0.00165	<0.00020	-
Sulfur (S)-Dissolved	mg/L	-	-	0.5	52.3	52.4	0%	27.9	198	64.1	64.9	71.1	259	395	430	554	<0.50	<0.50	-
Thallium (Tl)-Dissolved	mg/L	0.0008	-	0.00001	<0.000010	0.00001	<DL	0.000048	<0.000010	<0.000010	<0.000010	<0.000010	0.000036	0.000056	0.000041	0.000057	<0.000010	<0.000010	-
Tin (Sn)-Dissolved	mg/L	-	-	0.0001	<0.00010	<0.00010	<DL	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	<0.00020	<0.00020	<0.00010	<0.00010	-
Titanium (Ti)-Dissolved	mg/L	-	-	0.0003	<0.00030	<0.00030	<DL	<0.00030	0.00069	0.00107	0.00043	0.00049	<0.00030	<0.00060	<0.00060	<0.00060	<0.00030	<0.00030	-
Uranium (U)-Dissolved	mg/L	0.015	-	0.00001	0.000623	0.000625	0%	0.000075	0.0013	0.000938	0.000724	0.000694	0.00034	0.00253	0.000642	0.00154	<0.000010	<0.000010	-
Vanadium (V)-Dissolved	mg/L	-	-	0.001	<0.00050	<0.00050	<DL	<0.00050	0.00111	0.00051	<0.00050	<0.00050	<0.00050	<0.0010	<0.0010	<0.0010	<0.00050	<0.00050	-
Zinc (Zn)-Dissolved	mg/L	0.03		0.001	***0.113***	***0.111***	2%	***0.167***	0.0161	0.0181	0.0103	0.0107	***0.417***	***1.12***	***1.39***	***0.281***	0.0101	<0.0010	-

Applied Guidelines: 'Federal CCME Canadian Environmental Quality Guidelines (January 2015), CCME: Freshwater Aquatic Life 'Mount Nansen Effluent Discharge Standards

COLOUR KEY:

Exceeds CCME Guideline

Exceeds MN Effluent Discharge Standards

Exceeds both CCME and MN Standards

Exceeds Hardness Dependent Calculated Guideline (CCME)

Data flag for Detection Limit Adjustment --> Please refer to the lab COA report and lab excel report for more info

QA/QC Codes: RPD - Relative Percent Difference, <DL - below detection limit, and <2XDL - less than two times the detection limit.

ENVIRONMENTAL DYNAMICS INC.
ATTN: Meghan Marjanovic
2195 - 2nd Ave
Whitehorse YT Y1A 3T8

Date Received: 07-MAY-15
Report Date: 17-JUN-15 15:09 (MT)
Version: FINAL

Client Phone: 867-393-4882

Certificate of Analysis

Lab Work Order #: L1608599

Project P.O. #: NOT SUBMITTED
Job Reference: MOUNT NANSEN 15-Y-0146
C of C Numbers: 1, 2, 3, 4, 5
Legal Site Desc:

Can Dang
Senior Account Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1608599-1 Water 04-MAY-15 16:45 0146-150504-036	L1608599-2 Water 04-MAY-15 16:05 0146-150504-034	L1608599-3 Water 04-MAY-15 18:30 0146-150504-033	L1608599-4 Water 04-MAY-15 13:30 0146-150504-035	L1608599-5 Water 05-MAY-15 08:18 0146-150505-025
WATER						
Physical Tests	Conductivity (uS/cm)	214	234	757	215	346
	Hardness (as CaCO3) (mg/L)	111	114	391	102	163
	pH (pH)	8.07	8.10	7.93	8.09	7.53
	Total Suspended Solids (mg/L)	8.7	6.0	7.3	6.0	18.0
	Total Dissolved Solids (mg/L)	129	132	518	112	214
Anions and Nutrients	Alkalinity, Bicarbonate (as CaCO3) (mg/L)	68.4	71.7	46.7	53.7	17.7
	Alkalinity, Carbonate (as CaCO3) (mg/L)	<1.0	<1.0	<1.0	<1.0	<1.0
	Alkalinity, Hydroxide (as CaCO3) (mg/L)	<1.0	<1.0	<1.0	<1.0	<1.0
	Alkalinity, Total (as CaCO3) (mg/L)	68.4	71.7	46.7	53.7	17.7
	Ammonia, Total (as N) (mg/L)	0.0050	0.0061	<0.0050	0.0051	0.0140
	Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50	<0.50	<0.50
	Fluoride (F) (mg/L)	0.046	0.053	0.363	0.054	0.078
	Nitrate (as N) (mg/L)	0.0089	0.0103	0.117	0.0073	0.155
	Nitrite (as N) (mg/L)	<0.0010	<0.0010	0.0011	<0.0010	0.0029
	Sulfate (SO4) (mg/L)	45.1	45.6	342	40.6	139
	Anion Sum (meq/L)	2.31	2.39	8.07	1.92	3.26
	Cation Sum (meq/L)	2.37	2.42	7.90	2.19	3.31
	Cation - Anion Balance (%)	1.4	0.8	-1.1	6.5	0.8
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	
	Cyanide, Total (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	
	Cyanate (mg/L)	<2.0 DLIS	<0.20	<0.20	<0.20	
	Thiocyanate (SCN) (mg/L)	<0.50	<0.50	<0.50	0.54	<0.50
Total Metals	Aluminum (Al)-Total (mg/L)	0.315	0.242	0.0511	0.355	0.403
	Antimony (Sb)-Total (mg/L)	0.00036	0.00035	0.00754	0.00037	0.00268
	Arsenic (As)-Total (mg/L)	0.00387	0.00367	0.0644	0.00377	0.0194
	Barium (Ba)-Total (mg/L)	0.0579	0.0581	0.00291	0.0626	0.0124
	Beryllium (Be)-Total (mg/L)	<0.000020	<0.000020	<0.000020	0.000021	0.000032
	Bismuth (Bi)-Total (mg/L)	<0.000050	<0.000050	0.000110	<0.000050	0.000209
	Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Cadmium (Cd)-Total (mg/L)	0.0000642	0.0000584	0.00211	0.0000810	0.00128
	Calcium (Ca)-Total (mg/L)	30.9	30.1	128	28.4	58.1
	Chromium (Cr)-Total (mg/L)	0.00062	0.00044	0.00016	0.00055	0.00043
	Cobalt (Co)-Total (mg/L)	0.00025	0.00022	<0.00010	0.00028	0.00031
	Copper (Cu)-Total (mg/L)	0.00200	0.00204	0.00120	0.00253	0.0434
	Iron (Fe)-Total (mg/L)	0.414	0.375	0.203	0.570	0.881
	Lead (Pb)-Total (mg/L)	0.00114	0.00104	0.00767	0.00123	0.0131
	Lithium (Li)-Total (mg/L)	<0.0010	<0.0010	0.0026	<0.0010	<0.0010

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1608599-6	L1608599-7	L1608599-8	L1608599-9	L1608599-10
Description	Water	Water	Water	Water	Water
Sampled Date	04-MAY-15	05-MAY-15	04-MAY-15	05-MAY-15	05-MAY-15
Sampled Time	13:25	13:45	16:25	10:35	10:20
Client ID	0146-150504-037	0146-150505-020	0146-150504-FIELD BLANK	0146-150505-024	0146-150505-023
Grouping / **Analyte**					
WATER					
Physical Tests Conductivity (uS/cm)	217	198	<2.0	840	846
Hardness (as CaCO3) (mg/L)	101	94.5	<0.50	465	474
pH (pH)	8.09	8.05	5.49	8.24	8.25
Total Suspended Solids (mg/L)	6.0	24.7	<3.0	<3.0	<3.0
Total Dissolved Solids (mg/L)	120	101	<1.0	562	582
Anions and Nutrients Alkalinity, Bicarbonate (as CaCO3) (mg/L)	67.1	58.8	<1.0	105	130
Alkalinity, Carbonate (as CaCO3) (mg/L)	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Hydroxide (as CaCO3) (mg/L)	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3) (mg/L)	67.1	58.8	<1.0	105	130
Ammonia, Total (as N) (mg/L)	<0.0050	<0.0050	<0.0050	0.417	0.414
Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F) (mg/L)	0.057	0.059	<0.020	0.074	0.075
Nitrate (as N) (mg/L)	0.0075	0.0232	<0.0050	0.0396	0.0395
Nitrite (as N) (mg/L)	<0.0010	<0.0010	<0.0010	0.0021	0.0021
Sulfate (SO4) (mg/L)	40.8	28.8	<0.30	326	327
Anion Sum (meq/L)	2.19	1.78	<0.10	8.89	9.42
Cation Sum (meq/L)	2.17	2.03	<0.10	9.76	9.95
Cation - Anion Balance (%)	-0.5	6.6	0.0	4.7	2.8
Cyanides Cyanide, Weak Acid Diss (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cyanide, Total (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cyanate (mg/L)	<0.20	<0.20	<0.20	<0.20	<0.20
Thiocyanate (SCN) (mg/L)	0.54	<0.50	<0.50	0.52	0.54
Total Metals Aluminum (Al)-Total (mg/L)	0.331	1.57	<0.0030	0.0319	0.0391
Antimony (Sb)-Total (mg/L)	0.00035	0.00062	<0.00010	0.00227	0.00259
Arsenic (As)-Total (mg/L)	0.00341	0.0118	<0.00010	0.0130	0.0148
Barium (Ba)-Total (mg/L)	0.0585	0.0860	<0.000050	0.0449	0.0473
Beryllium (Be)-Total (mg/L)	<0.000020	0.000064	<0.000020	<0.000020	<0.000020
Bismuth (Bi)-Total (mg/L)	<0.000050	0.000160	<0.000050	<0.000050	<0.000050
Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010	0.014	0.015
Cadmium (Cd)-Total (mg/L)	0.0000684	0.000268	<0.0000050	0.000164	0.000171
Calcium (Ca)-Total (mg/L)	26.4	26.2	<0.050	118	124
Chromium (Cr)-Total (mg/L)	0.00051	0.00166	<0.00010	<0.00050 DLB	0.00021
Cobalt (Co)-Total (mg/L)	0.00024	0.00075	<0.00010	0.00118	0.00125
Copper (Cu)-Total (mg/L)	0.00246	0.00519	<0.00050	0.00207	0.00181
Iron (Fe)-Total (mg/L)	0.534	2.26	<0.010	0.629	0.668
Lead (Pb)-Total (mg/L)	0.00115	0.00765	<0.000050	0.000902	0.00134
Lithium (Li)-Total (mg/L)	0.0011	0.0014	<0.0010	0.0018	0.0021

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1608599-11	L1608599-12	L1608599-13	L1608599-14	L1608599-15
Description	Water	Water	Water	Water	Water
Sampled Date	05-MAY-15	05-MAY-15	05-MAY-15	05-MAY-15	05-MAY-15
Sampled Time	16:46	17:15	12:20	16:25	11:35
Client ID	0146-150505-030	0146-150505-029	0146-150505-022	0146-150505-028	0146-150505-021
Grouping / **Analyte**					
WATER					
Physical Tests					
Conductivity (uS/cm)	748	810	168	1540	171
Hardness (as CaCO3) (mg/L)	346	464	84.1	856	82.2
pH (pH)	7.64	8.18	8.07	8.00	8.09
Total Suspended Solids (mg/L)	4.0	155	24.0	48.7	10.0
Total Dissolved Solids (mg/L)	507	553	92.2	1190	82.3
Anions and Nutrients					
Alkalinity, Bicarbonate (as CaCO3) (mg/L)	24.8	123	70.9	194	57.4
Alkalinity, Carbonate (as CaCO3) (mg/L)	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Hydroxide (as CaCO3) (mg/L)	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3) (mg/L)	24.8	123	70.9	194	57.4
Ammonia, Total (as N) (mg/L)	0.218	0.0480	<0.0050	4.14	<0.0050
Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50	<2.5 DLA	<0.50
Fluoride (F) (mg/L)	0.133	0.077	0.049	<0.10 DLA	0.047
Nitrate (as N) (mg/L)	0.0873	0.0097	0.0287	0.317	0.0287
Nitrite (as N) (mg/L)	0.0033	<0.0010	<0.0010	0.0154	<0.0010
Sulfate (SO4) (mg/L)	351	312	17.0	703	15.9
Anion Sum (meq/L)	7.83	8.96	1.77	18.5	1.48
Cation Sum (meq/L)	7.26	9.59	1.81	20.0	1.77
Cation - Anion Balance (%)	-3.8	3.4	1.0	3.8	8.9
Cyanides					
Cyanide, Weak Acid Diss (mg/L)	<0.0050	<0.0050	<0.0050	0.0084	<0.0050
Cyanide, Total (mg/L)	<0.0050	<0.0050	<0.0050	0.0530	<0.0050
Cyanate (mg/L)	<0.20	<2.0 DLIS	<0.20	0.33	0.25
Thiocyanate (SCN) (mg/L)	<0.50	0.52	<0.50	3.75	<0.50
Total Metals					
Aluminum (Al)-Total (mg/L)	0.0670	2.66	0.432	0.0567	0.356
Antimony (Sb)-Total (mg/L)	0.0114	0.00249	0.00022	0.00068	0.00017
Arsenic (As)-Total (mg/L)	0.0141	0.0224	0.00327	0.0732	0.00258
Barium (Ba)-Total (mg/L)	0.00655	0.0766	0.0654	0.0674	0.0642
Beryllium (Be)-Total (mg/L)	0.000031	0.000092	0.000024	<0.000020	0.000020
Bismuth (Bi)-Total (mg/L)	<0.000050	<0.000050	0.000065	<0.000050	<0.000050
Boron (B)-Total (mg/L)	0.022	0.012	<0.010	0.061	<0.010
Cadmium (Cd)-Total (mg/L)	0.0176	0.000294	0.0000767	0.000487	0.0000714
Calcium (Ca)-Total (mg/L)	121	112	21.6	256	21.7
Chromium (Cr)-Total (mg/L)	0.00010	0.00455	0.00056	0.00056	0.00057
Cobalt (Co)-Total (mg/L)	0.00171	0.00192	0.00027	0.00769	0.00024
Copper (Cu)-Total (mg/L)	0.0608	0.00796	0.00299	0.00447	0.00247
Iron (Fe)-Total (mg/L)	0.216	7.20	0.659	17.5	0.544
Lead (Pb)-Total (mg/L)	0.00283	0.00295	0.00208	0.000536	0.00155
Lithium (Li)-Total (mg/L)	0.0023	0.0044	<0.0010	0.0013	<0.0010

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1608599-16	L1608599-17	L1608599-18	L1608599-19	L1608599-20
Description	Water	Water	Water	Water	Water
Sampled Date		05-MAY-15	05-MAY-15	05-MAY-15	06-MAY-15
Sampled Time		14:45	16:50	15:55	08:45
Client ID	0146-1505-TRAVEL BLANK	0146-150505-019	0146-150505-026	0146-150505-027	0146-150506-001
Grouping / **Analyte**					
WATER					
Physical Tests					
Conductivity (uS/cm)	<2.0	173	210	901	373
Hardness (as CaCO3) (mg/L)		87.8	99.4	501	180
pH (pH)	5.55	7.74	7.75	8.20	5.71
Total Suspended Solids (mg/L)	<3.0	9.3	17.3	148	<3.0
Total Dissolved Solids (mg/L)	<1.0	106	121	621	231
Anions and Nutrients					
Alkalinity, Bicarbonate (as CaCO3) (mg/L)	<1.0	39.2	40.6	125	3.5
Alkalinity, Carbonate (as CaCO3) (mg/L)	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Hydroxide (as CaCO3) (mg/L)	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3) (mg/L)	<1.0	39.2	40.6	125	3.5
Ammonia, Total (as N) (mg/L)	<0.0050	0.0078	0.0085	0.537	0.0066
Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50	<1.0 DLA	<0.50
Fluoride (F) (mg/L)	<0.020	0.056	0.057	0.046	0.054
Nitrate (as N) (mg/L)	0.0094	<0.0050	0.0104	0.047	<0.0050
Nitrite (as N) (mg/L)	<0.0010	<0.0010	<0.0010	0.0024	<0.0010
Sulfate (SO4) (mg/L)	0.43	46.0	55.5	360	162
Anion Sum (meq/L)	<0.10	1.74	1.97	10.0	3.45
Cation Sum (meq/L)	<0.10	1.94	2.18	10.6	3.78
Cation - Anion Balance (%)	-55.0	5.4	5.0	2.7	4.6
Cyanides					
Cyanide, Weak Acid Diss (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cyanide, Total (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Cyanate (mg/L)	<0.20	0.26	0.28	0.21	0.21
Thiocyanate (SCN) (mg/L)	<0.50	1.18	1.09	0.66	1.18
Total Metals					
Aluminum (Al)-Total (mg/L)	<0.0030	1.25	0.990	1.89	0.273
Antimony (Sb)-Total (mg/L)	<0.00010	0.00065	0.00113	0.00231	<0.00010
Arsenic (As)-Total (mg/L)	<0.00010	0.00942	0.0156	0.0335	0.00163
Barium (Ba)-Total (mg/L)	<0.000050	0.0491	0.0488	0.0746	0.0171
Beryllium (Be)-Total (mg/L)	<0.000020	0.000050	0.000051	0.000078	0.000034
Bismuth (Bi)-Total (mg/L)	<0.000050	<0.000050	0.000072	<0.000050	<0.000050
Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010	0.014	<0.010
Cadmium (Cd)-Total (mg/L)	<0.0000050	0.000138	0.00179	0.000348	0.00318
Calcium (Ca)-Total (mg/L)	<0.050	26.7	30.3	130	46.6
Chromium (Cr)-Total (mg/L)	<0.00010	0.00111	0.00104	0.00373	0.00020
Cobalt (Co)-Total (mg/L)	<0.00010	0.00072	0.00066	0.00250	<0.00010
Copper (Cu)-Total (mg/L)	<0.00050	0.00481	0.0126	0.00762	0.00274
Iron (Fe)-Total (mg/L)	<0.010	1.44	1.31	8.78	0.150
Lead (Pb)-Total (mg/L)	<0.000050	0.00328	0.00694	0.00390	0.000059
Lithium (Li)-Total (mg/L)	<0.0010	<0.0010	0.0010	0.0036	<0.0010

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1608599-21 Water 06-MAY-15 08:15 0146-150506-006	L1608599-22 Water 06-MAY-15 09:45 0146-150506-004	L1608599-23 Water 06-MAY-15 09:25 0146-150506-002	L1608599-24 Water 06-MAY-15 11:10 0146-150506-005	L1608599-25 Water 06-MAY-15 08:20 0146-150506-003
WATER						
Physical Tests	Conductivity (uS/cm)	56.7	1160	863	181	659
	Hardness (as CaCO3) (mg/L)	30.5	702	505	75.8	301
	pH (pH)	6.12	8.31	8.33	7.93	5.03
	Total Suspended Solids (mg/L)	<3.0	279	<3.0	15.3	23.3
	Total Dissolved Solids (mg/L)	27.8	844	594	103	423
Anions and Nutrients	Alkalinity, Bicarbonate (as CaCO3) (mg/L)	5.6	159	160	47.0	<1.0
	Alkalinity, Carbonate (as CaCO3) (mg/L)	<1.0	1.6	3.5	<1.0	<1.0
	Alkalinity, Hydroxide (as CaCO3) (mg/L)	<1.0	<1.0	<1.0	<1.0	<1.0
	Alkalinity, Total (as CaCO3) (mg/L)	5.6	161	163	47.0	<1.0
	Ammonia, Total (as N) (mg/L)	0.0060	0.0111	0.109	0.0073	0.0130
	Chloride (Cl) (mg/L)	<0.50	<1.0 DLA	<0.50	<0.50	<0.50
	Fluoride (F) (mg/L)	0.050	0.112	0.124	0.053	0.065
	Nitrate (as N) (mg/L)	<0.0050	0.030	<0.0050	<0.0050	0.0080
	Nitrite (as N) (mg/L)	<0.0010	<0.0020 DLA	<0.0010	<0.0010	<0.0010
	Sulfate (SO4) (mg/L)	10.2	499	314	34.8	316
	Anion Sum (meq/L)	0.33	13.6	9.80	1.67	6.58
	Cation Sum (meq/L)	0.73	14.3	10.4	1.86	6.28
	Cation - Anion Balance (%)	38.3	2.6	3.0	5.5	-2.3
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Cyanide, Total (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Cyanate (mg/L)	0.24	<0.20	<0.20	<0.20	<0.20
	Thiocyanate (SCN) (mg/L)	1.49	<0.50	<0.50	0.90	1.01
Total Metals	Aluminum (Al)-Total (mg/L)	0.279	6.05	0.0207	0.225	0.396
	Antimony (Sb)-Total (mg/L)	<0.00010	0.101	0.00849	0.00093	<0.00010
	Arsenic (As)-Total (mg/L)	0.00134	0.806	0.0107	0.0128	0.00212
	Barium (Ba)-Total (mg/L)	0.0384	0.128	0.0237	0.0166	0.0179
	Beryllium (Be)-Total (mg/L)	0.000023	0.000290	<0.000020	<0.000020	0.000041
	Bismuth (Bi)-Total (mg/L)	<0.000050	0.00429	<0.000050	<0.000050	<0.000050
	Boron (B)-Total (mg/L)	<0.010	0.033	0.013	<0.010	<0.010
	Cadmium (Cd)-Total (mg/L)	0.0000622	0.0128	0.00126	0.0000396	0.00714
	Calcium (Ca)-Total (mg/L)	9.23	171	130	21.1	78.1
	Chromium (Cr)-Total (mg/L)	0.00021	0.00782	0.00012	0.00041	0.00024
	Cobalt (Co)-Total (mg/L)	<0.00010	0.00469	0.00029	0.00017	0.00012
	Copper (Cu)-Total (mg/L)	0.00360	0.104	0.00245	0.00261	0.00260
	Iron (Fe)-Total (mg/L)	0.107	18.4	0.255	0.434	0.185
	Lead (Pb)-Total (mg/L)	<0.000050	0.698	0.000530	0.000461	0.000113
	Lithium (Li)-Total (mg/L)	<0.0010	0.0088	0.0046	<0.0010	0.0012

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1608599-26 Water 06-MAY-15 10:23 0146-150506-031	L1608599-27 Water 06-MAY-15 10:25 0146-150506-032	L1608599-28 Water 06-MAY-15 12:45 0146-150506-010	L1608599-29 Water 06-MAY-15 11:55 0146-150506-009	L1608599-30 Water 06-MAY-15 12:00 0146-150506-016
WATER						
Physical Tests	Conductivity (uS/cm)	143	1050	1820	2750	270
	Hardness (as CaCO3) (mg/L)	68.9	605	692	1830	165
	pH (pH)	7.50	8.24	3.31	4.63	7.98
	Total Suspended Solids (mg/L)	4.0	4.7	136	136	<3.0
	Total Dissolved Solids (mg/L)	82.4	714	1340	2700	174
Anions and Nutrients	Alkalinity, Bicarbonate (as CaCO3) (mg/L)	29.8	193	<1.0	<1.0	56.7
	Alkalinity, Carbonate (as CaCO3) (mg/L)	<1.0	<1.0	<1.0	<1.0	<1.0
	Alkalinity, Hydroxide (as CaCO3) (mg/L)	<1.0	<1.0	<1.0	<1.0	<1.0
	Alkalinity, Total (as CaCO3) (mg/L)	29.8	193	<1.0	<1.0	56.7
	Ammonia, Total (as N) (mg/L)	0.0081	0.0292	0.0649	<0.0050	0.184
	Chloride (Cl) (mg/L)	<0.50	<1.0 DLA	<2.5 DLA	<5.0	<0.50
	Fluoride (F) (mg/L)	0.069	0.191	0.24	0.78	0.302
	Nitrate (as N) (mg/L)	<0.0050	<0.010 DLA	<0.025 DLA	<0.050 DLA	0.0910
	Nitrite (as N) (mg/L)	<0.0010	<0.0020 DLA	<0.0050 DLA	<0.010 DLA	0.0077
	Sulfate (SO4) (mg/L)	32.3	379	1010	2030	77.2
	Anion Sum (meq/L)	1.27	11.8	21.1	42.3	2.76
	Cation Sum (meq/L)	1.61	12.5	19.1	39.4	3.40
	Cation - Anion Balance (%)	11.9	3.1	-5.0	-3.5	10.4
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Cyanide, Total (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Cyanate (mg/L)	0.27	<0.20	0.52	<0.20	0.25
	Thiocyanate (SCN) (mg/L)	1.44	<0.50	<0.50	<0.50	<0.50
Total Metals	Aluminum (Al)-Total (mg/L)	0.498	0.0778	3.70	7.94	0.0944
	Antimony (Sb)-Total (mg/L)	0.00191	0.0157	0.00683	0.00147	0.00212
	Arsenic (As)-Total (mg/L)	0.0131	0.0780	0.194	0.0462	0.0165
	Barium (Ba)-Total (mg/L)	0.0307	0.0154	0.0203	0.0236	0.00551
	Beryllium (Be)-Total (mg/L)	0.000037	<0.000020	0.00078	0.00201	<0.000020
	Bismuth (Bi)-Total (mg/L)	<0.000050	<0.000050	0.00172	0.0473	<0.000050
	Boron (B)-Total (mg/L)	<0.010	<0.010	<0.050 DLA	<0.050 DLA	<0.010
	Cadmium (Cd)-Total (mg/L)	0.000634	0.00415	0.271	0.306	0.000268
	Calcium (Ca)-Total (mg/L)	20.9	162	134	386	41.4
	Chromium (Cr)-Total (mg/L)	0.00047	0.00016	0.00056	0.00236	0.00014
	Cobalt (Co)-Total (mg/L)	0.00018	0.00100	0.0486	0.0277	<0.00010
	Copper (Cu)-Total (mg/L)	0.00681	0.00344	0.455	1.47	0.00332
	Iron (Fe)-Total (mg/L)	0.448	1.51	49.8	1.14	0.114
	Lead (Pb)-Total (mg/L)	0.00217	0.00371	0.0659	0.00998	0.00236
	Lithium (Li)-Total (mg/L)	<0.0010	0.0086	0.0056	0.0099	0.0015

