Mount Nansen March 2015 Groundwater Monitoring and Sampling

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1.0 INTRODUCTION

Hemmera Envirochem Inc. ("Hemmera") and Ecological Logistics & Research Ltd. (Hemmera/ELR) were retained by the Government of Yukon (GY), Assessment and Abandoned Mines (AAM) to conduct a groundwater monitoring and sampling program at the Mount Nansen Site in March of 2015. This report summarizes the activities conducted, the field conditions encountered, and the *in-situ* and laboratory analytical results for the program.

1.1 SITE LOCATION

The Mount Nansen Site (the Site) is located approximately 45 kilometres (km) west of the Town of Carmacks (70 km by road). This Type II abandoned mine site consists of three (3) primary areas of existing infrastructure: the Brown McDade Pit, a Mill Complex, and a Tailings Facility (**Figure 1-1**). Groundwater monitoring wells exist throughout the Site, a subset of which were sampled during the March 2015 groundwater monitoring and sampling program. The groundwater monitoring locations included in this program are described in **Sections 1.2** and **1.3**.

1.2 SCOPE OF WORK

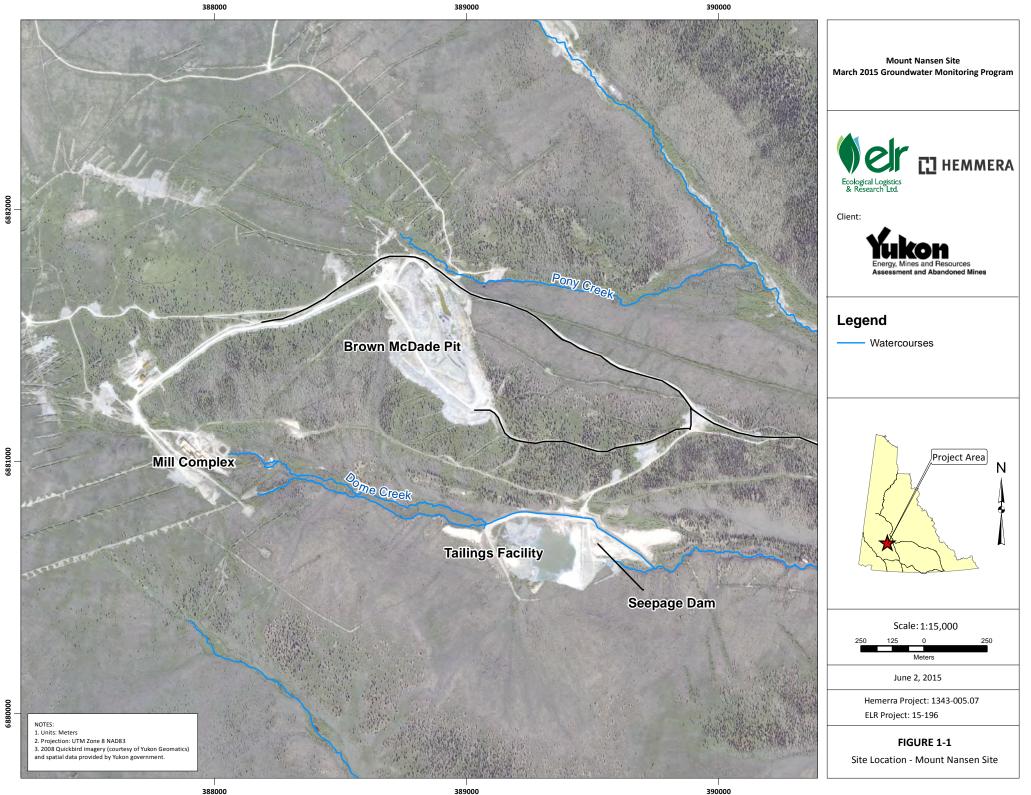
The scope of work for this program included the coordination and execution of the winter groundwater monitoring and sampling, analysis of groundwater samples, and the presentation of results in a report. This report provides a summary of the monitoring and sampling activities, a description of methodologies, field *in-situ* and laboratory analytical results including a comparison to applicable guidelines, and recommendations relating to sample procedures and monitoring well conditions. This report does not provide an interpretation of the results, nor does it provide recommendations relating to groundwater quality at the Site.

Groundwater sampling at the Site was conducted over a three (3) day period, between March 18 and 20, 2015. Sampling was conducted by a team of four (4) field staff from Hemmera/ELR (Rusto Martinka, Tara Jackle, Aaron Nicholson, and Jonathan Lowey). A total of 61 groundwater wells were included in the March sampling event (**Table 1-1**). Four (4) groundwater wells included in previous sampling events were excluded from the March sampling program; one (1) due to previously reported damage (CH-P-13-03/10), one (1) due to a previously reported blockage (CH-P-13-04/35), and two (2) that were previously reported as destroyed (MP09-01 and GSI-PC-01-B). These four (4) wells are still listed in the program summary table for consistent reporting purposes (**Table 1-1**). Two (2) of the 61 event groundwater wells that had previously been reported as damaged (MW09-01) or dry/damaged (CH-P-13-02/10) were included in the March sampling event (there was still a potential for successful sampling despite damage).

At each well (sampling station) headspace gas concentrations were measured, well and water level parameters were measured (Depth-to-Water, Depth-to-Bottom, well diameter, and well stick-up height), the well was purged, and then prescribed *in-situ* groundwater quality parameters were measured. Lastly, groundwater samples were collected for laboratory analysis. A detailed description of the sampling methods and measured groundwater quality parameters is provided in **Section 2**, below.

1.3 SAMPLE SITES

The groundwater wells included in the March monitoring and sampling event were grouped into six (6) main areas of the Mount Nansen Site (**Table 1-1**). The majority of groundwater wells were located around existing infrastructure including the tailings facility, the tailings pond and seepage pond/dam (26 wells), the Brown McDade Pit (10 wells) and the Mill Complex (9 wells). Additional wells (primarily drive-point piezometer installations) were sampled in the vicinity of Dome Creek (9 wells) and Pony Creek (8 wells). **Table 1-1** provides the location, status, and sample recovery for groundwater wells included in the March sampling program. The well locations are also illustrated in **Figures 1-2** and **1-3**. Photographs of each sample site are included in **Appendix A**.



		UTM (Z	one 08N)	e 12	Sample	QA/QC Sample
Area	Well Name	Easting	Northing	Status ^{1,2}	Collected	Collected
	GSI-DC-01B	387675	6881124	Dry	-	-
	GSI-DC-02B	387879	6881129	Direct Sampled ¹	✓	-
	GSI-DC-03B	388107	6881079	Frozen ²	-	-
	GSI-DC-05B	388725	6880836	Frozen ²	-	-
Dome Creek	GSI-DC-06B	389788	6880567	Frozen ²	-	-
Oreek	GSI-DC-07B	390065	6880641	Frozen ²	-	-
	GSI-DC-08-B	390311	6880583	Frozen ²	-	-
	GSI-DC-09-B	390614	6880494	Frozen ²	-	-
	GSI-DC-10-B	390859	6880447	Frozen	-	-
	GSI-HA-01A	387842	6881132	Direct Sampled ¹	✓	-
	GSI-HA-02A	387861	6881135	Frozen	-	-
	GSI-HA-03A	387878	6881131	Frozen	-	-
	GSI-HA-04A	387916	65881130	Direct Sampled ¹	√	-
Mill Complex	GSI-HA-05A	387898	6881125	Frozen	-	-
Complex	MW09-16	387992	6881094	Frozen	-	-
	MW09-17	388075	6880970	Dry	-	-
	MW09-18	388054	6880986	Good	√	Field Blank
	MW09-19	388051	6881016	Good	√	Duplicate
	CH-P-13-01/10	388657	6881116	Frozen	-	-
	CH-P-13-03/10	389145	6881105	Damaged ³	-	-
-	CH-P-13-03/50	389143	6881110	Insufficient Volume	-	-
	CH-P-13-04/10	389138	6881472	Frozen	-	-
	CH-P-13-04/35	389138	6881472	Blocked ³	-	-
Brown	CH-P-13-05/50	388954	6881466	Good	✓	Duplicate
McDade	GLL07-01	388851	6881783	Frozen	-	-
Pit	GLL07-02	389069	6881703	Dry	-	-
	GLL07-03	388959	6881477	Dry	-	-
	MW09-13	389006	6881664	Frozen	-	-
	MW09-14	389008	6881669	Frozen	-	-
	MW09-15	388920	6881727	Frozen	-	-
	CH-P-13-02/10	388924	6881014	Dry/Damaged ⁴	-	-
	GSI-PC-01-B	N/A	N/A	Destroyed ³	-	-
	GSI-PC-02-B	388907	6881786	Frozen	-	-
	GSI-PC-03-B	389256	6881706	Frozen ²	-	-
5	GSI-PC-04-B	389586	6881656	Frozen	-	-
Pony Creek	GSI-PC-05-B	389713	6881661	Frozen	-	-
2.250	MP09-01	N/A	N/A	Destroyed ³	-	-
	MP09-02	388867	6881816	Frozen ²	-	-
	MP09-03	388956	6881739	Frozen	-	-
	MP09-08	389160	6881718	Frozen	-	-

Table 1-1 Summary of Groundwater Well Locations and Samples Collected

A		UTM (Z	one 08N)	Status ^{1,2}	Sample	QA/QC Sample
Area	Well Name	Easting	Northing	Status	Collected	Collected
_	W14103083BH01	389522	6880669	Frozen	-	-
Seepage Dam	W14103083BH02	389561	6880665	Frozen	-	-
Dam	W14103083BH04	389544	6880666	Frozen	-	-
	MP09-04	389575	6880609	Frozen	-	-
	MP09-05	389548	6880590	Frozen	-	-
	MP09-09	389240	6880681	Dry	-	-
	MP09-10	389241	6880684	Frozen	-	-
	MP09-11	389220	6880619	Frozen	-	-
	MP09-12	389220	6880619	Frozen	-	-
	MP09-14	389138	6880722	Frozen	-	-
Tailings Facility	MW09-01	389396	6880563	Damaged ⁴	-	-
	MW09-02	389393	6880562	Good	✓	-
	MW09-03	389411	6880555	Not Located ²	-	-
Tailings	MW09-04	389420	6880557	Not Located ²	-	-
	MW09-05	389413	6880656	Dry	-	-
	MW09-06	389411	6880653	Good	✓	-
	MW09-07	389322	6880699	Dry	-	-
	MW09-08	389620	6880576	Frozen	-	-
	MW09-11	389037	6880711	Dry	-	-
	MW09-20	389592	6880586	Dry	-	-
	MW09-21	389536	6880577	Frozen	-	-
	MW09-22	389495	6880549	Insufficient Volume	-	-
	MW09-23	389459	6880553	Damaged (New) ⁵	✓	-
	MW09-24	389561	6880624	Good	✓	Field Blank
	W14103083BH03	389132	6880730	Frozen	-	-

Notes: 1

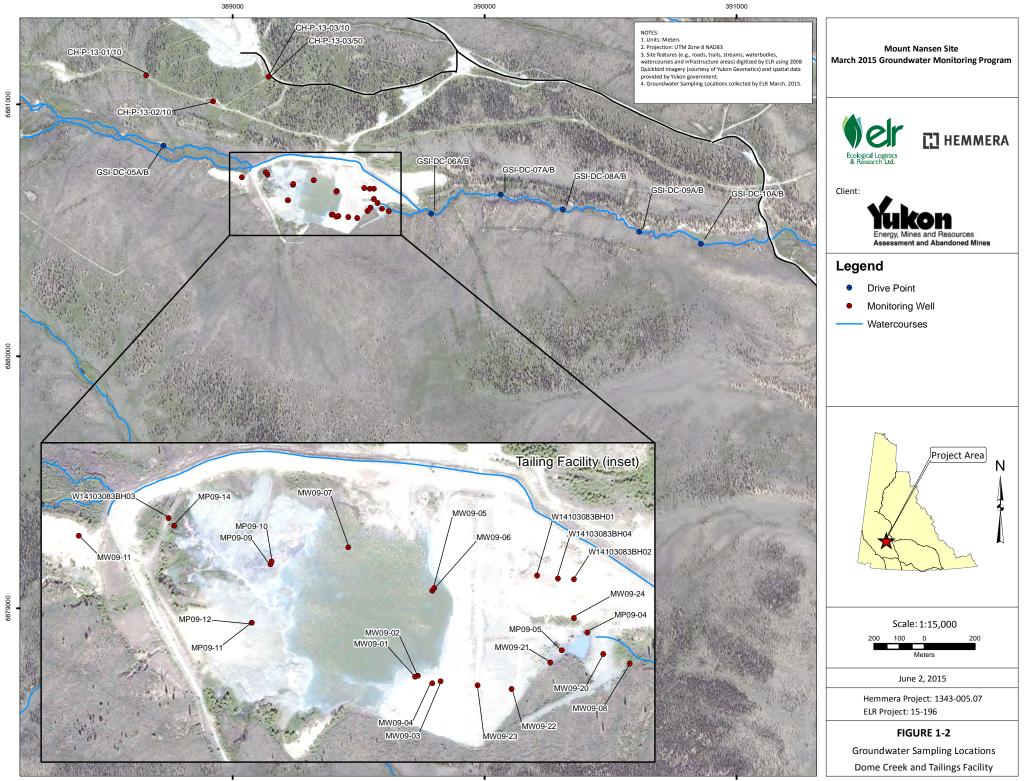
Direct sampling was completed at sample stations where insufficient volume had been encountered during the June 2014 groundwater sampling. This insufficient volume limited standard purging and sampling methodologies.

² Sample site was buried under ice or snow and was therefore not visually inspected. UTM provided from fall 2014 sampling event.

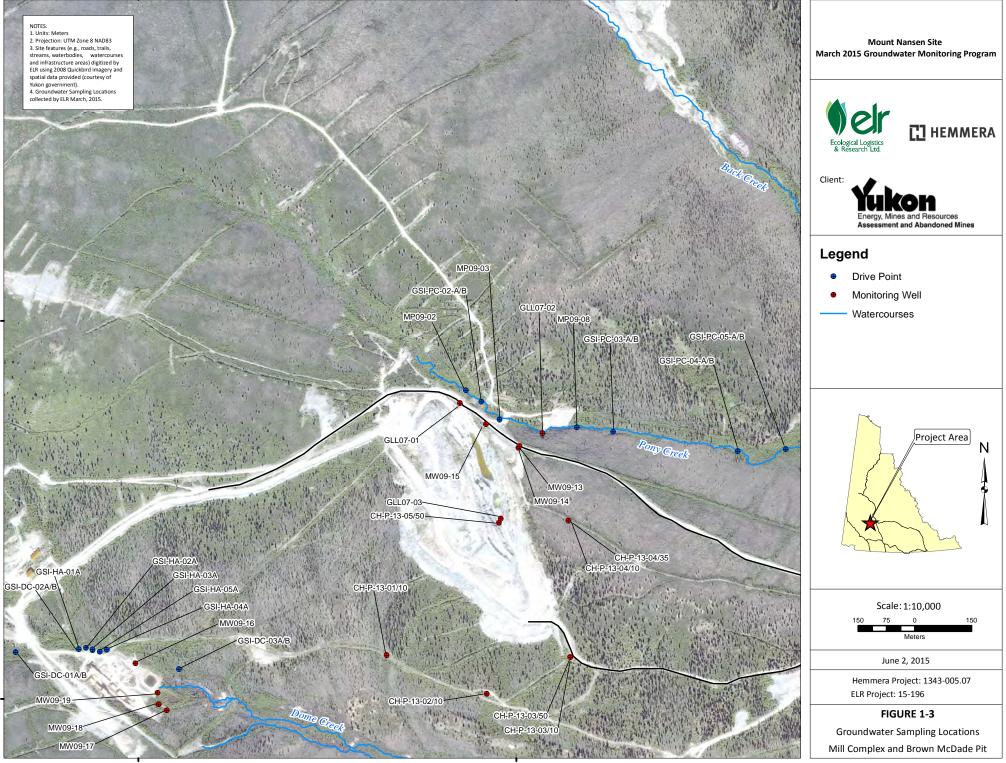
³ Damaged, destroyed, or blocked wells that were excluded from the March 2015 sampling event. These wells have been listed in the summary table but were not listed in the scope of work and are not further discussed in this report.

Groundwater wells previously reported as damaged (MW09-01) or dry/damaged (CH-P-13-02/10) but included in the March sampling event.

⁵ Newly reported damage. Sample site MW09-23 was found damaged in the field during the March 2015 sampling event.







2.0 METHODOLOGY

2.1 PROTOCOLS

Groundwater purging, monitoring and sampling conducted by Hemmera/ELR was in accordance with the Groundwater Sampling Standard Operating Procedures included in the document *Scope of Work: Groundwater Sampling Program – Mount Nansen Site 2014.* These procedures were consistent with Environment Yukon's *Protocol for the Contaminated Sites Regulation #7 - Sampling and Decommissioning* (Environment Yukon, 2011). Methods used were also consistent with the ASTM D4448-01 *Standard Guide for Sampling Groundwater Monitoring Wells* (ASTM, 2013), and the D6452-99 *Guide for Purging Methods for Wells used for Groundwater Quality Investigations* (ASTM, 2012).

2.2 WELL MEASUREMENTS AND PURGING

Upon arriving at each sample station, headspace gases were measured prior to any other well measurements. Oxygen (%), carbon dioxide (ppm), and methane (%LEL) were measured using a RAE Systems MultiRAE Four-Gas Monitor with photoionization detector (PID).

The well structure and casing were inspected for damage, closure, and general conditions. Depth to water (DTW; m), Depth to bottom (DTB; m), well diameter (cm), and well stick-up height (m) were then recorded at each well.

DTB and DTW were measured using either a Solinst - Model 102 Water Level Meter (for 2.54 cm diameter wells) or a Heron Water Tape (for wells with diameter greater than 2.54 cm). DTB and DTW were measured from (in order of preference): 1) a black mark drawn on the top of the well; 2) the bottom of the most significant notch found on the top of the PVC if a mark was not present; or 3) a line that was drawn on the highest point of the well if no distinguishable point of measure was present. Stick-up height was measured from the lowest point on the bottom of the well casing to the highest point (or distinguishing mark) on the well. Water level meters were cleaned between each sample site using Alconox low-foaming phosphate-free detergent solution and deionized water.

Following initial inspection and measurements, groundwater wells were purged and sampled using dedicated equipment. Groundwater wells were purged and sampled using one of two (2) techniques: 1) manual purging using high density polyethylene (HDPE) Waterra tubing and footvalve, or 2) GeoPump peristaltic pump with HDPE tubing. The purging technique chosen for each well was that which would produce the most representative groundwater sample.

Groundwater wells were determined to be sufficiently purged when either three successive field parameter measurements were recorded to be within an allowable tolerance level (as summarized in **Table 2-1**, below) or when a volume of water equivalent to three standing well volumes of water had been purged.

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Groundwater turbidity measured in Nephelometric Turbidity Units (NTU) was also measured prior to sampling (described below in **Section 2.3**) and was used as an indication of sample quality. Where possible, samples were not collected until turbidity was less than 50 NTU. Purge volumes and purge rates were measured using a graduated container and stop watch. All well measurements, purging details, and additional field notes were recorded on customized field forms in order to minimize the potential for field errors; this information is presented in **Table 3-1**.

Field Parameter	Allowable Variance
Temperature (°C)	± 3%
рН	± 0.1
Conductivity (µS/cm)	± 3%
Specific Conductivity (µS/cm)	± 3%

Table 2-1 Groundwater Sampling – Field Parameter Purging Criteria

2.3 DIRECT SAMPLING

During previous events a select number of groundwater wells were found to have an insufficient volume to sample, based on having a limited standing water volume or recharge rate (based on criteria established at that time; Hemmera, 2014a). While these criteria allowed for clear field decisions by the crew, it limited the number of wells that were sampled during the event. An alternate sampling strategy was established by AAM's consultant (AMEC) in order to obtain samples from low producing wells. This approach was followed during the March 2015 sampling event. At all of the wells identified as having insufficient volume in June of 2014, Hemmera/ELR direct sampled the well (prior to purging or collecting field parameter measurements), after which time field parameter measurements were collected if possible. Additionally, a priority ranking system for sample collection was established by AAM's consultant (AMEC) and employed in the field (as summarized in **Table 2-2**). This ranking system was used to ensure that samples for higher priority parameters were collected at each well if limited recharge or volume was encountered. Further samples were also collected following recharge by re-visiting wells, where possible.

In addition to the priority ranking order, Hemmera/ELR also considered the minimum sample volumes required for laboratory procedures (provided to Hemmera/ELR by ALS Laboratories). Where well volume was limited, minimum volumes were collected to maximize the number of program parameters collected.

2.4 FIELD PARAMETERS

Hemmera/ELR measured *in-situ* water quality parameters using YSI Professional Plus field meters, Lamotte 2020we turbidity meters, and Hach DR 890 Portable Colorimeters. Flow-through cells were used with the YSI Professional Plus meters to minimize field parameter variability. The *in-situ* groundwater quality parameters recorded at each sample station included; water temperature (°C), specific conductivity (µs/cm), conductivity (µs/cm), oxidation/reduction potential (ORP; mv), pH (pH units), sulphide (mg/l), dissolved oxygen (mg/l), and turbidity (NTU).

During purging, field parameters were monitored at 5 minute intervals, or at volume related intervals (e.g., every 500 mL) in the case of wells with slow recharge. A final set of measurements was recorded at the conclusion of purging.

2.5 **GROUNDWATER SAMPLING**

Groundwater quality samples were collected and preserved in accordance with laboratory directions, and using techniques consistent with *Standard Methods for the Examination of Water and Wastewater* (Rice et al., 2012). ALS was the analytical subcontractor chosen for this project, and a summary of the sample bottle set (including parameters analysed and preservation techniques) is provided in **Table 2-2**.

In addition to the analytical parameters provided to Hemmera/ELR in the SOW, a separate bottle for dissolved alkalinity was added to each bottle set during this event, to test whether acid or alkaline-generating solids may be affecting alkalinity results. This inclusion was in response to a recommendation made by Hemmera/ELR in the October 2014 program report (Hemmera, 2014b).

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered and Preserved	HNO ₃
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered and Preserved	HCI
2	1 L (plastic)	General Chemistry	250 ml	-	-
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	Preserved	NaOH
4	250 ml (glass amber)	Ammonia (NH3)	120 ml	Preserved	H ₂ SO ₄
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	Preserved	HNO ₃
6	120 ml (plastic)	Sulphide	100 ml	Preserved	Zinc Acetate, capped and mixed, then NaOH
7	250 ml (glass amber)	Total Inorganic Carbon (TIC)	100 ml	-	-
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-

Table 2-2 Groundwater Sampling Parameter Priority, Preservation, and Intended Analysis

2.6 DATA ANALYSIS

Groundwater analytical results were compared to the Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the Protection of Freshwater Aquatic Life (FAL; CCME, 2014). All relevant CCME FAL guidelines are presented in **Table A**.

2.7 QUALITY ASSURANCE AND QUALITY CONTROL

2.7.1 Field QA/QC

Several controls were used by Hemmera/ELR staff while in the field to ensure that sample integrity was maintained and that data was recorded completely and accurately. All equipment used during the sampling process was dedicated to individual wells, including HDPE tubing and Waterra footvalves, laboratory provided pre-cleaned sample bottles, disposable filters, and disposable syringes. Field staff wore dedicated disposable nitrile gloves for all measurements, purging, and sampling. Water level meters were cleaned between well locations, using Alconox low-foaming phosphate-free detergent and deionized water, and field instruments (YSI field meters, turbidity meters, and portable colorimeters) were checked and/or calibrated before each site visit to ensure the parameters recorded were as accurate as possible.

Project-specific field data sheets were created for the sampling event to help ensure that all required measurements were taken, and that information was recorded correctly. Field data sheets have been included as **Appendix B** of this report.

2.7.2 Analytical QA/QC

Analytical QA/QC measures were included in the winter sampling program as outlined in the scope of work and as per standard industry practice. This included the collection field duplicates and field blanks, and the use of travel blanks. Duplicate samples were collected at a ratio of 20% of the regular samples (2 duplicates were collected in relation to 10 samples), and a field blank was collected for each day field sampling was conducted (a total of 3 field blanks were collected). Two travel blanks accompanied the analytical supplies and samples from the lab to the field and back to the lab again (1 for each shipment).

The variation between sample and duplicate values was calculated as relative percent difference (RPD). RPD provides a measure of the relative difference between two values in comparison to their mean value, and is calculated as the difference between a sample and its field duplicate over the average of two values. RPD values greater than 20% indicate a potential error that has affected the precision of sampling or analysis. RPD was calculated according to the following formula:

$$\% RPD = \left(\frac{\left(\frac{x_1 - x_2}{x_1 + x_2}\right)}{2}\right) x \ 100$$

RPD is not calculated if either the sample or the field duplicate concentration is less than five times the detection limit.

The analytical results for field and travel blanks were reviewed to determine whether any of the parameters tested were detected (i.e., result exceeding the detection limit). In such cases, the parameter or element in question and its concentration were reviewed to determine potential sources of contamination or error.

3.0 RESULTS

Summary tables of the laboratory analytical results are presented in **Table A** of this report, including a comparison of results to CCME FAL guidelines. A summary of the QA/QC sampling results is also attached as **Table B**, including analytical data for duplicates, field blanks, and travel blanks. Laboratory analytical reports are provided as **Appendix C**.

3.1 GROUNDWATER SAMPLING SUMMARY

Groundwater sampling was completed between March 18 and 20, 2015. Weather conditions varied throughout the time of sampling with ambient air temperature ranging from -5 to 5°C. As agreed to with AAM, four (4) groundwater wells, previously included in the scope of work (and previous sampling events), were excluded from the March sampling program; one (1) due to previously reported damage (CH-P-13-03/10), one (1) due to a previously reported blockage (CH-P-13-04/35), and two (2) that had previously been reported as destroyed (MP09-01 and GSI-PC-01-B). Two (2) of the remaining 61 groundwater wells in the program had previously been reported as damaged (MW09-01) or dry/damaged (CH-P-13-02/10), but were included in the March sampling event.

Of the 61 wells specified for the March 2015 sampling event, 51 were located and assessed during the March program. The other ten (10) wells were buried beneath ice or snow and were therefore not assessed. Of the 51 wells located, ten (10) wells were sampled; seven (7) using purging and sample methods as per the program protocols, and three (3) sampled directly without purging according to the sample priority ranking. In all three (3) of the direct sampled wells, volumes were insufficient to collect a full sample set. Similarly, in one (1) of the ten (10) properly purged and sampled wells (MW09-06), low well volumes limited collection of a complete bottle set. **Table 3-1** provides a summary of sample success.

Of the 41 wells assessed but not sampled during the program, 28 wells were frozen, nine (9) wells were dry, two (2) wells had insufficient volume for sampling, one (1) well was reported as damaged, and one (1) well was reported as both dry and damaged and could not be sampled. Despite not collecting water quality samples these wells were still assessed and water/ice depth, well depth, and headspace gas measurements were collected where possible. Headspace gas measurements were obtained from 29 of these 41 wells (as specified in **Table 3-2**), but restricted at the other 11 by ice accumulation or site specific well conditions. A summary of the overall condition (status) and sampling result for groundwater wells is provided in **Table 1-1**, and a summary of all well measurements, purge details, and *in-situ* parameter results is provided in **Table 3-2**.

Well Name	Dissolved Metals	Dissolved Mercury	Physical Parameters	Anions/ Nutrients	Cyanide	Ammonia	Thiocyanate	Sulphide	Total Inorganic Carbon	Dissolved Alkalinity
Priority	1a	1b	2	2	3	4	5	6	7	8
GSI-DC-02B	~	~	~	~	-	-	-	-	-	-
GSI-HA-01A	~	~	-	-	-	-	-	-	-	-
GSI-HA-04A	~	~	-	-	-	-	-	-	-	-
MW09-18	~	~	~	~	~	~	✓	✓	~	\checkmark
MW09-19	~	✓	✓	✓	✓	✓	✓	✓	~	\checkmark
CH-P-13-05/50	~	✓	✓	✓	✓	✓	✓	✓	~	\checkmark
MW09-02	~	✓	✓	✓	✓	✓	✓	✓	~	\checkmark
MW09-06	~	~	✓	✓	✓	✓	✓	✓	~	-
MW09-23	~	~	✓	✓	✓	✓	✓	✓	~	\checkmark
MW09-24	√ ion 2.2.4	√ ∧	~	√	√	✓	√	√	✓	✓

Table 3-1 Summary of Samples Collected During March 2015 Sampling Program

Notes: Refer to section 2.2 for details concerning direct sampling methodologies, including minimum volume collection. Samples were collected based on field priority ranking as specified in Table 2-2.

Table 3-2 Groundwater Field Parameters and Well Measurements for March 2015 Sampling Program

Area	Location ID	Sample Date	Stick up Height (m)	Depth To Water (m) ¹	Depth to Bottom (m)	Standing Water Volume (L)	Volume Purged (L)	Purge Start Time	Purge End Time	Elapsed Purge Time	Purge Rate (Vmin)	Criteria ² (3WV/PS/DS)	Draw Down (m)	На	Temperature (°C)	Conductivity (µS/cm)	Specific Conductivity (µS/cm)	ORP (mV)	Dissolved Oxygen (mg/L)	Dissolved Sulphide (mg/L)	Methane (%LEL)	Oxygen (%)	Carbon Dioxide (ppm)	Field Turbidity (NTU)	Method Used	Well Diameter (inches) ⁶
	GSI-DC-01A	18/03/2015	0.74	Dry	0.873	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.4	0	-	-	1 DP
	GSI-DC-01B	18/03/2015	0.70	Dry	1.609	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.5	0	-	-	1 DP
	GSI-DC-02A	18/03/2015	0.91	Dry	2.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	19.4	0	-	-	1 DP
	GSI-DC-02B	18/03/2015	0.76	2.735	3.852	0.56	-	-	-	-	-	DS	-	-	-	-	-	-	-	-	0	20.3	0	-	-	1 DP
	GSI-DC-03A	20/03/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	GSI-DC-03B	20/03/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	GSI-DC-05A	20/03/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	GSI-DC-05B	20/03/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dome	GSI-DC-06A	19/03/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Creek	GSI-DC-06B	19/03/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	GSI-DC-07A	19/03/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	GSI-DC-07B	19/03/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	GSI-DC-08-A	19/03/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	GSI-DC-08-B	19/03/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	GSI-DC-09A	19/03/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	GSI-DC-09-B	19/03/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	GSI-DC-10A	19/03/2015	0.22	0.995	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.0	0	-	-	½ DP
	GSI-DC-10-B	19/03/2015	0.17	0.750	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.0	0	-	-	1 DP
	GSI-HA-01A	18/03/2015	1.14	2.872	3.110	0.12	-	-	-	-	-	DS	-	-	-	-	-	-	-	-	0	21.4	0	-	-	1 DP
	GSI-HA-02A	18/03/2015	1.49	2.283	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.3	0	-	-	1 DP
	GSI-HA-03A	18/03/2015	0.80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.2	0	-	-	1 DP
	GSI-HA-04A	18/03/2015	0.57	1.909	2.188	0.14	-	-	-	-	-	DS	-	-	-	-	-	-	-	-	0	20.1	0	-	Peristaltic	1 DP
Mill Complex	GSI-HA-05A ³	18/03/2015	0.47	-	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.1	0	-	-	-
	MW09-16	20/03/2015	1.21	1.755	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.4	0	-	-	-
	MW09-17	20/03/2015	0.97	Dry	5.710	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	9.5	0	-	-	2
	MW09-18	20/03/2015	0.87	5.131	7.778	5.30	7	14:32	16:02	1:30	0.08	PS	0.01	6.89	0.2	1530	2936	35.1	1.97	0.15	0	19.8	0	4.2	Peristaltic	2
	MW09-19	20/03/2015	0.97	3.062	5.883	5.60	7	13:01	13:35	0:34	0.21	PS	0.60	6.59	0.9	1158	2149	-64.2	1.12	0.05	0	20.0	0	7.1	Peristaltic	2
	CH-P-13-01/10	20/03/2015	0.49	6.452	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.3	0	-	-	1 1⁄2
Brown	CH-P-13-03/10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
McDade	CH-P-13-03/50	19/03/2015	0.54	49.355	50.490	1.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	19.9	0	-	-	1 ½
Pit	CH-P-13-04/10	19/03/2015	0.55	6.240	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.4	0	-	-	2
	CH-P-13-04/35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Area	Location ID	Sample Date	Stick up Height (m)	Depth To Water (m) ¹	Depth to Bottom (m)	Standing Water Volume (L)	Volume Purged (L)	Purge Start Time	Purge End Time	Elapsed Purge Time	Purge Rate (I/min)	Criteria ² (3WV/PS/DS)	Draw Down (m)	На	Temperature (°C)	Conductivity (µS/cm)	Specific Conductivity (µS/cm)	ORP (mV)	Dissolved Oxygen (mg/L)	Dissolved Sulphide (mg/L)	Methane (%LEL)	Oxygen (%)	Carbon Dioxide (ppm)	Field Turbidity (NTU)	Method Used	Well Diameter (inches) ⁶
	CH-P-13-05/50	20/03/2015	0.78	29.050	49.830	22.86	40	11:40	12:38	0:58	0.69	PS	0.35	6.54	1.4	1566	2857	90.4	2.36	0.94	0	20.1	0	48.9	Waterra	1 1⁄2
	GLL07-01	18/03/2015	0.80	13.815	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.1	0	-	-	2
	GLL07-02	18/03/2015	1.30	Dry	7.200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	19.8	0	-	-	6
Brown McDade	GLL07-03	19/03/2015	1.09	Dry	11.602	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.0	0	-	-	2
Pit	MW09-13	18/03/2015	0.76	9.025	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	19.9	0	-	-	-
	MW09-14	18/03/2015	0.74	4.990	Frozen	-	-	I	-	-	-	-	-	-	-	-	-	-	-	-	0	20.0	0	-	-	2
	MW09-15	18/03/2015	0.81	14.073	Frozen	-	-	I	-	-	-	-	-	-	-	-	-	-	-	-	0	20.0	0	-	-	2
	CH-P-13-02/10 ⁷	19/03/2015	0.60	Dry	8.140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	19.8	0	-	-	1 ½
	GSI-PC-01-A	-	-	-	-	-	-	I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	GSI-PC-01-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	GSI-PC-02-A	18/03/2015	0.55	0.854	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.0	0	-	-	1 DP
	GSI-PC-02-B	18/03/2015	0.53	0.887	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	19.9	0	-	-	1 DP
	GSI-PC-03-A	19/03/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	GSI-PC-03-B	19/03/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pony	GSI-PC-04-A	19/03/2015	0.57	0.940	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.3	0	-	-	½ DP
Creek	GSI-PC-04-B	19/03/2015	0.58	0.984	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.3	0	-	-	½ DP
	GSI-PC-05-A	19/03/2015	0.80	2.003	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.0	0	-	-	1⁄2 DP
	GSI-PC-05-B	19/03/2015	0.81	3.715	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.1	0	-	-	1⁄2 DP
	MP09-01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	MP09-02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	MP09-03	18/03/2015	0.73	0.694	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.1	0	-	-	½ DP
	MP09-08	18/03/2015	0.86	0.505	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.0	0	-	-	½ DP
	W14103083BH01 ⁴	19/03/2015	0.62	6.549	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Seepage Dam	W14103083BH02 ⁴	19/03/2015	0.74	6.780	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
	W14103083BH04 ⁴	19/03/2015	0.75	6.677	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
	MP09-04	19/03/2015	1.21	1.182	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.1	0	-	-	1 ½
	MP09-05	19/03/2015	0.39	0.667	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.1	0	-	-	1 ½
	MP09-09	20/03/2015	2.21	Dry	5.610	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.4	0	-	-	1 ¼
Tailings	MP09-10	20/03/2015	1.96	2.493	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.4	0	-	-	1 ¼
Facility	MP09-11	20/03/2015	1.72	1.745	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.4	0	-	-	1 ¼
	MP09-12	20/03/2015	1.67	1.758	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.4	0	-	-	1 ¼
	MP09-14 ³	20/03/2015	0.76	-	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.0	0	-	-	½ DP
	MW09-01 ⁷	19/03/2015	0.79	6.420	9.085	2.93	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.4	0	-	-	1 ½

Area	Location ID	Sample Date	Stick up Height (m)	Depth To Water (m) ¹	Depth to Bottom (m)	Standing Water Volume (L)	Volume Purged (L)	Purge Start Time	Purge End Time	Elapsed Purge Time	Purge Rate (I/min)	Criteria ² (3WV/PS/DS)	Draw Down (m)	Hd	Temperature (°C)	Conductivity (µS/cm)	Specific Conductivity (µS/cm)	ORP (mV)	Dissolved Oxygen (mg/L)	Dissolved Sulphide (mg/L)	Methane (%LEL)	Oxygen (%)	Carbon Dioxide (ppm)	Field Turbidity (NTU)	Method Used	Well Diameter (inches) ⁶
	MW09-02	19/03/2015	0.66	3.431	4.705	2.55	4	14:51	15:15	0:24	0.17	PS	0.74	7.29	2.3	1732	3066	-130.0	0.90	0.02	0	20.4	0	9.7	Peristaltic	2
	MW09-03	20/03/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	MW09-04	20/03/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	MW09-05	19/03/2015	0.83	Dry	7.560	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	15.4	0	-	-	2
	MW09-06	19/03/2015	1.45	4.091	6.040	3.90	5	9:46	10:10	0:24	0.21	PS	1.48	7.51	1.9	1105	1984	209.0	2.60	0.34	0	19.9	0	47.0	Peristaltic	2
	MW09-07	20/03/2015	1.32	Dry	3.393	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	18.9	0	-	-	2
Tailings	MW09-08	19/03/2015	1.09	1.150	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.1	0	-	-	2
Facility	MW09-11	20/03/2015	0.81	Dry	4.915	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.1	0	-	-	2
	MW09-20	19/03/2015	0.80	Dry	3.672	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20	0	-	-	2
	MW09-21	19/03/2015	0.43	1.472	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.1	0	-	-	2
	MW09-22	19/03/2015	0.89	4.024	5.252	2.46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.5	0	-	-	2
	MW09-23 ⁵	19/03/2015	0.14	12.124	15.772	7.30	7	-8	16:20	-	-	-9	0.04	7.4	1.9	800	1450	17.5	3.80	1.22	0	20.4	0	>4000	Waterra	2
	MW09-24	19/03/2015	0.62	9.114	11.193	4.16	15	12:40	13:05	-	0.60	PS	0.20	7.13	0.7	420	995	76.9	7.98	0.23	0	20.1	0	21.7	Bailer	2
	W14103083BH03	20/03/2015	0.70	1.514	Frozen	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	20.1	0	-	-	2

Notes: To maximize the sample return for analytical analysis, field parameters were not collected at direct sampled wells.

¹ Depth to Water (DTW) values for frozen or damaged wells indicates depth to ice or blockage

 2 3WV = Three well volumes purged prior to sample collection, PS = field parameters stabilized prior to sample collection, and DS = sample collected directly without purging.

³ Tubing frozen in well, depth-to-ice could not be measured.

⁴ Head space gases were not measured at these sites. Well was not sealed properly and thermistors and associated wiring prevented in-situ data collection.

Field meter was not functioning sufficiently to collect in-situ parameters at the time of sampling. MW09-23 was re-visited the following day to collect the reported field parameters. Turbidity was out of range of the instrument (>4000 NTU).
 DP refers to Drive Point.

⁷ Sampling was attempted at these locations, although both wells previously reported as damaged (MW09-01) or damaged/dry (CH-P-13-02/10). Well CH-P-13-02/10 is damaged but still can be sampled, and was found to be dry during the program. Well MW09-01 was found to have tailings present in the well (excessive fine grain material) that resulted in a consistency that could not be sampled.

⁸ Purge start time was not recorded in the field.

⁹ Field meter was not functioning correctly at the time of sampling to collect in-situ parameters and therefore no purging criteria was reached.

* Shaded rows indicate monitoring stations where analytical samples were collected.

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3.2 ANALYTICAL RESULTS

Analytical results, including a brief summary of CCME FAL guideline exceedances and a description of factors that may have influenced data precision, are provided below. Details regarding well status, including a description of damaged, destroyed, or underperforming wells, are also discussed.

In several instances, the reported laboratory reportable detection limits (RDL) for parameters exceeded applicable CCME FAL standards (values shaded light grey in **Table A**). In these cases, samples having high levels of certain materials required laboratory dilution in order to perform the required analyses, thereby resulting in an elevated RDL. For the purpose of this report, samples where the reported RDL is higher than the applicable guideline have not been reported as CCME FAL exceedances.

3.2.1 Dome Creek

Groundwater along Dome Creek was sampled between March 18 and March 20, 2015. Samples were obtained from one (1) of the nine (9) drive-point piezometers located within this area identified for the sampling program. Sample site GSI-DC-01B was found dry during the time of sampling. Sample site GSI-DC-10B was found frozen during the time of sampling. Sample sites GSI-DC-03B, GSI-DC-05B, GSI-DC-06B, GSI-DC-07B, GSI-DC-08B and GSI-DC-09-B were frozen underneath a large accumulation ice/overflow. These six (6) sample sites were not visually inspected and therefore no monitoring measurements are provided. Sample site GSI-DC-02B was sampled directly without purging. A summary of the samples collected is provided in **Table 3-1**.

Concentrations of dissolved iron exceeded the CCME FAL guidelines at sample location GSI-DC-02B. Groundwater field parameters were not measured at Dome Creek sample sites due to the occurrence of low volume and frozen wells.

The measurement of in-situ headspace vapours was made difficult at the Dome Creek sample sites due to dedicated sampling tubing being present in these small diameter wells. There was no space in the well head to sample vapours until dedicated sampling equipment was removed, after which time well head gases may have dispersed. All drive-point piezometers located within this area are properly sealed with PVC caps. Secondary wells (B wells) are improperly sealed with a plastic bag and elastic.

3.2.2 Mill Complex

Groundwater in the Mill Complex Area was sampled on March 18 and March 20, 2015. Samples were obtained from four (4) of the nine (9) wells identified in this area. Sample sites GSI-HA-02A, GSI-HA-03A, GSI-HA-05A, and MW09-16 were found frozen during the time of sampling. Sample site MW09-17 was found dry during the time of sampling. Drive-points GSI-HA-01A and GSI-HA-04A were sampled directly without purging. A summary of the samples collected is provided in **Table 3-1**.

Field dissolved oxygen concentrations were less than the CCME FAL guideline for all measurements collected in this area. Concentrations of dissolved arsenic and iron exceeded the CCME FAL guidelines at one or more sample locations in Mill Complex area.

Monitoring wells MW09-18 and MW09-16 have vents installed on the side of the PVC stand pipe, which could have influenced *in-situ* gas concentrations.

Where measured, groundwater turbidity of all samples collected within this area was less than 50 NTU (**Table 3-2**).

3.2.3 Brown McDade Pit

Groundwater wells in the Brown McDade Pit area were sampled between March 18 and March 20, 2015. Samples were obtained from one (1) of the 11 sample sites located within this area (CH-P-13-05/50). Six (6) wells were frozen during the time of sampling (CH-P-13-01/10, CH-P-13-04/10, GLL07-01, MW09-13, MW09-14, and MW09-15), three (3) wells (GLL07-02, GLL07-03, and CH-P-13-02/10) were either dry or dry and damaged, and one well (CH-P-13-03/50) had insufficient volume to collect a sample. A summary of the samples collected is provided in **Table 3-1**.

The field dissolved oxygen concentration was less than the CCME FAL guidelines for the one measurement collected in this area. Concentrations of dissolved cadmium, copper, iron, and zinc exceeded the CCME FAL guidelines at this sample location (CH-P-13-05/50).

Monitoring wells CH-P-13-04/10, CH-P-13-05/50, GLL07-01, GLL07-02, GLL07-03, and MW09-13 had either vents installed on the side of the PVC stand pipe or were missing a proper seal, which could have influenced *in-situ* gas concentrations.

CH-P-13-02/10 was found dry during the time of sampling. Bentonite was found present at the bottom of the well during previous sampling events and therefore the well status has been listed as dry/damaged throughout the report. This well should be redeveloped in a future program but requires a larger quantity of standing water to complete the task.

Where measured, groundwater turbidity collected within this area was less than 50 NTU (Table 3-2).

3.2.4 Pony Creek

Groundwater wells along Pony Creek were monitored between March 18 and March 20, 2015. No samples were obtained from any of the seven (7) sample sites in this area during the sampling event. All seven (7) wells were found frozen during the time of sampling (GSI-PC-02B, GSI-PC-03B, GSI-PC-04B, GSI-PC-05B, MP09-02, MP09-03, and MP09-08). Sample sites GSI-PC-03-B and MP09-02 were frozen beneath a large accumulation of overflow, and were not visually inspected.

Monitoring wells MP09-08 and MP09-03 were missing a proper seal, which could have influenced *in-situ* gas concentrations.

3.2.5 Seepage Dam

Groundwater wells in the Seepage Dam area were monitored on March 19, 2015. No samples were obtained from any of the three (3) sample sites in this area during the sampling event. All three (3) wells (W14103083BH01, W14103083BH02 and W14103083BH04) were found frozen during the time of sampling.

Monitoring wells located in the Seepage Dam area were not properly sealed, which could influence *in-situ* gas concentrations in future sampling events. Instrument wires installed in the well head prevented *in-situ* gas measurements at these sites.

3.2.6 Tailings Facility

Groundwater wells in the Tailings Facility area were sampled between March 19 and March 20, 2015. Samples were obtained from four (4) of the 21 sample sites located in this area (MW09-02, MW09-06, MW09-23, and MW09-24).

Nine (9) wells were found frozen during the time of sampling (MP09-04, MP09-05, MP09-10, MP09-11, MP09-12, MP09-14, MW09-08, MW09-21, and W14103083BH03), five (5) were dry (MP09-09, MW09-05, MW09-07, MW09-11 and MW09-20), two (2) were buried beneath snow and ice and were therefore not located (MW09-03 and MW09-04), one (1) had insufficient volume to sample (MW09-22), and one (1) was damaged and could not be sampled (MW09-01). A summary of the samples collected is provided in **Table 3-1**.

Although well MW09-23 was successfully sampled, Hemmera/ELR noted that the well had been damaged since the October 2014 sampling event. The well appears to have been buckled at an angle during earthworks on the tailings dam, and can only be sampled using waterra tubing. This well as therefore added to those listed as damaged at the site.

Where measured, field dissolved oxygen readings were less than the CCME FAL guideline at sample sites in the Brown McDade Pit area. Concentrations of dissolved arsenic, cadmium, copper, iron, and zinc exceeded the CCME FAL guidelines at one or more sample location in this area. Field dissolved oxygen concentrations were less than the CCME FAL guideline at all sample sites located within this area. Concentrations of fluoride and ammonia, exceeded the CCME FAL guidelines in at least one sample station.

Monitoring wells MP09-09, MP09-10, MP09-11, MP09-12, MP09-14, MW09-01, MW09-07, MW09-08, MW09-20, MW09-22, MW09-23, and W14103083BH03 had either vents installed on the side of the PVC stand pipe or were missing a proper cap/seal, which could have influenced *in-situ* gas concentrations.

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MW09-01 could not be sampled due to an excessive quantity of tailings present in the groundwater. This presence of tailing may indicate the well screen has been damaged or compromised. If this is the case, repairing the well may not be possible and the location may need to be reinstalled.

The measured groundwater turbidity at sample site MW09-23 was out of range of instrument (greater than 4000 NTU) and represented extremely turbid groundwater. Although groundwater samples were obtained from this location, the well was found damaged (as noted above), and it is not known whether this damage may have resulted in the increased turbidity. Field turbidity had been measured at 102 NTU during the October 2014 sampling event. The transducer installed at this location is also in poor condition (wires frayed) and should be replaced before the instrument is lost down the well. All other samples collected within this area had turbidity measurements of less than 50 NTU (**Table 3-2**).

