Appendix 42

Meadowbank 2020 Groundwater Monitoring Report

REPORT

2020 Groundwater Monitoring Report

Meadowbank Mine, Nunavut

Submitted to:

Agnico Eagle Mines Limited

Attn: Eric Haley

Submitted by:

Golder Associates Ltd.

1931 Robertson Road, Ottawa, Ontario, K2H 5B7, Canada

+1 613 592 9600

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1 e-copy - Agnico Eagle Mines Limited

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Table of Contents

1.0 INTRODUCTION 1

1.1 Background 1

2.0 METHODOLOGY 2

2.1 Water Level Monitoring 3

2.2 Purging of Monitoring Wells 3

2.3 Seepage Survey 4

2.4 Sample Collection 4

2.5 Sample Shipping 5

2.6 Additional Water Quality Sampling 6

3.0 2020 GROUNDWATER MONITORING 6

3.1 Comparative Guidelines 6

3.2 Quality Assurance/Quality Control 6

3.2.1 Reclaim Water Signature Parameters 8

4.0 RESULTS AND DISCUSSION 9

4.1 Water Level Monitoring and Flow Direction 9

4.2 2020 Seepage Survey 10

4.3 2020 Groundwater Monitoring from Seeps and Wells 11

4.4 Historical Water Quality 11

4.4.1 Available Data 11

4.4.2 2003 to 2020 Water Quality Trends 12

4.5 Evaluation of Effects on Groundwater from Reclaim Water 22

4.6 Quality Assurance/Quality Control 22

5.0 SUMMARY OF MONITORING WELL CONDITIONS AND SAMPLING EQUIPMENT 23

6.0 CONCLUSIONS 24

7.0 RECOMMENDATIONS 25

8.0 CLOSURE 27

9.0 STUDY LIMITATIONS 28

10.0 REFERENCES 29

TABLES (embedded in text)

Table 1: Summary of Samples Collected by Golder in 2020 4

Table 2: Analytical Requirements 5

Table 4: 2020 Meadowbank Water Levels in Monitoring Wells and Nearby Surface Water Features 9

Table 5: Summary of Available Meadowbank Groundwater Quality Data, 2003 to 2020 13

Table 7: Concentration of Constituents that Relate to Groundwater Salinity 21

Table 9: Summary of Nitrogen Tank Pressures at Each Monitoring Well 24

TABLES (appended after text)

Table 3: 2020 Groundwater Monitoring Program Water Quality Results

Table 6: Interpretation of 2020 Groundwater Quality Data

Table 8: 2020 Groundwater Monitoring Program Water Quality QA/QC

FIGURES (embedded in text)

Figure 4-1: Historical concentrations of total arsenic in Meadowbank groundwater by area, between 2003 and 2020 14

Figure 4-2: Historical concentrations of chloride in Meadowbank groundwater by area, between 2003 and 2020 15

Figure 4-3: Historical concentrations of total copper in Meadowbank groundwater by area, between 2003 and 2020 16

Figure 4-4: Historical concentrations of total cyanide in Meadowbank groundwater by area, between 2003 and 2020 17

Figure 4-5: Historical concentrations of total iron in Meadowbank groundwater by area, between 2003 and 2020 18

Figure 4-6: Historical concentrations of sulphate in Meadowbank groundwater by area, between 2003 and 2020 19

Figure 4-7: Concentrations of Sulphate versus Sum Total Calcium and Total Magnesium, 2017 to 2020 20

FIGURES (appended after text)

Figure 1: 2020 Water Sampling Stations

Figure 2: 2020 Seepage Survey Stations

Figure 3: 2020 Groundwater and Surface Water Elevations

APPENDICES

APPENDIX A
Monitoring Well Development Logs

APPENDIX B
Seepage Survey Photographs

APPENDIX C
Laboratory Certificates of Analysis

APPENDIX D
2020 Stiff Diagrams

APPENDIX E
Historical Groundwater Monitoring Program Water Quality Data, 2003 to 2020

1.0 INTRODUCTION

This document provides a summary of the 2020 groundwater monitoring program carried out at the Meadowbank mine site (Meadowbank) and a summary of water quality results obtained.

The 2020 groundwater monitoring program was completed by Golder Associates Ltd. (Golder) on behalf of Agnico Eagle Mines Limited (Agnico Eagle) in accordance with Amended Water Licence No. 2AM-MEA1530 issued by the Nunavut Water Board (NWB) on July 23, 2015 (Water License No. 2AM-MEA1525) and updated on March 27, 2020, Nunavut Impact Review Board (NIRB) Project Certificate (PC) No. 004, Condition No. 8 and the last approved Meadowbank Gold Project Groundwater Monitoring Plan Version 11 dated March 2020 (GWMP). Table 2 of Schedule I of the Meadowbank Water Licence states that the groundwater must be monitored annually for Group 2 chemical parameters listed this Schedule. As per NIRB PC No. 004, groundwater monitoring program is to be completed bi-annually, however it was only undertaken once in 2020 due to travel restrictions related to COVID-19.

The objective of the 2020 groundwater monitoring program is to document groundwater and surface water quality for effects related to mining operations associated with the historic deposition of tailings in the tailings storage facility and current practices involving In-Pit Tailings Deposition.

1.1 Background

Portage Pit-A, Portage Pit-E and Goose Pit were developed (already mined out) in a through talik (unfrozen ground that extends to the base of the permafrost). Portage Pit-E and Goose Pit are located in the through talik underneath Third Portage Lake, while Portage Pit-A is located in the through talik underneath Second Portage Lake. The tailings storage facility (TSF) is located in the basin of the north arm of Second Portage Lake and is also believed to be situated over a through talik. Tailings deposition was discontinued in April 2019 at the South Cell TSF and July 2019 at the North Cell TSF. The South Cell TSF was drained in 2019, however there still remains a regional inflow of water (not representative of tailings water). In-Pit Tailings Deposition (IPD) operations commenced at Meadowbank in July 2019 to accommodate the storage of tailings waste produced from Whale Tail Mine in addition to tailings produced from the Meadowbank Mine. Tailings were deposited in Goose Pit from July 2019 to August 19, 2020, commenced in Portage Pit-E (Pit-E) on August 20, 2020 and is on-going. In 2020, reclaim water was directed to Goose Pit, Portage Pit-A and Portage Pit-E. Portage Pit-A received reclaim water from the South Cell TSF (spring freshet only), Goose Pit and Portage Pit-E and seepage from East Dike that was not discharged to Second Portage Lake

Groundwater monitoring wells have been installed to provide information on groundwater quality in the through taliks of Third Portage Lake and the north arm of Second Portage Lake prior to and during mine operation and closure. The groundwater monitoring program was initiated prior to mining operations, in 2003, where a total of 14 groundwater monitoring wells were installed between 2003 to 2016 to characterize the groundwater within the five site areas: South and Central Dike, East Flat (East Dike area), Goose Pit, Portage Pit-A and Portage Pit-E. During this time, a total of 34 groundwater samples and 21 duplicates were collected from the monitoring network.

The reliability of the traditional monitoring well is undermined by its fragility in the permafrost environment and in the active mine site, which resulted in many of the monitoring wells becoming inoperable or destroyed over time. Alternate means of collecting groundwater from within the talik and open pit footprint include collecting groundwater that infiltrated into production holes at the base of pits; via horizontal borehole drilled in open pit walls into the talik or groundwater seeps into the open pits. The groundwater monitoring program was revised in 2017 following recommendations provided by Environment and Climate Change Canada to improve data collection for water quality model updates. A review of the available historical groundwater quality data claimed the information was not truly representative of real conditions due to the ongoing presence of de-icing salt and calcium chloride brine used to prevent the boreholes from freezing during the drilling program and historical sampling methodologies that resulted

in groundwater samples being more diluted or having higher sediment loadings than the representative groundwater (SNCL 2019). In 2018, an extensive environmental monitoring campaign was conducted to sample groundwater across the mine site investigate groundwater and contact water quality in relation to tailing pore water seepage (SNCL 2019). Groundwater samples were collected from horizontal boreholes in 2017 and 2018 in Portage Pit-E, and from pit wall seeps in Goose Pit, Portage Pit-A and/or Portage Pit-E since 2016 depending on accessibility. Four additional monitoring wells were added to the network in 2018 (MW-IPD-01(s), MW-IPD-01(d), MW-IPD-07 and MW-IPD-09) prior to the start of the IPD operations in July 2019. Environmentally friendly drill fluid DD2000 (copolymer of acrylamide and sodium acrylate) was used for the drilling of these boreholes and heated water was circulated continuously through the borehole until the wells were installed (SNCL 2019).

A total of five (5) monitoring wells remained operable in 2020, in addition to the two pumping wells at the East Dike location (ST-8-North and ST-8-South). In 2020, the five monitoring wells were sampled by Golder with the addition of one pit wall seepage location and the Stormwater Management Pond. The locations of the current and historical water quality monitoring stations completed as part of the annual groundwater monitoring program are illustrated in Figure 1.

2.0 METHODOLOGY

The 2020 groundwater monitoring program was carried out in accordance with Table 2 of Schedule I of the Meadowbank Water Licence and the Groundwater Monitoring Plan Version 11 dated April 2020. Samples were analyzed for the Group 2 suite of chemical parameters listed in Table 1 of that Schedule, namely: ammonia-nitrogen, calcium, chloride, conductivity, dissolved organic carbon (DOC), hardness, nitrate, nitrite, ortho-phosphate, pH, potassium, reactive silica, sodium, sulphate, total dissolved solids (TDS), total kjeldahl nitrogen (TKN), total and speciated alkalinity (carbonate, bicarbonate), total organic carbon (TOC), total phosphorus, total suspended solids (TSS), turbidity, total cyanide, free cyanide and Weak Acid Dissociable (WAD) cyanide (the latter is triggered based on the results of other programs performed by Agnico Eagle) and the following total and dissolved metals: aluminum, antimony, arsenic, boron, barium, beryllium, cadmium, copper, chromium, iron, lead, lithium, manganese, mercury, molybdenum, nickel, selenium, tin, strontium, titanium, thallium, uranium, vanadium, and zinc.

The groundwater monitoring program was completed by Golder personnel in September 2020 at the following five (5) monitoring well locations: MW16-01, MW-IPD-01(s), MW-IPD-01(d), MW-IPD-07, and MW-IPD-09, west Pit-E wall seepage (Pit-E Seep-27 m) and at the Stormwater Management Facility (refer to Figure 1). A seepage survey of the west walls of Pit-A and Pit-E was also conducted by Golder at the request of Agnico Eagle on September 14, 2020. The existing monitoring wells are equipped with a well-specific heating cable through the permafrost zone (40 to 59 metres along the borehole) which is continuously energized to prevent the well from freezing. A summary of the activities performed by Golder is listed below:

- Groundwater level monitoring at monitoring wells MW16-01, MW-IPD-01(s), MW-IPD-01(d), MW-IPD-07, and MW-IPD-09;
- Development (purging) of five monitoring wells;
- Groundwater sampling at five monitoring wells;
- Surface water sampling at the Stormwater Management Facility (SWMF); and,
- Seepage survey of the west walls of Pit-A and Pit-E, and groundwater sampling of Pit-E Seep. Groundwater sampling from seepage observed on the west wall of Pit-A was not completed due to safety considerations. The surveyed locations of the seepage monitoring stations are shown on Figure 2.

2.1 Water Level Monitoring

Golder personnel measured the water level in each of the five monitoring wells prior to the start of the purging activities using a water level meter tape manufactured by Heron Instruments Inc. supplied by Agnico Eagle. A handheld GPS was used to note the approximate elevation of the seepage sample collected from the west wall of Pit-E. Agnico Eagle provided surveyed surface water elevation data for the South Cell TSF, Goose Pit, Pit-E, Pit-A, Second Portage Lake and Third Portage Lake.

2.2 Purging of Monitoring Wells

IPD Wells

Purging of these monitoring wells was performed using the low flow portable double valve sampling pumps that were installed inside each of the four IPD wells during construction. The pumps were activated by pushing compressed nitrogen gas into low density polyethylene (LDPE) tubing attached to the sampling pump, which caused groundwater to rise to the surface through a flow through cell where water quality and volume was monitored during purging. A Model 464 Electronic Pneumatic Pump Control Unit (maximum pressure of 250 pounds per square inch, psi) manufactured by Solinst Canada Ltd. was used at the wellhead to control the flow rate of the pumps during development. The pressure set on the control box was adjusted accordingly for each monitoring well and the flow rate was monitored to ensure the water level remained stable during pumping, indicating water was being pulled from the bedrock formation.

MW-16-01 Well

This well was purged using a combination of the air lifting method and low flow portable double valve sampling pump as previously described for the purging of the four IPD wells. The well was initially purged using an air compressor (180 cubic feet per minute capacity) at a pressure set to 60 psi attached to a ½ inch inner diameter (5/8 inch outer diameter) high-density polyethylene (HDPE) Waterra® tubing lowered to 41 metres. A total of 785 Litres (L) of water were removed from MW-16-01 using the air lifting technique (7.2 well volumes) to achieve stability in the water quality. A low flow portable double valve sampling pump was lowered to a depth of 70 metres for the remainder of the well development (20.2 L) to confirm the stability of the water quality and to collect the groundwater sample after purging a total of 815.2 L.

Field Measurements on Groundwater

In-situ groundwater parameters measured during development included temperature, pH, conductivity, oxidation reduction (redox) potential, salinity and total dissolved solids, using a Hanna HI 9829 Multiparameter inserted into a flow through cell. An open-air container was used to measure turbidity (HACH 2100Q Portable Turbidity meter) and dissolved oxygen (YSI DO Optical probe). Each well was deemed sufficiently purged following the stabilization of the field parameters. Field measurements of redox potential, salinity and total dissolved solids were not recorded during the 2020 monitoring program at MW-IPD-07, MW-IPD-01(s), MW-IPD-01(d) during the development and collection of the samples on September 7 to 9, 2020 due to field equipment shipment delays. Dissolved oxygen was not monitored either while purging MW-16-01 using the airlifting technique, due to the introduction of oxygen into the water column.

Well development logs including a summary of the flow rates, volume removed, water levels and field parameters recorded for each well are included in Appendix A.

2.3 Seepage Survey

On September 17, 2020 Golder conducted a seepage survey which involved the visual inspection for the presence of seeps downstream and pit side (west walls of Pit-A and Pit-E) from the South Cell TSF. Agnico Eagle personnel experienced with pit work and pit wall inspections accompanied Golder into the accessible locations of Pit-E for the survey. The west wall of Pit-A could not be safely accessed and therefore was not surveyed.

2.4 Sample Collection

Groundwater sampling was performed by Golder personnel following stabilization of the field parameters during purging. Dedicated polyethylene LDPE tubing was used for each groundwater sample location.

A summary of the samples collected as part of the 2020 groundwater monitoring program is presented in Table 1.

Table 1: Summary of Samples Collected by Golder in 2020

Location	Type	2020 Purge Volume (L)	Screen Depth (m)	Pump Depth (m)	Sampling Date(s)
MW-IPD-01(s)	Monitoring Well	35.5	51 - 69	60	8-Sep-20
MW-IPD-01(d)	Monitoring Well	38	163 -181	175	7-Sep-20(2) 12-Sep-20(3,4)
MW-IPD-07	Monitoring Well	21.8	42 - 50	40	9-Sep-20
MW-IPD-09	Monitoring Well	24.6	62 - 80	70	10-Sep-20
MW-16-01	Monitoring Well	815.2(1)	89 - 101	60	15-Sep-20(5)
SWMP	Pond water	-	-	-	17-Sep-20
Pit-E seep-27 m	Pit wall seepage	-	-	-	17-Sep-20

Notes:
- not applicable; L = litres
(1) Sum of 2020 purge volume removed using the air lifting method (785 L) and low flow sampling (30.2 L)
(2) Sample collected after purging 20.5 L
(3) Sample collected after purging an additional 17.5 L
(4) Trip blank also collected on September 12, 2020
(5) Equipment blank also collected on September 15, 2020

Groundwater samples were collected in triplicate from MW-IPD-01(s), MW-IPD-01(d), MW-IPD-07, and MW-IPD-09, and duplicate at MW-16-01 due to time constraints. A second sample set was collected from MW-IPD-01(d) following additional development to confirm a representative groundwater sample was obtained. An equipment and trip blanks were also collected for quality assurance/quality control (QA/QC) purposes.

The Pit-E seepage sample (Pit-E seep-27 m) was collected on September 17, 2020 from the west side of the pit wall (refer to Figure 1) near the lowest accessible point that was being filled with tailings at the time of sample collection at an approximate elevation of 27 metres (refer to Figure B-2 in Appendix B for photograph of sample location). The seepage sample was collected directly from wall runoff. No accessible open fracture could be located suitable for the insertion of a LDPE tubing to prevent the sample coming into contact with the atmosphere.

The water samples were collected and preserved in the field following the laboratory-specified protocols outlined in Table 2.

Table 2: Analytical Requirements

Analytical Parameters	Preparation and Preservation Protocols
pH, electrical conductivity, total and speciated alkalinity (carbonate, bicarbonate), anions (bromide, chloride, fluoride and sulphate), reactive silica, TDS, TSS, and turbidity	plastic bottle, unfiltered and unpreserved
ammonia, COD, TKN, TOC, nitrate, nitrite, total phosphorous	plastic bottle, unfiltered and preserved to pH<2 with sulphuric acid
DOC, ortho-phosphate	plastic bottle, field filtered to 0.45 microns and preserved to pH<2 with sulphuric acid
total, free, WAD cyanide	plastic bottle, preserved with sodium hydroxide
Metals (total and dissolved): aluminum, antimony, arsenic, barium, beryllium, bismuth, boron, cadmium, calcium, chromium, copper, iron, lead, lithium, magnesium, manganese, molybdenum, nickel, potassium, selenium, tin, sodium, strontium, titanium, thallium, uranium, vanadium and zinc	plastic bottle, unfiltered(1) or filtered(2) and preserved to pH<2 with nitric acid
mercury	glass bottle, unfiltered(1) or filtered(2) and preserved to pH<2 with hydrochloric acid

Notes:
(1) Total constituent, unfiltered
(2) Dissolved constituents, field filtered to 0.45 microns
(3) Hardness calculated from sum of dissolved calcium and magnesium

An additional unpreserved bottle was filled with sample collect from each of the four IPD monitoring wells: MW-IPD-09(s), MW-IPD-01(d), MW-IPD-07 and MW-IPD-09. The additional samples were sent to ALS Winnipeg by Agnico Eagle personnel and are currently on hold for the potential future analysis of oxygen and hydrogen isotopes (one year holding time).

All of the laboratory chemical and physical analyses were performed by ALS Environmental (ALS) in Vancouver, British Columbia or Winnipeg, Manitoba. The results of the field and laboratory chemical analyses conducted during the 2020 groundwater monitoring program are presented in Table 3 included at the end of the report and Appendix C.

2.5 Sample Shipping

Duplicate samples were submitted for analysis, while the triplicate or additional sample set (MW-IPD-01(d) collected on September 12, 2020) was kept on site as backup and disposed of upon receipt of the samples by the analytical laboratory. A single set of samples were submitted for analysis from the SWMP, Pit-E seep-27 m, MW-16-01, and MW-IPD-01(d) during the two sampling events (initial and second sample collected following additional well development). Samples were kept refrigerated and shipped to ALS Winnipeg within 24 hours of sample collection. Samples were placed in coolers with ice packs and entered on a chain-of-custody form before being shipped from site.

2.6 Additional Water Quality Sampling

Agnico Eagle personnel collected water samples from the following monitoring stations in 2020 for water quality analysis as part of the water license requirements:

- East Dike seepage discharge station ST-8 (previously referred to as ST-8-North), which is identified as ST-MMER-3 when the discharge is directed to Pit-A and as ST-S-1 when the discharge is directed to Second Portage Lake.
- Reclaim water stations ST-17 Lake (Portage Pit-A), ST-19 Lake (Portage Pit-E) and ST-20 Lake (Goose Pit).
- Historic reclaim water stations ST-21 South located within the South Cell TSF and seepage from the Central Dike (ST-S-5).

The 2020 water quality data from these sampling stations was provided to Golder and results were used to assess potential effects of reclaim water on the groundwater quality at the existing monitoring network stations. Stations ST-21 South, ST-17 Lake, ST-19 Lake and ST-20 Lake were sampled on a monthly basis during periods of open water and analyzed for Group 1 (ST-21 South only) or the Group 2 chemical parameters listed in Table 2 Schedule I of the Meadowbank Water License. East Dike seepage station ST-8 (referred to as ST-MMER-3 or ST-S-1) was sampled on weekly basis for Group 3 chemicals parameters between July and October 2020. Central Dike seepage station ST-S-5 was sampled on a weekly basis and analyzed for a combination of Group 1 and 2 chemical parameters between July and October 2020. The locations of the water quality monitoring stations sampled by Agnico Eagle are illustrated in Figure 1. The water sample collected from ST-17 Lake, ST-19 Lake and ST-20 Lake were collected from accessible points in the pit as they fil.

Agnico Eagle also sampled groundwater collected from pit sump stations ST-17 (Pit-A), ST-19 (Pit-E) and ST-20 Sump (Goose Pit) throughout 2020. However, this water quality data was not integrated into the monitoring program and discussed in the report as the pit sumps were previously identified as not being representative of groundwater due to influences from nearby mining activities (i.e., drilling, blasting and excavating, etc.) as stated in Section 2.3.2. of the 2020 GWMP.

3.0 2020 GROUNDWATER MONITORING

3.1 Comparative Guidelines

Groundwater monitoring data is compared to Third Portage Effluent Discharge Limits (maximum average concentration) stated in Part F of the Meadowbank Water Licence 2AM-MEA1530 for illustrative purposes only, since these regulated parameters apply to effluent, not site contact water or groundwater quality.

3.2 Quality Assurance/Quality Control

Guideline procedures provided by the USEPA (1994) were followed during the sampling program to document that the samples collected from the monitoring wells were representative of water flowing through the rock formations. These procedures included the following:

- Measurement of field parameters at selected intervals until stable readings (within 10% of each other) were acquired, with the exception of turbidity for MW-IPD-01(d) and turbidity and dissolved oxygen at MW-IPD-09. The turbidity and/or dissolved oxygen at these wells had not stabilized within 10% of each other at the time of sampling due to time constraints.
- Minimizing the exposure of the sampled water to the atmosphere.

- Using compressed, inert gas (nitrogen) to lift water from the well for sampling to avoid changing the redox properties of the formation water.
- Conducting in-situ measurements of sensitive chemical parameters (temperature, pH, conductivity) and comparing these values with those obtained at the laboratory.
- Keeping the samples refrigerated from the time of collection until shipment to the laboratory.
- Shipping the samples to the laboratory in temperature-regulated coolers within the specified sample holding times.

Transit times resulted in the exceedance of the holding times for nitrate, nitrite, ortho-phosphate, turbidity and pH (0.25 days) for all samples. The 7-day holding time was also exceeded for TDS and TSS for the samples collected from MW-IPD-01(d), MW-IPD-07 and the trip blank.

Analytical repeatability was tested by assessing the similarity between duplicate pairs of results, where available. For each duplicate pairs of analysis where both results were higher than 5 times the method detection limit (MDL), the relative percent difference (RPD) was calculated as follows:

$$\text{RPD} = \frac{\text{absolute [difference (concentration of a given parameter)]}}{\text{[average (concentration of a given parameter)]}} \times 100$$

Per USEPA recommended methods (USEPA, 1994), an RPD of 20% or less was considered acceptable. Where one or both results of the duplicate pair were less than 5 times the MDL, a margin of +/- MDL was considered acceptable.

The concentration of main anions (bicarbonate, bromide, chloride, fluoride and sulphate) and cations (ammonium-nitrogen, calcium, magnesium, sodium and potassium) of groundwater were used to calculate Charge Balance Error (EBE) as a reliability check for the analysis, where the sum (Σ) of cations (in meq/L) should equal the sum of anions (in meq/L) as follows (Hounslow, 1995):

$$\text{CBE} = \frac{[\Sigma\text{Cations} - \Sigma\text{Anions}]}{[\Sigma\text{Cations} + \Sigma\text{Anions}]} \times 100$$

The USEPA (1994) recommends a charge imbalance error of +/- 10% or less for the laboratory results to be considered acceptable. For low concentration samples, a charge balance error of +/- 15% is considered acceptable due to small deviations in these values which can lead to significant differences in charge balance calculation results.

The observed concentrations of cations and anions are low in the water samples collected. As the charge balance is a relative error calculation between cation and anion concentrations, small deviations are considered as acceptable.

3.2.1 Reclaim Water Signature Parameters

A reclaim water signature parameter is useful in determining the presence/absence of tailings reclaim water effect on water resources; assessing the degree of tailings reclaim water effect on water resources, and, in determining the extent of reclaim water effects near the tailing storage facilities and in-pit deposition areas. The following characteristics are expected of a reclaim water signature parameter:

- There is a large contrast in the concentration of the parameter in the reclaim water source compared to background water quality. It is present in relatively low concentrations in background near the site and has a significantly higher concentration in reclaim water generated from the management of mine tailings.
- The concentration of reclaim water signature parameter should not vary significantly over time at background monitoring locations (i.e., low variability is desirable) in order to be a reliable indicator of reclaim water effect on groundwater.
- The trend in parameter concentration must be relatively consistent over time in terms of the persistence of elevated levels in reclaim water relative to background conditions.
- Conservative parameters which are relatively mobile in the groundwater and not subject to significant attenuation mechanisms (i.e., adsorption, biological uptake, precipitation, etc.,) are most appropriate for characterizing the extent of reclaim water and other mining operation effects on water.
- Parameter concentrations in groundwater should exhibit spatial variations in concentration relative to the location of the tailings placement and physical hydrogeological setting of the site (i.e., higher parameter concentrations immediately downgradient of TSF with progressively lower concentrations with increasing distances from the TSF).

Meadowbank tailings reclaim water chemistry was historically represented by the water quality at sampling station ST-21-South located within the South Cell TSF during active tailings deposition. Station ST-S-5 data may also be representative of reclaim water (mixed with dike rock contact water) seepage through the Central Dike downgradient of the TSF. It is noted that the South Cell TSF was emptied in 2019, however there remains a regional water inflow to the TSF pond at ST-21 station which is unrelated to tailings water. In 2020, surface water quality at stations ST-17 Lake located in the partially flooded Portage Pit-A, ST-19 Lake located in the partially flooded Portage Pit-E and ST-20 Lake located in partially flooded Goose Pit are representative of flooded pit with in-pit disposal reclaim water. Agnico Eagle personnel monitor water quality at these locations on a regular basis as part of the requirements of the Water License. The available 2020 water chemistry was provided to Golder for the five stations (ST-21-South, ST-S-5, ST-17 Lake, ST-19 Lake and ST-20 Lake) as part of the 2020 groundwater assessment. The approximate locations of the additional 2020 water sampling stations completed by Agnico Eagle personnel are shown in Figure 1.

Meadowbank reclaim water signature parameters include: ammonia nitrogen, arsenic, chloride, copper, cyanide, iron, and sulphate (SNCL 2019; SNCL 2020; AEM 2020). In 2020, concentrations of reclaim signature parameters were elevated at stations ST-17 Lake, ST-19 Lake and ST-20 Lake related to the in-pit disposal of reclaim water and/or IPD in Pit-E (ST-19 Lake) and Goose Pit (ST-20 Lake). Groundwater constituents such as calcium, manganese, magnesium, potassium and sodium are also present at elevated concentrations in the reclaim water and much lower in the background groundwater, which can also be used to compare the chemical signature of natural groundwater to samples with a reclaim water signature. Salinity of groundwater is of interest in open pit inflow water quality and is also used as part of the comparative groundwater assessment.

4.0 RESULTS AND DISCUSSION

4.1 Water Level Monitoring and Flow Direction

Water levels measured in the monitoring wells and during the seepage survey conducted by Golder personnel as part of the September 2020 groundwater monitoring program are presented in Table 4. The water level data presented in Table 4 also include surface water elevations of the South Cell TSF, Second Portage Lake, Third Portage Lake and flooded mined Pit-A and IPD pits (Goose Pit and Pit-E) based on data provided by Agnico Eagle measured between September and November 2020. Figure 3 illustrates the available surface water and groundwater elevations measured between September and November 2020.

Table 4: 2020 Meadowbank Water Levels in Monitoring Wells and Nearby Surface Water Features

Area	Location	Ground Surface Elevation (masl)(1)	Top of Well Head Casing (masl)(2)	Screened Interval (m)(3)	Screened Elevation (masl)	Date	Water Level (masl)
South Cell / Central Dike	South Cell TSF					24-Sep-20	138.6(4)
	ST-S-5(5)					13-Sep-20	114.7
	MW-16-01	119.9	120.5	88.1 to 101.0	34.4 to 25.0	13-Sep-20	115.8
East Flat	MW-IPD-01(s)	130.1	130.8	50.8 to 69.8	79.3 to 60.3	8-Sep-20	116.5
	MW-IPD-01(d)	130.1	130.4	162.5 to 181.4	-32.4 to -51.3	7-Sep-20	116.4
Pit-A	ST-17 Lake					16-Nov-20	81.1
Pit-E	Pit-E seep-27 m	27(6)	-	-	-	17-Sep-20	>27(7)
	ST-19 Lake					24-Sep-20 16-Nov-20	23.9(4) 34.2(4)
	MW-IPD-09	133.2	134.0	61.9 to 80.1	71.4 to 52.4	10-Sep-20	132.0
Second Portage Lake	Second Portage Lake					4-Oct-20	132.8
Third Portage Lake	Third Portage Lake					27-Aug-20	133.6(4)
Goose Pit	MW-IPD-07	133.4	133.9	41.2 to 50.7	92.2 to 82.7	9-Sep-20	132.9
	ST-20 Lake					23-Aug-20	114.6(4)

Notes:
masl = metres above sea level; m = metres, '-' = not applicable
(1) Ground surface elevation data obtained from borehole log provided by Agnico Eagle.
(2) Top of well head casing elevation calculated from height of well head casing measured in field above ground surface for the four IPD wells. Top of well casing for MW-16-01 is provided in borehole log provided by Agnico Eagle.
(3) All IPD monitoring wells are installed within vertical boreholes. Monitoring well MW-16-01 is installed within 70 degree inclined borehole. Screened interval (m) referenced metres along hole from vertical.
(4) Water level elevation provided by Agnico Eagle.
(5) Dike seepage station ST-S-5 is sampled from the Central Dike Downstream Pond which is located at the downstream toe of Central Dike.
(6) Elevation is approximate. Elevation measured using handheld GPS during pit wall seepage survey completed by Golder.
(7) Groundwater elevation at west wall seep is assumed to be greater than the approximate elevation base of Pit-E during sampling.

Regional groundwater flow is interpreted east towards the Third Portage Lake and Second Portage Lake. On a local scale, surface and groundwater flow is influenced by local topography and mining operations involving previously mined pits and tailings storage operations (TSF and IPD).

Based on the available August through to November 2020 groundwater and surface water elevation data, the flow of water within the subsurface in vicinity of the Meadowbank mining operations is interpreted as follows:

- MW-16-01, Pit-A and Pit-E are located hydraulically downgradient of the South Cell TSF and Central Dike, water from the South Cell TSF flows east towards the Central Dike, MW-16-01 and the west wall of Pit-E. It is noted that ST-S-5 (Central Dike Downstream Pond) is also located hydraulically downgradient of the South Cell TSF and the Central Dike
- Pit-A and Pit-E are located hydraulically downgradient of the adjacent Second Portage Lake and Third Portage Lake, therefore the partially flooded pits are not a source of contamination to the adjacent lakes. However, Pit-A and Pit-E are located downgradient of the South Cell TSF and therefore the pits could receive contaminants originating the TSF.
- MW-IPD-01(s) and MW-IPD-01(d) are located hydraulically downgradient of Second Portage Lake and upgradient of MW-16-01 and the Central Dike and South Cell TSF. Surface water from Second Portage Lake is interpreted to flow west towards MW-IPD-01(s), MW-IPD-01(d) and the Central Dump.
- MW-IPD-09 is located hydraulically downgradient of Third Portage Lake and upgradient of Pit-E. Surface water from Third Portage Lake is interpreted to flow west towards MW-IPD-09 and Pit-E.
- MW-IPD-07 is located hydraulically downgradient of Third Portage Lake and upgradient of the flooded Goose Pit, therefore surface water from Third Portage Lake is interpreted to flow west towards MW-IPD-07 and the Goose Pit.

4.2 2020 Seepage Survey

Upon conducting a seepage survey of the west walls of Pit-A and Pit-E on September 17, 2020 groundwater seepage was observed at various points. Photographs of the seepage survey are included in Appendix B at the end of the report. Limited accessibility within the pits related to safety concerns affected what was observable.

Portage Pit-A

Pit-A walls were not accessible. The west walls were viewed from various vantage points along the east side of the pit and some seepage was observed.

Portage Pit-E

Pit-E walls were accessible with guidance from qualified Agnico Eagle personnel. Seepage (both flowing and frozen) was observed on the west walls of the pit. A seepage sample was collected from the lowest accessible point along the west wall of Pit-E, near the current placement of tailings and the results are discussed in Section 4.2. Some iron staining was observed within the mined lifts of Pit-E.

4.3 2020 Groundwater Monitoring from Seeps and Wells

The 2020 results of the groundwater, pit wall seepage and stormwater management pond water quality analyses are compared to the maximum average concentration (MAC) of the Third Portage Effluent Discharge Limits (criteria) in Table 3 at the end of the report. Laboratory analytical reports are included in Appendix C. In the absence of groundwater criteria, the use of the water license effluent criteria are for comparative purposes only; they are not directly applicable to groundwater.

The 2020 groundwater quality results are generally consistent with historical data. Exceptions include arsenic and chloride, where increased concentrations were observed at the Pit-E west wall seepage monitoring location (Pit-E seep-27 m) compared to historic samples collected from groundwater seeps along the north and southwest walls and horizontal boreholes. Concentrations of arsenic, calcium, copper, manganese, magnesium, potassium, sodium and sulphate continue to trend upward at MW-16-01.

All parameter concentrations observed in 2020 met the MAC effluent criteria with the exception of TSS and total aluminum. Concentrations of TSS exceeded the MAC (15 mg/L) at monitoring well MW-IPD-01(d)) and the grab sample collected from the SWMP. Concentrations of total aluminum also exceeded the MAC (1.5 mg/L) at monitoring well MW-IPD-01(d).

The stiff diagrams for the 2020 groundwater monitoring program are provided in Appendix D. Stiff diagrams are used to display the major ion composition of a water sample in order to rapidly compare water the chemical signature of waters from different sources, such as natural groundwater compared to reclaim water chemistry. Based on the stiff diagrams, the major ion compositions of groundwater are similar and consistent with the 2018 and 2019 historical diagrams (SNCL, 2019; 2020). The groundwater samples collected from MW-16-01 and Pit-E west wall seepage (Pit-E seep-27 m) indicate a chemical signature trending towards that of reclaim water based on the September 2020 data provided by Agnico Eagle for surface water stations ST-17 Lake (Pit-A), ST-19 Lake (Pit-E), ST-20 Lake (Goose Pit), ST-21-South and ST-S-5. The chemical signature of the Pit-E wall seepage sample is more similar to the chemical signature of the reclaim water sample collected directly from the South Cell TSF (ST-21-South), while the chemical signature of MW-16-01 more closely resembles that of the Central Dike seepage sample (ST-S-5). The major ion dissolved content of surface water at ST-21-South has generally declined since 2019, which may the related to the interruption of the tailings disposal in the TSF in July 2019.

4.4 Historical Water Quality

4.4.1 Available Data

The groundwater monitoring program was initiated in 2003. A total of 14 groundwater monitoring wells were installed between 2003 to 2016 to characterize the groundwater within the five site areas: South and Central Dike, East Flat (East Dike area), Goose Pit, Portage Pit-A and Portage Pit-E. During this time, a total of 34 groundwater samples and 21 duplicates were collected from the monitoring network. The available historical groundwater monitoring program analytical results from 2003 to 2020 are included in Appendix E. A summary of the available Meadowbank groundwater quality data completed as part of the annual groundwater monitoring program is summarized in Table 5 included in Section 4.4.2.

4.4.2 2003 to 2020 Water Quality Trends

The interpretation of the 2020 groundwater quality data along with relevant comments are summarized in Table 6 included at the end of the report.

Concentrations of arsenic (total), chloride, copper (total), cyanide (total), iron (total), and sulphate, including sample duplicates are plotted for each monitoring location in Figures 4-1 through 4-7. These parameters are typically associated with the chemical signature of the reclaim water for the Meadowbank mining operations as discussed in Section 3.2.1. It is noted that metal constituents in groundwater are measured in the dissolved phase as elevated dissolved metals are of interest in water treatment processes and can often not be filtered out. The total metal concentrations reported for arsenic, copper and iron represent a sum of the dissolved metal concentration and the particulate (insoluble) metal concentration for each constituent. Total concentrations of arsenic, copper and iron are used as part of this assessment since the groundwater quality data is being compared to the Third Portage Lake Effluent Discharge Limits.

The available groundwater data is grouped based on the following site areas: South Cell and Central Dike, East flat (East Dike area), Goose Pit, Portage Pit-A and Portage Pit-E (refer to Table 5), where water quality is shown for different sampling locations within the given area. Half of the value of the laboratory's detection limit was used for the graphs when the parameter result was below the analytical detection limit value. Some of the results shown prior to 2016 may not be fully representative of actual groundwater conditions related to the historic use of de-icing salt or brine during monitoring well installations, purging and/or sampling methodology, etc.