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1608599-31				
	Description	Water				
	Sampled Date	06-MAY-15				
	Sampled Time	13:20				
	Client ID	0146-150506-018				
Grouping	**Analyte**					
WATER						
Physical Tests	Conductivity (uS/cm)	2650				
	Hardness (as CaCO3) (mg/L)	2520				
	pH (pH)	7.85				
	Total Suspended Solids (mg/L)	5.3				
	Total Dissolved Solids (mg/L)	2700				
Anions and Nutrients	Alkalinity, Bicarbonate (as CaCO3) (mg/L)	49.7				
	Alkalinity, Carbonate (as CaCO3) (mg/L)	<1.0				
	Alkalinity, Hydroxide (as CaCO3) (mg/L)	<1.0				
	Alkalinity, Total (as CaCO3) (mg/L)	49.7				
	Ammonia, Total (as N) (mg/L)	0.0246				
	Chloride (Cl) (mg/L)	<5.0 DLA				
	Fluoride (F) (mg/L)	0.37				
	Nitrate (as N) (mg/L)	0.056				
	Nitrite (as N) (mg/L)	<0.010 DLA				
	Sulfate (SO4) (mg/L)	1790				
	Anion Sum (meq/L)	38.2				
	Cation Sum (meq/L)	50.6				
	Cation - Anion Balance (%)	14.0				
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050				
	Cyanide, Total (mg/L)	<0.0050				
	Cyanate (mg/L)	<0.20				
	Thiocyanate (SCN) (mg/L)	<0.50				
Total Metals	Aluminum (Al)-Total (mg/L)	0.0097				
	Antimony (Sb)-Total (mg/L)	0.00192				
	Arsenic (As)-Total (mg/L)	0.00547				
	Barium (Ba)-Total (mg/L)	0.00698				
	Beryllium (Be)-Total (mg/L)	<0.000040 DLA				
	Bismuth (Bi)-Total (mg/L)	<0.00010 DLA				
	Boron (B)-Total (mg/L)	<0.020 DLA				
	Cadmium (Cd)-Total (mg/L)	0.00583				
	Calcium (Ca)-Total (mg/L)	552				
	Chromium (Cr)-Total (mg/L)	0.00031				
	Cobalt (Co)-Total (mg/L)	<0.00020 DLA				
	Copper (Cu)-Total (mg/L)	0.0021				
	Iron (Fe)-Total (mg/L)	0.022				
	Lead (Pb)-Total (mg/L)	0.00053				
	Lithium (Li)-Total (mg/L)	0.0056				

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1608599-1	L1608599-2	L1608599-3	L1608599-4	L1608599-5
Description	Water	Water	Water	Water	Water
Sampled Date	04-MAY-15	04-MAY-15	04-MAY-15	04-MAY-15	05-MAY-15
Sampled Time	16:45	16:05	18:30	13:30	08:18
Client ID	0146-150504-036	0146-150504-034	0146-150504-033	0146-150504-035	0146-150505-025
Grouping / **Analyte**					
WATER					
Total Metals					
Magnesium (Mg)-Total (mg/L)	9.63	9.35	20.0	8.87	5.67
Manganese (Mn)-Total (mg/L)	0.0961	0.0870	0.322	0.0721	0.153
Mercury (Hg)-Total (mg/L)	<0.0000050	<0.0000050	0.0000151	0.0000062	0.0000101
Molybdenum (Mo)-Total (mg/L)	0.000376	0.000339	0.000200	0.000317	0.000197
Nickel (Ni)-Total (mg/L)	0.00073	0.00066	<0.00050	0.00109	<0.00050
Phosphorus (P)-Total (mg/L)	<0.050	<0.050	<0.050	<0.050	0.066
Potassium (K)-Total (mg/L)	1.40	1.34	2.39	1.62	1.74
Rubidium (Rb)-Total (mg/L)	0.00099	0.00109	0.00244	0.00120	0.00231
Selenium (Se)-Total (mg/L)	<0.000050	<0.000050	0.000074	<0.000050	0.000141
Silicon (Si)-Total (mg/L)	4.97	4.77	3.65	5.16	2.07
Silver (Ag)-Total (mg/L)	0.000024	0.000023	0.000117	0.000030	0.000234
Sodium (Na)-Total (mg/L)	2.58	2.41	0.472	2.44	0.291
Strontium (Sr)-Total (mg/L)	0.228	0.229	0.127	0.210	0.134
Sulfur (S)-Total (mg/L)	16.9	16.6	127	15.5	53.0
Thallium (Tl)-Total (mg/L)	<0.000010	<0.000010	0.000021	<0.000010	0.000046
Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total (mg/L)	0.00889	0.00693	<0.00030	0.00862	0.00468
Uranium (U)-Total (mg/L)	0.000391	0.000379	0.000199	0.000363	0.000173
Vanadium (V)-Total (mg/L)	0.00083	0.00076	<0.00050	0.00090	0.00080
Zinc (Zn)-Total (mg/L)	0.0078	0.0071	0.130	0.0095	0.0667
Zirconium (Zr)-Total (mg/L)					
Dissolved Metals					
Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved (mg/L)	0.0206	0.0214	0.0014	0.0550	0.0073
Antimony (Sb)-Dissolved (mg/L)	0.00027	0.00029	0.00614	0.00027	0.00088
Arsenic (As)-Dissolved (mg/L)	0.00232	0.00232	0.0525	0.00206	0.00446
Barium (Ba)-Dissolved (mg/L)	0.0535	0.0563	0.00205	0.0579	0.00804
Beryllium (Be)-Dissolved (mg/L)	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved (mg/L)	0.0000460	0.0000417	0.00203	0.0000398	0.00103
Calcium (Ca)-Dissolved (mg/L)	29.4	30.1	125	26.5	56.4
Chromium (Cr)-Dissolved (mg/L)	0.00013	0.00012	<0.00010	0.00017	<0.00010
Cobalt (Co)-Dissolved (mg/L)	0.00014	0.00013	<0.00010	0.00017	0.00020
Copper (Cu)-Dissolved (mg/L)	0.00155	0.00152	0.00068	0.00197	0.0227
Iron (Fe)-Dissolved (mg/L)	0.079	0.082	<0.010	0.189	0.010
Lead (Pb)-Dissolved (mg/L)	0.000081	0.000087	0.000055	0.000095	0.000105

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1608599-6	L1608599-7	L1608599-8	L1608599-9	L1608599-10
	Description	Water	Water	Water	Water	Water
	Sampled Date	04-MAY-15	05-MAY-15	04-MAY-15	05-MAY-15	05-MAY-15
	Sampled Time	13:25	13:45	16:25	10:35	10:20
	Client ID	0146-150504-037	0146-150505-020	0146-150504-FIELD BLANK	0146-150505-024	0146-150505-023
Grouping	**Analyte**					
WATER						
Total Metals	Magnesium (Mg)-Total (mg/L)	8.53	7.51	<0.10	36.3	37.9
	Manganese (Mn)-Total (mg/L)	0.0687	0.274	<0.00010	1.30	1.39
	Mercury (Hg)-Total (mg/L)	0.0000064	0.0000117	<0.0000050	<0.0000050	<0.0000050
	Molybdenum (Mo)-Total (mg/L)	0.000322	0.000741	<0.000050	0.000283	0.000288
	Nickel (Ni)-Total (mg/L)	0.00103	0.00166	<0.00050	0.00090	0.00098
	Phosphorus (P)-Total (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Total (mg/L)	1.52	1.62	<0.10	2.96	3.08
	Rubidium (Rb)-Total (mg/L)	0.00123	0.00300	<0.00020	0.00174	0.00176
	Selenium (Se)-Total (mg/L)	<0.000050	0.000052	<0.000050	0.000067	0.000052
	Silicon (Si)-Total (mg/L)	4.79	7.75	<0.050	4.14	4.35
	Silver (Ag)-Total (mg/L)	0.000026	0.000156	<0.000010	0.000044	0.000043
	Sodium (Na)-Total (mg/L)	2.38	2.18	<0.050	6.66	6.95
	Strontium (Sr)-Total (mg/L)	0.200	0.221	<0.00020	0.377	0.389
	Sulfur (S)-Total (mg/L)	14.6	10.6	<0.50	118	123
	Thallium (Tl)-Total (mg/L)	<0.000010	0.000032	<0.000010	0.000011	<0.000010
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Total (mg/L)	0.00830	0.0413	<0.00030	<0.0012 DLM	0.00106
	Uranium (U)-Total (mg/L)	0.000342	0.000903	<0.000010	0.00115	0.00126
	Vanadium (V)-Total (mg/L)	0.00080	0.00339	<0.00050	<0.00050	<0.00050
	Zinc (Zn)-Total (mg/L)	0.0094	0.0227	<0.0030	0.0233	0.0258
	Zirconium (Zr)-Total (mg/L)	<0.00030				
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0542	0.0348	<0.0010	0.0234	0.0217
	Antimony (Sb)-Dissolved (mg/L)	0.00025	0.00015	<0.00010	0.00221	0.00230
	Arsenic (As)-Dissolved (mg/L)	0.00204	0.00120	<0.00010	0.0113	0.0118
	Barium (Ba)-Dissolved (mg/L)	0.0563	0.0619	<0.000050	0.0460	0.0446
	Beryllium (Be)-Dissolved (mg/L)	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<0.010	0.013	0.012
	Cadmium (Cd)-Dissolved (mg/L)	0.0000490	0.0000913	<0.0000050	0.000140	0.000110
	Calcium (Ca)-Dissolved (mg/L)	26.3	25.8	<0.050	122	125
	Chromium (Cr)-Dissolved (mg/L)	0.00016	0.00017	<0.00010	0.00013	0.00013
	Cobalt (Co)-Dissolved (mg/L)	0.00016	0.00020	<0.00010	0.00116	0.00121
	Copper (Cu)-Dissolved (mg/L)	0.00197	0.00225	<0.00020	0.00155	0.00153
	Iron (Fe)-Dissolved (mg/L)	0.185	0.104	<0.010	0.482	0.492
	Lead (Pb)-Dissolved (mg/L)	0.000096	0.000178	<0.000050	0.000255	0.000267

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1608599-11 Water 05-MAY-15 16:46 0146-150505-030	L1608599-12 Water 05-MAY-15 17:15 0146-150505-029	L1608599-13 Water 05-MAY-15 12:20 0146-150505-022	L1608599-14 Water 05-MAY-15 16:25 0146-150505-028	L1608599-15 Water 05-MAY-15 11:35 0146-150505-021
WATER						
Total Metals	Magnesium (Mg)-Total (mg/L)	12.0	40.0	6.87	53.8	6.97
	Manganese (Mn)-Total (mg/L)	1.74	0.661	0.105	6.76	0.0973
	Mercury (Hg)-Total (mg/L)	0.0000060	<0.000025 DLM	0.0000063	<0.0000050	0.0000058
	Molybdenum (Mo)-Total (mg/L)	0.000446	0.000286	0.000448	0.00104	0.000407
	Nickel (Ni)-Total (mg/L)	0.00177	0.00403	0.00089	0.00273	0.00085
	Phosphorus (P)-Total (mg/L)	<0.050	0.155	<0.050	<0.050	<0.050
	Potassium (K)-Total (mg/L)	3.60	3.08	1.17	5.85	1.21
	Rubidium (Rb)-Total (mg/L)	0.00503	0.00440	0.00144	0.00158	0.00108
	Selenium (Se)-Total (mg/L)	0.000052	0.000165	<0.000050	0.000190	0.000051
	Silicon (Si)-Total (mg/L)	1.05	8.16	5.11	7.56	5.05
	Silver (Ag)-Total (mg/L)	0.000074	0.000055	0.000033	0.000075	0.000023
	Sodium (Na)-Total (mg/L)	3.28	4.13	2.02	32.3	1.99
	Strontium (Sr)-Total (mg/L)	0.232	0.362	0.222	0.758	0.221
	Sulfur (S)-Total (mg/L)	121	112	6.27	266	6.04
	Thallium (Tl)-Total (mg/L)	0.000061	0.000044	0.000013	<0.000010	<0.000010
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Total (mg/L)	<0.00030	0.142	0.0124	0.00257	0.0103
	Uranium (U)-Total (mg/L)	0.000284	0.00162	0.000544	0.00149	0.000499
	Vanadium (V)-Total (mg/L)	<0.00050	0.0102	0.00119	0.00238	0.00098
	Zinc (Zn)-Total (mg/L)	0.920	0.0507	0.0069	0.0123	0.0059
	Zirconium (Zr)-Total (mg/L)					
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0052	0.0891	0.0385	0.0174	0.0394
	Antimony (Sb)-Dissolved (mg/L)	0.0109	0.00206	<0.00010	0.00052	<0.00010
	Arsenic (As)-Dissolved (mg/L)	0.00532	0.00502	0.00065	0.0497	0.00058
	Barium (Ba)-Dissolved (mg/L)	0.00575	0.0325	0.0605	0.0644	0.0598
	Beryllium (Be)-Dissolved (mg/L)	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Boron (B)-Dissolved (mg/L)	0.019	<0.010	<0.010	0.057	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	0.0171	0.0000863	0.0000502	0.000251	0.0000411
	Calcium (Ca)-Dissolved (mg/L)	119	116	22.1	254	21.5
	Chromium (Cr)-Dissolved (mg/L)	<0.00010	0.00012	<0.00010	0.00036	0.00014
	Cobalt (Co)-Dissolved (mg/L)	0.00163	0.00044	0.00011	0.00745	0.00011
	Copper (Cu)-Dissolved (mg/L)	0.0449	0.00150	0.00195	0.00178	0.00196
	Iron (Fe)-Dissolved (mg/L)	0.011	0.740	0.111	15.3	0.110
	Lead (Pb)-Dissolved (mg/L)	0.000087	0.000075	0.000101	<0.000050	0.000089

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1608599-16	L1608599-17	L1608599-18	L1608599-19	L1608599-20
Description	Water	Water	Water	Water	Water
Sampled Date		05-MAY-15	05-MAY-15	05-MAY-15	06-MAY-15
Sampled Time		14:45	16:50	15:55	08:45
Client ID	0146-1505-TRAVEL BLANK	0146-150505-019	0146-150505-026	0146-150505-027	0146-150506-001
Grouping / **Analyte**					
WATER					
Total Metals Magnesium (Mg)-Total (mg/L)	<0.10	5.62	6.38	44.1	16.7
Manganese (Mn)-Total (mg/L)	<0.00010	0.235	0.220	1.52	0.143
Mercury (Hg)-Total (mg/L)	<0.0000050	0.0000163	0.0000128	<0.000025 DLM	0.0000100
Molybdenum (Mo)-Total (mg/L)	<0.000050	0.000128	0.000126	0.000381	<0.000050
Nickel (Ni)-Total (mg/L)	<0.00050	0.00144	0.00156	0.00377	0.00391
Phosphorus (P)-Total (mg/L)	<0.050	<0.050	<0.050	0.131	<0.050
Potassium (K)-Total (mg/L)	<0.10	2.36	2.42	3.36	2.11
Rubidium (Rb)-Total (mg/L)	<0.00020	0.00315	0.00297	0.00361	0.00244
Selenium (Se)-Total (mg/L)	<0.000050	<0.000050	<0.000050	0.000145	<0.000050
Silicon (Si)-Total (mg/L)	<0.050	4.93	4.52	7.40	3.16
Silver (Ag)-Total (mg/L)	<0.000010	0.000065	0.000103	0.000080	<0.000010
Sodium (Na)-Total (mg/L)	<0.050	1.84	1.94	7.55	1.39
Strontium (Sr)-Total (mg/L)	<0.00020	0.192	0.207	0.421	0.119
Sulfur (S)-Total (mg/L)	<0.50	16.4	19.4	133	60.6
Thallium (Tl)-Total (mg/L)	<0.000010	0.000018	0.000017	0.000036	<0.000010
Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total (mg/L)	<0.00030	0.0327	0.0281	0.0991	0.00086
Uranium (U)-Total (mg/L)	<0.000010	0.000190	0.000192	0.00176	0.000013
Vanadium (V)-Total (mg/L)	<0.00050	0.00248	0.00202	0.00875	<0.00050
Zinc (Zn)-Total (mg/L)	<0.0030	0.0133	0.167	0.0511	1.13
Zirconium (Zr)-Total (mg/L)					
Dissolved Metals Dissolved Mercury Filtration Location		FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location		FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved (mg/L)		0.205	0.186	0.0737	0.265
Antimony (Sb)-Dissolved (mg/L)		0.00029	0.00039	0.00173	<0.00010
Arsenic (As)-Dissolved (mg/L)		0.00353	0.00373	0.00712	0.00160
Barium (Ba)-Dissolved (mg/L)		0.0402	0.0391	0.0356	0.0159
Beryllium (Be)-Dissolved (mg/L)		0.000028	0.000029	<0.000020	0.000031
Bismuth (Bi)-Dissolved (mg/L)		<0.000050	<0.000050	<0.000050	<0.000050
Boron (B)-Dissolved (mg/L)		<0.010	<0.010	0.014	<0.010
Cadmium (Cd)-Dissolved (mg/L)		0.000102	0.00152	0.0000772	0.00320
Calcium (Ca)-Dissolved (mg/L)		26.3	29.7	127	45.4
Chromium (Cr)-Dissolved (mg/L)		0.00024	0.00020	0.00017	0.00015
Cobalt (Co)-Dissolved (mg/L)		0.00040	0.00033	0.00128	<0.00010
Copper (Cu)-Dissolved (mg/L)		0.00333	0.00997	0.00153	0.00261
Iron (Fe)-Dissolved (mg/L)		0.339	0.296	0.964	0.128
Lead (Pb)-Dissolved (mg/L)		0.000200	0.000685	0.000066	<0.000050

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1608599-21	L1608599-22	L1608599-23	L1608599-24	L1608599-25
Description	Water	Water	Water	Water	Water
Sampled Date	06-MAY-15	06-MAY-15	06-MAY-15	06-MAY-15	06-MAY-15
Sampled Time	08:15	09:45	09:25	11:10	08:20
Client ID	0146-150506-006	0146-150506-004	0146-150506-002	0146-150506-005	0146-150506-003
Grouping / **Analyte**					
WATER					
Total Metals					
Magnesium (Mg)-Total (mg/L)	1.92	63.4	42.5	5.64	33.8
Manganese (Mn)-Total (mg/L)	0.00323	1.04	0.873	0.0154	0.399
Mercury (Hg)-Total (mg/L)	0.0000153	0.000112	<0.0000050	0.0000101	0.0000113
Molybdenum (Mo)-Total (mg/L)	<0.000050	0.000979	0.000209	0.000056	<0.000050
Nickel (Ni)-Total (mg/L)	0.00156	0.00698	0.00077	0.00057	0.00439
Phosphorus (P)-Total (mg/L)	<0.050	0.230	<0.050	0.080	<0.050
Potassium (K)-Total (mg/L)	1.77	7.12	3.98	11.6	2.38
Rubidium (Rb)-Total (mg/L)	0.00089	0.0162	0.00357	0.00357	0.00334
Selenium (Se)-Total (mg/L)	<0.000050	0.000312	<0.000050	0.000066	<0.000050
Silicon (Si)-Total (mg/L)	2.63	19.1	5.73	6.28	3.21
Silver (Ag)-Total (mg/L)	<0.000010	0.0106	0.000021	0.000054	0.000013
Sodium (Na)-Total (mg/L)	0.990	4.08	3.65	0.879	1.92
Strontium (Sr)-Total (mg/L)	0.0441	0.339	0.300	0.0597	0.192
Sulfur (S)-Total (mg/L)	4.24	184	119	12.9	115
Thallium (Tl)-Total (mg/L)	<0.000010	0.000461	0.000015	<0.000010	<0.000010
Tin (Sn)-Total (mg/L)	<0.00010	0.00045	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total (mg/L)	0.00091	0.197	0.00062	0.0119	0.00258
Uranium (U)-Total (mg/L)	0.000011	0.00271	0.00157	0.000033	0.000012
Vanadium (V)-Total (mg/L)	<0.00050	0.0257	<0.00050	0.00106	<0.00050
Zinc (Zn)-Total (mg/L)	0.0099	1.06	0.235	0.0056	2.28
Zirconium (Zr)-Total (mg/L)					
Dissolved Metals					
Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved (mg/L)	0.270	0.0129	0.0109	0.0168	0.336
Antimony (Sb)-Dissolved (mg/L)	<0.00010	0.0299	0.00842	0.00083	<0.00010
Arsenic (As)-Dissolved (mg/L)	0.00134	0.0619	0.00974	0.0106	0.00154
Barium (Ba)-Dissolved (mg/L)	0.0381	0.0164	0.0237	0.0147	0.0142
Beryllium (Be)-Dissolved (mg/L)	0.000022	<0.000020	<0.000020	<0.000020	0.000035
Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron (B)-Dissolved (mg/L)	<0.010	0.027	0.013	<0.010	<0.010
Cadmium (Cd)-Dissolved (mg/L)	0.0000649	0.00371	0.00102	0.0000336	0.00609
Calcium (Ca)-Dissolved (mg/L)	9.09	174	129	21.1	69.0
Chromium (Cr)-Dissolved (mg/L)	0.00018	<0.00010	<0.00010	0.00011	0.00015
Cobalt (Co)-Dissolved (mg/L)	<0.00010	0.00026	0.00029	<0.00010	<0.00010
Copper (Cu)-Dissolved (mg/L)	0.00346	0.0111	0.00209	0.00231	0.00245
Iron (Fe)-Dissolved (mg/L)	0.100	0.028	0.207	0.060	0.058
Lead (Pb)-Dissolved (mg/L)	<0.000050	0.00170	0.000193	0.000134	<0.000050

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1608599-26	L1608599-27	L1608599-28	L1608599-29	L1608599-30
	Description	Water	Water	Water	Water	Water
	Sampled Date	06-MAY-15	06-MAY-15	06-MAY-15	06-MAY-15	06-MAY-15
	Sampled Time	10:23	10:25	12:45	11:55	12:00
	Client ID	0146-150506-031	0146-150506-032	0146-150506-010	0146-150506-009	0146-150506-016
Grouping	**Analyte**					
WATER						
Total Metals	Magnesium (Mg)-Total (mg/L)	4.49	53.5	81.6	198	9.80
	Manganese (Mn)-Total (mg/L)	0.0292	1.23	36.5	26.2	0.0131
	Mercury (Hg)-Total (mg/L)	0.0000177	<0.0000050	0.0000222	0.0000349	<0.0000050
	Molybdenum (Mo)-Total (mg/L)	0.000064	0.000318	<0.00025 DLA	0.00179	0.000140
	Nickel (Ni)-Total (mg/L)	0.00125	0.00227	0.0118	0.0231	<0.00050
	Phosphorus (P)-Total (mg/L)	0.062	<0.050	0.364	0.055	<0.050
	Potassium (K)-Total (mg/L)	6.12	3.53	4.19	2.03	2.54
	Rubidium (Rb)-Total (mg/L)	0.00229	0.00462	0.0062	0.0038	0.00483
	Selenium (Se)-Total (mg/L)	<0.000050	<0.000050	<0.00025 DLA	0.00028	0.000056
	Silicon (Si)-Total (mg/L)	4.76	6.36	4.23	4.95	1.47
	Silver (Ag)-Total (mg/L)	0.000078	0.000052	0.00194	0.000711	0.000053
	Sodium (Na)-Total (mg/L)	0.798	4.40	0.27	24.9	0.290
	Strontium (Sr)-Total (mg/L)	0.0582	0.364	0.208	0.712	0.108
	Sulfur (S)-Total (mg/L)	12.2	141	309	673	27.8
	Thallium (Tl)-Total (mg/L)	0.000018	0.000090	0.000129	0.000099	<0.000010
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00050 DLA	0.00139	<0.00010
	Titanium (Ti)-Total (mg/L)	0.00724	0.00319	0.0016	<0.0048 DLM	0.00069
	Uranium (U)-Total (mg/L)	0.000061	0.00343	0.000706	0.000247	0.000185
	Vanadium (V)-Total (mg/L)	0.00096	<0.00050	<0.0025 DLA	<0.0025 DLA	<0.00050
	Zinc (Zn)-Total (mg/L)	0.0794	1.11	22.9	23.8	0.0124
	Zirconium (Zr)-Total (mg/L)					
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.312	0.0243	2.98	7.17	0.0050
	Antimony (Sb)-Dissolved (mg/L)	0.00159	0.0155	<0.00050 DLA	<0.00050 DLA	0.00209
	Arsenic (As)-Dissolved (mg/L)	0.00991	0.0596	0.0136	0.00214	0.0159
	Barium (Ba)-Dissolved (mg/L)	0.0271	0.0146	0.00336	0.0172	0.00617
	Beryllium (Be)-Dissolved (mg/L)	0.000032	<0.000020	0.00068	0.00169	<0.000020
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050	<0.00025 DLA	0.00726	<0.000050
	Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<0.050 DLA	<0.050 DLA	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	0.000560	0.00153	0.278	0.318	0.000305
	Calcium (Ca)-Dissolved (mg/L)	20.4	154	136	395	47.7
	Chromium (Cr)-Dissolved (mg/L)	0.00029	<0.00010	<0.00050 DLA	<0.00050 DLA	0.00011
	Cobalt (Co)-Dissolved (mg/L)	0.00014	0.00089	0.0513	0.0276	<0.00010
	Copper (Cu)-Dissolved (mg/L)	0.00651	0.00224	0.433	1.45	0.00343
	Iron (Fe)-Dissolved (mg/L)	0.245	1.08	42.5	0.116	<0.010
	Lead (Pb)-Dissolved (mg/L)	0.000765	0.000390	0.00223	0.00116	0.000106