3.3 QUALITY ASSURANCE AND QUALITY CONTROL RESULTS

Two (2) duplicate groundwater samples were collected during the fall sampling event. Two (2) travel blanks were provided by the laboratory and accompanied the samples throughout the sampling program. One (1) field blank was prepared on site for each day of sampling (3 field blanks in total). Detailed results of QA/QC sampling are provided in **Table B**, including RPD values for all duplicate and sample pairs collected.

3.3.1 Field and Travel Blanks

The majority of field blank and travel blank analytical results were reported as less than the RDL, indicating minimal evidence of contamination during the sampling or transportation process.

A detectable concentration of ammonia was recorded in both travel blanks (0.0167 mg/L and 0.0118 mg/L mg/L), and a detectable concentration of potassium was also recorded in two (2) of three (3) field blanks (FB-1 and FB-2; 0.16 mg/L and 0.14 mg/L). The program analytical supplier (ALS) indicated that the detection of low levels of ammonia should not be considered an indication of contamination as low concentrations of ammonia are occasionally found in travel blanks that are prepared too early in advance of the field program. ALS is currently investigating the reasoning for these observed spikes in ammonia.

The detection of potassium in field blank samples is not an occurrence that has been observed during past programs, and may suggest some potential contamination sourced from the environment. Potassium was present in nearly all non-QAQC samples collected during the March sampling program, ranging from 92.8 mg/L and 1.98 mg/L, with the highest concentrations of potassium were observed in samples collected from the tailings area. While elevated potassium concentrations in travel blanks suggests that this element may have been sourced from airborne or other environmental influences, the absence of other elements in the field blanks suggests that there should be no overall influence on the key program parameters.

3.3.2 Field Duplicates

3.3.2.1 MW09-19 and DUP-1

Duplicate and duplicate pair analytical results were reported within an acceptable range of variability (less than 20%) for all analysed parameters, indicating that there was no evidence of contamination during the sampling process.

3.3.2.2 CH-P-13-05/50 and DUP-2

Duplicate and duplicate pair analytical results were reported within an acceptable range of variability (less than 20%) for all analysed parameters, indicating that there was no evidence of contamination during the sampling process.

3.3.3 Quality Assurance and Quality Control Summary

Results for the QA/QC analytical program show minimal evidence of contamination during the sampling, transportation, and laboratory testing process. Overall, across two collected field duplicates, all RPD values were within an acceptable range of variability (less than 20%). Among three field blanks collected in the program, low concentrations of potassium were detected in two (2) field blanks. Finally, low concentrations of ammonia were detection in both travel blanks collected in the program. Overall, these results are considered to represent a sound QA/QC program. Despite detected potassium concentrations in travel blanks, the results suggest overall acceptable practices during field collection and transportation.

3.4 ANALYTICAL TEST OF FILTERED ALKALINITY

Filtered alkalinity samples were collected to test whether acid or alkaline-generating solids maybe affecting alkalinity results. Filtered and non-filtered alkalinity were both assessed from six (6) sample locations (MW09-18, MW09-19, CH-P-13-05/50, MW09-02, MW09-23, and MW09-24) during the March 2015 program, and analyzed for all QA/QC samples (duplicates, field blanks, and travel blanks). The four (4) other wells sampled did not have sufficient groundwater to collect filtered alkalinity (**Table 3-1**). A summary of filtered and unfiltered alkalinity results is provided in **Table 3-3**.

Well Name	Non-Filtered Alkalinity	Filtered Alkalinity	RPD
	mg/L	mg/L	%
MW09-18	491	626	24.2
MW09-19	483	482	0.2
DUP-1 (MW09-19)	472	487	3.1
CH-P-13-05/50	94.7	95.1	0.4
DUP-2 (CH-P-13-05/50)	96.4	97.6	1.2
MW09-02	40.9	43.8	6.8
MW09-23	365	380	4.0
MW09-24	189	190	0.5
FB-1	<2.0	<2.0	nc
FB-2	<2.0	<2.0	nc
Travel Blank 1	<2.0	<2.0	nc
Travel Blank 1	<2.0	<2.0	nc

Table 3-3 Comparison of Alkalinity and Filtered Alkalinity Results

Note: nc = not calculated. RPD is not calculated if either the sample or the field duplicate concentration is less than five times the detection limit.

Of the eight (8) samples above RDL, seven (7) show that filtered alkalinity samples were slightly more alkaline than unfiltered samples. This occurrence was most obvious at sample site MW09-18, where an RPD of 24.2 percent was found between filtered and unfiltered samples.

4.0 **RECOMMENDATIONS**

Hemmera/ELR has prepared the following recommendations based on the observations and results of the March 2015 groundwater sampling program.

1. Damaged or degraded wells should be repaired. Damaged or destroyed wells were excluded from the March 2015 sampling event, although sampling was attempted at two wells listed as damaged during earlier sampling events (as specified by AAM). One additional damaged well was noted during the March sampling event (MW09-23).

Damaged or degraded wells noted during the March 2015 sampling event include the following, MW09-01, CH-P-13-02/10, and MW09-23.

MW09-01 could not be sampled due to an excessive quantity of tailings present in the groundwater. This presence of tailing may indicate the well screen has been damaged or compromised. If this is the case, repairing the well may not be possible and the location may need to be reinstalled.

CH-P-13-02/10 was found dry during the time of sampling. Bentonite was found present at the bottom of the well during previous sampling events and therefore the well status has been listed as dry/damaged throughout the report. This well should be redeveloped in a future program but requires a larger quantity of standing water to complete the task.

Sample site MW09-23 was found damaged in the field (the PVC is bent at the surface), presumably due to grading. The transducer installed at this location is also in poor condition (wires frayed) and should be replaced before the instrument is lost down the well. Although samples were obtained from this location, the well still requires repairs.

- Monitoring wells should be fitted for the measurement of in-situ headspace vapour. This would include installing PVC caps or J-plugs on each well, and blocking vents currently installed on the side of some of the PVC wells. Wells which are not properly fitted for in-situ headspace vapour monitoring include; MW09-18, MW09-16, CH-P-13-04/10, CH-P-13-05/50, GLL07-01, GLL07-02, GLL07-03, MW09-13, MP09-08, MP09-03, W14103083BH01, W14103083BH02, W14103083BH04, MP09-09, MP09-10, MP09-11, MP09-12, MP09-14, MW09-01, MW09-07, MW09-08, MW09-20, MW09-22, MW09-23, and W14103083BH03.
- Due to the accumulation of ice/overflow on Dome Creek and Pony Creek, many of the drive-point piezometers installed in these areas were buried and could not be located at the time of sampling (Table 1-1). During future monitoring events, drive-points located in these areas should be well flagged in anticipation of winter ice accumulation.
- 4. At certain drive-point sample locations (**Table 1-1**) tubing was found frozen in the well, and therefore depth-to-ice could not be measured. If future winter monitoring events are anticipated, tubing should be removed from the drive-point wells following the fall sampling event. This will allow for depth-to-ice measurements during winter sampling.

5.0 CLOSURE

We have appreciated the opportunity of working with you on this project and trust that this report is satisfactory to your requirements. Please feel free to contact the undersigned regarding any questions or further information that you may require.

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6.0 **REFERENCES**

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 Prepared pursuant to Part 6 Administration, Section 21, Contaminated Sites Regulations, OIC 2002/171.

7.0 STATEMENT OF LIMITATIONS

This report was prepared by Hemmera Envirochem Inc. ("Hemmera"), based on fieldwork conducted by Hemmera, for the sole benefit and exclusive use of the Yukon Government. The material in it reflects Hemmera's best judgment in light of the information available to it at the time of preparing this Report. Any use that a third party makes of this Report, or any reliance on or decision made based on it, is the responsibility of such third parties. Hemmera accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken based on this Report.

Hemmera has performed the work as described above and made the findings and conclusions set out in this Report in a manner consistent with the level of care and skill normally exercised by members of the environmental science profession practicing under similar conditions at the time the work was performed.

This Report represents a reasonable review of the information available to Hemmera within the established Scope, work schedule and budgetary constraints. It is possible that the levels of contamination or hazardous materials may vary across the Site, and hence currently unrecognised contamination or potentially hazardous materials may exist at the Site. No warranty, expressed or implied, is given concerning the presence or level of contamination on the Site, except as specifically noted in this Report. The conclusions and recommendations contained in this Report are based upon applicable legislation existing at the time the Report was drafted. Any changes in the legislation may alter the conclusions and/or recommendations contained in the Report. Regulatory implications discussed in this Report were based on the applicable legislation existing at the time the applicable legislation existing at the time the resonance on the report. Report was written.

In preparing this Report, Hemmera has relied in good faith on information provided by others as noted in this Report, and has assumed that the information provided by those individuals is both factual and accurate. Hemmera accepts no responsibility for any deficiency, misstatement or inaccuracy in this Report resulting from the information provided by those individuals.

The liability of Hemmera to the Yukon Government shall be limited to injury or loss caused by the negligent acts of Hemmera. The total aggregate liability of Hemmera related to this agreement shall not exceed the lesser of the actual damages incurred, or the total fee of Hemmera for services rendered on this project.

TABLES

Table A: Groundwater Sampling Analytical Results and CCME Guideline Exceedances for 2015 March Sampling Program

			Llomo Crook		Mill Co	omplex		Brown McDade Pit Tailings						
	ŀ	Site Location:	Dome Creek			MW09-18	MW09-19				•			
	F	Sample Location:	GSI-DC-02B	GSI-HA-01A	GSI-HA-04A	MW09-18	MW09-19	CH-P-13-05/50	MW09-02	MW09-06	MW09-23	MW09-24		
		Sample ID:	GSI-DC-02B	GSI-HA-01A	GSI-HA-04A	MW09-18	MW09-19	CH-P-13-05-/50	MW09-02	MW09-06	MW09-23	MW09-24		
		Date Sampled:	18/03/2015	18/03/2015	18/03/2015	20/03/2015	20/03/2015	20/03/2015	19/03/2015	19/03/2015	19/03/2015	19/03/2015		
		Job Number:	L1589940	L1589940	L1589940	L1590448	L1590448	L1590448	L1589940	L1589940	L1589940	L1589940		
		Well Status:	Direct Sampled	Direct Sampled	Direct Sampled	Good	Good	Good	Good	Good	Good	Good		
Parameter	Units	CCME FAL ^{3,4}												
Field Tests														
Field Dissolved Oxygen	mg/L	9.5 ⁵	-	-	-	1.97	1.12	2.36	0.90	2.60	3.80	7.98		
Field Temperature	°C	-	-	-	-	0.2	0.9	1.4	2.3	1.9	1.9	0.7		
Field pH p	pH Units	6.5-9 ⁶	-	-	-	6.89	6.59	6.54	7.29	7.51	7.40	7.13		
Field Conductance	µS/cm	-	-	-	-	1530	1158	1566	1732	1105	800	420		
Field Conductance, Specific	µS/cm	-	-	-	-	2936	2149	2857	3066	1984	1450	995		
Field Redox, Relative to SHE	mV	-	-	-	-	35.1	-64.2	90.4	-130	209	17.5	76.9		
Field Turbidity	NTU	-	-	-	-	4.2	7.1	48.9	9.7	47.0	-	21.7		
Physical Tests														
Conductivity (uS/cm)	µS/cm	-	1010	-	-	2770	2010	2720	2820	1910	1260	979		
Hardness, Total (CaCO3)	mg/L	-	632	657	647	2060	1300	1910	1580	1310	618	620		
pH r	pH Units	-	8.1	-	-	7.57	7.29	6.58	6.49	7.81	7.33	7.38		
Anions and Nutrients														
Alkalinity, Total (CaCO3)	mg/L	-	295	-	-	491	483	94.7	40.9	119	365	189		
Filtered Alkalinity	mg/L	-	-	-	-	626	482	95.1	43.8	-	380	190		
Ammonia (N)	mg/L	Varies ⁷	-	-	-	0.0339	6.88	0.0381	14.4	0.733	3.79	0.0113		
Chloride	mg/L	-	<1.000	-	-	<5.000	<5.000	<5.000	<10.000	<2.500	<2.500	<1.000		
Fluoride	mg/L	0.12	0.066	-	-	<0.200	<0.200	<0.200	0.75	0.26	0.16	<0.040		
Nitrate	mg/L	13	0.778	-	-	<0.050	<0.050	<0.050	0.5	0.192	<0.025	3.28		
Nitrite	mg/L	0.06	0.0102	-	-	<0.010	<0.010	<0.010	0.023	0.0138	0.0058	<0.002		
Total Kjeldahl Nitrogen	mg/L	-	-	-	-	0.14	7.47	0.149	15.7	1.16	5.73	0.378		
Sulfate (SO4)	mg/L	-	337	-	-	1570	909	1880	2020	1190	428	387		
Sulfide	mg/L	-	-	-	-	<0.020	0.134	<0.020	<0.020	<0.020	0.023	<0.020		
Anion Sum	mEq/L	-	13	-	-	42.5	28.6	41.1	43	27.1	16.2	12.1		
	mEq/L	-	13.1	-	-	42	29.3	41.5	42.1	27.7	15.3	12.8		
Cation - Anion Balance	%	-	0.4	-	-	-0.6	1.2	0.5	-1	1	-3	3.1		
Cyanides														
Cyanide, WAD	mg/L	-	-	-	-	<0.005	<0.005	<0.005	0.0053	<0.005	<0.005	<0.005		
Cyanide, Total	mg/L	-	-	-	-	<0.005	<0.005	<0.005	0.169	<0.005	0.0376	0.0117		
Thiocyanate (SCN)	mg/L	-	-	-	-	<0.5	0.68	<0.5	1.28	<0.5	<0.5	<0.5		
Cyanide, Free	mg/L	0.005	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		
Organic/Inorganic Carbon														
Total Inorganic Carbon	mg/L	-	-	-	-	104	103	14.8	3.81	21.6	76.6	37.1		
Total Organic Carbon	mg/L	-	-	-	-	2.62	22.2	2.37	5.71	7.27	25.6	8.74		

Table A: Groundwater Sampling Analytical Results and CCME Guideline Exceedances for 2015 March Sampling Program

		Site Location:	Dome Creek	Mill Complex Brown McDade Pit								Tailings		
		Sample Location:	GSI-DC-02B	GSI-HA-01A	GSI-HA-04A	MW09-18	MW09-19	CH-P-13-05/50	MW09-02	MW09-06	MW09-23	MW09-24		
			001 00 020		0011// 04//				111100 02		111100 20	1111100 24		
		Sample ID:	GSI-DC-02B	GSI-HA-01A	GSI-HA-04A	MW09-18	MW09-19	CH-P-13-05-/50	MW09-02	MW09-06	MW09-23	MW09-24		
		Date Sampled:	18/03/2015	18/03/2015	18/03/2015	20/03/2015	20/03/2015	20/03/2015	19/03/2015	19/03/2015	19/03/2015	19/03/2015		
		Job Number:	L1589940	L1589940	L1589940	L1590448	L1590448	L1590448	L1589940	L1589940	L1589940	L1589940		
		Well Status:	Direct Sampled	Direct Sampled	Direct Sampled	Good	Good	Good	Good	Good	Good	Good		
Parameter	Units	CCME FAL ^{3,4}												
Dissolved Metals														
Aluminum	mg/L	Varies ⁸	0.0017	0.0038	0.0042	<0.002	0.0134	0.0649	<0.005	0.002	0.0182	0.0012		
Antimony	mg/L	-	0.00051	0.00047	0.00141	0.00041	0.00046	<0.0005	0.00508	0.213	0.00032	0.00018		
Arsenic	mg/L	0.005	0.00298	0.0147	0.00517	0.0556	0.125	0.00444	19.2	0.197	0.0168	0.00165		
Barium	mg/L	-	0.103	0.175	0.116	0.0094	0.052	0.00627	0.00896	0.00762	0.0375	0.205		
Beryllium	mg/L	-	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.0001		
Bismuth	mg/L	-	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0025	<0.0025	<0.001	<0.001	<0.0005		
Boron	mg/L	1.5	<0.01	<0.01	<0.01	<0.02	0.13	<0.05	0.058	0.116	0.169	0.015		
Cadmium	mg/L	Varies ⁹	0.000059	<0.00001	0.000017	0.00005	<0.00002	0.33	0.000707	0.00557	0.000025	0.000058		
Calcium	mg/L	-	166	172	166	369	302	453	487	443	159	169		
Chromium	mg/L	0.001 ¹⁰	0.00017	0.00015	<0.0001	<0.0002	0.00041	<0.0005	<0.0005	<0.0002	0.00022	0.00031		
Cobalt	mg/L	-	0.00169	0.00018	0.0004	0.0003	0.00306	0.0398	0.0115	0.00151	0.0192	0.00053		
Copper	mg/L	Varies ¹¹	0.00208	0.00128	0.00046	<0.0004	<0.0004	0.055	<0.001	0.0067	<0.0004	0.00769		
Iron	mg/L	0.3	0.331	4	1.55	0.037	24.4	11.3	46.7	<0.01	5.83	0.01		
Lead	mg/L	Varies ¹²	0.000078	0.000085	0.000056	<0.0001	<0.0001	0.00451	<0.00025	0.00045	<0.0001	<0.00005		
Lithium	mg/L	-	0.00262	0.00686	0.00491	0.0216	0.0081	0.0379	0.0284	0.0089	<0.001	0.0012		
Magnesium	mg/L	-	52.8	55.5	56.4	277	133	188	87.8	50.4	53.8	48.3		
Manganese	mg/L	-	2.85	0.206	0.321	0.848	9.2	37.5	35.2	6.31	11.2	0.000515		
Mercury	mg/L	0.000026	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001		
Molybdenum	mg/L	0.073	0.00487	0.000739	0.000531	0.00011	0.00013	0.0004	0.00515	0.00564	0.00375	0.000203		
Nickel	mg/L	Varies ¹³	0.0152	0.00423	0.00155	<0.001	0.0012	0.0143	0.003	0.0023	0.0015	<0.0005		
Phosphorus	mg/L	-	<0.050	<0.050	<0.050	<0.050	0.207	<0.050	<0.050	<0.050	<0.050	<0.050		
Potassium	mg/L	-	3.67	3.66	2.95	7.61	9.21	5	92.8	15.4	7.28	1.98		
Selenium	mg/L	0.001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	0.00048		
Silicon	mg/L	-	6.25	6.09	5.12	5.35	11	7.2	6.61	6.81	4.98	6.12		
Silver	mg/L	0.0001	<0.00001	<0.00001	<0.00001	<0.00002	<0.00002	<0.00005	<0.00005	0.000029	<0.00002	<0.00001		
Sodium	mg/L	-	5.54	5.76	4.65	13.1	20.6	8.37	77.1	17.4	40.1	9.09		
Strontium	mg/L	-	0.353	0.385	0.399	1.08	1.04	0.567	0.998	0.696	0.392	0.686		
Sulfur	mg/L	-	114	132	145	525	311	658	632	404	129	139		
Thallium	mg/L	0.0008	<0.00001	<0.00001	<0.00001	0.000257	<0.00002	0.00052	0.000238	0.00036	<0.00002	<0.00001		
Tin	mg/L	-	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	<0.0001		
Titanium	mg/L	-	<0.01	<0.01	<0.01	<0.02	<0.02	<0.05	<0.05	<0.02	<0.02	<0.01		
Uranium	mg/L	0.015	0.000625	0.00008	0.000615	0.00779	0.000291	0.000695	0.00038	0.00159	0.00182	0.00324		
Vanadium	mg/L	-	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.005	<0.002	<0.002	<0.001		
Zinc	mg/L	0.03	0.0077	0.0057	0.0043	0.0031	<0.002	31.7	0.299	0.0939	0.0051	0.0014		
		0.00	5.00.1	5.000,	5.00.0	3.0001	0.002							

Table B: QA/QC Analytical Data

		Sample Location:		MW09-19			CH-P-13-05/50		GSI-HA-03A	MW09-24	MW09-18	N	//A
		Sample ID:	MW09-19	DUP-1		CH-P-13-05-/50	DUP-2		FB-1	FB-2	FB-3	TRAVEL BLANK	TRAVEL BLANK
		Date Sampled:	20/03/2015	20/03/2015	14	20/03/2015	20/03/2015	14	18/03/2015	19/03/2015	20/03/2015	20/03/2015	23/03/2015
		Job Number:	L1590448	L1590448	RPD (%) ¹⁴	L1590448	L1590448	RPD (%) ¹⁴	L1589940	L1589940	L1590448	L1589940	L1590448
		Well Status:	Good	Good		Good	Good		-	-	-	-	-
Parameter	Units	CCME FAL ^{3,4}											
Field Tests													
Field Dissolved Oxygen	mg/L	9.5 ⁵	1.12	1.12	-	2.36	2.36	-	-	-	-	-	-
Field Temperature	°C	-	0.9	0.9	-	1.4	1.4	-	-	-	-	-	-
Field pH	pH Units	6.5-9 ⁶	6.59	6.59	-	6.54	6.54	-	-	-	-	-	-
Field Conductance	µS/cm	-	1158	1158	-	1566	1566	-	-	-	-	-	-
Field Conductance, Specific	µS/cm	-	2149	2149	-	2857	2857	-	-	-	-	-	-
Field Redox, Relative to SHE	mV	-	-64.2	-64.2	-	90.4	90.4	-	-	-	-	-	-
Field Turbidity	NTU	-	7.1	7.1	-	48.9	48.9	-	-	-	-	-	-
Physical Tests													
Conductivity (uS/cm)	µS/cm	-	2010	1910	5.1	2720	2710	0.4	<2.0	<2.0	<2.0	<2.0	<2.0
Hardness, Total (CaCO3)	mg/L	-	1300	1330	2.3	1910	1920	0.5	<0.500	<0.500	<0.500	<0.500	<0.500
рН	pH Units	-	7.29	7.11	2.5	6.58	6.56	0.3	5.45	5.98	5.87	5.23	5.45
Anions and Nutrients													
Alkalinity, Total (CaCO3)	mg/L	-	483	472	2.3	94.7	96.4	1.8	<2.000	<2.000	<2.000	<2.000	<2.000
Filtered Alkalinity	mg/L	-	482	487	1.0	95.1	97.6	2.6	<2.000	<2.000	<2.000		
Ammonia (N)	mg/L	Varies ⁷	6.88	6.75	1.9	0.0381	0.0377	1.1	<0.005	<0.005	<0.005	0.0167	0.0118
Chloride	mg/L	-	<5.000	<2.500	nc	<5.000	<5.000	nc	<0.500	<0.500	<0.500	<0.500	<0.500
Fluoride	mg/L	0.12	<0.200	<0.100	nc	<0.200	0.2	nc	<0.020	<0.020	<0.020	<0.020	<0.020
Nitrate	mg/L	13	<0.050	<0.025	nc	<0.050	<0.050	nc	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrite	mg/L	0.06	<0.010	<0.005	nc	<0.010	<0.010	nc	<0.001	<0.001	<0.001	<0.001	<0.001
Total Kjeldahl Nitrogen	mg/L	-	7.47	7.48	0.1	0.149	0.157	nc	<0.050	<0.050	<0.050	<0.050	<0.050
Sulfate (SO4)	mg/L	-	909	882	3.0	1880	1880	0.0	<0.300	<0.300	<0.300	<0.300	<0.300
Sulfide	mg/L	-	0.134	0.132	1.5	<0.020	<0.020	nc	<0.020	<0.020	<0.020	<0.020	<0.020
Anion Sum	mEq/L	-	28.6	27.8	-	41.1	41	-	<0.10	<0.10	<0.10	<0.10	<0.10
Cation Sum	mEq/L	-	29.3	29.9	-	41.5	41.8	-	<0.10	<0.10	<0.10	<0.10	<0.10
Cation - Anion Balance	%	-	1.2	3.6	-	0.5	0.9	-	0	0	0	0	0
Cyanides													
Cyanide, WAD	mg/L	-	<0.005	<0.005	nc	<0.005	<0.005	nc	<0.005	<0.005	<0.005	<0.005	<0.005
Cyanide, Total	mg/L	-	<0.005	<0.005	nc	<0.005	<0.005	nc	<0.005	<0.005	<0.005	<0.005	<0.005
Thiocyanate (SCN)	mg/L	-	0.68	0.66	nc	<0.5	<0.5	nc	<0.5	<0.5	<0.5	<0.5	<0.5
Cyanide, Free	mg/L	0.005	<0.005	<0.005	nc	<0.005	<0.005	nc	<0.005	<0.005	<0.005	<0.005	<0.005
Organic/Inorganic Carbon													
Total Inorganic Carbon	mg/L	-	103	101	2.0	14.8	13.4	9.9	<0.500	<0.500	<0.500	<0.500	<0.500
Total Organic Carbon	mg/L	-	22.2	21.7	2.3	2.37	2.44	nc	<0.500	<0.500	<0.500	<0.500	<0.500

Table B: QA/QC Analytical Data

		Sample Location:		MW09-19			CH-P-13-05/50		GSI-HA-03A	MW09-24	MW09-18	N	I/A
		Sample ID:	MW09-19	DUP-1		CH-P-13-05-/50	DUP-2		FB-1	FB-2	FB-3	TRAVEL BLANK	TRAVEL BLANK
		Date Sampled:	20/03/2015	20/03/2015	14	20/03/2015	20/03/2015	-	18/03/2015	19/03/2015	20/03/2015	20/03/2015	23/03/2015
		Job Number:	L1590448	L1590448	RPD (%) ¹⁴	L1590448	L1590448	RPD (%) ¹⁴	L1589940	L1589940	L1590448	L1589940	L1590448
		Well Status:	Good	Good		Good	Good		-	-	-	-	-
Parameter	Units	CCME FAL ^{3,4}											
Dissolved Metals													
Aluminum	mg/L	Varies ⁸	0.0134	0.0127	5.4	0.0649	0.0573	12.4	<0.001	<0.001	<0.001	-	-
Antimony	mg/L	-	0.00046	0.00048	nc	<0.0005	<0.0005	nc	<0.0001	<0.0001	<0.0001	-	-
Arsenic	mg/L	0.005	0.125	0.131	4.7	0.00444	0.00455	2.4	<0.0001	<0.0001	<0.0001	-	-
Barium	mg/L	-	0.052	0.0542	4.1	0.00627	0.00639	1.9	<0.00005	<0.00005	<0.00005	-	-
Beryllium	mg/L	-	<0.0002	<0.0002	nc	<0.0005	<0.0005	nc	<0.0001	<0.0001	<0.0001	-	-
Bismuth	mg/L	-	<0.001	<0.001	nc	<0.0025	<0.0025	nc	<0.0005	<0.0005	<0.0005	-	-
Boron	mg/L	1.5	0.13	0.127	2.3	<0.05	<0.05	nc	<0.01	<0.01	<0.01	-	-
Cadmium	mg/L	Varies ⁹	<0.00002	<0.00002	nc	0.33	0.349	5.6	<0.00001	<0.00001	<0.00001	-	-
Calcium	mg/L	-	302	309	2.3	453	460	1.5	<0.05	<0.05	<0.05	-	-
Chromium	mg/L	0.001 10	0.00041	0.00035	nc	<0.0005	<0.0005	nc	<0.0001	<0.0001	<0.0001	-	-
Cobalt	mg/L	-	0.00306	0.00303	1.0	0.0398	0.0402	1.0	<0.0001	<0.0001	<0.0001	-	-
Copper	mg/L	Varies ¹¹	<0.0004	<0.0004	nc	0.055	0.0555	0.9	<0.0002	<0.0002	<0.0002	-	-
Iron	mg/L	0.3	24.4	25.2	3.2	11.3	11.6	2.6	<0.01	<0.01	<0.01	-	-
Lead	mg/L	Varies ¹²	<0.0001	<0.0001	nc	0.00451	0.00456	1.1	<0.00005	<0.00005	<0.00005	-	-
Lithium	mg/L	-	0.0081	0.0069	16.0	0.0379	0.0368	2.9	<0.0005	<0.0005	<0.0005	-	-
Magnesium	mg/L	-	133	136	2.2	188	187	0.5	<0.1	<0.1	<0.1	-	-
Manganese	mg/L	-	9.2	9.24	0.4	37.5	37.5	0.0	<0.00005	<0.00005	<0.00005	-	-
Mercury	mg/L	0.000026	<0.00001	<0.00001	nc	<0.00001	<0.00001	nc	<0.00001	<0.00001	<0.00001	-	-
Molybdenum	mg/L	0.073	0.00013	0.00014	nc	0.0004	0.00042	nc	<0.00005	<0.00005	<0.00005	-	-
Nickel	mg/L	Varies ¹³	0.0012	0.0015	nc	0.0143	0.0142	0.7	<0.0005	<0.0005	<0.0005	-	-
Phosphorus	mg/L	-	0.207	0.211	nc	<0.050	<0.050	nc	<0.050	<0.050	<0.050	-	-
Potassium	mg/L	-	9.21	9.85	6.7	5	5.15	3.0	0.16	0.14	<0.1	-	-
Selenium	mg/L	0.001	<0.0002	<0.0002	nc	<0.0005	<0.0005	nc	<0.0001	<0.0001	<0.0001	-	-
Silicon	mg/L	-	11	11.4	3.6	7.2	7.34	1.9	<0.05	<0.05	<0.05	-	-
Silver	mg/L	0.0001	<0.00002	<0.00002	nc	<0.00005	<0.00005	nc	<0.00001	<0.00001	<0.00001	-	-
Sodium	mg/L	-	20.6	20.4	1.0	8.37	8.31	0.7	<0.05	<0.05	<0.05	-	-
Strontium	mg/L	-	1.04	1.1	5.6	0.567	0.578	1.9	<0.0002	<0.0002	<0.0002	-	-
Sulfur	mg/L	-	311	313	0.6	658	645	2.0	<0.500	<0.500	<0.500	-	-
Thallium	mg/L	0.0008	<0.00002	<0.00002	nc	0.00052	0.000543	4.3	<0.00001	<0.00001	<0.00001	-	-
Tin	mg/L	-	<0.0002	<0.0002	nc	<0.0005	<0.0005	nc	<0.0001	<0.0001	<0.0001	-	-
Titanium	mg/L	-	<0.02	<0.02	nc	<0.05	<0.05	nc	<0.01	<0.01	<0.01	-	-
Uranium	mg/L	0.015	0.000291	0.000296	1.7	0.000695	0.000709	2.0	<0.00001	<0.00001	<0.00001	-	-
Vanadium	mg/L	-	<0.002	<0.002	nc	<0.005	<0.005	nc	<0.001	<0.001	<0.001	-	-
Zinc	mg/L	0.03	<0.002	<0.002	nc	31.7	31.8	0.3	<0.001	<0.001	<0.001	-	-

Table B: QA/QC Analytical Data

		Sample Location:		MW09-19			CH-P-13-05/50		GSI-HA-03A	MW09-24	MW09-18	N	/A
		Sample ID:	MW09-19	DUP-1		CH-P-13-05-/50	DUP-2		FB-1	FB-2	FB-3	TRAVEL BLANK	TRAVEL BLANK
		Date Sampled:	20/03/2015	20/03/2015	44	20/03/2015	20/03/2015		18/03/2015	19/03/2015	20/03/2015	20/03/2015	23/03/2015
		Job Number:	L1590448	L1590448	RPD (%) ¹⁴	L1590448	L1590448	RPD (%) ¹⁴	L1589940	L1589940	L1590448	L1589940	L1590448
		Well Status:	Good	Good		Good	Good		-	-	-	-	-
Parameter	Units	CCME FAL ^{3,4}											
Total Metals													
Aluminum	mg/L	Varies ⁸	-	-	-	-	-	-	-	-	-	<0.003	<0.003
Antimony	mg/L	-	-	-	-	-	-	-	-	-	-	<0.0001	<0.0001
Arsenic	mg/L	0.005	-	-	-	-	-	-	-	-	-	<0.0001	<0.0001
Barium	mg/L	-	-	-	-	-	-	-	-	-	-	<0.00005	<0.00005
Beryllium	mg/L	-	-	-	-	-	-	-	-	-	-	<0.0001	<0.0001
Bismuth	mg/L	-	-	-	-	-	-	-	-	-	-	<0.0005	<0.0005
Boron	mg/L	1.5	-	-	-	-	-	-	-	-	-	<0.01	<0.01
Cadmium	mg/L	Varies ⁹	-	-	-	-	-	-	-	-	-	<0.00001	<0.00001
Calcium	mg/L	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05
Chromium	mg/L	0.001 ¹⁰	-	-	-	-	-	-	-	-	-	0.00025	<0.0001
Cobalt	mg/L	-	-	-	-	-	-	-	-	-	-	<0.0001	<0.0001
Copper	mg/L	Varies ¹¹	-	-	-	-	-	-	-	-	-	<0.0005	<0.0005
Iron	mg/L	0.3	-	-	-	-	-	-	-	-	-	<0.01	<0.01
Lead	mg/L	Varies ¹²	-	-	-	-	-	-	-	-	-	<0.00005	<0.00005
Lithium	mg/L	-	-	-	-	-	-	-	-	-	-	<0.0005	<0.0005
Magnesium	mg/L	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1
Manganese	mg/L	-	-	-	-	-	-	-	-	-	-	<0.00005	<0.00005
Mercury	mg/L	0.000026	-	-	-	-	-	-	-	-	-	<0.00001	<0.00001
Molybdenum	mg/L	0.073	-	-	-	-	-	-	-	-	-	<0.00005	<0.00005
Nickel	mg/L	Varies ¹³	-	-	-	-	-	-	-	-	-	<0.0005	<0.0005
Phosphorus	mg/L	-	-	-	-	-	-	-	-	-	-	<0.050	<0.050
Potassium	mg/L	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1
Selenium	mg/L	0.001	-	-	-	-	-	-	-	-	-	<0.0001	<0.0001
Silicon	mg/L	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05
Silver	mg/L	0.0001	-	-	-	-	-	-	-	-	-	<0.00001	<0.00001
Sodium	mg/L	-	-	-	-	-	-	-	-	-	-	<0.05	<0.05
Strontium	mg/L	-	-	-	-	-	-	-	-	-	-	<0.0002	<0.0002
Sulfur	mg/L	-	-	-	-	-	-	-	-	-	-	<0.500	<0.500
Thallium	mg/L	0.0008	-	-	-	-	-	-	-	-	-	<0.00001	<0.00001
Tin	mg/L	-	-	-	-	-	-	-	-	-	-	<0.0001	<0.0001
Titanium	mg/L	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01
Uranium	mg/L	0.015	-	-	-	-	-	-	-	-	-	<0.00001	<0.00001
Vanadium	mg/L	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001
Zinc	mg/L	0.03	-	-	-	-	-	-	-	-	-	<0.003	<0.003

Notes

(1) CCME guideline exceedences shaded with dark grey. Light grey shading denotes reportable detection limit in exceedence of CCME Guideline. Where guideline value is dependent on hardness or pH, reported values have been compared against a guideline value calculated for each site based on the relevant value, and the guideline value has been noted as "varies".

- (2) = No standard or not analyzed
- (3) CCME = Canadian Council of Ministers of the Environment, Canadian Environmental Quality Guidelines, 1999, updated to November 2014
- (4) CCME FAL = Chapter 4, Canadian Water Quality Guidelines for the Protection of Aquatic Life, Freshwater, updated to November 2014
- (5) Guideline note: Lowest acceptable dissolved oxygen concentration for cold-water biota, early life stages
- (6) CCME FAL stipulates pH not < 6.5 and not > 9
- (7) Ammonia varies with pH and temperature for CCME FAL; see the CCME ammonia fact sheet for details regarding the applicable criteria, ammonia-NH3 versus total ammonia-N, and other usage guidelines. CCME values listed in the table are expressed as ammonia (N) When field pH is not available, lab pH is used. When field and lab pH are both not available, the most stringent guideline has been used.
- (8) Aluminum varies with pH as follows for CCME FAL:
 - 0.005 if pH<6.5
 - 0.1 if pH>=6.5
 - when field pH is not available, lab pH is used. When field and lab pH are both not available, the most stringent guideline has been used.
- (9) Cadmium varies with Hardness in mg/L as follows for CCME FAL:
 - 0.00 if H<17
- 0.00004 0.00037 if H>=17 and H<=280 as follows;
 - CWQG (μ g/L) = 10{0.83(log[hardness]) 2.46 }
 - 0.00 if H>280
- (10) Chromium CCME FAL guidelines are expressed in chromium, hexavalent (CrVI). All laboratory data is expressed in total chromium. Total chromium values over 0.001 mg/l are flagged as exceedences.
- (11) Copper varies with Hardness in mg/L as follows for CCME FAL:
 - 0.002 if H<82
 - 0.002 0.004 if H>=82 and H<=180 as follows;
 - CWQG (μ g/L) = 0.2 * e{0.8545[ln(hardness)]-1.465}
 - 0.004 if H>180
- (12) Lead varies with Hardness in mg/L as follows for CCME FAL:
 - 0.001 if H<60
 - .001 0.00 if H>=60 and H<=180 as follows;

CWQG (µg/L)= e{1.273[In(hardness)]-4.705}

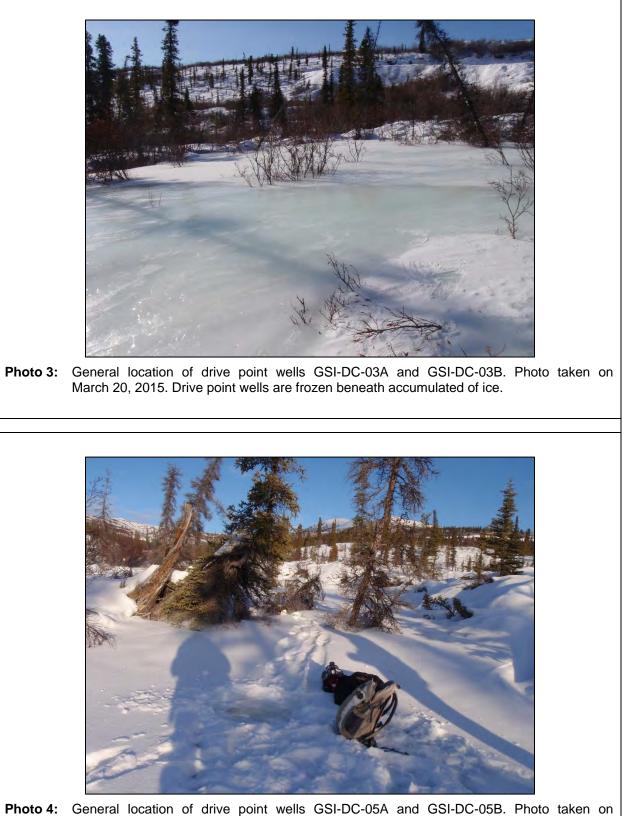
- 0.007 if H>180
- (13) Nickel varies with Hardness in mg/L as follows for CCME FAL:
 - 0.025 if H<60
 - 025 0.15 if H>=60 and H<=180 as follows;

CWQG (µg/L) = e{0.76[In(hardness)]+1.06}

- 0.15 if H>180
- (14) RPD = Relative Percent Difference. The difference between a sample and its field duplicate over the average of two values. nc = not calculated. RPD is not calculated if either the sample or the field
 - duplicate concentration is less than five times the detection limit.
- Bold Indicates QAQC values exceed expected results (i.e. RDP values exceed 20%).

APPENDIX A Site Photographs





March 20, 2015. Drive point wells are frozen beneath accumulated ice.



Photo 5: Location of drive point wells GSI-DC-06A and GSI-DC-06B. Photo taken on March 19, 2015. Drive point wells are frozen beneath accumulated ice.



Photo 6: General location of drive point wells GSI-DC-07A and GSI-DC-07B. Photo taken on March 19, 2015. Drive point wells are frozen beneath accumulated ice.



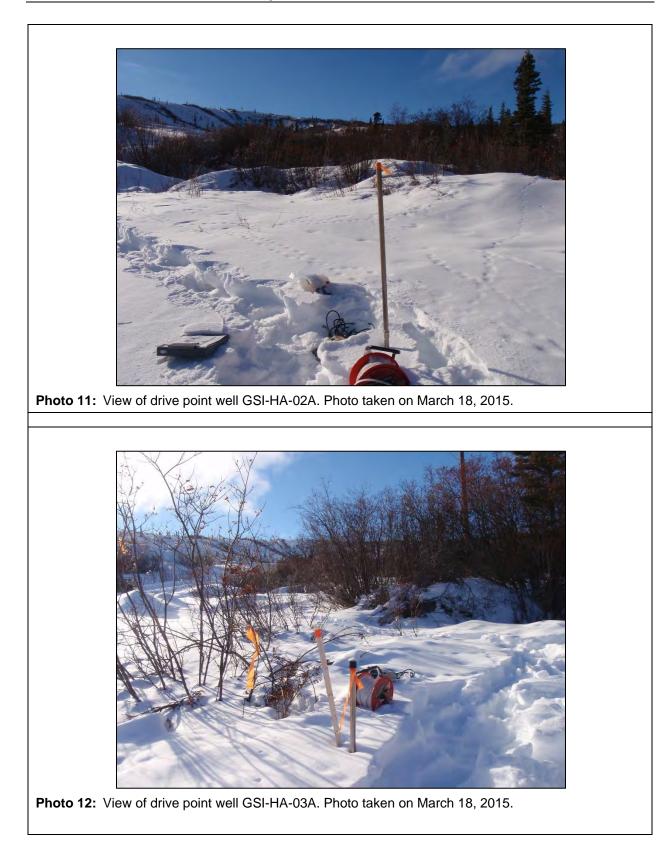
Photo 7: General location of drive point wells GSI-DC-08A and GSI-DC-08B. Photo taken on March 19, 2015. Drive point wells are frozen beneath accumulated ice.

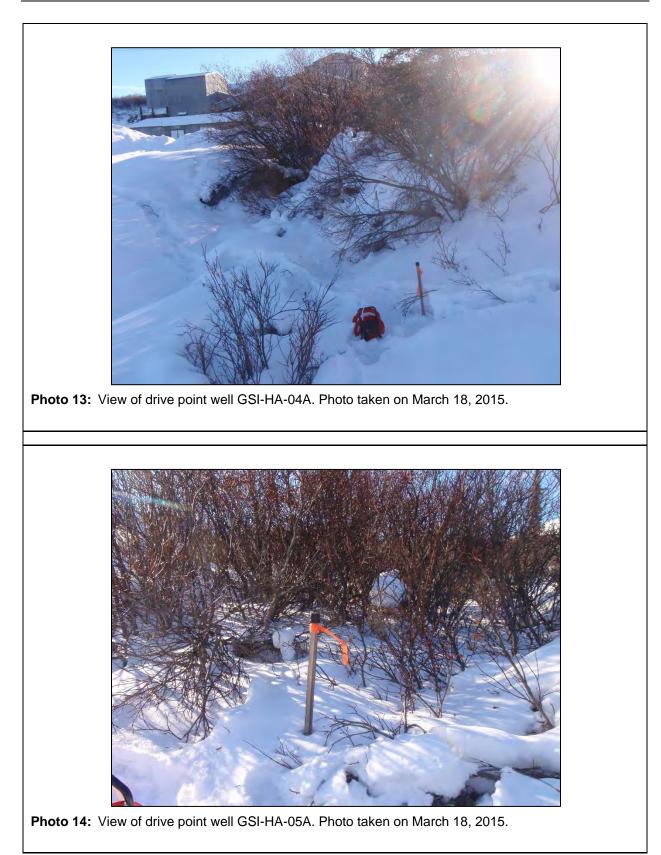


Photo 8: General location of drive point wells GSI-DC-09A and GSI-DC-09B. Photo taken on March 19, 2015. Drive point wells are frozen beneath accumulated ice.



Photo 10: View of drive point well GSI-HA-01A. Photo taken on March 18, 2015.





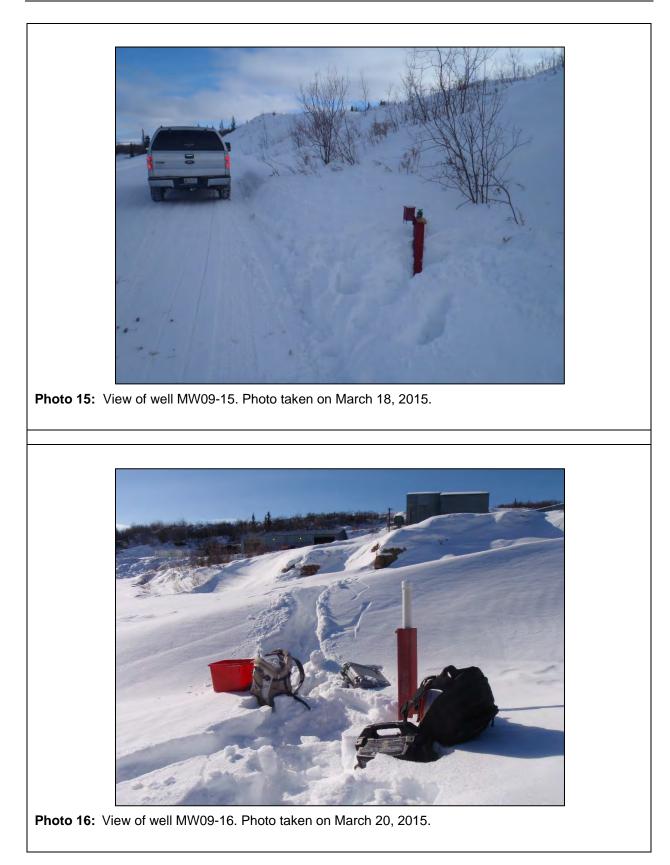






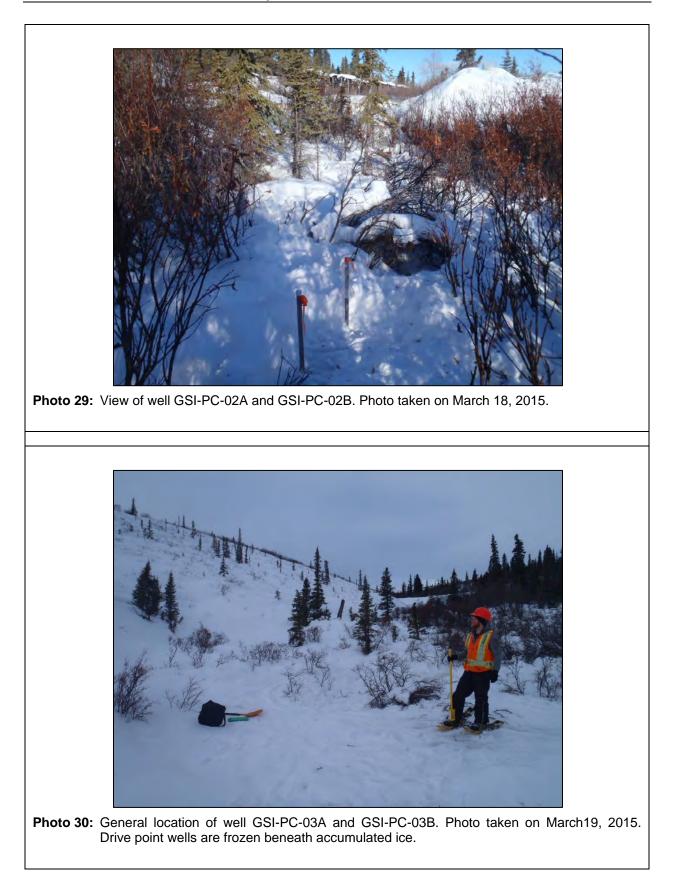


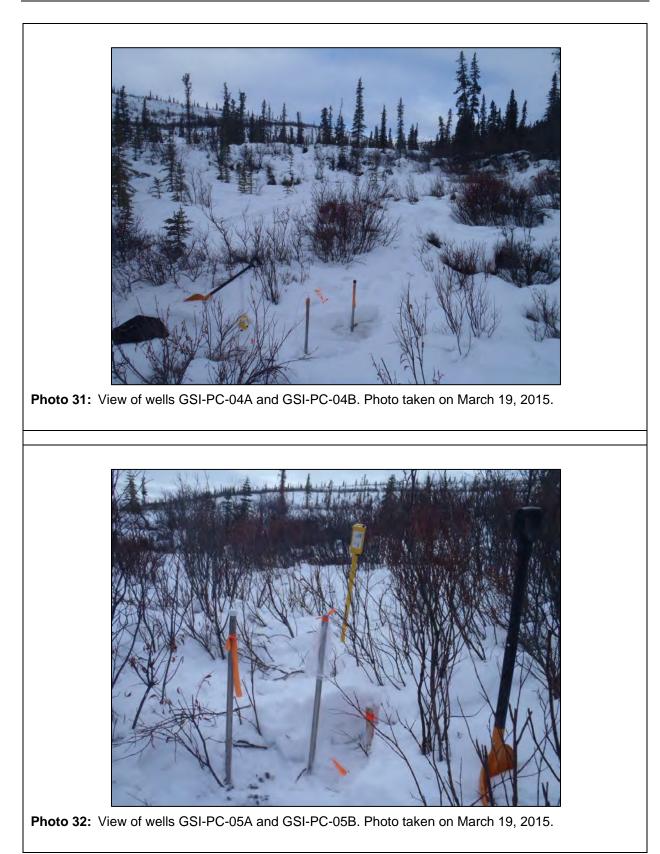


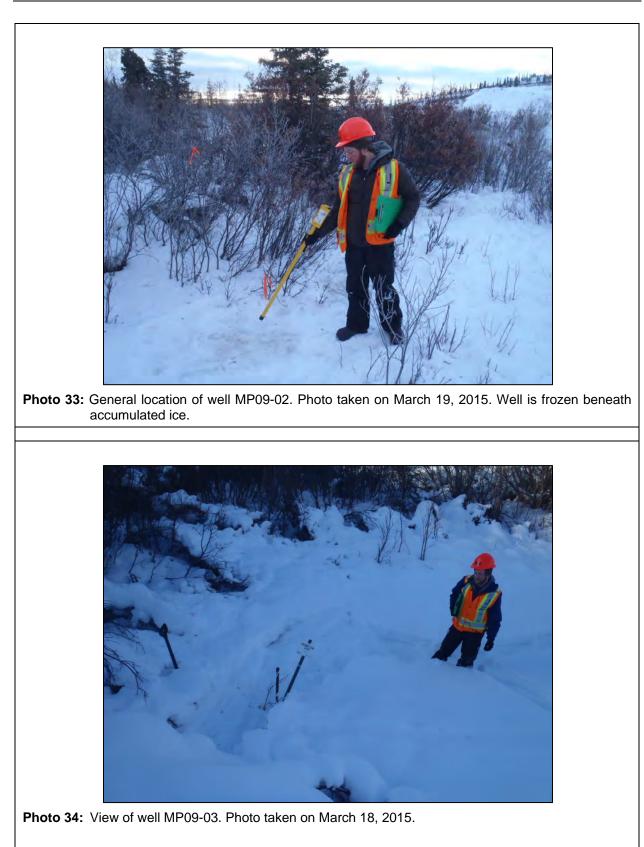




Photo 28: View of well MW09-14. Photo taken on March 18, 2015.