Table 5: Summary of Available Meadowbank Groundwater Quality Data, 2003 to 2020

Site / Station ID	Station Type	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
South Cell / Central Dike		**X**			**X**				**X**	**X**			**X**	**X**	**X**	**X**	**X**	**X**	**X**
BH-10-01	Temporary Borehole								X										
MW-03-04	Monitoring Well	X																	
MW-06-07	Monitoring Well				X														
MW-11-02	Monitoring Well									X									
MW-14-01	Monitoring Well												X	X					
MW-16-01	Monitoring Well														X	X	X	X	X
East Flat / East Dike							**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
MW-08-02	Monitoring Well						X	X	X	X	X	X	X	X					
MW-08-03	Monitoring Well						X					X							
ST-8-North	Pumping Well (Dike Seepage)															X	X	X	
ST-8-South	Pumping Well (Dike Seepage)															X	X	X	
ST-8	Discharge from Pumping Well													X	X	X	X	X	X
MW-IPD-01(s)	Monitoring Well																X	X	X
MW-IPD-01(d)	Monitoring Well																X	X	X
Goose Pit		**X**	**X**		**X**	**X**	**X**	**X**	**X**	**X**						**X**	**X**	**X**	**X**
BG-Seep-21m	Pit Wall Seepage															X	X		
BG-Seep-42m	Pit Wall Seepage															X	X	X	
BG-Seep-80m	Pit Wall Seepage															X			
MW-03-01	Monitoring Well	X	X		X														
MW-03-02	Monitoring Well	X	X																
MW-06-05	Monitoring Well				X	X	X	X	X										
MW-06-06	Monitoring Well				X														
MW-11-01	Monitoring Well									X									
MW-IPD-07	Monitoring Well																X	X	X
Portage Pit-A		**X**	**X**													**X**	**X**	**X**	
MW-03-03	Monitoring Well	X	X																
Pit-A-Seep-East	Pit Wall Seepage															X		X	
Pit-A-Seep-North	Pit Wall Seepage																X		
Portage Pit-E														**X**	**X**	**X**	**X**	**X**	**X**
Pit E3-B2	Horizontal Hole													X					
Pit E3-B6	Horizontal Hole													X	X				
Pit E3-B7	Horizontal Hole														X				
Pit E4	Pit Wall Seepage														X				
Pit-E-Seep-North	Pit Wall Seepage															X	X	X	
Pit-E-Seep-SW	Pit Wall Seepage															X			
Pit-E-Seep-27 m	Pit Wall Seepage																		X
MW-IPD-09	Monitoring Well																X	X	X

Arsenic

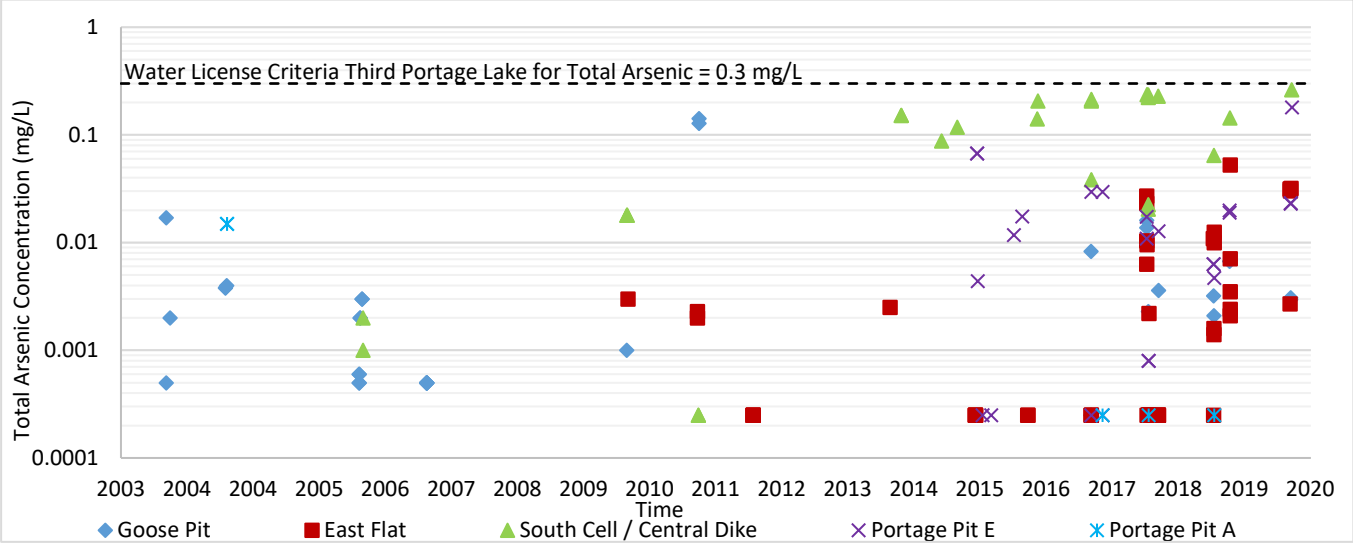

Figure 4-1: Historical concentrations of total arsenic in Meadowbank groundwater by area, between 2003 and 2020

- Total arsenic concentrations in groundwater remain consistently below MAC criteria (0.3 mg/L). Dissolved arsenic in groundwater also remains consistently below the MAC criteria.
- Total arsenic concentrations in groundwater have generally been higher within the South Cell and Central Dike area compared to the other samples taken around the pit. In 2020, concentrations of total arsenic were the highest reported to date in the South Cell and Central Dike area (MW-16-01) and Portage Pit-E (Pit-E seep-27 m). Higher concentrations of total arsenic have been observed in the 2020 Pit-E west wall seepage sample (0.181 mg/L) compared to the available historical (2018 to 2020) reclaim water chemistry at ST-21-South and ST-S-5 (i.e. 0.008 to 0.0982 mg/L). The increase in total arsenic observed at MW-16-01 in 2020 may be related to the historic operation of the TSF and the processing of ore from the Whale Tail Pit mining operations, some of which is arsenic-rich (Golder 2020). Whale Tail ore was placed in the North Cell TSF in 2019 which could explain higher arsenic in runoff water from this general area. The Pit-E tailings effluent discharge point is located just south of the 2020 Pit-E seepage sample location along the west wall. The elevated arsenic concentration in the Pit-E wall sample may be related to mine waste (non-acid generating rock pile comprised of ultramafic materials) which is documented to contain arsenic or west wall of Pit-E could have been contaminated from wind pushing tailings effluent on the pit walls due to the high deposition point (Agnico Eagle personnel observation). Tailing deposition occurred on the south-west wall of Pit-E at an elevation around 145 masl in the weeks prior to the September 2020 sampling event. It remains unclear what the source of arsenic is at the Pit-E wall sample, if it is related to mining activities and if so, how it is related.
- The increase in concentrations of total arsenic at Portage Pit-E seepage sample in 2020 is not interpreted to be related to the onset of IPD activities in Pit-E initiated in August 2020, based on the available 2020 water level and IPD operation data. The estimated elevation of the surface of tailings deposited in Pit-E was 3.7 metres above sea level (masl) in September 2020, which is below the screened interval of the monitoring well MW-IPD-09 and the elevation of the Pit-E west wall seepage sample (27 masl). The elevated concentrations in the 2020 Pit-E west wall seepage sample may be related to potential contamination from wind pushing the tailings effluent on the pit walls as previous discussed.

- Based on the 2020 results, a reclaim water signature is present within the groundwater samples collected from MW-16-01 and the Pit-E west wall seepage, while a natural water signature is present within the groundwater samples collected from MW-IPD-01(s), MW-IPD-01(d), MW-IPD-07 and MW-IPD-09.

Chloride

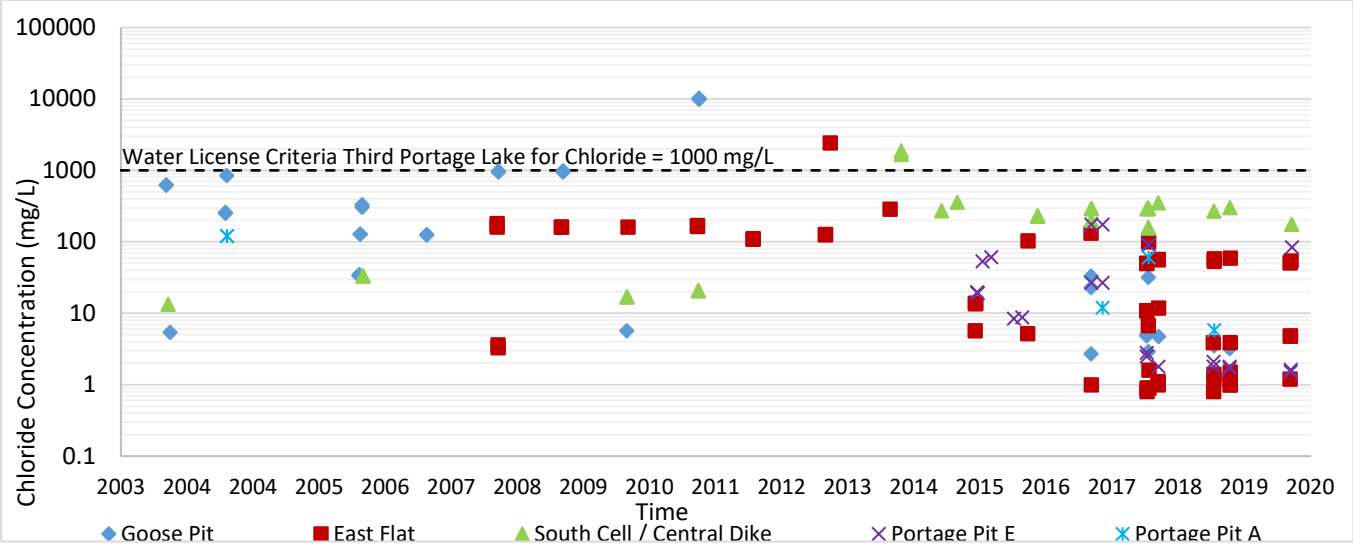

Figure 4-2: Historical concentrations of chloride in Meadowbank groundwater by area, between 2003 and 2020

- Chloride concentrations in groundwater remain consistently below MAC criteria (1,000 mg/L), with the exception of four results.
- High concentrations of chloride were measured in several monitoring wells prior to 2014, particularly within the vicinity of Goose Pit. The elevated concentrations of chloride in groundwater at these locations may be related to the historic use of de-icing salt and calcium chloride brine solution used to prevent the borehole from freezing during the drilling program. Concentrations of chloride measured in the IPD monitoring wells installed in 2018 remain low, with the exception of MW-IPD-01(d) located in the East Flat area. Chloride concentrations at MW-IPD-01(d) remain stable and have ranged between 50.2 mg/L and 59.4 mg/L from 2018 to 2020. Higher chloride concentrations measured in MW-IPD-01(d) may be the result of the monitor being screened at a greater depth (163-181 metres) compared to the other monitors (up to 80 metres) as the salinity of groundwater typically increases with depth (Frape & Fitz 1987).
- Concentrations of chloride at South Cell and Central Dike are higher compared to the other monitoring locations. The elevated concentrations of chloride observed at these locations may be related to the reclaim water stored in the nearby South Cell TSF. The 2020 concentration of chloride measured in MW-16-01 (177 mg/L) was the lowest result recorded to date at this location. The decline in concentrations of chloride in 2020 are decreasing in a similar manner as the water quality measured at ST-South-21 and ST-S-5.
- Based on the 2020 results, a reclaim water signature is present within the groundwater samples collected from MW-16-01 and the Pit-E west wall seepage, while a natural water signature is present within the groundwater samples collected from MW-IPD-01(s), MW-IPD-01(d), MW-IPD-07 and MW-IPD-09.

Copper

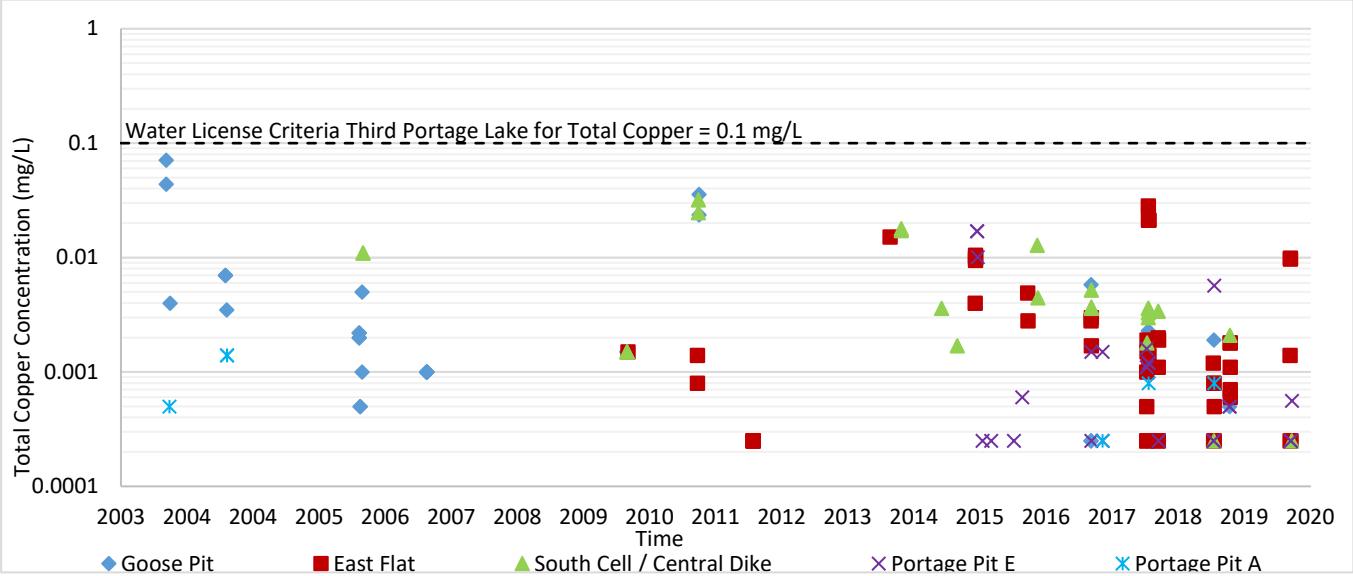

Figure 4-3: Historical concentrations of total copper in Meadowbank groundwater by area, between 2003 and 2020

- Total copper concentrations in groundwater remain consistently below MAC criteria (0.1 mg/L). Dissolved copper in groundwater also remain consistently below the MAC criteria.
- Concentrations of total copper have generally decreased over time in most areas. Concentrations of total copper were elevated in 2020 at MW-IPD-01(s) but were still within the historical range.
- Based on the 2020 results, a reclaim water signature is present within the groundwater samples collected from MW-16-01 and the Pit-E west wall seepage, while a natural water signature is present within the groundwater samples collected from MW-IPD-01(s), MW-IPD-01(d), MW-IPD-07 and MW-IPD-09.

Total Cyanide

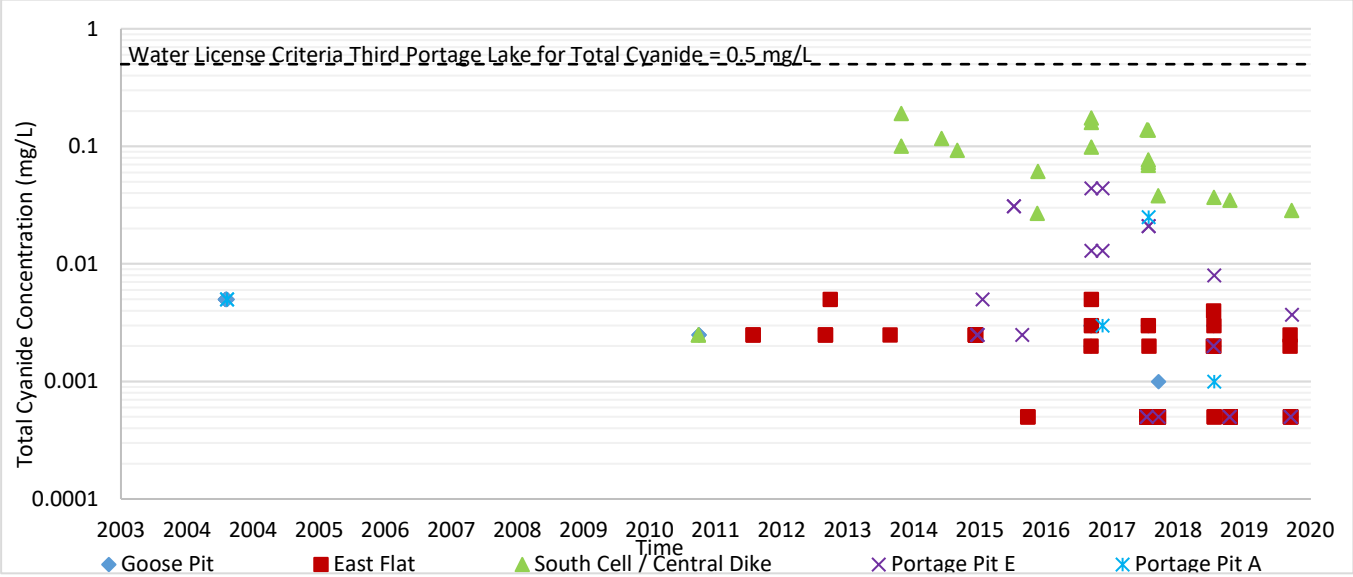

Figure 4-4: Historical concentrations of total cyanide in Meadowbank groundwater by area, between 2003 and 2020

- Total cyanide concentrations in groundwater remain consistently below MAC criteria (0.5 mg/L)
- Higher total cyanide concentrations measured in samples collected around the South Cell and Central Dike area may be related to storage of reclaim water in the South Cell TSF.
- Concentrations of total cyanide are variable over time, but have generally been trending downwards since 2017 at MW-16-01 (South Cell / Central Dike) and 2018 at Portage Pit-E.
- Based on the 2020 results, a reclaim water signature is present within the groundwater samples collected from MW-16-01, while a natural water signature is present within the groundwater samples collected from MW-IPD-01(s), MW-IPD-01(d), MW-IPD-07 and MW-IPD-09.

Iron

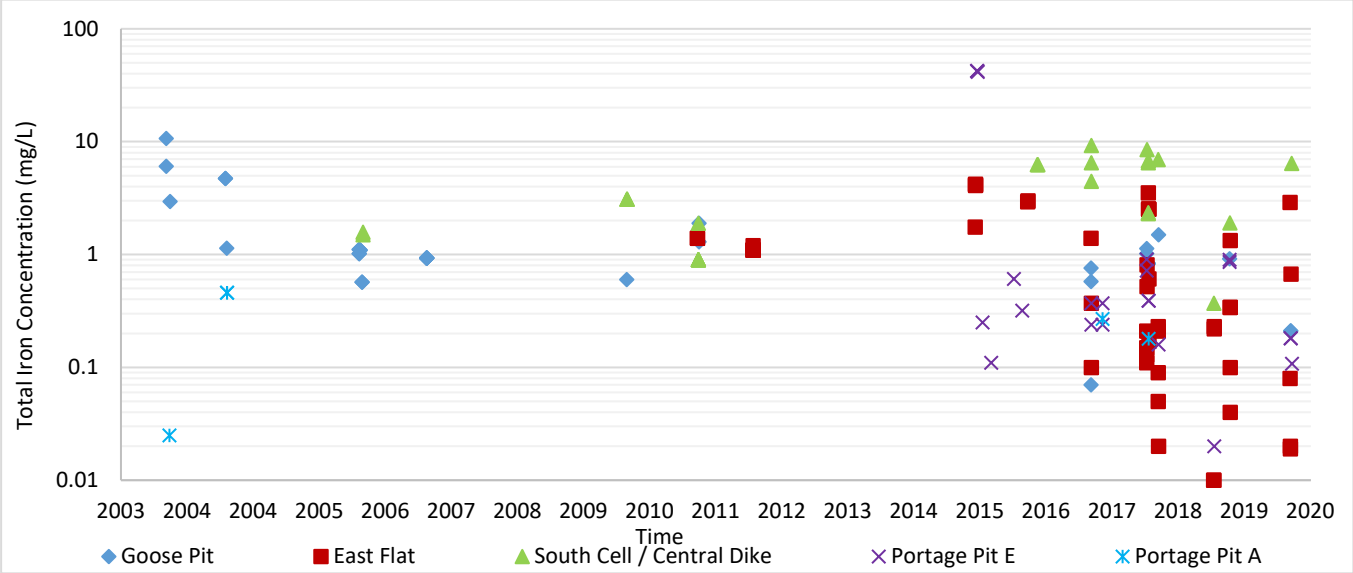

Figure 4-5: Historical concentrations of total iron in Meadowbank groundwater by area, between 2003 and 2020

- There is no MAC for total iron concentration.
- Total iron concentrations are higher in groundwater within the South Cell and Central Dike area compared to the other monitoring locations, where concentrations increased from 2005 to 2017, and have been variable since then. Dissolved iron concentrations also remain higher in groundwater within the South Cell and Central Dike area compared to the other monitoring locations, however concentrations have generally remained consistent. The elevated concentrations of iron in the South Cell and Central dike coincide with higher TSS and turbidity measurements at MW-16-01 compared to the other monitoring locations, which indicates that particulates are likely contributing to the elevated concentrations of total iron. Higher concentrations of total iron measured in the South Cell and Central Dike area may related to storage of reclaim water in the South Cell TSF as turbidity in groundwater could be brought on by TSF seepage.
- It is noted that concentrations of iron measured at MW-IPD-01(d) in 2020 were lower in the second sample collected following additional development compared to the initial sample (2.9 mg/L).

Sulphate

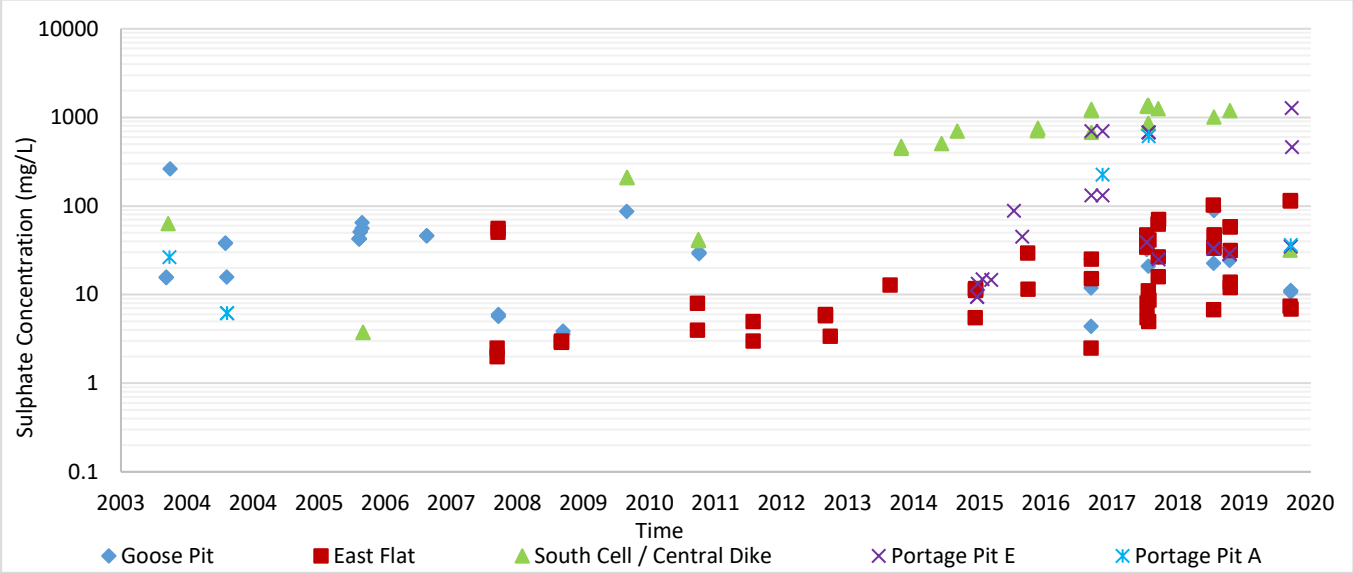

Figure 4-6: Historical concentrations of sulphate in Meadowbank groundwater by area, between 2003 and 2020

- There is no MAC for sulphate concentration.
- Concentrations of sulphate have increased since 2014 at South Cell / Central Dike where the highest concentrations were reported in 2020 at MW-16-01. The presence of sulphate may be related to reclaim water.
- A general upward trend in concentrations of sulphate in the East Flat area. Highest concentrations of sulphate reported to date at MW-IPD-01(s) in 2020, while concentrations remained low at deeper monitor MW-IPD-01(d). The concentrations sulphate on the east side at MW-IPD-01(s) are much lower than the concentrations on the west side measured at MW-16-01 and Pit-E. The increase in concentrations of sulphate at MW-IPD-01(s) may be related to minor oxidation from the pit walls.
- Concentrations of sulphate measured at Portage Pit-E very spatially and temporarily over time but are generally stable at MW-IPD-09.
- Based on the 2020 results, a reclaim water signature is present within the groundwater samples collected from MW-16-01 and the Pit-E west wall seepage, while a natural water signature is present within the groundwater samples collected from MW-IPD-01(s), MW-IPD-01(d), MW-IPD-07 and MW-IPD-09.

Sulphate versus Total Calcium and Magnesium

Three distinct chemical signatures (reclaim water, natural water and samples with intermediate characteristics) have been identified by plotting sulphate concentration versus the sum of dissolved calcium and magnesium (SNCL 2020). The 2020 groundwater monitoring and available reclaim water data (displayed in colour) was plotted for 2017-2019 values (displayed in grey) as illustrated in Figure 4-7. Note, the available surface water quality results from Pit-A, Pit-E and Goose Pit prior to 2020 are not included in the Figure 4-7 as these stations were not representative of reclaim water at the time of sampling.

Based on the 2020 results, a reclaim water signature is present within the groundwater samples collected from MW-16-01 and the Pit-E west wall seepage, while a natural water signature is present within the groundwater samples collected from MW-IPD-01(s), MW-IPD-01(d), MW-IPD-07 and MW-IPD-09. No seepage sample could be

collected from Pit-A in 2020 due to accessibility issues, however the 2019 Pit-A seepage sample collected from the east wall indicates groundwater quality is trending towards reclaim water (intermediate characteristics).

Note that the sum of total calcium and total magnesium concentrations were plotted instead of the dissolved constituents based on the available 2020 reclaim water data provided by Agnico Eagle for ST-17 Lake, ST-19 Lake and ST-20 Lake as well as historic reclaim water stations ST-21-South and ST-S-5. The residual water infiltrating the South Cell TSF still has a reclaim water signature, although it has decreased since the pond was drained and the interruption of tailings placement in 2019. Calcium and magnesium are primarily present in the dissolved phase within the given conditions, therefore the use of the sum of the total concentrations of these parameters is reasonable for the purpose of this assessment. The 2020 East Dike seepage water samples collected from ST-MMER-3 were not analyzed for major ions calcium and magnesium, therefore are not included in Figure 4-7.

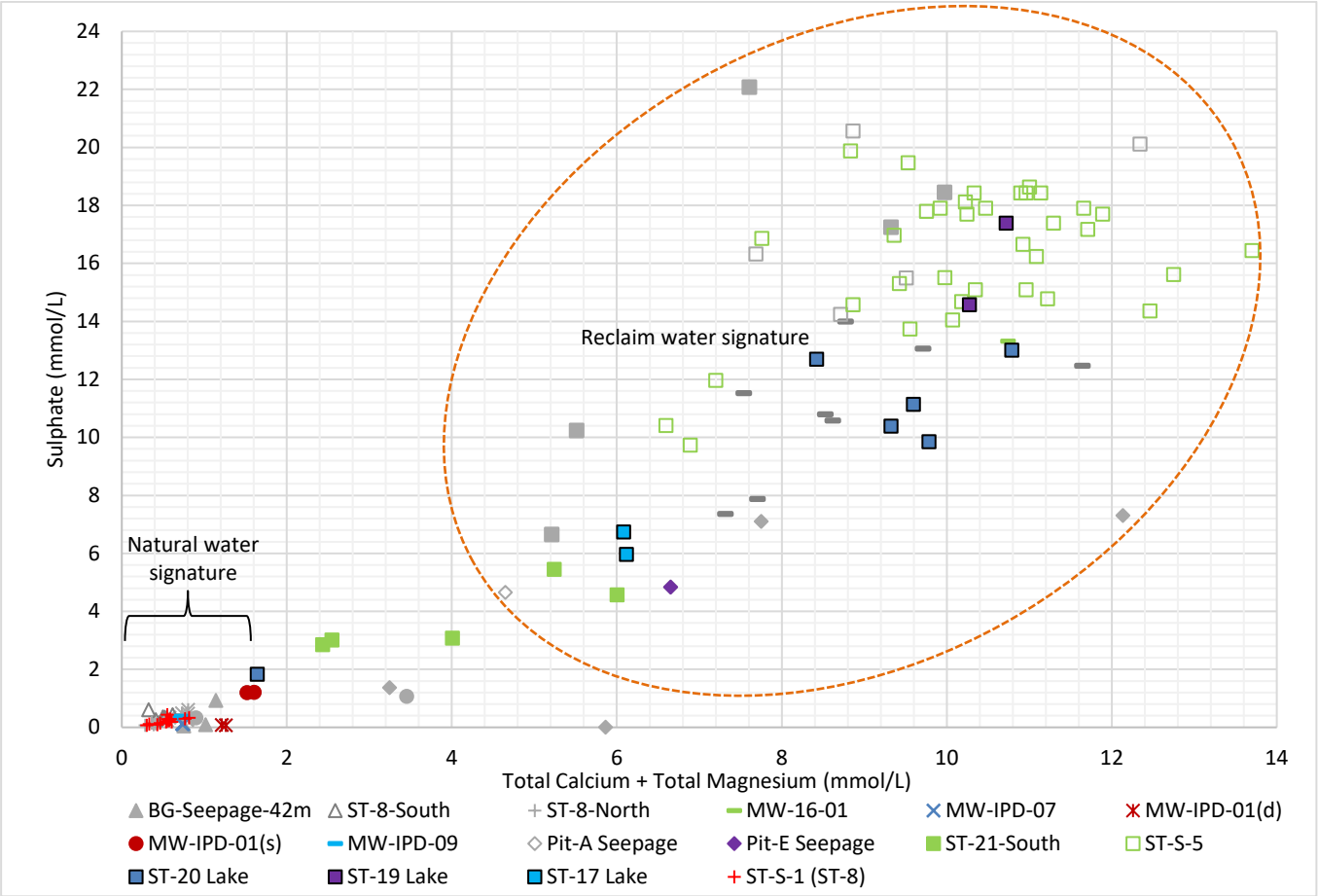

Figure 4-7: Concentrations of Sulphate versus Sum Total Calcium and Total Magnesium, 2017 to 2020

Salinity of groundwater is also of interest in open pit inflow groundwater quality. Table 7 shows that concentrations of salinity components are variable throughout the years but have generally been lower since the groundwater monitoring program was augmented with the addition of the four IPD monitoring wells and low flow sampling methods used. The IPD wells were installed without the use of a brine solution during drilling operations or to prevent the borehole from freezing during well installation. It is noted that the drilling fluid used for the IPD monitoring wells contained DD2000 (drilling mud additive comprised of a copolymer of acrylamide and sodium acrylate) and was not tagged with a tracer dye, therefore the quantity of potential drill fluid remaining in the formation is unknown.

Table 7: Concentration of Constituents that Relate to Groundwater Salinity

Area	Monitoring Well	Sample Year	TDS(1) (mg/L)	Conductivity (µS/cm)	Chloride (mg/L)
Goose Island	MW03-01	2003	793	*1,855*	626
		2004	1,335	2,900	845
		2006	315(2)	460*	81(2)
		2007	389	588	126
		2008	1,100	3,200	950
		2009	1,900(2)	3,350(2)	970(2)
		2010	340	335*	5.7
	MW11-01	2011	14,840	*3,999*	10,271
	MW-IPD-07	2018	171	No Available	4.8
		2019	145	233(2)	3.5(2)
		2020	154	260(2)	4.8(2)
Third Portage East Flat	MW08-02	2008	510(2)	*808*(2)	160
		2009	520(2)	705(2)	160*
		2010	450	*690*(2)	160
		2011	523	*782*(2)	169
		2012	307(3)	*616*(2)	111
		2013	411(2)	*484*(2)	127(2)
		2014	57(2)	*95*(2)	9.7(2)
		2015	74	*109*	13.7
		2016	264(2)	*442*(2)	54.1(2)
		2017	380	*323*	132
		2018	178(2)	*176*(2)	53.4(2)
	MW-IPD-01(s)	2018	158	Not available	10.8
		2019	298(2)	*576*(2)	3.9*
		2020	220(2)	*387*	4.8
	MW-IPD-01(d)	2018	294(2)	Not available	53.3
		2019	321(2)	*516*(2)	57(2)
		2020	235	*385*	53.8
South Cell / Central Dike	BH10-01	2010	670(2)	935(2)	17
	MW11-02	2011	263	*400*(2)	20.9
	MW-14-01	2014	3,152(2)	*5,030*	1,777(2)
		2015	1,243(2)	*1,817*(2)	317(2)
	MW-16-01	2016	1,029(2)	*1,691*(2)	230(2)
		2017	1,728(2)	*1,984*(2)	262(2)
		2018	1,586	*1,681*	226
		2019	1,492(2)	*2,703*(2)	285(2)
		2020	2,350	*3,098*	177
Portage Pit-E	MW-IPD-09	2018	132	Not available	2.8
		2019	120(2)	*189*(2)	1.9(2)
		2020	133(2)	*204*(2)	1.6(2)

Notes:
mg/L = milligram per litre; *Italic* - field measured value; * denotes average calculated value
(1) Laboratory measurement except for in 2011 which reported values as dissolved solids
(2) Average calculated value
(3) TDS value calculated from laboratory measured values of dissolved constituents

Salinity parameters measured at monitoring well MW-16-01 located directly east of the South Cell TSF and Central Dike have generally increased since 2016 and have consistently been elevated compared to the other monitoring locations. An exception to this is concentrations of chloride decreased at MW-16-01 in 2020.

4.5 Evaluation of Effects on Groundwater from Reclaim Water

Based on the interpretation of the 2020 groundwater quality data, the following conclusions are provided:

- The groundwater quality in monitoring wells MW-IPD-01(d), MW-IPD-01(s), MW-IPD-07, MW-IPD-09 continues to fit within the natural groundwater (background) previously established for the Meadowbank Mine and does not appear to be affected by reclaim water. Monitoring wells MW-IPD-01(s) and MW-IPD-09 are screened higher than the tailings level. Based on the current operations and the available 2020 water level data, the four IPD wells are situated hydraulically downgradient from the Second Portage Lake (MW-IPD-01(s) and MW-IPD-01(d)) and Third Portage Lake (MW-IPD-07 and MW-IPD-09), therefore water quality at these monitors may be influenced by surface water flowing east towards the monitoring wells and into the IPD pits and not the TSF or IPD operations at this time.
- Groundwater monitoring at MW-IPD-01(d) is completed at a much greater depth than other monitoring points (i.e.,163-181 metres compared to 80 metres). The consistent groundwater quality at this location (including the chloride concentrations, which range from 50.2 mg/L and 59.4 mg/L) is considered to be representative of natural water quality in the deeper bedrock unit and not affected by Meadowbank mining operations. Higher concentrations of chloride at MW-IPD-01(d) are interpreted to be related to the effect of salinity increasing with depth (Frape & Fritz 1987).
- Reclaim water in the South Cell TSF continues to be a source of sulphate, chloride, sodium, calcium, manganese, and other trace elements for surface water and groundwater at the site (SNCL 2020). The groundwater quality at monitoring well MW-16-01 is interpreted to be affected by reclaim water from the South Cell TSF.
- The seepage from the west wall of Pit-E has a similar chemical signature to the reclaim water and higher concentrations of total arsenic, chloride, sulphate, calcium, magnesium, and sodium than background groundwater, while concentrations of other key reclaim water parameters such as total copper, total cyanide, and total iron remain low. The west wall of Pit-E is located hydrogeologically downgradient from the South Cell TSF and Central Dike. The 2020 Pit-E seepage water quality is interpreted to be affected by mining activities, however it is unclear what is the primary source of contamination. Tailing deposition occurred on the south-west wall of Pit-E in the weeks prior to the September 2020 sampling event around elevation 145 masl.
- Groundwater quality does not appear to be affected by IPD operations in the Goose Pit (July 2019 to August 2020), Portage Pit-E (August 2020 to present) or Pit-A (reclaim water from Goose Pit was directed to Pit-A on occasion during 2020). Based on the understanding of hydraulic gradients within the vicinity of the pits, the four monitoring wells located on the east side and hydraulically upgradient of the IPD operations.

4.6 Quality Assurance/Quality Control

Table 8 presents the RPD and +/- MDL values calculated from the duplicate pairs of results. Approximately 42% of the duplicate pairs of analyses had one or both results below the method detection limit and consequently could not be assessed for repeatability. QA/QC results for the duplicate samples were within acceptable tolerance limits (RPD or +/- MDL) with the following exceptions:

- Duplicate concentrations of dissolved thallium at MW-IPD-01(s);
- Ammonia and DOC at MW-IPD-07; and,

- Total ammonia, total cesium and dissolved magnesium at MW-IPD-09.

The reason for the deviation in the DOC sample at MW-IPD-07 is unknown as the groundwater sample was filtered in the field prior to analysis. It is noted that the TOC (unfiltered) and DOC (filtered) may have been mislabeled in the field for the samples collected at MW-IPD-01(d) on September 7, 2020 and MW-IPD-07 on September 9, 2020. The DOC concentration at MW-IPD-01(d) collected on September 7, 2020 was also more than five times greater than the COD result, however the concentrations of DOC was only slightly elevated compared to the TOC result in the sample collected on September 12, 2020 following additional development.

The duplicate concentrations of dissolved thallium at MW-IPD-01(s) and total ammonia, total cesium and dissolved magnesium at MW-IPD-09 are within historical range for each monitoring location. Based on the available historical data, the analytical results for the samples discussed above are interpreted to be representative of water quality, however there is some uncertainty associated with the DOC result reported in the sample collected on September 7, 2020 at MW-IPD-01(d).

The results of the analysis of the trip and field blanks were very low or below the laboratory detection limits of all parameters. Trace components and major elements for all samples are considered adequately repeatable.

The calculated charge balance error for all samples was equal to or below +/- 6%, therefore the reported laboratory results are considered acceptable.