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1608599-31				
	Description	Water				
	Sampled Date	06-MAY-15				
	Sampled Time	13:20				
	Client ID	0146-150506-018				
Grouping	**Analyte**					
WATER						
Total Metals	Magnesium (Mg)-Total (mg/L)	171				
	Manganese (Mn)-Total (mg/L)	0.0660				
	Mercury (Hg)-Total (mg/L)	0.0000063				
	Molybdenum (Mo)-Total (mg/L)	0.00011				
	Nickel (Ni)-Total (mg/L)	<0.0010 DLA				
	Phosphorus (P)-Total (mg/L)	<0.050				
	Potassium (K)-Total (mg/L)	4.54				
	Rubidium (Rb)-Total (mg/L)	0.00268				
	Selenium (Se)-Total (mg/L)	0.00031				
	Silicon (Si)-Total (mg/L)	1.85				
	Silver (Ag)-Total (mg/L)	0.000049				
	Sodium (Na)-Total (mg/L)	0.52				
	Strontium (Sr)-Total (mg/L)	0.769				
	Sulfur (S)-Total (mg/L)	680				
	Thallium (Tl)-Total (mg/L)	0.000053				
	Tin (Sn)-Total (mg/L)	<0.00020 DLA				
	Titanium (Ti)-Total (mg/L)	<0.00060 DLA				
	Uranium (U)-Total (mg/L)	0.00148				
	Vanadium (V)-Total (mg/L)	<0.0010 DLA				
	Zinc (Zn)-Total (mg/L)	0.272				
	Zirconium (Zr)-Total (mg/L)	<0.00060 DLA				
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD				
	Dissolved Metals Filtration Location	FIELD				
	Aluminum (Al)-Dissolved (mg/L)	0.0034				
	Antimony (Sb)-Dissolved (mg/L)	0.00230				
	Arsenic (As)-Dissolved (mg/L)	0.00596				
	Barium (Ba)-Dissolved (mg/L)	0.0101 DTC				
	Beryllium (Be)-Dissolved (mg/L)	<0.000040 DLA				
	Bismuth (Bi)-Dissolved (mg/L)	<0.00010 DLA				
	Boron (B)-Dissolved (mg/L)	<0.020 DLA				
	Cadmium (Cd)-Dissolved (mg/L)	0.00742 DTC				
	Calcium (Ca)-Dissolved (mg/L)	683				
	Chromium (Cr)-Dissolved (mg/L)	<0.00020 DLA				
	Cobalt (Co)-Dissolved (mg/L)	<0.00020 DLA				
	Copper (Cu)-Dissolved (mg/L)	0.00273				
	Iron (Fe)-Dissolved (mg/L)	<0.010				
	Lead (Pb)-Dissolved (mg/L)	<0.00010 DLA				

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1608599-1 Water 04-MAY-15 16:45 0146-150504-036	L1608599-2 Water 04-MAY-15 16:05 0146-150504-034	L1608599-3 Water 04-MAY-15 18:30 0146-150504-033	L1608599-4 Water 04-MAY-15 13:30 0146-150504-035	L1608599-5 Water 05-MAY-15 08:18 0146-150505-025
WATER						
Dissolved Metals	Lithium (Li)-Dissolved (mg/L)	<0.0010	<0.0010	0.0026	<0.0010	<0.0010
	Magnesium (Mg)-Dissolved (mg/L)	9.16	9.37	19.1	8.57	5.37
	Manganese (Mn)-Dissolved (mg/L)	0.0803	0.0779	0.303	0.0610	0.136
	Mercury (Hg)-Dissolved (mg/L)	<0.0000050	<0.0000050	0.0000081	<0.0000050	<0.0000050
	Molybdenum (Mo)-Dissolved (mg/L)	0.000318	0.000294	0.000212	0.000264	0.000149
	Nickel (Ni)-Dissolved (mg/L)	0.00056	0.00055	<0.00050	0.00087	<0.00050
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	1.30	1.34	2.32	1.48	1.41
	Selenium (Se)-Dissolved (mg/L)	<0.000050	<0.000050	0.000059	<0.000050	0.000116
	Silicon (Si)-Dissolved (mg/L)	4.39	4.48	3.50	4.47	0.678
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Sodium (Na)-Dissolved (mg/L)	2.51	2.44	0.562	2.37	0.312
	Strontium (Sr)-Dissolved (mg/L)	0.221	0.226	0.123	0.208	0.129
	Sulfur (S)-Dissolved (mg/L)	16.4	16.7	121	14.9	50.8
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	0.000016	<0.000010	0.000014
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	0.00040	0.00038	<0.00030	0.00060	<0.00030
	Uranium (U)-Dissolved (mg/L)	0.000350	0.000365	0.000187	0.000317	0.000125
	Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Zinc (Zn)-Dissolved (mg/L)	0.0054	0.0056	0.124	0.0068	0.0364
	Zirconium (Zr)-Dissolved (mg/L)					

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1608599-6 Water 04-MAY-15 13:25 0146-150504-037	L1608599-7 Water 05-MAY-15 13:45 0146-150505-020	L1608599-8 Water 04-MAY-15 16:25 0146-150504-FIELD BLANK	L1608599-9 Water 05-MAY-15 10:35 0146-150505-024	L1608599-10 Water 05-MAY-15 10:20 0146-150505-023
WATER						
Dissolved Metals	Lithium (Li)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	0.0018	0.0021
	Magnesium (Mg)-Dissolved (mg/L)	8.48	7.30	<0.10	38.9	39.4
	Manganese (Mn)-Dissolved (mg/L)	0.0613	0.228	<0.00010	1.34	1.34
	Mercury (Hg)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Molybdenum (Mo)-Dissolved (mg/L)	0.000262	0.000584	<0.000050	0.000252	0.000267
	Nickel (Ni)-Dissolved (mg/L)	0.00084	0.00081	<0.00050	0.00091	0.00095
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	1.45	1.23	<0.10	3.08	3.08
	Selenium (Se)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Silicon (Si)-Dissolved (mg/L)	4.39	4.52	<0.050	4.27	4.37
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	0.000015	0.000013
	Sodium (Na)-Dissolved (mg/L)	2.41	2.14	<0.050	6.78	6.90
	Strontium (Sr)-Dissolved (mg/L)	0.201	0.222	<0.00020	0.377	0.379
	Sulfur (S)-Dissolved (mg/L)	14.8	10.6	<0.50	118	119
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	0.00065	0.00078	<0.00030	<0.00090 DLM	<0.00090 DLM
	Uranium (U)-Dissolved (mg/L)	0.000321	0.000773	<0.000010	0.00117	0.00119
	Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Zinc (Zn)-Dissolved (mg/L)	0.0061	0.0039	0.0013	0.0225	0.0237
	Zirconium (Zr)-Dissolved (mg/L)	<0.00030				

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1608599-11 Water 05-MAY-15 16:46 0146-150505-030	L1608599-12 Water 05-MAY-15 17:15 0146-150505-029	L1608599-13 Water 05-MAY-15 12:20 0146-150505-022	L1608599-14 Water 05-MAY-15 16:25 0146-150505-028	L1608599-15 Water 05-MAY-15 11:35 0146-150505-021
WATER						
Dissolved Metals	Lithium (Li)-Dissolved (mg/L)	0.0023	0.0026	<0.0010	0.0012	<0.0010
	Magnesium (Mg)-Dissolved (mg/L)	11.8	42.5	7.01	53.9	6.92
	Manganese (Mn)-Dissolved (mg/L)	1.69	0.538	0.0884	6.67	0.0780
	Mercury (Hg)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Molybdenum (Mo)-Dissolved (mg/L)	0.000419	0.000162	0.000387	0.000922	0.000368
	Nickel (Ni)-Dissolved (mg/L)	0.00167	0.00082	0.00064	0.00262	0.00061
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	3.44	2.93	1.13	5.75	1.12
	Selenium (Se)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	0.000193	<0.000050
	Silicon (Si)-Dissolved (mg/L)	1.00	4.40	4.60	7.40	4.61
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Sodium (Na)-Dissolved (mg/L)	3.24	3.99	2.02	31.6	2.02
	Strontium (Sr)-Dissolved (mg/L)	0.226	0.357	0.225	0.724	0.222
	Sulfur (S)-Dissolved (mg/L)	116	113	6.26	251	5.95
	Thallium (Tl)-Dissolved (mg/L)	0.000059	<0.000010	<0.000010	<0.000010	<0.000010
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	<0.00030	0.00084	0.00056	<0.0015 DLM	0.00058
	Uranium (U)-Dissolved (mg/L)	0.000231	0.00145	0.000502	0.00143	0.000457
	Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	0.00140	<0.00050
	Zinc (Zn)-Dissolved (mg/L)	0.899	0.0236	0.0030	0.0109	0.0059
	Zirconium (Zr)-Dissolved (mg/L)	<0.00030				

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1608599-16	L1608599-17	L1608599-18	L1608599-19	L1608599-20
Description	Water	Water	Water	Water	Water
Sampled Date		05-MAY-15	05-MAY-15	05-MAY-15	06-MAY-15
Sampled Time		14:45	16:50	15:55	08:45
Client ID	0146-1505-TRAVEL BLANK	0146-150505-019	0146-150505-026	0146-150505-027	0146-150506-001
Grouping **Analyte**					
WATER					
Dissolved Metals Lithium (Li)-Dissolved (mg/L)		<0.0010	<0.0010	0.0023	<0.0010
Magnesium (Mg)-Dissolved (mg/L)		5.39	6.13	44.8	16.1
Manganese (Mn)-Dissolved (mg/L)		0.212	0.180	1.38	0.139
Mercury (Hg)-Dissolved (mg/L)		0.0000108	0.0000094	<0.0000050	0.0000107
Molybdenum (Mo)-Dissolved (mg/L)		0.000076	0.000073	0.000275	<0.000050
Nickel (Ni)-Dissolved (mg/L)		0.00089	0.00103	0.00108	0.00300
Phosphorus (P)-Dissolved (mg/L)		<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved (mg/L)		2.19	2.28	3.04	2.02
Selenium (Se)-Dissolved (mg/L)		<0.000050	<0.000050	0.000058	<0.000050
Silicon (Si)-Dissolved (mg/L)		3.24	3.38	4.28	3.11
Silver (Ag)-Dissolved (mg/L)		0.000016	0.000016	<0.000010	<0.000010
Sodium (Na)-Dissolved (mg/L)		1.87	1.96	7.51	1.37
Strontium (Sr)-Dissolved (mg/L)		0.193	0.210	0.413	0.117
Sulfur (S)-Dissolved (mg/L)		16.2	19.5	129	58.2
Thallium (Tl)-Dissolved (mg/L)		<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)-Dissolved (mg/L)		<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Dissolved (mg/L)		0.00270	0.00226	0.00086	0.00068
Uranium (U)-Dissolved (mg/L)		0.000168	0.000161	0.00160	<0.000010
Vanadium (V)-Dissolved (mg/L)		<0.00050	<0.00050	<0.00050	<0.00050
Zinc (Zn)-Dissolved (mg/L)		0.0066	0.138	0.0164	1.15
Zirconium (Zr)-Dissolved (mg/L)					

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1608599-21 Water 06-MAY-15 08:15 0146-150506-006	L1608599-22 Water 06-MAY-15 09:45 0146-150506-004	L1608599-23 Water 06-MAY-15 09:25 0146-150506-002	L1608599-24 Water 06-MAY-15 11:10 0146-150506-005	L1608599-25 Water 06-MAY-15 08:20 0146-150506-003
WATER						
Dissolved Metals	Lithium (Li)-Dissolved (mg/L)	<0.0010	0.0058	0.0047	<0.0010	0.0012
	Magnesium (Mg)-Dissolved (mg/L)	1.90	65.2	44.4	5.63	31.4
	Manganese (Mn)-Dissolved (mg/L)	0.00280	0.285	0.867	0.0116	0.305
	Mercury (Hg)-Dissolved (mg/L)	0.0000131	<0.0000050	<0.0000050	0.0000095	0.0000104
	Molybdenum (Mo)-Dissolved (mg/L)	<0.000050	0.000436	0.000197	<0.000050	<0.000050
	Nickel (Ni)-Dissolved (mg/L)	0.00145	0.00104	0.00081	<0.00050	0.00387
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	1.75	4.51	3.93	11.8	2.24
	Selenium (Se)-Dissolved (mg/L)	<0.000050	0.000113	<0.000050	0.000063	<0.000050
	Silicon (Si)-Dissolved (mg/L)	2.65	4.01	5.74	6.20	3.17
	Silver (Ag)-Dissolved (mg/L)	<0.000010	0.000029	0.000010	0.000033	<0.000010
	Sodium (Na)-Dissolved (mg/L)	0.987	3.97	3.67	0.910	1.82
	Strontium (Sr)-Dissolved (mg/L)	0.0435	0.327	0.300	0.0623	0.175
	Sulfur (S)-Dissolved (mg/L)	4.18	180	115	12.8	99.9
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	0.000046	0.000015	<0.000010	<0.000010
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	0.00068	0.00079	0.00030	0.00032	0.00042
	Uranium (U)-Dissolved (mg/L)	<0.000010	0.00235	0.00152	0.000019	<0.000010
	Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Zinc (Zn)-Dissolved (mg/L)	0.0111	0.275	0.238	0.0075	2.05
	Zirconium (Zr)-Dissolved (mg/L)					

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1608599-26	L1608599-27	L1608599-28	L1608599-29	L1608599-30
	Description	Water	Water	Water	Water	Water
	Sampled Date	06-MAY-15	06-MAY-15	06-MAY-15	06-MAY-15	06-MAY-15
	Sampled Time	10:23	10:25	12:45	11:55	12:00
	Client ID	0146-150506-031	0146-150506-032	0146-150506-010	0146-150506-009	0146-150506-016
Grouping	**Analyte**					
WATER						
Dissolved Metals	Lithium (Li)-Dissolved (mg/L)	<0.0010	0.0080	<0.0050 DLA	0.0086	0.0017
	Magnesium (Mg)-Dissolved (mg/L)	4.37	53.4	85.6	205	11.2
	Manganese (Mn)-Dissolved (mg/L)	0.0233	1.17	37.1	26.9	0.00718
	Mercury (Hg)-Dissolved (mg/L)	0.0000179	<0.0000050	0.0000074	<0.0000050	<0.0000050
	Molybdenum (Mo)-Dissolved (mg/L)	0.000061	0.000281	<0.00025 DLA	0.00027	0.000146
	Nickel (Ni)-Dissolved (mg/L)	0.00117	0.00216	0.0112	0.0210	<0.00050
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	0.076	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	5.91	3.49	3.53	2.09	2.97
	Selenium (Se)-Dissolved (mg/L)	0.000055	<0.000050	<0.00025 DLA	<0.00025 DLA	0.000072
	Silicon (Si)-Dissolved (mg/L)	4.41	6.19	2.83	4.92	1.58
	Silver (Ag)-Dissolved (mg/L)	0.000033	<0.000010	0.000200	0.000367	0.000020
	Sodium (Na)-Dissolved (mg/L)	0.819	4.30	<0.25 DLA	4.66	0.361
	Strontium (Sr)-Dissolved (mg/L)	0.0579	0.349	0.181	0.649	0.124
	Sulfur (S)-Dissolved (mg/L)	12.0	130	302	660	31.9
	Thallium (Tl)-Dissolved (mg/L)	0.000012	0.000076	0.000055	0.000076	<0.000010
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00050 DLA	<0.00050 DLA	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	0.00262	<0.00030	<0.0015 DLA	<0.0015 DLA	<0.00030
	Uranium (U)-Dissolved (mg/L)	0.000056	0.00313	0.000504	0.000162	0.000194
	Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050	<0.0025 DLA	<0.0025 DLA	<0.00050
	Zinc (Zn)-Dissolved (mg/L)	0.0768	1.07	22.9	25.1	0.0181 DTC
	Zirconium (Zr)-Dissolved (mg/L)					

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1608599-31				
	Description	Water				
	Sampled Date	06-MAY-15				
	Sampled Time	13:20				
	Client ID	0146-150506-018				
Grouping	**Analyte**					
WATER						
Dissolved Metals	Lithium (Li)-Dissolved (mg/L)	0.0067				
	Magnesium (Mg)-Dissolved (mg/L)	199				
	Manganese (Mn)-Dissolved (mg/L)	0.108 DTC				
	Mercury (Hg)-Dissolved (mg/L)	<0.0000050				
	Molybdenum (Mo)-Dissolved (mg/L)	<0.00010 DLA				
	Nickel (Ni)-Dissolved (mg/L)	<0.0010 DLA				
	Phosphorus (P)-Dissolved (mg/L)	<0.050				
	Potassium (K)-Dissolved (mg/L)	5.89				
	Selenium (Se)-Dissolved (mg/L)	0.00037				
	Silicon (Si)-Dissolved (mg/L)	2.29				
	Silver (Ag)-Dissolved (mg/L)	<0.000020 DLA				
	Sodium (Na)-Dissolved (mg/L)	0.61				
	Strontium (Sr)-Dissolved (mg/L)	0.915				
	Sulfur (S)-Dissolved (mg/L)	777				
	Thallium (Tl)-Dissolved (mg/L)	0.000059				
	Tin (Sn)-Dissolved (mg/L)	<0.00020 DLA				
	Titanium (Ti)-Dissolved (mg/L)	<0.00060 DLA				
	Uranium (U)-Dissolved (mg/L)	0.00169				
	Vanadium (V)-Dissolved (mg/L)	<0.0010 DLA				
	Zinc (Zn)-Dissolved (mg/L)	0.317				
	Zirconium (Zr)-Dissolved (mg/L)	<0.00060 DLA				

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

Qualifiers for Individual Samples Listed:

Sample Number	Client Sample ID	Qualifier	Description
L1608599-6	0146-150504-037	WSMD	Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Method Blank	Alkalinity, Bicarbonate (as CaCO3)	B	L1608599-1, -2
Method Blank	Alkalinity, Total (as CaCO3)	B	L1608599-1, -2
Duplicate	Cyanate	DLIS	L1608599-1, -10, -11, -2, -3, -4, -6, -7, -8, -9
Duplicate	Cyanate	DLIS	L1608599-12, -13, -14, -15, -16, -17, -18, -19, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -30, -31
Duplicate	Cadmium (Cd)-Dissolved	DLM	L1608599-1, -10, -11, -12, -13, -14, -15, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -4, -5, -6, -7, -8, -9
Duplicate	Titanium (Ti)-Dissolved	DLM	L1608599-1, -10, -11, -12, -13, -14, -15, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -4, -5, -6, -7, -8, -9
Duplicate	Titanium (Ti)-Dissolved	DLM	L1608599-1, -10, -11, -12, -13, -14, -15, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -4, -5, -6, -7, -8, -9
Method Blank	Chromium (Cr)-Total	MB-LOR	L1608599-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20, -21, -22, -6, -7, -8, -9
Matrix Spike	Arsenic (As)-Dissolved	MS-B	L1608599-1, -10, -11, -12, -13, -14, -15, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -4, -5, -6, -7, -8, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1608599-1, -10, -11, -12, -13, -14, -15, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -4, -5, -6, -7, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1608599-1, -10, -11, -12, -13, -14, -15, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -4, -5, -6, -7, -8, -9
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1608599-1, -10, -11, -12, -13, -14, -15, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -4, -5, -6, -7, -8, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1608599-1, -10, -11, -12, -13, -14, -15, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -4, -5, -6, -7, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1608599-1, -10, -11, -12, -13, -14, -15, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -4, -5, -6, -7, -8, -9
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1608599-1, -10, -11, -12, -13, -14, -15, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -4, -5, -6, -7, -8, -9
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L1608599-1, -10, -11, -12, -13, -14, -15, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -4, -5, -6, -7, -8, -9
Matrix Spike	Sulfur (S)-Dissolved	MS-B	L1608599-1, -10, -11, -12, -13, -14, -15, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -4, -5, -6, -7, -8, -9
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L1608599-1, -10, -11, -12, -13, -14, -15, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -4, -5, -6, -7, -8, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1608599-1, -10, -11, -12, -13, -14, -15, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -4, -5, -6, -7, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1608599-1, -10, -11, -12, -13, -14, -15, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -4, -5, -6, -7, -8, -9
Matrix Spike	Cobalt (Co)-Dissolved	MS-B	L1608599-1, -10, -11, -12, -13, -14, -15, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -4, -5, -6, -7, -8, -9
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1608599-1, -10, -11, -12, -13, -14, -15, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -4, -5, -6, -7, -8, -9
Matrix Spike	Nickel (Ni)-Dissolved	MS-B	L1608599-1, -10, -11, -12, -13, -14, -15, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31,

Reference Information

	Parameter	Qualifier	Applies to Sample Number(s)
			-4, -5, -6, -7, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1608599-1, -10, -11, -12, -13, -14, -15, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -4, -5, -6, -7, -8, -9

Qualifiers for Individual Parameters Listed:

Qualifier	Description
B	Method Blank exceeds ALS DQO. All associated sample results are at least 5 times greater than blank levels and are considered reliable.
DLA	Detection Limit adjusted for required dilution
DLB	Detection Limit was raised due to detection of analyte at comparable level in Method Blank.
DLIS	Detection Limit Adjusted: Insufficient Sample
DLM	Detection Limit Adjusted due to sample matrix effects.
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
MB-LOR	Method Blank exceeds ALS DQO. Limits of Reporting have been adjusted for samples with positive hits below 5x blank level.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-PCT-VA	Water	Alkalinity by Auto. Titration	APHA 2320 "Alkalinity"
This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.			
ALK-PCT-VA	Water	Alkalinity by Auto. Titration	APHA 2320 Alkalinity
This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.			
BE-D-L-CCMS-VA	Water	Diss. Be (low) in Water by CRC ICPMS	APHA 3030B/6020A (mod)
Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.			
Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.			
BE-T-L-CCMS-VA	Water	Total Be (Low) in Water by CRC ICPMS	EPA 200.2/6020A (mod)
Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.			
Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.			
CL-IC-N-WR	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.			
CN-CNO-WT	Water	Cyanate	APHA 4500-CN-L
This analysis is carried out using procedures adapted from APHA method 4500-CN "Cyanide". Cyanate is determined by the Cyanate hydrolysis method using an ammonia selective electrode			
CN-SCN-VA	Water	Thiocyanate by Colour	APHA 4500-CN CYANIDE
This analysis is carried out using procedures adapted from APHA Method 4500-CN- M "Thiocyanate" Thiocyanate is determined by the ferric nitrate colourimetric method.			
CN-T-CFA-VA	Water	Total Cyanide in water by CFA	ISO 14403:2002
This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis. Method Limitation: This method is susceptible to interference from thiocyanate (SCN). If SCN is present in the sample, there could be a positive interference with this method, but it would be less than 1% and could be as low as zero.			
CN-WAD-CFA-VA	Water	Weak Acid Diss. Cyanide in water by CFA	APHA 4500-CN CYANIDE
This analysis is carried out using procedures adapted from APHA Method 4500-CN I. "Weak Acid Dissociable Cyanide". Weak Acid Dissociable (WAD) cyanide is determined by in-line sample distillation with final determination by colourimetric analysis.			
EC-PCT-VA	Water	Conductivity (Automated)	APHA 2510 Auto. Conduc.
This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.			
F-IC-N-WR	Water	Fluoride in Water by IC	EPA 300.1 (mod)

Reference Information

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

HARDNESS-CALC-VA Water Hardness APHA 2340B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-D-CVAA-VA Water Diss. Mercury in Water by CVAAS or CVAFS APHA 3030B/EPA 1631E (mod)

Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.

HG-T-CVAA-VA Water Total Mercury in Water by CVAAS or CVAFS EPA 1631E (mod)

Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.

IONBALANCE-VA Water Ion Balance Calculation APHA 1030E

Cation Sum, Anion Sum, and Ion Balance (as % difference) are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Because all aqueous solutions are electrically neutral, the calculated ion balance (% difference of cations minus anions) should be near-zero.

Cation and Anion Sums are the total meq/L concentration of major cations and anions. Dissolved species are used where available. Minor ions are included where data is present. Ion Balance is calculated as:

Ion Balance (%) = [Cation Sum-Anion Sum] / [Cation Sum+Anion Sum]

MET-D-CCMS-VA Water Dissolved Metals in Water by CRC ICPMS APHA 3030B/6020A (mod)

Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-DIS-LOW-ICP-VA Water Dissolved Metals in Water by ICPOES EPA 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves filtration (EPA Method 3005A) and analysis by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

MET-T-CCMS-VA Water Total Metals in Water by CRC ICPMS EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-TOT-LOW-ICP-VA Water Total Metals in Water by ICPOES EPA 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

NH3-F-VA Water Ammonia in Water by Fluorescence APHA 4500 NH3-NITROGEN (AMMONIA)

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NH3-F-VA Water Ammonia in Water by Fluorescence J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NO2-L-IC-N-WR Water Nitrite in Water by IC (Low Level) EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

NO3-L-IC-N-WR Water Nitrate in Water by IC (Low Level) EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H "pH Value"

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

Reference Information

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

S-DIS-ICP-VA Water Dissolved Sulfur in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

S-TOT-ICP-VA Water Total Sulfur in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

SO4-IC-N-WR Water Sulfate in Water by IC EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

TDS-CALC-VA Water TDS (Calculated) APHA 1030E (20TH EDITION)

This analysis is carried out using procedures adapted from APHA 1030E "Checking Correctness of Analyses".