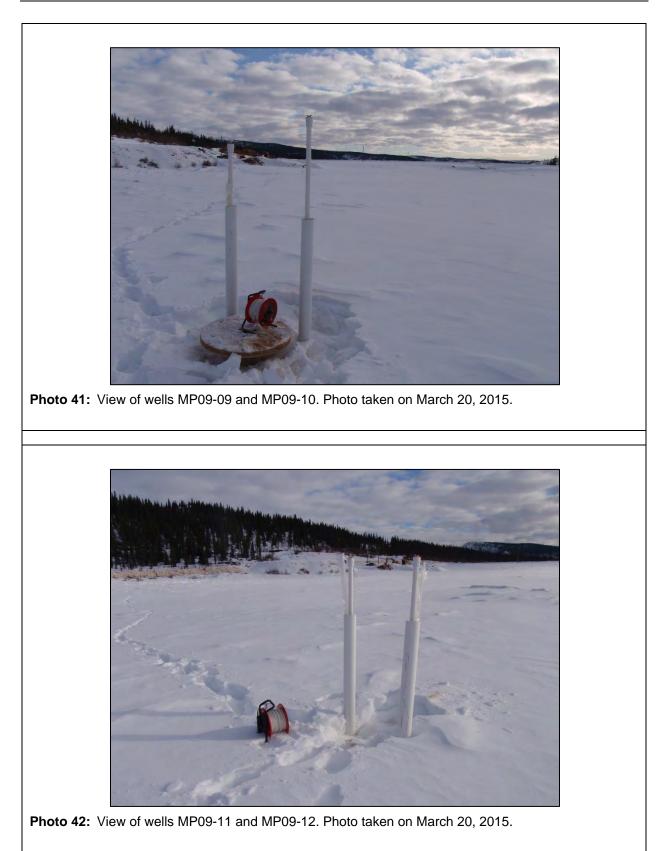














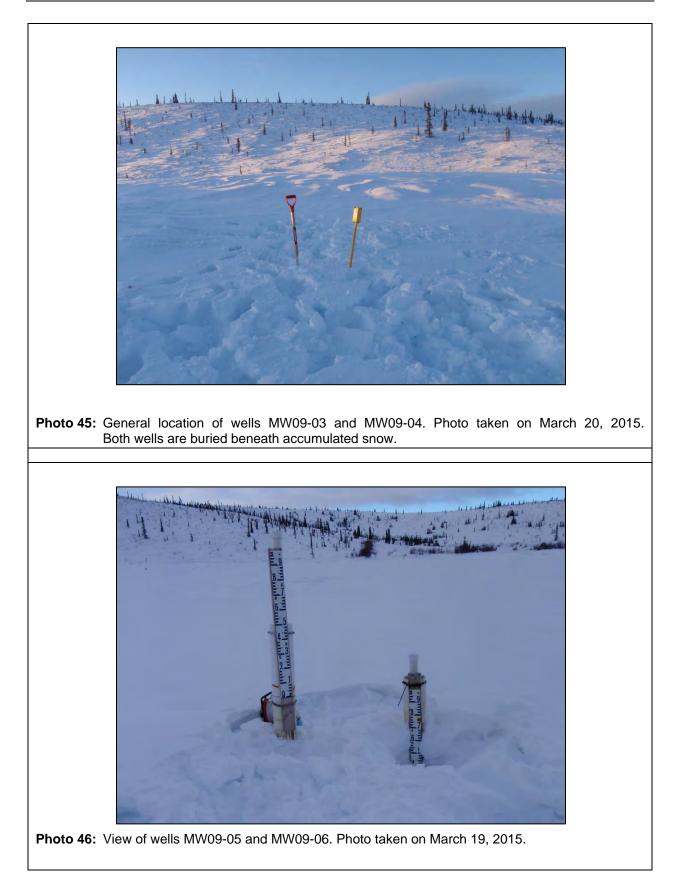




Photo 47: View of well MW09-07. Photo taken on March 20, 2015.





Photo 49: View of well MW09-11. Photo taken on March 20, 2015.



Photo 50: View of well MW09-20. Photo taken on March 19, 2015.





Photo 51: View of well MW09-21. Photo taken on March 19, 2015.



Photo 52: View of well MW09-22. Photo taken on March 19, 2015.



Photo 53: View of well MW09-23. Photo taken on March 19, 2015.





APPENDIX B Field Forms



GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	GSI-DC-DI	A Project Nun	nber: 1	343-005.06		Date:		18 Ma	14 2015	
Approximate Date Drilled:		Client:	6	GY - AAM		Sampler:		RM	RM TJ	
Piezometer Diameter / Screen Length:	I"DP	Project Nan	Project Name: Mount Nansen 2015 GW Sampling Program		Weather/Temperature:		Sum	sunny 3°C		
Field Blank Collected	Yes Name	Duplicate C	ollected:	Yes Name		Recovery:		Good	Good Bad	
Purge Method						-		-		
Waterra	Peristaltic	Disp. B	Bailer	Steel Ba	ailer	C	entrif. Pump	4	Air Lift	
	Frozer									
Initial Depth to Water (m):	DRY	Purge Start T	'ime:			Purge	End Time:			
Depth to Bottom (m):	0.873	Time () m	ninute interva	l:					-	
Submerged Tubing Depth (m):	Depth to wate	er (m)							
Well Stick-up Height (m):	0.745	Temperature	(°C)				2			
Estimated Water Volume (L):	stimated Water Volume (L):		pH			2.	le'/			
		Cond. (µs/cm)				SAM				
(DTB - DTW) x 2 (for 2" we	ll diameter) = 1 well	Specific Cond. (µs/cm)			Tot	0				
volume		Redox (mV)			Por	/	DA			
		DO (mg/L)				1	DA			
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume 2" casing has 0.16 USgal/ft or 2.032 l/m 1" casing has 0.04 USgal/ft or 0.508 l/m 8" sand pack has 0.73 USgal/ft or 9.271 l/m		Appearance & Silty, HC odo		ar,			frozen			
		final	Sulphide (mg/L)							
6 5/8" sand pack has 0.50 l	JSgal/ft or 6.35 l/m	readings	Turbidity (NT	·U)						
		Total Purge V	/olume:			-		- I		
Sample Method										
Waterra	Peristaltic	Disp. Baile	er Ste	el Bailer	Cen		Air Lift		Other	
Analysis										

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Sample Site (Con't) GSI - DC - OIA UTM Location: Zn: 081 Easting: 387677 Northing: 688/124 Photo No .: (00-0001, -0002, -0003 Well Head Space Gases:

Methane (CH4) Oxygen (O2)	%LEL	ø
Oxygen (O2)	0/	
	%	20.4
Carbon Dioxide (C02)	PPM	ø
Vell Head Seal: 🗹 J-Plug 🗌 eal Replaced: 🗹 J-Plug 🗌		

General Notes (Condition of well or other features): No change - Previous OTB: 0.81m.

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered	HCL		
2	1 L (plastic)	General Chemistry	200 ml		-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	□ NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	19.	H ₂ SO ₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-	HNO3		
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		



GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	GSI-DC-OIB	Project N	umber:	1343-005.06	;	Date:		18 ha	rch 2013
Approximate Date Drilled:		Client:		GY - AAM		Sampler:		RM TJ	
Piezometer Diameter / Screen Length:	(" DP	Project Name: Mount Nansen 2015 GW Sampling Program		Weather/Temperature:		sung s'c			
Field Blank Collected	Yes Name	Duplicate	Collected:	Yes Nan	ne	Recov	very:	Good	Bad
Purge Method									
Waterra	Peristaltic	Disp	. Bailer	Steel B	ailer	0	Centrif. Pump	A	ir Lift
Initial Depth to Water (m):	Dry	Purge Star	t Time:			Purge	End Time:		
Depth to Bottom (m):	1.609	Time ()	minute inte	rval:					
Submerged Tubing Depth (r	n):	Depth to w	ater (m)						
Well Stick-up Height (m):	0.705	Temperatu	re (°C)						/
Estimated Water Volume (L): /	pH					~		
		Cond. (µs/cm)				0121			
	uall diamatar) = 1 wall	Specific Cond. (µs/cm)			01	14C			
(DTB – DTW) x 2 (for 2" w volum		Redox (mV)			SA				
		DO (mg/L)							
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume 2" casing has 0.16 USgal/ft or 2.032 l/m 1" casing has 0.04 USgal/ft or 0.508 l/m 8" sand pack has 0.73 USgal/ft or 9.271 l/m			e & Odour (0 dours, etc.)	Clear,			Dred		
		Only for final Sulphide (mg/L)			1				
6 5/8" sand pack has 0.50) USgal/ft or 6.35 l/m	readings	Turbidity	(NTU)					
		Total Purge	e Volume:		_				
Sample Method	1 million (100 mil		-						
Waterra	Peristaltic	Disp. Ba	ailer	Steel Bailer		ntrif. mp	Air Lift		Other
Analysis									

? diy of frozen

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Sample Site (Con't): <u>GSJ - DC - 01B</u> UTM Location: Zn: OSV Easting: 387677 Northing: 6881124 Photo No.: 100 - 0001, - 00021 - 0003

Well Head Space Gases:

New Contraction	Units	Values
Methane (CH4)	%LEL	ø
Oxygen (O2)	%	20.5
Carbon Dioxide (C02)	PPM	ø
	PVC Cap Not Sealed PVC Cap Not required	
	monitoring: Yes No Deta	

General Notes (Condition of well or oth features):	her
No change	

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered	HCL		
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	🗆 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	H ₂ SO ₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-	HNO3	2	
6	120 ml (plastic)	Sulphide _	100 ml		Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		



GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	GSI-DC-OZB	Project Numb	per:	1343-005.06		Date:		18 har	22315
Approximate Date Drilled:		Client:		GY - AAM		Sampler:		RM TJ	
Piezometer Diameter / Screen Length:	I" DP	Project Name	:	Mount Nansen 2015 GW Sampling Program Weather/Temperature:		clady o'c			
Field Blank Collected	Yes Name	Duplicate Col	lected:	Yes Name Recovery:		ery:	Good Bad		
Purge Method N/A					-				-1
Waterra	Peristaltic	Disp. Ba	iler	Steel Ba	ailer	C	entrif. Pump	Air	r Lift
Initial Depth to Water (m):	2.735	Purge Start Tin	ne:			Purge	End Time:		
Depth to Bottom (m):	3.852	Time () min	nute interv	al:		1 . 1			
Submerged Tubing Depth (I	m): 3.857	Depth to water	(m)						
Well Stick-up Height (m):	0.765	Temperature (C)						
Estimated Water Volume (L	stimated Water Volume (L): 0.56		рН			1			
		Cond. (µs/cm)			TIRE	1CI			
(DTB – DTW) x 2 (for 2" w	uall diamotor) = 1 wall	Specific Cond. (µs/cm)			Pi	200	e		
volum		Redox (mV)			Ya.				
		DO (mg/L)			10				
(DTB-DTW) x 1.1 (for 1.5" dia		Appearance & Silty, HC odou		ear,					
2" casing has 0.16 USgal/ft or 2.032 l/m 1" casing has 0.04 USgal/ft or 0.508 l/m 8" sand pack has 0.73 USgal/ft or 9.271 l/m			ulphide ng/L)						
6 5/8" sand pack has 0.50) USgal/ft or 6.35 l/m	readings T	urbidity (N	ITU)					
		Total Purge Vo	lume:						
Sample Method									
Waterra	Peristaltic	Disp. Bailer	S	teel Bailer		ntrif. mp	Air Lift	0	Other
Analysis	/								

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Sample Site (Con't): <u>GS(-DC-OZB</u>

UTM Location: Zn: 0%√ Easting: 0387838 Northing: 6881128

Photo No .: 100 - 000 4 - 0005

Well Head Space Gases:

Methane (CH4) Oxygen (O2)	%LEL %	20.3
	%	20.3
0.1.01.0000		
Carbon Dioxide (C02)	PPM	2
ell Head Seal: 🥑 J-Plug 🗌 P eal Replaced: 🗹 J-Plug 🗌 P		

features):	
- turbil	+ sample

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3	100	16:50
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered	- CHCL	20	
2	1 L (plastic)	General Chemistry 🦯	200 ml			200	
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	•	🗌 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	H ₂ SO ₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	·	HNO3		
6	120 ml (plastic)	Sulphide	100 ml	•	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml		-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		



Sample Site:	SI-HA-OIA	Project Nur	mber: 1	343-005.06		Date:		18 Mar	2015
Approximate Date Drilled:		Client:	lient: GY - AAM Samp		Sample			75	
Piezometer Diameter / Screen Length:	2P "	Project Nar	me: G	Nount Nanser GW Sampling Program		Weathe	er/Temperature:	Partial cloud	
Field Blank Collected	Yes Name	Duplicate C	Collected:	Yes Name		Recove	ery:	Good	Bad
Purge Method	C. P. C. C.						and the second	C	
Waterra	Peristaltic	Disp. E	Bailer	Steel Ba	iler	Ce	entrif. Pump	Ai	r Lift
Initial Depth to Water (m):	2.872	Purge Start	Time:			Purge	End Time:		
Depth to Bottom (m):	3.110	Time () n	minute interva	l:					
Submerged Tubing Depth (n	1): 3.110	Depth to wat	ter (m)						
Well Stick-up Height (m):	1.140 (srow)	Temperature	e (°C)			/			
Estimated Water Volume (L)		рН				5			
		Cond. (µs/cn	n)	1	JUSE	10.7	E		
(DTB – DTW) x 2 (for 2" we	ll diamotor) = 1 woll	Specific Cond. (µs/cm)			Pie	OM.			
volume		Redox (mV)		2	1				
		DO (mg/L)						1 I I I I	
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume 2" casing has 0.16 USgal/ft or 2.032 l/m		Appearance Silty, HC odd	& Odour (Clea ours, etc.)	ar,					
1" casing has 0.04 US 8" sand pack has 0.73 U	al/ft or 0.508 l/m Sgal/ft or 9.271 l/m	Only for final	Sulphide (mg/L)						
6 5/8" sand pack has 0.50	USgal/ft or 6.35 l/m	readings	Turbidity (NT	·U)					
		Total Purge	Volume:						
Sample Method								<i>i</i>	
Waterra	Peristaltic	Disp. Bail	ler Ste	el Bailer	Cen Pu		Air Lift		Other
Analysis									

Sample Site (Con't): <u>G-SI-HA-0</u>1A UTM Location: Zn: O8V Easting: 387844 Northing: 6881/33 Photo No.: 100-0006, -0007

Well Head Space Gases:

		Units	Values
Methane (CH4)	%LEL	ø
Oxygen (02)	%	21.4
Carbon Dioxid	de (C02)	PPM	Ø
		PVC Cap Not Sealed	
Seal Replaced:	J-Plug	PVC Cap Not require	ed Other
Well properly sealed	d for gas r	nonitoring: 🗹 Yes 🗌 No	Details:

General Notes (Condition of well or other features): No change - new hibing, old tubing foren * 2 bottles

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3	001	16:30
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered	HCL	15	
2	1 L (plastic)	General Chemistry	200 ml		÷		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml		🗆 NaOH	C	
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	H ₂ SO ₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml		HNO3		
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	•		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered			

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Sample Site:	551-DC-02	A Project Number:	1343-005.06	Date:	18 March 15
Approximate Date Drilled:		Client:	GY - AAM	Sampler:	RMTJ
Piezometer Diameter / Screen Length:	1' DP	Project Name:	Mount Nansen 201 GW Sampling Program	5 Weather/Temperature:	clouly o'c
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name	Recovery:	Good Bad
Purge Method		The second second			
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift
	FLOZEN				
Initial Depth to Water (m):	DRY	Purge Start Time:		Purge End Time:	a ba
Depth to Bottom (m):	2.002	Time () minute inte	erval:		
Submerged Tubing Depth (m)):	Depth to water (m)			
Well Stick-up Height (m):	0.912	Temperature (°C)		4	
Estimated Water Volume (L):	-	pН		NEP /	
		Cond. (µs/cm)		up	
(DTB - DTW) x 2 (for 2" we	l diameter) = 1 wall	Specific Cond. (µs/cm)		ST	
volume	i diameter) – i weii	Redox (mV)		5 ATTOR	1 Cm
		DO (mg/L)	P		
(DTB-DTW) x 1.1 (for 1.5" diar 2" casing has 0.16 USga		Appearance & Odour (Silty, HC odours, etc.)	Clear,		
1" casing has 0.04 USga 8" sand pack has 0.73 US	al/ft or 0.508 l/m gal/ft or 9.271 l/m	Only for final Sulphide (mg/L)			
6 5/8" sand pack has 0.50 l	JSgal/ft or 6.35 l/m	readings Turbidity	(NTU)		
		Total Purge Volume:			
Sample Method					
Waterra	Peristaltic	Disp. Bailer		Centrif. Air Lift Pump	Other
Analysis					

Sample Site (Con't): GSI - DL - 02A UTM Location: Zn: 06V Easting: 0387838 Northing: 688128

Photo No .: 100 - 0004 , - 0005

Well Head Space Gases:

Methane (CH4) %LEL Oxygen (O2) % Carbon Dioxide (C02) PPM Well Head Seal: Iglig PVC Cap Not Sealed		Units	Values
Carbon Dioxide (C02) PPM Ø	Methane (CH4)	%LEL	78
	Oxygen (O2)	%	19.4
Nell Head Seal: J-Plug PVC Cap Not Sealed Other	Carbon Dioxide (C02)	PPM	ø
Seal Replaced: J-Plug PVC Cap Not required Other			

General Notes (Condition of well or other features): No change Previous DTB: 1.92 m.

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered	HCL		
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml		□ NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	H ₂ SO ₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-	HNO3		1
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-	-	
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

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Sample Site:	MP09-03	Project Number:	1343-005.06	Date:		2015/03/18
Approximate Date Drilled:	unhorown.	Client:	GY - AAM	Samp	oler:	AN, JL
Piezometer Diameter / Screen Length:	1"/mknown.	Project Name:	Mount Nansen 2 GW Sampling Program	- · · · ·	her/Temperature:	overcast/ sunny ~2°C
Field Blank Collected	🗌 Yes Name	Duplicate Collected:	Yes Name	Reco	vегу:	Good Bad
Purge Method						<u></u>
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	r (Centrif. Pump	Air Lift
Initial Depth to Water (m): 3	CE 0.694	Purge Start Time:		Pura	e End Time:	
Depth to Bottom (m):		Time () minute int	erval:		1 1	
Submerged Tubing Depth (r	n):	Depth to water (m)	·····			
Well Stick-up Height (m):	20.727	Temperature (°C)				
Estimated Water Volume (L)):	рН				
ţ	ct to top of well.	Cond. (µs/cm)				
(DTB – DTW) x 2 (for 2" w	ell diameter) = 1 well	Specific Cond. (µs/cm)		4011	
volum		Redox (mV)		er 0 0	4	
		DO (mg/L)		N N	and a second	
(DTB-DTW) x 1.1 (for 1.5" dia	ameter) = 1 well volume	Appearance & Odour Silty, HC odours, etc.)	(Clear,	and the second sec		
2" casing has 0.16 US	-					
1" casing has 0.04 US	-	Conty for Sulphide (mg/L)	· · · · · · · · · · · · · · · · · · ·	and the		
8" sand pack has 0.73 U 6 5/8" sand pack has 0.50		final (IngrE) readings Turbidity				
	e egant of 0.00 mill					
		Total Purge Volume:				
Sample Method		· · · · · · · · · · · · · · · · · · ·				
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift	Other
Analysis				P.		

Sample Site (Con't): <u>MP09-03</u> Way pf. collected an AN GPS. UTM Location: Zn: 08 Easting: 0388959 Northing: 6881740 Photo No.: [7-19 (comma 8010)

Well Head Space Gases:

3.

	Units	Values
Methane (CH4)	%LEL	D
Oxygen (O2)	%	20-1
Carbon Dioxide (C02)	PPM	Ø
Well Head Seal: 🔲 J-Plug		
Seal Replaced: 🔲 J-Plug 🗌	PVC Cap 🗌 Not required 🗹	Other not replaced .
Well properly sealed for gas mon	itoring: 🗌 Yes 🛛 Yo Details	no it caps.

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General Notes (Condition of well or other features): -Pre. existing waterna tabing found in well. Tubing was pulled out of well, lee found within tubing. -DP foreen solid.

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered			
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 m i	-	🗌 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-			
6	120 ml (plastic)	∩ Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		· · · · · · · · · · · · · · · · · · ·
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	~		

	2651-PC-02-A							
Sample Site:	651-PC-02-B	Project Number:	1343-005.06		Date:		2015/03/1	ð
Approximate Date Drilled:	unknown	Client:	GY - AAM		Sampler:		AN,JL	
Piezometer Diameter / Screen Length:	1"/mmourn	Project Name:	Mount Nanser GW Sampling Program		Weather/	Temperature:	overcast ~2°C.	
Field Blank Collected	Yes Name	Duplicate Collected:	🗌 Yes Name	·	Recovery	ĸ	Good [] Bad
Purge Method		and a subset of the second						
Waterra	Peristaltic	Disp. Bailer	Steel Bai	iler	Cent	trif. Pump	Air Lift	
Initial Depth to Water (m):	ICE 0.887	Purge Start Time:			Purge En	d Time:		
Depth to Bottom (m):	-	Time () minute inte	erval:					
Submerged Tubing Depth ((m):	Depth to water (m)						
Well Stick-up Height (m):	70-526	Temperature (°C)						
Estimated Water Volume (L		рН						
v	ice to top of well.	Cond. (µs/cm)				r/ V		
(DTB – DTW) x 2 (for 2" v	vell diameter) = 1 well	Specific Cond. (µs/cm)			-		
volum		Redox (mV)				and the second second		
		DO (mg/L)		1		Non-second second		
(DTB-DTW) x 1.1 (for 1.5" d	iameter) = 1 well volume	Appearance & Odour (Silty, HC odours, etc.)						
2" casing has 0.16 US	Sgal/ft or 2.032 l/m	Silly, HC buours, etc.)			Current	2		
1" casing has 0.04 US	-	Only for Sulphide			1	<		
8" sand pack has 0.73 l	-	final (mg/L)						
6 5/8" sand pack has 0.5	0 USgal/tt or 6.35 l/m	readings Turbidity	(NTU)		*****			
		Total Purge Volume.		۰		I,,,,I_		I
Sample Method								
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centr	••••	Air Lift	Othe	Γ
Analysis		<u> </u>		Pum	p			
AllalySIS								

Sample Site (Con't): <u>GS1-PC-02-B</u> Way pt. collected on ANGPS. UTM Location: Zn: 08 Easting: 0388909 Northing: 6881785 Photo No.: 11-13 ((amera 8010)

Well Head Space Gases:

	Linits	A Val	ies g			
Methane (CH4)	%LEL	0	0			
Oxygen (O2)	%	20.0	19.9			
Carbon Dioxide (C02)	PPM	0	0			
Well Head Seal: J-Plug 🖸 Seal Replaced: 🗍 J-Plug 🗍	PVC Cap Not required	Other				
Well properly sealed for gas monitoring: Yes 🗌 No Details: <u>Wall A - sealed with</u>						
Ziplock bag.						

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General Notes (Condition of well or other features):
No tubing formed in DPS (both AOB).
651-PC-02-A
Depth to life = 0.8524 m
(i.e. stick up).
Both DP; frozen solid in ice,

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered	HCL		
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	~	□ NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 mi	-	☐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	~	HNO3		
6	120 ml (plastic)	Sulphide	100 mi	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 mt	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	~	······	

Sample Site:	GLL07-01	Project Number:	1343-005.06		Date:		2015/03/	′ (8
Approximate Date Drilled:	unknown.	Client:	GY - AAM		Sampler:		AN, JL	
Piezometer Diameter / Screen Length:	2"/vakaowa.	Project Name:	Mount Nanser GW Sampling Program		Weather/T	emperature:	overcast ~0°C	
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name	÷	Recovery:		Good	Bad
Purge Method								
Waterra	Peristaltic	Disp, Bailer	Steel Ba	iler	Centr	rif. Pump	Air L	ift
TCE								
Initial Depth to water (m):	13.815 m	Purge Start Time:			Purge End	Time:		
Depth to Bottom (m):		Time () minute inte	erval:					
Submerged Tubing Depth (m):	Depth to water (m)						
Well Stick-up Height (m):	0.801	Temperature (°C)						
Estimated Water Volume (L	.):	рН						
		Cond. (µs/cm)			1	7/1		
(DTB – DTW) x 2 (for 2" v	vell diameter) = 1 well	Specific Cond. (µs/cm)	0	NL	-	~~~	
volum		Redox (mV)		IC K	V -			
		DO (mg/L)	****	FT				
(DTB-DTW) x 1.1 (for 1.5" di	ameter) = 1 well volume	Appearance & Odour (Silty, HC odours, etc.)			autor and a second	******		
2" casing has 0.16 US	-							
1" casing has 0.04 US	-	Only for Sulphide (mg/L)						
8" sand pack has 0.73 L 6 5/8" sand pack has 0.5	-	initial						
0 0/0 3000 pack 1/25 0.0	o obgaint or 0.00 mil							
		Total Purga Volume:						
Sample Method								
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centr Pum		Air Lift	Otř	ier
Analysis								·····-

Sample Site (Con't): <u>GLL07-01</u> Wy pt. collected on AN GPS. UTM Location: Zn: UB Easting: 0388852 Northing: 6881778 Photo No.: 2-4 (Camera 8010).

Well Head Space Gases:

	Units	Values
Methane (CH4)	%LEL	Ø
Охудел (О2)	%	20.1
Carbon Dioxide (C02)	PPM	0
Well Head Seal: J-Plug Seal Replaced: J-Plug Well properly sealed for gas mon	PVC Cap Not required	Other

General Notes (Condition of well or other features):

Metal well casing. located 2m from MN access Rd. Well in good condition.

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 mi	Field Filtered	☐ HNO ₃		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plasti c)	General Chemistry	200 mi	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 mi	-	🗌 №ОН		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-		······	
6	120 ml (plastic)	Sulphide	100 mł		Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plasti c)	Dissolved Alkalinity	100 ml	E Field Filtered			

CI HEMMERA

Sample Site:	MW09-14	Project Number:	1343-005.06	C	Date:	2015/0	3/18
Approximate Date Drilled:	mknown.	Client:	GY - AAM	s	Sampler:	AN, JL	
Piezometer Diameter / Screen Length:	2"/manon	Project Name:	Mount Nanse GW Sampling Program		Veather/Temperati	Auer ca.	; 4
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name	e F	Recovery:	Good	Bad
Purge Method							
Waterra	Peristaltic	Disp. Bailer	Steel Ba	iler	Centrif. Pump	Ai	r Lift
Initial Depth to Water (m): /	ICE 4.99	Purge Start Time:		F	Purge End Time:	1000	
Depth to Bottom (m):		Time () minute int	erval:				
Submerged Tubing Depth (m):	Depth to water (m)					
Well Stick-up Height (m):	0.738	Temperature (°C)				1	
Estimated Water Volume (L	.):	рH					
		Cond. (µs/cm)			101		
(DTB – DTW) x 2 (for 2" v	well diameter) = 1 well	Specific Cond. (µs/cm)		12	-7	
volum		Redox (mV)			\cap		
		DO (mg/L)				<u>·</u>	
(DTB-DTW) x 1.1 (for 1.5" d	·	Appearance & Odour Silty, HC odours, etc.)					
2" casing has 0.16 US	-						
1" casing has 0.04 US 8" sand pack has 0.73 l	-	Only for Sulphide (mg/L)					
6 5/8" sand pack has 0.5	*	final (ing/c) readings Turbidity					
		Total Purge Volume:					
Sample Method		T					
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump		t (Other
Analysis							

Sample Site (Con't): <u>MW09-14</u> Way pt. collected on AN GPS. UTM Location: Zn: 08 Easting: 0389008 Northing: 6881662 Photo No.: 11-13 (Comera 8010)

Well Head Space Gases:

	linits	Values
Methane (CH4)	%LEL	0
Oxygen (O2)	%	20.0
Carbon Dioxide (C02)	PPM	0
_ • -	PVC Cap Not Sealed PVC Cap Not required	

General Notes (Condition of well or other features):

Metal well casing. Well in good condition. Well has pre-existing waterna Thomas frozen in well. No water detected on top of ite. Well located 2n off MN access Road .

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 mi	-	••		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 mł	-	🗌 NaOH		······································
4	250 ml (glass)	Ammonia (NH3)	120 ml	~	☐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-			
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 mi		~		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

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Sample Site:	MW09-15	Project Number:	1343-005.06	Date	•	Mar 18,2015
Approximate Date Drilled:	unknown	Client:	GY - AAM	Sam	oler:	ANZJL
Piezometer Diameter / Screen Length:	2"/mkrom	Project Name:	Mount Nansen GW Sampling Program	2003/00/00/00/00/00/00/00/00/00/00/00/00/	her/Temperature:	overcast -2°C
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name	Reco	very:	Good Bad
Purge Method						
Waterra	Peristaltic	Disp. Bailer	Steel Bai	ler	Centrif. Pump	Air Lift
Initial Depth to Water (m):	13.98	Purge Start Time:		Pura	e End Time:	
Depth to Bottom (m): 10 E	_	Time () minute inte	erval:			
Submerged Tubing Depth (r		Depth to water (m)				
Well Stick-up Height (m):	0.8089	Temperature (°C)				
Estimated Water Volume (L)	. 0.186	pH				
		Cond. (µs/cm)			101	
(DTB – DTW) x 2 (for 2" w	ell diameter) = 1 well	Specific Cond. (µs/cm)	100		
volume		Redox (mV)			and and a second s	
		DO (mg/L)			and a second	
(DTB-DTW) x 1.1 (for 1.5" dia	ameter) = 1 well volun	^{ne} Appearance & Odour (Silty, HC odours, etc.)				
2" casing has 0.16 US	gal/ft or 2.032 l/m					
1" casing has 0.04 US	-	Only for Sulphide			in the second	
8" sand pack has 0.73 U	•	final (mg/L)				
6 5/8" sand pack has 0.50) USgal/ft or 6.35 l/m	readings Turbidity				
		Total Purge Volume:		·		l
Sample Method						
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift	Other
Analysis				-		

Sample Site (Con't): <u>MW09-15</u> Way pt. collected on AN 6P5. UTM Location: Zn: 08 Easting: 0398920 Northing: 6881723 Photo No.: 5-7 ((anera 8010)

Well Head Space Gases:

	Units	Values
Methane (CH4)	%LEL	0
Oxygen (O2)	%	20.0
Carbon Dioxide (C02)	PPM	0
Well Head Seal:] J-Plug		
Seal Replaced: UJ-Plug	PVC Cap 🗌 Not required 🔲	Other
Well properly sealed for gas mon	itoring: Ves 🗌 No Details	: once cap replaced.

General Notes (Condition of well or other features): No tribing in well. Metal well casing. Metal well casing. 2- from MN access Rd. Well in good condition. Solmst transdocer found in well. Well frozen to a few mom of slush/water on top of ice blockage. Previous DTB was 37.9 m. listed in SOW.

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	☐ HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 mi	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	□ NaOH		
4	250 mi (glass)	Ammonia (NH3)	120 ml	~	☐ H ₂ SO ₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-	☐ HNO ₃		
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 mł (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

Sample Site:	GS1-14A-03	A Project Number:	1343-005.06	Date	5	18 Mar 201	15
Approximate Date Drilled:		Client:	GY - AAM	Sam	pler:	RM /75	
Piezometer Diameter / Screen Length:	1"5P	Project Name:	Mount Nansen : GW Sampling Program		ther/Temperature	cloudy	
Field Blank Collected	Yes Name FB-1	Duplicate Collected:	🗌 Yes Name_	Rec	overy:	Good 🗌 Ba	ad
Purge Method							
Waterra	Peristaltic	Disp. Bailer	Steel Baile	er	Centrif. Pump	Air Lift	
Initial Depth to Water (m):		Purge Start Time:		Pure	je End Time:		
Depth to Bottom (m):		Time () minute inte	rval:				
Submerged Tubing Depth (m):	Depth to water (m)					
Well Stick-up Height (m):	0.8	Temperature (°C)					
Estimated Water Volume (L):		рН					
		Cond. (µs/cm)		×	57/		
(DTB – DTW) x 2 (for 2" we	Il diameter) = 1 well	Specific Cond. (µs/cm)		D. Q			
volume	ir diameter) = r wen	Redox (mV))	- A			
		DO (mg/L)		P /	$\sqrt{2}$		
(DTB-DTW) x 1.1 (for 1.5" diar	neter) = 1 well volume	Appearance & Odour (Silty, HC odours, etc.)	Clear,		-20-		
2" casing has 0.16 USga	al/ft or 2.032 l/m	Sincy, HC buburs, etc.)			X`		
1" casing has 0.04 USga		Only for Sulphide					
8" sand pack has 0.73 US	-	final (mg/L)					
6 5/8" sand pack has 0.50 l	USgal/ft or 6.35 l/m	readings Turbidity					
		Total Purge Volume:		1	I	1	
Sample Method							
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift	Other	
Analysis				••••••••••••••••••••••••••••••••••••••			··

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Sample Site (Con't): GSI - HA - O3AUTM Location: Zn: OSV Easting: 387883 Northing: 688 1129 Photo No.: 100 - 0010 + -0011

Well Head Space Gases:

	Units	Values
Methane (CH4)	%LEL	Ø
Oxygen (O2)	%	20.2
Carbon Dioxide (C02)	PPM	Ø
Well Head Seal: 🗹 J-Plug 🗌	PVC Cap 🗌 Not Sealed 🔲	Other
Seal Replaced: 🔽 J-Plug 🗌	PVC Cap 🗌 Not required 🔲	Other
Well properly sealed for gas moni	itoring: 🖵 Yes 🗌 No 🛛 Details	-

General Notes (Condition of well or other features):
-peristattic tubing
Scan't remove
pridut.
- could't reasur depth to ice due to peristaltic
to ice and to perisiance tubing
(C

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 mi	Field Filtered			
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-			
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	🗌 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml			·····	
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH	·····	
7	250 ml (glass amber)	Total Inorganic Carbon	100 mi	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

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Approximate Date Duilled: Client GY - AM Sampler: M // S Piezoneter Diameter / Screen Length: Project Name: Project Name:: Mount Nansen 2015 (Program Weather/Temperature: Purge Method Purge Nethod Recovery: Good Bad Initial Depth to Water (m): Purge Start Time: Purge End Time: Purge End Time: Depth to Bottom (m): Time () minute interval: Purge End Time: Purge End Time: Submerged Tubing Depth (m): Depth to water (m) Image: Cond. (µs/cm) Image: Cond. (µs/cm) (DTB - DTW) x 2 (for 2' well diameter) = 1 well volume Subming has 0.16 USgal/ft or 2.032 l/m Subpride (mg/L) Image: Cond. (µs/cm) 2' casing has 0.16 USgal/ft or 2.032 l/m Subpride (mg/L) Subpride (mg/L) Image: Cond. (µs/cm) Image: Cond. (µs/cm) 2'' casing has 0.16 USgal/ft or 2.032 l/m Subpride (mg/L) Turbidity (NTU) Image: Cond. (µs/cm) Image: Cond. (µs/cm) 3'' casing has 0.16 USgal/ft or 0.508 l/m Sity. HC odours, etc.) Subpride (mg/L) Image: Cond. (µs/cm) Image: Cond. (µs/cm) 3'' casing has 0.16 USgal/ft or 0.508 l/m Sity. HC odours, etc.) Turbidity (NTU) Image: Cond. (µs/cm) Image: Cond. (µs/cm) <th>Sample Site:</th> <th>F</th> <th>-B - 1</th> <th>Project Number:</th> <th>1343-</th> <th>-005.06</th> <th></th> <th>Date:</th> <th></th> <th></th> <th>18 Ma</th> <th>r 2015</th>	Sample Site:	F	-B - 1	Project Number:	1343-	-005.06		Date:			18 Ma	r 2015
Project Name: GW Sampling Program Weather/Temperature: Screen Length: Yes Name Duplicate Collected: Yes Name Recovery: Good Bad Purge Method Waterra Peristaltic Disp. Bailer Steel Bailer Centrif. Pump Air Lift Initial Depth to Water (m): Purge Start Time: Purge End Time: Image Start Time: Purge End Time: Image Start Time: Im	Approximate Da	te Drilled:	~	Client:	GY	ААМ		Sampl	er:		RMM	5
Purge Method Waterra Peristaltic Disp. Bailer Steel Bailer Centrif. Pump Air Lift Initial Depth to Water (m): Purge Start Time: Purge End Time: Purge End Time: Image: Start St	Selection of the Carl Schedule and Consultation and	neter /		Project Name:	GW S	Sampling	2015	Weath	er/Temp	erature:		
Waterra Peristaltic Disp. Bailer Steel Bailer Centrif. Pump Air Lift Initial Depth to Water (m): Purge Start. Time: Purge End Time: Purge End Time: Image: Start S	Field Blank Colle	ected [Yes Name	Duplicate Collected	к 🗌 Y	es Name		Recov	ery:		Good	Bad
Initial Depth to Water (m): Purge Start Time: Purge End Time: Depth to Bottom (m): Time () minute interval:	Purge Method											
Depth to Bottom (m): Time () minute interval: Image: Constraint of the state of the stat	Waterra	a	Peristaltic	Disp. Bailer		Steel Bai	ler	C	entrif. P	итр	Air	Lift
Submerged Tubing Depth (m): Depth to water (m) Image: Cond. (m) Imag	Initial Depth to V	Nater (m):		Purge Start Time:				Purge	End Tim	ie:		
Well Stick-up Height (m): Temperature (°C) Image: Cond. (µs/cm) Estimated Water Volume (L): pH Cond. (µs/cm) Image: Cond. (µs/cm) (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume Specific Cond. (µs/cm) Image: Cond. (µs/cm) Image: Cond. (µs/cm) (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume Specific Cond. (µs/cm) Image: Cond. (µs/cm) Image: Cond. (µs/cm) 2" casing has 0.16 USgal/ft or 2.032 l/m Total Purge: 4 Odours, etc.) Image: Cond. (µs/cm) Image: Cond. (µs/cm) 8" sand pack has 0.73 USgal/ft or 9.271 l/m Sulphide (mg/L) Image: Cond. (µs/cm) Image: Cond. (µs/cm) 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m Sulphide (mg/L) Image: Cond. (µs/cm) Image: Cond. (µs/cm) Sample Method Image: Cond. (µs/cm) Image: Cond. (µs/cm) Image: Cond. (µs/cm) Image: Cond. (µs/cm) Sample Method Image: Cond. (µs/cm) Image: Cond. (µs/cm) Image: Cond. (µs/cm) Image: Cond. (µs/cm) Sample Method Image: Cond. (µs/cm) Sample Method Image: Cond. (µs/cm) Image: Cond. (µs/cm) Image: Cond. (µs/cm) Image: Cond. (µs/cm) Image:	Depth to Bottom	ı (m):		Time () minute in	terval:						×a	
Estimated Water Volume (L): pH n <th< td=""><td>Submerged Tub</td><td>ing Depth (m):</td><td></td><td>Depth to water (m)</td><td></td><td></td><td></td><td></td><td></td><td>1</td><td></td><td></td></th<>	Submerged Tub	ing Depth (m):		Depth to water (m)						1		
(DTB - DTW) x 2 (for 2" well diameter) = 1 well volume Cond. (µs/cm) Disp. Bailer Specific Cond. (µs/cm) (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume Redox (mV) DO (mg/L) 2" casing has 0.16 USgal/ft or 2.032 l/m Appearance & Odour (Clear, Sity, HC odours, etc.) Appearance & Odour (Clear, Sity, HC odours, etc.) 0" training Sulphide (mg/L) Image (mg/L) 0" training Sulphide (mg/L) Image (mg/L) 0" training Turbidity (NTU) Image (mg/L) 0" training Turbidity (NTU) Image (mg/L)	Well Stick-up He	eight (m):		Temperature (°C)					1			
(DTB - DTW) x 2 (for 2" well diameter) = 1 well volume Specific Cond. (μs/cm) Image: Cond. (μs/cm) (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume Redox (mV) Image: Cond. (μs/cm) 2" casing has 0.16 USgal/ft or 2.032 l/m Appearance & Odour (Clear, sity, HC odours, etc.) Image: Cond. (μs/cm) 1" casing has 0.16 USgal/ft or 9.271 l/m Sulphide Image: Cond. (μs/cm) Image: Cond. (μs/cm) 8" sand pack has 0.73 USgal/ft or 9.271 l/m Sulphide Image: Cond. (μs/cm) Image: Cond. (μs/cm) 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m Turbidity (NTU) Image: Cond. (μs/cm) Image: Cond. (μs/cm) Steel Bailer Centrif. Air Lift Other	Estimated Water	r Volume (L):		рН				~ ×	₽ ~~~			
(DTB - DTW) x 2 (tor 2" well diameter) = 1 well volume (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume 2" casing has 0.16 USgal/ft or 2.032 l/m 1" casing has 0.04 USgal/ft or 0.508 l/m 8" sand pack has 0.73 USgal/ft or 9.271 l/m 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m Sample Mothod				Cond. (µs/cm)		1	(55		1		
volume Redox (mV) Image: Constraint of the second sec		v 2 (for 2" well c	liameter) = 1 well	Specific Cond. (µs/ci	n)							
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume 2" casing has 0.16 USgal/ft or 2.032 l/m 1" casing has 0.04 USgal/ft or 0.508 l/m 8" sand pack has 0.73 USgal/ft or 9.271 l/m 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m Sample Mathod	(010 - 0114)		Mameter) - 7 wea	Redox (mV)		/	$\overline{\mathbf{v}}$					
2" casing has 0.16 USgal/ft or 2.032 l/m 1" casing has 0.04 USgal/ft or 0.508 l/m 8" sand pack has 0.73 USgal/ft or 9.271 l/m 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m Sample Method Vaterra Peristaltic Disp. Bailer Steel Bailer Centrif. Air Lift Other				DO (mg/L)		5 A	~	1				
2" casing has 0.16 USgal/ft or 2.032 l/m 1" casing has 0.04 USgal/ft or 0.508 l/m 8" sand pack has 0.73 USgal/ft or 9.271 l/m 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m Sumple Method	(DTB-DTW) x 1.1	1 (for 1.5" diame	ter) = 1 well volume	Appearance & Odour Silty, HC odours, etc	(Clear, .)							
8" sand pack has 0.73 USgal/ft or 9.271 l/m 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m Sample Method Waterra Peristaltic Disp. Bailer Steel Bailer Centrif. Air Lift Other	•	-										
6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m Total Purge Volume: Sample Method Waterra Peristaltic Disp. Bailer Steel Bailer Centrif. Pump Air Lift Other	•	-			e	-						
Sample Method Waterra Peristaltic Disp. Bailer Steel Bailer Centrif. Air Lift Other		-		LINE!								
Sample Method Waterra Peristaltic Disp. Bailer Steel Bailer Centrif. Air Lift Other Pump	o bro sanu p	ack has 0.00 03	yam or 0.50 mil	readings	y (NIU)							
Waterra Peristaltic Disp. Bailer Steel Bailer Centrif. Air Lift Other				Total Purge Volume:								£,,
Pump	Sample Method											
		Waterra	Peristaltic	Disp. Bailer	Steel B	lailer		1	Ai	r Lift	0	ther
Alidi Alia	Analysis						rui	4				

Sample Site (Con't): FB - 1UTM Location: Zn: OSV Easting: 387863 Northing: 688 1129

Photo No.:

Well Head Space Gases:

	Units	Values
Methane (CH4)	%LEL	
Oxygen (O2)	%	
Carbon Dioxide (C02)	PPM	
Well Head Seal: J-Plug	PVC Cap 🗌 Not Sealed 🗌	Other
Seal Replaced: 🔲 J-Plug 🗌	PVC Cap 🗌 Not required 🗌	Other
Well properly sealed for gas mon	itoring: 🗌 Yes 🗌 No 🛛 Detail	s:

General Notes (Condition of well or other features): Field Blank - collect next to GSI-HA-03A BATCH: 03 OCT 2014

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Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a 🗸	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	☐ HNO3		17:00
1b 🖊	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2 /	1 L (plastic)	General Chemistry	200 ml	~	-		
3 /	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	□ NaOH		
4 🖊	250 ml (glass)	Ammonia (NH3)	120 ml		☐ H₂SO₄		
5 🖌	120 ml (plastic)	Thiocyanate (SCN)	50 ml		☐ HNO3		
6 🗸	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	- ,	-		
8 /	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

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GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	950-A4-128	Project Number:	1343-005.06		Date:			IS M	5720	×5
Approximate Date Drilled:		Client:	GY - AAM		Sampl	er:		RM 3	73	
Piczometer Diameter / Screen Length:	N, N	Project Name:	Mount Nanse GW Sampling Program		Weath	er/Tempe	rature:	Partie	al ch D°c	rad
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name	e	Recov	ery:		Good	з 🗌 Е	Bad
Purge Method 1010										
Waterra	Peristaltic	Disp. Bailer	Steel Ba	liler	C	entrif. Pu	np		Air Lift	
Initial Depth to Water (m):	FROZEN	Purge Start Time:			Purne	End Time	•			
Depth to Bottom (m):	2.2803	Time () minute inte	erval	T			<u> </u>	<u> </u>	[
Submerged Tubing Depth (Depth to water (m)								
Well Stick-up Height (m):		Temperature (°C)								
Estimated Water Volume (L):	pH								
	1	Cond. (µs/cm)							r7	
	المنبذاة سرفيمة مسمقام المن	Specific Cond. (µs/cm)			1. EN				
(DTB – DTW) x 2 (for 2" w volum		Redox (mV)		181.			× 1			
		DO (mg/L)		\mathbb{N}	AL			1		
(DTB-DTW) x 1.1 (f o r 1.5" di	ameter) = 1 well volume	Appearance & Odour Silty, HC odours, etc.)		میں میں		RO	C			
2" casing has 0.16 US	-					X'				
1" casing has 0.04 US	-	Conty for Sulphide								
8" sand pack has 0.73 U 6 5/8" sand pack has 0.50	•	final (mg/L) readings Turbidity		_						
5 5/5 Sand pack has 0.50	ogant of 0.00 infl									
		Total Purge Volume:				an an a land WA state to the second				
Sample Method h (/ [\	· · · · · · · · · · · · · · · · · · ·									
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Cent Pun		Air	Lift		Other	
Analysis				-						

Frozen

. seenes.