5.0 SUMMARY OF MONITORING WELL CONDITIONS AND SAMPLING EQUIPMENT

All monitoring wells and sampling equipment monitored in 2020 are confirmed to be in good condition and secure, with a few exceptions as reported to Agnico Eagle personnel during the field program and described below:

MW-IPD-09

- LDPE tubing could not be fully lowered down the well due to an obstruction in the riser pipe. The assembly was secured ‘as is’ and the well cap was taped over the top and covered by a plastic bag to protect the tubing.
- The monitoring well is enclosed within a modified Seacan container. The doors to the Seacan could not be fully shut at upon completion of the September 2020 field program. The Seacan door should be maintained to ensure the well enclosure can be protected from weather conditions, intrusion by animals or unauthorized people or traffic.

MW-16-01

- There is no dedicated well cap or bladder pump currently installed at MW-16-01. A temporary bladder pump was installed at MW-16-01 to collect a low flow sample. The original pump installed in the monitoring well had been previously removed to be checked for proper functioning. The pump was disassembled, and no obvious signs of damage were observed. A dedicated wellhead and tubing are needed to re-install a pump in the well for low flow sampling.
- The Waterra® tubing used for airlifting is cracked in multiple places and needs replacement. The ¼ inch LDPE tubing available on-site at the time of sampling was of insufficient length to lower the bladder pump to within the well screen interval (89 to 101 metres depth).

Bladder Pumps

- There are three extra bladder pumps identified with labels, in which only one is operational. The non-operational pumps include the original pump installed in MW-16-01 and other pump is missing a check valve ball.

Nitrogen Gas

Table 9 summarizes the 2020 nitrogen gas usage and amount remaining in each tank for each of the five monitoring well locations.

Table 9: Summary of Nitrogen Tank Pressures at Each Monitoring Well

Monitoring Well ID	Nitrogen Tank Pressure Remaining at end of 2020 Groundwater Monitoring Program (psi)	Nitrogen gas used during 2020 Groundwater Monitoring Program (psi)
MW-16-01	700[1]	650
MW-IPD-01(s)	1200	negligible
MW-IPD-01(d)	1300(1)	1600 (initial sample) 1000 (confirmation sample)
MW-IPD-07	1900	100
MW-IPD-09	600(2)	500

Notes:
(1) New nitrogen tank will be required for next sampling event
(2) Nitrogen tank is low, but may be sufficient for next sampling event

6.0 CONCLUSIONS

The groundwater monitoring program was conducted in September 2020. Groundwater samples were collected from the following five monitoring wells MW-16-01, MW-IPD-01(s), MW-IPD-01(d), MW-IPD-07, and MW-IPD-09, from pit wall seepage (west wall of Pit-E) and from the Stormwater Management Facility (SWMP).

Groundwater quality results were compared to the Portage effluent quality discharge limits stipulated in the Meadowbank water license, for comparative purposes only as there are no groundwater quality criteria applicable to the site. All groundwater samples collected in 2020 met these screening criteria, with the exception of total aluminum and TSS at MW-IPD-09. The SWMP sample collected by Golder in September 2020 met the screening criteria, with the exception of TSS.

In general, water quality was similar to results previously obtained, with a few exceptions. Concentrations of arsenic and chloride were higher than historic values at the Pit-E seepage monitoring location situated along the west wall of Portage Pit E, which may be related to mining operations involving the deposition of reclaim water effluent at the top of the west wall of Pit-E, based on observations of splashing of this water by wind during outflow into the pit. There remains uncertainty in the source of increased arsenic at the Pit-E wall seep sample, if and how it is related to mining activities.

The chemical signature of the groundwater at MW-16-01 continues to trend towards that of the reclaim water based on elevated concentrations of arsenic, copper, iron, and sulphate, while concentrations of chloride declined in 2020. The decreasing in concentrations of chloride observed at MW-16-01 since 2019 coincides with decreasing concentrations of chloride at reclaim water stations ST-21 South and ST-S-5. The groundwater quality at monitoring well MW-16-01 is interpreted to be affected by reclaim water from the South Cell TSF based on similar chemical signatures to reclaim water monitoring stations ST-21-South (South Cell TSF surface water) and ST-S-5 (Central Dike seepage). These monitoring locations are located hydrogeologically downgradient of the South Cell TSF and Central Dike. It is noted that the reclaim water signature at ST-21-South has declined since the deposition of tailings in the TSF was interrupted in 2019.

The groundwater quality in monitoring wells MW-IPD-01(d), MW-IPD-01(s), MW-IPD-07, MW-IPD-09 continues to display a natural water signature and can be used as background values against which to monitor groundwater quality in the future.

In-pit tailings deposition operations commenced at Meadowbank in July 2019 to accommodate the storage of tailings waste produced from Whale Tail Mine in addition to tailings produced at Meadowbank. Tailings deposition was discontinued in April 2019 in the South Cell TSF and July 2019 in the North Cell TSF. Tailings were deposited in Goose Pit from July 2019 to August 19, 2020 and commenced in Portage Pit-E (Pit-E) on August 20, 2020. Based on the results of the 2020 groundwater monitoring program, groundwater quality does not appear to be affected by in-pit deposition operations in the Goose Pit from July 2019 to August 2020 or Portage Pit-E since operations commenced in August 2020. The four IPD monitoring wells are located on the east side and hydraulically upgradient from the current IPD operations.

7.0 RECOMMENDATIONS

Based on the findings of the 2020 groundwater monitoring program, the following recommendations are made for the proposed 2021 annual groundwater monitoring program:

- The groundwater monitoring program should include a detailed survey of the water levels measured in the monitoring wells and surface water monitoring stations TSF, Goose Pit, Pit-E, Pit-A, SWMP, Second Portage Lake and Third Portage Lake to illustrate the hydraulic gradients influencing the potential movement of reclaim water and its potential effects to surface water related to Meadowbank Mine site operations. The top of the well head caps for the five existing monitoring wells should be surveyed to confirm the elevation of the reference point used to measure water level. The annual report should include an east-west and north-south cross-section figure illustrating the topographic profile of the Meadowbank site operations (i.e., mined pit profile and placement of tailings) and water levels across the Meadowbank site within the vicinity of the TSF and IPD operations. The movement of reclaim water across the site will change as the water levels in the IPD pits continue to increase over time.
- During the field program planning phase, verify that nitrogen gas tank pressure at each monitoring well station is sufficiently high to complete the 2021 monitoring program. Nitrogen gas use during the 2020 groundwater monitoring program (refer to Table 7) indicate limited nitrogen gas remaining at the tanks installed at MW-16-01, MW-IPD-01(d) and MW-IPD-07. Purchase and install new nitrogen tanks as required.
- Improve the purging and sampling system for MW-16-01. There is no dedicated well cap or bladder pump currently installed at MW-16-01. A temporary bladder pump was installed to a depth of 70 metres at MW-16-01 to collect a low flow sample. Replace the Waterra® tubing used for purging and the ¼ inch LDPE tubing required for the low flow sampling to permit the installation of the bladder pump within the midpoint of the well screen (i.e., 95 metres). Golder recommends sending the original pump removed from MW-16-01 to the manufacturer (Solinst Canada Ltd., located in Georgetown, Ontario) for assessment and repair and purchasing a new replacement check valve ball for the extra bladder pump.
- Repair MW-IPD-09 well cap and ensure Seacan enclosure is secure.

- Coordinate routine sampling of additional Meadowbank Mine Water License stations of interest such as reclaim water stations ST-17 Lake (Pit-A), ST-19 Lake (Pit-E), ST-20 Lake (Goose Pit), Central Dike ST-S-5 (reclaim water) and East Dike discharge station ST-8 (ST-8 North dike seepage pumping well) with 2021 bi-annual groundwater monitoring program (i.e., MW-16-01, IPD monitoring wells and Pit-E wall seepage, if accessible). Submit the samples for the same analytical parameters required under the Table 2 of Schedule I of the Meadowbank Water Licence states that the groundwater must be monitored for Group 2 chemical parameters which include, per Table 1 of this Schedule (refer to analytical requirements listed in Table 2 of this report) to facilitate the assessment of groundwater quality, reclaim water movement and its potential effects to surface water of mining activities at the Meadowbank Mine site.
- In accordance with Table 2 of the Meadowbank Water License, seeps should be monitored on a monthly basis or as often as found and analyzed for Group 1 parameters. Conduct seepage survey of along the west walls of Portage Pit-A and Portage Pit-E to evaluate effects related to South Cell TSF and collect pit wall samples if locations identified can be accessed safely. It is understood that the west wall of Portage Pit-A is no longer accessible due to the water elevation in the pit.
- Additional water samples collected from monitoring wells MW-IPD-01(s), MW-IPD-01(d), MW-IPD-07 and MW-IPD-09 currently on hold at ALS Winnipeg could be submitted for the analysis of stable isotopes (oxygen-18 and deuterium). The isotopic signatures of the groundwater would be used to support the understanding of groundwater movement along flow paths and identify the source and origin of water constituents. The isotope analysis of future water samples collected from the Pit-E west wall seepage, reclaim water monitoring stations ST-S-5, ST-17 Lake, ST-19 Lake, ST-20 Lake and reclaim water impacted well MW-16-01 could be used to further verify the isotopic signatures of groundwater affected by reclaim water.

8.0 CLOSURE

The reader is referred to the Study Limitations, which follows the text and forms an integral part of this report. We trust the above meets your present requirements. If you have any questions or require additional information, please contact the undersigned.

Golder Associates Ltd.

Dale Holtze

Dale Holtze, M.Sc.
Hydrogeologist

REGISTERED PROFESSIONAL GEOLOGIST
L 1811
V.J. BERTRAND
LICENSEE
22-3-2021
NWT/NU

Valerie Bertrand, M.A.Sc., P.Geo (NT/NU)
Senior Geochemist / Associate

DH/VJB/sg
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10.0 REFERENCES

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Table 3 - 2020 Groundwater Monitoring Program Water Quality Results
Agnico Eagle Mines Limited, Meadowbank Mine, Nunavut

Water Quality Criteria / Mine Area			GUIDELINES	DISCHARGE CRITERIA			Goose Pit		East Flat					South Cell / Central Dike			Portage Pit E			SWMP
Monitoring Location		THIRD PORTAGE LAKE	CCME Guidelines	MMER Max. Monthly Mean	Water License, Max. Avg Conc. Discharge to Third Portage Lake	Water License, Max. Avg Conc. Discharge to Wally Lake	MW-IPD-07		MW-IPD-01(s)		MW-IPD-01(d)		ST-S-1[13]	MW-16-01	ST-21-South[13]	ST-S-5[13]	Pit-E seep-27 m	MW-IPD-09		SWMP
Laboratory Sample ID							L2504283-5	L2504283-6	L2502386-1	L2502386-2	VA20B5290-001	L2504283-3	--	L2506132-1	--	--	L2507479-2	L2504283-1	L2504283-2	L2507479-1
Sample Type								Duplicate		Duplicate		Confirmation							Duplicate	
Date		Average- East Basin Summer 2015	Long Term, Based on 3PL quality	Schedule 4	Part F of License	Part F of License	2020-09-09	2020-09-09	2020-09-08	2020-09-08	2020-09-07	2020-09-12	2020-09-07	2020-09-15	2020-09-07	2020-09-14	2020-09-17	2020-09-10	2020-09-10	2020-09-17
FIELD PARAMETERS	**Units**																			
Temperature	°C	--	--	--	--	--	17.6	-	20.1	-	18.3	19.61	-	12.24	1.5	4.8	8.13	17.35	-	10.22
pH	-	--	--	--	--	--	8.46	-	7.71	-	8.21	8.1	-	7.73	7.81	7.79	7.47	8.31	-	10.42
Conductivity	µS/cm	--	--	--	--	--	260	-	387	-	388	382	-	3098	1366	3401	1371	204	-	1377
Oxygen Reduction Potential	mV	--	--	--	--	--	-	-	-	-	-	-241.6	-	-208.6	-	-	70.1	-263.4	-	-1.6
Salinity	PSU	--	--	--	--	--	-	-	-	-	-	0.18	-	1.63	-	-	0.69	0.1	-	0.7
Total Dissolved Solids	mg/L	--	--	--	--	--	-	-	-	-	-	191	-	1548	-	-	685	101	-	689
Total Suspended Solids	mg/L	--	--	--	--	--	-	-	-	-	-	-	-	-	-	8.5	-	-	-	-
Dissolved Oxygen	mg/L	--	--	--	--	--	1.5	-	3.5	-	1.9	2.4	-	-	-	-	-	2.1	-	-
Dissolved Oxygen	%	--	--	--	--	--	15	-	39	-	19	24	-	-	-	-	>100	21	-	>100
Turbidity	NTU	--	--	--	--	--	0.57	-	0.39	-	17	14.2	-	1.03	22.8	-	1.32	2.04	-	71.5
LABORATORY ANALYSIS																				
General																				
Total Alkalinity	mg $CaCO_3$/L	9.1	--	--	--	--	120	122	51.4	47.8	112	119	55	162	105	133	96.4	70.1	71.6	87
Bicarbonate Alkalinity HCO3	mg $CaCO_3$/L	--	--	--	--	--	146	149	62.7	58.3	137	146	-	198	-	-	118	85.5	87.4	72
Carbonate Alkalinity CO3	mg $CaCO_3$/L	--	--	--	--	--	<0.60	<0.60	<0.60	<0.60	<2.0	<0.60	-	<0.60	-	-	<0.60	<0.60	<0.60	16.8
Reactive silica	mg/L	--	--	--	--	--	7.8	7.6	6.6	6.5	7.41	7	-	7.8	-	-	6.8	9.5	9.4	3.5
Sulphate (SO4)	mg SO_4/L	5	--	--	--	--	10.7	11.2	116	115	7.43	6.89	31.8	1280	439	1450	465	34.8	36.4	113
Hardness (CaCO3)	mg $CaCO_3$/L	12	--	--	--	--	68.9	74.4	149	143	111	122	81	1060	-	1032	619	65.4	73.6	218
Dissolved Organic Carbon	mg/L	--	--	--	--	--	21.4[12]	15.2[12]	0.92	0.69	11.8[12]	2.37	-	33.7	2.7	24.3	1.79	1.11	1.39	36.5
Total Organic Carbon	mg/L	--	--	--	--	--	2.08	2.07	0.72	0.77	1.91	1.79	-	32.8	-	-	1.61	0.84	1.01	50.9
Total Suspended Solids	mg/L	< 1	[1]	15	15	15	<1.0	<1.0	<1.0	<1.0	**16.2**	**18**	2	12.6	**39**	6	4.7	<1.0	<1.0	**76.7**
Total Dissolved Solids	mg/L	22	--	--	--	--	169	140	217	222	239	235	-	2350	-	-	988	143	122	541
pH		--	--	--	--	--	8.14	8.29	7.79	7.9	8.13	8.27	7.95	8.07	7.88	-	8.12	8.03	8.08	9.32
Conductivity		--	--	--	--	--	245	250	353	358	388	388	-	3160	-	-	1340	210	217	690
Turbidity		--	--	--	--	--	0.31	0.33	0.16	0.23	12.3	12.1	-	82.2	-	-	1.05	0.36	0.32	29.9
Total Metals																				
Total Aluminium	mg/L	0.00748	0.1 [2]	--	1.5	1.5	<0.0030	0.0033	0.0057	0.0052	**12.5**	**1.62**	0.043	0.0033	0.520	0.008	0.0502	0.008	0.0078	0.173
Total Antimony	mg/L	--	--	--	--	--	<0.00010	<0.00010	0.0002	0.00015	0.0001	0.00011	-	<0.00010	-	-	0.00614	<0.00010	0.00012	0.00046
Total Arsenic	mg/L	0.00051	0.005	0.5	0.3	0.1	0.00296	0.00307	0.0303	0.0312	0.0315	0.032	0.0027	0.263	0.0215	0.0795	0.181	0.023	0.0233	0.0161
Total Barium	mg/L	0.00366	--	--	--	--	0.0147	0.0146	0.0103	0.0103	0.0249	0.0245	0.0138	0.0263	0.0410	0.0224	0.0221	0.00218	0.00225	0.0336
Total Beryllium	mg/L	--	--	--	--	--	<0.00010	<0.00010	<0.00010	<0.00010	0.00015	0.00016	-	<0.00010	-	-	<0.00010	<0.00010	<0.00010	<0.00010
Total Boron	mg/L	--	--	--	--	--	0.234	0.241	0.079	0.078	0.18	0.198	-	0.093	-	-	0.144	0.087	0.089	0.141
Total Cadmium	mg/L	0.00000	0.00004[3]	--	0.002	0.002	0.0000104	<0.0000050	0.000113	0.000109	<0.0000200	0.0000121	< 0.00002	0.0000159	< 0.00002	< 0.00002	0.0000961	<0.0000050	0.0000076	0.0000237
Total Calcium	mg/L	--	--	--	--	--	15.2	15.8	35.3	34.4	22.9	24.1	23.3	272	178	319	153	16.5	17	60.9
Total Chromium	mg/L	0.00011	0.001 [4]	--	--	--	<0.00010	<0.00010	<0.00010	<0.00010	0.00028	0.00017	< 0.0006	0.0002	0.0029	0.0015	0.00085	0.00019	0.0002	0.00152
Total Copper	mg/L	0.00060	0.002 [5]	0.3	0.1	0.1	<0.00050	<0.00050	0.00973	0.00989	<0.00050	<0.00050	0.0014	<0.00050	0.0727	< 0.0005	0.00056	<0.00050	<0.00050	0.00287
Total Iron	mg/L	0.01733	0.3	--	--	--	0.211	0.21	0.02	0.019	2.9	0.672	0.08	6.44	1.4	2.4	0.108	0.182	0.181	0.976
Total Lead	mg/L	0.00003	0.001 [6]	0.2	0.1	0.1	<0.000050	<0.000050	0.00006	<0.000050	0.00176	0.00164	< 0.00017	0.000201	0.0041	< 0.00017	0.00009	<0.000050	0.000117	0.000605
Total Lithium	mg/L	--	--	--	--	--	0.008	0.0085	0.0044	0.004	0.0102	0.0092	-	0.0129	-	-	0.0092	0.0024	0.0027	0.0157
Total Magnesium	mg/L	--	--	--	--	--	8.52	8.5	17.5	16	15.5	16	5.69	96.1	37.91	57.96	68.9	7.3	7.49	23.5
Total Manganese	mg/L	0.00155	--	--	--	--	0.0725	0.0714	0.916	0.875	0.0716	0.0707	0.0296	2.64	1.0110	2.0480	0.145	0.0465	0.0475	0.676
Total Mercury	mg/L	0.00000	0.000026	--	0.0004	0.0004	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	< 0.00001	0.00005	< 0.00001	< 0.00001	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Total Molybdenum	mg/L	0.00019	0.073	--	--	--	0.00645	0.0066	0.00392	0.00416	0.0112	0.0108	0.0029	0.0419	0.0594	0.1778	0.0255	0.0119	0.0125	0.00665
Total Nickel	mg/L	0.00059	0.025 [6]	0.5	0.2	0.2	<0.00050	<0.00050	0.0681	0.0661	0.0019	0.00146	0.003	0.00196	0.0401	0.0076	0.122	<0.00050	<0.00050	0.018
Total Potassium	mg/L	--	--	--	--	--	2.1	2.08	3.36	3.28	1.46	1.31	-	20.7	37.60	82.50	24.9	0.933	0.966	23.7
Total Selenium	mg/L	0.00003	0.001	--	--	--	0.000052	<0.000050	0.000175	0.000134	<0.000050	0.000057	< 0.001	0.000164	< 0.001	< 0.001	0.00112	<0.000050	0.000054	0.000195
Total Silver	mg/L	0.00001	0.00025	--	--	--	<0.000010	<0.000010	<0.000010	<0.000010	0.000032	0.000011	< 0.0001	<0.000010	< 0.0001	< 0.0001	<0.000010	<0.000010	<0.000010	0.000011
Total Sodium	mg/L	--	--	--	--	--	28.3	28.8	3.8	3.77	33.5	34.6	-	321	132	512	42.7	18	18.5	45.9
Total Strontium	mg/L	0.01323	--	--	--	--	0.147	0.143	0.159	0.163	0.318	0.321	-	1.29	-	-	1.03	0.136	0.14	0.594
Total Thallium	mg/L	0.00001	0.0008	--	--	--	<0.000010	<0.000010	0.000021	0.000014	<0.000010	<0.000010	< 0.0002	<0.000010	< 0.0002	< 0.0002	0.000059	<0.000010	<0.000010	0.000012
Total Tin	mg/L	--	--	--	--	--	<0.00010	<0.00010	<0.00010	<0.00010	0.00078	0.00015	-	<0.00010	-	-	<0.00010	<0.00010	<0.00010	<0.00010
Total Titanium	mg/L	--	--	--	--	--	<0.00030	<0.00030	<0.00030	<0.00030	0.1	0.0138	-	<0.00030	-	-	0.00078	<0.00030	<0.00030	0.00235
Total Uranium	mg/L	0.00005	0.015	--	--	--	0.000047	0.000045	0.00363	0.0041	0.00215	0.00191	-	0.0055	-	-	0.05	0.000223	0.000224	0.00356
Total Vanadium	mg/L	--	--	--	--	--	<0.00050	<0.00050	<0.00050	0.00053	0.00052	<0.00050	-	<0.00050	-	-	0.00069	<0.00050	<0.00050	0.00113
Total Zinc	mg/L	0.00150	0.03	0.5	0.4	0.2	<0.0030	<0.0030	0.0205	0.0196	0.0051	0.005	< 0.001	<0.0030	0.008	0.004	<0.0030	<0.0030	<0.0030	0.0032

Table 3 - 2020 Groundwater Monitoring Program Water Quality Results
Agnico Eagle Mines Limited, Meadowbank Mine, Nunavut

Water Quality Criteria / Mine Area			GUIDELINES	DISCHARGE CRITERIA			Goose Pit		East Flat					South Cell / Central Dike			Portage Pit E			SWMP
Monitoring Location		THIRD PORTAGE LAKE	CCME Guidelines	MMER Max. Monthly Mean	Water License, Max. Avg Conc. Discharge to Third Portage Lake	Water License, Max. Avg Conc. Discharge to Wally Lake	MW-IPD-07		MW-IPD-01(s)		MW-IPD-01(d)		ST-S-1(13)	MW-16-01	ST-21-South(13)	ST-S-5(13)	Pit-E seep-27 m	MW-IPD-09		SWMP
Laboratory Sample ID							L2504283-5	L2504283-6	L2502386-1	L2502386-2	VA20B5290-001	L2504283-3	--	L2506132-1	--	--	L2507479-2	L2504283-1	L2504283-2	L2507479-1
Sample Type								Duplicate		Duplicate		Confirmation							Duplicate	
Date		Average- East Basin Summer 2015	Long Term, Based on 3PL quality	Schedule 4	Part F of License	Part F of License	2020-09-09	2020-09-09	2020-09-08	2020-09-08	2020-09-07	2020-09-12	2020-09-07	2020-09-15	2020-09-07	2020-09-14	2020-09-17	2020-09-10	2020-09-10	2020-09-17
FIELD PARAMETERS	**Units**																			
Dissolved Metals																				
Dissolved Aluminum	mg/L	0.0018	--	--	1	1	<0.0010	<0.0010	0.0037	0.0034	0.0015	0.0147	-	0.0015	-	-	0.0032	0.002	0.0017	0.0039
Dissolved Antimony	mg/L	--	--	--	--	--	<0.00010	<0.00010	0.00011	0.0002	<0.00010	<0.00010	-	<0.00010	-	-	0.0062	<0.00010	<0.00010	0.00048
Dissolved Arsenic	mg/L	0.00048	--	0.5	--	--	0.00306	0.00312	0.0305	0.03	0.0312	0.0315	-	0.276	0.0102	0.0110	0.18	0.0217	0.0221	0.0106
Dissolved Barium	mg/L	0.00366	--	--	--	--	0.0146	0.014	0.00985	0.00978	0.0229	0.022	-	0.0264	0.0425	0.0214	0.0216	0.0024	0.00242	0.0265
Dissolved Beryllium	mg/L	--	--	--	--	--	<0.00010	<0.00010	<0.00010	<0.00010	<0.000100	<0.00010	-	<0.00010	-	-	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Boron	mg/L	--	--	--	--	--	0.218	0.252	0.075	0.074	0.17	0.192	-	0.081	-	-	0.143	0.083	0.092	0.135
Dissolved Cadmium	mg/L	0.00000	--	--	--	--	<0.0000050	<0.0000050	0.000103	0.000102	<0.0000050	<0.0000050	-	0.0000077	< 0.00002	< 0.00002	0.0000996	<0.0000050	<0.0000050	0.0000109
Dissolved Calcium	mg/L	--	--	--	--	--	15.1	15.7	33.5	33.1	21.8	23.6	-	269	-	-	153	15.8	16.4	58.3
Dissolved Chromium	mg/L	0.00005	--	--	--	--	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00010	< 0.0006	< 0.0006	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Copper	mg/L	0.00052	--	0.3	--	--	<0.00020	<0.00020	0.00872	0.00851	<0.00020	<0.00020	-	<0.00020	0.0055	< 0.0005	0.00051	<0.00020	<0.00020	0.00959
Dissolved Iron	mg/L	0.00500	--	--	--	--	0.082	0.069	<0.010	<0.010	0.063	0.037	-	6.26	< 0.01	0.02	<0.010	0.083	0.096	0.04
Dissolved Lead	mg/L	0.00003	--	0.2	--	--	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	-	<0.000050	< 0.00017	< 0.00017	<0.000050	<0.000050	<0.000050	0.000117
Dissolved Lithium	mg/L	--	--	--	--	--	0.0072	0.0082	0.0038	0.0035	0.0085	0.0085	-	0.0111	-	-	0.0078	0.0021	0.0025	0.0139
Dissolved Magnesium	mg/L	--	--	--	--	--	7.6	8.56	15.8	14.8	13.8	15.3	-	94.8	-	-	57.5	6.32	7.91	17.5
Dissolved Manganese	mg/L	0.00117	--	--	--	--	0.0682	0.0698	0.841	0.801	0.06	0.065	-	2.6	0.9095	1.8530	0.133	0.0451	0.0488	0.0205
Dissolved Mercury	mg/L	0.00000	--	--	--	--	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	-	<0.000050	< 0.00001	< 0.00001	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Dissolved Molybdenum	mg/L	0.00018	--	--	--	--	0.00651	0.00678	0.00408	0.00409	0.0108	0.0108	-	0.0407	0.0556	0.1720	0.0234	0.012	0.0123	0.00611
Dissolved Nickel	mg/L	0.00049	--	0.5	--	--	<0.00050	<0.00050	0.0641	0.0607	0.00058	0.00055	-	0.00165	-	0.0060	0.109	<0.00050	<0.00050	0.0113
Dissolved Potassium	mg/L	--	--	--	--	--	2.19	2.28	3.28	3.09	1.33	1.38	-	20.4	-	-	23.7	0.964	1.08	22.7
Dissolved Selenium	mg/L	0.00003	--	--	--	--	0.000104	<0.000050	0.00012	0.000121	0.00017	0.000137	-	0.000158	< 0.001	< 0.001	0.00129	0.000072	0.000092	0.000152
Dissolved Silver	mg/L	0.000005	--	--	--	--	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	-	<0.000010	< 0.0001	< 0.0001	<0.000010	<0.000010	<0.000010	<0.000010
Dissolved Sodium	mg/L	--	--	--	--	--	26.9	29.8	3.77	3.54	34.4	36.8	-	336	-	-	36.6	16.8	20.4	39.3
Dissolved Strontium	mg/L	0.01345	--	--	--	--	0.148	0.153	0.164	0.157	0.312	0.324	-	1.26	-	-	0.926	0.141	0.149	0.518
Dissolved Thallium	mg/L	0.00001	--	--	--	--	<0.000010	<0.000010	0.000013	0.000033	<0.000010	<0.000010	-	<0.000010	< 0.0002	< 0.0002	0.000053	<0.000010	<0.000010	<0.000010
Dissolved Tin	mg/L	--	--	--	--	--	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00010	-	-	<0.00010	<0.00010	<0.00010	<0.00010
Dissolved Titanium	mg/L	--	--	--	--	--	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	-	<0.00030	-	-	<0.00030	<0.00030	<0.00030	<0.00030
Dissolved Uranium	mg/L	0.00005	--				0.000029	0.000031	0.0037	0.00395	0.00156	0.00138	-	0.00542	-	-	0.0471	0.000201	0.000205	0.00253
Dissolved Vanadium	mg/L	--	--	--	--	--	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	-	<0.00050	-	-	<0.00050	<0.00050	<0.00050	<0.00050
Dissolved Zinc	mg/L	0.00063	--	0.5	--	--	<0.0010	<0.0010	0.0205	0.02	0.0013	<0.0010	-	<0.0010	0.005	< 0.001	0.001	0.0015	<0.0010	0.0036
Anions																				
Bromide	mg/L	--	--	--	--	--	<0.10	<0.10	<0.10	<0.10	0.634	0.71	-	2.2	-	-	0.58	<0.10	<0.10	0.8
Chloride	mg/L	0.793	120	--	1000	500	4.78	4.9	4.82	4.75	50.6	53.8	1.2	177	35.9	264.1	84.3	1.52	1.62	110
Fluoride	mg/L	0.0793	0.12	--	--	--	1.23	1.2	0.38	0.366	0.588	0.613	0.13	<0.40	0.32	0.50	0.27	0.986	1.1	0.404
Nutrients																				
Ammonia, Total (as N)	mg/L	0.015	1.83	--	16	20	0.23	0.125	0.074	0.061	0.0404	0.14		0.28	-	-	0.37	0.042	0.056	0.028
Ammonia, Total (as NH4)	mg/L	0.015	1.83	--	16	20	-	-	-	-	-	-	0.01	-	5.83	**26.46**	-	-	-	-
Nitrate (as N)	mg/L	0.0331	2.9355	--	20	50	<0.020	<0.020	0.432	0.437	<0.0050	<0.020	0.47	<0.40	8.25	0.35	18	<0.020	<0.020	<0.020
Nitrite (as N)	mg/L	--	--	--	--	--	<0.010	<0.010	<0.010	0.0011	<0.0010	<0.010	< 0.01	<0.20	0.44	0.06	0.119	<0.010	<0.010	<0.010
Total Kjeldahl Nitrogen	mg/L	--	--	--	--	--	<0.20	<0.20	<0.20	<0.20	0.078	<0.20	-	25.5	-	-	0.26	<0.20	<0.20	8.3
Orthophosphate	mg/L	--	--	--	--	--	0.0277	0.0263	0.0063	0.0067	0.0016	<0.0010	-	<0.0010	-	-	0.0043	0.0207	0.02	0.237
Total Phosphorus	mg/L	0.0026	0.0040	--	1	1.5	0.0454	0.0436	<0.0030	<0.0020	0.0105	0.0091	-	0.0881	-	-	0.0035	0.0296	0.0284	1.13
Cyanide																				
Total Cyanide	mg/L	0.0005	0.005	1	0.5	0.5	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	<0.0010	0.002	0.0285	0.017	0.050	0.0037	0.0019	<0.0010	<0.010
Free Cyanide	mg/L	--	--	--	--	--	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	<0.0010	-	0.008	0.003	0.006	<0.0010	<0.0010	<0.0010	<0.010
Weak Acid Dissociable Cyanide	mg/L	--	--	--	--	--	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	<0.0010	-	0.0104	0.002	0.006	0.0012	<0.0010	<0.0010	<0.010
QA/QC																				
Calculated TDS	mg/L	-	-	-	-	-	197	204	238	231	251	268	-	2393	-	-	928	158	168	490
Lab measured vs Calculated TDS	%	-	-	-	-	-	116%	146%	110%	104%	105%	114%	-	102%	-	-	94%	111%	137%	91%
Sum Cations(10)	meq	-	-	-	-	-	2.8	2.9	3.6	3.5	3.9	4.1	-	35.0	-	-	14.0	2.2	2.3	6.7
Sum Anions (11)	meq	-	-	-	-	-	2.6	2.8	3.2	3.1	3.8	4.1	-	36.4	-	-	14.6	2.1	2.4	6.6
Ionic Balance	%	-	-	-	-	-	3.6%	0.5%	5.5%	6.0%	1.6%	0.4%	-	-2.0%	-	-	-2.0%	3.6%	-2.0%	0.3%

Notes :
- : No data available
-- : No criteria available
Bold values are exceeding Water License, Max. Avg Conc. Discharge to 3PL
3PL denotes Third Portage Lake
(1) Maximum 5 mg/L increase from background
(2) pH 3PL > 6.5
(3) 3PL hardness < 17 mg/L CaCO3
(4) Based on Cr(VI)
(5) 3PL hardness < 82 mg/L CaCO3
(6) 3PL hardness < 60 mg/L CaCO3
(7) @15 C & pH 7.5
(8) 13 mg/L as NO3
(9) guidance only: 4 to 10 ug/L for oligotrophic lakes
(10) major cations: calcium, magnesium, sodium, potassium and ammonium-nitrogen as per Groundwater Monitoring Plan V 11: April 2020
(11) major anions: bicarbonate, bromide, chloride, fluoride and sulphate as per Groundwater Monitoring Plan V 11: April 2020
(12) DOC (field filtered) reported result is higher than expected based on TOC result (unfiltered) and verified by analytical laboratory.
(13) Sample collected by Agnico Eagle personnel

Table 6: Interpretation of 2020 Groundwater Quality Data

Monitoring Location	Parameters Exceeding MAC in 2020	Trend(s)	Elevated Reclaim Water Parameters[1] Compared to Natural Water[2] Conditions for 2020	Interpretation
MW-16-01	None	■ Concentrations of arsenic, calcium, copper, magnesium, manganese, potassium, sodium and sulphate continue to trend upward over time ■ Slight decreasing trend in concentrations of ammonia-nitrogen, chloride and total cyanide over time	ammonia-nitrogen, arsenic, calcium, total cyanide, chloride, copper, iron, magnesium, manganese, sodium and sulphate	■ MW-16-01 is located directly east and hydraulically downgradient form the TSF and Central Dike (see Figure 1 and Table 4) ■ Groundwater quality at MW-16-01 to be **affected by reclaim water from the TSF**
MW-IPD-01(s)	None	■ Groundwater quality is generally consistent for most parameters ■ Concentrations of total copper were elevated in 2020, but within historical range ■ Increasing trend in concentrations of sulphate over time ■ Concentrations of nitrate are elevated compared to initial sample collected in 2018	sulphate	■ MW-IPD-01(s) is located southeast of the TSF, Central Dike and Central Dump and hydraulically downgradient from the Second Portage Lake and East Dike (see Figure 1 and Table 4). ■ Groundwater quality at MW-IPD-01(s) is interpreted to not be affected by reclaim water from the TSF or management of waste rock within the Central Dump ■ Elevated concentrations of nitrate measured at MW-IPD-01(s) in 2019 and 2020 compared to 2018 may be related to the nearby use of blast rock for construction purposes (i.e., access road and East Dike)

Monitoring Location	Parameters Exceeding MAC in 2020	Trend(s)	Elevated Reclaim Water Parameters[1] Compared to Natural Water[2] Conditions for 2020	Interpretation
MW-IPD-01(d)	TSS	■ Groundwater quality is generally consistent for most parameters	None	■ MW-IPD-01(d) is located southeast of the TSF, Central Dike and Central Dump and hydraulically downgradient from the Second Portage Lake (see Figure 1 and Table 4). The monitoring well is screened within a deeper interval (163-181 metres) compared to the other monitors (80 metres) ■ Higher concentration (2.9 mg/L) of total iron from initial sample collected on September 7, 2020 compared to the September 12, 2020 sample (0.67 mg/L) is interpreted to be related to additional development. ■ Higher concentrations of chloride at MW-IPD-01(d) are interpreted to be related to the effect of salinity increasing with depth. Groundwater quality at MW-IPD-01(d) is interpreted not to be affected by reclaim water from the TSF or the management of waste rock within the Central Dump
MW-IPD-07	None	■ Groundwater quality is generally consistent for most parameters ■ Concentrations of most parameters were lower in 2020 compared to the previous sampling programs	None	■ MW-IPD-07 is located northeast of the Goose Dump and Goose Pit IPD operations that took place between July 2019 and August 2020 (see Figure 1). Available water level data indicates the well is located hydraulically downgradient from the Third Portage Lake (see Table 4). ■ Elevation of surface of the tailings deposited in Goose Pit was estimated at 86 masl in August 2020, which is within the screened interval of MW-IPD-07 (92.2 to 82.7 masl) ■ Groundwater quality at MW-IPD-07 is interpreted not to be affected by reclaim water associated with IPD operations in Goose Pit
MW-IPD-09	None	■ Slight increase in concentrations of total arsenic over time	None	■ MW-IPD-09 is located east and hydraulically upgradient of the Pit-E IPD operations (refer to Figure 1) ■ Elevation of surface of tailings deposited in Pit-E was 3.7 masl in September 2020, which is about 49 m below the screened interval of MW-IPD-09 (71.4 to 52.4 masl) ■ Groundwater quality at MW-IPD-09 is interpreted not to be affected by reclaim water associated with IPD operations in Pit-E

Monitoring Location	Parameters Exceeding MAC in 2020	Trend(s)	Elevated Reclaim Water Parameters(1) Compared to Natural Water(2) Conditions for 2020	Interpretation
Pit-E seep-27 m	None	■ Not applicable	total arsenic, calcium, chloride, magnesium, sodium, sulphate	■ 2020 Pit-E seepage sample was collected from the west wall of Pit-E at an approximate elevation of 27 masl, near the lowest accessible point of the pit which was being filled with tailings in September 2020. The sample location is situated hydraulically downgradient from the South Cell TSF. ■ Water quality has a reclaim water signature, but may not be representative of actual groundwater conditions. Tailings deposition occurred on the south-west wall of Pit-E from a pipe outlet located at an elevation of about 145 masl, in the weeks prior to the seepage sampling event. It is possible that wind splashing of effluent water discharged from the pipe onto the wall near the seep might have contaminated the seep. at the west wall of Pit-E where the seepage sample was collected but this remains conjectural.

Notes:

(1) Meadowbank reclaim water is characterized by elevated concentrations of ammonia nitrogen, arsenic, chloride, copper, cyanide, iron, and sulphate and other groundwater constituents such as calcium, manganese, magnesium, potassium and sodium.

(2) Natural water signature is characterized by groundwater quality from the four IPD monitoring wells installed in 2018 (i.e., MW-IPD-01(s), MW-IPD-01(d), MW-IPD-07 and MW-IPD-09).