TSS-MAN-WR Water Total Suspended Solids by Gravimetric APHA 2540 D

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids are determined by filtering a sample through a glass fibre filter and drying the filter at 104 degrees celsius.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WR	ALS ENVIRONMENTAL - WHITEHORSE, YUKON, CANADA
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

1 2 3 4 5

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
mg/kg - milligrams per kilogram based on dry weight of sample.
mg/kg wwt - milligrams per kilogram based on wet weight of sample.
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L1608599-COFC

COC Number: 14 -

Page ___ of ___

Report To	
Company:	EDI
Contact:	Meghan Marjanovic
Address:	2195 - 2nd Avenue, Whitehorse, YT Y1A 3T8
Phone:	867-393-4882

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL

Quality Control (QC) Report with Report ☐ Yes ☐ No

☐ Criteria on Report - provide details below if box checked

Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: mmarjanovic@edynamics.com

Email 2

...h Turnaround Time (TAT) is not available for all tests)

...ed by 3 pm - business days)

P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT

E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT

E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge

Specify Date Required for E2,E or P:

Invoice To	
Same as Report To	☑ Yes ☑ No
Copy of Invoice with Report	☑ Yes ☐ No
Company:	EDI
Contact:	S Jenner

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: sjenner@edynamics.com

Email 2: mmarjanovic@edynamics.com

Project Information

ALS Quote #:	Q49310
Job #:	MOUNT NANSEN 15-Y-0146
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

Approver ID: | Cost Center: | GL Account: | Routing Code: | Activity Code: | Location:

ALS Lab Work Order # (lab use only)

ALS Contact: Sean Slugget | Sampler: DH, BP, DS

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	ALK-PCT-VA,EC-PCT-VA,PH-PCT-VA	ANIONS-ALL-IC-WR,TSS-MAN-WR	CN-WAD-CFA-VA,CN-T-CFA-VA (P)	CN-CNO-WT (P)	CN-SCN-VA (P)	NH3-F-VA (P)	MET-T-BCMDG-VA (P)	MET-D-BCMDG-VA (F/P)	IONBALANC-VA, TDS-CALC-VA	Number of Containers
	0146-150504-036	04-May-15	16:45	Water	R	R	R	R	R	R	R	R	R	9
	0146-150504-034	04-May-15	16:05	Water	R	R	R	R	R	R	R	R	R	9
	0146-150504-033	04-May-15	18:30	Water	R	R	R	R	R	R	R	R	R	9
	0146-150504-035	04-May-15	13:30	Water	R	R	R	R	R	R	R	R	R	9
	0146-150505-025	05-May-15	08:18	Water	R	R	R	R	R	R	R	R	R	~~9~~ 7
	0146-150504-037	04-May-15	13:25	Water	R	R	R	R	R	R	R	R	R	9
	0146-150505-020	05-May-15	13:45	Water	R	R	R	R	R	R	R	R	R	9
	0146-150504-Field Blank	04-May-15	16:25	Water	R	R	R	R	R	R	R	R	R	9

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ Yes ☑ No

Are samples for human drinking water use? ☐ Yes ☑ No

Special Instructions / Specify Criteria to add on report (client Use)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐

Ice packs Yes ☐ No ☐ | Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C | FINAL COOLER TEMPERATURES °C

SHIPMENT RELEASE (client use)		
Released by: [signature]	Date: 07 May 2015	Time: 09:45

INITIAL SHIPMENT RECEPTION (lab use only): Received by: | Date: | Time:

FINAL SHIPMENT RECEPTION (lab use only): Received by: | Date: | Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NA-FM-0326e v09 Front/04 January 2014

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

L1608599-COFC

COC Number: 14 -

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Report To		Report Format / Dis		ish Turnaround Time (TAT) is not available for all tests)
Company:	EDI	Select Report Format:	☑ PDF ☑	d by 3 pm - business days)
Contact:	Meghan Marjanovic	Quality Control (QC) Report with Report	☐ Yes ☐ No	P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
Address:	2195 - 2nd Avenue Whitehorse, YT Y1A 3T8	☐ Criteria on Report - provide details below if box checked		E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT
		Select Distribution:	☐ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge
Phone:	867-393-4882	Email 1 or Fax	mmarjanovic@edynamics.com	Specify Date Required for E2,E or P:
		Email 2		

Invoice To	Same as Report To	☑ Yes ☑ No	Invoice Distribution	
	Copy of Invoice with Report	☑ Yes ☐ No	Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Company:	EDI		Email 1 or Fax	sjenner@edynamics.com
Contact:	S Jenner		Email 2	mmarjanovic@edynamics.com

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	Q49310	Approver ID:	Cost Center:
Job #:	MOUNT NANSEN 15-Y-0146	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only): ____ ALS Contact: Sean Slugget Sampler: DH, BP, DS

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	ALK-PCT-VA,EC-PCT-VA,PH-PCT-VA	ANIONS-ALL-IC-WR,TSS-MAN-WR	CN-WAD-CFA-VA,CN-T-CFA-VA	CN-CNO-WT	CN-SCN-VA	NH3-F-VA	MET-T-BCMDG-VA	MET-D-BCMDG-VA	IONBALANC-VA, TDS-CALC-VA	Number of Containers
					P	P	P	P	P	P	P	F/P		
	0146-1505 05- 024	05 - May -15	10:35	Water	R	R	R	R	R	R	R	R	R	9
	0146-1505 05- 023	05 - May -15	10:20	Water	R	R	R	R	R	R	R	R	R	9
	0146-1505 05- 030	05 - May -15	16:46	Water	R	R	R	R	R	R	R	R	R	9
	0146-1505 05- 029	05 - May -15	17:15	Water	R	R	R	R	R	R	R	R	R	9
	0146-1505 05- 022	05 - May -15	12:20	Water	R	R	R	R	R	R	R	R	R	9
	0146-1505 05- 028	05 - May -15	16:25	Water	R	R	R	R	R	R	R	R	R	9
	0146-1505 05- 021	05 - May -15	11:35	Water	R	R	R	R	R	R	R	R	R	9

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☑ No	
Are samples for human drinking water use? ☐ Yes ☑ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice packs ☐ Yes ☐ No ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
	07 May 2015	09:51						

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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NA-FM-0326a v09 Front/04 January 2014

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Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L1608599-COFC

COC Number: 14 -

Page ____ of ____

Report To		Report Format / Distri	Turnaround Time (TAT) is not available for all tests
Company:	EDI	Select Report Format: ☑ PDF ☑ EXC	☐ Regular (Standard TAT if received by 3 pm - business days)
Contact:	Meghan Marjanovic	Quality Control (QC) Report with Report ☐ Yes ☐ No	P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
Address:	2195 - 2nd Avenue Whitehorse, YT Y1A 3T8	☐ Criteria on Report - provide details below if box checked Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge
Phone:	867-393-4882	Email 1 or Fax mmarjanovic@edynamics.com	Specify Date Required for E2,E or P:
		Email 2	Analysis Request

Invoice To	Same as Report To ☑ Yes ☑ No	Invoice Distribution	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below
	Copy of Invoice with Report ☑ Yes ☐ No	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	
Company:	EDI	Email 1 or Fax sjenner@edynamics.com	
Contact:	S Jenner	Email 2 mmarjanovic@edynamics.com	

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	Q49310	Approver ID:	Cost Center:
Job #:	MOUNT NANSEN 15-Y-0146	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only):

ALS Contact: Sean Slugget Sampler: DH, BP, DS

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	ALK-PCT-VA,EC-PCT-VA,PH-PCT-VA	ANIONS-ALL-IC-WR,TSS-MAN-WR	CN-WAD-CFA-VA,CN-T-CFA-VA	CN-CNO-WT	CN-SCN-VA	NH3-F-VA	MET-T-BCMDG-VA	MET-D-BCMDG-VA	IONBALANC-VA, TDS-CALC-VA					Number of Containers
					P	P	P	P	P	P	P	F/P						
	0146-1505 - TRAVEL BLANK	- May -15	—	Water	R	R	R	R	R	R	R	R	R					9
	0146-1505 05- 019	05 - May -15	14:45	Water	R	R	R	R	R	R	R	R	R					9
	0146-1505 05- 026	05 - May -15	14:50	Water	R	R	R	R	R	R	R	R	R					9
	0146-1505 05- 027	05 - May -15	15:55	Water	R	R	R	R	R	R	R	R	R					9
	0146-1505 -	- May -15		Water	R	R	R	R	R	R	R	R	R					9
	0146-1505 -	- May -15		Water	R	R	R	R	R	R	R	R	R					9
	0146-1505 -	- May -15		Water	R	R	R	R	R	R	R	R	R					9

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☐ No Are samples for human drinking water use? ☐ Yes ☐ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice packs Yes ☐ No ☐ Custody seal intact Yes ☐ No ☐
Cooling initiated ☐

INITIAL COOLER TEMPERATURES °C		FINAL COOLER TEMPERATURES °C	

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
Brett Pogue	7 May 2015	09:53						

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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Chain of Custody (COC) / Analytical Request Form

ALS Environmental

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

L1608599-COFC

COC Number: 14 -

Page 1 of

Report To		Report Format / Distri	Turnaround Time (TAT) is not available for all tests)
Company:	EDI	Select Report Format: ☑ PDF ☑ EXC	y 3 pm - business days)
Contact:	Meghan Marjanovic	Quality Control (QC) Report with Report ☐ Yes ☐ No	P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
Address:	2195 - 2nd Avenue Whitehorse, YT Y1A 3T8	☐ Criteria on Report - provide details below if box checked	E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT
Phone:	867-393-4882	Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge
		Email 1 or Fax mmarjanovic@edynamics.com	Specify Date Required for E2,E or P:
		Email 2	

Invoice To	Same as Report To ☑ Yes ☑ No	Invoice Distribution	Analysis Request
	Copy of Invoice with Report ☑ Yes ☐ No	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below
Company:	EDI	Email 1 or Fax sjenner@edynamics.com	
Contact:	S Jenner	Email 2 mmarjanovic@edynamics.com	

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	Q49310	Approver ID:	Cost Center:
Job #:	MOUNT NANSEN 15-Y-0146	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only):

ALS Contact: Sean Slugget | Sampler: DH, BP, DS

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	ALK-PCT-VA,EC-PCT-VA,PH-PCT-VA	ANIONS-ALL-IC-WR,TSS-MAN-WR	CN-WAD-CFA-VA,CN-T-CFA-VA	CN-CNO-WT	CN-SCN-VA	NH3-F-VA	MET-T-BCMDG-VA	MET-D-BCMDG-VA	IONBALANC-VA, TDS-CALC-VA	Number of Containers
					P		P	P	P	P	P	F/P		
	0146-150506 - 001	06 - May -15	08:45	Water	R	R	R	R	R	R	R	R	R	9
	0146-150506 - 006	06 - May -15	08:15	Water	R	R	R	R	R	R	R	R	R	9
	0146-150506 - 004	06 - May -15	09:45	Water	R	R	R	R	R	R	R	R	R	9
	0146-150506 - 002	06 - May -15	09:25	Water	R	R	R	R	R	R	R	R	R	9
	0146-150506 - 005	06 - May -15	11:10	Water	R	R	R	R	R	R	R	R	R	9
	0146-150506 - 003	06 - May -15	08:20	Water	R	R	R	R	R	R	R	R	R	9
	0146-150506 - 031	06 - May -15	10:23	Water	R	R	R	R	R	R	R	R	R	9
	0146-150506-032	06-May 15	10:25	Water	R	R	R	R	R	R	R	R	R	9

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☐ No	
Are samples for human drinking water use? ☐ Yes ☐ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations ☐ Yes ☐ No ☐

Ice packs ☐ Yes ☐ No ☐ Custody seal intact ☐ Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C | FINAL COOLER TEMPERATURES °C

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Brett Pollock	Date: 7 May 2015	Time: 09:50	Received by:	Date:	Time:	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L1608599-COFC

COC Number: 14 -

Page 1 of 1

Report To		Report Format / Distribution		Turnaround Time (TAT) (Rush TAT is not available for all tests)
Company:	EDI	Select Report Format:	☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3 pm - business days)
Contact:	Meghan Marjanovic	Quality Control (QC) Report with Report	☐ Yes ☐ No	P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
Address:	2195 - 2nd Avenue Whitehorse, YT Y1A 3T8	☐ Criteria on Report - provide details below if box checked		E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT
		Select Distribution:	☐ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge
Phone:	867-393-4882	Email 1 or Fax	mmarjanovic@edynamics.com	Specify Date Required for E2,E or P:
		Email 2		

Invoice To		Invoice Distribution	
	Same as Report To ☑ Yes ☑ No		
	Copy of Invoice with Report ☑ Yes ☐ No	Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Company:	EDI	Email 1 or Fax	slenner@edynamics.com
Contact:	S Jenner	Email 2	mmarjanovic@edynamics.com

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	Q49310	Approver ID:	Cost Center:
Job #:	MOUNT NANSEN 15-Y-0146	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only):

ALS Contact: Sean Slugget Sampler: DH, BP, DS

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	ALK-PCT-VA,EC-PCT-VA,PH-PCT-VA	ANIONS-ALL-IC-WR,TSS-MAN-WR	CN-WAD-CFA-VA,CN-T-CFA -VA	CN-CNO-WT	CN-SCN-VA	NH3-F-VA	MET-T-BCMDG-VA	MET-D-BCMDG-VA	IONBALANC-VA, TDS-CALC-VA					Number of Containers
							P	P	P	P	P	F/P						
	0146-1505 06- 010	06 - May -15	12:45	Water	R	R	R	R	R	R	R	R	R					9
	0146-1505 06- 009	06 - May -15	11:55	Water	R	R	R	R	R	R	R	R	R					9
	0146-1505 06- 016	06 - May -15	12:00	Water	R	R	R	R	R	R	R	R	R					9
	0146-1505 06- 018	06 - May -15	13:20	Water	R	R	R	R	R	R	R	R	R					9
	0146-1505 -	- May -15		Water	R	R	R	R	R	R	R	R	R					9
	0146-1505 -	- May -15		Water	R	R	R	R	R	R	R	R	R					9
	0146-1505 -	- May -15		Water	R	R	R	R	R	R	R	R	R					9

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client use)
Are samples taken from a Regulated DW System? ☐ Yes ☐ No	
Are samples for human drinking water use? ☐ Yes ☐ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice ☐ Yes ☐ No ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Brett Pogue	Date: 7 May 2015	Time: 09:45	Received by:	Date:	Time:	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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NA-FM-0328a v09 Front/04 January 2014

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ENVIRONMENTAL DYNAMICS INC.
ATTN: Meghan Marjanovic
2195 - 2nd Ave
Whitehorse YT Y1A 3T8

Date Received: 07-MAY-15
Report Date: 14-MAY-15 15:35 (MT)
Version: FINAL

Client Phone: 867-393-4882

Certificate of Analysis

Lab Work Order #: L1608687

Project P.O. #: NOT SUBMITTED
Job Reference: MOUNT NANSEN 15-Y-0146
C of C Numbers: 1
Legal Site Desc:

Can Dang
Senior Account Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1608687-1				
	Description	Water				
	Sampled Date	06-MAY-15				
	Sampled Time	14:20				
	Client ID	0146-150506-041				
Grouping	**Analyte**					
WATER						
Physical Tests	Colour, True (CU)	<5.0				
	Conductivity (uS/cm)	377				
	Hardness (as CaCO3) (mg/L)	196				
	pH (pH)	7.66				
	Total Dissolved Solids (mg/L)	214				
	Turbidity (NTU)	0.17				
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	177				
	Chloride (Cl) (mg/L)	<0.50				
	Fluoride (F) (mg/L)	0.094				
	Nitrate (as N) (mg/L)	0.137				
	Nitrite (as N) (mg/L)	<0.0010				
	Sulfate (SO4) (mg/L)	35.4				
	Anion Sum (meq/L)	4.28				
	Cation Sum (meq/L)	4.20				
	Cation - Anion Balance (%)	-0.9				
Total Metals	Aluminum (Al)-Total (mg/L)	<0.010				
	Antimony (Sb)-Total (mg/L)	<0.00050				
	Arsenic (As)-Total (mg/L)	0.00038				
	Barium (Ba)-Total (mg/L)	0.088				
	Boron (B)-Total (mg/L)	<0.10				
	Cadmium (Cd)-Total (mg/L)	<0.00020				
	Calcium (Ca)-Total (mg/L)	45.5				
	Chromium (Cr)-Total (mg/L)	<0.0020				
	Copper (Cu)-Total (mg/L)	<0.0010				
	Iron (Fe)-Total (mg/L)	<0.030				
	Lead (Pb)-Total (mg/L)	0.00062				
	Magnesium (Mg)-Total (mg/L)	20.1				
	Manganese (Mn)-Total (mg/L)	<0.0020				
	Mercury (Hg)-Total (mg/L)	<0.00020				
	Potassium (K)-Total (mg/L)	0.98				
	Selenium (Se)-Total (mg/L)	<0.0010				
	Sodium (Na)-Total (mg/L)	5.7				
	Uranium (U)-Total (mg/L)	0.00190				
	Zinc (Zn)-Total (mg/L)	<0.050				

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Calcium (Ca)-Total	MS-B	L1608687-1

Qualifiers for Individual Parameters Listed:

Qualifier	Description
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-COL-VA	Water	Alkalinity by Colourimetric (Automated)	EPA 310.2

This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.

CL-IC-N-WR	Water	Chloride in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

COLOUR-TRUE-VA	Water	Colour (True) by Spectrometer	BCMOE Colour Single Wavelength

This analysis is carried out using procedures adapted from British Columbia Environmental Manual "Colour- Single Wavelength." Colour (True Colour) is determined by filtering a sample through a 0.45 micron membrane filter followed by analysis of the filtrate using the platinum-cobalt colourimetric method.
Colour measurements can be highly pH dependent, and apply to the pH of the sample as received (at time of testing), without pH adjustment. Concurrent measurement of sample pH is recommended.

EC-MAN-WR	Water	Conductivity by Meter	APHA 2510 (B)

This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using an electrode.

F-IC-N-WR	Water	Fluoride in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

HARDNESS-CALC-VA	Water	Hardness	APHA 2340B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-TOT-CVAFS-VA	Water	Total Mercury in Water by CVAFS	EPA 245.7

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry or atomic absorption spectrophotometry (EPA Method 245.7).

IONBALANCE-VA	Water	Ion Balance Calculation	APHA 1030E

Cation Sum, Anion Sum, and Ion Balance (as % difference) are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Because all aqueous solutions are electrically neutral, the calculated ion balance (% difference of cations minus anions) should be near-zero.

Cation and Anion Sums are the total meq/L concentration of major cations and anions. Dissolved species are used where available. Minor ions are included where data is present. Ion Balance is calculated as:

Ion Balance (%) = [Cation Sum-Anion Sum] / [Cation Sum+Anion Sum]

MET-TOT-ICP-VA	Water	Total Metals in Water by ICPOES	EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

MET-TOT-LOW-MS-VA	Water	Total Metals in Water by ICPMS(Low)	EPA SW-846 3005A/6020A

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

NO2-L-IC-N-WR	Water	Nitrite in Water by IC (Low Level)	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

NO3-L-IC-N-WR	Water	Nitrate in Water by IC (Low Level)	EPA 300.1 (mod)

Reference Information

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

PH-MAN-WR	Water	pH by Meter	APHA 4500-H (B)

"This analysis is carried out using procedures adapted from APHA Method 4500-H ""pH Value"". The pH is determined in the laboratory using a pH electrode."

SO4-IC-N-WR	Water	Sulfate in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

TDS-CALC-VA	Water	TDS (Calculated)	APHA 1030E (20TH EDITION)

This analysis is carried out using procedures adapted from APHA 1030E "Checking Correctness of Analyses".

TURBIDITY-VA	Water	Turbidity by Meter	APHA 2130 "Turbidity"

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

TURBIDITY-VA	Water	Turbidity by Meter	APHA 2130 Turbidity

This analysis is carried out using procedures adapted from APHA Method 2130 "Turbidity". Turbidity is determined by the nephelometric method.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WR	ALS ENVIRONMENTAL - WHITEHORSE, YUKON, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

1

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
mg/kg - milligrams per kilogram based on dry weight of sample.
mg/kg wwt - milligrams per kilogram based on wet weight of sample.
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L1608687-COFC

COC Number: 14 -

Page 1 of 1

Report To		Report Format / Distribution	Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)
Company:	EDI	Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3 pm - business days)
Contact:	Meghan Marjanovic	Quality Control (QC) Report with Report ☐ Yes ☐ No	P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
Address:	2195 - 2nd Avenue Whitehorse, YT Y1A 3T8	☐ Criteria on Report - provide details below if box checked	E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT
		Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge
Phone:	867-393-4882	Email 1 or Fax mmarjanovic@edynamics.com	Specify Date Required for E2,E or P:
		Email 2	

Invoice To		Invoice Distribution	
	Same as Report To ☑ Yes ☐ No	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	
	Copy of Invoice with Report ☑ Yes ☐ No	Email 1 or Fax sienner@edynamics.com	
Company:	EDI	Email 2 mmarjanovic@edynamics.com	
Contact:	S Jenner		

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	Q49311 and Q49312	Approver ID:	Cost Center:
Job #:	MOUNT NANSEN 15-Y-0146	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only):

ALS Contact: Sean Sluggett | Sampler: DH, DS, BP

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	ALK-PCT-VA,PH-PCT-VA,EC-PCT-VA	ANIONS-ALL-IC-WR,TSS-MAN-WR	NH3-F-VA (P)	MET-T-BCMDG-VA (P)	MET-D-BCMDG-VA (F/P)	TDS-CALC-VA,IONBLANCE-VA	FULL-TOT-DW-WR	Number of Containers
	0146-1505 -	- May - 15		Water	R	R	R	R	R	R		6
	0146-1505 -	- May - 15		Water	R	R	R	R	R	R		6
	0146-1505 -	- May - 15		Water	R	R	R	R	R	R		6
	0146-1505 06 - 041	06 - May - 15	14:20	Water							R	3

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☐ No	
Are samples for human drinking water use? ☐ Yes ☐ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ | SIF Observations Yes ☐ No ☐
Ice packs Yes ☐ No ☐ | Custody seal intact Yes ☐ No ☐
Cooling initiated ☐

INITIAL COOLER TEMPERATURES °C | FINAL COOLER TEMPERATURES °C

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
Brett Pagacz	7 May 2015	09:45		7/May/15	10:00			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

ENVIRONMENTAL DYNAMICS INC.
ATTN: Meghan Marjanovic
2195 - 2nd Ave
Whitehorse YT Y1A 3T8

Date Received: 15-MAY-15
Report Date: 25-JUN-15 13:42 (MT)
Version: FINAL REV. 2

Client Phone: 867-393-4882

Certificate of Analysis

Lab Work Order #: L1612473

Project P.O. #: NOT SUBMITTED
Job Reference: MOUNT NANSEN 15-Y-0146
C of C Numbers: 1, 2, 3, 4
Legal Site Desc:

Comments: 25-JUN-2015 Revision 2: This revision includes modified Total Suspended Solids data for the sample ALS identify as L1612473-8. Also included is the additional Fluoride data for the samples ALS identify as L1612473-16 and L1612473-18.

Can Dang
Senior Account Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1612473-1	L1612473-2	L1612473-3	L1612473-4	L1612473-5
	Description	Water	Water	Water	Water	Water
	Sampled Date	12-MAY-15	12-MAY-15	13-MAY-15	12-MAY-15	12-MAY-15
	Sampled Time	14:35	16:30	11:40	18:30	12:25
	Client ID	0146-150512-FIELD BLANK	0146-150512-022	0146-150513-026	0146-150512-021	0146-150512-035
Grouping	**Analyte**					
WATER						
Physical Tests	Conductivity (uS/cm)	<2.0	138	107	573	2090
	Hardness (as CaCO3) (mg/L)	<0.50	64.3	53.3	298	1410
	pH (pH)	5.69	7.60	7.72	8.09	7.74
	Total Suspended Solids (mg/L)	<3.0	<3.0	339	12.7	324
	Total Dissolved Solids (mg/L)	<1.0	75.3	60.6	370	1860
Anions and Nutrients	Alkalinity, Bicarbonate (as CaCO3) (mg/L)	<1.0	27.3	42.8	90.4	37.3
	Alkalinity, Carbonate (as CaCO3) (mg/L)	<1.0	<1.0	<1.0	<1.0	<1.0
	Alkalinity, Hydroxide (as CaCO3) (mg/L)	<1.0	<1.0	<1.0	<1.0	<1.0
	Alkalinity, Total (as CaCO3) (mg/L)	<1.0	27.3	42.8	90.4	37.3
	Ammonia, Total (as N) (mg/L)	<0.0050	0.0080	0.0193	0.258	<0.0050
	Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50	<0.50	<2.5 DLA
	Fluoride (F) (mg/L)	<0.020	0.046	0.052	0.064	0.24
	Nitrate (as N) (mg/L)	<0.0050	<0.0050	0.0271	0.0190	0.052
	Nitrite (as N) (mg/L)	<0.0010	<0.0010	<0.0010	0.0016	<0.0050 DLA
	Sulfate (SO4) (mg/L)	<0.30	32.4	13.2	202	1290
	Anion Sum (meq/L)	<0.10	1.22	1.13	6.01	27.5
	Cation Sum (meq/L)	<0.10	1.41	1.18	6.28	28.4
	Cation - Anion Balance (%)	0.0	7.2	1.9	2.1	1.6
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050	<0.0050	<0.020 DLA	<0.0050	<0.0050
	Cyanide, Total (mg/L)	<0.0050	<0.0050	<0.020 DLA	<0.0050	<0.0050
	Cyanate (mg/L)	<0.20	<2.0 DLIS	<0.20	<0.20	<0.20
	Thiocyanate (SCN) (mg/L)	<0.50	0.75	0.51	<0.50	<0.50
Total Metals	Aluminum (Al)-Total (mg/L)	<0.0030	0.171	11.1	0.127	0.694
	Antimony (Sb)-Total (mg/L)	<0.00010	0.00084	0.00203	0.00194	0.0139
	Arsenic (As)-Total (mg/L)	<0.00010	0.00459	0.0686	0.0232	0.150
	Barium (Ba)-Total (mg/L)	<0.000050	0.0283	0.240	0.0399	0.0294
	Beryllium (Be)-Total (mg/L)	<0.000020	0.000021	0.000439	<0.000020	0.000056
	Bismuth (Bi)-Total (mg/L)	<0.000050	<0.000050	0.000976	<0.000050	0.00096
	Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010	0.010	<0.020 DLA
	Cadmium (Cd)-Total (mg/L)	<0.0000050	0.000503	0.00128	0.000169	0.0314
	Calcium (Ca)-Total (mg/L)	<0.050	18.8	17.3	81.9	490
	Chromium (Cr)-Total (mg/L)	0.00028	0.00027	0.0138	0.00033	0.00047
	Cobalt (Co)-Total (mg/L)	<0.00010	0.00013	0.00626	0.00091	0.00069
	Copper (Cu)-Total (mg/L)	<0.00050	0.0108	0.0252	0.00186	0.0235
	Iron (Fe)-Total (mg/L)	<0.010	0.264	16.7	1.25	2.94
	Lead (Pb)-Total (mg/L)	<0.000050	0.00109	0.0583	0.00419	0.0757