Sample Site (Con't): $G \Im I - HA - O ZA$ UTM Location: Zn: $O \Im V$ Easting: $\Im \Im \Im \Im \Im G \Psi$ Northing: $G \Im \Im \Im \Im$ Photo No.: $00 - 000 \Im$, -0009

Well Head Space Gases:

	Units	Values
Methane (CH4)	%LEL	Ś
Oxygen (O2)	%	20.3
Carbon Dioxide (C02)	РРМ	Ø
Well Head Seal: J-Plug		
Seal Replaced: J-Plug	PVC Cap 🗌 Not required 🗌	Other
Well properly sealed for gas mon	toring: 🖓 Yes 🗌 No Details	3:

General Notes (Condition of well or other features): - No change - Potentially procen - difficulty replacing peristatic tubing

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	🗆 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H ₂ SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-			
6	120 ml (plastic)	Sulphide	100 mi		Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

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Sample Site:	MW09-13	Project Number:	1343-005.06	Dates		2015/03/18
Approximate Date Drilled:	vaknown	Client:	GY - AAM	Sam	oler:	AN, JL
Piezometer Diameter / Screen Length:	2"/vaknown	Project Name: Mount Nansen 2015 GW Sampling Program			her/Temperature:	overcast ~2°C
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name_	Reco	very:	Good Bad
Purge Method						
Waterra	Peristaltic	Disp. Bailer	Steel Baile	er	Centrif. Pump	Air Lift
Initial Depth to Water (m): //	E 9.025	Purge Start Time:		Dura	e End Time:	
Depth to Bottom (m):		Time () minute inte	nval:	1 cig		
Submerged Tubing Depth (r	n):	Depth to water (m)				
Well Stick-up Height (m):	0.756	Temperature (°C)				
Estimated Water Volume (L)		pH				
		Cond. (µs/cm)				
(DTB DTW) x 2 (for 2" w	nll diamatar) = 1 wall	Specific Cond. (µs/cm)		~		7
volume		Redox (mV)		\mathbb{Z}^{0}		
		DO (mg/L)		VV.		
(DTB-DTW) x 1.1 (for 1.5" dia	ameter) = 1 well volume	Appearance & Odour (Silty, HC odours, etc.)	Clear,			
2" casing has 0.16 US	gal/ft or 2.032 l/m					
1" casing has 0.04 US	-	Only for Sulphide				
8" sand pack has 0.73 U	•	final (mg/L)				
6 5/8" sand pack has 0.50	1 USgal/ft or 6.35 l/m	readings Turbidity	(UTN)			
		Total Purge Volume:		L.	<u>}</u>	II
Sample Method						
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift	Other
Analysis			······			

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Sample Site (Con't): _	MW09-13	Way pt. collected	on AN GPS.
UTM Location: Zn:	୦ଟ Easting: ୦	389007 Northing:	6881662
Photo No.: 8 - 10	(Camera Bolc	0)	

Well Head Space Gases:

	Units	Values
Methane (CH4)	%LEL	<i>0</i>
Oxygen (O2)	%	19.9
Carbon Dioxide (C02)	PPM	0
ell Head Seal: 📋 J-Plug 🛛 🗹	PVC Cap 🗌 Not Sealed 🗌 Oth	ner
eal Replaced: 🗌 J-Plug 🗌	PVC Cap Not required Oth	ner

General Notes (Condition of well or other features):

-Metal well cashing well in good condition. - Well does not have pre-existing tobiney. - Small amount of water deported on top of ice. - 21 listed -frevious DTB was 36 m. listed in SOW. Located 2 m off MN Rd. access.

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment 🔀	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered			
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	C y anide (total, free, weak acid dissociable)	100 ml	-	🔲 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H ₂ SO ₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml			·····	
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	•		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

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Sample Site:	M	P09-08	Project Number:	1343-00	5.06	Date:		2015/03	/ 18
Approximate Date Dr	illed:	ntron	Client:	GY - AA	M	Samp	ler:	AN, JL	
Piezometer Diameter Screen Length:) ['	/unknown	Project Name:	Mount N GW San Program		Weath	er/Temperature:	clear ski ~ 3°C	*5
Field Blank Collected		Yes Name	Duplicate Collected	: 🗌 Yes	Name	Reco	very:	Good 🗌	Bad
Purge Method									
Waterra		Peristaltic	Disp. Bailer	Ste	el Bailer	<u> </u>	Sentrif. Pump	Air I	_ift
Initial Depth to Water	(m): 105	0.505	Purge Start Time:			Purge	End Time:		
Depth to Bottom (m):	• •		Time () minute in	terval:			T		
Submerged Tubing D	epth (m):		Depth to water (m)						
Well Stick-up Height	(m):	0.861	Temperature (°C)			-			
Estimated Water Volu	ume (L):		pH						
			Cond. (µs/cm)						
(DTB – DTW) x 2 (f	for 2" well d	iameter) = 1 well	Specific Cond. (µs/cr	n)		5	$\frac{1}{1}$		
(010-010) × 2 (1	volume	ameter) – i wen	Redox (mV)			RO			
			DO (mg/L)		X				
(DTB-DTW) x 1.1 (for	1.5" diamet	ter) = 1 well volume	Appearance & Odour Silty, HC odours, etc						
2" casing has 0.	.16 USgal/fi	t or 2.032 l/m		-1					
1" casing has 0.	-		Only for Sulphid	e					
8" sand pack has	•		final (mg/L)						
6 5/8" sand pack h	as 0.50 05j	gal/ft or 6.35 l/m	readings Turbidit	y (NTU)					
			Total Purge Volume:					l	I
Sample Method									
Wat	terra	Peristaltic	Disp. Bailer	Steel Bail	er Cen Pu		Air Lift	Ot	her
Analysis									

Sample Site (Con't): <u>MP09-08</u> Way pt. collected on AN 675. UTM Location: Zn: 08 Easting: 0389160 Northing: 6881715 Photo No.: 23-25 (camera 8010)

Well Head Space Gases:

	Units	Values
Methane (CH4)	%LEL	O
Oxygen (O2)	%	20.0
Carbon Dioxide (C02)	РРМ	ò
Well Head Seal: 🔲 J-Plug 🗌	PVC Cap Not Sealed	Other
Seal Replaced: 🗌 J-Plug 🗌		
Well properly sealed for gas moni	itoring: 🗌 Yes 🔄 No Details	: no captplug.

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General Notes (Condition of well or other features): - 5% waterra found in well. No peri. - Waterra inner tubing, not used for sampling, see photos. - No sound of water flowing in creek. - DP frozen solid.

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered			
1b	40 mi (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	🗆 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-			
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 mi	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered			

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Sample Site:	GSI-HA-OYA	Project Number:	1343-005.06	Date		18 Mar 15
Approximate Date Drilled:		Client:	GY - AAM	Sam	oler:	RMAS
Piezometer Diameter / Screen Length:	III DP	Project Name:	Mount Nansen 2 GW Sampling Program	10/20/20/20/20/20/20/20/20/20/20/20/20/20	her/Temperature:	clear 0-C
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name_	Reco	very:	Good Bad
Purge Method				<u> </u>		
Waterra	Peristaltic	Disp. Bailer	Steel Baile	r	Centrif. Pump	Air Lift
Initial Depth to Water (m):	1.909	Purge Start Time:		Purg	e End Time:	
Depth to Bottom (m):	2.188	Time () minute int	erval:			
Submerged Tubing Depth (m		Depth to water (m)				
Well Stick-up Height (m):	0.575	Temperature (°C)				
Estimated Water Volume (L):	0.14	рH		1		
		Cond. (µs/cm)	DIF	KE		
(DTB – DTW) x 2 (for 2" we	ll diameter) = 1 well	Specific Cond. (µs/cm)	SAMP		
volume		Redox (mV)				
		DO (mg/L)				
(DTB-DTW) x 1.1 (for 1.5" dia	meter) = 1 well volume	Appearance & Odour Silty, HC odours, etc.)				
2" casing has 0.16 USg	al/ft or 2.032 l/m					
1" casing has 0.04 USg		Colv for Sulphide				
8" sand pack has 0.73 US	-	final (mg/L)				
6 5/8" sand pack has 0.50	USgal/ft or 6.35 l/m	readings Turbidity	(NTU)			
		Total Purge Volume:		1		
Sample Method						
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift	Other
Analysis						

Sample Site (Con't): GSI-HA-O4A UTM Location: Zn: OV Easting: 377919 Northing: 6881129Photo No.: 100 - 0014 , -0015 Well Head Space Gases: Units Values Methane (CH4) %LEL 20. Oxygen (O2) % Carbon Dioxide (C02) PPM X Well Head Seal: J-Plug PVC Cap Not Scaled Other ______. Seal Replaced: J-Plug PVC Cap Not required Other_____.

Well properly sealed for gas monitoring: Yes No Details: ______.

General Notes (Condition of well or othe features):	r
. New tubing - muddy sample, very tubic	[
¥7 bottles	

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a 🗸	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3	100	17:55
1b -	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered		茵15	•
2	1 L (plastic)	General Chemistry	200 ml			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml		🗌 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-	HNO3		
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

Sample Site:	GS1-HA-OSA	Project Number:	1343-005.06		Date:		18 Mar	205
Approximate Date Drilled:	· · · · · · · · · · · · · · · · · · ·	Client:	GY - AAM		Sample	r:	RM / 75	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Piezometer Diameter / Screen Length:	1""DP	Project Name:	Mount Nanser GW Sampling Program		Weathe	r/Temperature:	clear 0°C	
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name	;	Recove	ry:	Good [Bad
Purge Method				<u> </u>				
Waterra	Peristaltic	Disp. Bailer	Steel Ba	iler	Ce	ntrif. Pump	Air Li	ft
Initial Depth to Water (m):		Purge Start Time:		12.22	Purge E	nd Time:		
Depth to Bottom (m):		Time () minute inte	erval:		1			
Submerged Tubing Depth (r	n):	Depth to water (m)				· ·		
Well Stick-up Height (m):	0-47(ICE)	Temperature (°C)						
Estimated Water Volume (L)		рН						
	L	Cond. (µs/cm)						
(DTB – DTW) x 2 (for 2" w	all diameter) = 1 wall	Specific Cond. (µs/cm))		-17		·	
volume		Redox (mV)		10	NO		·····	
		DO (mg/L)		CA	Y /	N I		***
(DTB-DTW) x 1.1 (for 1.5" dia	ameter) = 1 well volume	Appearance & Odour (Silty, HC odours, etc.)	Clear,		R			
2" casing has 0.16 US	-				<u> </u>			
1" casing has 0.04 US	÷	Only for Sulphide (mg/L)						
8" sand pack has 0.73 U 6 5/8" sand pack has 0.50	-	final (IIIg/L) readings Turbidity	(NTU)					
		Total Purge Volume:						
Sample Method () //				-				
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centr Pum		Air Lift	Othe	er
Analysis				Full	P			
- 1				.1				

Sample Site:	6	LL07-02	Project Number:	1343-	005.06	Date	:		2015/03	/ (8
Approximate Date Drille	67.662.69	nknown	Client:	GY - A	\AM	San	pler:		AN,JL	
Piezometer Diameter / Screen Length:	1	5.5 cm/unknown	Project Name:	\$724	t Nansen 20 ampling am	55007005002	ther/Tem	perature:	Clear S ~ 3°C	
Field Blank Collected	E	Yes Name	Duplicate Collected:	Ye	s Name	Rec	overy:		Good 🗌	🗌 Bad
Purge Method						<u> </u>			-	
Waterra		Peristaltic	Disp. Bailer	S	iteel Bailer		Centrif. F	Pump	Ai	r Lift
Initial Depth to Water (m):	DUN.	Purge Start Time:			Pur	ye End Tir	ne:		
Depth to Bottom (m):		7.20	Time () minute int	erval:						
Submerged Tubing Dep	th (m):		Depth to water (m)							
Well Stick-up Height (m)	:	1.305	Temperature (°C)							
Estimated Water Volum	e (L):		рН					e .		
			Cond. (µs/cm)							
(DTB – DTW) x 2 (for :	2° woll (tiomator) = 1 wall	Specific Cond. (µs/cm)			\mathcal{I}			
	lume	uidinetei) – i weli	Redox (mV)		-					
			DO (mg/L)			1		-7	'	
(DTB-DTW) x 1.1 (for 1.5	" diame	eter) = 1 well volume	Appearance & Odour	(Clear,						
2" casing has 0.16	USaal	ft or 0.020 l/m	Silty, HC odours, etc.)			1	St. Marthanetterran			
1" casing has 0.04	-		Sulphide			- 7		_		
8" sand pack has 0.7			Only for (mg/L)					-		
6 5/8" sand pack has	0.50 Ŭŝ	Sgal/ft or 6.35 l/m	readings Turbidity	(NTU)						
			Tabel Deres Val						L	
Sample Method			Total Purge Volume:							
Water	-2	Peristaltic	Disp. Bailer	Steel Ba	oilea	Castail		:		
i i dief	u	renstatue	Disp. Daller	Steel Ba	diler	Centrif. Pump	^A	ir Lift		Other
Analysis		·······				· -···F	+			

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Sample Site (Con't): GSI - HA - 0SAUTM Location: Zn: O8V Easting: 387900 Northing: 6881124Photo No.: |OO - OO12| - OO13

Well Head Space Gases:

	Units	Values				
Methane (CH4)	%LEL	ø				
Oxygen (O2)	%	20.1				
Carbon Dioxide (C02)	PPM	Ø				
Well Head Seal: SJ-Plug	PVC Cap 🗌 Not Sealed 🔲	Other				
Seal Replaced: J-Plug	PVC Cap 🗌 Not required 🔲	Other				
Well properly sealed for gas moni	Well properly sealed for gas monitoring: Tyes 🗌 No Details:					

General Notes (Condition of well or other features):
-tubing logen in well,
-tubing forcen in well, can Y remove

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered	HCL		
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	+	🗋 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-	☐ HNO3		
6	120 ml (plastic)	Sulphide	100 ml	*	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 mi	Field Filtered	-		

Sample Site (Con't): <u>GLL07-02</u> Way pf. collected on AN GPS. UTM Location: Zn: U8 Easting: 0389070 Northing: 6881699 Photo No.: 20-22 (Commer 8010)

Well Head Space Gases:

	Units	Values
Methane (CH4)	%LEL	0
Oxygen (O2)	%	19.8
Carbon Dioxide (C02)	PPM	0
Well Head Seal: 🗌 J-Plug 🗌 Seal Replaced: 🔲 J-Plug 🗌	PVC Cap Not required	Other no PVC in well.
Well properly sealed for gas moni	toring: 🗌 Yes 💟 No Details	: only metal lid

General Notes (Condition of well or other features): -Large metal (15.5 cm) well casing. -No PVC with in casing. -No water detected in well. Tip of IFM had both ice and silt after measuring DTB. -Previous DTB recorded as <u>5.8</u> m. Granfared to 7.2 m found this event.

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	🗌 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H ₂ SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-			
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		<u> </u>
8	120 ml (plastic)	Dissolved Alkalinity	100 mi	Field Filtered	-		

Sample Site:	MP09-02	Project Number:	1343-005.06	Date:	2015/03/19
Approximate Date Drilled:	unknown	Client:	GY - AAM	Sampler:	AW,JL
Piezometer Diameter / Screen Length:	1"/viknown.	Project Name:	Mount Nansen 2015 GW Sampling Program	Weather/Temperature:	Overcast ~2°C
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name	Recovery:	Good Bad
Purge Method					
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift
Initial Depth to Water (m):		Purge Start Time:		Purge End Time:	
Depth to Bottom (m):		Time () minute inte	erval:		
Submerged Tubing Depth (n	n):	Depth to water (m)			
Well Stick-up Height (m):		Temperature (°C)			
Estimated Water Volume (L)	:	рН		201	
		Cond. (µs/cm)	- Lat	ST LIN	
(DTB DTW) x 2 (for 2" w	ell diameter) = 1 well	Specific Cond. (µs/cm)	1 1 1 1 1 1 1		
volume		Redox (mV)			
		DO (mg/L)	V		
(DTB-DTW) x 1.1 (for 1.5" dia	ameter) = 1 well volume	Appearance & Odour (Silty, HC odours, etc.)	Clear,		
2" casing has 0.16 US	gal/ft or 2.032 l/m				
1" casing has 0.04 USg		Only for Sulphide			
8" sand pack has 0.73 U	•	final (mg/c)	(A)7(1)		
6 5/8" sand pack has 0.50	USgalint of 6.35 i/M	readings Turbidity			
		Total Purge Volume:			· · · · · · · · · · · · · · · · · · ·
Sample Method					
Waterra	Peristaltic	Disp. Bailer	4	entrif. Air Lift ² ump	Other
Analysis					

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Sample Site (Con't): <u>MP09-02</u> Way pt. collected on AN GPS. UTM Location: Zn: 08 Easting: 0388867 Northing: 688 1810 Photo No.: 26-28 (Camera 8010)

Well Head Space Gases:

	Units	Values
Methane (CH4)	%LEL	
Oxygen (O2)	%	
Carbon Dioxide (C02)	PPM	
Weil Head Seal: 🗌 J-Plug 🗌	PVC Cap 🗌 Not Sealed · 🗌	OtherN/4
Seal Replaced: 🗌 J-Plug	PVC Cap 🗌 Not required 🗍	Other $\frac{N/A}{A}$.
Well properly sealed for gas mon	itoring: 🗌 Yes 🗌 No 🛛 Detail:	s:

General Notes (Condition of well or other features): Well frozen inderneth, ice. DP not visable. DP located with pinfinder. Tubing found frozen in ice at location.

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment 🔀	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml		-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	□ NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H ₂ SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-	HNO3		· · · · · · · · · · · · · · · · · · ·
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

and the second

-> 19 harch 16:20 @ 12.080 h

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Sample Site:	MW09-23	Project Number:	1343-005.06	Date		19 Mar 2015
Approximate Date Drilled:		Client:	GY - AAM	Sam	pler:	RM/75
Piezometer Diameter / Screen Length:	2" PUC	Project Name:	Mount Nansen : GW Sampling Program	1933653365555	her/Temperature:	dear -2°C
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name_	Reco	wery:	Good Bad
Purge Method				La contrata de la contrat		
Waterra	Peristaltic	Disp. Bailer	Steel Baile	er	Centrif. Pump	Air Lift
<u> </u>						
Initial Depth to Water (m):	12.124	Purge Start Time:		Purg	e End Time:	0912
Depth to Bottom (m):	15,772	Time () minute inte	rval:		1620	
Submerged Tubing Depth (m):	Depth to water (m)			12.080	
Well Stick-up Height (m):	0.14	Temperature (°C)			1.9	
Estimated Water Volume (L	1: 7.296	рН			7-40	
		Cond. (µs/cm)			800	
(DTB – DTW) x 2 (for 2" v	vell diameter) = 1 well	Specific Cond. (µs/cm)			1450	
volum		Redox (mV)			17.5	
		DO (mg/L)			3.80,	
(DTB-DTW) x 1.1 (for 1.5" di 2" casing has 0.16 US		Appearance & Odour (Silty, HC odours, etc.)	Slear, Sider,	ief sour	turbic	
1" casing has 0.04 US 8" sand pack has 0.73 L	JSgal/ft or 9.271 l/m	Only for final Sulphide (mg/L)			1.22	
6 5/8" sand pack has 0.5	0 USgal/ft or 6.35 l/m	readings Turbidity	(NTU)		measurable	
		Total Purge Volume;	74	l	<u> </u>	······
Sample Method			/ [
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift	Other
Analysis 🔨						

Sample Site (Con't): $\underline{M} = 009 - 23$ UTM Location: Zn: 08 Easting: 5894 Northing: 688055Photo No.: 100 - 0016, -0018, -0019

Well Head Space Gases:

	Linits	Velues					
Methane (CH4)	%LEL	sin the second second					
Oxygen (O2)	%	20.4					
Carbon Dioxide (C02)	PPM	and the second second					
Well Head Seal: 🔲 J-Plug 🛛 🕑	Well Head Seal: J-Plug PVC Cap Not Sealed Other						
Seal Replaced:] J-Plug PVC Cap Not required Other							
Well properly sealed for gas monitoring: Ves INo Details:							

General Notes (Condition of well or other features):
Lwell Pvc is, bent at
the surface
well Pvc is bent at the surface -turbid sample was
collected
-transducer cable needs
replacement
* 9 bottle

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered		Fill	16:20
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered		*	
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	~	🗌 №аОН		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H ₂ SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-			
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-	Fell	

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Sample Site:	MW09-02	Project Number:	1343-	005.06		Date:			19 Ma	xr 2015	1
Approximate Date Drilled:		Client:	GY - /	AAM		Sampl	er:		13/	RM	
Piezometer Diameter / Screen Length:	2° 40	Project Name:	8922	t Nanser Sampling am	2015	Weath	er/Tempo	erature:	Clouc 1°C	λų -	
Field Blank Collected	Yes Name	Duplicate Collected:	Y	es Name		Recov	ery:		Good 🗌	🔄 Bad	
Purge Method											
Waterra	Peristaltic	Disp. Bailer	5	Steel Ba	ler	c	entrif. Pu	ımp	A	\ir Lift]
	~]
Initial Depth to Water (m):	3.431	Purge Start Time:	145	(-	Purge	End Tim	e:			
Depth to Bottom (m):	4.705	Time (<u> </u>	erval:	455	1500	1505	1210	1212			
Submerged Tubing Depth (n	ו):	Depth to water (m)		3.68	4.08	4.23		4.32			<u> </u>
Well Stick-up Height (m):	0.66	Temperature (°C)					2.3	2.3			
Estimated Water Volume (L)	: 2.548	рН					7.33	7.29			
		Cond. (µs/cm)					1730	1732			
(DTB – DTW) x 2 (for 2" we	ell diameter) = 1 well	Specific Cond. (µs/cm)					3066			
volume		Redox (mV)					-132	-130			
		DO (mg/L)			*		1.0	0.9			
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume 2" casing has 0.16 USgal/ft or 2.032 l/m		Appearance & Odour Silty, HC odours, etc.)		clear NO Oslo	}						
1" casing has 0.10 00s 1" casing has 0.04 USs 8" sand pack has 0.73 US	al/ft or 0.508 l/m	Only for Sulphide (mg/L)			¥			0.02			
6 5/8" sand pack has 0.50	-	readings Turbidity	(NTU)					9,7			1
		Total Purge Volume:		0.5	1.5	2	3		- 2002	he 7530	4.4
Sample Method		Contraction of the second second				,			m ng	<u></u>	
Waterra	Peristaltic	Disp. Bailer	Steel B	Bailer	Cen Pur	1	Ai	r Lift		Other	
Analysis											1

Sample Site (Con't):						
UTM Location: Zn: つらい	Easting:389395	Northing: 688 0556				
Photo No.: 100 - 004	12, -0043					

Well Head Space Gases: `

	Units	Values			
Methane (CH4)	%LEL	\square			
Oxygen (O2)	%	20.4			
Carbon Dioxide (C02)	PPM	Ø			
Well Head Seal: 🗂-Plug 🔲	PVC Cap 🗌 Not Sealed 🔲	, Other			
Seal Replaced: 🖵 J-Plug 🔲 PVC Cap 🗌 Not required 🗌 Other					
Well properly sealed for gas monitoring: Yes 🗌 No Details:					

General Notes (Condition of well or other features):
- replaced tubing
V
* 9 bottles

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments	
1a 🗸	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	-2THNO3	100	Sampled @ 15:	30
1b /	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered	THCL	40		
2 ·	1 L (plastic)	General Chemistry	200 ml	-	-	750		
3 🗸	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	[¶ №аОн	100		
4 /	250 ml (glass)	Ammonia (NH3)	120 ml	-	⊡∕H₂SO₄	250		
5 /	120 ml (plastic)	Thiocyanate (SCN)	50 ml	ter.	HNO3	100		
6 🗸	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH	120		
7 🗸	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-	230	- · ·	
8 /	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-	100		

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Sample Site:	MW09-24	Project Number:	1343-	005.06		Date:			19 Ma	r 2015	
Approximate Date Drilled:		Client:	GY -	AAM		Sampl	er:			TSIRN	
Piezometer Diameter / Screen Length:	2/1/1	Project Name:	Mount Nansen 2015 GW Sampling Program		Weather/Temperature:				cloudy O°C		
Field Blank Collected	Ves Name FB2	Duplicate Collected	Duplicate Collected: Yes		······································	Recov	ery:		Good	🗍 Bad	
Purge Method											
Waterra	Peristaltic	Disp. Bailer		Steel Bai	ler	C	entrif. Pu	ımp	Ai	r Lift	
Initial Depth to Water (m):	9.114	Purge Start Time:	124	2		Purge	End Tim	e:			
Depth to Bottom (m):	11.193	Time () minute in	terval:	1250			· .				
Submerged Tubing Depth (n	,	Depth to water (m)									
Well Stick-up Height (m):	0.62	Temperature (°C)		(0,9	0.7	0.7	0.7			
Estimated Water Volume (L)	: 4.16	рН			12.01	713	713	713			
		Cond. (µs/cm)			146	269	\$53	420			
(DTB DTW) x 2 (for 2" w	ell diameter) = 1 well	Specific Cond. (µs/cn	n)		260	539	1030	995			
volume		Redox (mV)			75.2	746.0	780	76.9			
		DO (mg/L)			8.76	8.01	50,8	7.98			
(DTB-DTW) x 1.1 (for 1.5" dia	ameter) = 1 well volume	Appearance & Odour Silty, HC odours, etc.			Some	4					
2" casing has 0.16 US	-		·		Stan 1			7			
1" casing has 0.04 USg		Only for Sulphid (mg/L)	e					0.23			
8" sand pack has 0.73 U 6 5/8" sand pack has 0.50	0	tinal (IIIg)E) readings Turbidit									
	obguitt of 0.00 and		y (1410)					21.7			
		Total Purge Volume:			4	6	/0	150	-		
Sample Method		· · · · · · · · · · · · · · · · · · ·									
Waterra	Peristaltic	Disp. Bailer	Steel E	lailer	Cent Pun		Ai	r Lift		Other	
Analysis		~				·					

Sample Site (Con't): MW09-24

UTM Location: Zn: 0テレ Easting: 389 560 Northing: 6880623 Photo No.: 100 - 00321 - 0033

Well Head Space Gases:

	Units	Values						
Methane (CH4)	%LEL	Ø						
Oxygen (O2)	%	20.1						
Carbon Dioxide (C02)	PPM	\varnothing						
Well Head Seal: 🗍 J-Plug 🧧	PVC Cap 🗌 Not Sealed 🗌	Other						
Seal Replaced: 🔲 J-Plug 🗹	Seal Replaced: J-Plug PVC Cap Not required Other							
Well properly sealed for gas moni	toring: 🗹 Yes 🗌 No 🛛 Details							

General Notes (Condition of well or other features):
Harge,
*9 bottler

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment 🔀	Preservative Added	Volume Collected (ml)	Comments	
1a 🔶	120 ml (plastic)	Dissolved Metals 🗸	100 ml	Field Filtered	-£] HNO3	120	Samplede	130:
1b 🗸	40 ml (glass)	Dissolved Mercury -	15 mL	Field Filtered	[]2 HCL	40		
2 🗸	1 L (plastic)	General Chemistry	200 ml	-	-	750		
3 ⁄	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 mł	~	E ⁻ ŃaOH	145		
4 🗸	250 ml (glass)	Ammonia (NH3)	120 ml	-	∐ H₂SO₄	250		
5 🗸	120 mì (plastic)	Thiocyanate (SCN) -	50 ml	-	É HNO3	220		
6 /	120 ml (plastic)	Sulphide 🖌	100 ml	~	Zinc Acetate, capped and mixed, then NaOH	120		
7 /	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-	Q Rev		
8	120 ml (plastic)	Dissolved Alkalinity 🗸	100 ml	Field Filtered	-	, ² 2		

5

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Sample Site:	CH-P-13-02/	Project Number:	1343-005.06	Dat	e:	19 Mar 2015
Approximate Date Drilled:		Client:	GY - AAM	San	npler:	RMIT
Piezometer Diameter / Screen Length:	1-5"10	Project Name:	Mount Nansen 2015 GW Sampling Program		cloudy 2.0°C	
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name_	Rec	overy:	Good Bad
Purge Method N/A						
Waterra	Peristaltic	Disp. Bailer	Steel Baile	er	Centrif. Pump	Air Lift
		-				and Crients
Initial Depth to Water (m):	DRY	Purge Start Time:		Pur	ge End Time:	
Depth to Bottom (m):	8,140	Time () minute inte	erval:			
Submerged Tubing Depth (n	n):	Depth to water (m)				
Well Stick-up Height (m):	0.60	Temperature (°C)				
Estimated Water Volume (L)		рН				
		Cond. (µs/cm)				
(DTB – DTW) x 2 (for 2" w	ell diameter) = 1 well	Specific Cond. (µs/cm)		$\lambda \lambda \lambda$		
volume		Redox (mV)		<u>D KA</u>		
		DO (mg/L)	R	N Ko	and the	
(DTB-DTW) x 1.1 (for 1.5" dia	·	Appearance & Odour (Silty, HC odours, etc.)	Clear,	9		
2" casing has 0.16 US(-	Quit-bide				
1" casing has 0.04 US 8" sand pack has 0.73 U	-	Conly for Sulphide (mg/L)				
6 5/8" sand pack has 0.50	•	final (III9/2) readings Turbidity				
		Total Purge Volume:				
Sample Method						
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift	Other
Analysis				rump		

Sample Site (Con't): $\underline{CH+P-13-02}$ Photo No.: 100-0044,-0045 Well Head Space Gases:

features):	ndition of well or other
* Add to	nap

	Units	Values
Methane (CH4)	%LEL	Ð
Oxygen (O2)	%	19.8
Carbon Dioxide (C02)	РРМ	-0-
Well Head Seal: 🗌 J-Plug 💆	PVC Cap 🗌 Not Sealed 🔲	Other
Seal Replaced: 🔲 J-Plug 🔽	PVC Cap 🗌 Not required 🗌 (Other
Well properly sealed for gas mor	nitoring: 🗹 Yes 🗌 No 🛛 Details	

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment 🔀	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	☐ HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered	C HCL		
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	C y anide (total, free, weak acid dissociable)	100 ml		🗆 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-			·····
6	120 ml (plastic)	Sulphide	100 mi	~	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 mi	Field Filtered	*		

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Sample Site:	651-PC-03-A	/ß Project Number:	1343-005.06		Date:		2015/03	/19
Approximate Date Drilled			GY - AAM		Sampler:		AN, JL	
Piezometer Diameter / Screen Length:	" Vakrown "/mkrown	Project Name:	ame: Mount Nansen 2015 GW Sampling Program		Weather/Temperature:		overcast ~-3°C	
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name		Recovery:		Good	Bad
Purge Method				k				
Waterra	Peristaltic	Disp. Bailer	Steel Bai	ler	Centrif. P	ump	Air	Lift
Initial Depth to Water (m):		Purge Start Time:			Purge End Tin	1e:		
Depth to Bottom (m):	- Automatic	Time () minute inte	erval:					
Submerged Tubing Depth	ı (m):	Depth to water (m)						
Well Stick-up Height (m):		Temperature (°C)				100		
Estimated Water Volume	(L):	pН			, a			
		Cond. (µs/cm)		1	Tbe			
(DTB – DTW) x 2 (for 2*	well diameter) = 1 well	Specific Cond. (µs/cm)		N.X	V			
volu		Redox (mV)	1	< 10 h		1		
		DO (mg/L)						
(DTB-DTW) x 1.1 (for 1.5"	·	 Appearance & Odour (Silty, HC odours, etc.) 	Clear,					
2" casing has 0.16 L	-							
1" casing has 0.04 L 8" sand pack has 0.73	-	Only for Sulphide (mg/L)						
6 5/8" sand pack has 0.	*	final (mg/L) readings Turbidity	(NTU)					
Sample Method		Total Purge Volume:						
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centri Pump		ir Lift	Ot	her
Analysis								

Sample Site (Con't): GSI - PC - O3 - A/BUTM Location: Zn: Easting: Photo No.: 29 - 31 (Concorr 5010)

Well Head Space Gases:

	Units	Values
Methane (CH4)	%LEL	Contraction and the second
Oxygen (O2)	%	
Carbon Dioxide (C02)	РРМ	energia de la constanción de la constan
Well Head Seal: 🗌 J-Plug 🗌	PVC Cap 🗌 Not Sealed 🗌	Other
Seal Replaced: 🔲 J-Plug 🗌	PVC Cap Not required	Other
Well properly sealed for gas moni	itoring: 🗌 Yes 🗌 No 🛛 Details	

General Notes (Condition of well or other features): Visited UTM provided in SOW. Thick solid ice developed on creek at location. Searched area with pin finder. DP not located with pin finder. Most likely frozen undernedth flick ice accountertiers

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered			
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml		-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	□ NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H ₂ SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-	☐ HNO3		
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	÷		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	*		

Way pt. not collected.

Northing:

Sample Site:	651-DC-10-A13	Project Number:	1343-005.06		Date:			20151	03/19	7
Approximate Date Drilled:	unknown.	Client:	GY - AAM		Sampl	er:		AN, J	2	
Piezometer Diameter / Screen Length:	("/unknown	Project Name: Mount Nansen 2015 GW Sampling Program W		Weather/Temperature:		erature:	overenst ~O*C			
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name		Recov	ery:		Good 🗌	Ba	ad
Purge Method			*							
Waterra	Peristaltic	Disp. Bailer	Steel Bai	ler	C	entrif. Pu	ımp	4	Air Lift	
								Second Second		
Initial Depth to Water (m):	0.70	Purge Start Time:			Purge	End Tim	e:	<u> </u>	·····	
Depth to settor (m): LCE	0.75	Time () minute inte	rval:							
Submerged Tubing Depth (n	n):	Depth to water (m)				*****				
Well Stick-up Height (m):	0.17	Temperature (°C)								
Estimated Water Volume (L)	: ~ 0.05	pН					3			
		Cond. (µs/cm)				1)		
(DTB – DTW) x 2 (for 2" w	ell diameter) = 1 well	Specific Cond. (µs/cm)				TC	/			
volume		Redox (mV)			AN			7		
		DO (mg/L)			K					
(DTB-DTW) x 1.1 (for 1.5" dia	ameter) = 1 well volume	Appearance & Odour (Silty, HC odours, etc.)	Clear,							
2" casing has 0.16 US	5				ſ	and the second sec				
1" casing has 0.04 US		Only for Sulphide				And the second second				
8" sand pack has 0.73 U	-	final (mg/L)								
6 5/8" sand pack has 0.50	USgal/ft or 6.35 l/m	readings Turbidity	(NTU)							
		Total Purge Volume:	I	I.,,,,,,	I		.i	L		
Sample Nethod										
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Cent Pun		Ai	r Lift		Other	
Analysis									-	

Sample Site (Con't): <u>651-DC-10-A/B</u> Way pt. collected on AN GPS. UTM Location: Zn: 08 Easting: 0390862 Northing: 6880448 Photo No.: 60-62 (Concera 8010)

	linits	/ Va	lues 👌
Methane (CH4) %LEL 🔿			0
Oxygen (O2)	20.0	20.0	
Carbon Dioxide (C02)	PPM	0	0
Well Head Seal: J-Plug Seal Replaced: J-Plug Seal Replaced: J-Plug Sealed for gas monitorial sea	PVC Cap YNot required	Other	
		ziplock b	

General Notes (Condition of well or other features): 651-DC-10-A Depth to ice : 0.995 m Peri. tubing found in B well. Tubing was frozen in well and coold not be remarked. - 5mm of standing mater measured - on top of ice. - * Get j-plug for well A

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	🗌 №ОН		
4	250 mi (glass)	Ammonia (NH3)	120 ml	-	□ H ₂ SO ₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-			
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-	······	

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Sample Site:	651-0G-08-A/B	Project Number:	1343-005.06	Date	ĸ	2015/03/19
Approximate Date Drilled:	Unknown	Client:	GY - AAM	Sam	pler:	ANT
Piezometer Diameter / Screen Length:	("/unknown.	Project Name:	Mount Nansen GW Sampling Program		ther/Temperature:	overcast ~2°C
Field Blank Collected	Yes Name	Duplicate Collected	🗌 Yes Name	Rec	overy:	Good Bad
Purge Method						
Waterra	Peristaltic	Disp. Bailer	Steel Bai	ler	Centrif. Pump	Air Lift
initial Depth to Water (m):		Purge Start Time:		Purg	je End Time:	
Depth to Bottom (m):		Time () minute int	erval:			
Submerged Tubing Depth (r	n):	Depth to water (m)				Σ.
Well Stick-up Height (m):		Temperature (⁰C)				
Estimated Water Volume (L)	:	рН			100	4
		Cond. (µs/cm)			1 44	
(DTB DTW) x 2 (for 2" w	ell diameter) = 1 well	Specific Cond. (µs/cm)			104	-
volume	,	Redox (mV)			10	
		DO (mg/L)		1 X		
(DTB-DTW) x 1.1 (for 1.5" dia	ameter) = 1 well volume	Appearance & Odour		No		
2" casing has 0.16 US	nal/ft or 2 032 l/m	Silty, HC odours, etc.				
1" casing has 0.04 US		Only for Sulphide	•			
8" sand pack has 0.73 U	+	final (mg/L)		-	~~	
6 5/8" sand pack has 0.50	USgal/ft or 6.35 l/m	readings Turbidity	/ (NTU)			
		Total Purge Volume.		<u>I</u> I		
Sample Method						
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif.	Air Lift	Other
Analysis				Ритр		

Sample Site (Con't):	<u>6-1- De-08-</u>	A/B
UTM Location: Zn:	Easting:	
	-1 (-	1

No way pf. collected

Northing:

Photo No.: 54-56 ((ameron 8010).

Well Head Space Gases:

	Units	Veiues
Methane (CH4)	%LEL	
Oxygen (O2)	%	
Carbon Dioxide (C02)	PPM	
Well Head Seal: 🔲 J-Plug 📋	PVC Cap] Other
Seal Replaced: 🗌 J-Plug 🗌	PVC Cap 🗍 Not required 🗍	Other
Well properly sealed for gas mon	itoring: 🗌 Yes 📋 No 🛛 Detai	ls:

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General Notes (Condition of well or other features):

Visited utm listed in the SOW. Visited Vin listed in the SOW. DP's not located. Swept area with pin finder, not able to detect. Large accumulation of overflow on Upper Dome creek. DP's most likely buried under ice. Sites should be well flagged in spring in anticipation of ice accumulation.

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment 🔀	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered			
15	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-	*		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	□ NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-			
6	120 ml (plastic)	Sulphide	100 ml	~	Zinc Acetate, capped and mixed, then NaOH		·····
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 mi	Field Filtered			

Sample Site:	651-DC-07-A/B	Project Number:	1343-005.06	Date	:	2015/03/19
Approximate Date Drilled:	Jaknowa	Client:	GY - AAM	Sam	pler:	AN JL
Piezometer Diameter / Screen Length:	1" /unknown	Project Name:	Mount Nansen GW Sampling Program		ther/Temperature:	Overcast ~ 2°C
Field Blank Collected	Yes Name	Duplicate Collected:	🗌 Yes Name	Rec	overy:	Good Bad
Purge Method						
Waterra	Peristaltic	Disp. Bailer	Steel Baile	er	Centrif. Pump	Air Lift
Initial Depth to Water (m):		Purge Start Time:		Parc	je End Time:	
Depth to Bottom (m):		Time () minute inte	rval:			
Submerged Tubing Depth (r	m):	Depth to water (m)				
Well Stick-up Height (m):		Temperature (⁰ C)				
Estimated Water Volume (L)):	рH			1 P	
		Cond. (µs/cm)				/
(DTB – DTW) x 2 (for 2" w	ell diameter) = 1 well	Specific Cond. (µs/cm)			100	
volum		Redox (mV)			V	
		DO (mg/L)		X X		
(DTB-DTW) x 1.1 (for 1.5" dia	ameter) = 1 well volume	Appearance & Odour (Silty, HC odours, etc.)	Clear,	N		
2" casing has 0.16 US	-					
1" casing has 0.04 US	-	Only for Sulphide (mg/L)			- Chamberry 1, 1	
8" sand pack has 0.73 U 6 5/8" sand pack has 0.50	-	LIDRI				
0 5/6 Sanu pauk nas 0.50	o obyami or 6.55 mit	readings Turbidity				
		Total Purge Volume:			· · · · · · · · · · · · · · · · · · ·	<u> </u>
Sample Method						
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift	Other
Analysis						

Sample Site (Con't):	651-DC-07-A/B	Way	et.	Rot	collected
----------------------	---------------	-----	-----	-----	-----------

Northing:

UTM Location: Zn: Easting: Photo No.: 51 - 53 (Camera 8010)

	Units	Values
Methane (CH4)	%LEL	
Oxygen (O2)	%	
Carbon Dioxide (C02)	РРМ	
Well Head Seal: 🔲 J-Plug 🗌	PVC Cap 🗌 Not Sealed 🗌	Other
Seal Replaced: 🗌 J-Plug 🗌	PVC Cap 🗌 Not required 🗍	Other
Well properly sealed for gas mon	itoning: 🗌 Yes 🗌 No 🛛 Detail:	S:

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General Notes (Condition of well or other features):
Visited UTM listed in the sow.
Large amound of over flows accumulated on upper Donne ork
Attempted to locate DP using
pinfinder, mable to detect.
DP's assumed to be buriled
in accumulated ice.

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment 🔀	Preservative Added	Volume Collected (ml)	Comments
1a	120 mł (plastic)	Dissolved Metais	100 ml	Field Filtered			
1ט	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-			
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	🗋 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-			
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 mi (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

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Sample Site:	651-DC-06-A/B	Project Number:	1343-005.06		Date:		2015/03	3/19
Approximate Date Drilled:	vaknown.	Client:	GY - AAM		Sampler: Weather/Temperature:		AN, JL Overcast ~ 2°C	
Piezometer Diameter / Screen Length:	1"/vnknown	Project Name:	Mount Nanser GW Sampling Program					
Field Blank Collected	Yes Name	Duplicate Collected	Yes Name		Recovery:		Good	Bad
Purge Method				<u>ka</u>			4	
Waterra	Peristaltic	Disp. Bailer	Steel Bai	iler	Centrif. P	ump	Air	Lift
Initial Depth to Water (m):		Purge Start Time:			Purge End Tin	ne:		
Depth to Bottom (m):		Time () minute inf	erval:			T T		
Submerged Tubing Depth (r	n):	Depth to water (m)				++		
Well Stick-up Height (m):		Temperature (°C)				د. مرزب به رزیز.		
Estimated Water Volume (L)):	рН			\ <i>p</i>	D I		
·····		Cond. (µs/cm)						
(DTB – DTW) x 2 (for 2" w	rell diameter) = 1 well	Specific Cond. (µs/cm	1)		N d ^C			
volume		Redox (mV)			V//			
		DO (mg/L)		70				
(DTB-DTW) x 1.1 (for 1.5" dia	ameter) = 1 well volume	Appearance & Odour Silty, HC odours, etc.						
2" casing has 0.16 US	gal/ft or 2.032 l/m							
1" casing has 0.04 US	- 1	Only for Sulphide	•					
8" sand pack has 0.73 U		final (mg/L)						
6 5/8" sand pack has 0.50	vogantoro.35 mi	readings Turbidity	/ (NIU)					
		Total Purge Volume:						d
Sample Method								
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif		ir Lift	01	her
Analysis				Pump				
					[}	

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Sample Site (Con't): <u>GSI-DC-06-A/B</u> Way pt. not collected

UTM Location: Zn: Easting: Photo No .: 48-50 (comera 8010)

Northing:

	Units	Values				
Methane (CH4)	%LEL					
Oxygen (O2)	%					
Carbon Dioxide (C02)	РРМ					
Well Head Seat: 🔲 J-Plug 🗌	PVC Cap 🗌 Not Sealed 📋	Other				
Seal Replaced: J-Plug PVC Cap Not required Other						
Well properly sealed for gas mon	itoring: 🗌 Yes 🗌 No 🛛 Details	s:				

General Notes (Condition of well or other features): Visited UTM location provided visited of the location provided in SOWS. Large accumulation of over flows observed in upper Dome Creek. DP was not located with Pinfinder. Presumed to be buried under over flow. Esee photos. Location around sign "upper Dome".