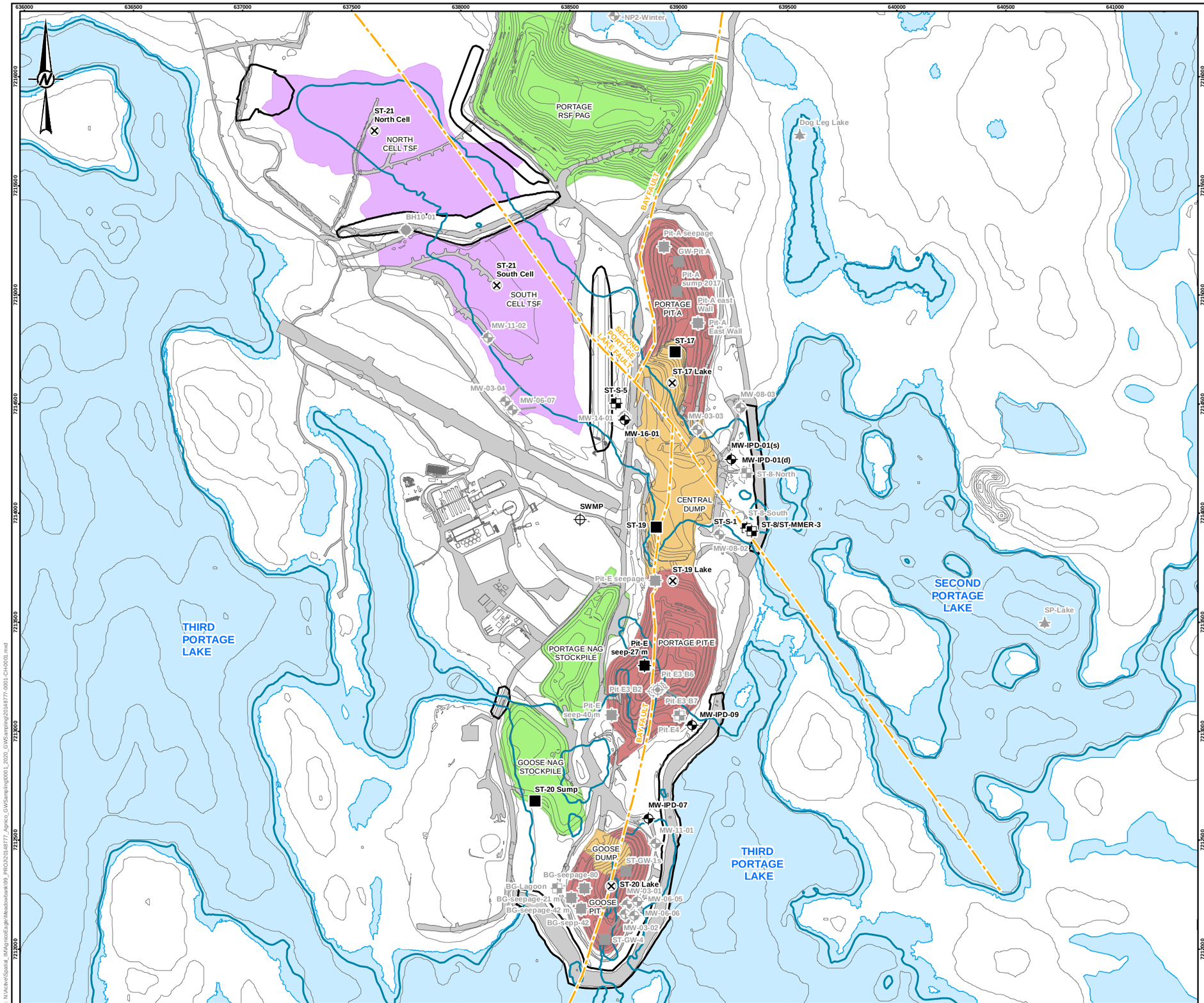
Table 8 - 2020 Groundwater Monitoring Program Water Quality QA/QC
Agnico Eagle Mines Limited, Meadowbank Mine, Nunavut

Sample Location				MW-IPD-07			MW-IPD-01(s)			MW-IPD-09			QA/QC	
Laboratory Sample ID				L2504283-5	L2504283-6	RPD	L2502386-1	L2502386-2	RPD	L2504283-1	L2504283-2	RPD	L2504283-4	L2506132-2
Sample Type					Duplicate			Duplicate			Duplicate		Trip Blank	Field Blank
Date Sampled				2020-09-09	2020-09-09					2020-09-10	2020-09-10		2020-09-12	2020-09-15
Laboratory Analysis	Units	Method Detection Limit	5x Method Detection Limit											
Physical Tests (Water)										QA				
Conductivity	umhos/cm	1.0	5	245	250	2%	353	358	1%	210	217	3%	<1.0	<1.0
Hardness (as CaCO3)	mg/L	0.20	1	68.9	74.4	8%	149	143	4%	65.4	73.6	12%	<0.20	<0.20
pH	pH units	0.10	0.5	8.14	8.29	2%	7.79	7.9	1%	8.03	8.08	1%	5.54	5.54
Total Suspended Solids	mg/L	1.0	5	<1.0	<1.0	--	<1.0	<1.0	--	<1.0	<1.0	--	<1.3	<1.3
Total Dissolved Solids	mg/L	4.0	20	169	140	19%	217	222	2%	143	122	16%	<4.0	<4.0
Turbidity	NTU	0.1	0.5	0.31	0.33	<MDL	0.16	0.23	<MDL	0.36	0.32	<MDL	<0.10	<0.10
Anions and Nutrients (Water)														
Alkalinity, Total (as CaCO3)	mg/L	1.0	5.0	120	122	2%	51.4	47.8	7%	70	71.6	2%	<1.0	<1.0
Ammonia, Total (as N)	mg/L	0.010	0.1	0.23	0.13	59%	0.074	0.061	19%	0.042	0.056	>MDL	<0.010	<0.010
Bicarbonate (HCO3)	mg/L	1.2	6.0	146	149	2%	62.7	58.3	7%	86	87.4	2%	<1.2	<1.2
Bromide (Br)	mg/L	0.10	0.5	<0.10	<0.10	--	<0.10	<0.10	--	<0.10	<0.10	--	<0.10	<0.10
Carbonate (CO3)	mg/L	0.60	3.0	<0.60	<0.60	--	<0.60	<0.60	--	<0.60	<0.60	--	<0.60	<0.60
Chloride (Cl)	mg/L	0.50	2.5	4.78	4.90	2%	4.82	4.75	1%	1.52	1.62	<MDL	<0.50	<0.50
Fluoride (F)	mg/L	0.020	0.1	1.23	1.20	2%	0.38	0.366	4%	0.99	1.10	11%	<0.020	<0.020
Hydroxide (OH)	mg/L	0.34	1.7	<0.34	<0.34	--	<0.34	<0.34	--	<0.34	<0.34	--	<0.34	<0.34
Nitrate and Nitrite as N	mg/L	0.070	0.4	<0.070	<0.070	--	0.432	0.438	1%	<0.070	<0.070	--	<0.070	<0.070
Nitrate (as N)	mg/L	0.020	0.1	<0.020	<0.020	--	0.432	0.437	1%	<0.020	<0.020	--	<0.020	<0.020
Nitrite (as N)	mg/L	0.010	0.1	<0.010	<0.010	--	<0.010	0.0011	--	<0.010	<0.010	--	<0.010	<0.010
Total Kjeldahl Nitrogen	mg/L	0.20	1.0	<0.20	<0.20	--	<0.20	<0.20	--	<0.20	<0.20	--	<0.20	<0.20
Total Nitrogen	mg/L	0.20	1.0	<0.20	<0.20	--	0.43	0.44	<MDL	<0.20	<0.20	--	<0.20	<0.20
Orthophosphate-Dissolved (as P)	mg/L	0.0030	0.0	0.0277	0.0263	5%	0.0063	0.0067	<MDL	0.0207	0.02	3%	-	-
Phosphorus (P)-Total Dissolved	mg/L	0.0030	0.0	0.0431	0.0382	12%	<0.0030	<0.0020	--	0.03	0.0244	7%	<0.0030	<0.0030
Phosphorus (P)-Total	mg/L	0.0030	0.0	0.0454	0.0436	4%	<0.0030	<0.0020	--	0.0296	0.0284	4%	<0.0030	<0.0030
Silica, Reactive (as SiO2)	mg/L	1.0	5.0	7.8	7.6	3%	6.6	6.5	2%	9.5	9.4	1%	-	-
Sulfate (SO4)	mg/L	0.30	1.5	10.7	11.2	5%	116	115	1%	34.8	36.4	4%	<0.30	<0.30
Cyanides (Water)														
Cyanide, Weak Acid Diss	mg/L	0.0010	0.0050	<0.0010	<0.0010	--	<0.0010	<0.0010	--	<0.0010	<0.0010	--	<0.0010	<0.0010
Cyanide, Total	mg/L	0.0010	0.0050	<0.0010	<0.0010	--	<0.0010	<0.0010	--	0.0019	<0.0010	--	<0.0010	<0.0010
Cyanide, Free	mg/L	0.0010	0.0050	<0.0010	<0.0010	--	<0.0010	<0.0010	--	<0.0010	<0.0010	--	<0.0010	<0.0010
Organic / Inorganic Carbon (Water)														
Dissolved Organic Carbon	mg/L	0.50	2.50	21.4	15.2	34%	0.92	0.69	<MDL	1.11	1.39	<MDL	<0.50	<0.50
Total Organic Carbon	mg/L	0.50	2.50	2.08	2.07	<MDL	0.72	0.77	<MDL	0.84	1.01	<MDL	<0.50	<0.50
Total Metals (Water)														
Aluminum (Al)-Total	mg/L	0.0030	0.0150	<0.0030	0.0033	--	0.0057	0.0052	<MDL	0.008	0.0078	<MDL	<0.0030	<0.0030
Antimony (Sb)-Total	mg/L	0.00010	0.0005	<0.00010	<0.00010	--	0.0002	0.00015	<MDL	<0.00010	0.00012	--	<0.00010	<0.00010
Arsenic (As)-Total	mg/L	0.00010	0.0005	0.00296	0.00307	4%	0.0303	0.0312	3%	0.023	0.0233	1%	<0.00010	<0.00010
Barium (Ba)-Total	mg/L	0.00010	0.0005	0.0147	0.0146	1%	0.0103	0.0103	0%	0.00218	0.00225	3%	<0.00010	<0.00010
Beryllium (Be)-Total	mg/L	0.00010	0.0005	<0.00010	<0.00010	--	<0.00010	<0.00010	--	<0.00010	<0.00010	--	<0.00010	<0.00010
Bismuth (Bi)-Total	mg/L	0.000050	0.0003	<0.000050	<0.000050	--	<0.000050	<0.000050	--	<0.000050	<0.000050	--	<0.000050	<0.000050
Boron (B)-Total	mg/L	0.010	0.0500	0.234	0.241	3%	0.079	0.078	1%	0.087	0.089	2%	<0.010	<0.010
Cadmium (Cd)-Total	mg/L	0.0000050	0.0000	0.0000104	<0.0000050	--	0.000113	0.000109	4%	<0.0000050	0.0000076	--	<0.0000050	<0.0000050
Calcium (Ca)-Total	mg/L	0.050	0.2500	15.2	15.8	4%	35.3	34.4	3%	16.5	17	3%	0.058	0.058
Cesium (Cs)-Total	mg/L	0.000010	0.0001	0.000255	0.000246	4%	0.000053	0.000043	<MDL	0.000046	0.000061	>MDL	<0.000010	<0.000010
Chromium (Cr)-Total	mg/L	0.00010	0.0005	<0.00010	<0.00010	--	<0.00010	<0.00010	--	0.00019	0.0002	<MDL	<0.00010	<0.00010
Cobalt (Co)-Total	mg/L	0.00010	0.0005	<0.00010	<0.00010	--	0.00597	0.00574	4%	<0.00010	<0.00010	--	<0.00010	<0.00010
Copper (Cu)-Total	mg/L	0.00050	0.0025	<0.00050	<0.00050	--	0.00973	0.00989	2%	<0.00050	<0.00050	--	<0.00050	<0.00050
Iron (Fe)-Total	mg/L	0.010	0.0500	0.211	0.21	0%	0.02	0.019	<MDL	0.182	0.181	1%	<0.010	<0.010
Lead (Pb)-Total	mg/L	0.000050	0.0003	<0.000050	<0.000050	--	0.00006	<0.000050	--	<0.000050	0.000117	--	<0.000050	<0.000050
Lithium (Li)-Total	mg/L	0.0010	0.0050	0.008	0.0085	6%	0.0044	0.004	<MDL	0.0024	0.0027	<MDL	<0.0010	<0.0010
Magnesium (Mg)-Total	mg/L	0.0050	0.0250	8.52	8.5	0%	17.5	16	9%	7.3	7.49	3%	<0.0050	<0.0050
Manganese (Mn)-Total	mg/L	0.00010	0.0005	0.0725	0.0714	2%	0.916	0.875	5%	0.0465	0.0475	2%	<0.00010	<0.00010
Mercury (Hg)-Total	mg/L	0.0000050	0.0000	<0.0000050	<0.0000050	--	<0.0000050	<0.0000050	--	<0.0000050	<0.0000050	--	<0.0000050	<0.0000050
Molybdenum (Mo)-Total	mg/L	0.000050	0.0003	0.00645	0.0066	2%	0.00392	0.00416	6%	0.0119	0.0125	5%	<0.000050	<0.000050
Nickel (Ni)-Total	mg/L	0.00050	0.0025	<0.00050	<0.00050	--	0.0681	0.0661	3%	<0.00050	<0.00050	--	<0.00050	<0.00050
Phosphorus (P)-Total	mg/L	0.030	0.1500	0.058	0.053	<MDL	<0.030	<0.030	--	0.034	0.048	<MDL	<0.030	<0.030
Potassium (K)-Total	mg/L	0.050	0.2500	2.1	2.08	1%	3.36	3.28	2%	0.933	0.966	3%	<0.050	<0.050
Rubidium (Rb)-Total	mg/L	0.00020	0.0010	0.00337	0.00331	2%	0.00356	0.00365	2%	0.00098	0.00102	<MDL	<0.00020	<0.00020
Selenium (Se)-Total	mg/L	0.000050	0.0003	0.000052	<0.000050	--	0.000175	0.000134	<MDL	<0.000050	0.000054	--	<0.000050	<0.000050
Silicon (Si)-Total	mg/L	0.10	0.5000	3.71	3.76	1%	3.12	3.15	1%	4.66	4.74	2%	<0.10	<0.10
Silver (Ag)-Total	mg/L	0.000010	0.0001	<0.000010	<0.000010	--	<0.000010	<0.000010	--	<0.000010	<0.000010	--	<0.000010	<0.000010
Sodium (Na)-Total	mg/L	0.050	0.2500	28.3	28.8	2%	3.8	3.77	1%	18	18.5	3%	<0.050	<0.050
Strontium (Sr)-Total	mg/L	0.00020	0.0010	0.147	0.143	3%	0.159	0.163	2%	0.136	0.14	3%	<0.00020	<0.00020
Sulfur (S)-Total	mg/L	0.50	2.5000	3.19	3.38	6%	37.4	35.6	5%	12.4	12.5	1%	<0.50	<0.50
Tellurium (Te)-Total	mg/L	0.00020	0.0010	<0.00020	<0.00020	--	<0.00020	<0.00020	--	<0.00020	<0.00020	--	<0.00020	<0.00020
Thallium (Tl)-Total	mg/L	0.000010	0.0001	<0.000010	<0.000010	--	0.000021	0.000014	<MDL	<0.000010	<0.000010	--	<0.000010	<0.000010

Table 8 - 2020 Groundwater Monitoring Program Water Quality QA/QC
Agnico Eagle Mines Limited, Meadowbank Mine, Nunavut

Sample Location				MW-IPD-07			MW-IPD-01(s)			MW-IPD-09			QA/QC	
Laboratory Sample ID				L2504283-5	L2504283-6	RPD	L2502386-1	L2502386-2	RPD	L2504283-1	L2504283-2	RPD	L2504283-4	L2506132-2
Sample Type					Duplicate			Duplicate			Duplicate		Trip Blank	Field Blank
Date Sampled				2020-09-09	2020-09-09					2020-09-10	2020-09-10		2020-09-12	2020-09-15
Laboratory Analysis	Units	Method Detection Limit	5x Method Detection Limit											
Physical Tests (Water)										QA				
Thorium (Th)-Total	mg/L	0.00010	0.0005	<0.00010	<0.00010	--	<0.00010	<0.00010	--	<0.00010	<0.00010	--	<0.00010	<0.00010
Tin (Sn)-Total	mg/L	0.00010	0.0005	<0.00010	<0.00010	--	<0.00010	<0.00010	--	<0.00010	<0.00010	--	<0.00010	<0.00010
Titanium (Ti)-Total	mg/L	0.00030	0.0015	<0.00030	<0.00030	--	<0.00030	<0.00030	--	<0.00030	<0.00030	--	<0.00030	<0.00030
Tungsten (W)-Total	mg/L	0.00010	0.0005	0.0169	0.0172	2%	0.00664	0.00677	2%	0.00634	0.00634	0%	<0.00010	<0.00010
Uranium (U)-Total	mg/L	0.000010	0.0001	0.000047	0.000045	<MDL	0.00363	0.0041	12%	0.000223	0.000224	0%	<0.000010	<0.000010
Vanadium (V)-Total	mg/L	0.00050	0.0025	<0.00050	<0.00050	--	<0.00050	0.00053	--	<0.00050	<0.00050	--	<0.00050	<0.00050
Zinc (Zn)-Total	mg/L	0.0030	0.0150	<0.0030	<0.0030	--	0.0205	0.0196	4%	<0.0030	<0.0030	--	<0.0030	<0.0030
Zirconium (Zr)-Total	mg/L	0.00020	0.0010	<0.00020	<0.00020	--	<0.00020	<0.00020	--	<0.00020	<0.00020	--	<0.00020	<0.00020
Dissolved Metals (Water)														
Aluminum (Al)-Dissolved	mg/L	0.0010	0.0050	<0.0010	<0.0010	--	0.0037	0.0034	<MDL	0.002	0.0017	<MDL	<0.0010	<0.0010
Antimony (Sb)-Dissolved	mg/L	0.00010	0.0005	<0.00010	<0.00010	--	0.00011	0.0002	<MDL	<0.00010	<0.00010	--	<0.00010	<0.00010
Arsenic (As)-Dissolved	mg/L	0.00010	0.0005	0.00306	0.00312	2%	0.0305	0.03	2%	0.0217	0.0221	2%	<0.00010	<0.00010
Barium (Ba)-Dissolved	mg/L	0.00010	0.0005	0.0146	0.014	4%	0.00985	0.00978	1%	0.0024	0.00242	1%	<0.00010	<0.00010
Beryllium (Be)-Dissolved	mg/L	0.00010	0.0005	<0.00010	<0.00010	--	<0.00010	<0.00010	--	<0.00010	<0.00010	--	<0.00010	<0.00010
Bismuth (Bi)-Dissolved	mg/L	0.000050	0.0003	<0.000050	<0.000050	--	<0.000050	<0.000050	--	<0.000050	<0.000050	--	<0.000050	<0.000050
Boron (B)-Dissolved	mg/L	0.010	0.0500	0.218	0.252	14%	0.075	0.074	1%	0.083	0.092	10%	<0.010	<0.010
Cadmium (Cd)-Dissolved	mg/L	0.0000050	0.0000	<0.0000050	<0.0000050	--	0.000103	0.000102	1%	<0.0000050	<0.0000050	--	<0.0000050	<0.0000050
Calcium (Ca)-Dissolved	mg/L	0.050	0.2500	15.1	15.7	4%	33.5	33.1	1%	15.8	16.4	4%	<0.050	<0.050
Cesium (Cs)-Dissolved	mg/L	0.000010	0.0001	0.000252	0.000263	4%	0.000039	0.000044	<MDL	0.000048	0.000043	<MDL	<0.000010	<0.000010
Chromium (Cr)-Dissolved	mg/L	0.00010	0.0005	<0.00010	<0.00010	--	<0.00010	<0.00010	--	<0.00010	<0.00010	--	<0.00010	<0.00010
Cobalt (Co)-Dissolved	mg/L	0.00010	0.0005	<0.00010	<0.00010	--	0.00563	0.00533	5%	<0.00010	<0.00010	--	<0.00010	<0.00010
Copper (Cu)-Dissolved	mg/L	0.00020	0.0010	<0.00020	<0.00020	--	0.00872	0.00851	2%	<0.00020	<0.00020	--	<0.00020	<0.00020
Iron (Fe)-Dissolved	mg/L	0.010	0.0500	0.082	0.069	17%	<0.010	<0.010	--	0.083	0.096	15%	<0.010	<0.010
Lead (Pb)-Dissolved	mg/L	0.000050	0.0003	<0.000050	<0.000050	--	<0.000050	<0.000050	--	<0.000050	<0.000050	--	<0.000050	<0.000050
Lithium (Li)-Dissolved	mg/L	0.0010	0.0050	0.0072	0.0082	13%	0.0038	0.0035	<MDL	0.0021	0.0025	<MDL	<0.0010	<0.0010
Magnesium (Mg)-Dissolved	mg/L	0.0050	0.0250	7.6	8.56	12%	15.8	14.8	7%	6.32	7.91	22%	<0.0050	<0.0050
Manganese (Mn)-Dissolved	mg/L	0.00010	0.0005	0.0682	0.0698	2%	0.841	0.801	5%	0.0451	0.0488	8%	<0.00010	<0.00010
Mercury (Hg)-Dissolved	mg/L	0.0000050	0.0000	<0.0000050	<0.0000050	--	<0.0000050	<0.0000050	--	<0.0000050	<0.0000050	--	<0.0000050	<0.0000050
Molybdenum (Mo)-Dissolved	mg/L	0.000050	0.0003	0.00651	0.00678	4%	0.00408	0.00409	0%	0.012	0.0123	2%	<0.000050	<0.000050
Nickel (Ni)-Dissolved	mg/L	0.00050	0.0025	<0.00050	<0.00050	--	0.0641	0.0607	5%	<0.00050	<0.00050	--	<0.00050	<0.00050
Phosphorus (P)-Dissolved	mg/L	0.030	0.1500	0.04	0.049	<MDL	<0.030	<0.030	--	<0.030	<0.030	--	<0.030	<0.030
Potassium (K)-Dissolved	mg/L	0.050	0.2500	2.19	2.28	4%	3.28	3.09	6%	0.964	1.08	11%	<0.050	<0.050
Rubidium (Rb)-Dissolved	mg/L	0.00020	0.0010	0.00366	0.00355	3%	0.00364	0.00356	2%	0.00101	0.00107	6%	<0.00020	<0.00020
Selenium (Se)-Dissolved	mg/L	0.000050	0.0003	0.000104	<0.000050	--	0.00012	0.000121	<MDL	0.000072	0.000092	<MDL	<0.000050	<0.000050
Silicon (Si)-Dissolved	mg/L	0.050	0.2500	3.54	3.69	4%	3.23	2.94	9%	4.45	4.58	3%	<0.050	<0.050
Silver (Ag)-Dissolved	mg/L	0.000010	0.0001	<0.000010	<0.000010	--	<0.000010	<0.000010	--	<0.000010	<0.000010	--	<0.000010	<0.000010
Sodium (Na)-Dissolved	mg/L	0.050	0.2500	26.9	29.8	10%	3.77	3.54	6%	16.8	20.4	19%	<0.050	<0.050
Strontium (Sr)-Dissolved	mg/L	0.00010	0.0005	0.148	0.153	3%	0.164	0.157	4%	0.141	0.149	6%	<0.00010	<0.00010
Sulfur (S)-Dissolved	mg/L	0.50	2.5000	3.93	4.12	5%	38.2	33.5	13%	12.3	12.4	1%	<0.50	<0.50
Tellurium (Te)-Dissolved	mg/L	0.00020	0.0010	<0.00020	<0.00020	--	<0.00020	<0.00020	--	<0.00020	<0.00020	--	<0.00020	<0.00020
Thallium (Tl)-Dissolved	mg/L	0.000010	0.00005	<0.000010	<0.000010	--	0.000013	0.000033	>MDL	<0.000010	<0.000010	--	<0.000010	<0.000010
Thorium (Th)-Dissolved	mg/L	0.00010	0.0005	<0.00010	<0.00010	--	<0.00010	<0.00010	--	<0.00010	<0.00010	--	<0.00010	<0.00010
Tin (Sn)-Dissolved	mg/L	0.00010	0.0005	<0.00010	<0.00010	--	<0.00010	<0.00010	--	<0.00010	<0.00010	--	<0.00010	<0.00010
Titanium (Ti)-Dissolved	mg/L	0.00030	0.0015	<0.00030	<0.00030	--	<0.00030	<0.00030	--	<0.00030	<0.00030	--	<0.00030	<0.00030
Tungsten (W)-Dissolved	mg/L	0.00010	0.0005	0.017	0.0175	3%	0.00657	0.00642	2%	0.00643	0.00693	7%	<0.00010	<0.00010
Uranium (U)-Dissolved	mg/L	0.000010	0.0001	0.000029	0.000031	<MDL	0.0037	0.00395	7%	0.000201	0.000205	2%	<0.000010	<0.000010
Vanadium (V)-Dissolved	mg/L	0.00050	0.0025	<0.00050	<0.00050	--	<0.00050	<0.00050	--	<0.00050	<0.00050	--	<0.00050	<0.00050
Zinc (Zn)-Dissolved	mg/L	0.0010	0.0050	<0.0010	<0.0010	--	0.0205	0.02	2%	0.0015	<0.0010	--	<0.0010	<0.0010
Zirconium (Zr)-Dissolved	mg/L	0.00020	0.0010	<0.00020	<0.00020	--	<0.00020	<0.00020	--	<0.00020	<0.00020	--	<0.00020	<0.00020

Notes:
Concentrations are mg/L unless otherwise noted.
RPD value exceeds 20% or duplicate outside of MDL tolerance (both samples are between the MDL and 5x the MDL)
RPD = relative percent difference
-- not calculated (one or both result below MDL)



LEGEND

WATER SAMPLING STATIONS 2020

- MONITORING WELL
- WALL SEEPAGE
- DIKE SEEPAGE
- SUMP
- POND
- RECLAIM WATER

WATER SAMPLING STATIONS (PRIOR 2019)

- MONITORING WELL
- PRODUCTION DRILL HOLE
- HORIZONTAL HOLE
- DIKE SEEPAGE
- WALL SEEPAGE
- SUMP
- DEEP LAKE WATER
- POND
- INCLINED HOLE
- TOPOGRAPHIC CONTOUR LINE (10 m)
- FAULT
- ASSUMED PERMAFROST LIMIT (SHORELINE MINUS 1.5 m)
- DIKE

MINING

- ROCK STORAGE FACILITY
- WASTE DUMP STORAGE
- PIT
- CELL

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECT DATA, AGNICO EAGLE MINES LIMITED 2017-2019
2. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: UTM ZONE 14, VERTICAL DATUM: CGVD28

0 175 350 700

1:17,500 METRES

CLIENT

AGNICO EAGLE MINES LIMITED

PROJECT

2020 GROUNDWATER MONITORING PROGRAM
MEADOWBANK MINE, NUNAVUT

TITLE

2020 WATER SAMPLING STATIONS

CONSULTANT

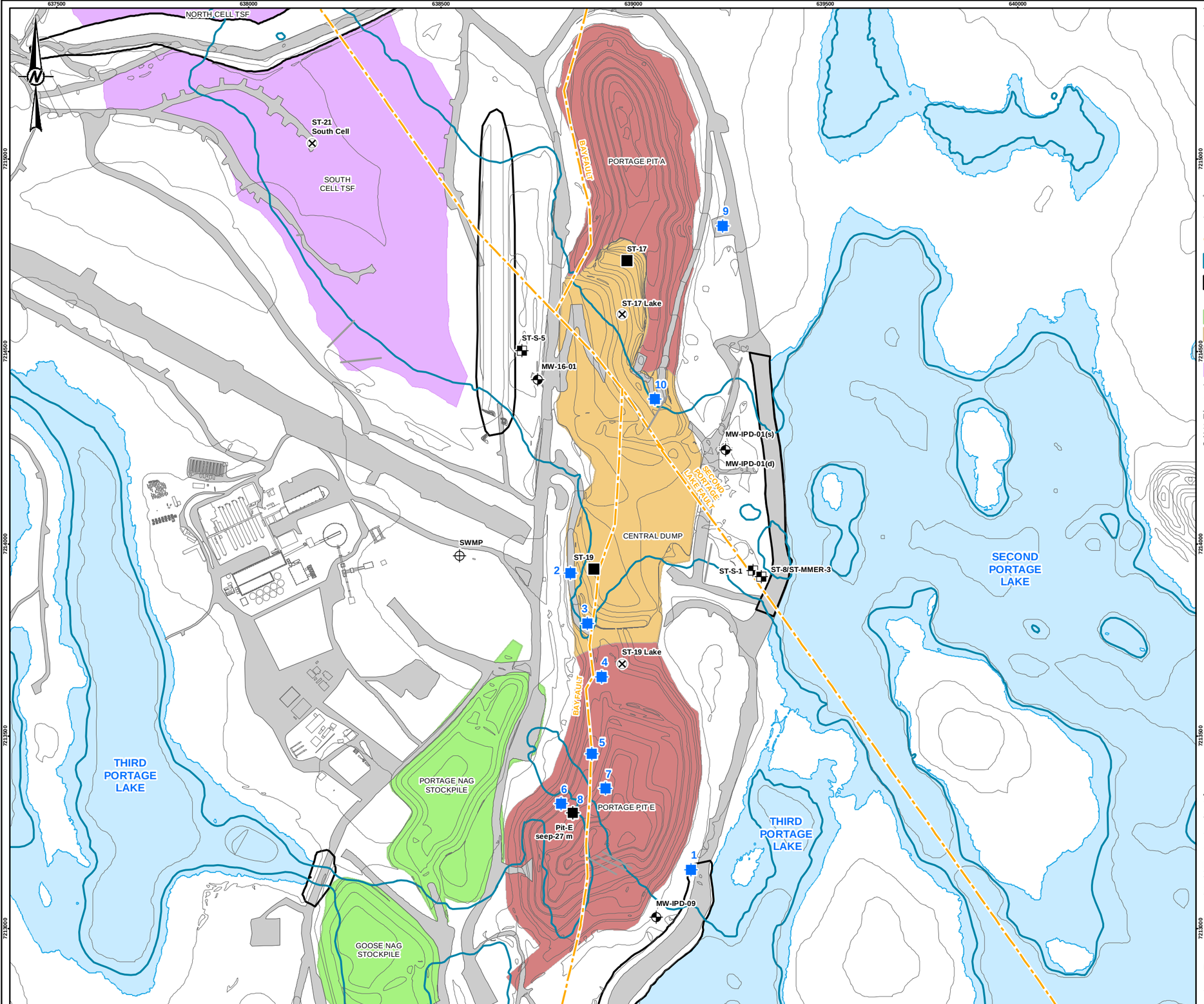
GOLDER

YYYY-MM-DD	2020-12-10
DESIGNED	----
PREPARED	JEM
REVIEWED	DH
APPROVED	VJB

PROJECT NO.	CONTROL	REV.	FIGURE
20148777-504	0001	0	1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm

Path: N:\Active\Spatial_IM\Agnico\Eagle\Meadowbank\99_PROJ\20148777_Agnico_GWSampling\0001_2020_GWSampling\20148777-0001-CH-001.mxd



LEGEND

WATER SAMPLING STATIONS 2020

- MONITORING WELL
- WALL SEEPAGE
- DIKE SEEPAGE
- SUMP
- POND
- RECLAIM WATER
- 2020 SEEPAGE SURVEY STATION
- INCLINED HOLE
- TOPOGRAPHIC CONTOUR LINE (10 m)
- FAULT
- ASSUMED PERMAFROST LIMIT (SHORELINE MINUS 1.5 m)
- DIKE

MINING

- ROCK STORAGE FACILITY
- WASTE DUMP STORAGE
- PIT
- CELL

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. PROJECT DATA, AGNICO EAGLE MINES LIMITED 2017-2019
2. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: UTM ZONE 14, VERTICAL DATUM: CGVD28

0 100 200 400
1:10,000 METRES

CLIENT
AGNICO EAGLE MINES LIMITED

PROJECT
2020 GROUNDWATER MONITORING PROGRAM
MEADOWBANK MINE, NUNAVUT

TITLE
2020 SEEPAGE SURVEY STATIONS

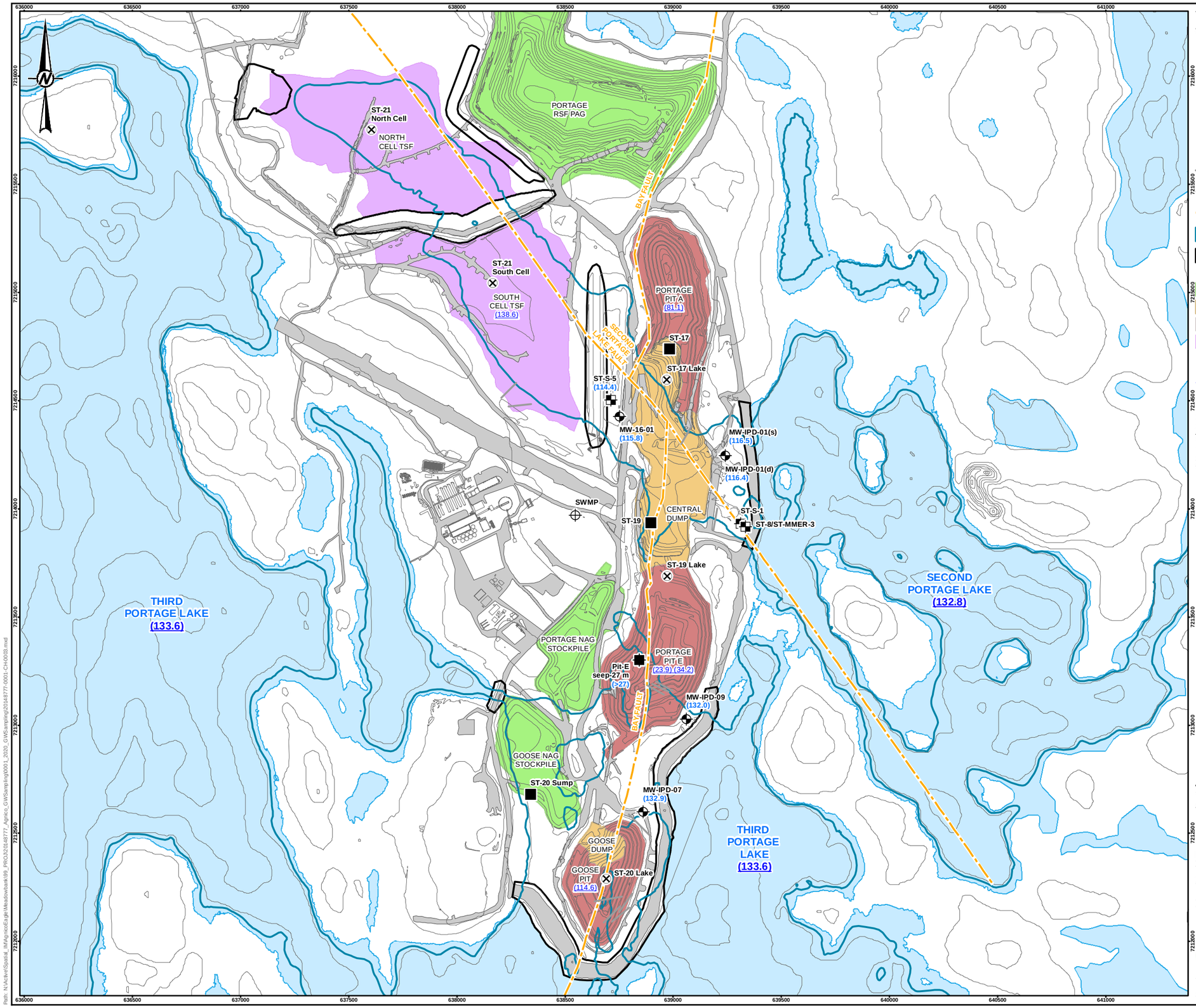
CONSULTANT
GOLDER

YYYY-MM-DD	2020-12-10
DESIGNED	----
PREPARED	JEM
REVIEWED	DH
APPROVED	VJB

PROJECT NO.	CONTROL	REV.	FIGURE
20148777-504	0001	0	2

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm

Path: N:\Active\Spatial_IM\AgnicoEagle\Meadowbank\99_PROJ\20148777_Agnico_GWSampling\20148777-0001-CH0002.mxd



LEGEND

WATER SAMPLING STATIONS 2020

- MONITORING WELL
- WALL SEEPAGE
- DIKE SEEPAGE
- SUMP
- POND
- RECLAIM WATER
- INCLINED HOLE
- TOPOGRAPHIC CONTOUR LINE (10 m)
- FAULT
- ASSUMED PERMAFROST LIMIT (SHORELINE MINUS 1.5 m)
- DIKE

MINING

- ROCK STORAGE FACILITY
- WASTE DUMP STORAGE
- PIT
- CELL

9999 GROUNDWATER ELEVATION, mASL

99.99 SURFACE WATER ELEVATION, MASL

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE
2. REFER TO TABLE 4 IN REPORT FOR SURFACE AND GROUNDWATER LEVEL MONITORING 2020 DATES

REFERENCE(S)

1. PROJECT DATA, AGNICO EAGLE MINES LIMITED 2017-2019
2. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: UTM ZONE 14, VERTICAL DATUM: CGVD28

0 175 350 700

1:17,500 METRES

CLIENT
AGNICO EAGLE MINES LIMITED

PROJECT
2020 GROUNDWATER MONITORING PROGRAM
MEADOWBANK MINE, NUNAVUT

TITLE
2020 GROUNDWATER AND SURFACE WATER ELEVATIONS

CONSULTANT

GOLDER

YYYY-MM-DD	2020-12-10
DESIGNED	----
PREPARED	JEM
REVIEWED	DH
APPROVED	VJB

PROJECT NO.	CONTROL	REV.	FIGURE
20148777-504	0001	0	3

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 25mm

Path: N:\Active\Spatial_IM\Agnico\Eagle\Meadowbank\99_PROJ\20148777_Agnico_GWSampling\0001_2020_GWSampling\20148777-0001-CH-0013.mxd