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1612473-6	L1612473-7	L1612473-8	L1612473-9	L1612473-10
	Description	Water	Water	Water	Water	Water
	Sampled Date	13-MAY-15	12-MAY-15		13-MAY-15	13-MAY-15
	Sampled Time	18:15	16:25		15:40	14:45
	Client ID	0146-150513-006	0146-150512-024	TRAVEL BLANK	0146-150513-005	0146-150513-031
Grouping	**Analyte**					
WATER						
Physical Tests	Conductivity (uS/cm)	226	136	<2.0	89.9	475
	Hardness (as CaCO3) (mg/L)	98.9	65.2		42.5	251
	pH (pH)	7.40	7.60	5.46	7.58	8.12
	Total Suspended Solids (mg/L)	29.3	3.3	<3.0	8.0	49.3
	Total Dissolved Solids (mg/L)	133	76.1	<1.0	49.2	305
Anions and Nutrients	Alkalinity, Bicarbonate (as CaCO3) (mg/L)	14.6	27.9	<1.0	29.1	101
	Alkalinity, Carbonate (as CaCO3) (mg/L)	<1.0	<1.0	<1.0	<1.0	<1.0
	Alkalinity, Hydroxide (as CaCO3) (mg/L)	<1.0	<1.0	<1.0	<1.0	<1.0
	Alkalinity, Total (as CaCO3) (mg/L)	14.6	27.9	<1.0	29.1	101
	Ammonia, Total (as N) (mg/L)	0.146	0.0081	0.0121 RRV	0.0071	0.0870
	Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50	<0.50	<0.50
	Fluoride (F) (mg/L)	0.068	0.048	<0.020	0.055	0.078
	Nitrate (as N) (mg/L)	0.0221	<0.0050	<0.0050	<0.0050	<0.0050
	Nitrite (as N) (mg/L)	0.0012	<0.0010	<0.0010	<0.0010	<0.0010
	Sulfate (SO4) (mg/L)	83.7	32.7	<0.30	13.0	150
	Anion Sum (meq/L)	2.04	1.24	<0.10	0.86	5.15
	Cation Sum (meq/L)	2.11	1.42	<0.10	0.96	5.19
	Cation - Anion Balance (%)	1.7	6.7	0.0	6.0	0.4
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.010 DLA	<0.0050	<0.0050	<0.010 DLA	<0.0050
	Cyanide, Total (mg/L)	<0.010 DLA	<0.0050	<0.0050	<0.010 DLA	<0.0050
	Cyanate (mg/L)	<0.20	<0.20	<0.20	<0.20	<0.20
	Thiocyanate (SCN) (mg/L)	<0.50	0.75	<0.50	0.77	<0.50
Total Metals	Aluminum (Al)-Total (mg/L)	0.0941	0.189	<0.0030	0.227	0.697
	Antimony (Sb)-Total (mg/L)	0.0119	0.00097	<0.00010	0.00177	0.0148
	Arsenic (As)-Total (mg/L)	0.0540	0.00560	<0.00010	0.0116	0.115
	Barium (Ba)-Total (mg/L)	0.00469	0.0287	<0.000050	0.0262	0.0334
	Beryllium (Be)-Total (mg/L)	<0.000020	0.000023	<0.000020	<0.000020	0.000038
	Bismuth (Bi)-Total (mg/L)	0.000288	<0.000050	<0.000050	<0.000050	0.000327
	Boron (B)-Total (mg/L)	0.010	<0.010	<0.010	<0.010	<0.010
	Cadmium (Cd)-Total (mg/L)	0.00265	0.000499	<0.0000050	0.000237	0.00163
	Calcium (Ca)-Total (mg/L)	39.9	18.3	<0.050	11.6	68.2
	Chromium (Cr)-Total (mg/L)	0.00026	0.00030	<0.00010	0.00042	0.00097
	Cobalt (Co)-Total (mg/L)	0.00042	0.00013	<0.00010	0.00013	0.00065
	Copper (Cu)-Total (mg/L)	0.0297	0.0101	<0.00050	0.00428	0.0110
	Iron (Fe)-Total (mg/L)	0.470	0.315	<0.010	0.318	3.88
	Lead (Pb)-Total (mg/L)	0.0284	0.00160	<0.000050	0.00233	0.0765

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1612473-11 Water 13-MAY-15 11:00 0146-150513-028	L1612473-12 Water 13-MAY-15 11:25 0146-150513-025	L1612473-13 Water 13-MAY-15 13:25 0146-150513-002	L1612473-14 Water 13-MAY-15 14:00 0146-150513-032	L1612473-15 Water 14-MAY-15 09:25 0146-150514-004
WATER						
Physical Tests	Conductivity (uS/cm)	109	98.2	466	986	222
	Hardness (as CaCO3) (mg/L)	48.8	48.7	268	568	107
	pH (pH)	7.82	7.75	5.96	8.00	7.58
	Total Suspended Solids (mg/L)	145	130	4.0	<3.0	31.3
	Total Dissolved Solids (mg/L)	53.5	50.9	337	714	134
Anions and Nutrients	Alkalinity, Bicarbonate (as CaCO3) (mg/L)	41.9	37.4	3.7	81.4	30.3
	Alkalinity, Carbonate (as CaCO3) (mg/L)	<1.0	<1.0	<1.0	<1.0	<1.0
	Alkalinity, Hydroxide (as CaCO3) (mg/L)	<1.0	<1.0	<1.0	<1.0	<1.0
	Alkalinity, Total (as CaCO3) (mg/L)	41.9	37.4	3.7	81.4	30.3
	Ammonia, Total (as N) (mg/L)	0.0094	0.0090	0.0145	0.0098	0.0091
	Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50	<1.0 DLA	<0.50
	Fluoride (F) (mg/L)	0.044	0.045	0.058	0.045	0.056
	Nitrate (as N) (mg/L)	0.0283	0.0284	0.0056	0.143	0.0291
	Nitrite (as N) (mg/L)	<0.0010	<0.0010	<0.0010	0.0063	<0.0010
	Sulfate (SO4) (mg/L)	8.69	8.84	236	446	72.4
	Anion Sum (meq/L)	1.02	0.94	5.00	10.9	2.12
	Cation Sum (meq/L)	1.07	1.07	5.58	11.7	2.30
	Cation - Anion Balance (%)	2.3	6.7	5.5	3.4	4.0
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Cyanide, Total (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Cyanate (mg/L)	<0.20	<0.20	<0.20	<0.20	<0.20
	Thiocyanate (SCN) (mg/L)	0.51	0.55	0.80	0.54	0.51
Total Metals	Aluminum (Al)-Total (mg/L)	3.47	2.71	0.242	0.0232	0.582
	Antimony (Sb)-Total (mg/L)	0.00075	0.00068	<0.00010	0.00017	0.00149
	Arsenic (As)-Total (mg/L)	0.0190	0.0143	0.00142	0.00394	0.0131
	Barium (Ba)-Total (mg/L)	0.110	0.0911	0.0175	0.0251	0.0347
	Beryllium (Be)-Total (mg/L)	0.000141	0.000127	0.000041	<0.000020	0.000066
	Bismuth (Bi)-Total (mg/L)	0.000237	0.000240	<0.000050	<0.000050	0.000067
	Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Cadmium (Cd)-Total (mg/L)	0.000387	0.000310	0.00452	0.0000213	0.00572
	Calcium (Ca)-Total (mg/L)	13.8	13.4	66.4	176	32.0
	Chromium (Cr)-Total (mg/L)	0.00427	0.00344	0.00026	0.00017	0.00063
	Cobalt (Co)-Total (mg/L)	0.00202	0.00158	0.00045	0.00011	0.00073
	Copper (Cu)-Total (mg/L)	0.00958	0.00808	0.00265	0.00055	0.108
	Iron (Fe)-Total (mg/L)	5.01	3.93	0.221	0.036	1.00
	Lead (Pb)-Total (mg/L)	0.0151	0.0125	0.000107	0.000091	0.00471

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1612473-16 Water 14-MAY-15 10:10 0146-150514-033	L1612473-17 Water 14-MAY-15 10:40 0146-150514-020	L1612473-18 Water 14-MAY-15 10:00 0146-150514-018	L1612473-19 Water 13-MAY-15 17:40 0146-150513-009	L1612473-20 Water 14-MAY-15 08:15 0146-150514-017
WATER						
Physical Tests	Conductivity (uS/cm)	2330	87.1	1370	1350	527
	Hardness (as CaCO3) (mg/L)	1640	42.7	867	748	284
	pH (pH)	8.41	7.54	8.19	7.92	8.03
	Total Suspended Solids (mg/L)	31.3	121	32.0	38.0	7.3
	Total Dissolved Solids (mg/L)	1940	48.4	1040	1000	335
Anions and Nutrients	Alkalinity, Bicarbonate (as CaCO3) (mg/L)	405	28.2	119	174	80.1
	Alkalinity, Carbonate (as CaCO3) (mg/L)	24.6	<1.0	<1.0	<1.0	<1.0
	Alkalinity, Hydroxide (as CaCO3) (mg/L)	<1.0	<1.0	<1.0	<1.0	<1.0
	Alkalinity, Total (as CaCO3) (mg/L)	430	28.2	119	174	80.1
	Ammonia, Total (as N) (mg/L)	0.0850	0.0154	0.0095	3.59	0.0349
	Chloride (Cl) (mg/L)	<5.0 DLA	<0.50	<2.5 DLA	1.3	<0.50
	Fluoride (F) (mg/L)	0.092	0.031	0.131	0.055	0.070
	Nitrate (as N) (mg/L)	<0.20 DLA		<0.10 DLA		
	Nitrite (as N) (mg/L)	0.157	<0.0050	<0.025 DLA	0.262	0.0066
	Sulfate (SO4) (mg/L)	0.016	<0.0010	<0.0050 DLA	0.0145	<0.0010
	Anion Sum (meq/L)	1130	13.0	666	574	183
	Cation Sum (meq/L)	32.0	0.83	16.2	15.5	5.42
	Cation - Anion Balance (%)	33.6	0.96	17.8	17.2	5.92
Cyanides	Cyanide, Weak Acid Diss (mg/L)	2.3	7.1	4.5	5.3	4.4
	Cyanide, Total (mg/L)	<0.0050	<0.0050	<0.0050	0.0141	<0.0050
	Cyanate (mg/L)	<0.0050	<0.0050	<0.0050	0.137	<0.0050
	Thiocyanate (SCN) (mg/L)	<0.20	<0.20	<0.20	<0.20	<0.20
Total Metals	Aluminum (Al)-Total (mg/L)	<0.50	0.78	<0.50	3.22	0.67
	Antimony (Sb)-Total (mg/L)	0.509	2.68	0.416	0.0670	0.261
	Arsenic (As)-Total (mg/L)	0.0796	0.00148	0.0363	0.00068	0.00144
	Barium (Ba)-Total (mg/L)	0.135	0.0318	0.117	0.0558	0.00683
	Beryllium (Be)-Total (mg/L)	0.0419	0.0673	0.0321	0.0608	0.0288
	Bismuth (Bi)-Total (mg/L)	<0.000040 DLA	0.000085	0.000025	<0.000020	<0.000020
	Boron (B)-Total (mg/L)	0.00037	<0.000050	0.000257	<0.000050	<0.000050
	Cadmium (Cd)-Total (mg/L)	0.051	<0.010	0.051	0.057	<0.010
	Calcium (Ca)-Total (mg/L)	0.0198	0.000250	0.0146	0.000584	0.000205
	Chromium (Cr)-Total (mg/L)	319	12.6	203	225	69.3
	Cobalt (Co)-Total (mg/L)	0.00103	0.00336	0.00056	0.00061	0.00040
	Copper (Cu)-Total (mg/L)	0.00144	0.00162	0.00151	0.00644	0.00055
	Iron (Fe)-Total (mg/L)	0.0323	0.00672	0.0195	0.00625	0.00249
	Lead (Pb)-Total (mg/L)	1.41	4.34	1.15	12.7	1.09
		0.0890	0.00380	0.0653	0.000633	0.000841

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1612473-21	L1612473-22	L1612473-23	L1612473-24	L1612473-25
	Description	Water	Water	Water	Water	Water
	Sampled Date	12-MAY-15	12-MAY-15	13-MAY-15	12-MAY-15	13-MAY-15
	Sampled Time	17:15	14:35	17:10	15:30	13:45
	Client ID	0146-150512-023	0146-150512-036	0146-150513-010	0146-150512-034	0146-150513-030
Grouping	**Analyte**					
WATER						
Physical Tests	Conductivity (uS/cm)	130	118	514	122	829
	Hardness (as CaCO3) (mg/L)	62.4	57.6	282	59.2	466
	pH (pH)	7.59	7.71	8.08	7.75	5.55
	Total Suspended Solids (mg/L)	29.3	38.7	157	52.7	5.3
	Total Dissolved Solids (mg/L)	74.9	62.9	329	69.1	580
Anions and Nutrients	Alkalinity, Bicarbonate (as CaCO3) (mg/L)	33.4	35.4	63.4	42.9	2.1
	Alkalinity, Carbonate (as CaCO3) (mg/L)	<1.0	<1.0	<1.0	<1.0	<1.0
	Alkalinity, Hydroxide (as CaCO3) (mg/L)	<1.0	<1.0	<1.0	<1.0	<1.0
	Alkalinity, Total (as CaCO3) (mg/L)	33.4	35.4	63.4	42.9	2.1
	Ammonia, Total (as N) (mg/L)	0.0138	0.0112	0.199	0.0135	0.0316
	Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50	<0.50	<0.50
	Fluoride (F) (mg/L)	0.049	0.045	0.057	0.044	0.058
	Nitrate (as N) (mg/L)	<0.0050	0.0184	0.0141	0.0214	<0.0050
	Nitrite (as N) (mg/L)	<0.0010	<0.0010	0.0012	<0.0010	<0.0010
	Sulfate (SO4) (mg/L)	28.9	18.5	186	19.8	413
	Anion Sum (meq/L)	1.27	1.10	5.15	1.27	8.64
	Cation Sum (meq/L)	1.38	1.26	5.89	1.29	9.61
	Cation - Anion Balance (%)	4.0	7.0	6.7	0.7	5.3
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Cyanide, Total (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Cyanate (mg/L)	<0.20	<0.20	<0.20	<0.20	<0.20
	Thiocyanate (SCN) (mg/L)	0.74	0.60	<0.50	0.56	0.80
Total Metals	Aluminum (Al)-Total (mg/L)	0.169	0.891	2.85	1.59	0.261
	Antimony (Sb)-Total (mg/L)	0.00033	0.00036	0.00290	0.00048	<0.00010
	Arsenic (As)-Total (mg/L)	0.00325	0.00611	0.0360	0.00911	0.00120
	Barium (Ba)-Total (mg/L)	0.0292	0.0560	0.0731	0.0652	0.0147
	Beryllium (Be)-Total (mg/L)	<0.000020	0.000052	0.000097	0.000069	0.000038
	Bismuth (Bi)-Total (mg/L)	<0.000050	0.000102	0.000084	0.000101	<0.000050
	Boron (B)-Total (mg/L)	<0.010	<0.010	0.011	<0.010	<0.010
	Cadmium (Cd)-Total (mg/L)	0.0000581	0.000108	0.000432	0.000198	0.00770
	Calcium (Ca)-Total (mg/L)	18.7	15.2	78.1	16.2	113
	Chromium (Cr)-Total (mg/L)	0.00025	0.00130	0.00448	0.00198	0.00026
	Cobalt (Co)-Total (mg/L)	0.00028	0.00060	0.00217	0.00084	0.00014
	Copper (Cu)-Total (mg/L)	0.00188	0.00425	0.00815	0.00547	0.00214
	Iron (Fe)-Total (mg/L)	0.297	1.42	6.92	2.30	0.077
	Lead (Pb)-Total (mg/L)	0.000353	0.00405	0.0113	0.00658	<0.000050

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1612473-26 Water 13-MAY-15 15:25 0146-150513-003	L1612473-27 Water 13-MAY-15 11:05 0146-150513-027	L1612473-28 Water 14-MAY-15 07:40 0146-150514-019	L1612473-29 Water 13-MAY-15 13:05 0146-150513-001	L1612473-30 Water 13-MAY-15 14:49 0146-150513-029
WATER						
Physical Tests	Conductivity (uS/cm)	1070	93.3	1400	52.1	473
	Hardness (as CaCO3) (mg/L)	653	49.5	815	27.6	257
	pH (pH)	8.16	7.81	7.69	6.31	8.09
	Total Suspended Solids (mg/L)	155	159	10.0	<3.0	48.0
	Total Dissolved Solids (mg/L)	749	49.5	1090	25.5	296
Anions and Nutrients	Alkalinity, Bicarbonate (as CaCO3) (mg/L)	228	33.9	27.5	6.3	84.8
	Alkalinity, Carbonate (as CaCO3) (mg/L)	<1.0	<1.0	<1.0	<1.0	<1.0
	Alkalinity, Hydroxide (as CaCO3) (mg/L)	<1.0	<1.0	<1.0	<1.0	<1.0
	Alkalinity, Total (as CaCO3) (mg/L)	228	33.9	27.5	6.3	84.8
	Ammonia, Total (as N) (mg/L)	0.0368	0.0098	0.0332	0.0121	0.0898
	Chloride (Cl) (mg/L)	<1.0 DLA	<0.50	<2.5 DLA	<0.50	<0.50
	Fluoride (F) (mg/L)	0.206	0.045	0.24	0.046	0.079
	Nitrate (as N) (mg/L)	<0.010 DLA	0.0291	0.115	<0.0050	<0.0050
	Nitrite (as N) (mg/L)	<0.0020 DLA	<0.0010	<0.0050 DLA	<0.0010	<0.0010
	Sulfate (SO4) (mg/L)	374	9.24	772	8.64	150
	Anion Sum (meq/L)	12.4	0.87	16.6	0.31	4.81
	Cation Sum (meq/L)	13.5	1.09	16.4	0.68	5.31
	Cation - Anion Balance (%)	4.3	10.8	-0.7	37.7	4.9
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Cyanide, Total (mg/L)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	Cyanate (mg/L)	<0.20	<0.20	<0.20	0.23	<0.20
	Thiocyanate (SCN) (mg/L)	<0.50	0.51	<0.50	1.44	<0.50
Total Metals	Aluminum (Al)-Total (mg/L)	1.65	3.26	0.0803	0.294	0.611
	Antimony (Sb)-Total (mg/L)	0.0236	0.00073	0.00195	<0.00010	0.0151
	Arsenic (As)-Total (mg/L)	0.231	0.0180	0.00642	0.00131	0.113
	Barium (Ba)-Total (mg/L)	0.0516	0.106	0.00968	0.0366	0.0332
	Beryllium (Be)-Total (mg/L)	0.000080	0.000140	<0.000020	0.000025	0.000038
	Bismuth (Bi)-Total (mg/L)	0.000293	0.000252	<0.000050	<0.000050	0.000414
	Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Cadmium (Cd)-Total (mg/L)	0.00675	0.000380	0.00765	0.0000468	0.00170
	Calcium (Ca)-Total (mg/L)	165	14.0	260	8.19	69.2
	Chromium (Cr)-Total (mg/L)	0.00167	0.00422	0.00015	0.00031	0.00102
	Cobalt (Co)-Total (mg/L)	0.00224	0.00198	0.00030	<0.00010	0.00065
	Copper (Cu)-Total (mg/L)	0.0629	0.00928	0.0496	0.00349	0.0105
	Iron (Fe)-Total (mg/L)	7.56	4.71	0.196	0.107	3.59
	Lead (Pb)-Total (mg/L)	0.0551	0.0158	0.00230	<0.000050	0.0784

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1612473-31	L1612473-32	L1612473-33		
	Description	Water	Water	Water		
	Sampled Date	14-MAY-15	14-MAY-15	14-MAY-15		
	Sampled Time	12:45	13:45	11:30		
	Client ID	0146-150514-013	0146-150514-014	0146-150514-015		
Grouping	**Analyte**					
WATER						
Physical Tests	Conductivity (uS/cm)	2130	2590	40.0		
	Hardness (as CaCO3) (mg/L)	1450	1680	2.93		
	pH (pH)	8.10	7.88	7.19		
	Total Suspended Solids (mg/L)	9.3				
	Total Dissolved Solids (mg/L)	1790	2290	13.8		
Anions and Nutrients	Alkalinity, Bicarbonate (as CaCO3) (mg/L)	112	54.7	7.0		
	Alkalinity, Carbonate (as CaCO3) (mg/L)	<1.0	<1.0	<1.0		
	Alkalinity, Hydroxide (as CaCO3) (mg/L)	<1.0	<1.0	<1.0		
	Alkalinity, Total (as CaCO3) (mg/L)	112	54.7	7.0		
	Ammonia, Total (as N) (mg/L)	0.0083				
	Chloride (Cl) (mg/L)	<2.5 DLA	<5.0 DLA	<0.50		
	Fluoride (F) (mg/L)	0.12	0.39	0.054		
	Nitrate (as N) (mg/L)	12.5	0.093	0.0148		
	Nitrite (as N) (mg/L)	0.0272	<0.010 DLA	<0.0010		
	Sulfate (SO4) (mg/L)	1170	1680	8.35		
	Anion Sum (meq/L)	27.5	36.1	0.32		
	Cation Sum (meq/L)	29.3	33.7	<0.10		
	Cation - Anion Balance (%)	3.3	-3.4	-68.4		
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050				
	Cyanide, Total (mg/L)	<0.0050				
	Cyanate (mg/L)	<0.20				
	Thiocyanate (SCN) (mg/L)	<0.50				
Total Metals	Aluminum (Al)-Total (mg/L)	0.0562	0.0732	0.288		
	Antimony (Sb)-Total (mg/L)	0.00318	0.00210	0.00143		
	Arsenic (As)-Total (mg/L)	0.00985	0.0114	0.0124		
	Barium (Ba)-Total (mg/L)	0.00913	0.00538	0.00493		
	Beryllium (Be)-Total (mg/L)	<0.000040 DLA	<0.000040 DLA	<0.000020		
	Bismuth (Bi)-Total (mg/L)	<0.00010 DLA	0.00011	0.000108		
	Boron (B)-Total (mg/L)	<0.020 DLA	<0.020 DLA	<0.010		
	Cadmium (Cd)-Total (mg/L)	0.0124	0.00357	0.000292		
	Calcium (Ca)-Total (mg/L)	342	310	6.59		
	Chromium (Cr)-Total (mg/L)	<0.00020 DLA	<0.00020 DLA	0.00020		
	Cobalt (Co)-Total (mg/L)	<0.00020 DLA	<0.00020 DLA	0.00010		
	Copper (Cu)-Total (mg/L)	0.0100	0.0033	0.00289		
	Iron (Fe)-Total (mg/L)	0.326	0.256	0.474		
	Lead (Pb)-Total (mg/L)	0.00771	0.00552	0.0101		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1612473-1	L1612473-2	L1612473-3	L1612473-4	L1612473-5
Description	Water	Water	Water	Water	Water
Sampled Date	12-MAY-15	12-MAY-15	13-MAY-15	12-MAY-15	12-MAY-15
Sampled Time	14:35	16:30	11:40	18:30	12:25
Client ID	0146-150512-FIELD BLANK	0146-150512-022	0146-150513-026	0146-150512-021	0146-150512-035
Grouping / **Analyte**					
WATER					
Total Metals Lithium (Li)-Total (mg/L)	<0.0010	<0.0010	0.0063	0.0013	0.0064
Magnesium (Mg)-Total (mg/L)	<0.10	3.90	6.48	21.4	31.2
Manganese (Mn)-Total (mg/L)	0.00016	0.0263	0.717	1.09	0.952
Mercury (Hg)-Total (mg/L)	<0.0000050	0.0000087	0.000033	<0.0000050	0.0000132
Molybdenum (Mo)-Total (mg/L)	<0.000050	0.000098	0.00115	0.000246	0.00011
Nickel (Ni)-Total (mg/L)	<0.00050	0.00078	0.00978	0.00089	0.0012
Phosphorus (P)-Total (mg/L)	<0.050	<0.050	0.362	<0.050	0.052
Potassium (K)-Total (mg/L)	<0.10	1.45	2.72	2.16	2.63
Rubidium (Rb)-Total (mg/L)	<0.00020	0.00145	0.0172	0.00158	0.00575
Selenium (Se)-Total (mg/L)	<0.000050	<0.000050	0.000139	0.000066	0.00019
Silicon (Si)-Total (mg/L)	<0.050	2.90	21.2	2.86	5.57
Silver (Ag)-Total (mg/L)	<0.000010	0.000039	0.000644	0.000080	0.00103
Sodium (Na)-Total (mg/L)	<0.050	1.50	1.90	4.14	1.49
Strontium (Sr)-Total (mg/L)	<0.00020	0.134	0.153	0.224	0.302
Sulfur (S)-Total (mg/L)	<0.50	11.7	4.85	70.8	430
Thallium (Tl)-Total (mg/L)	<0.000010	<0.000010	0.000214	<0.000010	0.000127
Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	0.00026	<0.00010	<0.00020 DLA
Titanium (Ti)-Total (mg/L)	<0.00030	0.00289	0.306	0.00398	0.00384
Uranium (U)-Total (mg/L)	<0.000010	0.000092	0.00164	0.000721	0.000638
Vanadium (V)-Total (mg/L)	<0.00050	<0.00050	0.0294	0.00077	0.0018
Zinc (Zn)-Total (mg/L)	<0.0030	0.0417	0.127	0.0167	1.74
Zirconium (Zr)-Total (mg/L)	<0.00030	<0.00030	0.00149	<0.00030	<0.00060 DLA
Dissolved Metals Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved (mg/L)	<0.0010	0.106	0.104	0.0281	0.0475
Antimony (Sb)-Dissolved (mg/L)	<0.00010	0.00077	0.00016	0.00124	0.00346
Arsenic (As)-Dissolved (mg/L)	<0.00010	0.00347	0.00153	0.0111	0.0149
Barium (Ba)-Dissolved (mg/L)	<0.000050	0.0265	0.0368	0.0354	0.0131
Beryllium (Be)-Dissolved (mg/L)	<0.000020	<0.000020	<0.000020	<0.000020	<0.000040 DLA
Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.00010 DLA
Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<0.010	0.010	<0.020 DLA
Cadmium (Cd)-Dissolved (mg/L)	<0.0000050	0.000487	0.0000919	0.0000620	0.0254
Calcium (Ca)-Dissolved (mg/L)	<0.050	19.2	14.8	83.4	513
Chromium (Cr)-Dissolved (mg/L)	<0.00010	0.00013	0.00019	<0.00010	<0.00020 DLA
Cobalt (Co)-Dissolved (mg/L)	<0.00010	<0.00010	0.00018	0.00083	0.00023
Copper (Cu)-Dissolved (mg/L)	<0.00020	0.00974	0.00349	0.00121	0.00431
Iron (Fe)-Dissolved (mg/L)	<0.010	0.159	0.209	0.524	<0.010