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 mi	Field Filtered			
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-	~		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	🗌 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	~			
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 mi	Field Filtered	-		

Sample Site:	MW209-06	Project Number:	1343-005.06		Date:			19 Ma	x 20	15
Approximate Date Drilled:		Client:	GY - AAM Sampler:		TS/RM					
Piezometer Diameter / Screen Length:	2" PVC	Project Name:	Mount Nansen GW Sampling Program	2015	Weath	er/Temp	erature:	-Z°C Partial clou		
Field Blank Collected	Yes Name	Duplicate Collected:	🗌 Yes Name		Recov	ery:		God	od 🗌	Bad
Purge Method										
Waterra	Peristaltic	Disp. Bailer	Steel Bail	er	Ċ	entrif. Pu	ump		Air Lift	
	<u> </u>									
Initial Depth to Water (m):	4.091	Purge Start Time:	9:46		Purge	End Tim	ie:			
Depth to Bottom (m):	6.040	Time (<u></u> 」) minute inte	rval: 9250	9:55		1005	1000			
Submerged Tubing Depth (n	n): 5.70	Depth to water (m)	464	495	5.19	5.40	5.57			
Well Stick-up Height (m):	1.45	Temperature (⁰ C)	2.2	2,2	2.0	1.9	1.9			
Estimated Water Volume (L)	: 3.90	рН	7.66	7.51	7.54	7.55	7.51			
		Cond. (µs/cm)		1117	1105	1080	1105			
(DTB DTW) x 2 (for 2" w	ell diameter) = 1 well	Specific Cond. (µs/cm)	1982	1981	1971	1945	1984			
volume	•	Redox (mV) (ORP)	214.7	2\3.0		210	209			
	·····	DO (mg/L)		1.66	1.94	2.50	2.60			
(DTB-DTW) x 1.1 (for 1.5" dia		Appearance & Odour (Silty, HC odours, etc.)	Slear, cleart					*final not	l radi Vogged	
2" casing has 0.16 US 1" casing has 0.04 US 8" sand pack has 0.73 U	gal/ft or 0.508 /m	Only for Sulphide (mg/L)	04000				034			
6 5/8" sand pack has 0.50	*	readings Turbidity	(NTU)				47			
Sample Method		Fotel Purge Volume:	\.5	3	₽ N	4	5			
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Cent Pun		Ai	r Lift		Other	
Analysis	×				······					



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Sample Site (Con't): $\underline{MU09-06}$ UTM Location: Zn: 08V Easting: 389414 Northing: 6880655 Photo No.: 100 - 0020, - 0020

	Units	Values
Methane (CH4)	%LEL	Ø
Oxygen (O2)	%	19.9
Carbon Dioxide (C02)	РРМ	Ø
	PVC Cap Not Sealed	
Seal Replaced: 🔲 J-Plug 🔽	PVC Cap 🗌 Not required 🔲	Other
Well properly sealed for gas mor	nitoring: 🗹 Yes 🗌 No Details	;

Gene featu	ral Notes (Condition of well or other res):
6.0	
-D.J	"I log final 451 reading
- 	Well went day
*8 }	sottler total

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a 🦯	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	€ HNO3	120	Sampled el
1b 🦯	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered	A HCT	40	
2 /	1 L (plastic)	General Chemistry	200 ml	-	-	500	
3-	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	⊡∕NaOH	145	
4 🗸	250 ml (glass)	Ammonia (NH3) 🖌	120 mi	-	[͡⊉ H₂SO₄	250	
5 /	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-	É HNO3	120	
6 /	120 ml (plastic)	Sulphide -	100 ml	-	Zinc Acetate, capped and mixed, then NaOH	120	
7 /	250 ml (glass amber)	Total Inorganic Carbon 🛩	100 ml	-	-	250	
8	120 ml (plastic)	Dissolved Alkalinity	100 mi	Field Filtered	-		

Sample Site:	MW09-05	Project Number:	1343-005.06 Date:				19 Mar 2015			
Approximate Date Drilled:	<u></u>	Client:	GY - AAM Sampler:			72/RM				
Piezometer Diameter / Screen Length:	2" PVC	Project Name:	Mount Nansen GW Sampling Program	R0326	Weather/Tem	perature:	Partial	c tial doud		
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name		Recovery:		Good [Bad		
Purge Method 10/A										
Waterra	Peristaltic	Disp. Bailer	Steel Bai	ler	Centrif. I	Pump	Air Lil	t		
Initial Depth to Water (m):	- DRY	Purge Start/Time:			Purge End Ti	ne:				
Depth to Bottom (m):	7.560	Time () minute int	erval:							
Submerged Tubing Depth (n		Depth to water (m)								
Well Stick-up Height (m):	0.83	Temperature (^o C)								
Estimated Water Volume (L)	:	рН								
		Cond. (µs/cm)			20	2				
(DTB – DTW) x 2 (for 2" w	ell diameter) = 1 well	Specific Cond. (µs/cm)	K p	U/U					
volume		Redox (mV)								
		DO (mg/L)		551						
(DTB-DTW) x 1.1 (for 1.5" dia	imeter) = 1 well volume	Appearance & Odour Silty, HC odours, etc.)			$\langle - \rangle$					
2" casing has 0.16 USg	=									
1" casing has 0.04 USg	•	Only for Sulphide	!							
8" sand pack has 0.73 U 6 5/8" sand pack has 0.50	-	final (mg/L)	(81711)							
0 010 Sand pack Has 0.00	obgaint of 0.55 mill	madings Turbidity								
		Total Purge Volume.								
Sample Method IV/C										
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif		vir Lift	Othe	er		
Analysis				Pump	·					
								J		

Sample Site (Con't): $\underline{MW09-0\leq}$ UTM Location: Zn: $\underline{O6V}$ Easting: $\underline{389412}$ Northing: $\underline{6880654}$

Photo No.: 100-00201 - 0021

Well Head Space Gases:

	Units	Vakes				
Methane (CH4)	%LEL	Ø				
Oxygen (O2)	%	(5.4				
Carbon Dioxide (C02)	РРМ	Ø				
Well Head Seal: 🔲 J-Plug 💆	PVC Cap Not Sealed	Other				
Seal Replaced: J-Plug PVC Cap Not required Other						
Well properly sealed for gas mor	nitoring: 🗹 Yes 🔲 No 🛛 Details					

General Notes (Condition of well or other features): -tailings ad bottom of Well

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Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment 🔀	Preservative Added 🛛	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered	HCL		
2	1 L (plastic)	General Chemistry	200 ml	~	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	🗆 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H ₂ SO₄		
5	120 ml (plastic)	. Thiocyanate (SCN)	50 ml	*	HNO3	: .	
6	120 ml (plastic)	Sulphide	100 mi	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered			

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Sample Site:	MN09-22	Project Number:	1343-0	05.06		Date:			191	har zo	115
Approximate Date Drilled:	·····	Client:	GY - AAM Sa		Sampler:		TS IRM				
Piezometer Diameter / Screen Length:	211 PVC	Project Name:	SS233	Nansen Impling m	2015	Weath	er/Temp	erature:	-2°C		
Field Blank Collected	Yes Name	Duplicate Collected	🕻 🗌 Yes	Name		Recove	ery:		Go Go	bd 🕼	Bad
Purge Method											
Waterra	Peristaltic	Disp. Bailer	St	teel Bai	ler	C	entrif. Pu	ump		Air Lift	
Initial Depth to Water (m):	4.024	Purge Start Time:				Purde	End Tim	e:			
Depth to Bottom (m):	5-252	Time () minute in	229	asig	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1						
Submerged Tubing Depth (n		Depth to water (m)			<u> 11 12 31 -</u>						
Well Stick-up Height (m):	0.89	Temperature (°C)									
Estimated Water Volume (L)		рН									
		Cond. (µs/cm)			I				D .		
(D T B DTW) x 2 (for 2" we	ell diameter) = 1 well	Specific Cond. (µs/cn	n)	4	5	E		X	N		
volume		Redox (mV)		1	SAM		<u> </u>	N'N	<u>]7.</u>		
		DO (mg/L)			ST	5	UN.	02			
(DTB-DTW) x 1.1 (for 1.5" dia	imeter) – i wen volume	Appearance & Odour Silty, HC odours, etc.			-	1050		\searrow			
2" casing has 0.16 USg	gal/ft or 2.032 l/m		·/			<u> </u>	Ne				
1" casing has 0.04 USg	-	Only for Sulphid	e								:
8" sand pack has 0.73 U 6 5/8" sand pack has 0.50	•	final (mg/L)	y (NTU)				<u> </u>				
0 5/0 Salid pack has 0.50	OSgaint of 0.55 inst	readings Turbidit	.y (1410)								
		Total Porge Volume:				in binar yanka fikifarilarika ana yaliwa da	the at part of the sector				
Sample Method											
Waterra	Peristaltic	Disp. Bailer	Steel Ba	iler	Cent Pur	1	Ai	r Lift		Other	
					r ui	איי					

П неммеrа

Sample Site (Con't): <u>MW09-22</u> UTM Location: Zn: OSV Easting: 389495 Northing: 6880549 Photo No.: 100-0022, -0023

	Units	Values
Methane (CH4)	%LEL	ø
Oxygen (O2)	%	20.5
Carbon Dioxide (C02)	PPM	Ď
Well Head Seal: 🗌 J-Plug 🕑	PVC Cap 🗌 Not Sealed 🗌	Other
Seal Replaced: 🔲 J-Plug 🔽	PVC Cap Not required	Other
Well properly sealed for gas mon	itoring: 🗌 Yes 🛒 No 🛛 Details	Puc cut

General Notes (Condition of well or other features):
-insufficient well volume
-insufficient well volume Gdespite > In well volume,
unable to draw out
- Replaced tubing (6 m)
- we at the tip of water level tape
water level tape

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metais	100 mi	Field Filtered	HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered	HCL		
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	[] NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-	HNO3		
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	•		

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	651-PC-05-A/B	Project Number:	1343-005.06		Date:			2015/0	3/19	
Approximate Date Drilled:	Viknavn	Client:	GY - AAM		Sample	r:		AN, J	L.	
Piezometer Diameter / Screen Length:	l"/unknown	Project Name:	Mount Nanser GW Sampling Program	18	Weathe	r/Tempe	erature:	á	duercast	
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name		Recovery:			Good 🗌	🗌 Bad	
Purge Method										
Waterra	Peristaltic	Disp. Bailer	Steel Bai	iler	Ce	ntrif. Pu	mp	Ai	r Lift	
Initial Depth to Water (m): (CE 3.715	Purge Start Time:			Purne F	ind Time	6 *			
Depth to Bottom (m):	50 5.415	Time () minute inte	rval:	I P						
Submerged Tubing Depth (r	m):	Depth to water (m)		· · ·						
Well Stick-up Height (m):	6.810	Temperature (°C)								
Estimated Water Volume (L)		pH					+ + + + + + + + + + + + + + + + + + +			
iro to	top of well,	Cond. (µs/cm)				T				
(DTB – DTW) x 2 (for 2" w		Specific Cond. (µs/cm)			nd	<u>~</u>				
volum	-	Redox (mV)		VK						
		DO (mg/L)								
(DTB-DTW) x 1.1 (for 1.5" dia	ameter) = 1 well volume	Appearance & Odour (Silty, HC odours, etc.)	Clear,			/				
2" casing has 0.16 US	-				4					
1" casing has 0.04 US	-	Only for Sulphide			4					
8" sand p ack has 0.73 U 6 5/8" sand pa c k has 0.50	0	final (mg/L) readings Turbidity								
o sio sanu pauk nas u.st	obgaint of 0.55 mit									
		Total Purge Volume:								
Sample Method	1									
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centr Pum	1	Air	Lift		Other	
Analysis					-					

note Louid be dry,

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Sample Site (Con't): <u>CSI-PC-OS-A/B</u> Way pl. collected on AN GPS. UTM Location: Zn: 08 Easting: 0389712 Northing: 6881660 Photo No.: 35-37 (Camera 0010)

	Units	/ Val	ues (2			
Methane (CH4)	%LEL	0	0			
Oxygen (O2) % 20.0						
Carbon Dioxide (C02)	PPM	0	0			
Nell Head Seai: 🗍 J-Plug 🖸 Seal Replaced: 📋 J-Plug 📋	PVC Cap Not required	Other				
Nell properly sealed for gas moni	toring: 🗹 Yes 📋 No 🛛 Details	s: Well (A) S	icaled with			
		zip lock b	ag.			

General Notes (Condition of well or other features): GS1-PC-05 - A Stick up film ice : 0.796 m Depth fo ICE : 2.003 m Pre-existing tubing (nievo waterra) found within woll. (6) *get plug for well A

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	☐ HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered	HCL		
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	🗌 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-			
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	~		

Sample Site:	GS1-PC-04-A/B	Project Number:	1343-005.06	Dat	e:	2015/03/19	
Approximate Date Drilled:	unknown.	Client:	GY - AAM	San	npler:	AN, JL.	
Piezometer Diameter / Screen Length:	("/~~ known.	Project Name:	8655	Mount Nansen 2015 GW Sampling Program		Overcast ~ -5°C.	
Field Blank Collected	Yes Name	Duplicate Collected	Yes Name	Rec	overy:	🗌 Good 🔲 Bad	
Purge Method							
Waterra	Peristaltic	Disp. Bailer	Steel Bai	iler	Centrif. Pump	Air Lift	
Initial Depth to Brater (m): (CE 0.984	Purge Start Time:		Pur	ge End Time:		
Depth to Bottom (m):		Time () minute int	erval:				
Submerged Tubing Depth (m): .	Depth to water (m)					
Well Stick-up Height (m):	,0.582	Temperature (°C)					
Estimated Water Volume (L): /	рН					
10E -	o top of well	Cond. (µs/cm)					
، DTB – DTW) x 2 (for 2" w	•	Specific Cond. (µs/cn	1)	1	X		
volum		Redox (mV)		C a b			
		DO (mg/L)		V M V			
(DTB-DTW) x 1.1 (for 1.5" dia	ameter) = 1 well volume	Appearance & Odour		$\Gamma / 7$			
2" casing has 0.16 US	gal/ft or 2 032 l/m	Silty, HC odours, etc.)				
1" casing has 0.04 US	-	Only for Sulphide	•				
8" sand pack has 0.73 U	ISgal/ft or 9.271 l/m	final (mg/L)					
6 5/8" sand pack has 0.50) USgal/ft or 6.35 l/m	readings Turbidit	(NTU)				
		Total Purne Volume:		<u></u>	I	<u>I </u>	
Sample Method	I.						
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif.	Air Lift	Other	
		-		Pump			
Analysis							

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Sample Site (Con't): <u>GSI-PC-04-A/B</u> Way pt. collected on AN GPS. UTM Location: Zn: OS Easting: 0389585 Northing: 6881656 Photo No .: 32 34 (Camer 6010)

	Units	A .	Values B				
Methane (CH4)	%LEL	Ø	0				
Oxygen (O2)	Methane (CH4) %LEL O						
Carbon Dioxide (C02)	PPM	0	0				
_	· · · · · · · · · · · · · · · · · · ·						
ell prop erly sealed for gas moni	toring: Yes 🗌 No Detail:						
		2.11	ock bag.				

General Notes (Condition of well or other features): <u>651-7C-04-A</u> Dopth to ICE: 0.940 m Stick up above ICE : 0.570 m Tubiny (micro naterra) found in well (B). Tobray frazen in DP. Tubing is slightly damaged, requires replacement next

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment 🔀	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered			
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 mi	*	🗋 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 mi	-	☐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-	HNO3		
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

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Sample Site:	FB-2	Project Number:	1343-005.06		Date:		19	1ar 2015
Approximate Date Drilled:	~	Client:	GY - AAM		Sample	r:	751	1RM
Piezometer Diameter / Screen Length:		Project Name:	Mount Nanser GW Sampling Program	· · · · · · · · · · · · · · · · · · ·		e: Chi	Cloudy O°C	
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name		Recove	ry:	Goo	d 🗌 Bad
Purge Method								
Waterra	Peristaltic	Disp. Bailer	Steel Bai	ler	Ce	ntrif. Pump		Air Lift
Initial Depth to Water (m):		Purge Start Time:			Purae E	nd Time:		
Depth to Bottom (m):	~	Time () minute inte	rval:		<u> </u>			
Submerged Tubing Depth (n	n):	Depth to water (m)						
Well Stick-up Height (m):		Temperature (^o C)				N		
Estimated Water Volume (L)	:	рН			, Qt			
		Cond. (µs/cm)			DAY			
(DTB – DTW) x 2 (for 2" w	ell diamotor) = 1 woll	Specific Cond. (µs/cm)		~	Ÿ/			
volume		Redox (mV)		600				
		DO (mg/L)	X	he/1				
(DTB-DTW) x 1.1 (for 1.5" dia	ameter) = 1 well volume	Appearance & Odour (Silty, HC odours, etc.)	Clear,					
2" casing has 0.16 US	gal/ft or 2.032 l/m							
1" casing has 0.04 US		Only for Sulphide						
8" sand pack has 0.73 U	-	final (mg/L)						
6 5/8" sand pack has 0.50	USgaint or 6.35 l/m	readings Turbidity	(UIV)					
		Total Purge Volume:			·······		I	1
Sample Method								
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Cent		Air Lift		Other
Analysis				Pum	ib			
]			

Sample Site (Con't): <u>FP - Z</u> UTM Location: Zn: ν/β Easting: Photo No .: NA

Northing:

	linits	Values					
Methane (CH4)	%LEL						
Oxygen (O2)	%						
Carbon Dioxide (C02)	РРМ						
Well Head Seal: 🔲 J-Plug 🗌	PVC Cap 🗌 Not Sealed 🗌	Other					
Seal Replaced: J-Plug PVC Cap Not required Other							
Well properly sealed for gas moni	itoring: 🗌 Yes 🗌 No 🛛 Detail	s:					

General Notes (Conditio features):	n of well or other
Batch: 12-	MAR - 15
collected a	MW09-24
;	

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment 🔀	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	12 HNO3	full	18:00
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered	ALTHOR		
2	1 L (plastic)	General Chemistry	200 ml	-	+		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	,[⊒-NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	I H₂SO4		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-	I HNO3		
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-	V	

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Sample Site:	CH-P-13-03/50	Project Number:	1343-005.06	Date	:		2015/03,	/19
Approximate Date Drilled:	unknown	Client:	GY - AAM	Sam	pler:	MARGENENS/88970000/200	ANJL	
Piezometer Diameter / Screen Length:	1.5 / Jun known	Project Name:	Mount Nansen GW Sampling Program		Weather/Temperature:		Overcast ~-2°C	
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name	Reco	overy:		Good	🗌 Bad
Purge Method				102000				
Waterra	Peristaltic	Disp. Bailer	Steel Bai	ler	Centrif. Pun	וף	Air L	ift
							3	
Initial Depth to Water (m):	49.355	Purge Start Time:		Purg	e End Time:			
Depth to Bottom (m):	50.490	Time () minute inte	erval:		<u> </u>			
Submerged Tubing Depth (m)	: N/A	Depth to water (m)						
Well Stick-up Height (m):	0.54	Temperature (°C)			1	1		
Estimated Water Volume (L):	1.7025	рН				-75 - 75		
		Cond. (µs/cm)		11.0	r e			
(DTB – DTW) x 2 (for 2" wel	l diameter) = 1 well	Specific Cond. (µs/cm)	· AK	J (0	74 J		
volume		Redox (mV)		10 10				
		DO (mg/L)		0				
(DTB-DTW) x 1.1 (for 1.5" diam	neter) = 1 well volume	Appearance & Odour (Silty, HC odours, etc.)	Clear,					
2" casing has 0.16 USga						^_		
1" casing has 0.04 USga		Only for Sulphide						
8" sand pack has 0.73 US	-	final (mg/L)						
6 5/8" sand pack has 0.50 t	isgailit or 6.35 l/m	readings Turbidity	(NIU)					
		Total Purge Volume:		ł	i <u>-</u>	I		I
Sample Method								
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air l	_ift	Otl	ıer
Analysis				Fump				

Sample Site (Con't): <u>CH-P-13-03/50</u> Way pf. collected on AN GPS. UTM Location: Zn: 08 Easting: 0389142 Northing: 6881109 Photo No.: 38-40 (Camera 8010)

Well Head Space Gases:

	Units	Values				
Methane (CH4)	%LEL	Ø				
Oxygen (O2)	%	(9.9				
Carbon Dioxide (C02)	PPM	0				
Well Head Seal: J-Plug PVC Cap Not Sealed Other						
Seal Replaced: J-Plug PVC Cap Not required Other						
Well properly sealed for gas monitoring: Yes No Details:						

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General Notes (Condition of well or other features):
Attempted to sample well using
0.5" bailer.
Bailer was not able to collect
sample.
1.135 m of standing matter
measured in well.
Volume was insufficient.

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 mł	Field Filtered			
1b	40 mi (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml		H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	*	HNO3		
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 mi	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

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Sample Site:	GLL07-03	Project Number:	1343-005.06	Date:		2015/03/19
Approximate Date Drilled:	Unknown	Client:	GY - AAM	Samp	ler:	AN, JL.
Piezometer Diameter / Screen Length:	2"/ Junknown	Project Name:	Mount Nansen 20 GW Sampling Program	1000003889999889	her/Temperature:	overcast ~ -3°C
Field Blank Collected	🗌 Yes Name	Duplicate Collected:	Yes Name	Reco	very:	Good Bad
Purge Method				<u>E</u>		
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	•	Centrif. Pump	Air Lift
Initial Depth to Water (m):	DRY	Purge Start Time:		Purg	End Time:	
Depth to Bottom (m):	11.602	Time () minute inte	rval:		Τ Τ	
Submerged Tubing Depth (Depth to water (m)				
Well Stick-up Height (m):	1.09	Temperature (°C)				
Estimated Water Volume (L):	рН			,	
		Cond. (µs/cm)				
(DTB – DTW) x 2 (for 2" w	vell diameter) ≃ 1 well	Specific Cond. (µs/cm)		17		
volum	,	Redox (mV)				
		DO (mg/L)		/ }		
(DTB-DTW) x 1.1 (for 1.5" di	ameter) = 1 well volume	Appearance & Odour (C	Clear,			
2" casing has 0.16 US	gal/ft or 2 032 l/m	Silty, HC odours, etc.)				
1" casing has 0.04 US	-	Sulphide			and an and the second s	
8" sand pack has 0.73 U	-	Only for (mg/L)		and a second		
6 5/8" sand pack has 0.50) USgal/ft or 6.35 l/m	readings Turbidity ((NTU)			
		Total Purge Volume:		L	<u> </u>	
Sample Method						
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift	Other
Analysis				· ···· r		

Sample Site (Con't): 62207-03 Way pt. collected on AN. 6P5. UTM Location: Zn: OB Easting: O398959 Northing: 6881474Photo No .: 41 - 43 (camera 8010).

Well Head Space Gases:

	A. (~
Methane (CH4)	%LEL	<u> </u>
Oxygen (O2)	%	20.0
Carbon Dioxide (C02)	PPM	0
eal Replaced:	PVC Cap Not Sealed PVC Cap Not required nitoring: Yes No Details	Other

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General Notes (Condition of well or other features): Pre existing waterra troing (518-) fond m well. Data logger found tied to well carring hinge (Barologger) Metal well stick up. Transducer hanging down mwell. PVC dicks up above top of casing. Carring does not close provely.

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 mł	~	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	🗌 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H ₂ SO ₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-			
6	120 ml (plastic)	Sulphide	100 mi	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

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Sample Site:	MW09-20	Project Number:	1343-005.06	Date:		19 Marzors
Approximate Date Drilled:		Client:	GY - AAM	Sam	oler:	TS /RM
Piezometer Diameter / Screen Length:	2°°C	Project Name:	Mount Nansen 2 GW Sampling Program		her/Temperature:	doudy Orc
Field Blank Collected	Yes Name	Duplicate Collected:	🗌 Yes Name _	Reco	very:	Good Bad
Purge Method						
Waterra	Peristaltic	Disp. Bailer	Steel Baile	er	Centrif. Pump	Air Lift
	(Dry)	I manufacture and the second se		Antoretricity		
Initial Depth to Water (m):	3.67 2 t Re.	Purge Start Time:		Purg	e End Time:	
Depth to Bottom (m):	+ 7	Time () minute inte	rval:			
Submerged Tubing Depth (n	n):	Depth to water (m)				
Well Stick-up Height (m):	0.80	Temperature (°C)				
Estimated Water Volume (L)	:	pН				
		Cond. (µs/cm)				
(DTB DTW) x 2 (for 2" w	ell diameter) = 1 well	Specific Cond. (µs/cm)		5		
volume		Redox (mV)				
		DO (mg/L)				
(DTB-DTW) x 1.1 (for 1.5" dia	ameter) = 1 well volume	Appearance & Odour (Silty, HC odours, etc.)	Clear,	SS	,	
2" casing has 0.16 US	jal/ft or 2.032 l/m		N	10		
1" ca s ing has 0.04 USg	-	Only for Sulphide				
8" sand pack has 0.73 U	•	final (mg/L.)				
6 5/8" sand pack has 0.50	USgal/It or 6.35 l/m	readings Turbidity				
		Total Purge Volume:				I
Sample Method						
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift	Other
Analysis			-			

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Sample Site (Con't): MW09 - 20					
UTM Location: Zn: OOV	Easting: 389590	Northing: しゃそのちゃて			
Photo No.: 100-0034, -035					

Well Head Space Gases:

	Units	Values				
Methane (CH4)	%LEL	Ø				
Oxygen (O2)	%	20.0				
Carbon Dioxide (C02)	PPM	Ø				
Well Head Seal: 🗌 J-Plug 🗹						
Seal Replaced: J-Plug PVC Cap Not required Other						
Well properly sealed for gas monitoring: Yes Yo Details: <u>Cut in well</u> .						

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment 🔀	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	☐ HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 mi	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 mi	-			
4	250 ml (glass)	Ammonia (NH3)	1 2 0 ml	-	☐ H ₂ SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-			
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 mi	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	1		

General Notes (Condition of well or other features):

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Sample Site:	MW09-08	Project Number:	1343-005.06	Date:		19 Mar 2015
Approximate Date Drilled:	·	Client:	GY - AAM	Samp	ler:	HM 175
Piezometer Diameter / Screen Length:	Z"PVC	Project Name:	Mount Nansen 20 GW Sampling Program		ner/Temperature:	cloudy
Field Blank Collected	Yes Name	Duplicate Collected:	🗌 Yes Name	Reco	very:	Good Bad
Purge Method ►/						
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	(Centrif. Pump	Air Lift
Initial Depth to Water (m):	1.150 (i.e)	Purge Start Time:		Purne	End Time:	<u></u>
Depth to Bottom (m):	<u> </u>	Time () minute inte	erval:			
Submerged Tubing Depth (m):	Depth to water (m)				
Well Stick-up Height (m):	1.09	Temperature (°C)				
Estimated Water Volume (L):	`	рН		•		
		Cond. (µs/cm)		1.5		
(DTB DTW) x 2 (for 2" we	ll diamatar) - 1 wall	Specific Cond. (µs/cm)		79,7		
volume	-	Redox (mV)		~~~~		
		DO (mg/L)		51/	We -	
(DTB-DTW) x 1.1 (for 1.5" dia	meter) = 1 well volume	Appearance & Odour (Silty, HC odours, etc.)	Clear,	181	9	
2" casing has 0.16 USg						
1" casing has 0.04 USg		Only for Sulphide				
8" sand pack has 0.73 US 6 5/8" sand pack has 0.50	•	tinal (mg/L)				
o bro i sano paok has 0.50	บอนสมายชาช.ออา/กา	readings Turbidity				
		Total Purge Volume:				· · · · ·
Sample Method (/)						
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift	Other
Analysis		-				

Sample Site (Con't): \underline{MWC}	9-08	
UTM Location: Zn: \bigcirc CV	Easting: 389 618	Northing: 6880577
Photo No.: (00-00うく	0, -0031	

	Units	Values					
Methane (CH4)	%LEL	Ø					
Oxygen (O2)	%	20.1					
Carbon Dioxide (C02)	PPM	Ð					
Well Head Seal: J-Plug PVC Cap Not Sealed Other							
Seal Replaced: 🛄 J-Plug 🕑	PVC Cap 🗌 Not required 🗍	Other					
Well properly sealed for gas moni	toring: 🗌 Yes 🗹 No 🛛 Details	vell cut					

General Notes (Condition of well or other features):						
Dome Cr. flowing rest						
to well of						

Anority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	*	~		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	🗌 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	~	HNO3		
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

Sample Site:	WHOBORBHOH	Project Number:	1343-005.06	Date:		19 Mar 2015	
Approximate Date Drilled:		Client:	GY - AAM	Samp	pler:	TS IRM	
Piezometer Diameter / Screen Length:	2" PVC	Project Name:	Mount Nansen 20 GW Sampling Program		her/Temperature:	Partial Cloud or	
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name	Reco	very:	Good Bad	
Purge Method 10/14							
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	•	Centrif. Pump	Air Lift	
Initial Depth to Water (m):	6.677 (ice)	Purge Start Time:		Purg	e End Time:		
Depth to Bottom (m):		Time () minute int	erval:				
Submerged Tubing Depth (r	п): —	Depth to water (m)					
Well Stick-up Height (m):	0.75	Temperature (°C)					
Estimated Water Volume (L)):	рН					
		Cond. (µs/cm)	1 h	R			
(DTB – DTW) x 2 (for 2" w	ell diameter) = 1 well	Specific Cond. (µs/cm		N.			
volume		Redox (mV)		5	NEP		
		DO (mg/L)		1/20			
(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume		Appearance & Odour		<u> </u>			
2" casing has 0.16 US	gal/ft.or.2.032.l/m	Silty, HC odours, etc.)					
1" casing has 0.04 USgal/ft or 0.508 l/m		Only for Sulphide					
8" sand pack has 0.73 USgal/ft or 9.271 l/m		final (mg/L)					
6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m		readings Turbidity	(NTU)				
		Total Purge Volume:		I		I	
Sample Method 1 1/1-	l and a second						
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif.	Air Lift	Other	
Analysis				Pump			

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Sample Site (Con't): <u>14103083</u>BH04

UTM Location: Zn: $O \otimes V$ Easting: $3 \otimes 9 \otimes S \otimes S$ Northing: $6 \otimes 9 \otimes 6 \otimes 9$

Photo No.: 00 - 0038, -0039

	Units	Values		
Methane (CH4)	%LEL	·		
Oxygen (O2)	%			
Carbon Dioxide (C02)	РРМ			
Well Head Seal: 🗍 J-Plug	PVC Cap YNot Sealed	Other		
Seal Replaced: 🗌 J-Plug	PVC Cap Not required	Other		
Well properly sealed for gas mon	itoring: 🗌 Yes 🗹 No 🛛 Details	<u>open</u>		

General Notes (Condition of well or other features): Not sealed Sinstrument wives blocking well

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment 🔀	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	☐ HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	🗌 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H ₂ SO ₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-	HNO3		
6	120 ml (plastic)	Sulphide	100 mi	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

Sample Site:	W14103083BH02	Project Number:	1343-005.06	Date		19 Mar 2015
Approximate Date Drilled:		Client:	GY - AAM	Sam	oler:	TSIRM
Piezometer Diameter / Screen Length:	2"PVC	Project Name:	Mount Nansen GW Sampling Program	S725555725555	her/Temperature:	Partial Cloud Orc
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name	Reco	very:	Good Bad
Purge Method 10/4						
Waterra	Peristaltic	Disp. Bailer	Steel Bail	er	Centrif. Pump	Air Lift
Initial Depth to Water (m):	6.780(ice)	Purge Start Time:		Puen	e End Time:	
Depth to Bottom (m):		Time () minute inte	rvat:			
Submerged Tubing Depth (n	n): —	Depth to water (m)				
Well Stick-up Height (m):	0.74	Temperature (°C)				
Estimated Water Volume (L)		pH				
		Cond. (µs/cm)		e~,		
(DTB – DTW) x 2 (for 2" w	all diameter) = 1 well	Specific Cond. (µs/cm)	14	TNE		
volume		Redox (mV)	27	MY	N	
		DO (mg/L)		5 10	J.	
(DTB-DTW) x 1.1 (for 1.5" dia	meter) = 1 well volume	Appearance & Odour (Clear,	10		
2" casing has 0.16 US	al/ft or 2.032 l/m	Silty, HC odours, etc.)				
1" casing has 0.04 US	-	Only for Sulphide				
8" sand pack has 0.73 U	*	final (mg/L)				
6 5/8" sand pack has 0.50	USgal/ft or 6.35 l/m	readings Turbidity	(NTU)			
		Total Purge Volume:		I	<u>}</u>	II
Sample Method 7 7/1						
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif,	Air Lift	Other
Analysis				Pump	·····	

Sample Site (Con't): W14103083 BH02

UTM Location: Zn: 08V Easting: 389562 Northing: 6880664

Photo No.: (00 - 0036, -0037)

Well Head Space Gases:

	Units	Values	
Methane (CH4)	%LEL		
Oxygen (O2)	%		
Carbon Dioxide (C02)	РРМ		
Well Head Seal: 🗌 J-Plug 🗌			
Seal Replaced: 🗌 J-Plug 🗌	PVC Cap 🗹 Not required 🗌	Other	
Well properly sealed for gas mor	itoring: 🗌 Yes 🌱 No Details	: open	

features).	otes (Condition of well or other sealed -instrument as blocking well
	Ø

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 mi	-	•		
3	145 ml (piastic)	Cyanide (total, free, weak acid dissociable)	100 mi	-	🗌 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H ₂ SO ₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml		HNO3	·····	
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 mi (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

Sample Site:	MP09-04	Project Number:	1343-005.06	Date:	19 Mar 2015
Approximate Date Drilled:		Client:	GY - AAM	Sampler:	RM/T
Piezometer Diameter / Screen Length:	1.5" PVC	Project Name:	Mount Nansen 2015 GW Sampling Program	Weather/Temperature:	cloudy -2°C
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name	Recovery:	Good Bad
Purge Method <i>kJ</i> / fa					
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift
Initial Depth to Water (m):	1.182 (ice)	Purge Start Time:		Purge End Time:	
Depth to Bottom (m):		Time () minute inte	rval:		
Submerged Tubing Depth (I	m): -	Depth to water (m)			
Well Stick-up Height (m):	1.21	Temperature (°C)			
Estimated Water Volume (L): ~	рН			
	•	Cond. (µs/cm)	1	D I	
(D T B DT\M) x 2 (for 2" w	TB DTW) x 2 (for 2 [∗] well diameter) = 1 well		, 10,	NY N	
volum		Redox (mV)		M LE	
		DO (mg/L)	A	XGO	
(DTB-DTW) x 1.1 (for 1.5" di	ameter) = 1 well volume	Appearance & Odour (Silty, HC odours, etc.)	Clear,	- Xe	
2" casing has 0.16 US	gal/ft or 2.032 l/m	· · · · · · · · · · · · · · · · · · ·			
1" casing has 0.04 US		Only for Sulphide			
8" sand pack has 0.73 U	_	final (mg/L)	(A)TIN		
6 5/8" sand pack has 0.5(U USgalint of 6.35 i/m	readings Turbidity	(010)		
	n	Total Purge Volumes			
Sample Method					
Waterra	Peristaltic	Disp. Bailer		entrif. Air Lift Pump	Other
Analysis					

Sample Site (Con't): MP 09-04 UTM Location: Zn: O8V Easting: 389575 Northing: 6880609Photo No.: (00-0025) - 0029

General Notes (Condition of well or other features):

Well Head Space Gases:

	Units	Values					
Methane (CH4)	%LEL	6					
Oxygen (O2)	%	20.1					
Carbon Dioxide (C02)	PPM	0					
Well Head Seal: 🗹 J-Plug 🗌	Well Head Seal: J-Plug PVC Cap Not Sealed Other						
Seal Replaced: 🗹 J-Plug 🗌 PVC Cap 🗌 Not required 🗍 Other							
Well properly sealed for gas monitoring: 🗹 Yes 🗌 No Details:							

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered	[] HCL		·····
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	🗌 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	□ H ₂ SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 mi	-			
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

.

Sample Site:		H-P-13-04/10	Project Number:	1343-005.06	Date		2015/03/19
Approximate Date D		mknorten	Client:	GY - AAM	Sam	oler:	AN.JL.
Piezometer Diamete Screen Length:	ri J	2" / un known	Project Name:	Mount Nansen 2 GW Sampling Program		her/Temperature:	Overcast ~-1°C
Field Blank Collecte	vd 🗌	Yes Name	Duplicate Collected:	Yes Name_	Reco	very:	Good Bad
Purge Method							
Waterra		Peristaltic	Disp. Bailer	Steel Baile	r	Centrif. Pump	Air Lift
the second second			-				881
Initial Depth to	• •	6.24	Purge Start Time:		Purg	e End Time:	
Depth to Bottom (m)			Time () minute inte	rval:			
Submerged Tubing			Depth to water (m)				
Well Stick-up Height	t (m):	0.55	Temperature (°C)				
Estimated Water Vo	lume (L):		рН				
			Cond. (µs/cm)				
(DTB – DTW) x 2	(for 2" well c	tiometer) = 1 well	Specific Cond. (µs/cm)			1XI -	~
(010-0100) × 2	volume	nameter) – i wen	Redox (mV)		< h 1		
			DO (mg/L)		K RU		
(DTB-DTW) x 1.1 (fo	or 1.5" diame	ter) = 1 well volume	Appearance & Odour (Silty, HC odours, etc.)	Clear,	TI		
2" casing has	0.16 USgal/	ft or 2.032 l/m	,,,,		1		
1" casing has	-		Only for Sulphide				
8" sand pack ha	•		final (mg/L)				
6 5/8" sand pack	has 0.50 US	gal/ft or 6.35 l/m	readings Turbidity				
			Total Purge Volume:		1	l	I
Sample Method							
W	aterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift	Other
Analysis					•		

200022

Sample Site (Con't): <u>CH-P-13-04/10</u> Way pf. collected on AN GPS. UTM Location: Zn: 08 Easting: 0389136 Northing: 6881471 Photo No.: 44-46 (camera 8010). Well Head Space Gases:

	Units	Values
Methane (CH4)	%LEL	0
Oxygen (O2)	% 20	
Carbon Dioxide (C02)	PPM	0
Seal Replaced: 🔲 J-Plug	PVC Cap Not Sealed	Other
Well properly sealed for gas mor	nitoring: 🗌 Yes 🗹 No Detail: «×	s: slits in side of PVC . tend down past cap.

Sample Volume Minimum Priority **Bottle Type** Parameters Analyzed Preservative Added Comments Volume Treatment 🔀 Collected (ml) 1a 120 ml (plastic) **Dissolved Metals** 100 ml Field Filtered HNO₃ 1b 40 ml (glass) **Dissolved Mercury** 15 mL Field Filtered 🗋 HCL 2 1 L (plastic) General Chemistry 200 ml -Cyanide (total, free, weak 3 145 ml (plastic) 100 ml 🗌 NaOH -acid dissociable) 4 250 ml (glass) Ammonia (NH3) 120 ml H₂SO₄ -5 120 ml (plastic) Thiocyanate (SCN) 50 ml -Zinc Acetate, capoed 6 120 ml (plastic) Sulphide 100 ml ~ and mixed, then NaOH 7 250 ml (glass amber) Total Inorganic Carbon 100 ml --8 120 ml (plastic) Dissolved Alkalinity 100 ml Field Filtered

Sample Site:	GS1-DC-09-A/B	Project Number:	1343-005.06	Date:		2015/03/19
Approximate Date Drilled:	unknown	Client:	GY - AAM	Sam	pler:	AN, JL
Piezometer Diameter / Screen Length:	1"/ mknown	Project Name:	Mount Nansen 2 GW Sampling Program		her/Temperature:	Overcast ~2°C
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name	Reco	very:	Good Bad
Purge Method						
Waterra	Peristaltic	Disp. Bailer	Steel Baile	ار ا	Centrif. Pump	Air Lift
Initial Depth to Water (m):		Purge Start Time:		Puro	e End Time:	
Depth to Bottom (m):		Time () minute inte	rval:			
Submerged Tubing Depth (n	n):	Depth to water (m)				· · · · · · · · · · · · · · · · · · ·
Well Stick-up Height (m):		Temperature (°C)				
Estimated Water Volume (L)	:	pH				
		Cond. (µs/cm)			lec	
(DTB DTW) x 2 (for 2" w	all diamatar) = 1 well	Specific Cond. (µs/cm)			Car -	->
volume		Redox (mV)		41		
		DO (mg/L)		101		
(DTB-DTW) x 1.1 (for 1.5" dia	ameter) = 1 well volume	Appearance & Odour (Silty, HC odours, etc.)	Clear,	N		
2" casing has 0.16 USg	gal/ft or 2.032 l/m				and the second sec	
1" casing has 0.04 USg		Only for Sulphide			harris (
8" sand pack has 0.73 U	•	final (mg/L)				
6 5/8" sand pack ha s 0.50	USgal/ft or 6.35 l/m	readings Turbidity	(NTU)			
		Total Purge Volume:			<u>I</u>	ii
Sample Method						
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift	Other
Analysis					·····	

Sample Site (Con't): 651-00-09-A/B

Way pt. not collected

Northing:

UTM Location: Zn: Easting: Photo No.: 57, 58, 59

Well Head Space Gases:

	Units	Values		
Methane (CH4)	%LEL			
Oxygen (O2)	Oxygen (O2) %			
Carbon Dioxide (C02)	PPM			
Well Head Seal: 🔲 J-Plug	PVC Cap 🗌 Not Sealed 🗌	Other		
Seal Replaced:J-Plug PVC Cap Not required Other				
Well properly sealed for gas moni	toring: 🗌 Yes 🔲 No 🛛 Detail	s:		

General Notes (Condition of well or other features):
Visited ut in listed in SOW.
Well not formed @ location.
Large accumulation overflow.
Wells buried under ice.
Location should be properly
Hagged in the spring in anticipothem for accumulation of oner flow.
and is portrain for accumulation
of over flow.
Searched area with pinfinder, did not detect.
did not deteent.

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metais	100 mi	Field Filtered	HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	□ NaOH	***********	
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H ₂ SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-			
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 mi (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

Sample Site:	NO-POWM	Project Number:	1343-005.06	Date:	19 Mar 2015
Approximate Date Drilled:	<u>, </u>	Client:	GY - AAM	Sampler:	TS/RM
Piezometer Diameter / Screen Length:	1-5" "PUC	Project Name:	Mount Nansen 2015 GW Sampling Program	Weather/Temperature:	cloudy 1°C
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name	Recovery:	Good Bad
Purge Method ///			<u>a</u>		
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift
Initial Depth to Water (m):	6.420	Purge Start Time:		Purge End Time:	
Depth to Bottom (m):	9.085	Time () minute inte	erval:		
Submerged Tubing Depth (n		Depth to water (m)			
Well Stick-up Height (m):	0.79	Temperature (°C)			
Estimated Water Volume (L)	: <u>2,932</u>	рН			
		Cond. (µs/cm)			
(DTB – DTW) x 2 (for 2" w	ell diameter) = 1 well	Specific Cond. (µs/cm)		Marcola 1	
volume		Redox (mV)	SV.		
		DO (mg/L)		XW	
(DTB-DTW) x 1.1 (for 1.5" dia	ameter) = 1 well volume	Appearance & Odour (Silty, HC odours, etc.)	Clear,		
2" casing has 0.16 US	gal/ft or 2.032 l/m				
1" casing has 0.04 US	-	Only for Sulphide			
8" sand pack has 0.73 U	-	final (mg/L)			
6 5/8" sand pack has 0.50	USgal/ft or 6.35 l/m	readings Turbidity	(NTU)		
		Total Purge Volume:			l
Sample Method					
Waterra	Peristaltic	Disp. Bailer		entrif. Air Lift	Other
Analysis				·	

Sample Site (Con't): $\underline{MW09-01}$ UTM Location: Zn: OV Easting: 389394 Northing: 6880555Photo No.: 100 - 0042, -0043Well Head Space Gases:

	Units	Values
Methane (CH4)	%LEL	\bigtriangledown
Oxygen (O2)	%	20.4
Carbon Dioxide (C02)	PPM	Ø
Well Head Seal: 🗹 J-Plug 🗌	PVC Cap Not Sealed	Other
Seal Replaced: 🗹 J-Plug 🗌	PVC Cap Not required	Other
Well properly sealed for gas mon	itoring: Yes Yo Details	: cut on PVC

General Notes (Condition of well or other features):
- studge (viscow) excensive sediment load
(tripling)
Sunable to sample .
· · · ·

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	 Dissolved Metals 	100 ml	Field Filtered			
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	□ NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	[] H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-			
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		<u></u>

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Sample Site:	MWOQ-Z1	Project Number:	1343-005.06	Date:		19 Mar 2015
Approximate Date Drilled:		Client:	GY - AAM	Samp	oler:	TS RM
Piezometer Diameter / Screen Length:	2,040	Project Name:	Mount Nansen 2 GW Sampling Program		her/Temperature:	cloudy -2°C
Field Blank Collected	Ves Name	Duplicate Collected:	🗌 Yes Name _	Reco	very:	Good Bad
Purge Method N/A				<u> </u>		
Waterra	Peristaltic	Disp. Bailer	Steel Baile	er (Centrif. Pump	Air Lift
Initial Depth to Water (m):	(911) 5FP-1	Purge Start Time:		Purg	e End Time:	
Depth to Bottom (m):		Time () minute int	erval:			and the second se
Submerged Tubing Depth (m):	Depth to water (m)				
Well Stick-up Height (m):	0.43 (1ce)	Temperature (⁰ C)				
Estimated Water Volume (L):		рН				
		Cond. (µs/cm)				
(DTB – DTW) x 2 (for 2" we	ll diameter) = 1 well	Specific Cond. (µs/cm) N	RUE		
volume		Redox (mV)	`	A.	1	
		DO (mg/L)		3	es	
(DTB-DTW) x 1.1 (for 1.5" diar	neter) = 1 well volume	Appearance & Odour Silty, HC odours, etc.)		- FROM		
2" casing has 0.16 USg					_	
1° casing has 0.04 USg		Only for Sulphide (mg/L)				
8" sand pack has 0.73 US 6 5/8" sand pack has 0.50	•	iuidi				
0 0/0 Sand pack lids 0.00	00ga/it 0F0.33 #/					
		Total Purga Volume:				
Sample Method ()						
Waterra	Peristaltic	Disp. Bailer	Stëel Bailer	Centrif. Pump	Air Lift	Other
Analysis						

Sample Site (Con't):
$$\frac{MW09 - 21}{2}$$

UTM Location: Zn: $06V$ Easting: 389534 Northing: 6880576
Photo No.: $100 - 0026$, -0027

Well Head Space Gases:

	Units	Values
Methane (CH4)	%LEL	Ø
Oxygen (O2)	%	20.1
Carbon Dioxide (C02)	РРМ	Ø
Well Head Seal: 🗍 J-Plug	PVC Cap 🔲 Not Sealed 🔲	Other
Seal Replaced: 🗍 J-Plug	PVC Cap 🔲 Not required 🗌	Other
Well properly sealed for gas mo	nitoring: 🗹 Yes 📋 No 🛛 Detail	s:

General Notes (Condition of well or other features):					
well	surrounded by ice				
	Ę.				