APPENDIX A

Monitoring Well Development Logs

APPENDIX A
Monitoring Well Development Logs
Agnico Eagle Mines Limited
Meadowbank Mine, Nunavut

Location	MW-IPD-01(d)		Nitrogen Tank Pressure (Start)			2200 psi (initial sample) / 1600 psi (confirmation sample)						Static Water Level (m): 14.08		Date: 7-Sep-20			
Screen Depth (m)	163-181		Nitrogen Tank Pressure (End)			600 psi / 1300 psi											
Pump Depth (m)	175		Pressure required to collect sample			1600 psi / 1000 psi											
Date	Time	Pressure set on control box (psi)	Flow setting on Controller Unit	Flow Rate (mL/min)	Volume Removed (L)	Cumulative Volume Removed (L)	Water Level (m)	pH	Conductivity (µS/cm)	Temp. °C	Dissolved oxygen (mg/L	Dissolved Oxygen (%)	ORP (mV)	Turbidity (NTU)	TDS (mg/L)	Salinity (ppm)	Comments
7-Sep-20	10:22	120	Medium	100	1	1	14.22	8.33	545	16.2	2.1	21	-	4.34	-	-	Slightly cloudy, grey colour
7-Sep-20	10:37	120	Medium	100	1.5	2.5	14.20	8.20	525	17.7	2.1	21	-	26.2	-	-	cloudy, grey colour
7-Sep-20	10:52	120	Medium	100	1.5	4	14.22	8.07	489	17.8	1.8	18	-	4.78	-	-	clear
7-Sep-20	11:07	120	Medium	90	1.5	5.5	14.22	8.06	476	17.6	1.7	17	-	4.88	-	-	clear
7-Sep-20	11:22	120	Medium	96	1.5	7	14.22	8.03	474	17.6	1.8	18	-	4.47	-	-	clear
7-Sep-20	11:37	120	Medium	98	1.5	8.5	14.22	8.07	458	18.1	1.7	17	-	3.37	-	-	clear
7-Sep-20	11:52	120	Medium	100	1.5	10	14.22	8.05	443	17.9	1.9	19	-	2.89	-	-	clear
7-Sep-20	12:07	120	Medium	103	1.5	11.5	14.22	8.09	430	17.7	1.6	16	-	2.58	-	-	clear
7-Sep-20	12:22	120	Medium	100	1.5	13	14.23	8.08	406	18.1	2	20	-	3.05	-	-	clear
7-Sep-20	12:37	120	Medium	101	1.5	14.5	14.22	8.15	391	17.8	2	20	-	10.7	-	-	clear
7-Sep-20	12:52	120	Medium	97	1.5	16	14.22	8.18	387	17.8	1.9	19	-	16.7	-	-	clear
7-Sep-20	13:07	120	Medium	99	1.5	17.5	14.22	8.21	388	18.3	1.9	19	-	17	-	-	clear
7-Sep-20	13:30	**Samples collected: MW-IPD-01(D); MW-IPD-01(D)-DUP-1; MW-IPD-01(D)-DUP-2**															
12-Sep-20	12:30	110	Medium	70	1	1	14.19	7.65	539	21.39	3.1	37.2	-116.3	3.82	271	0.25	
12-Sep-20	12:45	110	Medium	75	1.1	2.1	14.19	7.97	395	18.76	2.4	24	-189	35.1	197	0.19	
12-Sep-20	13:00	110	Medium	85	1.3	3.4	14.19	8.11	387	19.32	2.7	27	-220	5.34	194	0.19	
12-Sep-20	13:15	110	Medium	75	1.1	4.5	14.20	8.03	428	19.59	2.4	25	-241.5	3.57	214	0.21	
	13:30	111	Medium	83	1.3	5.8	14.20	8.00	433	19.29	2.1	22	-248.5	3.48	216	0.21	
12-Sep-20	13:45	110	Medium	83	1.3	7.1	14.20	8.00	427	19.76	2.2	22	-251.5	3.3	214	0.21	
12-Sep-20	14:00	110	Medium	80	1.2	8.3	14.19	8.02	424	19.42	2.7	27	-253.4	3.49	212	0.2	
12-Sep-20	14:15	110	Medium	82	1.2	9.5	14.13	8.06	420	15.88	2.5	25	-180	3.98	211	0.2	Pumping stopped for 5 min to connect new nitrogen tank
12-Sep-20	14:30	110	Medium	75	1.1	10.6	14.20	8.03	410	19.19	2.2	23	-250	4.26	206	0.2	
12-Sep-20	14:45	110	Medium	79	1.2	11.8	14.20	8.05	404	19.99	2.4	25	-255.1	5.12	203	0.2	
12-Sep-20	15:00	110	Medium	85	1.3	13.1	14.20	8.06	400	19.74	2.3	23	-255.5	5.54	200	0.19	
12-Sep-20	15:15	110	Medium	92	1.4	14.5	14.20	8.09	389	19.02	2.1	21	-251.9	6.11	195	0.19	
12-Sep-20	15:30	110	Medium	80	1.2	15.7	14.20	8.08	387	19.24	2.2	22	-250.1	7.89	193	0.19	
12-Sep-20	15:45	110	Medium	80	1.2	16.9	14.20	8.09	386	19.51	2.1	21	-247.8	9	192	0.18	
12-Sep-20	16:00	110	Medium	75	1.1	18	14.20	8.10	385	19.87	2.4	25	-247.1	10.9	192	0.18	
12-Sep-20	16:15	110	Medium	80	1.2	19.2	14.20	8.10	384	19.45	2.4	24	-245.1	12.3	192	0.18	
12-Sep-20	16:30	110	Medium	84	1.3	20.5	14.20	8.11	383	19.46	2.4	24	-243	14.2	192	0.18	
12-Sep-20	16:45	110	Medium	-	-	-	-	8.10	382	19.61	-	-	-241.6	-	191	0.18	
12-Sep-20	16:45	**Sample collected: MW-IPD-01(D)-12-09**															Nitrogen Tank pressure: 1300 psi

APPENDIX A
Monitoring Well Development Logs
Agnico Eagle Mines Limited
Meadowbank Mine, Nunavut

Location	MW-IPD-01(s)		Nitrogen Tank Pressure (Start)			1200 psi						Static Water Level (m): 14.36		Date: 8-Sep-20			
Screen Depth (m)	51-69		Nitrogen Tank Pressure (End)			1200 psi											
Pump Depth (m)	60		Pressure required to collect sample			negligible											
Date	Time	Pressure set on control box (psi)	Flow setting on Controller Unit	Flow Rate (mL/min)	Volume Removed (L)	Cumulative Volume Removed (L)	Water Level (m)	pH	Conductivity (µS/cm)	Temp. °C	Dissolved oxygen (mg/L	Dissolved Oxygen (%)	ORP (mV)	Turbidity (NTU)	TDS (mg/L)	Salinity (ppm)	Comments
8-Sep-20	10:25	50	Medium	61	0.5	0.5	14.36	7.46	193	21.3	6.1	69	-	6.37	-	-	Clear
8-Sep-20	10:40	60	Medium	125	1.5	2	14.37	7.43	512	20.9	4.1	46	-	0.69	-	-	Clear
8-Sep-20	10:55	40	Medium	58	1	3	14.36	7.56	506	19.4	5.2	56	-	0.73	-	-	Clear
8-Sep-20	11:10	50	Low	64	1	4	14.36	7.43	506	20.2	4.5	49	-	0.76	-	-	Clear
8-Sep-20	11:25	50	Low	61	1	5	14.36	7.52	507	19.2	4.8	51	-	0.52	-	-	Clear
8-Sep-20	11:40	-	Medium	-	1	6	14.36	7.46	503	21.4	5.3	57	-	0.56	-	-	Clear
8-Sep-20	11:55	60	Medium	120	2	8	14.37	7.56	502	20.3	4.7	51	-	0.72	-	-	Clear
8-Sep-20	12:10	60	Medium	123	2	10	14.37	7.56	491	20.6	4	45	-	0.5	-	-	Clear
8-Sep-20	12:25	60	Medium	130	2	12	14.37	7.60	494	20.8	4.1	45	-	0.41	-	-	Clear
8-Sep-20	12:40	60	Medium	132	2	14	14.37	7.54	490	20	3.9	44	-	0.44	-	-	Clear
8-Sep-20	12:55	55	Medium	98	1.5	15.5	14.37	7.62	487	20.1	4.6	49	-	0.42	-	-	Clear
8-Sep-20	13:10	55	Medium	95	1.5	17	14.37	7.57	485	20.6	4	44	-	0.39	-	-	Clear
8-Sep-20	13:25	55	Medium	100	1.5	18.5	14.37	7.61	481	20.3	4.1	45	-	0.41	-	-	Clear
8-Sep-20	13:40	55	Medium	100	1.5	20	14.37	7.57	474	20.2	4	44	-	0.48	-	-	Clear
8-Sep-20	13:55	55	Medium	100	1.5	21.5	14.37	7.65	472	19.9	4	43	-	0.5	-	-	Clear
8-Sep-20	14:10	55	Medium	100	1.5	23	14.37	7.57	465	20.2	4	44	-	0.37	-	-	Clear
8-Sep-20	14:25	55	Medium	102	1.5	24.5	14.37	7.66	458	20.4	3.9	43	-	0.39	-	-	Clear
8-Sep-20	14:40	55	Medium	95	1.5	26	14.37	7.66	450	19.9	3.9	43	-	0.45	-	-	Clear
8-Sep-20	14:55	55	Medium	100	1.5	27.5	14.37	7.69	444	19.7	4.1	45	-	0.44	-	-	Clear
8-Sep-20	15:10	55	Medium	104	1.6	29.1	14.37	7.66	429	20.6	3.8	42	-	0.39	-	-	Clear
8-Sep-20	15:25	55	Medium	108	1.6	30.7	14.37	7.73	417	19.9	4	43	-	0.43	-	-	Clear
8-Sep-20	15:40	55	Medium	104	1.6	32.3	14.37	7.75	403	20.2	4	44	-	0.54	-	-	Clear
8-Sep-20	15:55	55	Medium	105	1.6	33.9	14.37	7.76	395	20.4	3.6	41	-	0.41	-	-	Clear
8-Sep-20	16:10	55	Medium	105	1.6	35.5	14.37	7.71	387	20.1	3.5	39	-	0.39	-	-	Clear
8-Sep-20	16:30	**Samples collected: MW-IPD-01(s), MW-IPD-01(s)-DUP-1, MW-IPD-01(s)**															Nitrogen Tank pressure: 1200 psi

APPENDIX A
Monitoring Well Development Logs
Agnico Eagle Mines Limited
Meadowbank Mine, Nunavut

Location	MW-IPD-07		Nitrogen Tank Pressure (Start)			1000 psi						Static Water Level (m): 0.96		Date: 9-Sep-20			
Screen Depth (m)	42-50		Nitrogen Tank Pressure (End)			600 psi											
Pump Depth (m)	40		Pressure required to collect sample			500 psi											
Date	Time	Pressure set on control box (psi)	Flow setting on Controller Unit	Flow Rate (mL/min)	Volume Removed (L)	Cumulative Volume Removed (L)	Water Level (m)	pH	Conductivity (µS/cm)	Temp. °C	Dissolved oxygen (mg/L	Dissolved Oxygen (%)	ORP (mV)	Turbidity (NTU)	TDS (mg/L)	Salinity (ppm)	Comments
9-Sep-20	10:20	35	Low	164	2	2	1.16	7.72	248	18.9	1.4	15	-	14.7	-	-	Clear
9-Sep-20	10:35	25	Low	105	1.6	3.6	1.18	8.48	262	18	1.4	14	-	1.08	-	-	Clear
9-Sep-20	10:50	25	Low	105	1.6	5.2	1.18	8.48	262	18	1.4	15	-	0.97	-	-	Clear
9-Sep-20	11:05	25	Low	102	1.5	6.7	1.16	8.48	263	17.8	1.5	15	-	1.1	-	-	Clear
9-Sep-20	11:20	25	Low	96	1.5	8.2	1.18	8.46	263	17.8	1.4	15	-	0.59	-	-	Clear
9-Sep-20	11:35	25	Low	105	1.6	9.8	1.18	8.47	263	17.6	1.4	14	-	0.5	-	-	Clear
9-Sep-20	11:50	25	Low	95	1.5	11.3	1.19	8.42	262	17.8	1.4	14	-	0.52	-	-	Clear
9-Sep-20	12:05	20	Low	100	1.5	12.8	1.19	8.46	260	17.3	1.6	16	-	0.67	-	-	Clear
9-Sep-20	12:20	20	Low	79	12	14	1.19	8.45	262	16.7	1.4	15	-	0.51	-	-	Clear
9-Sep-20	12:35	20	Low	89	14	15.4	1.19	8.48	262	17.6	1.5	15	-	0.77	-	-	Clear
9-Sep-20	12:50	20	Low	88	14	16.8	1.19	8.46	261	16.8	1.4	14	-	0.58	-	-	Clear
9-Sep-20	13:05	20	Low	79	12	18	1.19	8.49	262	17.3	1.4	14	-	0.69	-	-	Clear
9-Sep-20	13:20	20	Low	79	12	19.2	1.19	8.47	260	17.1	1.4	14	-	0.57	-	-	Clear
9-Sep-20	13:35	20	Low	80	12	20.4	1.19	8.49	260	17.5	1.4	14	-	0.62	-	-	Clear
9-Sep-20	13:50	20	Low	-	14	21.8	1.19	8.46	260	17.6	1.5	15	-	0.57	-	-	Clear
9-Sep-20	14:00	**Samples collected: MW-IPD-07, MW-IPD-07-DUP-1, MW-IPD-07-DUP-2**															Nitrogen Tank pressure: 1900 psi

APPENDIX A
Monitoring Well Development Logs
Agnico Eagle Mines Limited
Meadowbank Mine, Nunavut

Location	MW-IPD-09		Nitrogen Tank Pressure (Start)			2000 psi						Static Water Level (m): 1.99		Date: 10-Sep-20			
Screen Depth (m)	62-80		Nitrogen Tank Pressure (End)			1900 psi											
Pump Depth (m)	70		Pressure required to collect sample			100 psi											
Date	Time	Pressure set on control box (psi)	Flow setting on Controller Unit	Flow Rate (mL/min)	Volume Removed (L)	Cumulative Volume Removed (L)	Water Level (m)	pH	Conductivity (µS/cm)	Temp. °C	Dissolved oxygen (mg/L	Dissolved Oxygen (%)	ORP (mV)	Turbidity (NTU)	TDS (mg/L)	Salinity (ppm)	Comments
10-Sep-20	11:30	25	High	75	1	1	2.21	7.91	325	17.05	0.04	0.9	-161.8	0.98	150	0.14	Clear
10-Sep-20	11:45	35	High	86	1.3	2.3	2.32	8.18	208	17.97	-	-	-243.5	2.27	104	0.1	Clear
10-Sep-20	12:00	35	High	87	1.4	3.7	2.22	8.28	210	17.79	2.9	28	-255.8	0.77	105	0.1	Clear
10-Sep-20	12:15	35	High	84	1.3	5	2.39	8.29	209	17.56	2.5	24	-254.8	0.69	104	0.1	Clear
10-Sep-20	12:30	35	High	88	1.4	6.4	2.30	8.29	208	17.45	2	19	-256.9	0.61	104	0.1	Clear
10-Sep-20	12:45	35	High	92	1.4	7.8	2.43	8.29	207	17.53	2.3	22	-258	0.69	103	0.1	Clear
10-Sep-20	13:00	35	High	89	1.4	9.2	2.43	8.29	206	17.4	1.7	17	-258.1	0.52	103	0.1	Clear
10-Sep-20	13:15	35	High	90	1.4	10.6	2.44	8.30	205	17.63	2.1	21	-260.5	0.56	103	0.1	Clear
10-Sep-20	13:30	35	High	88	1.4	12	2.45	8.31	204	17.34	2.4	23	-261	0.8	102	0.1	Clear
10-Sep-20	13:45	35	High	88	1.4	13.4	2.45	8.30	204	17.34	2.6	26	-261.3	0.57	102	0.1	Clear
10-Sep-20	14:00	35	High	88	1.4	14.8	2.45	8.30	203	17.29	2	20	-261.7	0.71	102	0.1	Clear
10-Sep-20	14:15	35	High	90	1.4	16.2	2.45	8.30	202	17.55	2.8	27	-262.5	0.81	101	0.1	Clear
10-Sep-20	14:30	35	High	88	1.4	17.6	2.45	8.30	205	17.49	3	29	-262.5	0.79	102	0.1	Clear
10-Sep-20	14:45	35	High	88	1.4	19	2.45	8.30	204	17.53	2.5	24	-263.5	0.88	102	0.1	Clear
10-Sep-20	15:00	35	High	91	1.4	20.4	2.45	8.30	204	17.44	2.1	21	-263.3	0.86	102	0.1	Clear
10-Sep-20	15:15	35	High	90	1.4	21.8	2.45	8.30	203	17.15	1.6	15	-262.8	1.25	101	0.1	Clear
10-Sep-20	15:30	35	High	90	1.4	23.2	2.45	8.30	202	17.51	1.4	14	-264.1	0.93	101	0.1	Clear
10-Sep-20	15:45	35	High	90	1.4	24.6	2.45	8.31	201	17.49	1.8	18	-264.5	1.57	101	0.1	Clear
10-Sep-20	16:00	-	-	-	-	-	-	8.31	204	17.35	2.1	21	-263.4	2.04	102	0.1	Clear
10-Sep-20	16:00	**Samples collected: MW-IPD-09, MW-IPD-09-DUP-1, MW-IPD-09-DUP-2**															Nitrogen Tank pressure: 600 psi

Location	MW-16-01		Nitrogen Tank Pressure (Start)			1350 psi						Static Water Level (m): 5.3			Date: 13-Sep-20		
Screen Depth (mah)	89-101		Nitrogen Tank Pressure (End)			700 psi											
Pump Depth (mah)	70		Pressure required to collect sample			650 psi											
Date	Time	Pressure set on control box (psi)	Flow setting on Controller Unit	Flow Rate (mL/min)	Volume Removed (L)	Cumulative Volume Removed (L)	Water Level (m)	pH	Conductivity (µS/cm)	Temp. °C	Dissolved oxygen (mg/L	Dissolved Oxygen (%)	ORP (mV)	Turbidity (NTU)	TDS (mg/L)	Salinity (ppm)	Comments
13-Sep-20	11:25	60	Not applicable	Airlifting	10	10	-	7.76	3265	13.27	-	-	51.1	126	1633	1.72	Cloudy, rust coloured
13-Sep-20	11:45	60	-	-	15	25	-	7.81	2855	11.69	-	-	41.7	91.2	1428	1.5	Cloudy, rust coloured
13-Sep-20	12:00	60	-	-	10	35	-	7.76	2891	10.99	-	-	-54.6	29	1446	1.52	Slightly cloudy
13-Sep-20	12:15	60	-	-	15	50	-	7.68	3015	11.6	-	-	-124.8	37.6	1508	1.58	Grey tinge
13-Sep-20	12:30	60	-	-	10	60	-	7.61	3131	11.85	-	-	-126.2	58.6	1565	1.65	Grey tinge
13-Sep-20	12:45	60	-	-	10	70	-	7.57	3146	11.92	-	-	-114	106	1575	1.66	Cloudy, grey
13-Sep-20	13:00	60	-	-	15	85	-	7.60	3150	11.62	-	-	-123.3	138	1576	1.66	Cloudy, grey
13-Sep-20	13:15	60	-	-	15	100	-	7.58	3148	11.66	-	-	-125.2	121	1575	1.66	Cloudy, grey
13-Sep-20	13:30	60	-	-	15	115	-	7.60	3146	11.75	-	-	-124.5	126	1574	1.66	Cloudy, grey
13-Sep-20	13:45	60	-	-	15	130	-	7.61	3142	11.6	-	-	-128.4	128	1574	1.66	Cloudy, grey
13-Sep-20	14:00	60	-	-	15	145	-	7.62	3133	11.83	-	-	-128	131	1568	1.65	Cloudy, grey
13-Sep-20	14:15	60	-	-	15	160	-	7.64	3127	11.54	-	-	-135.2	122	1564	1.65	Cloudy, grey
13-Sep-20	14:30	60	-	-	15	175	-	7.63	3112	11.53	-	-	-137.9	92.1	1557	1.64	Cloudy, grey
13-Sep-20	14:45	60	-	-	15	190	-	7.63	3099	11.54	-	-	-140.1	97.4	1549	1.63	Cloudy, grey
13-Sep-20	15:00	60	-	-	15	205	-	7.62	3114	11.49	-	-	-138.6	90.5	1558	1.64	Cloudy, grey
13-Sep-20	15:15	60	-	-	15	220	-	7.63	3110	11.63	-	-	-140.8	87.9	1556	1.64	Cloudy, grey
13-Sep-20	15:30	60	-	-	15	235	-	7.61	3076	11.54	-	-	-137.6	84.5	1538	1.62	Cloudy, grey
13-Sep-20	15:45	60	-	-	15	250	-	7.63	3103	11.48	-	-	-143.2	79.6	1553	1.64	Cloudy, grey
13-Sep-20	16:00	60	-	-	15	265	-	7.65	3096	11.46	-	-	-143.5	83.2	1549	1.63	Cloudy, grey
13-Sep-20	16:15	60	-	-	15	280	-	7.65	3058	11.32	-	-	-146.4	78.4	1530	1.61	Cloudy, grey
13-Sep-20	16:30	60	-	-	15	295	-	7.64	3052	11.32	-	-	-142.3	80.4	1526	1.6	Cloudy, grey
14-Sep-20	9:45	60	-	-	10	305	-	7.37	3013	13.82	-	-	43.6	142	1506	1.58	Cloudy, rust coloured
14-Sep-20	10:00	60	-	-	15	320	-	7.57	2929	11.62	-	-	-86.2	127	1465	1.54	Cloudy, light brown
14-Sep-20	10:15	60	-	-	15	335	-	7.63	2924	11.37	-	-	-124.5	46.7	1463	1.53	Cloudy, grey
14-Sep-20	10:30	60	-	-	15	350	-	7.66	2914	11.33	-	-	-129.8	39.4	1458	1.53	Slightly cloudy, grey
14-Sep-20	10:45	60	-	-	15	365	-	7.69	2913	11.3	-	-	-136.2	37.6	1456	1.53	Slightly cloudy, grey
14-Sep-20	11:00	60	-	-	15	380	-	7.66	2986	11.53	-	-	-131	67.8	1494	1.57	Cloudy, grey
14-Sep-20	11:15	60	-	-	15	395	-	7.62	3076	11.6	-	-	-128.7	84.5	1542	1.63	Cloudy, grey
14-Sep-20	11:30	60	-	-	15	410	-	7.67	3097	11.3	-	-	-149.8	37.1	1550	1.63	Slightly cloudy, grey
14-Sep-20	11:45	60	-	-	15	425	-	7.67	3103	11.56	-	-	-149.3	28.2	1554	1.64	Slightly cloudy, grey
14-Sep-20	12:00	60	-	-	15	440	-	7.68	3100	11.38	-	-	-156	22.8	1553	1.64	Slightly cloudy, grey
14-Sep-20	12:15	60	-	-	15	455	-	7.64	3109	11.91	-	-	-145.2	26.8	1556	1.64	Slightly cloudy, grey
14-Sep-20	12:30	60	-	-	15	470	-	7.67	3080	11.4	-	-	-156.3	25.5	1542	1.62	Slightly cloudy, grey
14-Sep-20	12:45	60	-	-	15	485	-	7.65	3101	11.59	-	-	-151.1	28.3	1551	1.63	Slightly cloudy, grey
14-Sep-20	13:00	60	-	-	15	500	-	7.66	3093	11.56	-	-	-152.4	31	1548	1.63	Slightly cloudy, grey
14-Sep-20	13:15	60	-	-	15	515	-	7.65	3067	11.67	-	-	-153.3	35.2	1536	1.61	Slightly cloudy, grey
14-Sep-20	13:30	60	-	-	15	530	-	7.65	3049	11.6	-	-	-151.4	30.7	1525	1.6	Slightly cloudy, grey
14-Sep-20	13:45	60	-	-	15	545	-	7.65	3073	11.61	-	-	-154.9	26.5	1537	1.62	Slightly cloudy, grey
14-Sep-20	14:00	60	-	-	15	560	-	7.66	3067	11.49	-	-	-154.6	32.1	1534	1.61	Slightly cloudy, grey
14-Sep-20	14:15	60	-	-	15	575	-	7.65	3049	11.46	-	-	-155.2	26.6	1526	1.61	Slightly cloud, grey-brown
14-Sep-20	14:30	60	-	-	15	590	-	7.65	3011	11.58	-	-	-155.4	27.6	1504	1.58	Slightly cloud, grey-brown
14-Sep-20	14:45	60	-	-	15	605	-	7.64	2973	11.57	-	-	-152.6	29.3	1486	1.56	Slightly cloud, grey-brown
14-Sep-20	15:00	60	-	-	15	620	-	7.59	2903	11.2	-	-	-156.6	25.9	1460	1.53	Slightly cloud, grey-brown
14-Sep-20	15:15	60	-	-	15	635	-	7.65	2938	11.27	-	-	-154.4	25.5	1469	1.54	Slightly cloud, grey-brown
14-Sep-20	15:30	60	-	-	15	650	-	7.66	2902	11.46	-	-	-155.2	22.2	1451	1.52	Slightly cloud, grey-brown
14-Sep-20	15:45	60	-	-	15	665	-	7.66	2891	11.53	-	-	-155	21.7	1446	1.51	Slightly cloud, grey-brown
14-Sep-20	16:00	60	-	-	15	680	-	7.67	2870	11.42	-	-	-156.8	20	1435	1.5	Slightly cloud, grey-brown
14-Sep-20	16:15	60	-	-	15	695	-	7.67	2867	11.43	-	-	-156.6	20.2	1434	1.5	Slightly cloud, grey-brown
14-Sep-20	16:30	60	-	-	15	710	-	7.67	2860	11.52	-	-	-156.2	20.9	1430	1.5	Slightly cloud, grey-brown
14-Sep-20	16:45	60	-	-	15	725	-	7.67	2858	11.55	-	-	-156.3	20.8	1429	1.5	Slightly cloud, grey-brown
14-Sep-20	17:00	60	-	-	15	740	-	7.67	2774	11.43	-	-	-157.2	18.7	1387	1.45	Slightly cloud, grey-brown
14-Sep-20	17:15	60	-	-	15	755	-	7.67	2879	11.5	-	-	-156.2	19.4	1440	1.51	Slightly cloud, grey-brown
14-Sep-20	17:30	60	-	-	15	770	-	7.67	2859	11.54	-	-	-156.3	19.4	1429	1.49	Slightly cloud, grey-brown
14-Sep-20	17:45	60	-	-	15	785	-	7.66	2854	11.61	-	-	-155.6	18.2	1428	1.49	Slightly cloud, grey-brown
15-Sep-20	14:00	40	High	Low Flow	1	1	-	7.48	2979	10.67	1.1	10.5	-195.8	2.9	1489	1.56	Clear
15-Sep-20	14:15	40	High	89	1.3	2.3	5.63	7.71	2869	11.22	0.53	5.1	-203.5	2.88	1435	1.5	Clear

APPENDIX A
Monitoring Well Development Logs
Agnico Eagle Mines Limited
Meadowbank Mine, Nunavut

Location	MW-16-01	Nitrogen Tank Pressure (Start)	1350 psi	Static Water Level (m): 5.3	Date: 13-Sep-20
Screen Depth (mah)	89-101	Nitrogen Tank Pressure (End)	700 psi		
Pump Depth (mah)	70	Pressure required to collect sample	650 psi		

Date	Time	Pressure set on control box (psi)	Flow setting on Controller Unit	Flow Rate (mL/min)	Volume Removed (L)	Cumulative Volume Removed (L)	Water Level (m)	pH	Conductivity (µS/cm)	Temp. °C	Dissolved oxygen (mg/L	Dissolved Oxygen (%)	ORP (mV)	Turbidity (NTU)	TDS (mg/L)	Salinity (ppm)	Comments
15-Sep-20	14:30	40	High	90	1.4	3.7	5.63	7.75	2846	11.44	3.9	34	-206.7	2.5	1424	1.49	Clear, DO measurements from YSI optical DO when Hanna stopped displaying results. No flow through cell, not representative
15-Sep-20	14:45	40	High	94	1.4	5.1	5.63	7.76	2877	11.42	3.9	33	-208.5	1.66	1439	1.51	Clear, DO measurements from YSI optical DO when Hanna stopped displaying results. No flow through cell, not representative
15-Sep-20	15:00	40	High	90	1.4	6.5	5.63	7.77	28.98	11.53	0.14	1.4	-208.6	1.76	1448	1.52	Clear
15-Sep-20	15:15	40	High	95	1.4	7.9	5.63	7.76	2943	11.35	0.08	0.8	-208.7	1.77	1471	1.54	Clear
15-Sep-20	15:30	40	High	90	1.4	9.3	5.63	7.76	2984	11.65	0.01	0.2	-208.9	1.57	1494	1.57	Clear
15-Sep-20	15:45	40	High	91	1.4	10.7	5.63	7.74	3051	11.62	-	-	-208	1.93	1525	1.6	Clear
15-Sep-20	16:00	40	High	90	1.4	12.1	5.63	7.74	3077	11.75	-	-	-207.8	1.19	1538	1.62	Clear
15-Sep-20	16:00	**Samples collected: Field Blank**															
15-Sep-20	16:15	40	High	92	1.4	13.5	5.63	7.73	3098	11.95	-	-	-207.7	1.86	1547	1.63	Clear
15-Sep-20	16:30	40	High	92	1.4	14.9	5.63	7.73	3095	11.68	-	-	-207.8	1.14	1547	1.63	Clear
15-Sep-20	16:45	40	High	91	1.4	16.3	5.63	7.73	3085	12.05	-	-	-208.2	1.39	1543	1.62	Clear
15-Sep-20	17:00	40	High	89	1.4	17.6	5.63	7.72	3088	12.36	-	-	-209.1	1.16	1546	1.62	Clear
15-Sep-20	17:15	40	High	88	1.3	18.9	5.63	7.72	3093	12.18	-	-	-209.3	1.05	1547	1.63	Clear
15-Sep-20	17:30	40	High	88	1.3	20.2	5.63	7.73	3099	12.07	-	-	-209	0.93	1547	1.63	Clear
15-Sep-20	17:45	40	High	-	1.3	-	5.63	7.73	3098	12.24	-	-	-208.6	1.03	1548	1.63	Clear
15-Sep-20	17:45	**Samples collected: MW-16-01, MW-16-01-DUP-1**															Nitrogen Tank pressure: 700 psi

Notes:
Water level measurements reference meters below the top of the well casing
m = metres
mL/min = millimeter per minute
L = Litre
µS/cm = microsiemens per centimetre
psi = pounds per square inch
mg/L = milligram per litre
mV = millivolt
NTU = nephelometric turbidity units
ORP = oxygen reduction potential
ppm = parts per million

APPENDIX B

Seepage Survey Photographs

September 17, 2020

Seepage survey station 1: View from top looking towards west wall of Pit-E, showing the approximate locations of survey stations 2 through 6. Position: 14 W 639150 Easting, 7213154 Northing, Altitude 130 metres elevation. Groundwater seeps observed within multiple lifts. Note seepage survey stations 7 and 8 (the Pit-E west wall seepage sample location) are below the visible area shown.

Notes:
5 Seepage survey station number
Approximate route of seepage survey
Survey position and elevation measured using handheld GPS

CLIENT
AGNICO EAGLE MINES LIMITED

CONSULTANT
GOLDER

YYYY-MM-DD	2021-03-03
PREPARED	DH
DESIGN	--
REVIEW	VJB
APPROVED	VJB

PROJECT
2020 GROUNDWATER MONITORING PROGRAM
MEADOWBANK MINE, NUNAVUT

TITLE
SEEPAGE SURVEY PORTAGE PIT-E SEPTEMBER 17, 2020

PROJECT No. 20148777-504
Rev. 0

FIGURE B-1

Seepage survey station 2: View of Pit-E west wall near the top lift. Some groundwater seepage and iron oxide staining observed.
Position: 14 W, 638836 Easting, 7213925 Northing, Altitude 103 metres elevation.

Note: Survey position and elevation measured using handheld GPS

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FIGURE B-2

Seepage survey station 3: View of Pit-E west wall near the second lift. Some groundwater seepage and iron oxide staining observed.
Position: 14 W 638881 Easting, 7213794 Northing, Elevation 83 metres.

Note: Survey position and elevation measured using handheld GPS

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FIGURE B-3

Seepage survey station 4: View of Pit-E west wall near the third lift. Some groundwater seepage and iron oxide staining observed.
Position: 14 W 638918 Easting, 7213655 Northing, Elevation 71 metres.

Seepage survey station 5: View of Pit-E west wall near the fourth lift. Some groundwater seepage observed.
Position: 14 W 638881 Easting, 7213794 Northing, Elevation 68 metres.

Note: Survey position and elevation measured using handheld GPS

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FIGURE B-4

Seepage survey station 6: View of Pit-E west wall near the second lift. Some groundwater seepage and iron oxide staining observed.
Position: 14 W 638812 Easting, 7213325 Northing, Elevation 52 metres.

Note: Survey position and elevation measured using handheld GPS

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FIGURE B-5

Seepage survey station 7: Base of Pit-E looking west. Position: 14 W 638927 Easting, 7213365 Northing, Elevation 8 metres.

Seepage survey station 8: View from pit floor looking towards west wall of Pit-E. Groundwater seepage sample was collected near the lowest accessible point of the west wall. Position: 14 W 638843 Easting, 7213301 Northing, Elevation 27 metres.

Note: Survey position and elevation measured using handheld GPS

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FIGURE B-6

Survey Station 9: View looking towards west wall of Pit-A. Groundwater seeps observed within the second and third lifts. Seepage locations could not be accessed safely to collect sample. Position: 14 W 639233 Easting, 7214828 Northing, Elevation 141 metres.

Notes:
Approximate location of observed groundwater seep
Survey position and elevation measured using handheld GPS

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GOLDER

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FIGURE B-7

Survey Station 10: View from south looking towards Central Dump west wall of Pit-A. Groundwater seeps observed within the second and third lifts. Seepage locations could not be accessed safely to collect sample. Position: 14 W 639056 Easting, 7214828 Northing, Elevation 81 metres.

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PREPARED	DH
DESIGN	--
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PROJECT No.	20148777-504
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FIGURE B-8

APPENDIX C

Laboratory Certificates of Analysis

Appendix C-I Analytical Report No. VA20B5290

Monitoring Location	Golder Sample ID	Lab Sample ID
MW-IPD-01(d)	MW-IPD-01(D)	VA20B5290-001

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **VA20B5290**	Page	: 1 of 8
Client	: **Golder Associates Ltd.**	Laboratory	: Vancouver - Environmental
Contact	: Adrian Kowalchuk	Account Manager	: Heather McKenzie
Address	: 1931 Robertson Road Ottawa ON Canada K2H 5B7	Address	: 8081 Lougheed Highway Burnaby BC Canada V5A 1W9
Telephone	: 613 592 9600	Telephone	: +1 604 253 4188
Project	: 20148777-2000-2030	Date Samples Received	: 15-Sep-2020 14:05
PO	: ----	Date Analysis Commenced	: 16-Sep-2020
C-O-C number	: ----	Issue Date	: 08-Oct-2020 17:53
Sampler	: Gabrielle Klappstein		
Site	: Meadowbank		
Quote number	: VA20-AEML100-001		
No. of samples received	: 2		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Amy Liang	Analsyt	Inorganics - Water Quality, Burnaby, British Columbia
Bruna Botti	Team Leader - Inorganics	Inorganics - Water Quality, Burnaby, British Columbia
Caitlin Macey	Team Leader - Inorganics	Inorganics - Water Quality, Burnaby, British Columbia
Cindy Tang	Team Leader - Inorganics	Inorganics - Water Quality, Burnaby, British Columbia
Clarie Tejano		Metals, Burnaby, British Columbia
Dee Lee	Analyst	Metals, Burnaby, British Columbia
Kenson Lo		Metals, Burnaby, British Columbia
Kevin Duarte	Team Leader - Inorganics	Inorganics - Water Quality, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics - Water Quality, Burnaby, British Columbia
Richard Chong		Inorganics - Water Quality, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Shaneel Dayal	Analyst	Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics - Water Quality, Burnaby, British Columbia

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	*Description*
-	No Unit
µS/cm	Microsiemens per centimetre
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units
psu	practical salinity units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior 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.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in reports identified as "Preliminary Report" are considered authorized for use.

Workorder Comments

Sample "MW-IDP-01(D)": Dissolved Mercury Vial Received Broken. Dissolved Mercury analysis will run from plastic dissolved metals bottle. Results may be biased low.