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1612473-6	L1612473-7	L1612473-8	L1612473-9	L1612473-10
	Description	Water	Water	Water	Water	Water
	Sampled Date	13-MAY-15	12-MAY-15		13-MAY-15	13-MAY-15
	Sampled Time	18:15	16:25		15:40	14:45
	Client ID	0146-150513-006	0146-150512-024	TRAVEL BLANK	0146-150513-005	0146-150513-031
Grouping	**Analyte**					
WATER						
Total Metals	Lithium (Li)-Total (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	0.0023
	Magnesium (Mg)-Total (mg/L)	5.20	3.85	<0.10	2.81	17.3
	Manganese (Mn)-Total (mg/L)	0.672	0.0283	<0.00010	0.0271	0.604
	Mercury (Hg)-Total (mg/L)	0.0000087	0.0000138	<0.0000050	0.0000137	0.0000111
	Molybdenum (Mo)-Total (mg/L)	0.000584	0.000088	<0.000050	0.000084	0.000182
	Nickel (Ni)-Total (mg/L)	0.00090	0.00088	<0.00050	0.00068	0.00119
	Phosphorus (P)-Total (mg/L)	<0.050	<0.050	<0.050	<0.050	0.056
	Potassium (K)-Total (mg/L)	1.96	1.39	<0.10	2.48	2.38
	Rubidium (Rb)-Total (mg/L)	0.00337	0.00134	<0.00020	0.00168	0.00362
	Selenium (Se)-Total (mg/L)	<0.000050	<0.000050	<0.000050	0.000061	0.000059
	Silicon (Si)-Total (mg/L)	0.634	2.87	<0.050	2.40	4.38
	Silver (Ag)-Total (mg/L)	0.000547	0.000046	<0.000010	0.000087	0.00129
	Sodium (Na)-Total (mg/L)	1.73	1.44	<0.050	0.727	1.63
	Strontium (Sr)-Total (mg/L)	0.0876	0.131	<0.00020	0.0393	0.167
	Sulfur (S)-Total (mg/L)	35.4	10.8	<0.50	4.58	51.2
	Thallium (Tl)-Total (mg/L)	0.000066	<0.000010	<0.000010	0.000018	0.000058
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Total (mg/L)	0.00057	0.00400	<0.00030	0.00596	0.0318
	Uranium (U)-Total (mg/L)	0.000123	0.000096	<0.000010	0.000045	0.000666
	Vanadium (V)-Total (mg/L)	<0.00050	<0.00050	<0.00050	0.00076	0.00297
	Zinc (Zn)-Total (mg/L)	0.187	0.0427	<0.0030	0.0248	0.219
	Zirconium (Zr)-Total (mg/L)	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD		FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD		FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0200	0.0882		0.0784	0.0090
	Antimony (Sb)-Dissolved (mg/L)	0.00707	0.00077		0.00140	0.00415
	Arsenic (As)-Dissolved (mg/L)	0.0164	0.00298		0.00709	0.0122
	Barium (Ba)-Dissolved (mg/L)	0.00295	0.0228		0.0209	0.0186
	Beryllium (Be)-Dissolved (mg/L)	<0.000020	0.000023		<0.000020	<0.000020
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050		<0.000050	<0.000050
	Boron (B)-Dissolved (mg/L)	<0.010	<0.010		<0.010	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	0.00230	0.000432		0.000134	0.000421
	Calcium (Ca)-Dissolved (mg/L)	33.1	19.4		12.2	71.1
	Chromium (Cr)-Dissolved (mg/L)	<0.00010	0.00013		0.00016	<0.00010
	Cobalt (Co)-Dissolved (mg/L)	0.00034	<0.00010		<0.00010	0.00019
	Copper (Cu)-Dissolved (mg/L)	0.0177	0.00834		0.00381	0.00197
	Iron (Fe)-Dissolved (mg/L)	0.061	0.161		0.103	0.217

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1612473-11	L1612473-12	L1612473-13	L1612473-14	L1612473-15
	Description	Water	Water	Water	Water	Water
	Sampled Date	13-MAY-15	13-MAY-15	13-MAY-15	13-MAY-15	14-MAY-15
	Sampled Time	11:00	11:25	13:25	14:00	09:25
	Client ID	0146-150513-028	0146-150513-025	0146-150513-002	0146-150513-032	0146-150514-004
Grouping	**Analyte**					
WATER						
Total Metals	Lithium (Li)-Total (mg/L)	0.0022	0.0022	0.0014	<0.0010	<0.0010
	Magnesium (Mg)-Total (mg/L)	4.64	4.40	23.5	30.6	5.91
	Manganese (Mn)-Total (mg/L)	0.247	0.198	0.440	0.0180	0.274
	Mercury (Hg)-Total (mg/L)	0.0000204	0.0000154	0.0000059	<0.0000050	0.0000088
	Molybdenum (Mo)-Total (mg/L)	0.000506	0.000531	<0.000050	0.000091	0.000094
	Nickel (Ni)-Total (mg/L)	0.00344	0.00287	0.00392	<0.00050	0.00151
	Phosphorus (P)-Total (mg/L)	0.145	0.123	<0.050	0.054	<0.050
	Potassium (K)-Total (mg/L)	1.50	1.35	1.91	5.35	1.27
	Rubidium (Rb)-Total (mg/L)	0.00610	0.00495	0.00261	0.00329	0.00167
	Selenium (Se)-Total (mg/L)	0.000054	0.000069	0.000054	<0.000050	<0.000050
	Silicon (Si)-Total (mg/L)	8.85	7.54	3.18	6.54	3.96
	Silver (Ag)-Total (mg/L)	0.000157	0.000142	0.000012	<0.000010	0.000110
	Sodium (Na)-Total (mg/L)	1.44	1.37	1.66	4.68	1.73
	Strontium (Sr)-Total (mg/L)	0.131	0.140	0.169	0.364	0.162
	Sulfur (S)-Total (mg/L)	3.37	3.22	81.7	159	24.2
	Thallium (Tl)-Total (mg/L)	0.000067	0.000065	<0.000010	<0.000010	0.000011
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Total (mg/L)	0.119	0.0979	0.00088	<0.00090 DLM	0.0138
	Uranium (U)-Total (mg/L)	0.000639	0.000597	0.000014	0.000241	0.000192
	Vanadium (V)-Total (mg/L)	0.00939	0.00733	<0.00050	<0.00050	0.00110
	Zinc (Zn)-Total (mg/L)	0.0378	0.0288	1.46	<0.0030	0.446
	Zirconium (Zr)-Total (mg/L)	0.00066	0.00062	<0.00030	<0.00030	<0.00030
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0826	0.0776	0.231	0.0115	0.152
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	0.00010	<0.00010	0.00014	0.00072
	Arsenic (As)-Dissolved (mg/L)	0.00074	0.00072	0.00123	0.00366	0.00260
	Barium (Ba)-Dissolved (mg/L)	0.0394	0.0389	0.0171	0.0243	0.0279
	Beryllium (Be)-Dissolved (mg/L)	<0.000020	0.000021	0.000038	<0.000020	0.000051
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	0.0000526	0.0000489	0.00444	0.0000133	0.00542
	Calcium (Ca)-Dissolved (mg/L)	13.2	13.1	68.1	177	33.0
	Chromium (Cr)-Dissolved (mg/L)	0.00013	0.00014	0.00014	<0.00010	0.00014
	Cobalt (Co)-Dissolved (mg/L)	0.00011	0.00011	0.00043	0.00010	0.00037
	Copper (Cu)-Dissolved (mg/L)	0.00309	0.00303	0.00241	0.00051	0.0921
	Iron (Fe)-Dissolved (mg/L)	0.155	0.157	0.195	0.011	0.232

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1612473-16	L1612473-17	L1612473-18	L1612473-19	L1612473-20
	Description	Water	Water	Water	Water	Water
	Sampled Date	14-MAY-15	14-MAY-15	14-MAY-15	13-MAY-15	14-MAY-15
	Sampled Time	10:10	10:40	10:00	17:40	08:15
	Client ID	0146-150514-033	0146-150514-020	0146-150514-018	0146-150513-009	0146-150514-017
Grouping	**Analyte**					
WATER						
Total Metals	Lithium (Li)-Total (mg/L)	0.0172	0.0019	0.0070	0.0017	0.0021
	Magnesium (Mg)-Total (mg/L)	188	3.87	78.8	43.2	23.7
	Manganese (Mn)-Total (mg/L)	0.573	0.164	1.01	6.61	0.475
	Mercury (Hg)-Total (mg/L)	0.0000176	0.0000205	0.0000081	<0.0000050	0.0000098
	Molybdenum (Mo)-Total (mg/L)	0.00093	0.000092	0.000471	0.000916	0.000181
	Nickel (Ni)-Total (mg/L)	0.0056	0.00269	0.00342	0.00283	0.00113
	Phosphorus (P)-Total (mg/L)	0.050	0.211	<0.050	<0.050	<0.050
	Potassium (K)-Total (mg/L)	7.54	2.79	4.58	4.92	2.02
	Rubidium (Rb)-Total (mg/L)	0.0153	0.00562	0.00653	0.00167	0.00154
	Selenium (Se)-Total (mg/L)	0.00319	0.000086	0.000227	0.000172	0.000063
	Silicon (Si)-Total (mg/L)	4.88	5.87	4.28	6.29	3.04
	Silver (Ag)-Total (mg/L)	0.00281	0.000095	0.00140	0.000100	0.000028
	Sodium (Na)-Total (mg/L)	10.6	0.755	5.51	27.2	2.58
	Strontium (Sr)-Total (mg/L)	0.943	0.0404	0.445	0.645	0.219
	Sulfur (S)-Total (mg/L)	391	4.72	219	201	62.5
	Thallium (Tl)-Total (mg/L)	0.000503	0.000063	0.000128	<0.000010	<0.000010
	Tin (Sn)-Total (mg/L)	<0.00020 DLA	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Total (mg/L)	0.0218	0.124	<0.021 DLM	<0.0027 DLM	0.00710
	Uranium (U)-Total (mg/L)	0.00767	0.000156	0.00302	0.00126	0.000882
	Vanadium (V)-Total (mg/L)	0.0021	0.0105	0.00147	0.00184	0.00108
	Zinc (Zn)-Total (mg/L)	2.14	0.0257	1.21	0.0189	0.0206
	Zirconium (Zr)-Total (mg/L)	<0.00060 DLA	<0.00030	<0.00030	0.00046	<0.00030
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0037	0.0664	0.0049	0.0292	0.149
	Antimony (Sb)-Dissolved (mg/L)	0.0675	0.00058	0.0273	0.00053	0.00144
	Arsenic (As)-Dissolved (mg/L)	0.0681	0.00443	0.0444	0.0331	0.00523
	Barium (Ba)-Dissolved (mg/L)	0.0343	0.0144	0.0251	0.0574	0.0300
	Beryllium (Be)-Dissolved (mg/L)	<0.000040 DLA	<0.000020	<0.000020	<0.000020	<0.000020
	Bismuth (Bi)-Dissolved (mg/L)	<0.00010 DLA	<0.000050	<0.000050	<0.000050	<0.000050
	Boron (B)-Dissolved (mg/L)	0.048	<0.010	0.049	0.050	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	0.0190	0.0000223	0.0138	0.000390	0.000104
	Calcium (Ca)-Dissolved (mg/L)	336	11.9	213	228	72.7
	Chromium (Cr)-Dissolved (mg/L)	<0.00020 DLA	0.00018	<0.00010	0.00031	0.00013
	Cobalt (Co)-Dissolved (mg/L)	0.00108	0.00011	0.00129	0.00626	0.00050
	Copper (Cu)-Dissolved (mg/L)	0.0218	0.00187	0.00735	0.00314	0.00189
	Iron (Fe)-Dissolved (mg/L)	<0.010	0.091	0.019	10.8	0.856

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1612473-21	L1612473-22	L1612473-23	L1612473-24	L1612473-25
Description	Water	Water	Water	Water	Water
Sampled Date	12-MAY-15	12-MAY-15	13-MAY-15	12-MAY-15	13-MAY-15
Sampled Time	17:15	14:35	17:10	15:30	13:45
Client ID	0146-150512-023	0146-150512-036	0146-150513-010	0146-150512-034	0146-150513-030
Grouping / **Analyte**					
WATER					
Total Metals Lithium (Li)-Total (mg/L)	<0.0010	<0.0010	0.0031	0.0012	0.0017
Magnesium (Mg)-Total (mg/L)	3.74	4.52	22.3	4.88	45.4
Manganese (Mn)-Total (mg/L)	0.178	0.126	0.798	0.150	0.566
Mercury (Hg)-Total (mg/L)	0.0000059	0.0000346	0.0000298	0.0000336	0.0000318
Molybdenum (Mo)-Total (mg/L)	0.000086	0.000349	0.000302	0.000381	<0.000050
Nickel (Ni)-Total (mg/L)	0.00079	0.00144	0.00400	0.00189	0.00523
Phosphorus (P)-Total (mg/L)	<0.050	<0.050	0.238	0.093	<0.050
Potassium (K)-Total (mg/L)	1.42	1.18	2.26	1.28	2.52
Rubidium (Rb)-Total (mg/L)	0.00160	0.00200	0.00433	0.00317	0.00378
Selenium (Se)-Total (mg/L)	<0.000050	0.000062	0.000152	0.000055	<0.000050
Silicon (Si)-Total (mg/L)	2.80	4.31	6.92	5.63	3.46
Silver (Ag)-Total (mg/L)	0.000018	0.000063	0.000199	0.000089	<0.000010
Sodium (Na)-Total (mg/L)	1.42	1.39	3.23	1.47	2.38
Strontium (Sr)-Total (mg/L)	0.133	0.123	0.224	0.127	0.274
Sulfur (S)-Total (mg/L)	10.2	6.61	64.9	6.97	146
Thallium (Tl)-Total (mg/L)	<0.000010	0.000026	0.000049	0.000033	<0.000010
Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total (mg/L)	<0.0045 DLM	0.0294	0.131	0.0520	0.00035
Uranium (U)-Total (mg/L)	0.000111	0.000345	0.000972	0.000392	<0.000010
Vanadium (V)-Total (mg/L)	<0.00050	0.00268	0.0109	0.00405	<0.00050
Zinc (Zn)-Total (mg/L)	0.0048	0.0125	0.0570	0.0185	2.60
Zirconium (Zr)-Total (mg/L)	<0.00030	0.00033	<0.00030	0.00042	<0.00030
Dissolved Metals Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
Aluminum (Al)-Dissolved (mg/L)	0.105	0.0731	0.0344	0.0748	0.258
Antimony (Sb)-Dissolved (mg/L)	0.00030	0.00015	0.00141	0.00016	<0.00010
Arsenic (As)-Dissolved (mg/L)	0.00251	0.00137	0.00609	0.00146	0.00117
Barium (Ba)-Dissolved (mg/L)	0.0274	0.0395	0.0243	0.0381	0.0143
Beryllium (Be)-Dissolved (mg/L)	<0.000020	<0.000020	<0.000020	<0.000020	0.000037
Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron (B)-Dissolved (mg/L)	<0.010	<0.010	0.010	<0.010	<0.010
Cadmium (Cd)-Dissolved (mg/L)	0.0000770 DTC	0.0000475	0.0000621	0.0000488	0.00771
Calcium (Ca)-Dissolved (mg/L)	18.8	15.6	76.8	16.1	113
Chromium (Cr)-Dissolved (mg/L)	0.00013	0.00015	<0.00010	0.00014	0.00011
Cobalt (Co)-Dissolved (mg/L)	0.00025	0.00015	0.00057	0.00014	0.00012
Copper (Cu)-Dissolved (mg/L)	0.00185	0.00264	0.00115	0.00260	0.00179
Iron (Fe)-Dissolved (mg/L)	0.222	0.212	0.480	0.158	0.067

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1612473-26	L1612473-27	L1612473-28	L1612473-29	L1612473-30
	Description	Water	Water	Water	Water	Water
	Sampled Date	13-MAY-15	13-MAY-15	14-MAY-15	13-MAY-15	13-MAY-15
	Sampled Time	15:25	11:05	07:40	13:05	14:49
	Client ID	0146-150513-003	0146-150513-027	0146-150514-019	0146-150513-001	0146-150513-029
Grouping	**Analyte**					
WATER						
Total Metals	Lithium (Li)-Total (mg/L)	0.0097	0.0021	0.0034	<0.0010	0.0022
	Magnesium (Mg)-Total (mg/L)	53.9	4.68	49.2	1.71	17.7
	Manganese (Mn)-Total (mg/L)	1.46	0.233	0.286	0.00256	0.585
	Mercury (Hg)-Total (mg/L)	0.0000283	0.0000410	0.0000069	0.0000311	0.0000266
	Molybdenum (Mo)-Total (mg/L)	0.000388	0.000505	0.000055	<0.000050	0.000226
	Nickel (Ni)-Total (mg/L)	0.00336	0.00340	0.00066	0.00155	0.00120
	Phosphorus (P)-Total (mg/L)	0.152	0.133	<0.050	<0.050	0.055
	Potassium (K)-Total (mg/L)	3.69	1.51	2.20	1.50	2.36
	Rubidium (Rb)-Total (mg/L)	0.00755	0.00613	0.00328	0.00088	0.00353
	Selenium (Se)-Total (mg/L)	0.000080	0.000065	0.000340	<0.000050	0.000075
	Silicon (Si)-Total (mg/L)	9.26	8.83	2.88	2.95	4.26
	Silver (Ag)-Total (mg/L)	0.00112	0.000182	0.000087	<0.000010	0.00127
	Sodium (Na)-Total (mg/L)	4.29	1.41	1.22	1.01	1.63
	Strontium (Sr)-Total (mg/L)	0.387	0.138	0.522	0.0403	0.172
	Sulfur (S)-Total (mg/L)	127	3.33	260	3.27	51.6
	Thallium (Tl)-Total (mg/L)	0.000177	0.000070	0.000039	<0.000010	0.000061
	Tin (Sn)-Total (mg/L)	0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Total (mg/L)	0.0915	0.102	0.00057	0.00070	0.0287
	Uranium (U)-Total (mg/L)	0.00372	0.000649	0.000365	0.000011	0.000673
	Vanadium (V)-Total (mg/L)	0.00720	0.00904	<0.00050	<0.00050	0.00290
	Zinc (Zn)-Total (mg/L)	1.24	0.0353	0.426	0.0090	0.221
	Zirconium (Zr)-Total (mg/L)	<0.00030	0.00072	<0.00030	<0.00030	<0.00030
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0086	0.0815	0.0143	0.302	0.0089
	Antimony (Sb)-Dissolved (mg/L)	0.0162	<0.00010	0.00168	0.00011	0.00420
	Arsenic (As)-Dissolved (mg/L)	0.0722	0.00070	0.00247	0.00135	0.0119
	Barium (Ba)-Dissolved (mg/L)	0.0165	0.0395	0.00912	0.0370	0.0185
	Beryllium (Be)-Dissolved (mg/L)	<0.000020	<0.000020	<0.000020	0.000024	<0.000020
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	0.00115	0.0000487	0.00759	0.0000530	0.000433
	Calcium (Ca)-Dissolved (mg/L)	171	13.4	250	8.24	72.6
	Chromium (Cr)-Dissolved (mg/L)	<0.00010	0.00012	<0.00010	0.00021	<0.00010
	Cobalt (Co)-Dissolved (mg/L)	0.00091	0.00011	0.00028	<0.00010	0.00020
	Copper (Cu)-Dissolved (mg/L)	0.00164	0.00309	0.0355	0.00364	0.00199
	Iron (Fe)-Dissolved (mg/L)	1.39	0.151	0.012	0.119	0.225

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L1612473-31	L1612473-32	L1612473-33		
		Description	Water	Water	Water		
		Sampled Date	14-MAY-15	14-MAY-15	14-MAY-15		
		Sampled Time	12:45	13:45	11:30		
		Client ID	0146-150514-013	0146-150514-014	0146-150514-015		
Grouping	**Analyte**						
WATER							
Total Metals	Lithium (Li)-Total (mg/L)		0.0048	0.0037	<0.0010		
	Magnesium (Mg)-Total (mg/L)		137	118	1.57		
	Manganese (Mn)-Total (mg/L)		0.115	0.0533	0.0323		
	Mercury (Hg)-Total (mg/L)		0.0000108	<0.0000050	<0.0000050		
	Molybdenum (Mo)-Total (mg/L)		0.00028	<0.00010 DLA	<0.000050		
	Nickel (Ni)-Total (mg/L)		0.0018	<0.0010 DLA	<0.00050		
	Phosphorus (P)-Total (mg/L)		<0.050	<0.050	<0.050		
	Potassium (K)-Total (mg/L)		2.10	2.24	0.53		
	Rubidium (Rb)-Total (mg/L)		0.00295		0.00165		
	Selenium (Se)-Total (mg/L)		0.00118	0.00021	<0.000050		
	Silicon (Si)-Total (mg/L)		5.09	1.37	0.658		
	Silver (Ag)-Total (mg/L)		0.000138	0.000121	0.000160		
	Sodium (Na)-Total (mg/L)		6.06	0.33	0.052		
	Strontium (Sr)-Total (mg/L)		0.813	0.463	0.0186		
	Sulfur (S)-Total (mg/L)		395	412	4.29		
	Thallium (Tl)-Total (mg/L)		0.000067	0.000044	0.000020		
	Tin (Sn)-Total (mg/L)		<0.00020 DLA	<0.00020 DLA	<0.00010		
	Titanium (Ti)-Total (mg/L)		<0.00060 DLA	<0.00060 DLA	0.00322		
	Uranium (U)-Total (mg/L)		0.00259	0.00119	0.000031		
	Vanadium (V)-Total (mg/L)		<0.0010 DLA	<0.0010 DLA	0.00063		
	Zinc (Zn)-Total (mg/L)		1.15	0.203	0.0263		
	Zirconium (Zr)-Total (mg/L)		<0.00060 DLA	<0.00060 DLA	<0.00030		
Dissolved Metals	Dissolved Mercury Filtration Location		FIELD	FIELD	FIELD		
	Dissolved Metals Filtration Location		FIELD	FIELD	FIELD		
	Aluminum (Al)-Dissolved (mg/L)		0.0051	<0.0020 DLA	0.0054		
	Antimony (Sb)-Dissolved (mg/L)		0.00217	0.00168	<0.00010		
	Arsenic (As)-Dissolved (mg/L)		0.00274	0.00453	0.00088		
	Barium (Ba)-Dissolved (mg/L)		0.00835	0.00764 DTC	0.00110		
	Beryllium (Be)-Dissolved (mg/L)		<0.000040 DLA	<0.000040 DLA	<0.000020		
	Bismuth (Bi)-Dissolved (mg/L)		<0.00010 DLA	<0.00010 DLA	<0.000050		
	Boron (B)-Dissolved (mg/L)		<0.020 DLA	<0.020 DLA	<0.010		
	Cadmium (Cd)-Dissolved (mg/L)		0.0120	0.00676 DTC	0.0000522		
	Calcium (Ca)-Dissolved (mg/L)		351	414	0.996		
	Chromium (Cr)-Dissolved (mg/L)		<0.00020 DLA	<0.00020 DLA	<0.00010		
	Cobalt (Co)-Dissolved (mg/L)		<0.00020 DLA	<0.00020 DLA	<0.00010		
	Copper (Cu)-Dissolved (mg/L)		0.00597	0.00217	0.00072		
	Iron (Fe)-Dissolved (mg/L)		0.039	<0.010	<0.010		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping	Analyte	L1612473-1 Water 12-MAY-15 14:35 0146-150512-FIELD BLANK	L1612473-2 Water 12-MAY-15 16:30 0146-150512-022	L1612473-3 Water 13-MAY-15 11:40 0146-150513-026	L1612473-4 Water 12-MAY-15 18:30 0146-150512-021	L1612473-5 Water 12-MAY-15 12:25 0146-150512-035
WATER						
Dissolved Metals	Lead (Pb)-Dissolved (mg/L)	<0.000050	0.000512	0.000443	0.000262	0.00012
	Lithium (Li)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	0.0013	0.0057
	Magnesium (Mg)-Dissolved (mg/L)	<0.10	3.99	3.95	21.9	32.2
	Manganese (Mn)-Dissolved (mg/L)	<0.00010	0.0204	0.106	1.01	0.640
	Mercury (Hg)-Dissolved (mg/L)	<0.0000050	0.0000067	0.0000098	<0.0000050	<0.0000050
	Molybdenum (Mo)-Dissolved (mg/L)	<0.000050	0.000076	0.000354	0.000215	<0.00010 DLA
	Nickel (Ni)-Dissolved (mg/L)	<0.00050	0.00078	0.00088	0.00077	<0.0010 DLA
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	<0.10	1.48	0.96	2.21	2.44
	Selenium (Se)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	0.000052	0.00015
	Silicon (Si)-Dissolved (mg/L)	<0.050	2.83	3.18	2.61	4.29
	Silver (Ag)-Dissolved (mg/L)	<0.000010	0.000016	0.000016	0.000011	<0.000020 DLA
	Sodium (Na)-Dissolved (mg/L)	<0.050	1.49	1.35	4.07	1.54
	Strontium (Sr)-Dissolved (mg/L)	<0.00020	0.130	0.116	0.228	0.306
	Sulfur (S)-Dissolved (mg/L)	<0.50	11.4	4.84	71.1	430
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	0.000041
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020 DLA
	Titanium (Ti)-Dissolved (mg/L)	<0.00030	0.00099	0.00195	0.00049	<0.00060 DLA
	Uranium (U)-Dissolved (mg/L)	<0.000010	0.000081	0.000386	0.000694	0.000642
	Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.0010 DLA
	Zinc (Zn)-Dissolved (mg/L)	<0.0010	0.0381	0.0041	0.0107	1.39
	Zirconium (Zr)-Dissolved (mg/L)	<0.00030	<0.00030	<0.00030	<0.00030	<0.00060 DLA