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered			
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plasti c)	General Chemistry	200 ml	•	~		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 mi	_			
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H ₂ SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 mi	-			
6	120 ml (plastic)	Sulphide	100 mi	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

Sample Site:	MP09-05	Project Number:	1343-005.06		Date:			19 H	212015
Approximate Date Drilled:		Client:	GY - AAM		Sample	r:		10	RM
Piezometer Diameter / Screen Length:	1.5"	Project Name:	Mount Nans GW Samplir Program		Weathe	r/Temperati	ure:	cloud -20	ly, low i
Field Blank Collected	Yes Name	Duplicate Collecter	d: 🗌 Yes Nar	ne	Recove	ry:		Good G	Bad 🗌 Bad
Purge Method 10/4									
Waterra	Peristaltic	Disp. Bailer	Steel B	ailer	Ce	ntrif. Pump)		Air Lift
Initial Depth to Water (m):	ICE 0.667	Purge Start Time:			Purge E	nd Time:			
Depth to Bottom (m):	-	Time () minute in	nterval:		1				
Submerged Tubing Depth (m):	Depth to water (m)							
Well Stick-up Height (m):	(ICE) 0.39	Temperature (°C)			-				
Estimated Water Volume (L):		рН							
		Cond. (µs/cm)		1.01					
(DTB – DTW) x 2 (for 2" we	ll diameter) = 1 well	Specific Cond. (µs/c	m)	\mathbb{N}^{-}	1000				
volume	-	Redox (mV)		SAL					
		DO (mg/L)			60				
(DTB-DTW) x 1.1 (for 1.5" dia	meter) = 1 well volume	Appearance & Odou Silty, HC odours, etc		1	FR				
2" casing has 0.16 USg	al/ft or 2.032 l/m	Sity, no odours, et)						
1" casing has 0.04 USg	al/ft or 0.508 l/m	Only for Sulphic	de						
8" sand pack has 0.73 US	+	final (mg/L)							
6 5/8" sand pack has 0.50	USgal/ft or 6.35 l/m	readings Turbidi	ity (NTU)						
		Total Purge Volume	2				I,	I	L
Sample Nethod									
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Cen		Air Lif	ft		Other
			·	Pur	np			_	
Analysis									

Sample Site (Con't): MP09-05UTM Location: Zn: 08V Easting: 389548 Northing: 688059] Photo No.: 100-0024, -0025

Well Head Space Gases:

	Units	Values
Methane (CH4)	%LEL	Ø
Oxygen (O2)	%	20.1
Carbon Dioxide (C02)	PPM	Ø
Well Head Seal: 🗹 J-Plug 🗌	PVC Cap 🗌 Not Sealed 🗌	Other
Seal Replaced: J-Plug	PVC Cap 🗌 Not required 🔲	Other
Well properly sealed for gas mon	toring: 🗹 Yes 🗌 No 🛛 Details	÷

General Notes (Condition of well or other features): -Well survound by ice (pond?)						
-well	surround b	tice.				
		(pond?)				
		. *				

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment 🔀	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered			
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	~	□ NaOH		
4	250 mi (glass)	Ammonia (NH3)	120 ml	-	☐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-			
6	120 ml (plastic)	Sulphide	100 ml	~	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	•		

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Sample Site:	W14103083BH01	Project Number:	1343-005.06	Da	te:	19 Mar 2015
Approximate Date Drilled:	· · · · · · · · · · · · · · · · · · ·	Client:	GY - AAM	Sa	mpler:	RH/TS
Piezometer Diameter / Screen Length:	2 pic	Project Name:	Mount Nanser GW Sampling Program		ather/Temperature:	cloudy OC
Field Blank Collected	Yes Name	Duplicate Collected	🗌 Yes Name	Re	covery:	Good 🗍 Bad
Purge Method N/1A				Ender Street		
Waterra	Peristaltic	Disp. Bailer	Steel Bai	iler	Centrif. Pump	Air Lift
Initial Depth to Water (m):		Purge Start Time:				
	6.549			ru	rge End Time:	
Depth to Bottom (m):		Time () minute in				
Submerged Tubing Depth (r Well Stick-up Height (m):	11):	Depth to water (m) Temperature (°C)				
Estimated Water Volume (L)		pH				
		Cond. (μs/cm)			ST -	
(DTB – DTW) x 2 (for 2" w	all diamatar) a 1 wall	Specific Cond. (µs/cm)		Lot Rt	5	
volumi		Redox (mV)		P ON		
		DO (mg/L)		51	»)	
(DTB-DTW) x 1.1 (for 1.5" dia	ameter) = 1 well volume	Appearance & Odour Silty, HC odours, etc.		005	2.Fr	
2" casing has 0.16 US		,,		1 24		
1" casing has 0.04 US		Only for Sulphid	÷			
8" sand pack has 0.73 U 6 5/8" sand pack has 0.50	•	final (mg/L)	. (67711)			
0 5/0 Sand pack has 0.50	r usgamt or 6.55 mit	readings Turbidit	(NTO)			
		Total Purge Volume:		· · · · ·		l
Sample Method 1-11						
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif.	Air Lift	Other
Analysis	/			Pump		
<u> </u>	l			L		

States.

Sample Site (Con't): <u>14103083</u>H01 UTM Location: Zn: OTV Easting: 389 521 Northing: 6880667 Photo No.: 100 - 00 (0, 00 4) Well Head Space Gases: Values **Units** Methane (CH4) %LEL -...... % Oxygen (O2) Carbon Dioxide (C02) PPM -----Well Head Seal: J-Plug PVC Cap Not Sealed Other _____. Seal Replaced: J-Plug PVC Cap Vot required Other Well properly sealed for gas monitoring: Yes Yoo Details:

General Notes (Condition of well or other features):
Not sealed
Not sealed Sintument wires blocking well
Jacob

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metais	100 ml	Field Filtered	HNO3		
1b	40 mi (glass)	Dissolved Mercury	15 mL	Field Filtered	HCL		
2	1 L (plastic)	General Chemistry	200 ml	-	*		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	🗌 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 mi	-	HNO3		
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

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Sample Site:	F	-B-3	Project Number:	1343-005.06	Date	9:	20 Mar 2015
Approximate	Date Drilled:		Client:	GY - AAM	San	ipler:	TJRM
Piezometer E Screen Leng	Concernment and a second state of the second s		Project Name:	Mount Nansen GW Sampling Program		ther/Temperature:	cloudy -3°C
Field Blank C	ollected	Yes Name	Duplicate Collecte	d: 🗌 Yes Name	Rec	overy:	Good Bad
Purge Metho	d						
Wat	terra	Peristaltic	Disp. Bailer	Steel Bai	ler	Centrif. Pump	Air Lift
Initial Depth	to Water (m):		Purge Start Time:		Pur	ge End Time:	
Depth to Bot	tom (m):		Time () minute i	nterval:			
Submerged 1	Tubing Depth (m):		Depth to water (m)				
Well Stick-up	Height (m):		Temperature (°C)			134/	
Estimated W	ater Volume (L):	/	рН		0	F.	
			Cond. (µs/cm)		D		
(DTB – DT	W) x 2 (for 2" well d	iameter) = 1 well	Specific Cond. (µs/cm)				
(2.0 0)	volume		Redox (mV)				
			DO (mg/L)				
	< 1.1 (for 1.5" diamet		Appearance & Odou Silty, HC odours, etc				
	ng has 0.16 USgal/fi ng has 0.04 USgal/fi		Sulphi	de			
	oack has 0.73 USga		Only for (mg/L)				
6 5/8" san	id pack has 0.50 US	gal/ft or 6.35 l/m		ity (NTU)			
			Total Purge Volume		l		
Sample Meth	05		server nige solding				
	Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift	Other
Analysis					• • • • • • • • • • • • • • • • • • •		

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Sample Site (Con't): <u>FD</u> - UTM Location: Zn:	Easting: North	ing:	General Notes (Condition of well or other features):
Photo No.:		-	FB-3 taken at MW09-18
Well Head Space Gases:			
	Unita	Values	
Methane (CH4)	%LEL		
Oxygen (O2)	%		
Carbon Dioxide (C02)	PPM		
Well Head Seal: 🔲 J-Plug	PVC Cap Not Sealed	Other	
Seal Replaced: J-Plug	PVC Cap Not required	Other	
Well properly sealed for gas mo	nitoring: 🗌 Yes 📋 No 🛛 Details	5:	*9 bottles

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered		/	
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	250 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	60 ml	-	□ NaOH		
4	250 ml (glass)	NH3	120 ml	-	☐ H ₂ SO₄	/	
5	120 ml (plastic)	Thiocyanate	100 ml				
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-	/	
8²	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	□ NaOH		
9	120 ml (plastic)	Alkalinity	100 ml	Field Filtered	-	/	

Sample Site:	CH - P-13 - 05/50	Project Number:	1343-	005.06		Date:			Mar	<i>20</i> , 20	/5
Approximate Date Drilled:	vakaowa	Client:	GY - /	AAM		Sampler:		AN	AN, JL		
Piezometer Diameter / Screen Length:	15"/ vn krown	Project Name:		t Nansen Sampling am	2015	Weath	ather/Temperature:		QVCIC	overcast -5°C	
Field Blank Collected	Yes Name	Duplicate Collected:	VY	es Name	Dur-2	Recov	əry:		1 So	od 🗌	Bad
Purge Method											
Waterra	Peristaltic	Disp. Bailer	\$	Steel Bai	ler	C	entrif. Pu	Imp		Air Lift	
Initial Depth to Water (m):	29.05	Purge Start Time:	// : 4	0		Purge	End Tim	e:	12	:38	
Depth to Bottom (m):	49.83	Time (<u>5</u>) minute inte	erval:	11:45	12:06	12:11	12:16	12'20	12:26	123	12:38
Submerged Tubing Depth (m): ~47.	Depth to water (m)		29.10	29.11	29.32	29.29	29.30	29.37	29.39	29.40
Well Stick-up Height (m):	0.78	Temperature (°C)		2.2	1.6	1.3	1.3	1.3	1.3	1.3	1.4
Estimated Water Volume (L): 22.86	рН		6.54	6.77	6.62	6.92	6,68	6.62	6.61	6.54
		Cond. (µs/cm)		1555	1540	1554	1578	1569	1559	1558	1566
(DTB – DTW) x 2 (for 2" w	vell diameter) ≃ 1 well	Specific Cond. (µs/cm)		2754	2789	2912	2882	2881	2834	2836.	2857
volum		Redox (mV)		117.9	107.7	98.3	90.3	83.i	88.6	9(.4	90.4
		DO (mg/L)		4.09	4.54	1.95	2.32	2.03	2.15	2.04	2.36
(DTB-DTW) x 1.1 (for 1.5" di 2" casing has 0.16 US		Appearance & Odour (Silty, HC odours, etc.)	Clear,	light brown greg.	Some.	Sound	brond .	Sand.	Some	Sane.	Same
1" casing has 0.04 US 8" sand pack has 0.73 L	gal/ft or 0.508 l/m ISgal/ft o r 9.271 l/m	Only for Sulphide (mg/L)									0.94
6 5/8" sand pack has 0.5() USgal/ft or 6.35 l/m	readings Turbidity	(NTU)								48.9
		Total Purge Volume: /		5:	10	15	20	25	30	35	40
Sample Method									-	1	
Waterra	Peristaltic	Disp. Bailer	Steel B	ailer	Cent Pun	{	Air	r Lift		Other	
Analysis											

Sample Site (Con't): <u>CH-P-13-05/50</u> Way pt. collected on AN GPS UTM Location: Zn: 08 Easting: 0388955 Northing: 6881468 Photo No.: 74-76 (Camera 8010)

Well Head Space Gases:

	Units	Values						
Methane (CH4)	%LEL	0						
Oxygen (O2)	%	20.1						
Carbon Dioxide (C02)	PPM	0						
Well Head Seal: 🔲 J-Plug	PVC Cap Not Sealed	Other						
Seal Replaced: 🗌 J-Plug	PVC Cap 🗌 Not required 🗹	Other <u>10 1.5" caps.</u>						
Well properly sealed for gas monitoring: Yes Yoo Details:								

T HEMMERA

General Notes (Condition of well or other features): Tubing in well does not reach bottom. Tubing should be replaced. Did not have som length to replace 2015/03/19 Water was frozen throughout tubing length. Tubing was brought inside bunkhouse over night to dethaw. Well was purged and sampled on 2015/08/20.

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	I É HNO₃	120	
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered	ETHCL .	40	
2	1 L (plastic)	General Chemistry	200 ml	-	-	1000	
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 m i		⊡́NaOH	145	
4	250 mi (glass)	Ammonia (NH3)	120 ml	-	EH2SO4	250	
5	120 ml (plastic)	Thiocyanate (SCN)	50 mi		I HNO3	(20	
6	120 ml (plastic)	Sulphide	100 ml		Zinc Acetate, capped and mixed, then NaOH	120	
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-	250	
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-	120	

5a~pled @ 12:40

Sample Site:	MW09-19	Project Number:	1343-00	5 06		Date:			Mai	20,201	5
Approximate Date Drilled:		Client:	GY - AA	M		Samp	er:			ΤĴ	
Piezometer Diameter / Screen Length:	2" PVC	Project Name:	Mount N GW Sar Program	mpling	2015	Weath	er/Temp	erature:	88	ηγ Φε	
Field Blank Collected	Yes Name	Duplicate Collected:	X Yes	Name	pup-1	Recov	ery:		God	d 🗌	Bad
Purge Method											
Waterra	Peristaltic	Disp. Bailer	Ste	el Bai	ler	C	entrif. Pu	۳p		Air Lift	
Initial Depth to Water (m):	3.062	Purge Start Time:	13:01			Purge	End Tim	e:	13:	35	
Depth to Bottom (m):	5.883	Time (<u>5</u>) minute inte	rval:	3 05	13:10	13:15	13:20	13:25	13:30		
Submerged Tubing Depth (m):	Depth to water (m)	3	.34	3.56	3,65	3.66	3.66	3.66		
Well Stick-up Height (m):	0.97	Temperature (°C)	ζ).7		0.9	0.9	0.9	0,9		
Estimated Water Volume (L): ~ 5.6	рН		~					6.59		
		Cond. (µs/cm)	1	162	10	1144	1155	1160	1158		
(DTB – DTW) x 2 (for 2" w	vell diameter) = 1 well	Specific Cond. (µs/cm)		170	2. B	2123	2146	2149	2149		
volum		Redox (mV)		41.7	Ś	-51.9	-62.1	- 65.2	-69.2		
		DO (mg/L)	3	7,7	ot	12.1	1.26	1.08	1.12		
(DTB-DTW) x 1.1 (for 1.5" di 2" casing has 0.16 US		Appearance & Odour (C Silty, HC odours, etc.)	Clear,		C LEEN J				Some sulfor inve Odoví		
1° casing has 0.04 USgal/ft or 0.508 l/m 8° sand pack has 0.73 USgal/ft or 9.271 l/m		Only for Sulphide final (mg/L)			75, 56				0.05		
6 5/8" sand pack has 0.5(0 USgal/ft or 6.35 l/m	readings Turbidity ((NTU)]		7.1		
		Total Purge Volume:		1 L I	3	L-(5	6	7		
Sample Method	Bartant										
Waterra	Peristaltic	Disp. Bailer	Steel Bail	er	Cen Pur		Air	r Lift		Other	
Analysis			,			····					

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Sample Site (Con't): <u>MW</u> 0	9-19		General Notes (Condition							
UTM Location: Zn: 0 § V	JTM Location: Zn: 08V Easting: 38805! Northing: 6881015									
Photo No.: 100-0075-	Dupl collected									
Well Head Space Gases			1							
	Units	Values								
Methane (CH4)	%LEL	0								
Oxygen (O2)	%	20.0								
Carbon Dioxide (C02)	РРМ	0								
Well Head Seal: 🗍 J-Plug 🔽										
Seal Replaced: D-Plug	1									
Well properly sealed for gas mor	itoring 🗹 Yes 🗌 No	Details:								

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0220028

Genera feature	Il Notes (Condition of well or other s):
Dupl	collected
	į

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 m)	Field Filtered		120	
1b	40 ml (giass)	Dissolved Mercury	15 mL	Field Filtered	I HCL	40	
2	1 L (plastic)	General Chemistry	200 ml		-	1000	
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 mł	-	I NEOH	145	
4	250 ml (glass)	Ammonia (NH3)	ات 120	-	TH,SO.	250	
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-	IS HNO;	120	
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH	120	
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	- /	-	250	
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-	120	

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Sample Site:	MW09-18	Project Number:	1343-(005.06		Date:			Mar 2	0 2015
Approximate Date Drilled:		Client:	GY - AAM			Sampler:			Mar 20, 2015 RM TJ	
Piezometer Diameter / Screen Length:		Project Name:		Nanser ampling am		Weath	er/Tempera	iture:	Sunny	0°C
Field Blank Collected	Ves NameFB-3	Duplicate Collected:	🗌 Ye	s Name		Recov	ery:		🗌 Good	🗌 Bad
Purge Method										
Waterra	Peristattic	Disp. Bailer	S	teel Ba	iler	C	entrif. Pum	p	A	ir Lift
Initial Depth to Water (m):	5.131	Purge Start Time:	14:	32		Purge	End Time:		16:9	3
Depth to Bottom (m):	7.778	Time () minute inte	rval:	14:37	14:44	14:55	16:02			
Submerged Tubing Depth (r	m): /	Depth to water (m)		5.14	5.14	5.14	5.14			
Well Stick-up Height (m):	0.87	Temperature (°C)		0.4	0.2	0.2	0.2			
Estimated Water Volume (L): 5.3	рH		6.96	6.90	6.89	6.89			
		Cond. (µs/cm)		1584	1551	1524	1530			
(DTB – DTW) x 2 (for 2° w	ell diameter) = 1 well	Specific Cond. (µs/cm)		3007	2947	2939	2936			
volum		Redox (mV)		26.8	31.0	35.0	351			
		DO (mg/L)		0.88	1.20	2.0	1.97			
(DTB-DTW) x 1,1 (for 1,5° di	ameter) = 1 well volume	Appearance & Odour (0 Silty, HC odours, etc.)	Clear,				Ne odoví			
2" casing has 0.16 US	•						00.001			
1" casing has 0.04 US 8" sand pack bas 0.73 U	•	Only for Sulphide (mg/L)					Q.15			
8" sand pack has 0.73 USgal/ft or 9.271 l/m 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m		final (ingit) readings Turbidity	(NTU)				4,19			
		Total Purge Volume: / (J	3	5	7	******		
Sample Method										
Waterra	Peristaltic	Disp. Bailer	Steel B	ailer	Cen Pur		Air L	.ift		Other
Analysis						1				····

Sample Site (Con't): $MWaq - 18$							
UTM Location: Zn: O $\%$ V	Easting: 388055	Northing:	6880983				
Photo No.: The states FIZ7 - 78							
Well Head Space Gases.							

52218376

COMPANY STORY

	Units	Values						
Methane (CH4)	%LEL	0						
Oxygen (O2)	%	19.8						
Carbon Dioxide (C02)	РРМ	Q						
Well Head Seal: 🗌 J-Plug 🗹	Well Head Seal: J-Plug PVC Cap Not Scaled Other							
Seal Replaced:J-Plug PVC Cap Not required Other								
Well properly sealed for gas monitoring: Vis No Details: 600d								

General Notes (Condition of well or other features):				
EB-3	Mariz batch			

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment 🔀	Preservative Added	Volume Collected (mi)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	THNO3	120	
1b	40 ml (glass)	Dissolved Mercury	15 mL	I Field Filtered	HCL	40	
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	Z NEOH	1000	
۷	250 ml (glass)	Ammonia (NH3)	120 ml	-	C/H.SO.	250	
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-			
6	120 ml (plastic)	Sulphide	100 mi	-	Zinc Acetate, capped and mixed, then NaOH	120	
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	- /	-	250	
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	~	120	

EI HEMMERA

GROUNDWATER SAMPLE COLLECTION SHEET

Sample Site:	Trip Black	Project Number:	1343-005.06	Date	•	18 Mar 15
Approximate Date Drilled:	ALS	Client:	GY - AAM	Sam	oler:	5 /RM
Piezometer Diameter / Screen Length:		Project Name:	Mount Nansen GW Sampling Program		ther/Temperature:	
Field Blank Collected	Yes Name	Duplicate Collected:	🗌 Yes Name_	Reco	wery:	Good Bad
Purge Method				Let set		
Waterra	Peristaltic	Disp. Bailer	Steel Baile	er	Centrif. Pump	Air Lift
Initial Depth to Water (m):		Purge Start Time:		Purg	e End Time:	
Depth to Bottom (m):		Time () minute inte	rval:			
Submerged Tubing Depth (m):	Depth to water (m)				
Well Stick-up Height (m):		Temperature (^o C)				
Estimated Water Volume (L	.):	рН		······		
		Cond. (µs/cm)			T FLIT	
(DTB – DTW) x 2 (for 2" v	well diameter) = 1 well	Specific Cond. (µs/cm)		\bigcirc		
volum		Redox (mV)		6 K		
		DO (mg/L)		A-		
(DTB-DTW) x 1.1 (for 1.5" d	iameter) = 1 well volume	Appearance & Odour (Silty, HC odours, etc.)	Clear,	× /		
2" casing has 0.16 US	Sgal/ft or 2.032 l/m					
1" casing has 0.04 US	•	Only for Sulphide				
8" sand pack has 0.73 l	-	final (mg/L)		·		
6 5/8" sand pack has 0.5	0 05gal/π or 6.35 l/m	readings Turbidity	(NIU)			
		Total Purge Volume:	***			l
Sample Method						
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift	Other
Analysis						

Batch 17-Feb-15 ALS - SRS

allera,

General Notes (Condition of well or other

TRIP BLANK March # 192015

features):

RIP BLANK Sample Site (Con't):

UTM Location: Zn:

Easting:

Photo No.:

بر المتحرير

Well Head Space Gases:

	Units	Values					
Methane (CH4)	%LEL						
Oxygen (O2)	%						
Carbon Dioxide (C02)	PPM						
Well Head Seat: J-Plug PVC Cap Not Sealed Other							
Seal Replaced: J-Plug PVC Cap Not required Other							
Well properly sealed for gas monitoring: Yes No Details:							

Northing:

1

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment 🔀	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3		/
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			ý
2	1 L (plastic)	General Chemistry	200 ml	-	-	1	
3	145 ml (plastic)	Cyanide (totał, free, weak acid dissociable)	100 ml	-	□ NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	□ H ₂ SO ₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-	HNO3		
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-	1	
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-	/	

Sample Site:	MW09-11	Project Number:	1343-005.06	Date	•	2015/03/20
Approximate Date Drilled:	unknown	Client:	GY - AAM	Sam	pler:	AN, JL
Piezometer Diameter / Screen Length:	2"/mknown	Project Name:	Mount Nansen 2 GW Sampling Program		ther/Temperature:	clear skies ~ 2°C
Field Blank Collected	🗌 Yes Name	Duplicate Collected:	Yes Name_	Reco	wery:	Good Bad
Purge Method						
Waterra	Peristaltic	Disp. Bailer	Steel Baile	er	Centrif. Pump	Air Lift
1						
Initial Depth to Water (m):	DRY	Purge Start Time:	- 1 1	Purg	e End Time:	
Depth to Bottom (m):	4.915	Time () minute inte	erval:			
Submerged Tubing Depth (r		Depth to water (m)				
Well Stick-up Height (m):	0.806	Temperature (°C)				
Estimated Water Volume (L.):	pH				
		Cond. (µs/cm)			2	
(DTB DTW) x 2 (for 2" w	ell diameter) = 1 well	Specific Cond. (µs/cm)				
volume		Redox (mV)		$-\overline{1}$		2
		DO (mg/L)				
(DTB-DTW) x 1.1 (for 1.5" dia	ameter) = 1 well volume	Appearance & Odour (Silty, HC odours, etc.)	Clear,			
2" casing has 0.16 US	gal/ft or 2.032 l/m					
1" casing has 0.04 US	gal/ft or 0.508 l/m	Only for Sulphide		······		
8" sand pack has 0.73 U	0	final (mg/L)				¢
6 5/8" sand pack has 0.50) USgal/ft or 6.35 l/m	readings Turbidity	(NTU)			
		Total Pume Volume:			III	[
Sample Method						
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif.	Air Lift	Other
				Pump		
Analysis						

Sample Site (Con't):	Way pt. collected on AN GPS					
	1037 Northing: 68807/1					
Photo No.: 65-67 ((amara 8010)						
Well Head Space Gases:						

	Unita	Values
Methane (CH4)	%LEL	0
Oxygen (O2)	%	20.1
Carbon Dioxide (C02)	PPM	0
	PVC Cap Not Sealed PVC Cap Not required	
ell properly sealed for gas moni	toring: 🗹 Yes 🗌 No Details	: slife in side of
		PVE covered by well

General Notes (Condition of well or other features):

Matal well easing, good condition Plastic bailer formed in well.

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered			
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 mi	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 mi	-	П NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	~	☐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-	☐ HNO3		
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-	l	

Sample Site:	W141030838H03	Project Number:	1343-005.06	Date:	2015/03/20
Approximate Date Drilled:	unknown	Client:	GY - AAM	Sampler:	AN, JL
Piezometer Diameter / Screen Length:	2"/mkronn	Project Name:	Mount Nansen 2015 GW Sampling Program	Weather/Temperature:	over cast ~2°C
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name	Recovery:	Good Bad
Purge Method			3		
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift
		hour contraction of the second s			
Initial Depth to marrier (m):	CE 1.514	Purge Start Time:		Purge End Time:	
Depth to Bottom (m):		Time () minute inte	erval:		
Submerged Tubing Depth (m):	Depth to water (m)			
Well Stick-up Height (m):	0.70	Temperature (°C)			
Estimated Water Volume (L):	рН			
		Cond. (µs/cm)			
(DTB – DTW) x 2 (for 2" v	(all diameter) = 1 well	Specific Cond. (µs/cm)		T//	
volum		Redox (mV)		NO 7	
		DO (mg/L)			
(DTB-DTW) x 1.1 (for 1.5" di	ameter) = 1 well volume	Appearance & Odour (Silty, HC odours, etc.)	Clear,		
2" casing has 0.16 US	-			1 4 7	
1" casing has 0.04 US	+	Only for Sulphide			
8" sand pack has 0.73 L	-	final (mg/L)	()		
6 5/8" sand pack has 0.5	υ osgai/π or 6.35 i/m	readings Turbidity			
		Total Purge Volume:		I I	
Sample Method					
Waterra	Peristaltic	Disp. Bailer	1	entrif. Air Lift ump	Other
Analysis				······	

Sample Site (Con't): W14103083BH03 Way pt. collected on AN 6P5. UTM Location: Zn: 08 Easting: 0389132 Northing: 6830731 Photo No.: 68-70 (Comera 8010).

Well Head Space Gases:

	Units	Values
Methane (CH4)	%LEL	Ø
Oxygen (O2)	%	20.1
Carbon Dioxide (C02)	РРМ	Ø
Well Head Seal: 🚺 J-Plug 🔲 Seal Replaced: 🔛 J-Plug 🔲	·	
		,
Well properly sealed for gas moni	~ — — 7	that world fit.

General Notes (Condition of well or other features):

Metal well casima, good condition Peri. tubing found in well Tubing frozen in place. Well not properly labeled, added flagging tape with label. UTM matches SOW.

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	🗌 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-			
6	120 ml (plastic)	Sulphide	100 ml	•	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinit y	100 ml	Field Filtered			

Approximate Date Drilled:	MP09-14	Project Number:	1343-005.06		Date:		2015/03	120
reprise vale vineu.	vakaowa	Client:	GY - AAM	5	Sampler:		AN,JL	
Piezometer Diameter / Screen Length:	l"/rocknown	Project Name:	Mount Nansen GW Sampling Program		Weather/Temp	erature:	AN, JL Ourreast ~-2°C	-
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name		Recovery:		Good	Bad Bad
Purge Method								
Waterra	Peristaltic	Disp. Bailer	Steel Bai	ler	Centrif. P	ump	Air L	.ift
Initial Depth to Water (m):		Purge Start Time:			Purge End Tim	ie:		
Depth to Bottom (m):		Time () minute inte	rval:					
Submerged Tubing Depth (n	n):	Depth to water (m)						
Well Stick-up Height (m):	0.76	Temperature (ºC)						
Estimated Water Volume (L)	· · · · · · · · · · · · · · · · · · ·	рН				\cup		
***************************************		Cond. (µs/cm)			1/1			
(DTB – DTW) x 2 (for 2" we	all diameter) = 1 well	Specific Cond. (µs/cm)		Į,	1.0			
volume		Redox (mV)		/ n D				
		DO (mg/L)		6 M				
(DTB-DTW) x 1.1 (for 1.5" dia	imeter) = 1 well volume	Appearance & Odour (C Silty, HC odours, etc.)	Clear,					
2" casing has 0.16 USg	-			2	\rightarrow			
1° casing has 0.04 USg		Only for Sulphide (mg/L)						
8" sand pack has 0.73 US 6 5/8" sand pack has 0.50	-	final Turbidity						
	obgained 0.00 init		(((10))					
		Total Purge Volume:						
Sample Method								
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centril Pump	{ · · · · · · · · · · · · · · · · · · ·	ir Lift	Oti	her
Analysis				unip	· · · · · · · · · · · · · · · · · · ·			

Sample Site (Con't): MP09-14 Way pt. collected on AN GPS. UTM Location: Zn: 08 Easting: 0389140 Northing: 6880720 Photo No.: 7|-73 (Cancer a 8010)

Well Head Space Gases:

	Units	Values
Methane (CH4)	%LEL	×
Oxygen (O2)	%	20.0
Carbon Dioxide (C02)	РРМ	X X
Weil Head Seal: J-Plug	PVC Cap INot Sealed	Other
Seal Replaced: 🔲 J-Plug	PVC Cap 🗌 Not required	Other not replaced.
Well properly sealed for gas mon	itoring: 🗌 Yes 💾 No Details	no not have seal that you!"

HEMMERA

General Notes (Condition of well or other features):

Metal DP stick up with inner waterra tobing and pre existing peri. tubing installed for sampling. Tubing frozen in place. Could not measure depth to ice. Water level meter could not fit with frozen tubing.

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	☐ HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	~	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	🗋 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	*	☐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 mi	~			
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 mi	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

Sample Site:	MW09-17	Project Number:	1343-005.06	Date:		2015/03/20
Approximate Date Drilled:	mann.	Client:	GY - AAM	Samp	Management of the second s	AN, JL
Piezometer Diameter / Screen Length:	2" / Jakaonin	Project Name:	Mount Nansen 20 GW Sampling Program		her/Temperature:	clear skiles ~2°C.
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name	Reco	very:	Good Bad
Purge Method						
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	(Centrif. Pump	Air Lift
		Egentilitätiin kuitetaa kaalaan kaalaa				776
Initial Depth to Water (m):	DRY	Purge Start Time:		Purgi	End Time:	
Depth to Bottom (m):	5.71	Time () minute inte	rval:			
Submerged Tubing Depth (r	· · · · · · · · · · · · · · · · · · ·	Depth to water (m)				
Well Stick-up Height (m):	0.968	Temperature (°C)				
Estimated Water Volume (L)):	рН				
		Cond. (µs/cm)				
(DTB – DTW) x 2 (for 2" w	vell diameter) = 1 well	Specific Cond. (µs/cm)				
volum		Redox (mV)			A I	
		DO (mg/L)		$\overline{\mathbf{h}}$		
(DTB-DTW) x 1.1 (for 1.5" dia	ameter) = 1 well volume	Appearance & Odour (Silty, HC odours, etc.)	Clear,			
2" casing has 0.16 US	-					
1" casing has 0.04 US	•	Only for Sulphide		-	1 Ch I	
8" sand pack has 0.73 U	*	final (mg/L)				
6 5/8" sand pack has 0.50	υ osgal/π or 6.35 l/m	readings Turbidity		****		
		Total Purge Volume:	, ,			I
Sample Method			and a second second second			
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift	Other
Analysis						

E HEMMERA

Sample Site (Con't): <u>MW09-17</u> Way pt. collected on AN 6P5. UTM Location: Zn: 08 Easting: 0388075 Northing: 6886970 Photo No.: 77-79 ((amera 8010).

Well Head Space Gases:

	Units	Values
Methane (CH4)	%LEL	X
Oxygen (O2)	%	9.5
Carbon Dioxide (C02)	PPM	à
Well Head Seal: 🔲 J-Plug 🕑	PVC Cap 🗌 Not Sealed 🔲	Other
Seal Replaced: 🔲 J-Plug	PVC Cap Vot required	Other
Well properly sealed for gas mon	toring: 🖳 Yes 🗌 No Details	<u></u>

General Notes (Condition of well or other features): Metal well casting. PVC well sticks up above top of well casting. (asing does not close properly. Silt found on end of IFM after measuring DTB.

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment 🔀	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	🗌 №аОН		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H ₂ SO ₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 mi	-	HNO3		
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	*	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 mi	Field Filtered	-		

L HEMMERA

Sample Site:	\sim	MW09-16	Project Number:	1343-005.06	Da	ite:		Mar 2	.0.2015
Approximate D	Date Drilled:		Client:	GY - AAM	Sa	mpler:		RM T	
Piezometer Dia Screen Length			Project Name:	Mount Nansen GW Sampling Program		Weather/Temperature:			٥٤
Field Blank Co	llected [Yes Name	Duplicate Collected:	Yes Name	Re	covery:		Good	l 🗍 Bad
Purge Method									
Wate	rra	Peristaltic	Disp. Bailer	Steel Bail	er	Centrif. P	խութ	ŀ	Air Lift
Initial Depth to	Water (m):	1.755(ICe)	Purge Start Time:		Pu	rge End Tin	ne:	<u>2</u>	
Depth to Botto	m (m):	/	Time () minute inte	erval:	<u> ©%©%g</u>	1	T T		
Submerged Tu	bing Depth (m):		Depth to water (m)		<u>‡</u>			 +	
Well Stick-up F	leight (m):	1.21	Temperature (⁹ C)				+		
Estimated Wate	er Volume (L):	1	рН			N			
			Cond. (µs/cm)				1		
	A × 2 (for 2" well (diameter) = 1 well	Specific Cond. (µs/cm)		$-\Lambda_{i}$	$\forall / / /$	17-1		
	v) x 2 (lot 2 well (volume	ngmeren) - i wen	Redox (mV)		~ Q ~	/ /	1/		
			DO (mg/L)	X			/		
	1.1 (for 1.5° diame 3 has 0.16 USgal/	eter) = 1 well volume	Appearance & Odour (C Silty, HC odours, etc.)	Clear,					
	j has 0.10 USgai/ j has 0.04 USgai/		Sulphide	/					
-	ick has 0.73 USga		Only for (mg/L)						
6 5/8" sand	pack has 0.50 US	Sgal/ft or 6.35 l/m	readings Turbidity ((NTU)					
			Total Purge Volume:			l			
Sample Method	1			<u> </u>					
	Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Ai	r Lift		Other
Analysis					• 				· · · · · · · · · · · · · · · · · · ·

LI HEMMERA

Sample Site (Con't): <u>A</u>	1209-16	09-16					
UTM Location: Zn: ()	g√ Easting	: 387990	Northing:	6881093			
Photo No.: 100 - 00	73,-0074			•••••			

Well Head Space Gases.

NAME OF TAXABLE PARTY OF TAXABLE PARTY

Methane (CH4)			%LEL		Ω	
Oxygen	n (O2)		% PPM		20.4	
Carbon Dio:	xide (C02)					
Nell Head Seal:	🗍 J-Plug	PVC Cap	Not Sealed	С	ther	
Seal Replaced	J-Plug	PVC Cap	Not required	По	ther	

General Notes (Condition of well or other	
features):	

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment 🔀	Preservative Added 🔀	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered			
15	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered	HCL		
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	□ N8OH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	~	H,SO.		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-			·····
6	120 ml (plastic)	Sulphide	100 mi		Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered			

Sample Site:	MW09-03	Project Number:	1343-005.06		Date:		2	O Mar	2015
Approximate Date Drilled:		Client:	GY - AAM		Sample	era		5 RM	
Piezometer Diameter / Screen Length:	2"pvc	Project Name:	Mount Nanse GW Sampling Program		Weathe	er/Temperati	174	lear -5°C	
Field Blank Collected	Yes Name	Duplicate Collected:	🗌 Yes Name	e	Recove	ery:	E	Good [Bad
Purge Method									
Waterra	Peristaltic	Disp. Bailer	Steel Ba	ailer	Ce	entrif. Pump		Air Li	ft
Initial Depth to Water (m):	<u> </u>	Purge Start Time:	[Purgel	End Time:			
Depth to Bottom (m):		Time () minute inte	rval:	T					
Submerged Tubing Depth (r	m):	Depth to water (m)							
Well Stick-up Height (m):		Temperature (°C)							
Estimated Water Volume (L)):	pН							
		Cond. (µs/cm)		/					
(DTB – DTW) x 2 (for 2" w	vell diameter) = 1 well	Specific Cond. (µs/cm)		1	1				
volum		Redox (mV)		Do	210				
		DO (mg/L)		10	~/				
(DTB-DTW) x 1.1 (for 1.5" dia	ameter) = 1 well volume	Appearance & Odour (Clear,						
2" casing has 0.16 US	gal/ft or 2.032 l/m	Silty, HC odours, etc.)							
1" casing has 0.04 US	-	Only for Sulphide							
8" sand pack has 0.73 U	-	final (mg/L)							
6 5/8" sand pack has 0.50) USgal/ft or 6.35 l/m	readings Turbidity	(NTU)						
		Total Purge Volume:		_I	l	L		L	
Sample Nethod									
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Cent		Air Lifi	t i	Oth	er
Analysis				Pun	np				

C HEMMERA

Sample Site (Con't):	09-03	
UTM Location: Zn: $\bigcirc \& \lor \lor$	Easting: 389421	Northing: 6880 556
Photo No.: 100 - 0040	0, -0047	
	,	

	Units	Values
Methane (CH4)	%LEL	
Oxygen (O2)	%	
Carbon Dioxide (C02)	PPM	
Well Head Seal: 🔲 J-Plug	PVC Cap 🗌 Not Sealed 🗌	Other
Seal Replaced: 🗌 J-Plug 🗌	PVC Cap 🗌 Not required 🗍	Other
Well properly sealed for gas moni	itoring: 🗌 Yes 🗌 No 🛛 Detail	s:

	tures):	ł			
_ \	ouried	. und	er.	snow	
	could	not	loc	ale	
	w/p	in find	o yr	. 0.	. the
*	well co	wing 3	cap c	ine pri	N.
	UTH	not infind sing & for	pre	orfi	e ld
	data	, v		V	

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	☐ HNO3		
15	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered	HCL		
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	🗆 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	+	☐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-	HNO3		
6	120 ml (plastic)	Sulphide	100 ml	*	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

П HEMMERA

Sample Site:	MP19-12	Project Number:	1343-005.06	Date	:	20 Mar 2015
Approximate Date Drilled:	γι. <u>Σ.ι. Σ</u>	Client:	GY - AAM	Sam	pler:	TS RM
Piezometer Diameter / Screen Length:	2°pvc	Project Name:	Mount Nansen GW Sampling Program	6559288555888	ther/Temperature:	Partial cloud
Field Blank Collected	Yes Name	Duplicate Collected:	🗌 Yes Name_	Rec	overy:	Good Bad
Purge Method						
Waterra	Peristaltic	Disp. Bailer	Steel Bail	er	Centrif. Pump	Air Lift
		Exercise and a second				
Initial Depth to Water (m):	1.758 (ice)	Purge Start Time:		Purg	e End Time:	
Depth to Bottom (m):	-	Time () minute inte	rval:			
Submerged Tubing Depth (m	ו): –	Depth to water (m)				
Well Stick-up Height (m):	1.67	Temperature (°C)				Contract Con
Estimated Water Volume (L):	: _	рН				
		Cond. (µs/cm)				
(DTB – DTW) x 2 (for 2" we	all diameter) = 1 well	Specific Cond. (µs/cm)				
volume	,	Redox (mV)		in IV		
		DO (mg/L)	D	2 april		
(DTB-DTW) x 1.1 (for 1.5" dia	meter) = 1 well volume	Appearance & Odour (Silty, HC odours, etc.)	Clear,	31/18	2di	
2" casing has 0.16 USg				$-/\langle \chi $	<u> </u>	
1" casing has 0.04 USg		Chiv for Sulphide (mg/L)		•••• ¥		
8" sand pack has 0.73 US 6 5/8" sand pack has 0.50	-					
5 5/5 Sana paok nas 0.00	obgaint of 0.00 mit					
		Total Purge Volume:				
Sample Method						
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift	Other
Analysis				F		

Sample Site (Con't): <u>MPO9 - 12</u> UTM Location: Zn: ORV Easting: 389220 Northing: 688063 Photo No.: 100-0057, -0058

General Notes (Condition of well or other features):

	Units	Values
Methane (CH4)	%LEL	Ø
Oxygen (O2)	%	20.4
Carbon Dioxide (C02)	Methane (CH4) %LEL Oxygen (O2) % Oxygen (O2) % Carbon Dioxide (C02) PPM Ell Head Seal: J-Plug PVC Cap Not Sealed Other eal Replaced: J-Plug PVC Cap	
Well Head Seal: 🗹 J-Plug 🔲	PVC Cap 🗌 Not Sealed 🔲	Other
Seal Replaced: J-Plug	PVC Cap 🗌 Not required 🗍	Other
Well properly sealed for gas mon	itoring: 🗌 Yes 🗹 No 🛛 Details	Pre cut

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered			
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered		/	
2	1 L. (plastic)	General Chemistry	200 ml	-	*	/	
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	🗌 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H ₂ SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 mi	-			
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-	////	
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	*	/	

П неммеrа

Sample Site:	MR09-11	Project Number:	1343-005.06	Date		20 Mar 2015
Approximate Date Drilled:		Client:	GY - AAM	Sam	pler:	-15 RM
Piezometer Diameter / Screen Length:	2 PVC	Project Name:	Mount Nansen GW Sampling Program		ther/Temperature:	Partial cloud -5°C
Field Blank Collected	Yes Name	Duplicate Collected	Yes Name	Reco	ivery:	🗌 Good 🛛 🗌 Bad
Purge Method						
Waterra	Peristaltic	Disp. Bailer	Steel Bail	er	Centrif. Pump	Air Lift
Initial Depth to Water (m):	1.745 (ive)	Purge Start Time:		Purg	e End Time:	
Depth to Bottom (m):		Time () minute int	erval:			
Submerged Tubing Depth (m):	Depth to water (m)				
Well Stick-up Height (m):	1.72	Temperature (°C)		-	+ + +	
Estimated Water Volume (L): ~	pH		J n F		
		Cond. (µs/cm)		JAW -		
(DTB DTW) x 2 (for 2" v	vell diameter) = 1 well	Specific Cond. (µs/cm	i)	R		
volum		Redox (mV)		151	. 2	
		DO (mg/L)		S/ ∕(J.M.	
(DTB-DTW) x 1.1 (for 1.5" di	·	Appearance & Odour Silty, HC odours, etc.		1007	Ύ	
2" casing has 0.16 US	-		A	<u> </u>		
1" casing has 0.04 US 8" sand pa c k has 0.73 L	-	Only for Sulphide (mg/L)				
6 5/8" sand pack has 0.5	•	final (ing/L) readings Turbidity	(NTU)			
			,			
		Total Purge Volume:				
Sample Method		· · · · · · · · · · · · · · · · · · ·	<u> </u>		-	
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift	Other
Analysis				Fumh	<u> </u>	
,		.1			1	

UTM Location: Zn: 087 Easting: 389219 Northing: 688063

Photo No.: 100 - 00 5 71 - 00 58

Well Head Space Gases:

	Units	Values
Methane (CH4)	%LEL	Ø
Oxygen (O2)	%	20.4
Carbon Dioxide (C02)	PPM	Ø
Well Head Seal: J-Plug	PVC Cap 🗌 Not Sealed 🗌	Other
Seal Replaced: 🗌 J-Plug	PVC Cap Not required	Other
Well properly sealed for gas mon	itoring: 🗌 Yes 🛃 No 🛛 Details	» PVc cut

wen prope	ny sealed for gas moni	toring: 📋 Yes 🔄 No D	etails: <u>v c</u>		······································		
Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment 🔀	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3	/	
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	C y anide (total, free, weak acid dissociable)	100 ml	-	□ NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	*	HNO3	/	
6	120 ml (plastic)	Sulphide	100 mt	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-	/	
8	120 ml (plastic)	Dissolved Alkalinity	100 mi	Field Filtered	**	/	

General Notes (Condition of well or other features):

C HEMMERA

Sample Site:	651-DC-05E	Project Number:	1343-	005.06		Date:			2.0	Maria	6201
Approximate Date Drilled:		Client:	GY - /	λAM		Sample	эг:		1751	RM	
Piezometer Diameter / Screen Length:	'", DP	Project Name:		t Nanser ampling am		Weath	er/Tempe	erature:	5444	40	°C
Field Blank Collected	Yes Name	Duplicate Collecter	d: 🗌 Ye	es Name		Recove	əry:		Goo	d 🗌	Bad
Purge Method Part						Lange and					
Waterra	Peristaltic	Disp. Bailer	5	steel Ba	iler	Ce	entrif. Pu	ımp		Air Lift	
Initial Darth to Matan (m):		Duran Charles Times				0					
Initial Depth to Water (m):		Purge Start Time:	-4		T	Purge	End Tim	e:			T
Depth to Bottom (m): Submerged Tubing Depth (n	-11	Time () minute in Depth to water (m)	ntervai:								
Well Stick-up Height (m):		Temperature (°C)							- ^ r		
Estimated Water Volume (L)	:	pH							 		
		Cond. (µs/cm)				1			1/-		
(DTB DTW) x 2 (for 2" w	all diamator) = 1 wall	Specific Cond. (µs/c	m))	5	AT	N	r 🗸			
volume	-	Redox (mV)	*****************	P	10	1-1		1			
		DO (mg/L)		·····			W.V				
(DTB-DTW) x 1.1 (for 1.5" dia	·	Appearance & Odou Silty, HC odours, etc				bren					
2" casing has 0.16 US(1" casing has 0.04 US(Sulphic	10		\leftarrow	ρ					
8" sand pack has 0.73 U		Only for (mg/L)	16								
6 5/8" sand pack has 0.50	-		ity (NTU)								1
		Total Purge Volume:			1			ļ			
Sample Method		anter cuide regionite									
Waterra	Peristaltic	Disp. Bailer	Steel B	ailer	Cen Pur	F	Ai	r Lift		Other	
Analysis	······				1						

T HEMMERA

Sample Site (Con't): GSI - DC = 05BUTM Location: Zn: O8V Easting: 388724 Northing: 6880835Photo No.: (0D - 0050) - 0051, -0052

	Units	Values
Methane (CH4)	%LEL	
Oxygen (O2)	%	
Carbon Dioxide (C02)	PPM	
Well Head Seal: 🔲 J-Plug 📋	PVC Cap 🗌 Not Sealed 🔲	Other
Seal Replaced: 🔲 J-Plug 🗌	PVC Cap 🗌 Not required 🛄	Other,
Well properly sealed for gas mon	toring: 🗌 Yes 📃 No 🛛 Details	3:

	General Notes (Condition of well or other features):
	-not located, iced over
I _∙	
<u>-'</u>	

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 mi	Field Filtered	HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered	HCL		
2	1 L (plastic)	General Chemistry	200 ml	*	*		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	□ NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	∐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-	HNO3		
6	120 ml (plastic)	Sulphide	100 mi	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		·····

C HEMMERA

Sample Site:	6	SI-DC-05A	Project Number:	1343-005.06		Date:		Zo Ma	12 20 15
Approximate Date	Drilled:		Client:	GY - AAM		Sampler:			~
Piezometer Diamet Screen Length:	er <i>l</i> (DP	Project Name:	Mount Nanser GW Sampling Program		Weather/Ter	nperature:	Sunny	0°C
Field Blank Collect	red 🗌	Yes Name	Duplicate Collecte	ed: 🗌 Yes Name		Recovery:		Good	Bad
Purge Method (11								
Waterra		Peristaltic	Disp. Bailer	Steel Bai	iler	Centrif.	Pump	Air	Lift
		*	1						
Initial Depth to Wat	ter (m):		Purge Start Time:			Purge End 1	ïme:		
Depth to Bottom (m	n):		Time () minute i	interval:					
Submerged Tubing	g Depth (m):		Depth to water (m)						
Well Stick-up Heigh	ht (m):		Temperature (°C)			T_	_ ~ ~		
Estimated Water Vo	olume (L):		рН			pi			
			Cond. (µs/cm)		10		A		
(DTB – DTW) x 2	2 (for 2" well d	iameter) = 1 well	Specific Cond. (µs/e	cm) <			<u> </u>		
(_ · · ·) / · _	volume		Redox (mV)						
	e		DO (mg/L)	1		1000			
(D T B-DTW) x 1.1 (f	for 1.5" diamet	er) = 1 well volume	Appearance & Odo Silty, HC odours, et	ur (Clear, tc.)	zer				
-	s 0.16 USgal/f				p ^e				
-	s 0.04 USgal/fi		Only for Sulphi (mg/L)	ide					
8" sand pack h 6 5/8" sand pack	-			/ lity (NTU)					
o oro dana paor		gear or 0.00 and							
			Total (Purge Volume						
Sample Nothod	3/4								
V	Naterra	Peristaltic	Disp. Bailer	Steel Bailer	Cent Purr		Air Lift	Ot	ther
Analysis						-			

General Notes (Condition of well or other

Sample Site (Con't):	<u>GSI-</u>	<u>DC-05</u> A	
UTM Location: Zn:	081	Easting: 388724	Northing:
Photo No.: (00 –	0050	, -0051, -	0052

	Units	Values
Methane (CH4)	%LEL	
Oxygen (O2)	%	
Carbon Dioxide (C02)	PPM	
Well Head Seal: J-Plug	PVC Cap 🗌 Not Scaled 🔲	Other
Seal Replaced: DJ-Plug	PVC Cap 🔲 Not required 🗌	Other
Well properly sealed for gas mon	itoring: 🗌 Yes 🗌 No 🛛 Details	5:

388724 Northing: 6880835 51, -0052	- not la ated, app iced
Units Values %LEL	
Not Sealed Other Not required Other Yes No Details:	

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (mi)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	☐ HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	250 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	60 ml	-	🗋 NaOH		
4	250 ml (glass)	NH3	120 mi	-	☐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate	100 ml	~			
6	120 ml (plastic)	Sulphide	100 ml	*	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8²	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 mi		🗆 NаОн		
9	120 ml (plastic)	Alkalinity	100 ml	Field Filtered	-		

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Sample Site:	GSI-DC-03B	Project Number:	1343-005.06	Date:		20 Mar 2015
Approximate Date Drilled:		Client:	GY - AAM	Sam	oler:	TS RM
Piezometer Diameter / Screen Length:	1" DP	Project Name:	Mount Nansen 2 GW Sampling Program		her/Temperature:	cloudy -3-c
Field Blank Collected	Yes Name	Duplicate Collected:	🗌 Yes Name	Reco	very:	Good Bad
Purge Method						
Waterra	Peristaltic	Disp. Bailer	Steel Baile	r i	Centrif. Pump	Air Lift
Initial Depth to Water (m):		Purge Start Time:		Purg	e End Time:	
Depth to Bottom (m):		Time () minute inte	rval:			×234
Submerged Tubing Depth (m):	Depth to water (m)				
Well Stick-up Height (m):		Temperature (°C)				
Estimated Water Volume (L	.):	рН				
		Cond. (µs/cm)		s f		
(D T B – DTW) x 2 (for 2" v	vell diameter) = 1 well	Specific Cond. (µs/cm)		10	17	
volum		Redox (mV)			North	
		DO (mg/L)			a Jur	
(DTB-DTW) x 1.1 (for 1.5" d		Appearance & Odour (Silty, HC odours, etc.)	Clear,	- Jaw	~	
2" casing has 0.16 US	-	0.1.1.1	eme			
1" casing has 0.04 US 8" sand pack has 0.73 (•	Only for Sulphide (mg/L)				
6 5/8" sand pack has 0.5	•	final (IIIg/2) readings Turbidity				
	-					
Sample Method		Total Purge Volume:				
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift	Other
Analysis				-		

Sample Site (Con't): <u>6-51-56-03</u> B UTM Location: Zn: $\bigcirc \mathcal{C} \lor \lor$ Easting: 388103 Northing: 688/082Photo No.: 100 -0070, -0071, -0072

	Units	Values
Methane (CH4)	%LEL	
Oxygen (O2)	%	
Carbon Dioxide (C02)	РРМ	
Well Head Seal: 🔲 J-Plug 🗌	PVC Cap	Other
Seal Replaced: J-Plug	PVC Cap Not required	Other
Well properly sealed for gas mon	itoring: 🗌 Yes 🗌 No 🛛 Detail	s:

General Notes (Condition of well or other features):
-well "glaciated" over
-well "glaciated" over (frozen Gw seeps)

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment 🔀	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered		/	
2	1 L (plastic)	General Chemistry	200 ml	*	-	/	
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 mi	~~	🗋 №аОН		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H ₂ SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-	HNO3		
6	120 ml (plastic)	Sulphide	100 mi	*	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

Sample Site:	MOQ-	10	Project Nu	mber:	1343-	005.06		Date:			201	lar 2	015
Approximate Date Drilled:			Client:		GY - /	4AM		Sampl	er:		75		
Piezometer Diameter / Screen Length:	2",PVC		Project Na	me:		t Nanser Sampling am		Weath	er/Temp	erature:	Part -5	ial cl	oud
Field Blank Collected	Yes N	ame	Duplicate	Collected:	1 Y	es Name		Recov	ery:		Goo	od 🗌	Bad
Purge Method								<u></u>					
Waterra	Peri	staitic	Disp.	Bailer	\$	Steel Bai	iler	C	entrif. P	ump		Air Lift	
		a. (; .)									erismod.		
Initial Depth to Water (m):	2.0	493 (ice)	Purge Start	<u> 17,000,000,000,000,000,000</u>		ſ	<u>г </u>	Purge	End Tin	ne:			·····
Depth to Bottom (m):		~	·/	minute inte	rval:							-	
Submerged Tubing Depth (Depth to wa						Ļ				
Well Stick-up Height (m):	1.9(0	Temperatur	e (ºC)				1)				
Estimated Water Volume (L):		рH					LIV		1			
			Cond. (µs/ci	n)			1 - 1	LAN .	and the second s				
(DTB – DTW) x 2 (for 2" v	/ell diameter)	= 1 well	Specific Co	nd. (µs/cm)			7						
volum		i wea	Redox (mV)			,) (<u></u>		1				
			DO (mg/L)			P		-	1				
(DTB-DTW) x 1.1 (for 1.5" di	ameter) = 1 v	vell volume	Appearance Silty, HC od	& Odour (ours, etc.)	Clear,		C.O.	628					
2" casing has 0.16 US	•						<u> </u>						
1" casing has 0.04 US	-		Only for	Sulphide (mg/L)									
8" sand pack has 0.73 t 6 5/8" sand pack has 0.5	-		final		/NTU)								
o bro isanu packinas 0.5	o osgaini or i	0.55 MI	readings	Turbidity	(1110)								
			Tetal Purge	Voluma			•				1		
Sample Method													
Waterra	Per	istaltic	Disp. Bai	ler	Steel B	ailer	Cen Pur		A	ir Lift		Other	
Analysis													

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Sample Site (Con't): <u><u>MP09 - 10</u></u> UTM Location: Zn: 08V Easting: 389240 Northing: 6880682 Photo No.: 100-0055,-0056

General Notes (Condition of well or other features):

	Units	Values				
Methane (CH4)	%LEL	Ø				
Oxygen (O2)	%	20.4				
Carbon Dioxide (C02)	РРМ	Ø				
Well Head Seal: 🗹 J-Plug	PVC Cap 🗌 Not Sealed 📃	Other				
Seal Replaced: J-Plug PVC Cap Not required Other						
Well properly sealed for gas monitoring: Yes V No Details: Well cut						

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment 🔀	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered		/	, <u>, , , , , , , , , , , , , , , , , , </u>
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-	-	/	
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	🗆 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml				
6	120 ml (plastic)	Sulphide	100 ml		Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	*	\bigvee	

Sample Site:	MP09-09	Project Number:	1343-005.06	Date:		20 Mar 2015
Approximate Date Drilled:	<u> </u>	Glient:	GY - AAM	Samp	ler:	TS RM
Piezometer Diameter / Screen Length:	2"PVC	Project Name:	Mount Nansen 201 GW Sampling Program		ner/Temperature:	Cloudy -5°c
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name	Reco	/ery:	Good Bad
Purge Method						
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	C	entrif. Pump	Air Lift
Initial Depth to Water (m):	DRY	Purge Start Time:		Purge	End Time:	
Depth to Bottom (m):	5.610	Time () minute inte	rval:		_ _	
Submerged Tubing Depth (Depth to water (m)				
Well Stick-up Height (m):	2.21	Temperature (°C)				
Estimated Water Volume (L):	рH				
		Cond. (µs/cm)		1.0		
(DTB – DTW) x 2 (for 2" w	ell diameter) = 1 well	Specific Cond. (µs/cm)	. 10			
volum		Redox (mV)	N	AT TA		
		DO (mg/L)		51/~	\mathcal{K}	
(DTB-DTW) x 1.1 (for 1.5" di	ameter) = 1 well volume	Appearance & Odour (Clear,			
2" casing has 0.16 US	gal/ft or 2 032 l/m	Silty, HC odours, etc.)	U			
1" casing has 0.04 US	-	Only for Sulphide				
8" sand pack has 0.73 U	-	final (mg/L)				
6 5/8" sand pack has 0.5() USgal/ft or 6.35 l/m	readings Turbidity	(NTU)			
		Total Purge Volume:			<u></u>	I
Sample Method						
Waterra	Peristaltic	Disp. Bailer		Centrif. Pump	Air Lift	Other
Analysis						

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Sample Site (Con't): <u>MPO9-09</u>									
UTM Location: Zn:	081	Easting: 389,238	Northing: (688068/						
Photo No.: (00-6055,-0056									

Well Head Space Gases:

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	Units	Values			
Methane (CH4)	%LEL	Ø			
Oxygen (O2)	%	20.4			
Carbon Dioxide (C02)	PPM	Ø			
Well Head Seal: 🗹 J-Plug 🗌	PVC Cap 🛄 Not Sealed 🛄	Other			
Seal Replaced:] J-Plug PVC Cap Not required Other					
Well properly sealed for gas monitoring:					

General Notes (Condition of well or other features):

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered			
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	🗌 NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H ₂ SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-			
6	120 ml (plastic)	Sulphide	100 ml	*	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-	//////	

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Sample Site:	MW09-07	Project Number:	1343-005.06	Date	:	20 Mar 201	5
Approximate Date Drilled:		Client:	GY - AAM	Sam	pler:	TO RM	
Piezometer Diameter / Screen Length:	2"p/c	Project Name:	Mount Nansen GW Sampling Program		ther/Temperature:	Partial cloud - 5.C	
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name	Reco	ivery:	Good Bad	
Purge Method							
Waterra	Peristaltic	Disp. Bailer	Steel Bail	ler	Centrif. Pump	Air Lift	
Initial Depth to Water (m):		Purge Start Time:		Direct	e End Tîme:		
. , .	BORY 1			Fung			
Depth to Bottom (m):	3.393	Time () minute int	ervai:				
Submerged Tubing Depth (r		Depth to water (m)					
Well Stick-up Height (m):	1.32	Temperature (°C)			jor and the second seco		
Estimated Water Volume (L)):	pH		- JAK	4		
		Cond. (µs/cm)					
(DTB – DTW) x 2 (for 2" w	ell diameter) ≃ 1 well	Specific Cond. (µs/cm					
volum	e	Redox (mV)	<u>\</u> 0				
		DO (mg/L)	N	(t			
(DTB-DTW) x 1.1 (for 1.5" dia	ameter) = 1 well volume	Appearance & Odour Silty, HC odours, etc.		\mathcal{N}			
2" casing has 0.16 US	aal/ft or 2.032 l/m	Shiy, no odours, etc.		× (*			
1" casing has 0.04 US	-	Only for Sulphide	•				
8" sand pack has 0.73 U	- ISgal/ft or 9.271 l/m	final (mg/L)					
6 5/8" sand pack ha s 0.50) USgal/ft or 6.35 l/m	readings Turbidity	(NTU)				
		Total Purge Volume:					
Sample Method		tom ange retentige			-		
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif.	Air Lift	Other	
				Pump			
Analysis							

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Sample Site (Con't): MWD9 - 07 UTM Location: Zn: OSV Easting: 389324 Northing: 6880698Photo No.: 100.0053, -0054

Well Head Space Gases:

	Units	Values			
Methane (CH4)	%LEL	Ø			
Oxygen (O2)	%	18.9			
Carbon Dioxide (C02)	PPM	Ø			
Well Head Seal: 🔲 J-Plug 🕑	PVC Cap 🗌 Not Sealed 🗌	Other			
Seal Replaced: 🔲 J-Plug 🗌 PVC Cap 🗌 Not required 🗌 Other					
Well properly sealed for gas monitoring:					

General Notes (Condition of well or other features):

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment 🖂	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	☐ HNO3	/	
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	~	🗋 №ОН		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	[] H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	*	HNO3		
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 mi	Field Filtered	~	/	

Sample Site:	MW09-04	Project Number:	1343-005.06	Date:		20 Mar 20/2
Approximate Date Drilled:		Client:	GY - AAM	Samj	oler:	TJ RM
Piezometer Diameter / Screen Length:	2" PVC	Project Name:	Mount Nansen 2 GW Sampling Program		her/Temperature:	clear - 5°C
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name	Reco	very:	Good Bad
Purge Method	-					
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	r	Centrif. Pump	Air Lift
Initial Depth to Water (m):		Purge Start Time:		Purg	e End Time:	
Depth to Bottom (m):		Time () minute inte	erval:			s
Submerged Tubing Depth (I	n):	Depth to water (m)				
Well Stick-up Height (m):		Temperature (°C)	· ·			
Estimated Water Volume (L):	рН				
		Cond. (µs/cm)		,		
(DTB – DTW) x 2 (for 2" w	ell diameter) = 1 well	Specific Cond. (µs/cm		10/	17 VI	
volum		Redox (mV)		J		
		DO (mg/L)		100	7	·····
(DTB-DTW) x 1.1 (for 1.5" dia	ameter) = 1 well volume	Appearance & Odour (Clear,			
2" casing has 0.16 US	gal/ft or 2.032 l/m	Silty, HC odours, etc.)				
1" casing has 0.04 US	-	Only for Sulphide				
8" sand pack has 0.73 U	*	final (mg/L)				
6 5/8" sand pack has 0.50) USgal/ft or 6.35 l/m	readings Turbidity	(NTU)			
		Total Purge Volume:		I	<u> </u>	l i
Sample Method						
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif.	Air Lift	Other
Analysis				Pump		
/						

Sample Site (Con't): <u>MWO 9-04</u>	
UTM Location: Zn: \bigcirc \heartsuit Easting: 389421	Northing: 6880558
Photo No.: 100 - 0046, - 0047	

	Units	Values
Methane (CH4)	%LEL	
Oxygen (O2)	%	
Carbon Dioxide (C02)	PPM	
Well Head Seal: 🔲 J-Plug 🗌	PVC Cap	Other
Seal Replaced: 🔲 J-Plug 🗌	PVC Cap 🗌 Not required 🔲	Other
Well properly sealed for gas mon	itoring: 🗌 Yes 📄 No 🛛 Detail	s:

General Notes (Condition of well or other features): - buried under snow - would not locate with Pin finder * well dasing & cap an plastic (OCT "14) - UTH from prev. field data

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment 🔀	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3		
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	*	🗌 №ОН		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	☐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-	HNO3		
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 mi	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

Sample Site:	CH-P-13-01/10	Project Number:	1343-005.06	Date	:	20 Marth 2015
Approximate Date Drilled:		Client:	GY - AAM	Sam	pler:	Zn Tj
Piezometer Diameter / Screen Length:	1.5" PVC	Project Name:	Mount Nansen GW Sampling Program		ther/Temperature	: shing a
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name_	Rec	overy:	Good Bad
Purge Method						
Waterra	Peristaltic	Disp. Bailer	Steel Baile	er	Centrif. Pump	Air Lift
Initial Depth to Water (m):	6.452(ice)	Purge Start Time:		Purg	je End Time:	
Depth to Bottom (m):		Time () minute inte	erval:			
Submerged Tubing Depth (m		Depth to water (m)				
Well Stick-up Height (m):	0.49	Temperature (°C)				
Estimated Water Volume (L):		рН			$\overline{2}$	
		Cond. (µs/cm)				
(DTB – DTW) x 2 (for 2" we	ll diameter) = 1 well	Specific Cond. (µs/cm))			
volume		Redox (mV)	N	DI M		
		DO (mg/L)		cr/		
(DTB-DTW) x 1.1 (for 1.5" diar	neter) = 1 well volume	Appearance & Odour (Silty, HC odours, etc.)	Clear,		10070	
2" ca s ing has 0.16 USga				- K	14	
1" casing has 0.04 USga		Only for Sulphide				
8" sand pack has 0.73 US	-	final (mg/L)				
6 5/8" sand pack has 0.50 l	บอั้มสมาเ ปร ช.วิวาทร์ที่	readings Turbidity				
		Total Purge Volume:		t,		·····
Sample Method 3 1/4						
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift	Other
Analysis				•		

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Sample Site (Con't): <u>CH-P-13-01/10</u> UTM Location: Zn: $OS^{\sqrt{-1}}$ Easting: 388657° Photo No.: 100 -00 48, -00 49

Northing: 688 1119

Well Head Space Gases:

	Units	Values				
Methane (CH4)	%LEL	je se				
Oxygen (O2)	%	20.3				
Carbon Dioxide (C02)	РРМ	Ø				
Well Head Seal: 📋 J-Plug 🗹	PVC Cap 🗌 Not Sealed 🗌	Other				
Seal Replaced: J-Plug PVC Cap Not required Other						
Well properly sealed for gas moni	toring: 🖸 Yes 🗌 No Details					

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	HNO3		
1b	40 ml (gl a ss)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 ml	-	□ NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 ml	-	∐ H₂SO₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	•	∐ HNO₃		
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		······································
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-		
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	-		

General Notes (Condition of well or other features):

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Sample Site:	GSI-DC-OBA	Project Number:	1343-005.06	Date		20 Mar 2515
Approximate Date Drilled:	······	Client:	GY - AAM	Sam	oler:	TS RM
Piezometer Diameter / Screen Length:	111 DP	Project Name:	Mount Nansen 2 GW Sampling Program		her/Temperature:	cloudy -3.C
Field Blank Collected	Yes Name	Duplicate Collected:	Yes Name _	Reco	very:	Good Bad
Purge Method				<u></u>		<u>a</u>
Waterra	Peristaltic	Disp. Bailer	Steel Baile	er	Centrif. Pump	Air Lift
Initial Depth to Water (m):		Purge Start Time:		Purg	e End Time:	
Depth to Bottom (m):		Time () minute inte	erval:			
Submerged Tubing Depth (r	n):	Depth to water (m)				
Well Stick-up Height (m):		Temperature (ºC)			5/	
Estimated Water Volume (L)):	рН		A	TV /	
		Cond. (µs/cm)		a A	(I)	
(D T B – DTW) x 2 (for 2" w	ell diameter) = 1 well	Specific Cond. (µs/cm		100		
volume		Redox (mV)		\mathcal{K}	de la	
		DO (mg/L)		O Ini	M	
(DTB-DTW) x 1.1 (for 1.5" dia	ameter) = 1 well volume	Appearance & Odour (Silty, HC odours, etc.)	Clear,	ZEP		
2" casing has 0.16 US	-					
1" casing has 0.04 US	-	Only for Sulphide (mg/L)				
8" sand pack has 0.73 U 6 5/8" sand pack has 0.50	-	inneu				
0 0/0 30/0 pack 110 0.00	oogaint of 0.55 mill					
		Total Purge Volume:				
Sample Method						
Waterra	Peristaltic	Disp. Bailer	Steel Bailer	Centrif. Pump	Air Lift	Other
Analysis				rump	<u> </u>	
	I	1			1	[

Sample Site (Con't): $\underline{GSI - DC - O3A}$ UTM Location: Zn: OSV Easting: 388103 Northing: 6881082Photo No.: (00 - 0070) - 0071 - 0072

	Units	Values
Methane (CH4)	%LEL	
Oxygen (O2)	%	
Carbon Dioxide (C02)	РРМ	
Well Head Seal: J-Plug	PVC Cap Not Sealed	Other
Seal Replaced: 🔲 J-Plug	PVC Cap Not required	Other
Well properly sealed for gas mon	itoring: 🗌 Yes 🗌 No 🛛 Details	s:

eneral atures		s (Cond	lition of	well or c	other
 10000000000000000000000000000000000000	2000 - 2000 - 2000 - 2000 2000 - 2000 - 2000 - 2000 2000 - 2000 - 2000 - 2000 - 2000				
 wel ()	l'gl fro	laiat zer	cl"ov GW	r See	(مم
	e.				

Priority	Bottle Type	Parameters Analyzed	Minimum Volume	Sample Treatment	Preservative Added	Volume Collected (ml)	Comments
1a	120 ml (plastic)	Dissolved Metals	100 ml	Field Filtered	☐ HNO ₃	/	
1b	40 ml (glass)	Dissolved Mercury	15 mL	Field Filtered			
2	1 L (plastic)	General Chemistry	200 ml	-	-		
3	145 ml (plastic)	Cyanide (total, free, weak acid dissociable)	100 mi	-	[] NaOH		
4	250 ml (glass)	Ammonia (NH3)	120 mí	-	☐ H ₂ SO ₄		
5	120 ml (plastic)	Thiocyanate (SCN)	50 ml	-	HNO3		
6	120 ml (plastic)	Sulphide	100 ml	-	Zinc Acetate, capped and mixed, then NaOH		
7	250 ml (glass amber)	Total Inorganic Carbon	100 ml	-	-	1/	······
8	120 ml (plastic)	Dissolved Alkalinity	100 ml	Field Filtered	~	//	

APPENDIX C Laboratory Reports



HEMMERA ENVIROCHEM INC. ATTN: Natasha Sandys 230 - 2237 2nd Avenue Whitehorse YK Y1A 0K7 Date Received:20-MAR-15Report Date:08-APR-15 11:59 (MT)Version:FINAL REV. 2

Client Phone: 867-456-4865

Certificate of Analysis

Lab Work Order #: L1589940

Project P.O. #: Job Reference: C of C Numbers: Legal Site Desc: NOT SUBMITTED 1343-005.07 1

Comments:

8-APR-2015 This report replaces the previous version and contains a requested change to the Job#.

Brent Mack, B.Sc. Account Manager

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L1589940 CONTD.... PAGE 2 of 14 08-APR-15 11:59 (MT) Version: FINAL REV. 2

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1589940-1 Water 19-MAR-15 13:05 MW09-24	L1589940-2 Water 19-MAR-15 13:05 MW09-24 FILTERED ALK	L1589940-3 Water 19-MAR-15 10:30 MW09-06	L1589940-4 Water 19-MAR-15 15:30 MW09-02	L1589940-5 Water 19-MAR-15 15:30 MW09-02 FILTERED ALK
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	979		1910	2820	
	Hardness (as CaCO3) (mg/L)	620		1310	1580	
	рН (рН)	7.38		7.81	6.49	
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	189	190	119	40.9	43.8
	Ammonia, Total (as N) (mg/L)	0.0113		0.733	14.4	
	Chloride (Cl) (mg/L)	<1.0 DLA		<2.5	<10	
	Fluoride (F) (mg/L)	ola <0.040		0.26	0.75	
	Nitrate (as N) (mg/L)	3.28		0.192	0.50	
	Nitrite (as N) (mg/L)	DLA <0.0020		0.0138	0.023	
	Total Kjeldahl Nitrogen (mg/L)	0.378		1.16	15.7	
	Sulfate (SO4) (mg/L)	387		1190	2020	
	Sulphide as S (mg/L)	<0.020		<0.020	<0.020	
	Anion Sum (meq/L)	12.1		27.1	43.0	
	Cation Sum (meq/L)	12.8		27.7	42.1	
	Cation - Anion Balance (%)	3.1		1.0	-1.0	
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050		<0.0050	0.0053	
	Cyanide, Total (mg/L)	0.0117		<0.0050	0.169	
	Thiocyanate (SCN) (mg/L)	<0.50		<0.50	1.28	
	Cyanide, Free (mg/L)	<0.0050		<0.0050	<0.0050	
Organic / Inorganic Carbon	Total Inorganic Carbon (mg/L)	37.1		21.6	884 3.81	
	Total Organic Carbon (mg/L)	8.74		7.27	5.71	
Total Metals	Aluminum (Al)-Total (mg/L)					
	Antimony (Sb)-Total (mg/L)					
	Arsenic (As)-Total (mg/L)					
	Barium (Ba)-Total (mg/L)					
	Beryllium (Be)-Total (mg/L)					
	Bismuth (Bi)-Total (mg/L)					
	Boron (B)-Total (mg/L)					
	Cadmium (Cd)-Total (mg/L)					
	Calcium (Ca)-Total (mg/L)					
	Chromium (Cr)-Total (mg/L)					
	Cobalt (Co)-Total (mg/L)					
	Copper (Cu)-Total (mg/L)					
	Iron (Fe)-Total (mg/L)					
	Lead (Pb)-Total (mg/L)					
	Lithium (Li)-Total (mg/L)					

L1589940 CONTD.... PAGE 3 of 14 08-APR-15 11:59 (MT) Version: FINAL REV. 2

					VCIS	ion: FINAL R
	Sample ID Description Sampled Date Sampled Time Client ID	L1589940-6 Water 19-MAR-15 16:20 MW09-23	L1589940-7 Water 19-MAR-15 16:20 MW09-23 FILTERED ALK	L1589940-8 Water 18-MAR-15 16:50 GSI-DC-02B	L1589940-9 Water 18-MAR-15 17:55 GSI-HA-04A	L1589940-10 Water 18-MAR-15 16:30 GSI-HA-01A
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	1260		1010		
-	Hardness (as CaCO3) (mg/L)	618		632	647	657
	рН (рН)	7.33		8.10	047	0.57
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	365	380	295		
	Ammonia, Total (as N) (mg/L)	3.79				
	Chloride (Cl) (mg/L)	<2.5		<1.0 DLA		
	Fluoride (F) (mg/L)	0.16		0.066		
	Nitrate (as N) (mg/L)	DLA <0.025		0.778		
	Nitrite (as N) (mg/L)	0.0058		0.0102		
	Total Kjeldahl Nitrogen (mg/L)	5.73				
	Sulfate (SO4) (mg/L)	428		337		
	Sulphide as S (mg/L)	0.023				
	Anion Sum (meq/L)	16.2		13.0		
	Cation Sum (meq/L)	15.3		13.1		
	Cation - Anion Balance (%)	-3.0		0.4		
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050				
	Cyanide, Total (mg/L)	0.0376				
	Thiocyanate (SCN) (mg/L)	<0.50				
	Cyanide, Free (mg/L)	<0.0050				
Organic / Inorganic Carbon	Total Inorganic Carbon (mg/L)	76.6				
	Total Organic Carbon (mg/L)	25.6				
Total Metals	Aluminum (Al)-Total (mg/L)					
	Antimony (Sb)-Total (mg/L)					
	Arsenic (As)-Total (mg/L)					
	Barium (Ba)-Total (mg/L)					
	Beryllium (Be)-Total (mg/L)					
	Bismuth (Bi)-Total (mg/L)					
	Boron (B)-Total (mg/L)					
	Cadmium (Cd)-Total (mg/L)					
	Calcium (Ca)-Total (mg/L)					
	Chromium (Cr)-Total (mg/L)					
	Cobalt (Co)-Total (mg/L)					
	Copper (Cu)-Total (mg/L)					
	Iron (Fe)-Total (mg/L)					
	Lead (Pb)-Total (mg/L)					
	Lithium (Li)-Total (mg/L)					

L1589940 CONTD.... PAGE 4 of 14 08-APR-15 11:59 (MT) Version: FINAL REV. 2

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1589940-11 Water 18-MAR-15 17:00 FB-1	L1589940-12 Water 18-MAR-15 17:00 FB-1 FILTERED ALK	L1589940-13 Water 19-MAR-15 18:00 FB-2	L1589940-14 Water 19-MAR-15 18:00 FB-2 FILTERED ALK	L1589940-15 Water 20-MAR-15 TRIP BLANK
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	<2.0		<2.0		<2.0
	Hardness (as CaCO3) (mg/L)	<0.50		<0.50		<0.50
	рН (рН)	5.45		5.98		5.23
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	<2.0	<2.0	<2.0	<2.0	<2.0
	Ammonia, Total (as N) (mg/L)	<0.0050		<0.0050		0.0167
	Chloride (Cl) (mg/L)	<0.50		<0.50		<0.50
	Fluoride (F) (mg/L)	<0.020		<0.020		<0.020
	Nitrate (as N) (mg/L)	<0.0050		<0.0050		<0.0050
	Nitrite (as N) (mg/L)	<0.0010		<0.0010		<0.0010
	Total Kjeldahl Nitrogen (mg/L)	<0.050		<0.050		<0.050
	Sulfate (SO4) (mg/L)	<0.30		<0.30		<0.30
	Sulphide as S (mg/L)	<0.020		<0.020		<0.020
	Anion Sum (meq/L)	<0.10		<0.10		<0.10
	Cation Sum (meq/L)	<0.10		<0.10		<0.10
	Cation - Anion Balance (%)	0.0		0.0		0.0
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050		<0.0050		<0.0050
	Cyanide, Total (mg/L)	<0.0050		<0.0050		<0.0050
	Thiocyanate (SCN) (mg/L)	<0.50		<0.50		<0.50
	Cyanide, Free (mg/L)	<0.0050		<0.0050		<0.0050
Organic / Inorganic Carbon	Total Inorganic Carbon (mg/L)	<0.50		<0.50		<0.50
	Total Organic Carbon (mg/L)	<0.50		<0.50		<0.50
Total Metals	Aluminum (Al)-Total (mg/L)					<0.0030
	Antimony (Sb)-Total (mg/L)					<0.00010
	Arsenic (As)-Total (mg/L)					<0.00010
	Barium (Ba)-Total (mg/L)					<0.000050
	Beryllium (Be)-Total (mg/L)					<0.00010
	Bismuth (Bi)-Total (mg/L)					<0.00050
	Boron (B)-Total (mg/L)					<0.010
	Cadmium (Cd)-Total (mg/L)					<0.000010
	Calcium (Ca)-Total (mg/L)					<0.050
	Chromium (Cr)-Total (mg/L)					0.00025
	Cobalt (Co)-Total (mg/L)					<0.00010
	Copper (Cu)-Total (mg/L)					<0.00050
	Iron (Fe)-Total (mg/L)					<0.010
	Lead (Pb)-Total (mg/L)					<0.000050
	Lithium (Li)-Total (mg/L)					<0.00050

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	Sample ID Description Sampled Date Sampled Time Client ID	L1589940-1 Water 19-MAR-15 13:05 MW09-24	L1589940-2 Water 19-MAR-15 13:05 MW09-24 FILTERED ALK	L1589940-3 Water 19-MAR-15 10:30 MW09-06	L1589940-4 Water 19-MAR-15 15:30 MW09-02	L1589940-5 Water 19-MAR-15 15:30 MW09-02 FILTERED ALK
Grouping	Analyte					
WATER						
Total Metals	Magnesium (Mg)-Total (mg/L)					
	Manganese (Mn)-Total (mg/L)					
	Mercury (Hg)-Total (mg/L)					
	Molybdenum (Mo)-Total (mg/L)					
	Nickel (Ni)-Total (mg/L)					
	Phosphorus (P)-Total (mg/L)					
	Potassium (K)-Total (mg/L)					
	Selenium (Se)-Total (mg/L)					
	Silicon (Si)-Total (mg/L)					
	Silver (Ag)-Total (mg/L)					
	Sodium (Na)-Total (mg/L)					
	Strontium (Sr)-Total (mg/L)					
	Sulfur (S)-Total (mg/L)					
	Thallium (TI)-Total (mg/L)					
	Tin (Sn)-Total (mg/L)					
	Titanium (Ti)-Total (mg/L)					
	Uranium (U)-Total (mg/L)					
	Vanadium (V)-Total (mg/L)					
	Zinc (Zn)-Total (mg/L)					
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD		FIELD	FIELD	
	Dissolved Metals Filtration Location	FIELD		FIELD	FIELD	
	Aluminum (AI)-Dissolved (mg/L)	0.0012		0.0020	DLA <0.0050	
	Antimony (Sb)-Dissolved (mg/L)	0.00018		0.213	0.00508	
	Arsenic (As)-Dissolved (mg/L)	0.00165		0.197	19.2	
	Barium (Ba)-Dissolved (mg/L)	0.205		0.00762	0.00896	
	Beryllium (Be)-Dissolved (mg/L)	<0.00010		<0.00020	<0.00050	
	Bismuth (Bi)-Dissolved (mg/L)	< 0.00050		DLA <0.0010	DLA <0.0025	
	Boron (B)-Dissolved (mg/L)	0.015		0.116	0.058	
	Cadmium (Cd)-Dissolved (mg/L)	0.000058		0.00557	0.000707	
	Calcium (Ca)-Dissolved (mg/L)	169		443	487	
	Chromium (Cr)-Dissolved (mg/L)	0.00031		DLA <0.00020	DLA <0.00050	
	Cobalt (Co)-Dissolved (mg/L)	0.00053		0.00151	0.0115	
	Copper (Cu)-Dissolved (mg/L)	0.00769		0.00670	<0.0010	
	Iron (Fe)-Dissolved (mg/L)	0.010		< 0.010	46.7	
	Lead (Pb)-Dissolved (mg/L)	<0.000050		0.00045	DLA <0.00025	
	Lithium (Li)-Dissolved (mg/L)	0.00120		0.0089	0.0284	
	Magnesium (Mg)-Dissolved (mg/L)	48.3		50.4	87.8	

L1589940 CONTD PAGE 6 of 14 08-APR-15 11:59 (MT)

	Sample ID Description Sampled Date Sampled Time Client ID	L1589940-6 Water 19-MAR-15 16:20 MW09-23	L1589940-7 Water 19-MAR-15 16:20 MW09-23 FILTERED ALK	L1589940-8 Water 18-MAR-15 16:50 GSI-DC-02B	L1589940-9 Water 18-MAR-15 17:55 GSI-HA-04A	L1589940-10 Water 18-MAR-15 16:30 GSI-HA-01A
Grouping	Analyte					
WATER						
Total Metals	Magnesium (Mg)-Total (mg/L)					
	Manganese (Mn)-Total (mg/L)					
	Mercury (Hg)-Total (mg/L)					
	Molybdenum (Mo)-Total (mg/L)					
	Nickel (Ni)-Total (mg/L)					
	Phosphorus (P)-Total (mg/L)					
	Potassium (K)-Total (mg/L)					
	Selenium (Se)-Total (mg/L)					
	Silicon (Si)-Total (mg/L)					
	Silver (Ag)-Total (mg/L)					
	Sodium (Na)-Total (mg/L)					
	Strontium (Sr)-Total (mg/L)					
	Sulfur (S)-Total (mg/L)					
	Thallium (TI)-Total (mg/L)					
	Tin (Sn)-Total (mg/L)					
	Titanium (Ti)-Total (mg/L)					
	Uranium (U)-Total (mg/L)					
	Vanadium (V)-Total (mg/L)					
	Zinc (Zn)-Total (mg/L)					
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD		FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD		FIELD	FIELD	FIELD
	Aluminum (AI)-Dissolved (mg/L)	0.0182		0.0017	0.0042	0.0038
	Antimony (Sb)-Dissolved (mg/L)	0.00032		0.00051	0.00141	0.00047
	Arsenic (As)-Dissolved (mg/L)	0.0168		0.00298	0.00517	0.0147
	Barium (Ba)-Dissolved (mg/L)	0.0375		0.103	0.116	0.175
	Beryllium (Be)-Dissolved (mg/L)	DLA <0.00020		<0.00010	<0.00010	<0.00010
	Bismuth (Bi)-Dissolved (mg/L)	DLA <0.0010		<0.00050	<0.00050	<0.00050
	Boron (B)-Dissolved (mg/L)	0.169		<0.010	<0.010	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	0.000025		0.000059	0.000017	<0.000010
	Calcium (Ca)-Dissolved (mg/L)	159		166	166	172
	Chromium (Cr)-Dissolved (mg/L)	0.00022		0.00017	<0.00010	0.00015
	Cobalt (Co)-Dissolved (mg/L)	0.0192		0.00169	0.00040	0.00018
	Copper (Cu)-Dissolved (mg/L)	<0.00040		0.00208	0.00046	0.00128
	Iron (Fe)-Dissolved (mg/L)	5.83		0.331	1.55	4.00
	Lead (Pb)-Dissolved (mg/L)	DLA <0.00010		0.000078	0.000056	0.000085
	Lithium (Li)-Dissolved (mg/L)	<0.00010 DLA <0.0010		0.00262	0.00491	0.00686
	Magnesium (Mg)-Dissolved (mg/L)	53.8		52.8	56.4	55.5

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	Sample ID Description Sampled Date Sampled Time Client ID	L1589940-11 Water 18-MAR-15 17:00 FB-1	L1589940-12 Water 18-MAR-15 17:00 FB-1 FILTERED ALK	L1589940-13 Water 19-MAR-15 18:00 FB-2	L1589940-14 Water 19-MAR-15 18:00 FB-2 FILTERED ALK	L1589940-15 Water 20-MAR-15 TRIP BLANK
Grouping	Analyte					
WATER						
Total Metals	Magnesium (Mg)-Total (mg/L)					<0.10
	Manganese (Mn)-Total (mg/L)					<0.000050
	Mercury (Hg)-Total (mg/L)					<0.000010
	Molybdenum (Mo)-Total (mg/L)					<0.000050
	Nickel (Ni)-Total (mg/L)					<0.00050
	Phosphorus (P)-Total (mg/L)					<0.050
	Potassium (K)-Total (mg/L)					<0.000
	Selenium (Se)-Total (mg/L)					<0.00010
	Silicon (Si)-Total (mg/L)					<0.00010
	Silver (Ag)-Total (mg/L)					<0.00010
	Sodium (Na)-Total (mg/L)					<0.050
	Strontium (Sr)-Total (mg/L)					<0.00020
	Sulfur (S)-Total (mg/L)					<0.0020
	Thallium (TI)-Total (mg/L)					<0.00010
	Tin (Sn)-Total (mg/L)					<0.00010
	Titanium (Ti)-Total (mg/L)					<0.00010
	Uranium (U)-Total (mg/L)					<0.000010
	Vanadium (V)-Total (mg/L)					<0.00010
	Zinc (Zn)-Total (mg/L)					<0.0010
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD		FIELD		<0.0030
	Dissolved Metals Filtration Location	FIELD		FIELD		
	Aluminum (AI)-Dissolved (mg/L)	<0.0010		<0.0010		
	Antimony (Sb)-Dissolved (mg/L)	<0.0010		<0.0010		
	Arsenic (As)-Dissolved (mg/L)					
	Barium (Ba)-Dissolved (mg/L)	<0.00010		<0.00010		
	Beryllium (Be)-Dissolved (mg/L)	<0.000050 <0.00010		<0.000050 <0.00010		
	Bismuth (Bi)-Dissolved (mg/L)	<0.00010		<0.00010		
	Boron (B)-Dissolved (mg/L)	<0.00050		<0.00050		
	Cadmium (Cd)-Dissolved (mg/L)	<0.00010		<0.00010		
	Calcium (Ca)-Dissolved (mg/L)					
	Chromium (Cr)-Dissolved (mg/L)	<0.050		<0.050		
	Cobalt (Co)-Dissolved (mg/L)	<0.00010		<0.00010		
	Copper (Cu)-Dissolved (mg/L)	<0.00010		<0.00010		
	Iron (Fe)-Dissolved (mg/L)	<0.00020		<0.00020		
	Lead (Pb)-Dissolved (mg/L)	<0.010		<0.010		
	Lithium (Li)-Dissolved (mg/L)	<0.000050		<0.000050		
	Magnesium (Mg)-Dissolved (mg/L)	<0.00050 <0.10		<0.00050 <0.10		

L1589940 CONTD.... PAGE 8 of 14 08-APR-15 11:59 (MT) Version: FINAL REV. 2

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1589940-1 Water 19-MAR-15 13:05 MW09-24	L1589940-2 Water 19-MAR-15 13:05 MW09-24 FILTERED ALK	L1589940-3 Water 19-MAR-15 10:30 MW09-06	L1589940-4 Water 19-MAR-15 15:30 MW09-02	L1589940-5 Water 19-MAR-15 15:30 MW09-02 FILTERED ALK
Grouping	Analyte					
WATER	-					
Dissolved Metals	Manganese (Mn)-Dissolved (mg/L)	0.000515		6.31	35.2	
	Mercury (Hg)-Dissolved (mg/L)	<0.000010		<0.00010	<0.00010	
	Molybdenum (Mo)-Dissolved (mg/L)	0.000203		0.00564	0.00515	
	Nickel (Ni)-Dissolved (mg/L)	<0.00050		0.0023	0.0030	
	Phosphorus (P)-Dissolved (mg/L)	<0.050		< 0.050	< 0.050	
	Potassium (K)-Dissolved (mg/L)	1.98		15.4	92.8	
	Selenium (Se)-Dissolved (mg/L)	0.00048		<0.00020	<0.00050	
	Silicon (Si)-Dissolved (mg/L)	6.12		6.81	6.61	
	Silver (Ag)-Dissolved (mg/L)	<0.000010		0.000029	<0.000050	
	Sodium (Na)-Dissolved (mg/L)	9.09		17.4	77.1	
	Strontium (Sr)-Dissolved (mg/L)	0.686		0.696	0.998	
	Sulfur (S)-Dissolved (mg/L)	139		404	632	
	Thallium (TI)-Dissolved (mg/L)	<0.000010		0.000360	0.000238	
	Tin (Sn)-Dissolved (mg/L)	<0.00010		DLA <0.00020	DLA <0.00050	
	Titanium (Ti)-Dissolved (mg/L)	<0.010		DLA <0.020	DLA <0.050	
	Uranium (U)-Dissolved (mg/L)	0.00324		0.00159	0.000380	
	Vanadium (V)-Dissolved (mg/L)	<0.0010		DLA <0.0020	DLA <0.0050	
	Zinc (Zn)-Dissolved (mg/L)	0.0014		0.0939	0.299	

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ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1589940-6 Water 19-MAR-15 16:20 MW09-23	L1589940-7 Water 19-MAR-15 16:20 MW09-23 FILTERED ALK	L1589940-8 Water 18-MAR-15 16:50 GSI-DC-02B	L1589940-9 Water 18-MAR-15 17:55 GSI-HA-04A	L1589940-10 Water 18-MAR-15 16:30 GSI-HA-01A
Grouping	Analyte					
WATER						
Dissolved Metals	Manganese (Mn)-Dissolved (mg/L)	11.2		2.85	0.321	0.206
	Mercury (Hg)-Dissolved (mg/L)	<0.000010		<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	0.00375		0.00487	0.000531	0.000739
	Nickel (Ni)-Dissolved (mg/L)	0.0015		0.0152	0.00155	0.00423
	Phosphorus (P)-Dissolved (mg/L)	<0.050		<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	7.28		3.67	2.95	3.66
	Selenium (Se)-Dissolved (mg/L)	DLA <0.00020		<0.00010	<0.00010	<0.00010
	Silicon (Si)-Dissolved (mg/L)	4.98		6.25	5.12	6.09
	Silver (Ag)-Dissolved (mg/L)	DLA <0.000020		<0.000010	<0.000010	<0.000010
	Sodium (Na)-Dissolved (mg/L)	40.1		5.54	4.65	5.76
	Strontium (Sr)-Dissolved (mg/L)	0.392		0.353	0.399	0.385
	Sulfur (S)-Dissolved (mg/L)	129		114	145	132
	Thallium (TI)-Dissolved (mg/L)	DLA <0.000020		<0.000010	<0.000010	<0.000010
	Tin (Sn)-Dissolved (mg/L)	DLA <0.00020		<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	DLA <0.020		<0.010	<0.010	<0.010
	Uranium (U)-Dissolved (mg/L)	0.00182		0.000625	0.000615	0.000080
	Vanadium (V)-Dissolved (mg/L)	DLA <0.0020		<0.0010	<0.0010	<0.0010
	Zinc (Zn)-Dissolved (mg/L)	0.0051		0.0077	0.0043	0.0057
		0.0051		0.0077	0.0043	0.0057

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Grouping Analyte WATER Mercury (Hg)-Dissolved (mg/L) Molyddenum (Mo)-Dissolved (mg/L) Nickel (Ni)-Dissolved (mg/L) Nickel (Ni)-Dissolved (mg/L) Phosphorus (P)-Dissolved (mg/L) Phosphorus (P)-Dissolved (mg/L) Potassium (K)-Dissolved (mg/L) Potassium (S)-Dissolved (mg/L) Solicon (Si)-Dissolved (mg/L) Zinc (Zi)-Dissolved (mg/L) Zinc (Zi)-Dissolved (mg/L) Solicon (Si)-Dissolved (mg/L) Solicon (S		Sample ID Description Sampled Date Sampled Time Client ID	L1589940-11 Water 18-MAR-15 17:00 FB-1	L1589940-12 Water 18-MAR-15 17:00 FB-1 FILTERED ALK	L1589940-13 Water 19-MAR-15 18:00 FB-2	L1589940-14 Water 19-MAR-15 18:00 FB-2 FILTERED ALK	L1589940-15 Water 20-MAR-15 TRIP BLANK
Dissolved Metals Manganese (Mn)-Dissolved (mg/L) <0.000050	Analyte						
Dissolved Metals Manganese (Mn)-Dissolved (mg/L) <0.000050 <0.000010 Mercury (Hg)-Dissolved (mg/L) <0.000050							
Mercury (Hg)-Dissolved (mg/L) <0.00010 <0.00010 Molybdenum (Mo)-Dissolved (mg/L) <0.00050	langanese (Mn)-Dis	solved (mg/L)	<0.000050		<0.000050		
Molybdenum (Mo)-Dissolved (mg/L) <0.000050	lercury (Hg)-Dissolv	ved (mg/L)					
Nickel (Ni)-Dissolved (mg/L) <0.00050	lolybdenum (Mo)-Di	ssolved (mg/L)					
Phosphorus (P)-Dissolved (mg/L) <0.050	ickel (Ni)-Dissolved	(mg/L)					
Potassium (K)-Dissolved (mg/L) 0.16 0.14 Selenium (Se)-Dissolved (mg/L) <0.00010	hosphorus (P)-Disse	olved (mg/L)					
Selenium (Se)-Dissolved (mg/L) <0.00010	otassium (K)-Dissol	lved (mg/L)					
Silicon (Si)-Dissolved (mg/L) <0.050	elenium (Se)-Dissol	lved (mg/L)					
Silver (Ag)-Dissolved (mg/L) <0.000010	ilicon (Si)-Dissolved	d (mg/L)					
Sodium (Na)-Dissolved (mg/L) <0.050	ilver (Ag)-Dissolved	l (mg/L)					
Strontium (Sr)-Dissolved (mg/L) <0.00020	odium (Na)-Dissolve	ed (mg/L)					
Thallium (TI)-Dissolved (mg/L) <0.000010	trontium (Sr)-Dissol	ved (mg/L)					
Thallium (TI)-Dissolved (mg/L) <0.000010	ulfur (S)-Dissolved ((mg/L)	<0.50		<0.50		
Titanium (Ti)-Dissolved (mg/L) <0.010	hallium (TI)-Dissolve	ed (mg/L)			<0.000010		
Uranium (U)-Dissolved (mg/L) <0.000010	in (Sn)-Dissolved (m	ng/L)					
Vanadium (V)-Dissolved (mg/L) <0.0010	itanium (Ti)-Dissolve	ed (mg/L)	<0.010		<0.010		
	ranium (U)-Dissolve	ed (mg/L)	<0.000010		<0.000010		
Zinc (Zn)-Dissolved (mg/L) <0.0010 <0.0010 <0.0010	anadium (V)-Dissolv	ved (mg/L)	<0.0010		<0.0010		
	inc (Zn)-Dissolved (mg/L)	<0.0010		<0.0010		

Reference Information

Qualifiers for Individual Samples Listed:

Sample Numbe	Client Sample ID	Qualifier	Description
L1589940-15	TRIP BLANK	LPMB	Lab-Preserved for Metals. Sample received with pH > 2 and preserved at the lab. Metals results may be biased low.