Qualifiers

Qualifier	*Description*
DLM	*Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).*
DTS	*Dissolved Sulfur concentration exceeds total. Negative bias on Total Sulfur suspected due to presence of volatile sulfur species lost during digestion.*
DTSE	*Dissolved Se concentration exceeds total. Positive bias on D-Se suspected due to signal enhancement from volatile selenium species. Contact ALS if an alternative test to address this interference is needed.*
RRV	*Reported result verified by repeat analysis.*

Analytical Results

Sub-Matrix: Groundwater (Matrix: Water)				Client sample ID	MW-IPD-01(D)	----	----	----	----
				Client sampling date / time	07-Sep-2020 13:30	----	----	----	----
Analyte	CAS Number	Method	LOR	Unit	VA20B5290-001	--------	--------	--------	--------
					Result	----	----	----	----
Physical Tests									
conductivity	----	E100	2.0	µS/cm	388	----	----	----	----
hardness (as CaCO3), from total Ca/Mg	----	EC100A	0.60	mg/L	121	----	----	----	----
pH	----	E108	0.10	pH units	8.13	----	----	----	----
salinity	----	EC100S	1.0	psu	<1.0	----	----	----	----
solids, total dissolved [TDS]	----	E162	10	mg/L	239	----	----	----	----
solids, total suspended [TSS]	----	E160-H	3.0	mg/L	16.2	----	----	----	----
turbidity	----	E121	0.10	NTU	12.3	----	----	----	----
alkalinity, total (as CaCO3)	----	E290	2.0	mg/L	112	----	----	----	----
alkalinity, phenolphthalein (as CaCO3)	----	E290	2.0	mg/L	<2.0	----	----	----	----
alkalinity, hydroxide (as CaCO3)	----	E290	2.0	mg/L	<2.0	----	----	----	----
alkalinity, carbonate (as CaCO3)	----	E290	2.0	mg/L	<2.0	----	----	----	----
alkalinity, bicarbonate (as CaCO3)	----	E290	2.0	mg/L	112	----	----	----	----
bicarbonate	71-52-3	E290	2.0	mg/L	137	----	----	----	----
carbonate	3812-32-6	E290	2.0	mg/L	<2.0	----	----	----	----
hydroxide	14280-30-9	E290	2.0	mg/L	<2.0	----	----	----	----
hardness (as CaCO3), dissolved	----	EC100	0.60	mg/L	111	----	----	----	----
Anions and Nutrients									
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0404	----	----	----	----
bromide	24959-67-9	E235.Br-L	0.050	mg/L	0.634	----	----	----	----
chloride	16887-00-6	E235.Cl	0.50	mg/L	50.6	----	----	----	----
fluoride	16984-48-8	E235.F	0.020	mg/L	0.588	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.078	----	----	----	----
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	----	----	----	----
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	----	----	----	----
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0016	----	----	----	----
phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0105	----	----	----	----
silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	7.41	----	----	----	----
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	7.43	----	----	----	----
Cyanides									
cyanide, free	----	E339	0.0050	mg/L	<0.0050	----	----	----	----

Analytical Results

Sub-Matrix: Groundwater (Matrix: Water)				Client sample ID	MW-IPD-01(D)	----	----	----	----
				Client sampling date / time	07-Sep-2020 13:30	----	----	----	----
Analyte	CAS Number	Method	LOR	Unit	VA20B5290-001	--------	--------	--------	--------
					Result	----	----	----	----
Cyanides									
cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	----	----	----	----
cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	----	----	----	----
Organic / Inorganic Carbon									
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	11.8 RRV	----	----	----	----
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.91 RRV	----	----	----	----
Total Metals									
aluminum, total	7429-90-5	E420	0.0030	mg/L	12.5	----	----	----	----
antimony, total	7440-36-0	E420	0.00010	mg/L	0.00010	----	----	----	----
arsenic, total	7440-38-2	E420	0.00010	mg/L	0.0315	----	----	----	----
barium, total	7440-39-3	E420	0.00010	mg/L	0.0249	----	----	----	----
beryllium, total	7440-41-7	E420	0.000100	mg/L	0.000150	----	----	----	----
bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	----	----	----	----
boron, total	7440-42-8	E420	0.010	mg/L	0.180	----	----	----	----
cadmium, total	7440-43-9	E420	0.0000050	mg/L	<0.0000200 DLM	----	----	----	----
calcium, total	7440-70-2	E420	0.050	mg/L	22.9	----	----	----	----
cesium, total	7440-46-2	E420	0.000010	mg/L	0.000294	----	----	----	----
chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00028	----	----	----	----
cobalt, total	7440-48-4	E420	0.00010	mg/L	0.00013	----	----	----	----
copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	----	----	----	----
iron, total	7439-89-6	E420	0.010	mg/L	2.90	----	----	----	----
lead, total	7439-92-1	E420	0.000050	mg/L	0.00176	----	----	----	----
lithium, total	7439-93-2	E420	0.0010	mg/L	0.0102	----	----	----	----
magnesium, total	7439-95-4	E420	0.0050	mg/L	15.5	----	----	----	----
manganese, total	7439-96-5	E420	0.00010	mg/L	0.0716	----	----	----	----
mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	----	----	----	----
molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0112	----	----	----	----
nickel, total	7440-02-0	E420	0.00050	mg/L	0.00190	----	----	----	----
phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	----	----	----	----
potassium, total	7440-09-7	E420	0.050	mg/L	1.46	----	----	----	----
rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00189	----	----	----	----
selenium, total	7782-49-2	E420	0.000050	mg/L	<0.000050	----	----	----	----

Analytical Results

Sub-Matrix: Groundwater (Matrix: Water)				Client sample ID	MW-IPD-01(D)	----	----	----	----
				Client sampling date / time	07-Sep-2020 13:30	----	----	----	----
Analyte	CAS Number	Method	LOR	Unit	VA20B5290-001	--------	--------	--------	--------
					Result	----	----	----	----
Total Metals									
silicon, total	7440-21-3	E420	0.10	mg/L	38.6	----	----	----	----
silver, total	7440-22-4	E420	0.000010	mg/L	0.000032	----	----	----	----
sodium, total	17341-25-2	E420	0.050	mg/L	33.5	----	----	----	----
strontium, total	7440-24-6	E420	0.00020	mg/L	0.318	----	----	----	----
sulfur, total	7704-34-9	E420	0.50	mg/L	2.75	----	----	----	----
tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	----	----	----	----
thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	----	----	----	----
thorium, total	7440-29-1	E420	0.00010	mg/L	0.00235	----	----	----	----
tin, total	7440-31-5	E420	0.00010	mg/L	0.00078	----	----	----	----
titanium, total	7440-32-6	E420	0.00030	mg/L	0.100	----	----	----	----
tungsten, total	7440-33-7	E420	0.00010	mg/L	0.00601	----	----	----	----
uranium, total	7440-61-1	E420	0.000010	mg/L	0.00215	----	----	----	----
vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00052	----	----	----	----
zinc, total	7440-66-6	E420	0.0030	mg/L	0.0051	----	----	----	----
zirconium, total	7440-67-7	E420	0.00020	mg/L	0.0128	----	----	----	----
Dissolved Metals									
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0015	----	----	----	----
antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	----	----	----	----
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.0312	----	----	----	----
barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0229	----	----	----	----
beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.000100	----	----	----	----
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	----	----	----	----
boron, dissolved	7440-42-8	E421	0.010	mg/L	0.170	----	----	----	----
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	<0.0000050	----	----	----	----
calcium, dissolved	7440-70-2	E421	0.050	mg/L	21.8	----	----	----	----
cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.000191	----	----	----	----
chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	----	----	----	----
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	----	----	----	----
copper, dissolved	7440-50-8	E421	0.00020	mg/L	<0.00020	----	----	----	----
iron, dissolved	7439-89-6	E421	0.010	mg/L	0.063	----	----	----	----
lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	----	----	----	----

Analytical Results

Sub-Matrix: Groundwater (Matrix: Water)				Client sample ID	MW-IPD-01(D)	----	----	----	----
				Client sampling date / time	07-Sep-2020 13:30	----	----	----	----
Analyte	CAS Number	Method	LOR	Unit	VA20B5290-001	--------	--------	--------	--------
					Result	----	----	----	----
Dissolved Metals									
lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0085	----	----	----	----
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	13.8	----	----	----	----
manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0600	----	----	----	----
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	----	----	----	----
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.0108	----	----	----	----
nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00058	----	----	----	----
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	----	----	----	----
potassium, dissolved	7440-09-7	E421	0.050	mg/L	1.33	----	----	----	----
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00123	----	----	----	----
selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000170 DTSE	----	----	----	----
silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.42	----	----	----	----
silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	----	----	----	----
sodium, dissolved	17341-25-2	E421	0.050	mg/L	34.4	----	----	----	----
strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.312	----	----	----	----
sulfur, dissolved	7704-34-9	E421	0.50	mg/L	3.76 DTS	----	----	----	----
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	----	----	----	----
thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	----	----	----	----
thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	----	----	----	----
tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	----	----	----	----
titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	----	----	----	----
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	0.00501	----	----	----	----
uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00156	----	----	----	----
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	----	----	----	----
zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0013	----	----	----	----
zirconium, dissolved	7440-67-7	E421	0.00020	mg/L	<0.00020	----	----	----	----
dissolved mercury filtration location	----	EP509	-	-	Field	----	----	----	----
dissolved metals filtration location	----	EP421	-	-	Field	----	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **VA20B5290**	Page	: 1 of 13
Client	: **Golder Associates Ltd.**	Laboratory	: Vancouver - Environmental
Contact	: Adrian Kowalchuk	Account Manager	: Heather McKenzie
Address	: 1931 Robertson Road Ottawa ON Canada K2H 5B7	Address	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
Telephone	: 204 489 9600	Telephone	: +1 604 253 4188
Project	: 20148777-2000-2030	Date Samples Received	: 15-Sep-2020 14:05
PO	: ----	Issue Date	: 08-Oct-2020 17:53
C-O-C number	: ----		
Sampler	: Gabrielle Klappstein		
Site	: Meadowbank		
Quote number	: VA20-AEML100-001		
No. of samples received	: 2		
No. of samples analysed	: 1		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO: Data Quality Objective.
LOR: Limit of Reporting (detection limit).
RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 15:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 15:00 is used for calculation purposes.

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW-IPD-01(D)	E298	07-Sep-2020	----	----	----		19-Sep-2020	28 days	11 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE										
MW-IPD-01(D)	E235.Br-L	07-Sep-2020	----	----	----		16-Sep-2020	28 days	9 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
MW-IPD-01(D)	E235.Cl	07-Sep-2020	----	----	----		16-Sep-2020	28 days	9 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)										
HDPE										
MW-IPD-01(D)	E378-U	07-Sep-2020	----	----	----		17-Sep-2020	3 days	9 days	✗ EHTR
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
MW-IPD-01(D)	E235.F	07-Sep-2020	----	----	----		16-Sep-2020	28 days	9 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
MW-IPD-01(D)	E235.NO3-L	07-Sep-2020	----	----	----		16-Sep-2020	3 days	9 days	✗ EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
MW-IPD-01(D)	E235.NO2-L	07-Sep-2020	----	----	----		16-Sep-2020	3 days	9 days	✗ EHTR

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis: Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE MW-IPD-01(D)	E392	07-Sep-2020	----	----	----		19-Sep-2020	28 days	11 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE MW-IPD-01(D)	E235.SO4	07-Sep-2020	----	----	----		16-Sep-2020	28 days	9 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) MW-IPD-01(D)	E318	07-Sep-2020	18-Sep-2020	28 days	11 days	✓	21-Sep-2020	16 days	2 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (Ultra Trace)										
Amber glass total (sulfuric acid) MW-IPD-01(D)	E372-U	07-Sep-2020	18-Sep-2020	28 days	11 days	✓	19-Sep-2020	16 days	0 days	✓
Cyanides : Free Cyanide by CFA										
UV inhibited HDPE - total (sodium hydroxide) MW-IPD-01(D)	E339	07-Sep-2020	----	----	----		20-Sep-2020	14 days	12 days	✓
Cyanides : Total Cyanide by CFA										
UV inhibited HDPE - total (sodium hydroxide) MW-IPD-01(D)	E333	07-Sep-2020	----	----	----		20-Sep-2020	14 days	12 days	✓
Cyanides : WAD Cyanide by CFA										
UV inhibited HDPE - total (sodium hydroxide) MW-IPD-01(D)	E336	07-Sep-2020	----	----	----		20-Sep-2020	14 days	12 days	✓
Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)										
HDPE dissolved (nitric acid) MW-IPD-01(D)	E421.Cr-L	07-Sep-2020	17-Sep-2020	180 days	10 days	✓	19-Sep-2020	169 days	1 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
HDPE dissolved (nitric acid) MW-IPD-01(D)	E509	07-Sep-2020	23-Sep-2020	28 days	15 days	✓	23-Sep-2020	12 days	0 days	✓

Matrix: **Water**

Evaluation: ✗ = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation: Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis: Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW-IPD-01(D)	E421	07-Sep-2020	17-Sep-2020	180 days	10 days	✓	19-Sep-2020	169 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid)										
MW-IPD-01(D)	E358-L	07-Sep-2020	----	----	----		22-Sep-2020	28 days	15 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid)										
MW-IPD-01(D)	E355-L	07-Sep-2020	----	----	----		18-Sep-2020	28 days	11 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
MW-IPD-01(D)	E290	07-Sep-2020	----	----	----		17-Sep-2020	14 days	10 days	✓
Physical Tests : Conductivity in Water										
HDPE										
MW-IPD-01(D)	E100	07-Sep-2020	----	----	----		17-Sep-2020	28 days	10 days	✓
Physical Tests : pH by Meter										
HDPE										
MW-IPD-01(D)	E108	07-Sep-2020	----	----	----		17-Sep-2020	0.25 hrs	240 hrs	✗ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE										
MW-IPD-01(D)	E162	07-Sep-2020	----	----	----		16-Sep-2020	7 days	8 days	✗ EHTR
Physical Tests : TSS by Gravimetry										
HDPE										
MW-IPD-01(D)	E160-H	07-Sep-2020	----	----	----		16-Sep-2020	7 days	8 days	✗ EHTR
Physical Tests : Turbidity by Nephelometry										
HDPE										
MW-IPD-01(D)	E121	07-Sep-2020	----	----	----		16-Sep-2020	3 days	8 days	✗ EHTR

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)										
HDPE total (nitric acid) MW-IPD-01(D)	E420.Cr-L	07-Sep-2020	----	----	----		18-Sep-2020	180 days	11 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) MW-IPD-01(D)	E508	07-Sep-2020	----	----	----		21-Sep-2020	28 days	14 days	✓
Total Metals : Total Metals in Water by CRC ICPMS										
HDPE total (nitric acid) MW-IPD-01(D)	E420	07-Sep-2020	----	----	----		18-Sep-2020	180 days	11 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water**

Evaluation: × = *QC frequency outside specification*; ✓ = *QC frequency within specification.*

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	87041	1	16	6.2	5.0	✓
Ammonia by Fluorescence	E298	88251	1	8	12.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	86571	1	1	100.0	5.0	✓
Chloride in Water by IC	E235.Cl	86567	1	9	11.1	5.0	✓
Conductivity in Water	E100	87043	1	16	6.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	87539	1	7	14.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	90285	1	17	5.8	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	87538	1	18	5.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	89706	1	1	100.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U	87050	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	86570	1	2	50.0	5.0	✓
Free Cyanide by CFA	E339	88803	1	9	11.1	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	86569	1	8	12.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	86572	1	2	50.0	5.0	✓
pH by Meter	E108	87040	1	16	6.2	5.0	✓
Reactive Silica by Colourimetry	E392	88697	1	11	9.0	5.0	✓
Sulfate in Water by IC	E235.SO4	86568	1	10	10.0	5.0	✓
TDS by Gravimetry	E162	86637	1	8	12.5	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	87550	1	16	6.2	5.0	✓
Total Cyanide by CFA	E333	88801	1	15	6.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	88252	1	8	12.5	5.0	✓
Total Mercury in Water by CVAAS	E508	89294	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	87549	2	17	11.7	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	88287	1	5	20.0	5.0	✓
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U	88263	1	5	20.0	5.0	✓
TSS by Gravimetry	E160-H	86634	1	5	20.0	5.0	✓
Turbidity by Nephelometry	E121	86626	1	19	5.2	5.0	✓
WAD Cyanide by CFA	E336	88802	1	17	5.8	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	87041	1	16	6.2	5.0	✓
Ammonia by Fluorescence	E298	88251	1	8	12.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	86571	1	1	100.0	5.0	✓
Chloride in Water by IC	E235.Cl	86567	1	9	11.1	5.0	✓
Conductivity in Water	E100	87043	1	16	6.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	87539	1	7	14.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	90285	1	17	5.8	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	87538	1	18	5.5	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	89706	1	1	100.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U	87050	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	86570	1	2	50.0	5.0	✓
Free Cyanide by CFA	E339	88803	1	9	11.1	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	86569	1	8	12.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	86572	1	2	50.0	5.0	✓
pH by Meter	E108	87040	1	16	6.2	5.0	✓
Reactive Silica by Colourimetry	E392	88697	1	11	9.0	5.0	✓
Sulfate in Water by IC	E235.SO4	86568	1	10	10.0	5.0	✓
TDS by Gravimetry	E162	86637	1	8	12.5	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	87550	1	16	6.2	5.0	✓
Total Cyanide by CFA	E333	88801	1	15	6.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	88252	1	8	12.5	5.0	✓
Total Mercury in Water by CVAAS	E508	89294	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	87549	1	17	5.8	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	88287	1	5	20.0	5.0	✓
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U	88263	1	5	20.0	5.0	✓
TSS by Gravimetry	E160-H	86634	1	5	20.0	5.0	✓
Turbidity by Nephelometry	E121	86626	1	19	5.2	5.0	✓
WAD Cyanide by CFA	E336	88802	1	17	5.8	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	87041	1	16	6.2	5.0	✓
Ammonia by Fluorescence	E298	88251	1	8	12.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	86571	1	1	100.0	5.0	✓
Chloride in Water by IC	E235.Cl	86567	1	9	11.1	5.0	✓
Conductivity in Water	E100	87043	1	16	6.2	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	87539	1	7	14.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	90285	1	17	5.8	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	87538	1	18	5.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	89706	1	1	100.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U	87050	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	86570	1	2	50.0	5.0	✓
Free Cyanide by CFA	E339	88803	1	9	11.1	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	86569	1	8	12.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	86572	1	2	50.0	5.0	✓
Reactive Silica by Colourimetry	E392	88697	1	11	9.0	5.0	✓
Sulfate in Water by IC	E235.SO4	86568	1	10	10.0	5.0	✓
TDS by Gravimetry	E162	86637	1	8	12.5	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	87550	1	16	6.2	5.0	✓
Total Cyanide by CFA	E333	88801	1	15	6.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	88252	1	8	12.5	5.0	✓

Matrix: **Water**

Evaluation: ✗ = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Method Blanks (MB) - Continued							
Total Mercury in Water by CVAAS	E508	89294	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	87549	1	17	5.8	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	88287	1	5	20.0	5.0	✓
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U	88263	1	5	20.0	5.0	✓
TSS by Gravimetry	E160-H	86634	1	5	20.0	5.0	✓
Turbidity by Nephelometry	E121	86626	1	19	5.2	5.0	✓
WAD Cyanide by CFA	E336	88802	1	17	5.8	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	88251	1	8	12.5	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	86571	0	1	0.0	5.0	✗
Chloride in Water by IC	E235.Cl	86567	1	9	11.1	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	87539	1	7	14.2	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	90285	1	17	5.8	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	87538	1	18	5.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	89706	0	1	0.0	5.0	✗
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U	87050	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	86570	1	2	50.0	5.0	✓
Free Cyanide by CFA	E339	88803	1	9	11.1	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	86569	1	8	12.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	86572	1	2	50.0	5.0	✓
Reactive Silica by Colourimetry	E392	88697	1	11	9.0	5.0	✓
Sulfate in Water by IC	E235.SO4	86568	1	10	10.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	87550	1	16	6.2	5.0	✓
Total Cyanide by CFA	E333	88801	1	15	6.6	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	88252	1	8	12.5	5.0	✓
Total Mercury in Water by CVAAS	E508	89294	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	87549	1	17	5.8	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	88287	1	5	20.0	5.0	✓
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U	88263	1	5	20.0	5.0	✓
WAD Cyanide by CFA	E336	88802	1	17	5.8	5.0	✓

Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 Vancouver - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 Vancouver - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Vancouver - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160-H Vancouver - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 1°C, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Vancouver - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfate in Water by IC	E235.SO4 Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 Vancouver - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Vancouver - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 Vancouver - Environmental	Water	APHA 4500-Norg D (mod)	Total Kjeldahl Nitrogen is determined using block digestion followed by flow-injection analysis with fluorescence detection.
Total Cyanide by CFA	E333 Vancouver - Environmental	Water	ISO 14403 (mod)	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.
WAD Cyanide by CFA	E336 Vancouver - Environmental	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by in-line sample distillation with final determination by colourimetric analysis.
Free Cyanide by CFA	E339 Vancouver - Environmental	Water	ASTM D7237 (mod)	Free cyanide is determined by in-line gas diffusion at pH 6 with final determination by colourimetric analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L Vancouver - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO_2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Vancouver - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO2. NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Phosphorus by Colourimetry (Ultra Trace)	E372-U Vancouver - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level)	E378-U Vancouver - Environmental	Water	APHA 4500-P E (mod)	Dissolved Orthophosphate is determined colourimetrically on a water sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392 Vancouver - Environmental	Water	APHA 4500-SiO2 E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a dicrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test.
Total Metals in Water by CRC ICPMS	E420 Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L Vancouver - Environmental	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Total Mercury in Water by CVAAS	E508 Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	“Hardness (as CaCO3), dissolved” is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. “Total Hardness” refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Hardness (Calculated) from Total Ca/Mg	EC100A Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO3), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations. Hardness from total Ca/Mg is normally comparable to Dissolved Hardness in non-turbid waters.
Salinity in Seawater (calculation)	EC100S Vancouver - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a seawater sample. Conductivity measurements are temperature-compensated to 25°C. Salinity in Practical Salinity Units is calculated.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Digestion for TKN in water	EP318 Vancouver - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested using block digestion with Copper Sulfate Digestion Reagent.
Digestion for Total Phosphorus in water	EP372 Vancouver - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

QUALITY CONTROL REPORT

Work Order	: **VA20B5290**	Page	: 1 of 18
Client	: Golder Associates Ltd.	Laboratory	: Vancouver - Environmental
Contact	: Adrian Kowalchuk	Account Manager	: Heather McKenzie
Address	: # 400 - 543 Granville Street Vancouver BC Canada V6C 1X8	Address	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
Telephone	: 204 489 9600	Telephone	: +1 604 253 4188
Project	: 20148777-2000-2030	Date Samples Received	: 15-Sep-2020 14:05
PO	: ----	Date Analysis Commenced	: 16-Sep-2020
C-O-C number	: ----	Issue Date	: 08-Oct-2020 17:53
Sampler	: Gabrielle Klappstein		
Site	: Meadowbank		
Quote number	: VA20-AEML100-001		
No. of samples received	: 2		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Amy Liang	Analsyt	Inorganics - Water Quality, Burnaby, British Columbia
Bruna Botti	Team Leader - Inorganics	Inorganics - Water Quality, Burnaby, British Columbia
Caitlin Macey	Team Leader - Inorganics	Inorganics - Water Quality, Burnaby, British Columbia
Cindy Tang	Team Leader - Inorganics	Inorganics - Water Quality, Burnaby, British Columbia
Clarie Tejano		Metals, Burnaby, British Columbia
Dee Lee	Analyst	Metals, Burnaby, British Columbia
Kenson Lo		Metals, Burnaby, British Columbia
Kevin Duarte	Team Leader - Inorganics	Inorganics - Water Quality, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics - Water Quality, Burnaby, British Columbia
Richard Chong		Inorganics - Water Quality, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Shaneel Dayal	Analyst	Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics - Water Quality, Burnaby, British Columbia

General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percentage Difference
# = Indicates a QC result that did not meet the ALS DQO.

Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 86626)											
KS2001740-001	Anonymous	turbidity	----	E121	0.10	NTU	3.72	3.75	0.803%	15%	----
Physical Tests (QC Lot: 86634)											
VA20B5213-001	Anonymous	solids, total suspended [TSS]	----	E160-H	3.0	mg/L	4.2	3.8	0.4	Diff <2x LOR	----
Physical Tests (QC Lot: 86637)											
VA20B5213-002	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	134	138	4	Diff <2x LOR	----
Physical Tests (QC Lot: 87040)											
VA20B5290-001	MW-IPD-01(D)	pH	----	E108	0.10	pH units	8.13	8.13	0.00%	4%	----
Physical Tests (QC Lot: 87041)											
VA20B5290-001	MW-IPD-01(D)	alkalinity, bicarbonate (as CaCO3)	----	E290	2.0	mg/L	112	112	0.0890%	20%	----
		alkalinity, carbonate (as CaCO3)	----	E290	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
		alkalinity, hydroxide (as CaCO3)	----	E290	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
		alkalinity, phenolphthalein (as CaCO3)	----	E290	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	2.0	mg/L	112	112	0.0890%	20%	----
Physical Tests (QC Lot: 87043)											
VA20B5290-001	MW-IPD-01(D)	conductivity	----	E100	2.0	µS/cm	388	388	0.00%	10%	----
Anions and Nutrients (QC Lot: 86567)											
VA20B5290-001	MW-IPD-01(D)	chloride	16887-00-6	E235.Cl	0.50	mg/L	50.6	49.5	2.20%	20%	----
Anions and Nutrients (QC Lot: 86568)											
VA20B5290-001	MW-IPD-01(D)	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	7.43	7.29	1.81%	20%	----
Anions and Nutrients (QC Lot: 86569)											
VA20B5290-001	MW-IPD-01(D)	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 86570)											
VA20B5290-001	MW-IPD-01(D)	fluoride	16984-48-8	E235.F	0.020	mg/L	0.588	0.575	2.20%	20%	----
Anions and Nutrients (QC Lot: 86571)											
VA20B5290-001	MW-IPD-01(D)	bromide	24959-67-9	E235.Br-L	0.050	mg/L	0.634	0.619	2.45%	20%	----
Anions and Nutrients (QC Lot: 86572)											
VA20B5290-001	MW-IPD-01(D)	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 87050)											
VA20B5290-001	MW-IPD-01(D)	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0016	0.0015	0.0001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 88251)											
VA20B4870-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	1.00	mg/L	30.1	29.8	0.768%	20%	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report						
					LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 88252)											
VA20B4870-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	1.00	mg/L	43.2	43.4	0.396%	20%	----
Anions and Nutrients (QC Lot: 88263)											
VA20B4870-001	Anonymous	phosphorus, total	7723-14-0	E372-U	0.200	mg/L	5.38	5.12	4.86%	20%	----
Anions and Nutrients (QC Lot: 88697)											
VA20B5290-001	MW-IPD-01(D)	silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	7.41	7.27	1.87%	20%	----
Cyanides (QC Lot: 88801)											
KS2001773-001	Anonymous	cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 88802)											
VA20B5226-001	Anonymous	cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 88803)											
VA20B5290-001	MW-IPD-01(D)	cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 88287)											
VA20B5187-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	4.32	4.10	0.23	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 89706)											
VA20B5290-001	MW-IPD-01(D)	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	11.8	11.9	0.332%	20%	----
Total Metals (QC Lot: 87549)											
VA20B5290-001	MW-IPD-01(D)	aluminum, total	7429-90-5	E420	0.0030	mg/L	12.5	10.3	19.7%	20%	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.0249	0.0233	6.64%	20%	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000200	mg/L	<0.0000200	<0.0000200	0	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	22.9	22.1	3.69%	20%	----
		cesium, total	7440-46-2	E420	0.000010	mg/L	0.000294	0.000278	5.43%	20%	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	0.00013	0.00012	0.000008	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	2.90	2.72	6.13%	20%	----
		lead, total	7439-92-1	E420	0.000050	mg/L	0.00176	0.00174	0.830%	20%	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	0.0102	0.0101	1.69%	20%	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	15.5	14.9	3.88%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.0716	0.0685	4.48%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.0112	0.0111	0.877%	20%	----
		potassium, total	7440-09-7	E420	0.050	mg/L	1.46	1.40	4.20%	20%	----
		rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00189	0.00178	0.00011	Diff <2x LOR	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		silicon, total	7440-21-3	E420	0.10	mg/L	38.6	37.9	1.91%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	0.000032	0.000039	0.000006	Diff <2x LOR	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 87549) - continued											
VA20B5290-001	MW-IPD-01(D)	sodium, total	17341-25-2	E420	0.050	mg/L	33.5	31.6	5.62%	20%	----
		tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		thorium, total	7440-29-1	E420	0.00010	mg/L	0.00235	0.00238	1.40%	20%	----
		tin, total	7440-31-5	E420	0.00010	mg/L	0.00078	0.00077	0.000008	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	0.100	0.0833	18.2%	20%	----
		tungsten, total	7440-33-7	E420	0.00010	mg/L	0.00601	0.00604	0.362%	20%	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.00215	0.00213	1.03%	20%	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00052	<0.00050	0.00002	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	0.0051	0.0046	0.0005	Diff <2x LOR	----
		zirconium, total	7440-67-7	E420	0.00020	mg/L	0.0128	0.0130	1.10%	20%	----
VA20B5290-001	MW-IPD-01(D)	antimony, total	7440-36-0	E420	0.00010	mg/L	0.00010	<0.00010	0.000001	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.0315	0.0324	2.70%	20%	----
		beryllium, total	7440-41-7	E420	0.000100	mg/L	0.000150	0.000144	0.000006	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	0.180	0.188	4.44%	20%	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.00190	0.00191	0.000008	Diff <2x LOR	----
		phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.318	0.323	1.32%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	2.75	2.83	0.08	Diff <2x LOR	----
Total Metals (QC Lot: 87550)											
VA20B5290-001	MW-IPD-01(D)	chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00028	0.00032	0.00004	Diff <2x LOR	----
Total Metals (QC Lot: 89294)											
VA20B5272-001	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 87538)											
VA20B5279-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0030	mg/L	0.0069	0.0069	0.00004	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00014	0.00014	0.0000002	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00071	0.00072	0.000008	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.100	0.0980	2.59%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	0.010	0.010	0.00004	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000062	0.0000067	0.0000006	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	71.5	70.3	1.68%	20%	----
		cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00025	0.00024	0.000008	Diff <2x LOR	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Laboratory Duplicate (DUP) Report						
					LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 87538) - continued											
VA20B5279-001	Anonymous	copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00030	0.00030	0.000003	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	0.098	0.096	0.002	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0089	0.0087	0.0002	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E421	0.100	mg/L	50.3	48.9	2.82%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0123	0.0121	1.53%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000739	0.000726	1.80%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00267	0.00262	0.00005	Diff <2x LOR	----
		phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	1.19	1.17	1.74%	20%	----
		rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00101	0.00092	0.00009	Diff <2x LOR	----
		selenium, dissolved	7782-49-2	E421	0.0500	mg/L	4.20 µg/L	0.00404	4.09%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	0.154	0.166	0.011	Diff <2x LOR	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	17341-25-2	E421	0.050	mg/L	4.53	4.42	2.51%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.194	0.190	2.22%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	109	109	0.340%	20%	----
		tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.0100	mg/L	<0.0100	<0.0100	0	Diff <2x LOR	----
		tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000937	0.000897	4.33%	20%	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 87539)											
VA20B5279-001	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 90285)											
VA20B4794-001	Anonymous	mercury, dissolved	7439-97-6	E509	0.00500	mg/L	<0.0050 µg/L	<0.0000050	0	Diff <2x LOR	----

Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 86626)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 86634)						
solids, total suspended [TSS]	----	E160-H	3	mg/L	<3.0	----
Physical Tests (QCLot: 86637)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 87041)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 87043)						
conductivity	----	E100	1	µS/cm	<1.0	----
Anions and Nutrients (QCLot: 86567)						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 86568)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 86569)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 86570)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 86571)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 86572)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 87050)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 88251)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 88252)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 88263)						
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 88697)						
silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	----
Cyanides (QCLot: 88801)						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 88802)						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 88803)						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 88287)						
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 89706)						
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 87549)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 87549) - continued						
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
sodium, total	17341-25-2	E420	0.05	mg/L	<0.050	----
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 87550)						
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	----
Total Metals (QCLot: 89294)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 87538)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 87538) - continued						
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	17341-25-2	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 87539)						
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----
Dissolved Metals (QCLot: 90285)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----

Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 86626)									
turbidity	----	E121	0.1	NTU	200 NTU	98.0	85.0	115	----
Physical Tests (QCLot: 86634)									
solids, total suspended [TSS]	----	E160-H	3	mg/L	150 mg/L	95.7	85.0	115	----
Physical Tests (QCLot: 86637)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	104	85.0	115	----
Physical Tests (QCLot: 87040)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 87041)									
alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	87.7	75.0	125	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	96.5	85.0	115	----
Physical Tests (QCLot: 87043)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	100	90.0	110	----
Anions and Nutrients (QCLot: 86567)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	98.0	90.0	110	----
Anions and Nutrients (QCLot: 86568)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	98.9	90.0	110	----
Anions and Nutrients (QCLot: 86569)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	97.7	90.0	110	----
Anions and Nutrients (QCLot: 86570)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.6	90.0	110	----
Anions and Nutrients (QCLot: 86571)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	97.4	85.0	115	----
Anions and Nutrients (QCLot: 86572)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	97.3	90.0	110	----
Anions and Nutrients (QCLot: 87050)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	98.9	80.0	120	----
Anions and Nutrients (QCLot: 88251)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.12 mg/L	94.2	85.0	115	----
Anions and Nutrients (QCLot: 88252)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	97.2	75.0	125	----
Anions and Nutrients (QCLot: 88263)									
phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	92.1	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report: Spike Concentration	Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High	Qualifier
Anions and Nutrients (QCLot: 88697)									
silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	103	85.0	115	----
Cyanides (QCLot: 88801)									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	93.8	80.0	120	----
Cyanides (QCLot: 88802)									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	100	80.0	120	----
Cyanides (QCLot: 88803)									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	93.9	80.0	120	----
Organic / Inorganic Carbon (QCLot: 88287)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	106	80.0	120	----
Organic / Inorganic Carbon (QCLot: 89706)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	104	80.0	120	----
Total Metals (QCLot: 87549)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	99.9	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	100	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	98.9	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	97.3	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	99.6	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	94.5	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	101	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	97.8	80.0	120	----
cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	103	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	99.0	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	103	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	96.6	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	95.8	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	97.2	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	98.7	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	99.4	80.0	120	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	109	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	98.7	80.0	120	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	97.6	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report: Spike Concentration	Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High	Qualifier
Total Metals (QCLot: 87549) - continued									
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	102	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	97.0	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
sodium, total	17341-25-2	E420	0.05	mg/L	50 mg/L	96.0	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	92.9	80.0	120	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	99.9	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	96.6	80.0	120	----
thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	94.2	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	100	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	94.8	80.0	120	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	96.4	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	99.8	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	100	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	101	80.0	120	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	96.8	80.0	120	----
Total Metals (QCLot: 87550)									
chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	99.2	80.0	120	----
Total Metals (QCLot: 89294)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	102	80.0	120	----
Dissolved Metals (QCLot: 87538)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	104	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	96.8	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	100	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	100.0	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	94.5	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	97.6	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	92.5	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	101	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	98.1	80.0	120	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	102	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	104	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	96.7	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	95.2	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 87538) - continued									
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	97.0	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	99.1	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	110	70.0	130	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	100	80.0	120	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	101	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	96.0	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	94.8	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	101	80.0	120	----
sodium, dissolved	17341-25-2	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	88.9	80.0	120	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	97.5	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	95.4	80.0	120	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	97.0	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	100	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	93.8	80.0	120	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	97.5	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	101	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	103	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	104	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	97.9	80.0	120	----
Dissolved Metals (QCLot: 87539)									
chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
Dissolved Metals (QCLot: 90285)									
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	86.2	80.0	120	----

Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 86567)										
VA20B5312-001	Anonymous	chloride	16887-00-6	E235.Cl	98.8 mg/L	100 mg/L	98.8	75.0	125	----
Anions and Nutrients (QCLot: 86568)										
VA20B5312-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	98.8 mg/L	100 mg/L	98.8	75.0	125	----
Anions and Nutrients (QCLot: 86569)										
VA20B5312-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.46 mg/L	2.5 mg/L	98.4	75.0	125	----
Anions and Nutrients (QCLot: 86570)										
VA20B5312-001	Anonymous	fluoride	16984-48-8	E235.F	1.02 mg/L	1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 86572)										
VA20B5312-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.486 mg/L	0.5 mg/L	97.3	75.0	125	----
Anions and Nutrients (QCLot: 87050)										
VA20B5370-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0351 mg/L	0.03 mg/L	117	70.0	130	----
Anions and Nutrients (QCLot: 88251)										
VA20B4870-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	38.2 mg/L	40 mg/L	95.4	75.0	125	----
Anions and Nutrients (QCLot: 88252)										
VA20B4870-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	47.1 mg/L	2.5 mg/L	94.3	70.0	130	----
Anions and Nutrients (QCLot: 88263)										
VA20B4870-002	Anonymous	phosphorus, total	7723-14-0	E372-U	ND mg/L	5 mg/L	ND	70.0	130	----
Anions and Nutrients (QCLot: 88697)										
VA20B5640-001	Anonymous	silicate (as SiO2)	7631-86-9	E392	9.16 mg/L	10 mg/L	91.6	75.0	125	----
Cyanides (QCLot: 88801)										
VA20B5290-001	MW-IPD-01(D)	cyanide, strong acid dissociable (total)	----	E333	0.241 mg/L	0.25 mg/L	96.6	75.0	125	----
Cyanides (QCLot: 88802)										
VA20B5226-002	Anonymous	cyanide, weak acid dissociable	----	E336	0.128 mg/L	0.125 mg/L	102	75.0	125	----
Cyanides (QCLot: 88803)										
VA20B5536-001	Anonymous	cyanide, free	----	E339	0.249 mg/L	0.25 mg/L	99.6	75.0	125	----
Organic / Inorganic Carbon (QCLot: 88287)										
VA20B5226-001	Anonymous	carbon, total organic [TOC]	----	E355-L	5.04 mg/L	5 mg/L	101	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 87549)										
VA20B5299-001	Anonymous	aluminum, total	7429-90-5	E420	0.196 mg/L	0.2 mg/L	97.8	70.0	130	----
		antimony, total	7440-36-0	E420	0.0198 mg/L	0.02 mg/L	98.9	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0193 mg/L	0.02 mg/L	96.7	70.0	130	----
		barium, total	7440-39-3	E420	0.0190 mg/L	0.02 mg/L	95.2	70.0	130	----
		beryllium, total	7440-41-7	E420	0.0386 mg/L	0.04 mg/L	96.4	70.0	130	----
		bismuth, total	7440-69-9	E420	0.00964 mg/L	0.01 mg/L	96.4	70.0	130	----
		boron, total	7440-42-8	E420	0.093 mg/L	0.1 mg/L	93.1	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00392 mg/L	0.004 mg/L	98.0	70.0	130	----
		calcium, total	7440-70-2	E420	3.74 mg/L	4 mg/L	93.5	70.0	130	----
		cesium, total	7440-46-2	E420	0.0103 mg/L	0.01 mg/L	103	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0200 mg/L	0.02 mg/L	99.8	70.0	130	----
		copper, total	7440-50-8	E420	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		iron, total	7439-89-6	E420	1.93 mg/L	2 mg/L	96.6	70.0	130	----
		lead, total	7439-92-1	E420	0.0189 mg/L	0.02 mg/L	94.6	70.0	130	----
		lithium, total	7439-93-2	E420	0.0939 mg/L	0.1 mg/L	93.9	70.0	130	----
		magnesium, total	7439-95-4	E420	0.960 mg/L	1 mg/L	96.0	70.0	130	----
		manganese, total	7439-96-5	E420	0.0198 mg/L	0.02 mg/L	99.1	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0195 mg/L	0.02 mg/L	97.5	70.0	130	----
		nickel, total	7440-02-0	E420	0.0394 mg/L	0.04 mg/L	98.5	70.0	130	----
		phosphorus, total	7723-14-0	E420	9.81 mg/L	10 mg/L	98.1	70.0	130	----
		potassium, total	7440-09-7	E420	3.87 mg/L	4 mg/L	96.8	70.0	130	----
		rubidium, total	7440-17-7	E420	0.0198 mg/L	0.02 mg/L	99.0	70.0	130	----
		selenium, total	7782-49-2	E420	0.0394 mg/L	0.04 mg/L	98.4	70.0	130	----
		silicon, total	7440-21-3	E420	8.91 mg/L	10 mg/L	89.1	70.0	130	----
		silver, total	7440-22-4	E420	0.00406 mg/L	0.004 mg/L	101	70.0	130	----
		sodium, total	17341-25-2	E420	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, total	7440-24-6	E420	0.0203 mg/L	0.02 mg/L	101	70.0	130	----
		sulfur, total	7704-34-9	E420	19.6 mg/L	20 mg/L	97.9	70.0	130	----
		tellurium, total	13494-80-9	E420	0.0410 mg/L	0.04 mg/L	102	70.0	130	----
		thallium, total	7440-28-0	E420	0.00374 mg/L	0.004 mg/L	93.4	70.0	130	----
		thorium, total	7440-29-1	E420	0.0199 mg/L	0.02 mg/L	99.6	70.0	130	----
		tin, total	7440-31-5	E420	0.0199 mg/L	0.02 mg/L	99.6	70.0	130	----
		titanium, total	7440-32-6	E420	0.0381 mg/L	0.04 mg/L	95.2	70.0	130	----
		tungsten, total	7440-33-7	E420	0.0186 mg/L	0.02 mg/L	93.2	70.0	130	----
		uranium, total	7440-61-1	E420	0.00401 mg/L	0.004 mg/L	100	70.0	130	----
		vanadium, total	7440-62-2	E420	0.0996 mg/L	0.1 mg/L	99.6	70.0	130	----
		zinc, total	7440-66-6	E420	0.402 mg/L	0.4 mg/L	100	70.0	130	----