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1612473-6	L1612473-7	L1612473-8	L1612473-9	L1612473-10
Description	Water	Water	Water	Water	Water
Sampled Date	13-MAY-15	12-MAY-15		13-MAY-15	13-MAY-15
Sampled Time	18:15	16:25		15:40	14:45
Client ID	0146-150513-006	0146-150512-024	TRAVEL BLANK	0146-150513-005	0146-150513-031
Grouping **Analyte**					
WATER					
Dissolved Metals Lead (Pb)-Dissolved (mg/L)	0.00130	0.000538		0.000345	0.000630
Lithium (Li)-Dissolved (mg/L)	<0.0010	<0.0010		<0.0010	0.0019
Magnesium (Mg)-Dissolved (mg/L)	3.96	4.06		2.94	17.9
Manganese (Mn)-Dissolved (mg/L)	0.521	0.0187		0.0102	0.487
Mercury (Hg)-Dissolved (mg/L)	<0.0000050	0.0000070		0.0000114	<0.0000050
Molybdenum (Mo)-Dissolved (mg/L)	0.000397	0.000069		0.000062	0.000117
Nickel (Ni)-Dissolved (mg/L)	0.00070	0.00069		0.00057	0.00056
Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050		<0.050	<0.050
Potassium (K)-Dissolved (mg/L)	1.54	1.52		2.62	2.26
Selenium (Se)-Dissolved (mg/L)	<0.000050	<0.000050		0.000065	<0.000050
Silicon (Si)-Dissolved (mg/L)	0.441	2.88		2.25	3.04
Silver (Ag)-Dissolved (mg/L)	0.000061	0.000015		0.000035	0.000014
Sodium (Na)-Dissolved (mg/L)	1.29	1.26		0.751	1.63
Strontium (Sr)-Dissolved (mg/L)	0.0655	0.131		0.0384	0.165
Sulfur (S)-Dissolved (mg/L)	27.9	11.4		4.74	52.4
Thallium (Tl)-Dissolved (mg/L)	0.000048	<0.000010		0.000012	0.000010
Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010		<0.00010	<0.00010
Titanium (Ti)-Dissolved (mg/L)	<0.00030	0.00094		0.00105	<0.00030
Uranium (U)-Dissolved (mg/L)	0.000075	0.000080		0.000037	0.000625
Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050		<0.00050	<0.00050
Zinc (Zn)-Dissolved (mg/L)	0.167	0.0385		0.0214	0.111
Zirconium (Zr)-Dissolved (mg/L)	<0.00030	<0.00030		<0.00030	<0.00030

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1612473-11	L1612473-12	L1612473-13	L1612473-14	L1612473-15
	Description	Water	Water	Water	Water	Water
	Sampled Date	13-MAY-15	13-MAY-15	13-MAY-15	13-MAY-15	14-MAY-15
	Sampled Time	11:00	11:25	13:25	14:00	09:25
	Client ID	0146-150513-028	0146-150513-025	0146-150513-002	0146-150513-032	0146-150514-004
Grouping	**Analyte**					
WATER						
Dissolved Metals	Lead (Pb)-Dissolved (mg/L)	0.000153	0.000130	<0.000050	<0.000050	0.000225
	Lithium (Li)-Dissolved (mg/L)	<0.0010	<0.0010	0.0013	<0.0010	<0.0010
	Magnesium (Mg)-Dissolved (mg/L)	3.86	3.86	23.9	30.4	6.00
	Manganese (Mn)-Dissolved (mg/L)	0.0471	0.0479	0.430	0.0144	0.210
	Mercury (Hg)-Dissolved (mg/L)	0.0000084	0.0000078	0.0000059	<0.0000050	0.0000059
	Molybdenum (Mo)-Dissolved (mg/L)	0.000284	0.000285	<0.000050	0.000068	0.000067
	Nickel (Ni)-Dissolved (mg/L)	0.00073	0.00069	0.00359	<0.00050	0.00115
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	0.90	0.92	2.00	5.51	1.28
	Selenium (Se)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Silicon (Si)-Dissolved (mg/L)	3.18	3.19	3.18	6.47	3.46
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	0.000023
	Sodium (Na)-Dissolved (mg/L)	1.24	1.23	1.61	4.56	1.65
	Strontium (Sr)-Dissolved (mg/L)	0.127	0.129	0.172	0.340	0.173
	Sulfur (S)-Dissolved (mg/L)	3.36	3.42	80.5	154	24.9
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	0.00103	0.00091	0.00054	<0.00030	0.00077
	Uranium (U)-Dissolved (mg/L)	0.000284	0.000285	0.000010	0.000217	0.000135
	Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Zinc (Zn)-Dissolved (mg/L)	0.0046	0.0033	1.40	0.0041	0.421
	Zirconium (Zr)-Dissolved (mg/L)	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1612473-16	L1612473-17	L1612473-18	L1612473-19	L1612473-20
Description	Water	Water	Water	Water	Water
Sampled Date	14-MAY-15	14-MAY-15	14-MAY-15	13-MAY-15	14-MAY-15
Sampled Time	10:10	10:40	10:00	17:40	08:15
Client ID	0146-150514-033	0146-150514-020	0146-150514-018	0146-150513-009	0146-150514-017
Grouping / Analyte					
WATER					
Dissolved Metals					
Lead (Pb)-Dissolved (mg/L)	0.00620	0.000066	0.000949	<0.000050	0.000257
Lithium (Li)-Dissolved (mg/L)	0.0163	<0.0010	0.0067	<0.0010	0.0015
Magnesium (Mg)-Dissolved (mg/L)	195	3.14	81.5	43.6	24.8
Manganese (Mn)-Dissolved (mg/L)	0.533	0.0289	0.977	5.48	0.411
Mercury (Hg)-Dissolved (mg/L)	0.0000056	0.0000096	<0.0000050	<0.0000050	0.0000071
Molybdenum (Mo)-Dissolved (mg/L)	0.00085	<0.000050	0.000401	0.000793	0.000165
Nickel (Ni)-Dissolved (mg/L)	0.0049	<0.00050	0.00300	0.00253	0.00099
Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved (mg/L)	7.96	2.63	4.70	5.03	2.19
Selenium (Se)-Dissolved (mg/L)	0.00341	<0.000050	0.000264	0.000162	0.000056
Silicon (Si)-Dissolved (mg/L)	4.02	2.23	3.68	6.11	2.99
Silver (Ag)-Dissolved (mg/L)	0.000300	0.000015	0.000077	0.000011	<0.000010
Sodium (Na)-Dissolved (mg/L)	10.9	0.617	5.69	26.1	2.60
Strontium (Sr)-Dissolved (mg/L)	0.926	0.0346	0.443	0.631	0.225
Sulfur (S)-Dissolved (mg/L)	391	4.74	222	198	64.1
Thallium (Tl)-Dissolved (mg/L)	0.000455	<0.000010	0.000093	<0.000010	<0.000010
Tin (Sn)-Dissolved (mg/L)	<0.00020 DLA	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Dissolved (mg/L)	<0.00060 DLA	0.00096	<0.00030	0.00069	0.00107
Uranium (U)-Dissolved (mg/L)	0.00757	0.000023	0.00286	0.00130	0.000938
Vanadium (V)-Dissolved (mg/L)	<0.0010 DLA	<0.00050	<0.00050	0.00111	0.00051
Zinc (Zn)-Dissolved (mg/L)	2.07	0.0024	1.10	0.0161	0.0181
Zirconium (Zr)-Dissolved (mg/L)	<0.00060 DLA	<0.00030	<0.00030	0.00047	<0.00030

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID	L1612473-21	L1612473-22	L1612473-23	L1612473-24	L1612473-25
Description	Water	Water	Water	Water	Water
Sampled Date	12-MAY-15	12-MAY-15	13-MAY-15	12-MAY-15	13-MAY-15
Sampled Time	17:15	14:35	17:10	15:30	13:45
Client ID	0146-150512-023	0146-150512-036	0146-150513-010	0146-150512-034	0146-150513-030
Grouping / **Analyte**					
WATER					
Dissolved Metals Lead (Pb)-Dissolved (mg/L)	0.000099	0.000115	0.000257	0.000129	<0.000050
Lithium (Li)-Dissolved (mg/L)	<0.0010	<0.0010	0.0011	<0.0010	0.0015
Magnesium (Mg)-Dissolved (mg/L)	3.79	4.53	22.0	4.62	44.9
Manganese (Mn)-Dissolved (mg/L)	0.169	0.0659	0.626	0.0598	0.545
Mercury (Hg)-Dissolved (mg/L)	0.0000058	0.0000077	<0.0000050	0.0000074	0.0000054
Molybdenum (Mo)-Dissolved (mg/L)	0.000082	0.000245	0.000176	0.000243	<0.000050
Nickel (Ni)-Dissolved (mg/L)	0.00071	0.00077	0.00068	0.00071	0.00515
Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved (mg/L)	1.52	1.10	1.98	1.05	2.48
Selenium (Se)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silicon (Si)-Dissolved (mg/L)	2.67	3.05	2.52	2.94	3.38
Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Dissolved (mg/L)	1.39	1.37	3.08	1.40	2.35
Strontium (Sr)-Dissolved (mg/L)	0.134	0.120	0.206	0.125	0.269
Sulfur (S)-Dissolved (mg/L)	10.1	6.59	64.9	6.86	141
Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Dissolved (mg/L)	<0.0012 DLM	0.00071	0.00043	0.00072	0.00036
Uranium (U)-Dissolved (mg/L)	0.000105	0.000228	0.000724	0.000255	<0.000010
Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc (Zn)-Dissolved (mg/L)	0.0038	0.0043	0.0103	0.0038	2.61
Zirconium (Zr)-Dissolved (mg/L)	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1612473-26	L1612473-27	L1612473-28	L1612473-29	L1612473-30
	Description	Water	Water	Water	Water	Water
	Sampled Date	13-MAY-15	13-MAY-15	14-MAY-15	13-MAY-15	13-MAY-15
	Sampled Time	15:25	11:05	07:40	13:05	14:49
	Client ID	0146-150513-003	0146-150513-027	0146-150514-019	0146-150513-001	0146-150513-029
Grouping	**Analyte**					
WATER						
Dissolved Metals	Lead (Pb)-Dissolved (mg/L)	0.000206	0.000119	0.000081	<0.000050	0.000666
	Lithium (Li)-Dissolved (mg/L)	0.0086	<0.0010	0.0033	<0.0010	0.0019
	Magnesium (Mg)-Dissolved (mg/L)	55.0	3.92	46.1	1.71	18.4
	Manganese (Mn)-Dissolved (mg/L)	1.24	0.0460	0.277	0.00502 DTC	0.484
	Mercury (Hg)-Dissolved (mg/L)	<0.0000050	0.0000074	<0.0000050	0.0000134	0.0000087
	Molybdenum (Mo)-Dissolved (mg/L)	0.000296	0.000264	<0.000050	<0.000050	0.000123
	Nickel (Ni)-Dissolved (mg/L)	0.00208	0.00074	0.00064	0.00156	0.00056
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	3.33	0.92	2.18	1.59	2.32
	Selenium (Se)-Dissolved (mg/L)	<0.000050	<0.000050	0.000289	<0.000050	<0.000050
	Silicon (Si)-Dissolved (mg/L)	6.33	3.26	2.66	2.98	3.09
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	0.000028	<0.000010	0.000015
	Sodium (Na)-Dissolved (mg/L)	4.27	1.24	1.19	1.08	1.65
	Strontium (Sr)-Dissolved (mg/L)	0.382	0.122	0.502	0.0403	0.168
	Sulfur (S)-Dissolved (mg/L)	128	3.37	259	3.23	52.3
	Thallium (Tl)-Dissolved (mg/L)	0.000080	<0.000010	0.000036	<0.000010	<0.000010
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	<0.00030	0.00092	<0.00030	0.00068	<0.00030
	Uranium (U)-Dissolved (mg/L)	0.00348	0.000265	0.000340	0.000012	0.000623
	Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Zinc (Zn)-Dissolved (mg/L)	1.08	0.0026	0.417	0.0103	0.113
	Zirconium (Zr)-Dissolved (mg/L)	<0.00030	<0.00030	<0.00030	0.00030	<0.00030

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L1612473-31	L1612473-32	L1612473-33		
	Description	Water	Water	Water		
	Sampled Date	14-MAY-15	14-MAY-15	14-MAY-15		
	Sampled Time	12:45	13:45	11:30		
	Client ID	0146-150514-013	0146-150514-014	0146-150514-015		
Grouping	**Analyte**					
WATER						
Dissolved Metals	Lead (Pb)-Dissolved (mg/L)	0.00027	<0.00010 DLA	0.000085		
	Lithium (Li)-Dissolved (mg/L)	0.0046	0.0055	<0.0010		
	Magnesium (Mg)-Dissolved (mg/L)	140	157	0.11		
	Manganese (Mn)-Dissolved (mg/L)	0.0893	0.0685 DTC	0.00183		
	Mercury (Hg)-Dissolved (mg/L)	0.0000065	0.0000069	<0.0000050		
	Molybdenum (Mo)-Dissolved (mg/L)	0.00028	<0.00010 DLA	<0.000050		
	Nickel (Ni)-Dissolved (mg/L)	0.0017	<0.0010 DLA	<0.00050		
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050		
	Potassium (K)-Dissolved (mg/L)	2.10	3.50	<0.10		
	Selenium (Se)-Dissolved (mg/L)	0.00117	0.00033	<0.000050		
	Silicon (Si)-Dissolved (mg/L)	5.16	1.62	0.059		
	Silver (Ag)-Dissolved (mg/L)	<0.000020 DLA	<0.000020 DLA	<0.000010		
	Sodium (Na)-Dissolved (mg/L)	5.78	0.42	<0.050		
	Strontium (Sr)-Dissolved (mg/L)	0.797	0.650 DTC	0.00165		
	Sulfur (S)-Dissolved (mg/L)	395	554	<0.50		
	Thallium (Tl)-Dissolved (mg/L)	0.000056	0.000057	<0.000010		
	Tin (Sn)-Dissolved (mg/L)	<0.00020 DLA	<0.00020 DLA	<0.00010		
	Titanium (Ti)-Dissolved (mg/L)	<0.00060 DLA	<0.00060 DLA	<0.00030		
	Uranium (U)-Dissolved (mg/L)	0.00253	0.00154 DTC	<0.000010		
	Vanadium (V)-Dissolved (mg/L)	<0.0010 DLA	<0.0010 DLA	<0.00050		
	Zinc (Zn)-Dissolved (mg/L)	1.12	0.281 DTC	0.0101		
	Zirconium (Zr)-Dissolved (mg/L)	<0.00060 DLA	<0.00060 DLA	<0.00030		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

Qualifiers for Individual Samples Listed:

Sample Number	Client Sample ID	Qualifier	Description
L1612473-32	0146-150514-014	WSMT	Water sample(s) for total mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.
L1612473-33	0146-150514-015	WSMT	Water sample(s) for total mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Cyanate	DLIS	L1612473-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L1612473-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -4, -5, -6, -7, -9
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1612473-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -4, -5, -6, -7, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1612473-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -4, -5, -6, -7, -9
Matrix Spike	Sulfate (SO4)	MS-B	L1612473-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -4, -5, -6, -7, -8, -9
Matrix Spike	Sulfate (SO4)	MS-B	L1612473-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -4, -5, -6, -7, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1612473-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -4, -5, -6, -7, -9
Matrix Spike	Strontium (Sr)-Total	MS-B	L1612473-1, -10, -11, -12, -13, -14, -15, -16, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1612473-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -4, -5, -6, -7, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1612473-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -4, -5, -6, -7, -9
Matrix Spike	Aluminum (Al)-Dissolved	MS-B	L1612473-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -4, -5, -6, -7, -9
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1612473-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -4, -5, -6, -7, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1612473-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -4, -5, -6, -7, -9
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L1612473-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -4, -5, -6, -7, -9
Matrix Spike	Aluminum (Al)-Dissolved	MS-B	L1612473-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -4, -5, -6, -7, -9
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1612473-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -4, -5, -6, -7, -9
Matrix Spike	Cobalt (Co)-Dissolved	MS-B	L1612473-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -4, -5, -6, -7, -9
Matrix Spike	Copper (Cu)-Dissolved	MS-B	L1612473-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -4, -5, -6, -7, -9
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1612473-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -4, -5, -6, -7, -9
Matrix Spike	Nickel (Ni)-Dissolved	MS-B	L1612473-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -4, -5, -6, -7, -9

Reference Information

	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1612473-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -4, -5, -6, -7, -9
Matrix Spike	Uranium (U)-Dissolved	MS-B	L1612473-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -4, -5, -6, -7, -9

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLA	Detection Limit adjusted for required dilution
DLIS	Detection Limit Adjusted: Insufficient Sample
DLM	Detection Limit Adjusted due to sample matrix effects.
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RRV	Reported Result Verified By Repeat Analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-PCT-VA	Water	Alkalinity by Auto. Titration	APHA 2320 Alkalinity

This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.

BE-D-L-CCMS-VA	Water	Diss. Be (low) in Water by CRC ICPMS	APHA 3030B/6020A (mod)

Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

BE-T-L-CCMS-VA	Water	Total Be (Low) in Water by CRC ICPMS	EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

CL-IC-N-WR	Water	Chloride in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

CN-CNO-WT	Water	Cyanate	APHA 4500-CN-L

This analysis is carried out using procedures adapted from APHA method 4500-CN "Cyanide". Cyanate is determined by the Cyanate hydrolysis method using an ammonia selective electrode

CN-SCN-VA	Water	Thiocyanate by Colour	APHA 4500-CN CYANIDE

This analysis is carried out using procedures adapted from APHA Method 4500-CN- M "Thiocyanate" Thiocyanate is determined by the ferric nitrate colourimetric method.

CN-T-CFA-VA	Water	Total Cyanide in water by CFA	ISO 14403:2002

This analysis is carried out using procedures adapted from ISO Method 14403:2002 "Determination of Total Cyanide using Flow Analysis (FIA and CFA)". Total or strong acid dissociable (SAD) cyanide is determined by in-line UV digestion along with sample distillation and final determination by colourimetric analysis. Method Limitation: This method is susceptible to interference from thiocyanate (SCN). If SCN is present in the sample, there could be a positive interference with this method, but it would be less than 1% and could be as low as zero.

CN-WAD-CFA-VA	Water	Weak Acid Diss. Cyanide in water by CFA	APHA 4500-CN CYANIDE

This analysis is carried out using procedures adapted from APHA Method 4500-CN I. "Weak Acid Dissociable Cyanide". Weak Acid Dissociable (WAD) cyanide is determined by in-line sample distillation with final determination by colourimetric analysis.

EC-PCT-VA	Water	Conductivity (Automated)	APHA 2510 Auto. Conduc.

This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.

F-IC-N-WR	Water	Fluoride in Water by IC	EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

F-SIE-VA	Water	Fluoride by SIE	APHA 4500-F "Fluoride"

This analysis is carried out using procedures adapted from APHA Method 4500-F "Fluoride". Fluoride is determined using a selective ion electrode. This method has a significant negative interference (i.e. results could be biased low) when Al3+ is present in the sample at a concentration greater

Reference Information

than 2.5 mg/L.

F-SIE-VA Water Fluoride by SIE APHA 4500-F Fluoride

This analysis is carried out using procedures adapted from APHA Method 4500-F "Fluoride". Fluoride is determined using a selective ion electrode. This method has a significant negative interference (i.e. results could be biased low) when Al3+ is present in the sample at a concentration greater than 2.5 mg/L.

HARDNESS-CALC-VA Water Hardness APHA 2340B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-D-CVAA-VA Water Diss. Mercury in Water by CVAAS or CVAFS APHA 3030B/EPA 1631E (mod)

Water samples are filtered (0.45 um), preserved with hydrochloric acid, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.

HG-T-CVAA-VA Water Total Mercury in Water by CVAAS or CVAFS EPA 1631E (mod)

Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS or CVAFS.

IONBALANCE-VA Water Ion Balance Calculation APHA 1030E

Cation Sum, Anion Sum, and Ion Balance (as % difference) are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Because all aqueous solutions are electrically neutral, the calculated ion balance (% difference of cations minus anions) should be near-zero.

Cation and Anion Sums are the total meq/L concentration of major cations and anions. Dissolved species are used where available. Minor ions are included where data is present. Ion Balance is calculated as:

Ion Balance (%) = [Cation Sum-Anion Sum] / [Cation Sum+Anion Sum]

MET-D-CCMS-VA Water Dissolved Metals in Water by CRC ICPMS APHA 3030B/6020A (mod)

Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-DIS-LOW-ICP-VA Water Dissolved Metals in Water by ICPOES EPA 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves filtration (EPA Method 3005A) and analysis by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

MET-T-CCMS-VA Water Total Metals in Water by CRC ICPMS EPA 200.2/6020A (mod)

Water samples are digested with nitric and hydrochloric acids, and analyzed by CRC ICPMS.

Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.

MET-TOT-LOW-ICP-VA Water Total Metals in Water by ICPOES EPA 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

NH3-F-VA Water Ammonia in Water by Fluorescence APHA 4500 NH3-NITROGEN (AMMONIA)

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NH3-F-VA Water Ammonia in Water by Fluorescence J. ENVIRON. MONIT., 2005, 7, 37-42, RSC

This analysis is carried out, on sulfuric acid preserved samples, using procedures modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society of Chemistry, "Flow-injection analysis with fluorescence detection for the determination of trace levels of ammonium in seawater", Roslyn J. Waston et al.

NO2-L-IC-N-WR Water Nitrite in Water by IC (Low Level) EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

NO3-L-IC-N-WR Water Nitrate in Water by IC (Low Level) EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H "pH Value"

Reference Information

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

S-DIS-ICP-VA Water Dissolved Sulfur in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

S-TOT-ICP-VA Water Total Sulfur in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

SO4-IC-N-WR Water Sulfate in Water by IC EPA 300.1 (mod)

Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

TDS-CALC-VA Water TDS (Calculated) APHA 1030E (20TH EDITION)

This analysis is carried out using procedures adapted from APHA 1030E "Checking Correctness of Analyses".