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Total Inorganic Carbon	MS-B	L1589940-1, -11, -13, -15, -3, -4, -6
Matrix Spike	Total Organic Carbon	MS-B	L1589940-1, -13, -15, -3, -4
Matrix Spike	Total Organic Carbon	MS-B	L1589940-11, -6
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1589940-1, -10, -11, -13, -3, -4, -6, -8, -9
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1589940-1, -10, -11, -13, -3, -4, -6, -8, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1589940-1, -10, -11, -13, -3, -4, -6, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1589940-1, -10, -11, -13, -3, -4, -6, -8, -9
Matrix Spike	Aluminum (Al)-Total	MS-B	L1589940-15
Matrix Spike	Copper (Cu)-Total	MS-B	L1589940-15
Matrix Spike	Strontium (Sr)-Total	MS-B	L1589940-15
Qualifiers for Individual Paran	neters Listed:		
Qualifier Description			

DLA	Detection Limit adjusted for required dilution
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RRA	Reported Result Is The Average Of 2 Or More Analyses
RRV	Reported Result Verified By Repeat Analysis

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 colourimetric method.	out using proce	edures adapted from EPA Method 310.2 "Alkalinit	y". Total Alkalinity is determined using the methyl orange
ALK-PCT-VA	Water	Alkalinity by Auto. Titration	APHA 2320 "Alkalinity"
			ity". Total alkalinity is determined by potentiometric titration to a enolphthalein alkalinity and total alkalinity values.
ALK-PCT-VA	Water	Alkalinity by Auto. Titration	APHA 2320 Alkalinity
			ity". Total alkalinity is determined by potentiometric titration to a enolphthalein alkalinity and total alkalinity values.
CARBONS-TIC-VA	Water	Total inorganic carbon by CO2 purge	APHA 5310 TOTAL ORGANIC CARBON (TOC)
This analysis is carried	out using proce	edures adapted from APHA Method 5310 "Total C	Organic Carbon (TOC)".
CARBONS-TOC-VA	Water	Total organic carbon by combustion	APHA 5310 TOTAL ORGANIC CARBON (TOC)
This analysis is carried	out using proce	edures adapted from APHA Method 5310 "Total C	Organic Carbon (TOC)".
CL-IC-N-WR	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are an	nalyzed by Ion (Chromatography with conductivity and/or UV deter	ction.
CN-FREE-CFA-VA	Water	Free Cyanide in water by CFA	ASTM 7237
			yanide with Flow Injection Analysis (FIA) Utilizing Gas Diffusior fusion at pH 6 with final determination by colourimetric analysis
CN-SCN-VA	Water	Thiocyanate by Colour	APHA 4500-CN CYANIDE
This analysis is carried colourimetric method.	out using proce	edures adapted from APHA Method 4500-CN- M	"Thiocyanate" Thiocyanate is determined by the ferric nitrate
CN-T-CFA-VA	Water	Total Cyanide in water by CFA	ISO 14403:2002
CFA)". Total or strong a colourimetric analysis.	acid dissociable Method Limitati	e (SAD) cyanide is determined by in-line UV diges	etermination of Total Cyanide using Flow Analysis (FIA and tion along with sample distillation and final determination by m thiocyanate (SCN). If SCN is present in the sample, there d be as low as zero.

CN-WAD-CFA-VA

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

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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.

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

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

HARDNESS-CALC-VA Water Hardness

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-DIS-LOW-CVAFS-VA Water Dissolved Mercury in Water by CVAFS(Low)

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 filtration (EPA Method 3005A) and 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).

HG-TOT-LOW-CVAFS-VA Water Total Mercury in Water by CVAFS(Low)

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).

Water Ion Balance Calculation **IONBALANCE-VA**

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 meg/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

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 hotblock, or filtration (APHA 3030B&E). Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).

MET-DIS-LOW-ICP-VA Water

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).

Dissolved Metals in Water by ICPOES

MET-T-CCMS-VA Water Total Metals in Water by CRC ICPMS

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 hotblock, or filtration (APHA 3030B&E). Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).

MET-TOT-LOW-ICP-VA Water Total Metals in Water by ICPOES

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

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)

EPA 300.1 (mod)

APHA 2340B

APHA 1030E

EPA SW-846 3005A & EPA 245.7

FPA 245.7

EPA 3005A/6010B

EPA 3005A/6010B

APHA 3030 B&E / EPA SW-846 6020A

APHA 3030 B&E / EPA SW-846 6020A

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. 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. Total Sulfur in Water by ICPOES EPA SW-846 3005A/6010B S-TOT-ICP-VA Water 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. S2-T-COL-VA Water Total Sulphide by Colorimetric APHA 4500-S2 Sulphide This analysis is carried out using procedures adapted from APHA Method 4500-S2 "Sulphide". Sulphide is determined using the methlyene blue colourimetric method. Water Sulfate in Water by IC EPA 300.1 (mod) SO4-IC-N-WR Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection. TKN in Water by Fluorescence APHA 4500-NORG D. **TKN-F-VA** Water This analysis is carried out using procedures adapted from APHA Method 4500-Norg D. "Block Digestion and Flow Injection Analysis". Total Kjeldahl Nitrogen is determined using block digestion followed by Flow-injection analysis with fluorescence detection. ** 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



COC Number: 1 -

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Page <u>1</u> of <u>1</u>

Canada Toll Free: 1 800 668 9878

www.alsglobal.com																						
Report To				Report Forma	t / Distribution			Sel	ect Sen	/ice Lev	vel Belo	w (Rus	h Tuma	round	Time (TAT) it	s not av	vailable f	or all te	sts)		
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Contact:	Natasha Sandys		Quality Control	(QC) Report with F	Report 🛛 💌 Ye	ns 🔽 No	P Priority (2-4 bus, days if received by 3pm) 50% surcharge - contact ALS to confirm TAT							AT								
Address:	230 - 2237 2nd Avenue		Criteria on Repo	rt - provide details belo	w if box checked		E	E Emergency (1-2 bus, days if received by 3pm) 100% surcharge - contact ALS to confirm TAT						im TAT								
	Whitehorse, YT			Select Distribution: DEMAIL MAIL FAX			E2	San	Same day or weekend emergency - contact ALS to confirm TAT and surcharge													
Phone:	867-335-3235		Email 1 or Fax	Email 1 or Fax nsandys@hemmera.com, rmartinka@hemmera.c			Spec	ify Dat	e Req	uired f	or E2,E	E or P:										
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	Project Information		Oil and Gas Required Fields (client use)					1	É	alka	Anio	1 1 1	្ល							Containers		
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ALS Lab Wo	ork Order # (lab use only)		ALS Contact:		Sampler:	RM,TJ,AN,JL	Dissolved Metals,	Dissolved Metals, Dissolved Mercury		ed Merc	Nitrite,	Sutfate, conductivity, pH, alkalinity	Anion Sum, Cation Sum, Cation/Anion Balan	- Weak Acid Diss.,	Ammonia N (total), Total Organic	Thiocyanate (SCN)	e as S	Total Inorganic	Dissolved Alkalinity			
ALS Sample # (lab use only)	· ·	ation and/or Coordinates will appear on the report)		Date (dd-mmm-yy)	Time (hb:mm)	Sample Type	Dissolve	Dissolve	Nitrate,	ci, Fi, s	Anion S	Cyanide -	Ammon	Thiocya	Sulphide as	Total In	Dissolve					
MW09-24				19-Mar-15	13:05	Water	R	R	R	R	R	R	R	R	R	R	R			9		
	MW09-06			19-Mar-15	10:30	Water	R	R	R	R	R	R	R	R	R	R				8		
	MW09-02			19-Mar-15	15:30	Water	R	R	R	R	R	R	R	R	R	R	R			9		
	MW09-23			19-Mar-15	16:20	Water	R	R	R	R	R	R	R	R	R	R	R			9		
	GSI-DC-02B			18-Mar-15	16:50	Water	R	R	R	R	R									3		
	GSI-HA-04A			18-Mar-15	17:55	Water	R	R												2		
	GSI-HA-01A	rt Holding	Time	18-Mar-15	16:30	Water	R	R												2		
	FB-1 5NO		_	18-Mar-15	17:00	Water	R	R	R	R	R	R	R	R	R	R	R			9		
	FB-2	Rush Process	ing [–]	19-Mar-15	18:00	Water	R	R	R	R	R	R	R	R	R	R	R			9		
	Trip Blank	Rush Floore		+	-	Water	R	R	R	Ŕ	R	R	R	R	R	R	R			9		
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Drinking	g Water (DW) Samples' (client use)	Special I	istructions / Spec	ify Criteria to add o	on report (client (186)	Froze	en					ŞIF C)bser	vatio	nş	Yes		No			
-	ken from a Regulated DW System?						ice p	acks	Yes		No		Custo	ody s	eal In	tact	Yes		No			
	Yes 🕼 No	 See attached parame - note limited volume in 					Cooli	ing Init	ated													
1 .	r human drinking water use?						INI	TIAL CO	OLER	TEMPE	RATURI	S °C				COOL	ER TE!	MPERAT	URES '	°C		
F Y	fes IV No						1.6	•	1.	5				3'	C							
	SHIPMENT RELEASE (client use	<u> </u>		SHIPMENT RECEP		nly)				FIN	AL SH	IPME	NT RE	CEP	TION							
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REFER TO BAC	FER 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.



HEMMERA ENVIROCHEM INC. ATTN: Natasha Sandys 230 - 2237 2nd Avenue Whitehorse YK Y1A 0K7 Date Received:23-MAR-15Report Date:08-APR-15 11:58 (MT)Version:FINAL REV. 2

Client Phone: 867-456-4865

Certificate of Analysis

Lab Work Order #: L1590448

Project P.O. #: Job Reference: C of C Numbers: Legal Site Desc: NOT SUBMITTED 1343-005.07 1

Comments:

8-APR-2015 This report replaces the previous version and contains a requested change to the Job#.

Brent Mack, B.Sc. Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1590448-1 Water 20-MAR-15 16:10 MW09-18	L1590448-2 Water 20-MAR-15 16:10 MW09-18 FILTERED ALK	L1590448-3 Water 20-MAR-15 13:45 MW09-19	L1590448-4 Water 20-MAR-15 13:45 MW09-19 FILTERED ALK	L1590448-5 Water 20-MAR-15 12:40 CH-P-13-05-/50
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	2770		2010		2720
	Hardness (as CaCO3) (mg/L)	2060		1300		1910
	рН (рН)	7.57		7.29		6.58
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	491	626	483	482	94.7
	Ammonia, Total (as N) (mg/L)	0.0339		6.88		0.0381
	Chloride (CI) (mg/L)	<5.0		<5.0 DLA		<5.0 DLA
	Fluoride (F) (mg/L)	ola<0.20		<0.20		<0.20
	Nitrate (as N) (mg/L)	DLA <0.050		DLA <0.050		ola <0.050
	Nitrite (as N) (mg/L)	DLA <0.010		DLA <0.010		<0.010
	Total Kjeldahl Nitrogen (mg/L)	0.140		7.47		0.149
	Sulfate (SO4) (mg/L)	1570		909		1880
	Sulphide as S (mg/L)	<0.020		0.134		<0.020
	Anion Sum (meq/L)	42.5		28.6		41.1
	Cation Sum (meq/L)	42.0		29.3		41.5
	Cation - Anion Balance (%)	-0.6		1.2		0.5
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050		<0.0050		CNP <0.0050
	Cyanide, Total (mg/L)	<0.0050		<0.0050		CNP <0.0050
	Thiocyanate (SCN) (mg/L)	<0.50		0.68		<0.50
	Cyanide, Free (mg/L)	<0.0050		<0.0050		CNP <0.0050
Organic / Inorganic Carbon	Total Inorganic Carbon (mg/L)	104		103		14.8
	Total Organic Carbon (mg/L)	2.62		22.2		2.37
Total Metals	Aluminum (Al)-Total (mg/L)					
	Antimony (Sb)-Total (mg/L)					
	Arsenic (As)-Total (mg/L)					
	Barium (Ba)-Total (mg/L)					
	Beryllium (Be)-Total (mg/L)					
	Bismuth (Bi)-Total (mg/L)					
	Boron (B)-Total (mg/L)					
	Cadmium (Cd)-Total (mg/L)					
	Calcium (Ca)-Total (mg/L)					
	Chromium (Cr)-Total (mg/L)					
	Cobalt (Co)-Total (mg/L)					
	Copper (Cu)-Total (mg/L)					
	Iron (Fe)-Total (mg/L)					
	Lead (Pb)-Total (mg/L)					
	Lithium (Li)-Total (mg/L)					

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ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1590448-6 Water 20-MAR-15 12:40 CH-P-13-05-/50 FILTERED ALK	L1590448-7 Water 20-MAR-15 13:45 DUP-1	L1590448-8 Water 20-MAR-15 13:45 DUP-1 FILTERED ALK	L1590448-9 Water 20-MAR-15 12:40 DUP-2	L1590448-10 Water 20-MAR-15 12:40 DUP-2 FILTERED ALK
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)		1910		2710	
-	Hardness (as CaCO3) (mg/L)		1330		1920	
	рН (рН)		7.11		6.56	
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	95.1	472	487	96.4	97.6
	Ammonia, Total (as N) (mg/L)		6.75		0.0377	
	Chloride (Cl) (mg/L)		<2.5		DLA <5.0	
	Fluoride (F) (mg/L)		<0.10		0.20	
	Nitrate (as N) (mg/L)		ola <0.025		DLA <0.050	
	Nitrite (as N) (mg/L)		DLA <0.0050		DLA <0.010	
	Total Kjeldahl Nitrogen (mg/L)		7.48		0.157	
	Sulfate (SO4) (mg/L)		882		1880	
	Sulphide as S (mg/L)		0.132		<0.020	
	Anion Sum (meq/L)		27.8		41.0	
	Cation Sum (meq/L)		29.9		41.8	
	Cation - Anion Balance (%)		3.6		0.9	
Cyanides	Cyanide, Weak Acid Diss (mg/L)		<0.0050		CNP <0.0050	
	Cyanide, Total (mg/L)		<0.0050		CNP <0.0050	
	Thiocyanate (SCN) (mg/L)		0.66		<0.50	
	Cyanide, Free (mg/L)		<0.0050		CNP <0.0050	
Organic / Inorganic Carbon	Total Inorganic Carbon (mg/L)		101		13.4	
	Total Organic Carbon (mg/L)		21.7		2.44	
Total Metals	Aluminum (Al)-Total (mg/L)					
	Antimony (Sb)-Total (mg/L)					
	Arsenic (As)-Total (mg/L)					
	Barium (Ba)-Total (mg/L)					
	Beryllium (Be)-Total (mg/L)					
	Bismuth (Bi)-Total (mg/L)					
	Boron (B)-Total (mg/L)					
	Cadmium (Cd)-Total (mg/L)					
	Calcium (Ca)-Total (mg/L)					
	Chromium (Cr)-Total (mg/L)					
	Cobalt (Co)-Total (mg/L)					
	Copper (Cu)-Total (mg/L)					
	Iron (Fe)-Total (mg/L)					
	Lead (Pb)-Total (mg/L)					
	Lithium (Li)-Total (mg/L)					

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	Sample ID Description Sampled Date Sampled Time Client ID	L1590448-11 Water 23-MAR-15 TRAVEL BLANK	L1590448-12 Water 20-MAR-15 16:10 FB-3	L1590448-13 Water 20-MAR-15 16:10 FB-3 FILTERED ALK	
Grouping	Analyte				
WATER					
Physical Tests	Conductivity (uS/cm)	<2.0	<2.0		
	Hardness (as CaCO3) (mg/L)	<0.50	<0.50		
	рН (рН)	5.45	5.87		
Anions and	Alkalinity, Total (as CaCO3) (mg/L)	<2.0	<2.0	<2.0	
Nutrients		RRV			
	Ammonia, Total (as N) (mg/L)	0.0118	<0.0050		
	Chloride (Cl) (mg/L)	<0.50	<0.50		
	Fluoride (F) (mg/L)	<0.020	<0.020		
	Nitrate (as N) (mg/L)	<0.0050	<0.0050		
	Nitrite (as N) (mg/L)	<0.0010	<0.0010		
	Total Kjeldahl Nitrogen (mg/L)	<0.050	<0.050		
	Sulfate (SO4) (mg/L)	<0.30	<0.30		
	Sulphide as S (mg/L)	<0.020	<0.020		
	Anion Sum (meq/L)	<0.10	<0.10		
	Cation Sum (meq/L)	<0.10	<0.10		
a	Cation - Anion Balance (%)	0.0	0.0		
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0050	<0.0050		
	Cyanide, Total (mg/L)	<0.0050	<0.0050		
	Thiocyanate (SCN) (mg/L)	<0.50	<0.50		
	Cyanide, Free (mg/L)	<0.0050	<0.0050		
Organic / Inorganic Carbon	Total Inorganic Carbon (mg/L)	<0.50	<0.50		
	Total Organic Carbon (mg/L)	<0.50	<0.50		
Total Metals	Aluminum (Al)-Total (mg/L)	<0.0030			
	Antimony (Sb)-Total (mg/L)	<0.00010			
	Arsenic (As)-Total (mg/L)	<0.00010			
	Barium (Ba)-Total (mg/L)	<0.000050			
	Beryllium (Be)-Total (mg/L)	<0.00010			
	Bismuth (Bi)-Total (mg/L)	<0.00050			
	Boron (B)-Total (mg/L)	<0.010			
	Cadmium (Cd)-Total (mg/L)	<0.000010			
	Calcium (Ca)-Total (mg/L)	<0.050			
	Chromium (Cr)-Total (mg/L)	<0.00010			
	Cobalt (Co)-Total (mg/L)	<0.00010			
	Copper (Cu)-Total (mg/L)	<0.00050			
	Iron (Fe)-Total (mg/L)	<0.010			
	Lead (Pb)-Total (mg/L)	<0.000050			
	Lithium (Li)-Total (mg/L)	<0.00050			

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Version: FINAL REV. 2 L1590448-1 Sample ID L1590448-2 L1590448-3 L1590448-4 L1590448-5 Description Water Water Water Water Water 20-MAR-15 20-MAR-15 20-MAR-15 20-MAR-15 20-MAR-15 Sampled Date Sampled Time 16:10 16:10 13:45 13:45 12:40 CH-P-13-05-/50 MW09-18 MW09-19 MW09-18 MW09-19 **Client ID** FILTERED ALK FILTERED ALK Grouping Analyte WATER **Total Metals** Magnesium (Mg)-Total (mg/L) Manganese (Mn)-Total (mg/L) Mercury (Hg)-Total (mg/L) Molybdenum (Mo)-Total (mg/L) Nickel (Ni)-Total (mg/L) Phosphorus (P)-Total (mg/L) Potassium (K)-Total (mg/L) Selenium (Se)-Total (mg/L) Silicon (Si)-Total (mg/L) Silver (Ag)-Total (mg/L) Sodium (Na)-Total (mg/L) Strontium (Sr)-Total (mg/L) Sulfur (S)-Total (mg/L) Thallium (TI)-Total (mg/L) Tin (Sn)-Total (mg/L) Titanium (Ti)-Total (mg/L) Uranium (U)-Total (mg/L) Vanadium (V)-Total (mg/L) Zinc (Zn)-Total (mg/L) **Dissolved Metals Dissolved Mercury Filtration Location** FIELD FIELD FIELD **Dissolved Metals Filtration Location** FIELD FIELD FIELD DLA Aluminum (AI)-Dissolved (mg/L) <0.0020 0.0134 0.0649 DLA Antimony (Sb)-Dissolved (mg/L) 0.00041 0.00046 < 0.00050 Arsenic (As)-Dissolved (mg/L) 0.0556 0.125 0.00444 Barium (Ba)-Dissolved (mg/L) 0.00940 0.0520 0.00627 DLA DLA DLA Beryllium (Be)-Dissolved (mg/L) <0.00020 < 0.00020 < 0.00050 DLA DLA DLA Bismuth (Bi)-Dissolved (mg/L) <0.0010 <0.0010 <0.0025 DLA DLA Boron (B)-Dissolved (mg/L) <0.020 < 0.050 0.130 DLA Cadmium (Cd)-Dissolved (mg/L) 0.000050 < 0.000020 0.330 Calcium (Ca)-Dissolved (mg/L) 302 369 453 DLA DLA Chromium (Cr)-Dissolved (mg/L) 0.00041 < 0.00020 < 0.00050 Cobalt (Co)-Dissolved (mg/L) 0.00306 0.0398 0.00030 DLA DLA Copper (Cu)-Dissolved (mg/L) <0.00040 < 0.00040 0.0550 Iron (Fe)-Dissolved (mg/L) 11.3 0.037 24.4 DLA DLA Lead (Pb)-Dissolved (mg/L) <0.00010 < 0.00010 0.00451 Lithium (Li)-Dissolved (mg/L) 0.0216 0.0081 0.0379 Magnesium (Mg)-Dissolved (mg/L) 277 133 188

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L1590448-6 L1590448-7 Sample ID L1590448-8 L1590448-9 L1590448-10 Description Water Water Water Water Water 20-MAR-15 20-MAR-15 20-MAR-15 20-MAR-15 20-MAR-15 Sampled Date Sampled Time 12:40 13:45 13:45 12:40 12:40 DUP-2 FILTERED CH-P-13-05-/50 DUP-1 **DUP-1 FILTERED** DUP-2 **Client ID** FILTERED ALK ALK ALK Grouping Analyte WATER **Total Metals** Magnesium (Mg)-Total (mg/L) Manganese (Mn)-Total (mg/L) Mercury (Hg)-Total (mg/L) Molybdenum (Mo)-Total (mg/L) Nickel (Ni)-Total (mg/L) Phosphorus (P)-Total (mg/L) Potassium (K)-Total (mg/L) Selenium (Se)-Total (mg/L) Silicon (Si)-Total (mg/L) Silver (Ag)-Total (mg/L) Sodium (Na)-Total (mg/L) Strontium (Sr)-Total (mg/L) Sulfur (S)-Total (mg/L) Thallium (TI)-Total (mg/L) Tin (Sn)-Total (mg/L) Titanium (Ti)-Total (mg/L) Uranium (U)-Total (mg/L) Vanadium (V)-Total (mg/L) Zinc (Zn)-Total (mg/L) **Dissolved Metals Dissolved Mercury Filtration Location** FIELD FIELD **Dissolved Metals Filtration Location** FIELD FIELD Aluminum (AI)-Dissolved (mg/L) 0.0127 0.0573 DLA Antimony (Sb)-Dissolved (mg/L) 0.00048 < 0.00050 Arsenic (As)-Dissolved (mg/L) 0.131 0.00455 Barium (Ba)-Dissolved (mg/L) 0.0542 0.00639 DLA Beryllium (Be)-Dissolved (mg/L) < 0.00020 <0.00050 DLA DLA Bismuth (Bi)-Dissolved (mg/L) <0.0010 <0.0025 DLA Boron (B)-Dissolved (mg/L) <0.050 0.127 DLA Cadmium (Cd)-Dissolved (mg/L) < 0.000020 0.349 Calcium (Ca)-Dissolved (mg/L) 309 460 DLA Chromium (Cr)-Dissolved (mg/L) 0.00035 < 0.00050 Cobalt (Co)-Dissolved (mg/L) 0.0402 0.00303 DLA Copper (Cu)-Dissolved (mg/L) < 0.00040 0.0555 Iron (Fe)-Dissolved (mg/L) 11.6 25.2 DLA Lead (Pb)-Dissolved (mg/L) < 0.00010 0.00456 Lithium (Li)-Dissolved (mg/L) 0.0069 0.0368 Magnesium (Mg)-Dissolved (mg/L) 136 187

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ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1590448-11 Water 23-MAR-15 TRAVEL BLANK	L1590448-12 Water 20-MAR-15 16:10 FB-3	L1590448-13 Water 20-MAR-15 16:10 FB-3 FILTERED ALK		
Grouping	Analyte					
WATER	, unary co					
Total Metals	Magnesium (Mg)-Total (mg/L)	-0.10				
	Manganese (Mn)-Total (mg/L)	<0.10 <0.000050				
	Mercury (Hg)-Total (mg/L)	<0.000050				
	Molybdenum (Mo)-Total (mg/L)	<0.000050				
	Nickel (Ni)-Total (mg/L)	<0.00050				
	Phosphorus (P)-Total (mg/L)	<0.050				
	Potassium (K)-Total (mg/L)	<0.00				
	Selenium (Se)-Total (mg/L)	<0.0010				
	Silicon (Si)-Total (mg/L)	<0.050				
	Silver (Ag)-Total (mg/L)	<0.00010				
	Sodium (Na)-Total (mg/L)	<0.050				
	Strontium (Sr)-Total (mg/L)	<0.00020				
	Sulfur (S)-Total (mg/L)	<0.50				
	Thallium (TI)-Total (mg/L)	<0.00010				
	Tin (Sn)-Total (mg/L)	<0.00010				
	Titanium (Ti)-Total (mg/L)	<0.010				
	Uranium (U)-Total (mg/L)	<0.000010				
	Vanadium (V)-Total (mg/L)	<0.0010				
	Zinc (Zn)-Total (mg/L)	<0.0030				
Dissolved Metals	Dissolved Mercury Filtration Location		FIELD			
	Dissolved Metals Filtration Location		FIELD			
	Aluminum (AI)-Dissolved (mg/L)		<0.0010			
	Antimony (Sb)-Dissolved (mg/L)		<0.00010			
	Arsenic (As)-Dissolved (mg/L)		<0.00010			
	Barium (Ba)-Dissolved (mg/L)		<0.000050			
	Beryllium (Be)-Dissolved (mg/L)		<0.00010			
	Bismuth (Bi)-Dissolved (mg/L)		<0.00050			
	Boron (B)-Dissolved (mg/L)		<0.010			
	Cadmium (Cd)-Dissolved (mg/L)		<0.000010			
	Calcium (Ca)-Dissolved (mg/L)		<0.050			
	Chromium (Cr)-Dissolved (mg/L)		<0.00010			
	Cobalt (Co)-Dissolved (mg/L)		<0.00010			
	Copper (Cu)-Dissolved (mg/L)		<0.00020			
	Iron (Fe)-Dissolved (mg/L)		<0.010			
	Lead (Pb)-Dissolved (mg/L)		<0.000050			
	Lithium (Li)-Dissolved (mg/L)		<0.00050			
	Magnesium (Mg)-Dissolved (mg/L)		<0.10			

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	Sample ID Description Sampled Date Sampled Time Client ID	L1590448-1 Water 20-MAR-15 16:10 MW09-18	L1590448-2 Water 20-MAR-15 16:10 MW09-18 FILTERED ALK	L1590448-3 Water 20-MAR-15 13:45 MW09-19	L1590448-4 Water 20-MAR-15 13:45 MW09-19 FILTERED ALK	L1590448-5 Water 20-MAR-15 12:40 CH-P-13-05-/50
Grouping	Analyte					
WATER						
Dissolved Metals	Manganese (Mn)-Dissolved (mg/L)	0.848		9.20		37.5
	Mercury (Hg)-Dissolved (mg/L)	<0.000010		<0.000010		<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	0.00011		0.00013		0.00040
	Nickel (Ni)-Dissolved (mg/L)	<0.0010		0.0012		0.0143
	Phosphorus (P)-Dissolved (mg/L)	<0.050		0.207		<0.050
	Potassium (K)-Dissolved (mg/L)	7.61		9.21		5.00
	Selenium (Se)-Dissolved (mg/L)	DLA <0.00020		<0.00020		<0.00050
	Silicon (Si)-Dissolved (mg/L)	5.35		11.0		7.20
	Silver (Ag)-Dissolved (mg/L)	DLA <0.000020		<0.000020		<0.000050
	Sodium (Na)-Dissolved (mg/L)	13.1		20.6		8.37
	Strontium (Sr)-Dissolved (mg/L)	1.08		1.04		0.567
	Sulfur (S)-Dissolved (mg/L)	525		311		658
	Thallium (TI)-Dissolved (mg/L)	0.000257		DLA <0.000020		0.000520
	Tin (Sn)-Dissolved (mg/L)	DLA <0.00020		DLA <0.00020		DL4 <0.00050
	Titanium (Ti)-Dissolved (mg/L)	DLA <0.020		DLA <0.020		DLA <0.050
	Uranium (U)-Dissolved (mg/L)	0.00779		0.000291		0.000695
	Vanadium (V)-Dissolved (mg/L)	DLA <0.0020		DLA <0.0020		DLA <0.0050
	Zinc (Zn)-Dissolved (mg/L)	0.0031		DLA <0.0020		31.7

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					VCI 3	ion: FINAL REV
	Sample ID Description Sampled Date Sampled Time Client ID	L1590448-6 Water 20-MAR-15 12:40 CH-P-13-05-/50 FILTERED ALK	L1590448-7 Water 20-MAR-15 13:45 DUP-1	L1590448-8 Water 20-MAR-15 13:45 DUP-1 FILTERED ALK	L1590448-9 Water 20-MAR-15 12:40 DUP-2	L1590448-10 Water 20-MAR-15 12:40 DUP-2 FILTERED ALK
Grouping	Analyte					
WATER						
Dissolved Metals	Manganese (Mn)-Dissolved (mg/L)		9.24		37.5	
	Mercury (Hg)-Dissolved (mg/L)		<0.000010		<0.000010	
	Molybdenum (Mo)-Dissolved (mg/L)		0.00014		0.00042	
	Nickel (Ni)-Dissolved (mg/L)		0.0015		0.0142	
	Phosphorus (P)-Dissolved (mg/L)		0.211		<0.050	
	Potassium (K)-Dissolved (mg/L)		9.85		5.15	
	Selenium (Se)-Dissolved (mg/L)		DLA <0.00020		DLA <0.00050	
	Silicon (Si)-Dissolved (mg/L)		11.4		7.34	
	Silver (Ag)-Dissolved (mg/L)		DLA <0.000020		DLA <0.000050	
	Sodium (Na)-Dissolved (mg/L)		20.4		8.31	
	Strontium (Sr)-Dissolved (mg/L)		1.10		0.578	
	Sulfur (S)-Dissolved (mg/L)		313		645	
	Thallium (TI)-Dissolved (mg/L)		DLA <0.000020		0.000543	
	Tin (Sn)-Dissolved (mg/L)		DLA <0.00020		DLA <0.00050	
	Titanium (Ti)-Dissolved (mg/L)		DLA <0.020		DLA <0.050	
	Uranium (U)-Dissolved (mg/L)		0.000296		0.000709	
	Vanadium (V)-Dissolved (mg/L)		DLA <0.0020		DLA <0.0050	
	Zinc (Zn)-Dissolved (mg/L)		DLA <0.0020		31.8	

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ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L1590448-11 Water 23-MAR-15 TRAVEL BLANK	L1590448-12 Water 20-MAR-15 16:10 FB-3	L1590448-13 Water 20-MAR-15 16:10 FB-3 FILTERED ALK	
Grouping	Analyte				
WATER					
Dissolved Metals	Manganese (Mn)-Dissolved (mg/L)		<0.000050		
	Mercury (Hg)-Dissolved (mg/L)		<0.000010		
	Molybdenum (Mo)-Dissolved (mg/L)		<0.000050		
	Nickel (Ni)-Dissolved (mg/L)		<0.00050		
	Phosphorus (P)-Dissolved (mg/L)		<0.050		
	Potassium (K)-Dissolved (mg/L)		<0.10		
	Selenium (Se)-Dissolved (mg/L)		<0.00010		
	Silicon (Si)-Dissolved (mg/L)		<0.050		
	Silver (Ag)-Dissolved (mg/L)		<0.000010		
	Sodium (Na)-Dissolved (mg/L)		<0.050		
	Strontium (Sr)-Dissolved (mg/L)		<0.00020		
	Sulfur (S)-Dissolved (mg/L)		<0.50		
	Thallium (TI)-Dissolved (mg/L)		<0.000010		
	Tin (Sn)-Dissolved (mg/L)		<0.00010		
	Titanium (Ti)-Dissolved (mg/L)		<0.010		
	Uranium (U)-Dissolved (mg/L)		<0.000010		
	Vanadium (V)-Dissolved (mg/L)		<0.0010		
	Zinc (Zn)-Dissolved (mg/L)		<0.0010		

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L1590448-1, -12, -3, -5, -7, -9
Matrix Spike	Sulfur (S)-Dissolved	MS-B	L1590448-1, -12, -3, -5, -7, -9
Matrix Spike	Molybdenum (Mo)-Dissolved	MS-B	L1590448-1, -12, -3, -5, -7, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1590448-1, -12, -3, -5, -7, -9
Matrix Spike	Total Organic Carbon	MS-B	L1590448-12, -5, -7, -9
Matrix Spike	Total Inorganic Carbon	MS-B	L1590448-1, -11, -12, -3, -9
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1590448-1, -12, -3, -5, -7, -9
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1590448-1, -12, -3, -5, -7, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1590448-1, -12, -3, -5, -7, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1590448-1, -12, -3, -5, -7, -9
Matrix Spike	Total Organic Carbon	MS-B	L1590448-1, -11, -3
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1590448-1, -12, -3, -5, -7, -9
Matrix Spike	Iron (Fe)-Dissolved	MS-B	L1590448-1, -12, -3, -5, -7, -9
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L1590448-1, -12, -3, -5, -7, -9
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1590448-1, -12, -3, -5, -7, -9
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1590448-1, -12, -3, -5, -7, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1590448-1, -12, -3, -5, -7, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1590448-1, -12, -3, -5, -7, -9
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1590448-1, -12, -3, -5, -7, -9
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1590448-1, -12, -3, -5, -7, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1590448-1, -12, -3, -5, -7, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1590448-1, -12, -3, -5, -7, -9
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1590448-1, -12, -3, -5, -7, -9
Matrix Spike	Total Kjeldahl Nitrogen	MSTN	L1590448-1, -12, -3, -5, -7, -9

Qualifiers for Individual Parameters Listed:

Qualifier	Description
CNP	Cyanide test sample appears to have been preserved, but pH was <10 at time of testing. Results may be biased low, particularly for Free CN species.
DLA	Detection Limit adjusted for required dilution
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
MSTN	TKN Matrix Spike recovery was low due to interference from high nitrate, which causes negative bias on TKN.
RRV	Reported Result Verified By Repeat Analysis

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 colourimetric method.	out using proce	edures adapted from EPA Method 310.2 "Alkalinit	y". Total Alkalinity is determined using the methyl orange
ALK-PCT-VA	Water	Alkalinity by Auto. Titration	APHA 2320 "Alkalinity"
5	01	edures adapted from APHA Method 2320 "Alkalini te and hydroxide alkalinity are calculated from ph	ty". Total alkalinity is determined by potentiometric titration to a enolphthalein alkalinity and total alkalinity values.
ALK-PCT-VA	Water	Alkalinity by Auto. Titration	APHA 2320 Alkalinity
	01	edures adapted from APHA Method 2320 "Alkalini te and hydroxide alkalinity are calculated from ph	ty". Total alkalinity is determined by potentiometric titration to a enolphthalein alkalinity and total alkalinity values.
CARBONS-TIC-VA	Water	Total inorganic carbon by CO2 purge	APHA 5310 TOTAL ORGANIC CARBON (TOC)
This analysis is carried	out using proce	edures adapted from APHA Method 5310 "Total C	rganic Carbon (TOC)".
CARBONS-TOC-VA	Water	Total organic carbon by combustion	APHA 5310 TOTAL ORGANIC CARBON (TOC)
This analysis is carried	out using proce	edures adapted from APHA Method 5310 "Total C	rganic Carbon (TOC)".
CL-IC-N-WR	Water	Chloride in Water by IC	EPA 300.1 (mod)
Inorganic anions are ar	nalyzed by Ion (Chromatography with conductivity and/or UV detection	ction.

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CN-FREE-CFA-VA Water Free Cyanide in water by CFA **ASTM 7237** This analysis is carried out using procedures adapted from ASTM Method 7237 "Free Cyanide with Flow Injection Analysis (FIA) Utilizing Gas Diffusion Separation and Amperometric Detection". Free cyanide is determined by in-line gas diffusion at pH 6 with final determination by colourimetric analysis. **CN-SCN-VA** APHA 4500-CN CYANIDE Water Thiocvanate by Colour 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. Cvanide 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. 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-DIS-LOW-CVAFS-VA** Dissolved Mercury in Water by CVAFS(Low) EPA SW-846 3005A & EPA 245.7 Water 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 filtration (EPA Method 3005A) and 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). HG-TOT-LOW-CVAFS-VA Water Total Mercury in Water by CVAFS(Low) FPA 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 meg/L concentration of major cations and anions. Dissolved species are used where available. Minor jons are included where data is present. Ion Balance is calculated as: Ion Balance (%) = [Cation Sum-Anion Sum] / [Cation Sum+Anion Sum] Dissolved Metals in Water by CRC ICPMS MET-D-CCMS-VA APHA 3030 B&E / EPA SW-846 6020A Water 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 hotblock, or filtration (APHA 3030B&E). Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).

MET-DIS-LOW-ICP-VA

Dissolved Metals in Water by ICPOES Water

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).

EPA 3005A/6010B

APHA 3030 B&E / EPA SW-846 6020A

MET-T-CCMS-VA Water Total Metals in Water by CRC ICPMS

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 hotblock, or filtration (APHA 3030B&E). Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).

MET-TOT-LOW-ICP-VA	Water	Total Metals in Water by ICPOES	EPA 3005A/6010B
American Public Health As States Environmental Prot	ssociation, ar	nd with procedures adapted from "Test Metl cy (EPA). The procedures may involve prel	the Examination of Water and Wastewater" published by the nods for Evaluating Solid Waste" SW-846 published by the United minary sample treatment by acid digestion, using either hotblock or pled plasma - optical emission spectrophotometry (EPA Method
NH3-F-VA	Water	Ammonia in Water by Fluorescence	J. ENVIRON. MONIT., 2005, 7, 37-42, RSC
			modified from J. Environ. Monit., 2005, 7, 37 - 42, The Royal Society ation of trace levels of ammonium in seawater", Roslyn J. Waston et
NO2-L-IC-N-WR	Water	Nitrite in Water by IC (Low Level)	EPA 300.1 (mod)
Inorganic anions are analy	zed by Ion C	hromatography 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 analy	zed by Ion C	hromatography with conductivity and/or UV	detection.
PH-PCT-VA	Water	pH by Meter (Automated)	APHA 4500-H "pH Value"
This analysis is carried ou electrode	t using proce	dures adapted from APHA Method 4500-H	"pH Value". The pH is determined in the laboratory using a pH
It is recommended that thi	s analysis be	conducted in the field.	
PH-PCT-VA	Water	pH by Meter (Automated)	APHA 4500-H pH Value
This analysis is carried ou electrode	t using proce	dures adapted from APHA Method 4500-H	"pH Value". The pH is determined in the laboratory using a pH
It is recommended that thi	s analysis be	e conducted in the field.	
S-DIS-ICP-VA	Water	Dissolved Sulfur in Water by ICPOES	EPA SW-846 3005A/6010B
American Public Health As States Environmental Prot	ssociation, ar	nd with procedures adapted from "Test Metl cy (EPA). The procedures may involve prel	the Examination of Water and Wastewater" published by the hods for Evaluating Solid Waste" SW-846 published by the United minary sample treatment by acid digestion, using either hotblock or uctively coupled plasma - optical emission spectrophotometry (EPA
	n lost during	the sampling, preservation and analysis pre-	ulfide or other volatile forms of sulfur that may be present in occess. The data reported as total and/or dissolved sulfur represents
S-TOT-ICP-VA	Water	Total Sulfur in Water by ICPOES	EPA SW-846 3005A/6010B
American Public Health A States Environmental Prot	ssociation, ar	nd with procedures adapted from "Test Meth cy (EPA). The procedures may involve prel	the Examination of Water and Wastewater" published by the nods for Evaluating Solid Waste" SW-846 published by the United minary sample treatment by acid digestion, using either hotblock or uctively coupled plasma - optical emission spectrophotometry (EPA
	en lost during	the sampling, preservation and analysis pre-	ulfide or other volatile forms of sulfur that may be present in ocess. The data reported as total and/or dissolved sulfur represents
S2-T-COL-VA	Water	Total Sulphide by Colorimetric	APHA 4500-S2 Sulphide
This analysis is carried ou colourimetric method.	t using proce	dures adapted from APHA Method 4500-S2	"Sulphide". Sulphide is determined using the methlyene blue
SO4-IC-N-WR	Water	Sulfate in Water by IC	EPA 300.1 (mod)
Inorganic anions are analy	zed by Ion C	hromatography with conductivity and/or UV	detection.
TKN-F-VA	Water	TKN in Water by Fluorescence	APHA 4500-NORG D.
		dures adapted from APHA Method 4500-No estion followed by Flow-injection analysis wi	org D. "Block Digestion and Flow Injection Analysis". Total Kjeldahl th fluorescence detection.
** ALS test methods may inc	orporate mod	difications from specified reference methods	to improve performance.
			analytical analysis for that test. Refer to the list below:
Laboratory Definition Cod	le Labor	atory Location	

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 dry 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

Canada Toll Free: 1 800 668 9878



COC Number: 1 -

Page <u>1</u> of

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ALS Sample # (lab use only)	Sample Identification a (This description will ap			Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Dissolved	Dissolved Mercury	Nitrate,	Cl, Fl, Sulfate, conductivity, pH,	Anion S	Cyanide - Weak	Ammonia N (total),	Thiocyanate (SCN)	Sulphide	Total Inorganic	Dissolved Alkalinity			
	MVV09-18	• • • •		20-Mar-15	16:10	Water	R	R	R	R	R	R	R	R	R	R	R			9
	MW09-19			20-Mar-15	13:45	Water	R	R	R	R	R	R	R	R	R	R	R			9
	CH-P-13-05-/50			20-Mar-15	12;40	Water	R	R	R	R	R	R	R	R	R	R	R			9
	DUP-1			20-Mar-15	13:45	Water	R	R	R	R	R	R	R	R	R	R	R			9
	DUP-2			20-Mar-15	12:40	Water	R	R	R	R	R	R	R	R	R	R	R			9
	Travel Blank			20-Mar-25		Water	R	R	R	R	R	R	R	R	R	R	R			9
	FB-3			20-Mar-25	16:10	Water	R	R	R	R	R	R	R	R	R	R	R			9
Drinking	Water (DW) Samples ¹ (client use)	Special in	structions / Spec	ify Criteria to add o	on report (client l	Jse)			(11) (11)	SAMP	LE CO	NDIT	<u> </u>					e only		
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Are samples tak	en from a Regulated DW System? 'es IV No -	er sheet for full parameter list.				tce packs Yes I No I Custody seal intact Yes I No														
Are samples for human drinking water use?							INIITIAL COOLER TEMPERATURES °C						FINAL COOLER TEMPERATURES						Ŷ	
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Released by:	Date:	Time: Receive	ed by	\mathbf{N}	Date: 23-MAR-1		Rec	eived t	oy:					Date);		Time			
REFER TO BAC	K PAGE FOR ALS LOCATIONS AND SAMPLING	GINFORMATION	<u> </u>	WH	ITE - LABORATO		LOW	CLIEN	IT COF	γ					HAFMO	326+ 109 Fi	anUO4 Jan	uary 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.
1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

APPENDIX D

Response to Comments Received in Draft Report

Response to Comments Received in Draft Report (as Received May 7, 2015)

Comment No.	Page	Comment	Response						
1	ii	This table was not labelled/titled	This has been adjusted						
2	ii	This table was not labelled/titled	This has been adjusted						
3	1	Not clear throughout document which wells were previously reported damaged and which were found to be damaged during March 2015 sampling event	Previously reported damaged wells have now been distinguished from newly reported damaged wells in Table 1-1. SOW lists 62 wells included in the March sampling event. This includes MP09-01 which was previously reported as destroyed. The document now reads 61 wells included in the March sampling event, with 4 wells excluded due to previously reported damage,						
4	5	Assume status is reported as good because sample was collected, but if this well requires repairs, condition should be noted in table	blockage or destroyed. Status of well was changed to "damaged (new)" indicating the damage was first reported during the March field program.						
5	5	For some of the damaged wells noted here, water level parameters and headspace gas concentrations were still measured and are discussed in this report	Two wells which were previously reported as damaged (MW09-01) or dry/damaged (CH- P-13-02/10) were included in the March sampling event. Headspace gas was measured at each of these locations and discussed within the report. Gas measurements for CH-P- 13-03/10 and CH-P-13-04/35, excluded from the SOW due to previously reported damage or blockage, are not provided.						
6	8	Does not align with reference in section 6.0, which is listed as Yukon Government, 2002.	Added reference specific to Protocol for the Contaminated Sites Regulation #7						
7	12	See comment in Section 1.2 regarding clarification on damaged wells.	Wording has been revised to more accurately describe well status.						
8	12	See comment in Section 1.2 regarding clarification on damaged wells. If measurements (i.e., water level parameters/headspace gas concentrations) were still possible, please note that in text.	Added summary information on wells where gas measurements were collected but groundwater samples were not obtained.						
9	15	MW09-15 is noted as 'Frozen" in Table 1-1?	MW09-15 was found frozen during the time of sampling. Previous DTB measurements were recorded as 37.9 m, DTB in March 2015 was recorded as 14.07 m. A few mm of standing water was recorded on top of the ice (this was the value listed in Table 3-2). That value has been removed to avoid confusion.						
10	15	Not clear if this well is dry, damaged, or both.	CH-P-13-02/10 was found dry during the time of sampling. Bentonite was found present at the bottom of the well during previous sampling events and therefore the well status has been listed as dry/damaged throughout the report.						

Comment No.	Page	Comment	Response						
11	15	Frozen?	Yes. GSI-PC-02-B was recorded as frozen.						
12	16	Not recorded? Criteria?	Purging criteria was not recorded for this well. Note has been added to Table 3-2.						
13	16	Is this an accurate turbidity reading or is it contributed to the meter not functioning properly? Assumed erroneous because it's not recorded in Table A under field turbidity. Not noted in Section 3.2.6 or with respect to QA/QC. This is an extremely high value, should be spoken to somewhere in the report, whether erroneous or not.	Groundwater turbidity at sample site MW09-23 was out of range of instrument (>4000 NTU) and could not be properly quantified. This was a result of extremely turbid conditions and not a product of malfunctioning equipment. Although groundwater samples were obtained from this location, the well was found damaged in the field (the PVC is bent at the surface, presumably due to site grading). A note has been added to the results section indicating turbid conditions at this location.						
14	17	Do the dark shaded cells (exceedences) account for hardness/pH adjusted guideline values for each site? By briefly looking at the data I have assumed yes; although could you clarify this in the text and/or in the table. It is just unclear if the formulas from the 'Page 6 of 6' of the tables has been applied or not. Instead of writing "varies" in the CCME column, could the range of adjusted values be provided instead?	Each of these hardness / pH dependent parameters has been checked against an adjusted guideline value for each site. Our agreed upon method with Josee previously was to note "varies" in the guideline column, but we would be open to other methods as well. I have revised the notes (#1) to indicated that each is compared against a site-specific standard value where relevant.						
15	18	Specified here and in Table 1-1 as Frozen; but DTB and standing water measurements are recorded in Table 3-2?	MW09-15 was found frozen during the time of sampling. Previous DTB measurements were recorded as 37.9 m, DTB in March 2015 was recorded as 14.07 m. A few mm of standing water was recorded on top of the ice (this is the value listed in Table 3-2. This value has been removed to avoid confusion and the well has been marked as simply "frozen".						
16	18	There was only one sample obtained from this area	Wording has been revised.						
17	19	Six wells indicated as dry in Table 3-2. Not clear throughout report if CH-P-13- 02/10 is dry or damaged?	Five (5) dry wells were found in the tailings facility area. CH-P-13-02/10 has been moved to section 3.2.3 (Brown McDade Pit). Status of CH-P-13-02/10 remains listed as dry/damaged.						

Comment No.	Page	Comment	Response
18	19	Except for MW09-23, which was measured at >4,000 NTU in the field. If this was an erroneous measurement, consider removing from Table 3-2, with a note specifying as such. If value is to be considered an accurate measurement, needs to be discussed here.	Text in report has been revised.
19	19	Specify that it was still possible to collect a sample from this well	Text revised accordingly.
20	20	Were these data reviewed to determine potential sources of contamination or error?	ALS has indicated that this occurrence should not be considered an indication of contamination. Low concentrations of ammonia are occasionally found in travel blanks that are prepared too early in advance. Elevated potassium concentrations in travel blanks some potential contamination sourced from the environment. Details have been added to Section 3.3.1.
21	20	Please add clarity in terms of what this actually means; would like to see a sentence that speaks to why we have or don't have concerns with these results.	Details have been added to Section 3.3.1.
		See Comment Above	Details have been added to address this comment.
		For?	This sentence has been clarified.
22	22	Does this indicate damage, and is this why it is listed as such in Table 1-1?	Yes, CH-P-13-02/10 was found dry during the time of sampling. Bentonite was found present at the bottom of the well during previous sampling events and therefore the well status has been listed as dry/damaged throughout the report.