Sub-Matrix: **Water**

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Matrix Spike (MS) Report: Spike Concentration	Spike Target	Recovery (%) MS	Recovery Limits (%) Low	Recovery Limits (%) High	Qualifier
Total Metals (QCLot: 87549) - continued										
VA20B5299-001	Anonymous	zirconium, total	7440-67-7	E420	0.0394 mg/L	0.04 mg/L	98.4	70.0	130	----
Total Metals (QCLot: 87550)										
VA20B5299-001	Anonymous	chromium, total	7440-47-3	E420.Cr-L	0.0395 mg/L	0.04 mg/L	98.7	70.0	130	----
Total Metals (QCLot: 89294)										
VA20B5272-002	Anonymous	mercury, total	7439-97-6	E508	0.000106 mg/L	0.0001 mg/L	106	70.0	130	----
Dissolved Metals (QCLot: 87538)										
VA20B5279-002	Anonymous	aluminum, dissolved	7429-90-5	E421	0.202 mg/L	0.2 mg/L	101	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0200 mg/L	0.02 mg/L	99.9	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0214 mg/L	0.02 mg/L	107	70.0	130	----
		barium, dissolved	7440-39-3	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0391 mg/L	0.04 mg/L	97.7	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00911 mg/L	0.01 mg/L	91.1	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.091 mg/L	0.1 mg/L	90.7	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00400 mg/L	0.004 mg/L	100.0	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		cesium, dissolved	7440-46-2	E421	0.0102 mg/L	0.01 mg/L	102	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0191 mg/L	0.02 mg/L	95.7	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0192 mg/L	0.02 mg/L	95.9	70.0	130	----
		iron, dissolved	7439-89-6	E421	1.95 mg/L	2 mg/L	97.4	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0186 mg/L	0.02 mg/L	92.8	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0948 mg/L	0.1 mg/L	94.8	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0196 mg/L	0.02 mg/L	98.1	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0383 mg/L	0.04 mg/L	95.8	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	11.0 mg/L	10 mg/L	110	70.0	130	----
		potassium, dissolved	7440-09-7	E421	3.88 mg/L	4 mg/L	97.0	70.0	130	----
		rubidium, dissolved	7440-17-7	E421	0.0198 mg/L	0.02 mg/L	99.2	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0457 mg/L	0.04 mg/L	114	70.0	130	----
		silicon, dissolved	7440-21-3	E421	9.01 mg/L	10 mg/L	90.1	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00391 mg/L	0.004 mg/L	97.9	70.0	130	----
		sodium, dissolved	17341-25-2	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	20.0 mg/L	20 mg/L	100	70.0	130	----
		tellurium, dissolved	13494-80-9	E421	0.0429 mg/L	0.04 mg/L	107	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00374 mg/L	0.004 mg/L	93.4	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 87538) - continued										
VA20B5279-002	Anonymous	thorium, dissolved	7440-29-1	E421	0.0197 mg/L	0.02 mg/L	98.7	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0198 mg/L	0.02 mg/L	99.1	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0386 mg/L	0.04 mg/L	96.5	70.0	130	----
		tungsten, dissolved	7440-33-7	E421	0.0195 mg/L	0.02 mg/L	97.6	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.00400 mg/L	0.004 mg/L	100.0	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.405 mg/L	0.4 mg/L	101	70.0	130	----
		zirconium, dissolved	7440-67-7	E421	0.0390 mg/L	0.04 mg/L	97.4	70.0	130	----
Dissolved Metals (QCLot: 87539)										
VA20B5279-002	Anonymous	chromium, dissolved	7440-47-3	E421.Cr-L	0.0394 mg/L	0.04 mg/L	98.5	70.0	130	----
Dissolved Metals (QCLot: 90285)										
VA20B4794-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000951 mg/L	0.0001 mg/L	95.1	70.0	130	----

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Chain of Cus[illegible] Re[illegible]

Canada To[illegible]

[illegible]rcode label here
[illegible] use only)

COC Number: 17 -

Page 1 of

Report To	Contact and company name below will appear on the final report
Company:	Golder Associates
Contact:	Adrian Kowalchuk
Phone:	(204) 891-5372
	Company address below will appear on the final report
Street:	1931 Robertson Road,
City/Province:	Ottawa, Ontario
Postal Code:	K2H 5B7
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Agnico Eagle, Meadowbank Mine, Permitting
Contact:	Robin Allard

Report Format / Distribution

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Quality Control (QC) Report with Report ☑ YES ☐ NO
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax Adrian_Kowalchuk@Golder.com
Email 2 Valerie_Bertrand@Golder.com
Email 3

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax Robin.Allard@AgnicoEagle.com
Email 2

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐; 3 day [P3-25%] ☐; 2 day [P2-50%] ☐
EMERGENCY: 1 Business day [E - 100%] ☐; Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q72802
Job #: 20148777-2000-2030
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location: Meadowbank

ALS Lab Work Order # (lab use only):

ALS Contact: Heather McKenzie Sampler: Gabrielle Klappstein

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

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Cyanide (Total, Free, Weak Acid Dissociable) P	Hardness, pH, electrical conductivity, turbidity	Total and speciated alkalinity	General TDS TSS Routine	Dissolved metals and Mercury F/P	Total Metals and mercury P	Anions (Br, Cl, F, SO4)		NUT/TOC/COD/TKN/TN/TP/NH3 P	NUT/DOC/DKN/TDN/TDP/DNH3 F/P		RADIUM 226 P	Reactive Silica P		SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	MW-IDP-01(D)	7-Sep-20	13:30	Groundwater	11	R	R	R	R	R	R	R		R	R		R	R			
	MW-IDP-01(D)-DUP-1	7-Sep-20	13:30	Groundwater	11															Hold	

Environmental Division
Vancouver
Work Order Reference
VA20B5290
Telephone : +1 604 253 4188

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

Are samples taken from a Regulated DW System? ☐ YES ☑ NO
Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

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

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				18.4			8.8

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Gabrielle Klappstein	Date: Sep. 8, 2020	Time: 0830	Received by:	Date:	Time:	Received by: GE	Date: Sept 11/2020	Time: 1:20 pm

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

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

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

cm Sept. 15, 2020 2:05 pm

NOV 2018 FRONT

Appendix C-II Analytical Report No. L2502386

Monitoring Location	Golder Sample ID	Lab Sample ID
MW-IPD-01(s)	MW-IPD-01(S)	L2502386-1
	MW-IPD-01(S)-DUP-1	L2502386-2

AGNICO-EAGLE MINES LTD.
ATTN: ADRIAN KOWALCHUK
1931 ROBERTSON ROAD

OTTAWA ON K2H 5B7

Date Received: 14-SEP-20
Report Date: 13-OCT-20 07:35 (MT)
Version: FINAL REV. 2

Client Phone: 204-891-5372

Certificate of Analysis

Lab Work Order #: L2502386
Project P.O. #: NOT SUBMITTED
Job Reference: 20148777-2000-2030
C of C Numbers:
Legal Site Desc:

Comments: ADDITIONAL 01-OCT-20 11:41

Hua Wo
Chemistry Laboratory Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2502386-1	L2502386-2			
	Description	GROUNDWATER	GROUNDWATER			
	Sampled Date	08-SEP-20	08-SEP-20			
	Sampled Time	16:30	16:30			
	Client ID	MW-IPD-01 (S)	MW-IPD-01 (S)-DUP-1			
Grouping	**Analyte**					
WATER						
Physical Tests	Conductivity (umhos/cm)	353	358			
	Hardness (as CaCO3) (mg/L)	149	143			
	pH (pH units)	7.79	7.90			
	Total Suspended Solids (mg/L)	<1.0	<1.0			
	Total Dissolved Solids (mg/L)	217	222			
	Turbidity (NTU)	0.16	0.23			
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	51.4	47.8			
	Ammonia, Total (as N) (mg/L)	0.074	0.061			
	Bicarbonate (HCO3) (mg/L)	62.7	58.3			
	Bromide (Br) (mg/L)	<0.10	<0.10			
	Carbonate (CO3) (mg/L)	<0.60	<0.60			
	Chloride (Cl) (mg/L)	4.82	4.75			
	Fluoride (F) (mg/L)	0.380	0.366			
	Hydroxide (OH) (mg/L)	<0.34	<0.34			
	Nitrate and Nitrite as N (mg/L)	0.432	0.438			
	Nitrate (as N) (mg/L)	0.432	0.437			
	Nitrite (as N) (mg/L)	<0.010	0.0011			
	Total Kjeldahl Nitrogen (mg/L)	<0.20	<0.20			
	Total Nitrogen (mg/L)	0.43	0.44			
	Orthophosphate-Dissolved (as P) (mg/L)	0.0063	0.0067			
	Phosphorus (P)-Total Dissolved (mg/L)	<0.0030	<0.0020			
	Phosphorus (P)-Total (mg/L)	<0.0030	<0.0020			
	Silica, Reactive (as SiO2) (mg/L)	6.6	6.5			
	Sulfate (SO4) (mg/L)	116	115			
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0010	<0.0010			
	Cyanide, Total (mg/L)	<0.0010	<0.0010			
	Cyanide, Free (mg/L)	<0.0010	<0.0010			
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	0.92 RRV	0.69			
	Total Organic Carbon (mg/L)	0.72 RRV	0.77 RRV			
Total Metals	Aluminum (Al)-Total (mg/L)	0.0057	0.0052			
	Antimony (Sb)-Total (mg/L)	0.00020	0.00015			
	Arsenic (As)-Total (mg/L)	0.0303	0.0312			
	Barium (Ba)-Total (mg/L)	0.0103	0.0103			
	Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010			
	Bismuth (Bi)-Total (mg/L)	<0.000050	<0.000050			
	Boron (B)-Total (mg/L)	0.079	0.078			

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2502386-1	L2502386-2			
	Description	GROUNDWATER	GROUNDWATER			
	Sampled Date	08-SEP-20	08-SEP-20			
	Sampled Time	16:30	16:30			
	Client ID	MW-IPD-01 (S)	MW-IPD-01 (S)-DUP-1			
Grouping	**Analyte**					
WATER						
Total Metals	Cadmium (Cd)-Total (mg/L)	0.000113	0.000109			
	Calcium (Ca)-Total (mg/L)	35.3	34.4			
	Cesium (Cs)-Total (mg/L)	0.000053	0.000043			
	Chromium (Cr)-Total (mg/L)	<0.00010	<0.00010			
	Cobalt (Co)-Total (mg/L)	0.00597	0.00574			
	Copper (Cu)-Total (mg/L)	0.00973	0.00989			
	Iron (Fe)-Total (mg/L)	0.020	0.019			
	Lead (Pb)-Total (mg/L)	0.000060	<0.000050			
	Lithium (Li)-Total (mg/L)	0.0044	0.0040			
	Magnesium (Mg)-Total (mg/L)	17.5	16.0			
	Manganese (Mn)-Total (mg/L)	0.916	0.875			
	Mercury (Hg)-Total (mg/L)	<0.0000050	<0.0000050			
	Molybdenum (Mo)-Total (mg/L)	0.00392	0.00416			
	Nickel (Ni)-Total (mg/L)	0.0681	0.0661			
	Phosphorus (P)-Total (mg/L)	<0.030	<0.030			
	Potassium (K)-Total (mg/L)	3.36	3.28			
	Rubidium (Rb)-Total (mg/L)	0.00356	0.00365			
	Selenium (Se)-Total (mg/L)	0.000175	0.000134			
	Silicon (Si)-Total (mg/L)	3.12	3.15			
	Silver (Ag)-Total (mg/L)	<0.000010	<0.000010			
	Sodium (Na)-Total (mg/L)	3.80	3.77			
	Strontium (Sr)-Total (mg/L)	0.159	0.163			
	Sulfur (S)-Total (mg/L)	37.4	35.6			
	Tellurium (Te)-Total (mg/L)	<0.00020	<0.00020			
	Thallium (Tl)-Total (mg/L)	0.000021	0.000014			
	Thorium (Th)-Total (mg/L)	<0.00010	<0.00010			
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010			
	Titanium (Ti)-Total (mg/L)	<0.00030	<0.00030			
	Tungsten (W)-Total (mg/L)	0.00664	0.00677			
	Uranium (U)-Total (mg/L)	0.00363	0.00410			
	Vanadium (V)-Total (mg/L)	<0.00050	0.00053			
	Zinc (Zn)-Total (mg/L)	0.0205	0.0196			
	Zirconium (Zr)-Total (mg/L)	<0.00020	<0.00020			
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD			
	Dissolved Metals Filtration Location	FIELD	FIELD			
	Aluminum (Al)-Dissolved (mg/L)	0.0037	0.0034			
	Antimony (Sb)-Dissolved (mg/L)	0.00011	0.00020			

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2502386-1	L2502386-2			
	Description	GROUNDWATER	GROUNDWATER			
	Sampled Date	08-SEP-20	08-SEP-20			
	Sampled Time	16:30	16:30			
	Client ID	MW-IPD-01 (S)	MW-IPD-01 (S)-DUP-1			
Grouping	**Analyte**					
WATER						
Dissolved Metals	Arsenic (As)-Dissolved (mg/L)	0.0305	0.0300			
	Barium (Ba)-Dissolved (mg/L)	0.00985	0.00978			
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010			
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050			
	Boron (B)-Dissolved (mg/L)	0.075	0.074			
	Cadmium (Cd)-Dissolved (mg/L)	0.000103	0.000102			
	Calcium (Ca)-Dissolved (mg/L)	33.5	33.1			
	Cesium (Cs)-Dissolved (mg/L)	0.000039	0.000044			
	Chromium (Cr)-Dissolved (mg/L)	<0.00010	<0.00010			
	Cobalt (Co)-Dissolved (mg/L)	0.00563	0.00533			
	Copper (Cu)-Dissolved (mg/L)	0.00872	0.00851			
	Iron (Fe)-Dissolved (mg/L)	<0.010	<0.010			
	Lead (Pb)-Dissolved (mg/L)	<0.000050	<0.000050			
	Lithium (Li)-Dissolved (mg/L)	0.0038	0.0035			
	Magnesium (Mg)-Dissolved (mg/L)	15.8	14.8			
	Manganese (Mn)-Dissolved (mg/L)	0.841	0.801			
	Mercury (Hg)-Dissolved (mg/L)	<0.0000050	<0.0000050			
	Molybdenum (Mo)-Dissolved (mg/L)	0.00408	0.00409			
	Nickel (Ni)-Dissolved (mg/L)	0.0641	0.0607			
	Phosphorus (P)-Dissolved (mg/L)	<0.030	<0.030			
	Potassium (K)-Dissolved (mg/L)	3.28	3.09			
	Rubidium (Rb)-Dissolved (mg/L)	0.00364	0.00356			
	Selenium (Se)-Dissolved (mg/L)	0.000120	0.000121			
	Silicon (Si)-Dissolved (mg/L)	3.23	2.94			
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010			
	Sodium (Na)-Dissolved (mg/L)	3.77	3.54			
	Strontium (Sr)-Dissolved (mg/L)	0.164	0.157			
	Sulfur (S)-Dissolved (mg/L)	38.2	33.5			
	Tellurium (Te)-Dissolved (mg/L)	<0.00020	<0.00020			
	Thallium (Tl)-Dissolved (mg/L)	0.000013	0.000033			
	Thorium (Th)-Dissolved (mg/L)	<0.00010	<0.00010			
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010			
	Titanium (Ti)-Dissolved (mg/L)	<0.00030	<0.00030			
	Tungsten (W)-Dissolved (mg/L)	0.00657	0.00642			
	Uranium (U)-Dissolved (mg/L)	0.00370	0.00395			
	Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050			
	Zinc (Zn)-Dissolved (mg/L)	0.0205	0.0200			

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2502386-1	L2502386-2			
	Description	GROUNDWATER	GROUNDWATER			
	Sampled Date	08-SEP-20	08-SEP-20			
	Sampled Time	16:30	16:30			
	Client ID	MW-IPD-01 (S)	MW-IPD-01 (S)-DUP-1			
Grouping	**Analyte**					
WATER						
Dissolved Metals	Zirconium (Zr)-Dissolved (mg/L)	<0.00020	<0.00020			
Radiological Parameters	Ra-226 (Bq/L)	0.011				

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

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Method Blank	Alkalinity, Total (as CaCO3)	B	L2502386-2
Method Blank	Conductivity	B	L2502386-2
Laboratory Control Sample	Sulfur (S)-Dissolved	MES	L2502386-1
Matrix Spike	Dissolved Organic Carbon	MS-B	L2502386-1
Matrix Spike	Total Organic Carbon	MS-B	L2502386-1
Matrix Spike	Arsenic (As)-Dissolved	MS-B	L2502386-2
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L2502386-1
Matrix Spike	Boron (B)-Dissolved	MS-B	L2502386-1
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L2502386-1
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L2502386-2
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L2502386-1
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L2502386-2
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L2502386-1
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L2502386-2
Matrix Spike	Nickel (Ni)-Dissolved	MS-B	L2502386-2
Matrix Spike	Potassium (K)-Dissolved	MS-B	L2502386-1
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L2502386-1
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L2502386-1
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L2502386-2
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L2502386-1
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L2502386-2
Matrix Spike	Sulfur (S)-Dissolved	MS-B	L2502386-2
Matrix Spike	Uranium (U)-Dissolved	MS-B	L2502386-1
Matrix Spike	Barium (Ba)-Total	MS-B	L2502386-2
Matrix Spike	Calcium (Ca)-Total	MS-B	L2502386-1
Matrix Spike	Calcium (Ca)-Total	MS-B	L2502386-2
Matrix Spike	Copper (Cu)-Total	MS-B	L2502386-2
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2502386-1
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2502386-2
Matrix Spike	Manganese (Mn)-Total	MS-B	L2502386-2
Matrix Spike	Potassium (K)-Total	MS-B	L2502386-2
Matrix Spike	Silicon (Si)-Total	MS-B	L2502386-2
Matrix Spike	Sodium (Na)-Total	MS-B	L2502386-1
Matrix Spike	Sodium (Na)-Total	MS-B	L2502386-2
Matrix Spike	Strontium (Sr)-Total	MS-B	L2502386-2
Matrix Spike	Sulfur (S)-Total	MS-B	L2502386-2
Matrix Spike	Uranium (U)-Total	MS-B	L2502386-2
Matrix Spike	Zinc (Zn)-Total	MS-B	L2502386-2
Matrix Spike	Silica, Reactive (as SiO2)	MS-B	L2502386-1
Matrix Spike	Silica, Reactive (as SiO2)	MS-B	L2502386-2
Matrix Spike	Sulfate (SO4)	MS-B	L2502386-2

Qualifiers for Individual Parameters Listed:

Qualifier	Description
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RRV	Reported Result Verified By Repeat Analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

Reference Information

ALK-CO3CO3-CALC-WP Water Alkalinity, Carbonate CALCULATION

The Alkalinity of water is a measure of its acid neutralizing capacity.Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by carbonate is calculated and reported as mg CO3 2-/L.

ALK-HCO3HCO3-CALC-WP Water Alkalinity, Bicarbonate CALCULATION

The Alkalinity of water is a measure of its acid neutralizing capacity.Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by bicarbonate is calculated and reported as mg HCO3-/L

ALK-OHOH-CALC-WP Water Alkalinity, Hydroxide CALCULATION

The Alkalinity of water is a measure of its acid neutralizing capacity.Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by hydroxide is calculated and reported as mg OH-/L.

ALK-TITR-WP Water Alkalinity, Total (as CaCO3) APHA 2320B

The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. Total alkalinity is determined by titration with a strong standard mineral acid to the successive HCO3- and H2CO3 endpoints indicated electrometrically.

BR-IC-N-WP Water Bromide in Water by IC EPA 300.1 (mod)

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

C-DOC-HTC-WP Water Dissolved Organic Carbon by Combustion APHA 5310 B-WP

Filtered (0.45 um) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.

C-TOC-HTC-WP Water Total Organic Carbon by Combustion APHA 5310 B-WP

Sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.

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

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

CN-FREE-L-CFA-WT Water Low Level 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-T-L-CFA-WT Water Low Level Total Cyanide in water by CFA ISO 14403-2:2002

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, however it would be less than 1% and could be as low as zero.

CN-WAD-L-CFA-WT Water Low level WAD Cyanide in water by CFA APHA 4500CN I-Weak acid Dist Colorimet

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-SCREEN-WP Water Conductivity Screen (Internal Use Only) APHA 2510

Qualitative analysis of conductivity where required during preparation of other test eg. IC, TDS, TSS, etc

EC-WP Water Conductivity APHA 2510B

Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.

ETL-N-TOT-ANY-WP Water Total Nitrogen Calculated Calculated

F-IC-N-WP 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-WP Water Hardness Calculated APHA 2340B

Reference Information

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

HG-D-CVAA-WP	Water	Mercury Dissolved	APHA 3030B/EPA 1631E (mod)

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

HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)

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

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

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

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

MET-T-CCMS-WP	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020B (mod.)

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

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

N-TOTKJ-WP	Water	Total Kjeldahl Nitrogen	APHA 4500 NorgD (modified)

Aqueous samples are digested in a block digester with sulfuric acid and copper sulfate as a catalyst. Total Kjeldahl Nitrogen is then analyzed using a discrete analyzer with colorimetric detection.

NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F

Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.

NO2+NO3-CALC-L-WP	Water	Nitrate+Nitrite	CALCULATION
NO2+NO3-CALC-WP	Water	Nitrate+Nitrite	CALCULATION
NO2-IC-N-WP	Water	Nitrite in Water by IC	EPA 300.1 (mod)

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

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

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

NO3-IC-N-WP	Water	Nitrate in Water by IC	EPA 300.1 (mod)

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

NO3-L-IC-N-WP	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.

P-T-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapted from APHA METHOD 4500-P "Phosphorus". Total Phosphorus is determined colourmetrically after persulphate digestion of the sample.

P-T-L-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorous is determined colourimetrically after persulphate digestion of the sample.

P-TD-COL-WP	Water	Phosphorus, Total Dissolved	APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapated from APHA METHOD 4500-P "Phosphorus". Total Phosphorous is determined colourmetricaly after persulphate digestion of a sample that has been lab or field filtered through a 0.45 micron membrane filter.

P-TD-L-COL-WP	Water	Phosphorus, Total Dissolved	APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Dissolved Phosphorous is determined colourimetrically after persulphate digestion of a sample that has been lab or field filtered through a 0.45 micron membrane filter.

PH-WP	Water	pH	APHA 4500H

The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.

Reference Information

PO4-DO-COL-WP	Water	Phosphate Ortho Dissolved in Water	APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapated from APHA METHOD 4500-P " Phosphorus ". Dissolved Ortho Phosphorous is determined colourmetricaly on a sample that has been lab or field filtered through a 0.45 micron filter.

RA226-MMER-FC	Water	Ra226 by Alpha Scint, MDC=0.01 Bq/L	EPA 903.1
SIO2-COL-WP	Water	Reactive Silica by colour	APHA 4500 SIO2

This analysis is carried out using procedures adapted from APHA Method 4500-SiO2 "Silica". Molybdate Reactive Silica is determined by analysis of the sample using the heteropoly blue colourimetric method.

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

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

SOLIDS-TOTSUS-LR-WP	Water	Total Suspended Solids	APHA 2540 D (modified)

Total suspended solids in aquesous matrices is determined gravimetrically after drying the residue at 103 105°C.

TDS-WP	Water	Total Dissolved Solids (TDS)	APHA 2540 SOLIDS C,E

A well-mixed sample is filtered through a glass fiber filter paper. The filtrate is then evaportaed to dryness in a pre-weighed vial and dried at 180 – 2C. The increase in vial weight represents the total dissolved solids.

TURBIDITY-WP	Water	Turbidity	APHA 2130B (modified)

Turbidity in aqueous matrices is determined by the nephelometric method.

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

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

Laboratory Definition Code	Laboratory Location
FC	ALS ENVIRONMENTAL - FORT COLLINS, COLORADO, USA
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA

Chain of Custody Numbers:

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.

Wednesday, September 30, 2020

Judy Dalmaijer
ALS Environmental
1329 Niakwa Road East, Unit 12
Winnipeg, MB R2J 3T4

Re: ALS Workorder: 2009348
Project Name:
Project Number: L2502386

Dear Ms. Dalmaijer:

One water sample was received from ALS Environmental, on 9/16/2020. The sample was scheduled for the following analysis:

Radium-226

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental
Katie M. OBrien
Project Manager

ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
AIHA	214884
Alaska (AK)	UST-086
Alaska (AK)	CO01099
Arizona (AZ)	AZ0742
California (CA)	06251CA
Colorado (CO)	CO01099
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
PJ-LA (DoD ELAP/ISO 170250)	95377
Louisiana (LA)	05057
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO000782008A
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280

2009348

Radium-226:

The sample was prepared and analyzed according to the current revision of SOP 783.

All acceptance criteria were met.

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 2009348
Client Name: ALS Environmental
Client Project Name:
Client Project Number: L2502386
Client PO Number: L2502386

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
L2502386-1	2009348-1		WATER	08-Sep-20	

ALS Environmental

L2502386

WINNIPEG

2002348

Subcontract Request Form

Subcontract To:

ALS ENVIRONMENTAL - FORT COLLINS, COLORADO, USA
225 COMMERCE DRIVE
FORT COLLINS,CO 80524

NOTES: Please reference on final report and invoice: PO# *L2502386*
ALS requires QC data to be provided with your final results.

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

SAMPLE NUMBER	ANALYTICAL REQUIRED	DATE SAMPLED / DUE DATE	Priority Flag
L2502386-1 MW-IPD-01 (S)		**9/8/2020**	
	Ra226 by Alpha Scint, MDC=0.01 Bq/L (RA226-MMER-FC 1)	10/5/2020	

Subcontract Info Contact: Judy Dalmaijer (204) 255-9749
Analysis and reporting info contact: Judy Dalmaijer
12-1329 NIAKWA ROAD E
WINNIPEG,MB R2J3T4
Phone: (204) 255-9749 Email:Judy.Dalmaijer@alsglobal.com

Please email confirmation of receipt to: Judy.Dalmaijer@alsglobal.com

Shipped By: _____ Date Shipped: SEPT 15

Received By: _____ Date Received: 9/14/20 1005

Verified By: _____ Date Verified: _____

Temperature: 8°

Sample Integrity Issues: _____

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client Name/ID: ALS Winnipeg Workorder No: 2009348

Project Manager: KMO Initials: TM Date: 9/17/20

1. Are airbills / shipping documents present and/or removable?	☐ Drop Off	☑ YES	☐ NO		
2. Are custody seals on **shipping** containers intact?	☑ NONE	☐ YES	☐ NO*		
3. Are custody seals on **sample** containers intact?	☑ NONE	☐ YES	☐ NO*		
4. Is there a COC (chain-of-custody) present?		☑ YES	☐ NO*		
5. Is the COC in agreement with samples received? (IDs, dates, times, # of samples, # of containers, matrix, requested analyses, etc.)		☑ YES	☐ NO*		
6. Are short-hold samples present?		☐ YES	☑ NO		
7. Are all samples within holding times for the requested analyses?		☑ YES	☐ NO*		
8. Were all sample containers received intact? (not broken or leaking)		☑ YES	☐ NO*		
9. Is there sufficient sample for the requested analyses?		☑ YES	☐ NO*		
10. Are samples in proper containers for requested analyses? (form 250, *Sample Handling Guidelines*)		☑ YES	☐ NO*		
11. Are all aqueous samples preserved correctly, if required?	☐ N/A	☑ YES	☐ NO*		
12. Were unpreserved samples pH checked, if required?	☑ N/A	☐ YES	☐ NO		
13. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, radon) free of bubbles > 6 mm in diameter?	☑ N/A	☐ YES	☐ NO		
14. Were the samples shipped on ice?		☐ YES	☑ NO		
15. Were cooler temperatures measured at 0.1 - 6.0°C? IR gun used+: ☐ #3 ☐ #5	☑ Rad Only	☐ YES	☑ NO		

Cooler #: 1

Temperature (°C): amb

# of custody seals on cooler: 0

External mR/hr reading: 10

Background mR/hr reading: 11

Were external mR/hr readings ≤ two times background and within DOT acceptance criteria? (If no, see Form 008) ☐ N/A ☑ YES ☐ NO

* Please provide details below for 'NO' responses in gray boxes above - for 2 thru 5 & 7 thru 12, notify PM & continue w/ login.

All client bottle ID's vs ALS lab ID's double-checked by: TM

If applicable, was the client contacted? ☐ YES ☐ N/A Contact Name Date:

Project Manager Signature / Date: 9/17/20

Form 201r30.xls
(06/04/2020)

+IR Gun #3, VWR SN 170647571
+IR Gun #5, VWR SN 192272629

https://www.ups.com/ship/core/confirmation?tx=7083496013596681&loc=en_CA 9/15/2020

BARB BAYER
2042559721
ALS ENVIROMENTAL LAB
1329 NIAKWA ROAD
WINNIPEG MB R2J3T4
CANADA

30 LBS

1 OF 1

SHP#: 3035 R493 XZF
SHP WT: 30 LBS
SHP DWT: 30 LBS
DATE: 15 SEP 2020

SHIP TO:
ALS
970 4901511
ALS FORT COLLINS
LOGIN
225 COMMERCE DRIVE
FORT COLLINS CO 80524
UNITED STATES

10-0

-amy

CO 805 0-01

UPS EXPRESS

TRACKING #: 1Z 303 5R4 66 1844 1107

1

BILLING: F/D
DESC: WATER SAMPLE

INV

XOL 20.08.05 NV45 31.0A 07/2020*

TM

Shipper agrees to the UPS Terms found at www.ups.com and UPS service centers. For international air carriage, the Warsaw Convention as amended or Montreal Convention may apply and limits UPS's liability for loss or damage to cargo. International carriage by road may be subject to the Convention on the Contract for the International Carriage of Goods By Road. Except as otherwise governed by international conventions or other mandatory law, the UPS Terms limit UPS's liability for damage, loss or delay of this shipment. There are no stopping places agreed upon at the time of tender of the shipment and UPS reserves the right to route the shipment in any way it deems appropriate. Where allowed by law, shipper authorizes UPS to act as forwarding agent for export control and customs purposes. If exported from the US, shipper certifies that the commodities, technology or software were exported from the US in accordance with the Export Administration Regulations. Diversion contrary to law is prohibited.