TSS-MAN-WR Water Total Suspended Solids by Gravimetric APHA 2540 D

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids are determined by filtering a sample through a glass fibre filter and drying the filter at 104 degrees celsius.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WR	ALS ENVIRONMENTAL - WHITEHORSE, YUKON, CANADA
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

1 2 3 4

Reference Information

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
mg/kg - milligrams per kilogram based on dry weight of sample.
mg/kg wwt - milligrams per kilogram based on wet weight of sample.
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L1612473-COFC

COC Number: 14 -

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Report To		Report Format / Di	Rush Turnaround Time (TAT) is not available for all tests
Company:	EDI	Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3 pm - business days)
Contact:	Meghan Marjanovic	Quality Control (QC) Report with Report ☐ Yes ☐ No	P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
Address:	2195 - 2nd Avenue Whitehorse, YT Y1A 3T8	☐ Criteria on Report - provide details below if box checked Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge
Phone:	867-393-4882	Email 1 or Fax mmarjanovic@edynamics.com	Specify Date Required for E2,E or P:
		Email 2	

Invoice To	Same as Report To ☑ Yes ☑ No	Invoice Distribution	
	Copy of Invoice with Report ☑ Yes ☐ No	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	
Company:	EDI	Email 1 or Fax sjenner@edynamics.com	
Contact:	S Jenner	Email 2 mmarjanovic@edynamics.com	
Project Information		**Oil and Gas Required Fields (client use)**	
ALS Quote #:	Q49310	Approver ID:	Cost Center:
Job #:	MOUNT NANSEN 15-Y-0146	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		ALS Contact: Sean Slugget	Sampler: DH, SB, DS

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	ALK-PCT-VA,EC-PCT-VA,PH-PCT-VA	ANIONS-ALL-IC-WR,TSS-MAN-WR	CN-WAD-CFA-VA,CN-T-CFA -VA	CN-CNO-WT	CN-SCN-VA	NH3-F-VA	MET-T-BCMDG-VA	MET-D-BCMDG-VA	IONBALANC-VA, TDS-CALC-VA					Number of Containers
							P	P	P	P	P	F/P						
	0146-150512- Field Blank	12 - May -15	14:35	Water	R	R	R	R	R	R	R	R	R					9
	0146-150512- 022	12 - May -15	16:30	Water	R	R	R	R	R	R	R	R	R					9
	0146-150513- 026	13 - May -15	11:40	Water	R	R	R	R	R	R	R	R	R					9
	0146-150512- 021	12 - May -15	18:30	Water	R	R	R	R	R	R	R	R	R					9
	0146-150512- 035	12 - May -15	12:25	Water	R	R	R	R	R	R	R	R	R					9
	0146-150513- 006	13 - May -15	18:15	Water	R	R	R	R	R	R	R	R	R					9
	0146-150512- 024	12 - May -15	16:25	Water	R	R	R	R	R	R	R	R	R					9
	Travel Blank	—	—	Water	R	R	R	R	R	R	R	R	R					8

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☑ No Are samples for human drinking water use? ☐ Yes ☑ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐
Ice packs Yes ☐ No ☐ Custody seal intact Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		
2.1	32.1	3.0			

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
	14 May 2015	15:25		15-May-15	9:00			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L1612473-COFC

COC Number: 14 -

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Report To		Report Format / Di	(Rush Turnaround Time (TAT) is not available for all tests)
Company:	EDI	Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3 pm - business days)
Contact:	Meghan Marjanovic	Quality Control (QC) Report with Report ☐ Yes ☐ No	P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
Address:	2195 - 2nd Avenue Whitehorse, YT Y1A 3T8	☐ Criteria on Report - provide details below if box checked Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge
Phone:	867-393-4882	Email 1 or Fax mmarjanovic@edynamics.com	Specify Date Required for E2,E or P:
		Email 2	

Invoice To	Same as Report To ☑ Yes ☑ No	Invoice Distribution	
	Copy of Invoice with Report ☑ Yes ☐ No	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	
Company:	EDI	Email 1 or Fax sjenner@edynamics.com	
Contact:	S Jenner	Email 2 mmarjanovic@edynamics.com	

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	Q49310	Approver ID:	Cost Center:
Job #:	MOUNT NANSEN 15-Y-0146	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only)	ALS Contact: Sean Slugget	Sampler: DH, ~~SB~~ DS

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	ALK-PCT-VA,EC-PCT-VA,PH-PCT-VA	ANIONS-ALL-IC-WR,TSS-MAN-WR	CN-WAD-CFA-VA,CN-T-CFA-VA	CN-CNO-WT	CN-SCN-VA	NH3-F-VA	MET-T-BCMDG-VA	MET-D-BCMDG-VA	IONBALANC-VA, TDS-CALC-VA					Number of Containers
					P	P	P	P	P	P	P	F/P						
	0146-1505 13 - 005	13 - May -15	15:40	Water	R	R	R	R	R	R	R	R	R					9
	0146-1505 13 - 031	13 - May -15	14:45	Water	R	R	R	R	R	R	R	R	R					9
	0146-1505 13 - 028	13 - May -15	11:00	Water	R	R	R	R	R	R	R	R	R					9
	0146-1505 13 - 025	13 - May -15	11:25	Water	R	R	R	R	R	R	R	R	R					9
	0146-1505 13 - 002	13 - May -15	13:25	Water	R	R	R	R	R	R	R	R	R					9
	0146-1505 13 - 032	13 - May -15	14:00	Water	R	R	R	R	R	R	R	R	R					9
	~~0146-1505 14~~ - 013	14 - May -15	12:45	Water	R	R	R	R	R	R	R	R	R					9

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☑ No	
Are samples for human drinking water use? ☐ Yes ☑ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice packs Yes ☐ No ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date	Time	Received by:	Date:	Time:
	14 May 2015	15:35						

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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Chain of Custody (COC) / Analytical Request Form

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Canada Toll Free: 1 800 668 9878

L1612473-COFC

COC Number: 14 -

Page ____ of ____

Report To		Report Format / Distribution	Turnaround Time (TAT) (Rush Turnaround Time (TAT) is not available for all tests)
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Contact:	Meghan Marjanovic	Quality Control (QC) Report with Report ☐ Yes ☐ No	P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
Address:	2195 - 2nd Avenue Whitehorse, YT Y1A 3T8	☐ Criteria on Report - provide details below if box checked Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge
Phone:	867-393-4882	Email 1 or Fax mmarjanovic@edynamics.com	Specify Date Required for E2,E or P:
		Email 2	

Invoice To			Invoice Distribution	
	Same as Report To	☑ Yes ☑ No	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	
	Copy of Invoice with Report	☑ Yes ☐ No	Email 1 or Fax sjenner@edynamics.com	
Company:	EDI		Email 2 mmarjanovic@edynamics.com	
Contact:	S Jenner			

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	Q49310	Approver ID:	Cost Center:
Job #:	MOUNT NANSEN 15-Y-0146	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only): [redacted]

ALS Contact: Sean Slugget

Sampler: DH, SB, DS

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	ALK-PCT-VA,EC-PCT-VA,PH-PCT-VA	ANIONS-ALL-IC-WR,TSS-MAN-WR	CN-WAD-CFA-VA,CN-T-CFA-VA	CN-CNO-WT	CN-SCN-VA	NH3-F-VA	MET-T-BCMDG-VA	MET-D-BCMDG-VA	IONBALANC-VA, TDS-CALC-VA					Number of Containers
							P	P	P	P	P	F/P						
	0146-1505 14 - 004	14 - May -15	09:25	Water	R	R	R	R	R	R	R	R	R					9
	0146-1505 14 - 033	14 - May -15	10:10	Water	R	R	R	R	R	R	R	R	R					9
	0146-1505 14 - 020	14 - May -15	10:40	Water	R	R	R	R	R	R	R	R	R					9
	0146-1505 14 - 018	14 - May -15	10:00	Water	R	R	R	R	R	R	R	R	R					9
	0146-1505 13 - 009	13 - May -15	17:40	Water	R	R	R	R	R	R	R	R	R					9
	0146-1505 14 - 017	14 - May -15	08:15	Water	R	R	R	R	R	R	R	R	R					9
	0146-1505 12 - 023	12 - May -15	17:15	Water	R	R	R	R	R	R	R	R	R					9
	0146-1505 12 - 036	12 - May -15	14:35	Water	R	R	R	R	R	R	R	R	R					9

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☑ No Are samples for human drinking water use? ☐ Yes ☑ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations ☐ Yes ☐ No ☐
Ice packs ☐ Yes ☐ No ☐ Custody seal intact ☐ Yes ☐ No ☐
Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
[signature]	14 May 2015	15:20						

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

L1612473-COFC

COC Number: 14 -

Page ____ of ____

Report To		Report Format / ...		(Rush Turnaround Time (TAT) is not available for all tests)
Company:	EDI	Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)	R	☑ Regular (Standard TAT if received by 3 pm - business days)
Contact:	Meghan Marjanovic	Quality Control (QC) Report with Report ☐ Yes ☐ No	P	☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
Address:	2195 - 2nd Avenue Whitehorse, YT Y1A 3T8	☐ Criteria on Report - provide details below if box checked	E	☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT
		Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	E2	☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge
Phone:	867-393-4882	Email 1 or Fax mmarjanovic@edynamics.com	Specify Date Required for E2,E or P:	
		Email 2		

Invoice To	Same as Report To ☑ Yes ☑ No	Invoice Distribution	Analysis Request
	Copy of Invoice with Report ☑ Yes ☐ No	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below
Company:	EDI	Email 1 or Fax sjenner@edynamics.com	
Contact:	S Jenner	Email 2 mmarjanovic@edynamics.com	

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	Q49310	Approver ID:	Cost Center:
Job #:	MOUNT NANSEN 15-Y-0146	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	

ALS Lab Work Order # (lab use only)		ALS Contact: Sean Slugget	Sampler: DH, BP, DS

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	ALK-PCT-VA,EC-PCT-VA,PH-PCT-VA	ANIONS-ALL-IC-WR,TSS-MAN-WR	CN-WAD-CFA-VA,CN-T-CFA -VA	CN-CNO-WT	CN-SCN-VA	NH3-F-VA	MET-T-BCMDG-VA	MET-D-BCMDG-VA	ION&ALANC-VA, TDS-CALC-VA					Number of Containers
					P	P	P	P	P	P	P	F/P						
	0146-150513 - 010	13 - May -15	17:10	Water	R	R	R	R	R	R	R	R	R					9
	0146-150512 - 034	12 - May -15	15:30	Water	R	R	R	R	R	R	R	R	R					9
	0146-150513 - 030	13 - May -15	13:45	Water	R	R	R	R	R	R	R	R	R					9
	0146-150513 - 003	13 - May -15	15:25	Water	R	R	R	R	R	R	R	R	R					9
	0146-150513 - 027	13 - May -15	11:05	Water	R	R	R	R	R	R	R	R	R					9
	0146-150514 - 019	14 - May -15	07:40	Water	R	R	R	R	R	R	R	R	R					9
	0146-150513 - 001	13 - May -15	13:05	Water	R	R	R	R	R	R	R	R	R					9
	0146-150513 - 029	13-May-15	14:49	Water	R	R	R	R	R	R	R	R	R					9

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)
Are samples taken from a Regulated DW System? ☐ Yes ☑ No	
Are samples for human drinking water use? ☐ Yes ☑ No	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice packs Yes ☐ No ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C		FINAL COOLER TEMPERATURES °C		

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
	14 May 2015	15:30						

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L1612473-COFC

COC Number: 14 -

Page ___ of ___

Report To	
Company:	EDI
Contact:	Meghan Marjanovic
Address:	2195 - 2nd Avenue, Whitehorse, YT Y1A 3T8
Phone:	867-393-4882

Report Format / Di[stribution]

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Quality Control (QC) Report with Report ☐ Yes ☐ No

☐ Criteria on Report - provide details below if box checked

Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax mmarjanovic@edynamics.com

Email 2

(Rush Turnaround Time (TAT) is not available for all tests)

R ☑ Regular (Standard TAT if received by 3 pm - business days)

P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT

E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT

E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge

Specify Date Required for E2,E or P:

Invoice To	
Same as Report To	☑ Yes ☑ No
Copy of Invoice with Report	☑ Yes ☐ No
Company:	EDI
Contact:	S Jenner

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax sjenner@edynamics.com

Email 2 mmarjanovic@edynamics.com

Project Information

ALS Quote #:	Q49310
Job #:	MOUNT NANSEN 15-Y-0146
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

Approver ID: | Cost Center:
GL Account: | Routing Code:
Activity Code:
Location:

ALS Lab Work Order # (lab use only)

ALS Contact: Sean Slugget

Sampler: DH, ~~BP~~ SB, DS

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	ALK-PCT-VA,EC-PCT-VA,PH-PCT-VA	ANIONS-ALL-IC-WR, ~~TSS-MAN-WR~~	~~CN-WAD-CFA-VA,CN-T-CFA-VA~~ (P)	~~CN-CNO-WT~~ (P)	~~CN-SCN-VA~~ (P)	~~NH3-F-VA~~ (P)	MET-T-BCMDG-VA (P)	MET-D-BCMDG-VA (F/P)	IONBALANC-VA, TDS-CALC-VA					Number of Containers
	0146-1505 14-014	14 -May -15	13:45	Water	R	R	R	R	R	R	R	R	R					~~9~~ 4
	0146-1505 14-015	14 -May -15	11:30	Water	R	R	R	R	R	R	R	R	R					~~9~~ 4
	~~0146-1505 -~~	~~-May -15~~		~~Water~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~					~~9~~
	~~0146-1505 -~~	~~-May -15~~		~~Water~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~					~~9~~
	~~0146-1505 -~~	~~-May -15~~		~~Water~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~					~~9~~
	~~0146-1505 -~~	~~-May -15~~		~~Water~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~					~~9~~
	~~0146-1505~~	~~-May -15~~		~~Water~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~					~~9~~

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ Yes ☑ No

Are samples for human drinking water use? ☐ Yes ☑ No

Special Instructions / Specify Criteria to add on report (client Use)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice packs Yes ☐ No ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
2.5	

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: [signature]	Date: 15 May 2015	Time: 09:23	Received by: [signature]	Date: 15-May-15	Time: 9:00	Received by:	Date:	Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

ENVIRONMENTAL DYNAMICS INC.
ATTN: Meghan Marjanovic
2195 - 2nd Ave
Whitehorse YT Y1A 3T8

Date Received: 15-MAY-15
Report Date: 29-MAY-15 17:57 (MT)
Version: FINAL

Client Phone: 867-393-4882

Certificate of Analysis

Lab Work Order #: L1612705

Project P.O. #: NOT SUBMITTED
Job Reference: MOUNT NANSEN 15-Y-0146
C of C Numbers: 1
Legal Site Desc:

Comments: LC50 Rainbow Trout analyses were sub-contracted to Nautilus Environmental Ltd., in Burnaby, BC. Please refer to the attached report for detail.

Can Dang
Senior Account Manager

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID					
Grouping **Analyte**					

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location

Chain of Custody Numbers:

1

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.
mg/kg - milligrams per kilogram based on dry weight of sample.
mg/kg wwt - milligrams per kilogram based on wet weight of sample.
mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.
mg/L - milligrams per litre.
< - Less than.
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

Nautilus Environmental

ALS Environmental
ATTN: Can Dang
Suite 100-8081 Lougheed Hwy.
Burnaby, BC
V5A 1W9

Report Date: May 29, 2015
Work Order: 15402

Data Report

Species: **Rainbow trout (*Oncorhynchus mykiss*)**
Protocol: **EPS 1/RM/13 (Second Ed. with 2007 amendments)**

Table 1. Results for the 96-h rainbow trout acute toxicity test.

Sample ID	Collection Date and Time	96-h LC50 (%v/v)
L1612705-1 (0146-150513)	May 13, 2015 @ N/A	>100

The sample was received on May 19, 2015, outside of the 5-day holding time required under EPS 1/RM/13 test protocol. The client was contacted upon sample receipt for confirmation to proceed with testing.

The test met control performance criterion and there were no other deviations, other than the sample holding time exceedance, from the test method. The results relate only to the sample tested.

Josh Baker, M.Sc.
Environmental Chemist

Reviewed By:
Edmund Canaria, R.P.Bio.
Senior Reviewer

Rainbow Trout Summary Sheet

Client: ALS

Start Date/Time: May 19/15 @1145

Work Order No.: 15402

Test Species: *Oncorhynchus mykiss*

Test Validity Criteria:
≥ 90% control survival
WQ Ranges:
T (°C) = 15 ± 1; DO (mg/L) = 7.0 to 10.3; pH = 5.5 to 8.5

Sample Information:

Sample ID: L1612705-1 0146-150513
Sample Date: May 13/15
Date Received: May 19/15
Sample Volume: 2 × 20L
Other: —

Dilution Water:

Type: Dechlorinated Municipal Tap Water
Hardness (mg/L $CaCO_3$): 8
Alkalinity (mg/L $CaCO_3$): 6

Test Organism Information:

Batch No.: 042715
Source: Aqua Farms
No. Fish/Volume (L): 10/15L
Loading Density (g/L): 0.44
Mean Length ± SD (mm): 41 ± 2 Range: 38 - 45
Mean Weight ± SD (g): 0.66 ± 0.05 Range: 0.60 - 0.76

Zinc SSS ~~NaNO2~~ Reference Toxicant Results:

Reference Toxicant ID: RTZn10
Stock Solution ID: 15Zn02
Date Initiated: May 21/15
96-h LC50 (95% CL): 48.9 (36.4 - 65.6) mg/L zinc

Reference Toxicant Mean and Historical Range: 65.7 (44.1 - 97.8) ug/L Zn
Reference Toxicant CV (%): 22%

Test Results: The 96-hr LC50 is > 100 % (v/v)

Reviewed by: [signature]

Date reviewed: May 28/15

96-Hour Rainbow Trout Toxicity Test Data Sheet

Client/Project#: ALS
Sample I.D. L1612705-1 0146-150513
W.O. # 15402
RBT Batch #: 042215
Date Collected/Time: May 13/15 @ 17:40
Date Setup/Time: May 19/15 @ 11:45
Sample Setup By: SSD

D.O. meter: DO-2
pH meter: pH-1
Cond. Meter: C-1

Number Fish/Volume: 10/15
7-d % Mortality: 0
Total Pre-aeration Time (mins): 30 min
Aeration rate adjusted to 6.5 ± 1 mL/min/L? (Y/N): Yes

Undiluted Sample WQ			
Parameters	Initial WQ	Adjustment	30 min WQ
Temp °C	14.0		14.5
pH	6.8		6.8
D.O. (mg/L)	6.8		7.5
Cond. (µS/cm)	1324		1329

Concentration	# Survivors							Temperature (°C)					Dissolved Oxygen (mg/L)					pH					Conductivity (µS/cm)	
(% v/v)	1	2	4	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	96
Control				10	10	10	10	15.0	15.0	15.0	15.0	15.0	9.9	9.6	9.8	9.7	9.6	6.9	7.0	7.1	6.8	6.9	81	483 / 141
6.25				10	10	10	10	15.0	15.0	15.0	15.0	15.0	9.8	9.5	9.8	9.6	9.7	6.9	7.1	7.1	7.0	7.1	134	
12.5				10	10	10	10	15.0	15.0	15.0	15.0	15.0	9.8	9.6	9.7	9.6	9.7	6.9	7.0	7.1	7.1	7.2	248	254
25				10	10	10	10	15.0	15.0	15.0	15.0	15.0	9.8	9.6	9.6	9.5	9.6	6.9	7.3	7.3	7.1	7.4	432	437
50				10	10	10	10	14.5	15.0	15.0	15.0	15.0	9.7	9.7	9.8	9.6	9.6	7.0	7.9	8.0	7.8	7.8	766	768
100				10	10	10	10	14.5	15.0	15.0	15.0	15.0	7.5	9.5	9.7	9.5	9.7	6.8	7.8	7.9	7.8	8.0	1329	1355
Initials				SSD	SSD	SSD	m	SSD	SSD	SSD	SSD	m	SSD	SSD	SSD	SSD	m	SSD	SSD	SSD	SSD	m	SSD	m

WQ Ranges: T (°C) = 15 ± 1; DO (mg/L) = 7.0 to 10.3; pH = 5.5 to 8.5

Sample Description/Comments: dark yellow

Fish Description at 96 h: ok

Number of Stressed Fish at 96 h: 0

Other Observations:

Reviewed by: [signature]

Date Reviewed: May 28/15

Nautilus

Josh Baker <josh@nautilusenvironmental.com>

L1612705

2 messages

Can Dang <Can.Dang@alsglobal.com> Tue, May 19, 2015 at 10:18 AM
To: Josh Baker <josh@nautilusenvironmental.com>, "krysta@nautilusenvironmental.com" <krysta@nautilusenvironmental.com>

Hi Josh,

Thanks for your voice message regarding the water sample L1612705 for LC50 RT analysis. Please proceed with the analysis. Please confirm when you receive this email.

Thanks!

Can Dang

Senior Account Manager - Vancouver
ALS Life Sciences Division | Environmental

8081 Lougheed Highway,
Burnaby, BC, V5A 1W9 Canada

D +1 778 370 3232
T +1 604 253 4188
F +1 604 253 6700

http://www.alsglobal.com/

L1612705

VANCOUVER

WO# 15402

Subcontract Request Form

Rainbow Trout LC50

Subcontract To:

NAUTILUS ENVIRONMENTAL
8664 COMMERCE COURT
BURNABY,BC V5A 4N7

NOTES: Please reference on final report and invoice: PO# *L1612705*
ALS requires QC data to be provided with your final results.

Please see enclosed 1 **sample(s) in** 2 **Container(s)**

SAMPLE NUMBER	ANALYTICAL REQUIRED	DATE SAMPLED / DUE DATE	Priority Flag
L1612705-1 0146-150513-LC 50	Special Request- Nautilus Environmental (SPECIAL REQUEST-NL 14)	5/13/2015 ① / 5/28/2015	

Subcontract Info Contact: Dorota Jamro (604) 253-4188

Analysis and reporting info contact: Can Dang
8081 LOUGHEED HWY
SUITE 100
BURNABY,BC V5A 1W9
Phone: (604) 253-4188 Email: can.dang@alsglobal.com

Please email confirmation of receipt to: **can.dang@alsglobal.com**

Shipped By: Paul Date Shipped: May 19/2015

Received By: JRB Date Received: May 19/15 @ 0815h

Verified By: Date Verified:

Temperature: 5.2°C

Sample Integrity Issues:

① Sample exceeded holding time requirements. Proceed with testing per client communication

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L1612705-COFC

COC Number: 14 -

Page ____ of ____

Report To		Report Format / Di	(Rush Turnaround Time (TAT) is not available for all tests)
Company:	EDI	Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)	R ☑ Regular (Standard TAT if received by 3 pm - business days)
Contact:	Meghan Marjanovic	Quality Control (QC) Report with Report ☐ Yes ☐ No	P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT
Address:	2195 - 2nd Avenue Whitehorse, YT Y1A 3T8	☐ Criteria on Report - provide details below if box checked	E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT
		Select Distribution: ☐ EMAIL ☐ MAIL ☐ FAX	E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge
Phone:	867-393-4882	Email 1 or Fax mmarjanovic@edynamics.com	Specify Date Required for E2,E or P:
		Email 2	

Invoice To	Same as Report To ☑ Yes ☐ No	Invoice Distribution	Analysis Request
	Copy of Invoice with Report ☑ Yes ☐ No	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below
Company:	EDI	Email 1 or Fax sjenner@edynamics.com	
Contact:	S Jenner	Email 2 mmarjanovic@edynamics.com	

Project Information		Oil and Gas Required Fields (client use)	
ALS Quote #:	Q49310	Approver ID:	Cost Center:
Job #:	MOUNT NANSEN 15-Y-0146	GL Account:	Routing Code:
PO / AFE:		Activity Code:	
LSD:		Location:	
ALS Lab Work Order # (lab use only)		ALS Contact: Sean Sluggett	Sampler:

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Rainbow Trout LC50	Number of Containers
	0146-1505 13 - LC 50	13 -May-15	17:40	Water	R	2

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report (client Use)	SAMPLE CONDITION AS RECEIVED (lab use only)
Are samples taken from a Regulated DW System? ☐ Yes ☑ No		Frozen ☐ SIF Observations: Yes ☐ No ☐
Are samples for human drinking water use? ☐ Yes ☑ No		Ice packs Yes ☐ No ☐ Custody seal intact Yes ☐ No ☐
		Cooling Initiated ☐
		INITIAL COOLER TEMPERATURES °C: 2.5 2.8 FINAL COOLER TEMPERATURES °C:

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
Dawn Hanson	14 May 2015	15:12		15-May-15	9:00			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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NA-FM-3326a v08 Front/04 January 2014

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

Yukon
Health and Social Services
Santé et Affaires sociales
Environmental Health Services
Service d'hygiène du millieu

BACTERIOLOGICAL ANALYSIS OF DRINKING WATER
ANALYSE BACTÉRIOLOGIQUE DE L'EAU POTABLE

#2 Hospital Road, Whitehorse, Yukon Y1A 3H8
phone : (867) 667-8391 fax : (867) 667-8322
Toll free: 1-800-661-0408 ext.8391

2 Hospital Road, Whitehorse (Yukon) Y1A 3H8
Tél. : 867-667-8391 Téléc. : 867-667-8322
Sans frais au Yukon : 1-800-661-0408, poste 8391

Contact Information · *Coordonnées de la personne ressource*

Contact Person / *Personne ressource*: Meghan Marjanovic
Phone / *Téléphone*: 393-4882
Mailing address / *Adresse postale*: 2195 2nd Ave
Fax / *Télécopieur*: —
Whitehorse, YT
Postal code / *Code postal*: Y1A 3T8
First Nation, Municipal or Business Name / *Nom de la Première nation, de la municipalité ou de l'entreprise*: EDI
Agent / *Agent*: ____ Fax / *Télécopieur*: ____

Sampling Location · *Lieu de la prise d'échantillon*

Municipal Address / *Adresse municipale*: Mt. Nansen
Subdivision / *Lotissement*: ____
Legal Description Lot / *Désignation officielle Lot*: ____ Quad / *Quadrilatère*: ____ Plan no. / *Plan n°*: ____
Other Information (e.g., Location, Business / Building Name) / *Autres renseignements (ex. : emplacement, nom de l'entreprise, nom de l'édifice)*: ____

Sample Collection / *Prélèvement de l'échantillon*

Sample Collected By / *Échantillon prélevé par*: Dawn Hansen
Date / *Date*: 15/05/06 (YY/MM/DD · *AA/MM/JJ*)
Time / *Heure*: 14:25 am / pm (2:25 pm)
Sampling Site (e.g., kitchen tap) / *Point d'échantillonnage (ex. : robinet de cuisine)*: Pumphouse
Is this a Resample from a Previous Test? / *Est-ce un deuxième échantillon d'un test antérieur?*: ☐ Yes / *Oui* ☐ No / *Non*
Previous Sample Number / *Numéro de l'échantillon précédent*: ____

Sample Supply / *Source d'approvisionnement en eau*

☒ Public Supply / *Municipal – par canalisation*
☐ Bulk Water Distributor / *Municipal – par camion*
☐ Business / *Privé – entreprise*
☐ Private Residence / *Privé – résidence*

Sample Source / *Provenance de l'échantillon*

☐ Dug Well / *Puits creusé*
☐ Driven Well / *Puits tubulaire*
☒ Drilled Well / *Puits foré à la sondeuse*
Depth of Well / *Profondeur du puits*: ____
☐ Water Holding Tank / *Réservoir d'eau*
☐ Other (explain) / *Autre (précisez)*: ____

Water Treatment / *Traitement de l'eau*

Is the Water Chlorinated? / *L'eau contient-elle du chlore?*: ☐ Yes / *Oui* ☒ No / *Non*
Free Available Chlorine / *Chlore libre disponible*: ____ ppm / *mg/L*
Other Treatment Systems (e.g., UV, softener, filter) / *Autre dispositif de traitement (ex. : désinfection aux rayons UV, adoucisseur d'eau, filtre)*: ____

For Laboratory Use Only / *À l'usage du laboratoire seulement*

Receipt of Sample / ***Réception de l'échantillon***: Date / *Date*: 15/05/07 (YY/MM/DD · *AA/MM/JJ*) Time / *Heure*: 1130 am / pm By / *Par*: G
Condition of Sample / ***État de l'échantillon***: ☒ Satisfactory / *Satisfaisant* ☐ Unsatisfactory / *Non satisfaisant* Details / *Précisez*: 10.4 °C
Incubation / ***Incubation***: Date / *Date*: 15-05-07 (YY/MM/DD · *AA/MM/JJ*) Time / *Heure*: 1240 am / pm By / *Par*: SS Incubator / *Incubateur*: 4
Analysis Completed / ***Analyse terminée***: Date / *Date*: 15-05-08 (YY/MM/DD · *AA/MM/JJ*) Time / *Heure*: 140 am / pm By / *Par*: MM

Results (See Reverse Side for Interpretation) per 100 ml
Résultats (Voir au verso l'interprétation des résultats)

Total Coliforms/*Coliformes totaux*	**E. coli**/*E. coli*
☐ Present / *Présence* ☒ Absent / *Absence*	☐ Present / *Présence* ☒ Absent / *Absence*

Comments / *Commentaires*

Report Authorized By / *Rapport autorisé par*: M Mcclard
Position / *Poste*: PIA
Date / *Date*: 15/05/08 (YY/MM/DD · *AA/MM/JJ*)

Distribution: / *Distribution*: White - Chain of Custody / *Blanc - Chaîne de possession*; Yellow - Lab Copy / *Jaune - Laboratoire*; Pink - Client Copy / *Rose - Client*

YG(4649)NC3 Rev.03/2013

Sample Number / ***Numéro de l'échantillon***: 62727