Client:	ALS Environmental	**Date:**	*30-Sep-20*
Project:	L2502386	**Work Order:**	2009348
Sample ID:	L2502386-1	**Lab ID:**	2009348-1
Legal Location:		**Matrix:**	WATER
Collection Date:	9/8/2020	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Radium-226 by Radon Emanation - Method 903.1		**SOP 783**		Prep Date: **9/21/2020**		PrepBy: **MIG**
Ra-226	**0.011 (+/- 0.0069)**		**0.0084**	**BQ/l**	NA	9/29/2020 12:53
Carr: BARIUM	*99.5*		*40-110*	*%REC*	DL = NA	9/29/2020 12:53

Client:	ALS Environmental	**Date:**	*30-Sep-20*
Project:	L2502386	**Work Order:**	2009348
Sample ID:	L2502386-1	**Lab ID:**	2009348-1
Legal Location:		**Matrix:**	WATER
Collection Date:	9/8/2020	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed

Explanation of Qualifiers

Radiochemistry:

- "Report Limit" is the MDC
U or ND - Result is less than the sample specific MDC.
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
Y2 - Chemical Yield outside default limits.
W - DER is greater than Warning Limit of 1.42
* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.
# - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.
G - Sample density differs by more than 15% of LCS density.
D - DER is greater than Control Limit
M - Requested MDC not met.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS, Matrix Spike Recovery within control limits.
N - Matrix Spike Recovery outside control limits
NC - Not Calculated for duplicate results less than 5 times MDC
B - Analyte concentration greater than MDC.
B3 - Analyte concentration greater than MDC but less than Requested MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).
U or ND - Indicates that the compound was analyzed for but not detected.
E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.
M - Duplicate injection precision was not met.
N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.
Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.
* - Duplicate analysis (relative percent difference) not within control limits.
S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.
B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.
E - Analyte concentration exceeds the upper level of the calibration range.
J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).
A - A tentatively identified compound is a suspected aldol-condensation product.
X - The analyte was diluted below an accurate quantitation level.
* - The spike recovery is equal to or outside the control criteria used.
+ - The relative percent difference (RPD) equals or exceeds the control criteria.
G - A pattern resembling gasoline was detected in this sample.
D - A pattern resembling diesel was detected in this sample.
M - A pattern resembling motor oil was detected in this sample.
C - A pattern resembling crude oil was detected in this sample.
4 - A pattern resembling JP-4 was detected in this sample.
5 - A pattern resembling JP-5 was detected in this sample.
H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.
L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.
Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
- gasoline
- JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

ALS -- Fort Collins

Client: ALS Environmental
Work Order: 2009348
Project: L2502386

Date: *9/30/2020 6:46:*

QC BATCH REPORT

Batch ID: **RE200921-1-1** Instrument ID **Alpha Scin** Method: **Radium-226 by Radon Emanation**

LCS Sample ID: **RE200921-1** Units: **BQ/l** Analysis Date: **9/29/2020 14:08**
Client ID: Run ID: **RE200921-1A** Prep Date: **9/21/2020** DF: **NA**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref	DER	DER Limit	Qual
Ra-226	1.65 (+/- 0.412)	0.0191	1.719		95.8	67-120					P,Y1,M3
Carr: BARIUM	17000		16410		104	40-110					Y1

LCSD Sample ID: **RE200921-1** Units: **BQ/l** Analysis Date: **9/29/2020 14:08**
Client ID: Run ID: **RE200921-1A** Prep Date: **9/21/2020** DF: **NA**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref	DER	DER Limit	Qual
Ra-226	1.75 (+/- 0.437)	0.0169	1.719		102	67-120		1.65	0.2	2.1	P,Y1,M3
Carr: BARIUM	16800		16410		103	40-110		17000			Y1

MB Sample ID: **RE200921-1** Units: **BQ/l** Analysis Date: **9/29/2020 13:31**
Client ID: Run ID: **RE200921-1A** Prep Date: **9/21/2020** DF: **NA**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref	DER	DER Limit	Qual
Ra-226	0 (+/- 0.0038)	0.0076									Y1,U
Carr: BARIUM	16800		16410		103	40-110					Y1

The following samples were analyzed in this batch: 2009348-1

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2502386-COFC

COC Number:

Report To	Contact and company name below will appear on the final report
Company:	Golder Associates
Contact:	Adrian Kowalchuk
Phone:	(204) 891-5372
	Company address below will appear on the final report
Street:	1931 Robertson Road,
City/Province:	Ottawa, Ontario
Postal Code:	K2H 5B7
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Agnico Eagle, Meadowbank Mine, Permitting
Contact:	Robin Allard

Report Format / Distribution

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

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Adrian_Kowalchuk@Golder.com

Email 2: Valerie_Bertrand@Golder.com

Email 3:

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Robin.Allard@AgnicoEagle.com

Email 2:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐; 3 day [P3-25%] ☐; 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐; Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q72802

Job #: 20148777-2000-2030

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:

Major/Minor Code: Routing Code:

Requisitioner:

Location: Meadowbank

ALS Lab Work Order # (lab use only):

ALS Contact: Heather McKenzie

Sampler: Gabrielle Klappstein

Analysis Request

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

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Cyanide (Total, Free, Weak Acid Dissociable) P	Hardness, pH, electrical conductivity, turbidity	Total and speciated alkalinity	General TDS TSS Routine	Dissolved metals and Mercury F/P	Total Metals and mercury P	Anions (Br, Cl, F, SO4)		NUT/TOC/COD/TKN/TN/TP/NH3 P	NUT/DOC/DKN/TDN/TDP/DNH3 F/P		RADIUM 226 P	Reactive Silica P		SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	MW-IPD-01(S)	8-Sep-20	16:30	Groundwater	11	R	R	R	R	R	R	R		R	R		R	R			
	MW-IPD-01(S)-DUP-1	8-Sep-20	16:30	Groundwater	11															Hold	

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

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
			6.3				

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Gabrielle Klappstein	Date: Sep-9, 2020	Time: 0830	Received by:	Date: Sept 14/20	Time: 9:00	Received by:	Date: Sept 14/20	Time: 9:00

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NOV 2018 FRONT

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 C-III Analytical Report No. L2504283

Monitoring Location	Golder Sample ID	Lab Sample ID
MW-IPD-09	MW-IPD-09	L2504283-1
	MW-IPD-09-DUP-1	L2504283-2
MW-IPD-01(d)	MW-IPD-01(D)-12-09	L2504283-3
Trip Blank	TB20-01	L2504283-4
MW-IPD-07	MW-IPD-07	L2504283-5
	MW-IPD-07-DUP-1	L2504283-6

AGNICO-EAGLE MINES LTD.
ATTN: ADRIAN KOWALCHUK
1931 ROBERTSON ROAD

OTTAWA ON K2H 5B7

Date Received: 17-SEP-20
Report Date: 13-OCT-20 07:32 (MT)
Version: FINAL

Client Phone: 204-891-5372

Certificate of Analysis

Lab Work Order #: L2504283
Project P.O. #: NOT SUBMITTED
Job Reference: 20148777-2000-2030
C of C Numbers:
Legal Site Desc:

Comments: Insufficient sample to complete Reactive Silica on sample number 4

Hua Wo
Chemistry Laboratory Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2504283-1	L2504283-2	L2504283-3	L2504283-4	L2504283-5
	Description	GROUNDWATER	GROUNDWATER	GROUNDWATER	WATER	GROUNDWATER
	Sampled Date	10-SEP-20	10-SEP-20	12-SEP-20	12-SEP-20	09-SEP-20
	Sampled Time	16:00	16:00	16:45	17:00	14:00
	Client ID	MW-IPD-09	MW-IPD-09-DUP-1	MW-IPD-01(D)-12-09	TB20-01	MW-IPD-07
Grouping	**Analyte**					
WATER						
Physical Tests	Conductivity (umhos/cm)	210	217	388	<1.0	245
	Hardness (as CaCO3) (mg/L)	65.4	73.6	122	<0.20	68.9
	pH (pH units)	8.03	8.08	8.27	5.54	8.14
	Total Suspended Solids (mg/L)	<1.0	<1.0	18.0	<1.3	<1.0
	Total Dissolved Solids (mg/L)	143	122	235	<4.0	169
	Turbidity (NTU)	0.36	0.32	12.1	<0.10	0.31
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	70.1	71.6	119	<1.0	120
	Ammonia, Total (as N) (mg/L)	0.042	0.056	0.140	<0.010	0.23
	Bicarbonate (HCO3) (mg/L)	85.5	87.4	146	<1.2	146
	Bromide (Br) (mg/L)	<0.10	<0.10	0.71	<0.10	<0.10
	Carbonate (CO3) (mg/L)	<0.60	<0.60	<0.60	<0.60	<0.60
	Chloride (Cl) (mg/L)	1.52	1.62	53.8	<0.50	4.78
	Fluoride (F) (mg/L)	0.986	1.10	0.613	<0.020	1.23
	Hydroxide (OH) (mg/L)	<0.34	<0.34	<0.34	<0.34	<0.34
	Nitrate and Nitrite as N (mg/L)	<0.070	<0.070	<0.070	<0.070	<0.070
	Nitrate (as N) (mg/L)	<0.020	<0.020	<0.020	<0.020	<0.020
	Nitrite (as N) (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Total Kjeldahl Nitrogen (mg/L)	<0.20	<0.20	<0.20	<0.20	<0.20
	Total Nitrogen (mg/L)	<0.20	<0.20	<0.20	<0.20	<0.20
	Orthophosphate-Dissolved (as P) (mg/L)	0.0207	0.0200	<0.0010		0.0277
	Phosphorus (P)-Total Dissolved (mg/L)	0.0261	0.0244	0.0021	<0.0030	0.0431
	Phosphorus (P)-Total (mg/L)	0.0296	0.0284	0.0091	<0.0030	0.0454
	Silica, Reactive (as SiO2) (mg/L)	9.5	9.4	7.0		7.8
	Sulfate (SO4) (mg/L)	34.8	36.4	6.89	<0.30	10.7
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0010	<0.0010 PEHT	<0.0010 PEHT	<0.0010	<0.0010
	Cyanide, Total (mg/L)	0.0019	<0.0010 PEHT	<0.0010 PEHT	<0.0010	<0.0010
	Cyanide, Free (mg/L)	<0.0010	<0.0010 PEHT	<0.0010 PEHT	<0.0010	<0.0010
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	1.11 RRV	1.39 RRV	2.37 RRV	<0.50	21.4 RRV
	Total Organic Carbon (mg/L)	0.84 RRV	1.01 RRV	1.79 RRV	<0.50	2.08 RRV
Total Metals	Aluminum (Al)-Total (mg/L)	0.0080	0.0078	1.62	<0.0030	<0.0030
	Antimony (Sb)-Total (mg/L)	<0.00010	0.00012	0.00011	<0.00010	<0.00010
	Arsenic (As)-Total (mg/L)	0.0230	0.0233	0.0320	<0.00010	0.00296
	Barium (Ba)-Total (mg/L)	0.00218	0.00225	0.0245	<0.00010	0.0147
	Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010	0.00016	<0.00010	<0.00010
	Bismuth (Bi)-Total (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Boron (B)-Total (mg/L)	0.087	0.089	0.198	<0.010	0.234

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2504283-6				
	Description	GROUNDWATER				
	Sampled Date	09-SEP-20				
	Sampled Time	14:00				
	Client ID	MW-IPD-07-DUP-1				
Grouping	**Analyte**					
WATER						
Physical Tests	Conductivity (umhos/cm)	250				
	Hardness (as CaCO3) (mg/L)	74.4				
	pH (pH units)	8.29				
	Total Suspended Solids (mg/L)	<1.0				
	Total Dissolved Solids (mg/L)	140				
	Turbidity (NTU)	0.33				
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	122				
	Ammonia, Total (as N) (mg/L)	0.125				
	Bicarbonate (HCO3) (mg/L)	149				
	Bromide (Br) (mg/L)	<0.10				
	Carbonate (CO3) (mg/L)	<0.60				
	Chloride (Cl) (mg/L)	4.90				
	Fluoride (F) (mg/L)	1.20				
	Hydroxide (OH) (mg/L)	<0.34				
	Nitrate and Nitrite as N (mg/L)	<0.070				
	Nitrate (as N) (mg/L)	<0.020				
	Nitrite (as N) (mg/L)	<0.010				
	Total Kjeldahl Nitrogen (mg/L)	<0.20				
	Total Nitrogen (mg/L)	<0.20				
	Orthophosphate-Dissolved (as P) (mg/L)	0.0263				
	Phosphorus (P)-Total Dissolved (mg/L)	0.0382				
	Phosphorus (P)-Total (mg/L)	0.0436				
	Silica, Reactive (as SiO2) (mg/L)	7.6				
	Sulfate (SO4) (mg/L)	11.2				
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.0010 PEHT				
	Cyanide, Total (mg/L)	<0.0010 PEHT				
	Cyanide, Free (mg/L)	<0.0010 PEHT				
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	15.2 RRV				
	Total Organic Carbon (mg/L)	2.07 RRV				
Total Metals	Aluminum (Al)-Total (mg/L)	0.0033				
	Antimony (Sb)-Total (mg/L)	<0.00010				
	Arsenic (As)-Total (mg/L)	0.00307				
	Barium (Ba)-Total (mg/L)	0.0146				
	Beryllium (Be)-Total (mg/L)	<0.00010				
	Bismuth (Bi)-Total (mg/L)	<0.000050				
	Boron (B)-Total (mg/L)	0.241				

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2504283-1	L2504283-2	L2504283-3	L2504283-4	L2504283-5
	Description	GROUNDWATER	GROUNDWATER	GROUNDWATER	WATER	GROUNDWATER
	Sampled Date	10-SEP-20	10-SEP-20	12-SEP-20	12-SEP-20	09-SEP-20
	Sampled Time	16:00	16:00	16:45	17:00	14:00
	Client ID	MW-IPD-09	MW-IPD-09-DUP-1	MW-IPD-01(D)-12-09	TB20-01	MW-IPD-07
Grouping	**Analyte**					
WATER						
Total Metals	Cadmium (Cd)-Total (mg/L)	<0.0000050	0.0000076	0.0000121	<0.0000050	0.0000104
	Calcium (Ca)-Total (mg/L)	16.5	17.0	24.1	0.058	15.2
	Cesium (Cs)-Total (mg/L)	0.000046	0.000061	0.000277	<0.000010	0.000255
	Chromium (Cr)-Total (mg/L)	0.00019	0.00020	0.00017	<0.00010	<0.00010
	Cobalt (Co)-Total (mg/L)	<0.00010	<0.00010	0.00012	<0.00010	<0.00010
	Copper (Cu)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Iron (Fe)-Total (mg/L)	0.182	0.181	0.672	<0.010	0.211
	Lead (Pb)-Total (mg/L)	<0.000050	0.000117	0.00164	<0.000050	<0.000050
	Lithium (Li)-Total (mg/L)	0.0024	0.0027	0.0092	<0.0010	0.0080
	Magnesium (Mg)-Total (mg/L)	7.30	7.49	16.0	<0.0050	8.52
	Manganese (Mn)-Total (mg/L)	0.0465	0.0475	0.0707	<0.00010	0.0725
	Mercury (Hg)-Total (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Molybdenum (Mo)-Total (mg/L)	0.0119	0.0125	0.0108	<0.000050	0.00645
	Nickel (Ni)-Total (mg/L)	<0.00050	<0.00050	0.00146	<0.00050	<0.00050
	Phosphorus (P)-Total (mg/L)	0.034	0.048	<0.030	<0.030	0.058
	Potassium (K)-Total (mg/L)	0.933	0.966	1.31	<0.050	2.10
	Rubidium (Rb)-Total (mg/L)	0.00098	0.00102	0.00164	<0.00020	0.00337
	Selenium (Se)-Total (mg/L)	<0.000050	0.000054	0.000057	<0.000050	0.000052
	Silicon (Si)-Total (mg/L)	4.66	4.74	8.37	<0.10	3.71
	Silver (Ag)-Total (mg/L)	<0.000010	<0.000010	0.000011	<0.000010	<0.000010
	Sodium (Na)-Total (mg/L)	18.0	18.5	34.6	<0.050	28.3
	Strontium (Sr)-Total (mg/L)	0.136	0.140	0.321	<0.00020	0.147
	Sulfur (S)-Total (mg/L)	12.4	12.5	2.58 RRV	<0.50	3.19
	Tellurium (Te)-Total (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
	Thallium (Tl)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Thorium (Th)-Total (mg/L)	<0.00010	<0.00010	0.00187	<0.00010	<0.00010
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	0.00015	<0.00010	<0.00010
	Titanium (Ti)-Total (mg/L)	<0.00030	<0.00030	0.0138	<0.00030	<0.00030
	Tungsten (W)-Total (mg/L)	0.00634	0.00634	0.00499	<0.00010	0.0169
	Uranium (U)-Total (mg/L)	0.000223	0.000224	0.00191	<0.000010	0.000047
	Vanadium (V)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Zinc (Zn)-Total (mg/L)	<0.0030	<0.0030	0.0050	<0.0030	<0.0030
	Zirconium (Zr)-Total (mg/L)	<0.00020	<0.00020	0.00181	<0.00020	<0.00020
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	LAB	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	LAB	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0020	0.0017	0.0147	<0.0010	<0.0010
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2504283-6				
	Description	GROUNDWATER				
	Sampled Date	09-SEP-20				
	Sampled Time	14:00				
	Client ID	MW-IPD-07-DUP-1				
Grouping	**Analyte**					
WATER						
Total Metals	Cadmium (Cd)-Total (mg/L)	<0.0000050				
	Calcium (Ca)-Total (mg/L)	15.8				
	Cesium (Cs)-Total (mg/L)	0.000246				
	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)	0.210				
	Lead (Pb)-Total (mg/L)	<0.000050				
	Lithium (Li)-Total (mg/L)	0.0085				
	Magnesium (Mg)-Total (mg/L)	8.50				
	Manganese (Mn)-Total (mg/L)	0.0714				
	Mercury (Hg)-Total (mg/L)	<0.0000050				
	Molybdenum (Mo)-Total (mg/L)	0.00660				
	Nickel (Ni)-Total (mg/L)	<0.00050				
	Phosphorus (P)-Total (mg/L)	0.053				
	Potassium (K)-Total (mg/L)	2.08				
	Rubidium (Rb)-Total (mg/L)	0.00331				
	Selenium (Se)-Total (mg/L)	<0.000050				
	Silicon (Si)-Total (mg/L)	3.76				
	Silver (Ag)-Total (mg/L)	<0.000010				
	Sodium (Na)-Total (mg/L)	28.8				
	Strontium (Sr)-Total (mg/L)	0.143				
	Sulfur (S)-Total (mg/L)	3.38				
	Tellurium (Te)-Total (mg/L)	<0.00020				
	Thallium (Tl)-Total (mg/L)	<0.000010				
	Thorium (Th)-Total (mg/L)	<0.00010				
	Tin (Sn)-Total (mg/L)	<0.00010				
	Titanium (Ti)-Total (mg/L)	<0.00030				
	Tungsten (W)-Total (mg/L)	0.0172				
	Uranium (U)-Total (mg/L)	0.000045				
	Vanadium (V)-Total (mg/L)	<0.00050				
	Zinc (Zn)-Total (mg/L)	<0.0030				
	Zirconium (Zr)-Total (mg/L)	<0.00020				
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD				
	Dissolved Metals Filtration Location	FIELD				
	Aluminum (Al)-Dissolved (mg/L)	<0.0010				
	Antimony (Sb)-Dissolved (mg/L)	<0.00010				

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2504283-1	L2504283-2	L2504283-3	L2504283-4	L2504283-5
	Description	GROUNDWATER	GROUNDWATER	GROUNDWATER	WATER	GROUNDWATER
	Sampled Date	10-SEP-20	10-SEP-20	12-SEP-20	12-SEP-20	09-SEP-20
	Sampled Time	16:00	16:00	16:45	17:00	14:00
	Client ID	MW-IPD-09	MW-IPD-09-DUP-1	MW-IPD-01(D)-12-09	TB20-01	MW-IPD-07
Grouping	**Analyte**					
WATER						
Dissolved Metals	Arsenic (As)-Dissolved (mg/L)	0.0217	0.0221	0.0315	<0.00010	0.00306
	Barium (Ba)-Dissolved (mg/L)	0.00240	0.00242	0.0220	<0.00010	0.0146
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Boron (B)-Dissolved (mg/L)	0.083	0.092	0.192	<0.010	0.218
	Cadmium (Cd)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Calcium (Ca)-Dissolved (mg/L)	15.8	16.4	23.6	<0.050	15.1
	Cesium (Cs)-Dissolved (mg/L)	0.000048	0.000043	0.000203	<0.000010	0.000252
	Chromium (Cr)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Cobalt (Co)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Copper (Cu)-Dissolved (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
	Iron (Fe)-Dissolved (mg/L)	0.083	0.096	0.037	<0.010	0.082
	Lead (Pb)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Lithium (Li)-Dissolved (mg/L)	0.0021	0.0025	0.0085	<0.0010	0.0072
	Magnesium (Mg)-Dissolved (mg/L)	6.32	7.91	15.3	<0.0050	7.60
	Manganese (Mn)-Dissolved (mg/L)	0.0451	0.0488	0.0650	<0.00010	0.0682
	Mercury (Hg)-Dissolved (mg/L)	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
	Molybdenum (Mo)-Dissolved (mg/L)	0.0120	0.0123	0.0108	<0.000050	0.00651
	Nickel (Ni)-Dissolved (mg/L)	<0.00050	<0.00050	0.00055	<0.00050	<0.00050
	Phosphorus (P)-Dissolved (mg/L)	<0.030	<0.030	<0.030	<0.030	0.040
	Potassium (K)-Dissolved (mg/L)	0.964	1.08	1.38	<0.050	2.19
	Rubidium (Rb)-Dissolved (mg/L)	0.00101	0.00107	0.00134	<0.00020	0.00366
	Selenium (Se)-Dissolved (mg/L)	0.000072	0.000092	0.000137	<0.000050	0.000104
	Silicon (Si)-Dissolved (mg/L)	4.45	4.58	3.56	<0.050	3.54
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Sodium (Na)-Dissolved (mg/L)	16.8	20.4	36.8	<0.050	26.9
	Strontium (Sr)-Dissolved (mg/L)	0.141	0.149	0.324	<0.00010	0.148
	Sulfur (S)-Dissolved (mg/L)	12.3	12.4	3.42	<0.50	3.93
	Tellurium (Te)-Dissolved (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Thorium (Th)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
	Tungsten (W)-Dissolved (mg/L)	0.00643	0.00693	0.00553	<0.00010	0.0170
	Uranium (U)-Dissolved (mg/L)	0.000201	0.000205	0.00138	<0.000010	0.000029
	Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Zinc (Zn)-Dissolved (mg/L)	0.0015	<0.0010	<0.0010	<0.0010	<0.0010

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2504283-6				
	Description	GROUNDWATER				
	Sampled Date	09-SEP-20				
	Sampled Time	14:00				
	Client ID	MW-IPD-07-DUP-1				
Grouping	**Analyte**					
WATER						
Dissolved Metals	Arsenic (As)-Dissolved (mg/L)	0.00312				
	Barium (Ba)-Dissolved (mg/L)	0.0140				
	Beryllium (Be)-Dissolved (mg/L)	<0.00010				
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050				
	Boron (B)-Dissolved (mg/L)	0.252				
	Cadmium (Cd)-Dissolved (mg/L)	<0.0000050				
	Calcium (Ca)-Dissolved (mg/L)	15.7				
	Cesium (Cs)-Dissolved (mg/L)	0.000263				
	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)	0.069				
	Lead (Pb)-Dissolved (mg/L)	<0.000050				
	Lithium (Li)-Dissolved (mg/L)	0.0082				
	Magnesium (Mg)-Dissolved (mg/L)	8.56				
	Manganese (Mn)-Dissolved (mg/L)	0.0698				
	Mercury (Hg)-Dissolved (mg/L)	<0.0000050				
	Molybdenum (Mo)-Dissolved (mg/L)	0.00678				
	Nickel (Ni)-Dissolved (mg/L)	<0.00050				
	Phosphorus (P)-Dissolved (mg/L)	0.049				
	Potassium (K)-Dissolved (mg/L)	2.28				
	Rubidium (Rb)-Dissolved (mg/L)	0.00355				
	Selenium (Se)-Dissolved (mg/L)	<0.000050				
	Silicon (Si)-Dissolved (mg/L)	3.69				
	Silver (Ag)-Dissolved (mg/L)	<0.000010				
	Sodium (Na)-Dissolved (mg/L)	29.8				
	Strontium (Sr)-Dissolved (mg/L)	0.153				
	Sulfur (S)-Dissolved (mg/L)	4.12				
	Tellurium (Te)-Dissolved (mg/L)	<0.00020				
	Thallium (Tl)-Dissolved (mg/L)	<0.000010				
	Thorium (Th)-Dissolved (mg/L)	<0.00010				
	Tin (Sn)-Dissolved (mg/L)	<0.00010				
	Titanium (Ti)-Dissolved (mg/L)	<0.00030				
	Tungsten (W)-Dissolved (mg/L)	0.0175				
	Uranium (U)-Dissolved (mg/L)	0.000031				
	Vanadium (V)-Dissolved (mg/L)	<0.00050				
	Zinc (Zn)-Dissolved (mg/L)	<0.0010				

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2504283-1	L2504283-2	L2504283-3	L2504283-4	L2504283-5
	Description	GROUNDWATER	GROUNDWATER	GROUNDWATER	WATER	GROUNDWATER
	Sampled Date	10-SEP-20	10-SEP-20	12-SEP-20	12-SEP-20	09-SEP-20
	Sampled Time	16:00	16:00	16:45	17:00	14:00
	Client ID	MW-IPD-09	MW-IPD-09-DUP-1	MW-IPD-01(D)-12-09	TB20-01	MW-IPD-07
Grouping	**Analyte**					
WATER						
Dissolved Metals	Zirconium (Zr)-Dissolved (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID		L2504283-6			
Description		GROUNDWATER			
Sampled Date		09-SEP-20			
Sampled Time		14:00			
Client ID		MW-IPD-07-DUP-1			
Grouping	**Analyte**				
WATER					
Dissolved Metals	Zirconium (Zr)-Dissolved (mg/L)	<0.00020			

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

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Method Blank	Alkalinity, Total (as CaCO3)	B	L2504283-2, -3, -6
Method Blank	Alkalinity, Total (as CaCO3)	B	L2504283-2, -3, -6
Method Blank	Cadmium (Cd)-Total	B	L2504283-1
Matrix Spike	Bromide (Br)	MS-B	L2504283-2, -3, -6
Matrix Spike	Fluoride (F)	MS-B	L2504283-1, -4, -5
Matrix Spike	Fluoride (F)	MS-B	L2504283-2, -3, -6
Matrix Spike	Arsenic (As)-Dissolved	MS-B	L2504283-2, -3, -6
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L2504283-1, -4, -5
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L2504283-1, -4, -5
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L2504283-2, -3, -6
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L2504283-1, -4, -5
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L2504283-2, -3, -6
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L2504283-2, -3, -6
Matrix Spike	Potassium (K)-Dissolved	MS-B	L2504283-1, -4, -5
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L2504283-1, -4, -5
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L2504283-1, -4, -5
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L2504283-2, -3, -6
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L2504283-1, -4, -5
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L2504283-2, -3, -6
Matrix Spike	Sulfur (S)-Dissolved	MS-B	L2504283-1, -4, -5
Matrix Spike	Arsenic (As)-Total	MS-B	L2504283-1, -5
Matrix Spike	Arsenic (As)-Total	MS-B	L2504283-2, -3, -6
Matrix Spike	Barium (Ba)-Total	MS-B	L2504283-2, -3, -6
Matrix Spike	Calcium (Ca)-Total	MS-B	L2504283-4
Matrix Spike	Calcium (Ca)-Total	MS-B	L2504283-1, -5
Matrix Spike	Calcium (Ca)-Total	MS-B	L2504283-2, -3, -6
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2504283-4
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2504283-1, -5
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2504283-2, -3, -6
Matrix Spike	Manganese (Mn)-Total	MS-B	L2504283-1, -5
Matrix Spike	Manganese (Mn)-Total	MS-B	L2504283-2, -3, -6
Matrix Spike	Potassium (K)-Total	MS-B	L2504283-2, -3, -6
Matrix Spike	Sodium (Na)-Total	MS-B	L2504283-4
Matrix Spike	Sodium (Na)-Total	MS-B	L2504283-1, -5
Matrix Spike	Sodium (Na)-Total	MS-B	L2504283-2, -3, -6
Matrix Spike	Strontium (Sr)-Total	MS-B	L2504283-4
Matrix Spike	Strontium (Sr)-Total	MS-B	L2504283-1, -5
Matrix Spike	Strontium (Sr)-Total	MS-B	L2504283-2, -3, -6
Matrix Spike	Sulfur (S)-Total	MS-B	L2504283-2, -3, -6
Matrix Spike	Phosphorus (P)-Total	MS-B	L2504283-2, -3, -6
Matrix Spike	Silica, Reactive (as SiO2)	MS-B	L2504283-1, -5
Matrix Spike	Silica, Reactive (as SiO2)	MS-B	L2504283-2, -3, -6

Qualifiers for Individual Parameters Listed:

Qualifier	Description
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
PEHT	Parameter Exceeded Recommended Holding Time Prior to Analysis
RRV	Reported Result Verified By Repeat Analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**

Reference Information

ALK-CO3CO3-CALC-WP	Water	Alkalinity, Carbonate	CALCULATION

The Alkalinity of water is a measure of its acid neutralizing capacity.Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by carbonate is calculated and reported as mg CO3 2-/L.

ALK-HCO3HCO3-CALC-WP	Water	Alkalinity, Bicarbonate	CALCULATION

The Alkalinity of water is a measure of its acid neutralizing capacity.Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by bicarbonate is calculated and reported as mg HCO3-/L

ALK-OHOH-CALC-WP	Water	Alkalinity, Hydroxide	CALCULATION

The Alkalinity of water is a measure of its acid neutralizing capacity.Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by hydroxide is calculated and reported as mg OH-/L.

ALK-TITR-WP	Water	Alkalinity, Total (as CaCO3)	APHA 2320B

The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. Total alkalinity is determined by titration with a strong standard mineral acid to the successive HCO3- and H2CO3 endpoints indicated electrometrically.

BR-IC-N-WP	Water	Bromide in Water by IC	EPA 300.1 (mod)

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

C-DOC-HTC-WP	Water	Dissolved Organic Carbon by Combustion	APHA 5310 B-WP

Filtered (0.45 um) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.

C-TOC-HTC-WP	Water	Total Organic Carbon by Combustion	APHA 5310 B-WP

Sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.

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

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

CN-FREE-L-CFA-WT	Water	Low Level 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-T-L-CFA-WT	Water	Low Level Total Cyanide in water by CFA	ISO 14403-2:2002

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, however it would be less than 1% and could be as low as zero.

CN-WAD-L-CFA-WT	Water	Low level WAD Cyanide in water by CFA	APHA 4500CN I-Weak acid Dist Colorimet

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-SCREEN-WP	Water	Conductivity Screen (Internal Use Only)	APHA 2510

Qualitative analysis of conductivity where required during preparation of other test eg. IC, TDS, TSS, etc

EC-WP	Water	Conductivity	APHA 2510B

Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.

ETL-N-TOT-ANY-WP	Water	Total Nitrogen Calculated	Calculated
F-IC-N-WP	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-WP	Water	Hardness Calculated	APHA 2340B

Reference Information

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

HG-D-CVAA-WP	Water	Mercury Dissolved	APHA 3030B/EPA 1631E (mod)

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

HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)

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

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

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

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

MET-T-CCMS-WP	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020B (mod.)

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

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

N-TOTKJ-WP	Water	Total Kjeldahl Nitrogen	APHA 4500 NorgD (modified)

Aqueous samples are digested in a block digester with sulfuric acid and copper sulfate as a catalyst. Total Kjeldahl Nitrogen is then analyzed using a discrete analyzer with colorimetric detection.

NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F

Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.

NO2+NO3-CALC-WP	Water	Nitrate+Nitrite	CALCULATION
NO2-IC-N-WP	Water	Nitrite in Water by IC	EPA 300.1 (mod)

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

NO3-IC-N-WP	Water	Nitrate in Water by IC	EPA 300.1 (mod)

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

P-T-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapted from APHA METHOD 4500-P "Phosphorus". Total Phosphorus is determined colourmetrically after persulphate digestion of the sample.

P-TD-COL-WP	Water	Phosphorus, Total Dissolved	APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapated from APHA METHOD 4500-P "Phosphorus". Total Phosphorous is determined colourmetricaly after persulphate digestion of a sample that has been lab or field filtered through a 0.45 micron membrane filter.

P-TD-L-COL-WP	Water	Phosphorus, Total Dissolved	APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Dissolved Phosphorous is determined colourimetrically after persulphate digestion of a sample that has been lab or field filtered through a 0.45 micron membrane filter.

PH-WP	Water	pH	APHA 4500H

The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.

PO4-DO-COL-WP	Water	Phosphate Ortho Dissolved in Water	APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapated from APHA METHOD 4500-P " Phosphorus ". Dissolved Ortho Phosphorous is determined colourmetricaly on a sample that has been lab or field filtered through a 0.45 micron filter.

PO4-DO-L-COL-WP	Water	Phosphate Ortho Dissolved in Water	APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter.

SIO2-COL-WP	Water	Reactive Silica by colour	APHA 4500 SIO2

This analysis is carried out using procedures adapted from APHA Method 4500-SiO2 "Silica". Molybdate Reactive Silica is determined by analysis of the sample using the heteropoly blue colourimetric method.

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

Reference Information

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

SOLIDS-TOTSUS-LR-WP	Water	Total Suspended Solids	APHA 2540 D (modified)

Total suspended solids in aquesous matrices is determined gravimetrically after drying the residue at 103 105°C.

TDS-WP	Water	Total Dissolved Solids (TDS)	APHA 2540 SOLIDS C,E

A well-mixed sample is filtered through a glass fiber filter paper. The filtrate is then evaportaed to dryness in a pre-weighed vial and dried at 180 – 2C. The increase in vial weight represents the total dissolved solids.

TURBIDITY-WP	Water	Turbidity	APHA 2130B (modified)

Turbidity in aqueous matrices is determined by the nephelometric method.

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

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

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA

Chain of Custody Numbers:

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

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2504283-COFC

COC Number:

Report To	Contact and company name below will appear on the final report
Company:	Golder Associates
Contact:	Adrian Kowalchuk
Phone:	(204) 891-5372
	Company address below will appear on the final report
Street:	1931 Robertson Road,
City/Province:	Ottawa, Ontario
Postal Code:	K2H 5B7
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Agnico Eagle, Meadowbank Mine, Environment
Contact:	Robin Allard

Report Format / Distribution

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

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Adrian_Kowalchuk@Golder.com

Email 2: Valerie_Bertrand@Golder.com

Email 3:

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Robin.Allard@AgnicoEagle.com

Email 2:

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐; 3 day [P3-25%] ☐; 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐; Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q72802

Job #: 20148777-2000-2030

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:

Major/Minor Code: Routing Code:

Requisitioner:

Location: Meadowbank

ALS Lab Work Order # (lab use only):

ALS Contact: Heather McKenzie

Sampler: Gabrielle Klappstein

Analysis Request

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

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Cyanide (Total, Free, Weak Acid Dissociable) P	Hardness, pH, electrical conductivity, turbidity	Total and speciated alkalinity	General TDS TSS Routine	Dissolved metals and Mercury F/P	Total Metals and mercury P	Anions (Br, Cl, F, SO4)		NUT/TOC/COD/TKN/TN/TP/NH3 P	NUT/DOC/DKN/TDN/TDP/DNH3 F/P		RADIUM 226 P	Reactive Silica P		SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
1	MW-IPD-09	10-Sep-20	16:00	Groundwater	11	R	R	R	R	R	R	R		R	R		R	R			
2	MW-IPD-09-DUP-1	10-Sep-20	16:00	Groundwater	11															Hold	
3	MW-IPD-01(D)-12-09	12-Sep-20	16:45	Groundwater	11															Hold	
4	TB20-01	12-Sep-20	17:00	Water	5	R	R	R	R	R	R	R		R	R			R			

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

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
			4-2				

SHIPMENT RELEASE (client use)

Released by: G. Klappstein Date: Sep. 14, 2020 Time: 0730

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: Date: SEP 17 2020 Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by: Date: SEP 17 2020 Time:

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2504283-COFC

COC Number:

Report To	Contact and company name below will appear on the final report
Company:	Golder Associates
Contact:	Adrian Kowalchuk
Phone:	(204) 891-5372
	Company address below will appear on the final report
Street:	1931 Robertson Road,
City/Province:	Ottawa, Ontario
Postal Code:	K2H 5B7
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Agnico Eagle, Meadowbank Mine, Permitting
Contact:	Robin Allard

Report Format / Distribution

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

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax Adrian_Kowalchuk@Golder.com

Email 2 Valerie_Bertrand@Golder.com

Email 3

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax Robin.Allard@AgnicoEagle.com

Email 2

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐ 3 day [P3-25%] ☐ 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐ Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #:	Q72802
Job #:	20148777-2000-2030
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	Meadowbank

ALS Lab Work Order # (lab use only):

ALS Contact: Heather McKenzie

Sampler: Gabrielle Klappstein

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

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Cyanide (Total, Free, Weak Acid Dissociable) P	Hardness, pH, electrical conductivity, turbidity	Total and speciated alkalinity	General TDS TSS Routine	Dissolved metals and Mercury F/P	Total Metals and mercury P	Anions (Br, Cl, F, SO4)		NUT/TOC/COD/TKN/TN/TP/NH3 P	NUT/DOC/DKN/TDN/TDP/DNH3 F/P		RADIUM 226 P	Reactive Silica P		SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
5	MW-IPD-07	9-Sep-20	14:00	Groundwater	11	R	R	R	R	R	R	R		R	R		R	R			
6	MW-IPD-07-DUP-1	9-Sep-20	14:00	Groundwater	11															Hold	

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

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
			4.2				

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by: Gabrielle Klappstein	Date: Sep.10,2020	Time: 0830	Received by:	Date: SEP 17 2020	Time: 9:00	Received by: SEP 17 2020	Date:	Time: 9:00

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1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

Appendix C-IV Analytical Report No. L2506132

Monitoring Location	Golder Sample ID	Lab Sample ID
MW-16-01	MW-IPD-01(D)-12-09	L2506132-1
Field Blank	FB20-02	L2506132-2

AGNICO-EAGLE MINES LTD.
ATTN: ADRIAN KOWALCHUK
1931 ROBERTSON ROAD

OTTAWA ON K2H 5B7

Date Received: 22-SEP-20
Report Date: 13-OCT-20 07:27 (MT)
Version: FINAL

Client Phone: 204-891-5372

Certificate of Analysis

Lab Work Order #: L2506132

Project P.O. #: NOT SUBMITTED
Job Reference: 20148777-2000-2030
C of C Numbers:
Legal Site Desc:

Hua Wo
Chemistry Laboratory Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2506132-1	L2506132-2			
	Description	GROUNDWATER	WATER			
	Sampled Date	15-SEP-20	15-SEP-20			
	Sampled Time	17:45	16:00			
	Client ID	MW-16-01	FB20-02			
Grouping	**Analyte**					
WATER						
Physical Tests	Conductivity (umhos/cm)	3160	2.5			
	Hardness (as CaCO3) (mg/L)	1060	<0.20			
	pH (pH units)	8.07	5.75			
	Total Suspended Solids (mg/L)	12.6	<1.0			
	Total Dissolved Solids (mg/L)	2350	<4.0			
	Turbidity (NTU)	82.2	<0.10			
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	162	1.1			
	Ammonia, Total (as N) (mg/L)	0.280	<0.010			
	Bicarbonate (HCO3) (mg/L)	198	1.3			
	Bromide (Br) (mg/L)	2.2	<0.10			
	Carbonate (CO3) (mg/L)	<0.60	<0.60			
	Chloride (Cl) (mg/L)	177	<0.50			
	Fluoride (F) (mg/L)	<0.40 DLM	<0.020			
	Hydroxide (OH) (mg/L)	<0.34	<0.34			
	Nitrate and Nitrite as N (mg/L)	<0.45	<0.070			
	Nitrate (as N) (mg/L)	<0.40 DLM	<0.020			
	Nitrite (as N) (mg/L)	<0.20 DLM	<0.010			
	Total Kjeldahl Nitrogen (mg/L)	25.5	<0.20			
	Total Nitrogen (mg/L)	25.5	<0.20			
	Orthophosphate-Dissolved (as P) (mg/L)	<0.0010	<0.0010			
	Phosphorus (P)-Total Dissolved (mg/L)	0.0610	<0.0030			
	Phosphorus (P)-Total (mg/L)	0.0881	<0.0030			
	Silica, Reactive (as SiO2) (mg/L)	7.8	<0.010			
	Sulfate (SO4) (mg/L)	1280	<0.30			
Cyanides	Cyanide, Weak Acid Diss (mg/L)	0.0104	<0.0010			
	Cyanide, Total (mg/L)	0.0285	<0.0010			
	Cyanide, Free (mg/L)	0.0080	<0.0010			
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	33.7	0.61			
	Total Organic Carbon (mg/L)	32.8	<0.50 RRV			
Total Metals	Aluminum (Al)-Total (mg/L)	0.0033	<0.0030			
	Antimony (Sb)-Total (mg/L)	<0.00010	<0.00010			
	Arsenic (As)-Total (mg/L)	0.263	0.00025			
	Barium (Ba)-Total (mg/L)	0.0263	<0.00010			
	Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010			
	Bismuth (Bi)-Total (mg/L)	<0.000050	<0.000050			
	Boron (B)-Total (mg/L)	0.093	<0.010			

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2506132-1	L2506132-2			
	Description	GROUNDWATER	WATER			
	Sampled Date	15-SEP-20	15-SEP-20			
	Sampled Time	17:45	16:00			
	Client ID	MW-16-01	FB20-02			
Grouping	**Analyte**					
WATER						
Total Metals	Cadmium (Cd)-Total (mg/L)	0.0000159	<0.0000050			
	Calcium (Ca)-Total (mg/L)	272	0.519			
	Cesium (Cs)-Total (mg/L)	0.000271	<0.000010			
	Chromium (Cr)-Total (mg/L)	0.00020	<0.00010			
	Cobalt (Co)-Total (mg/L)	0.0163	<0.00010			
	Copper (Cu)-Total (mg/L)	<0.00050	<0.00050			
	Iron (Fe)-Total (mg/L)	6.44	<0.010			
	Lead (Pb)-Total (mg/L)	0.000201	<0.000050			
	Lithium (Li)-Total (mg/L)	0.0129	<0.0010			
	Magnesium (Mg)-Total (mg/L)	96.1	0.0803			
	Manganese (Mn)-Total (mg/L)	2.64	0.00191			
	Mercury (Hg)-Total (mg/L)	0.000050	<0.0000050			
	Molybdenum (Mo)-Total (mg/L)	0.0419	0.000086			
	Nickel (Ni)-Total (mg/L)	0.00196	<0.00050			
	Phosphorus (P)-Total (mg/L)	0.051	<0.030			
	Potassium (K)-Total (mg/L)	20.7	<0.050			
	Rubidium (Rb)-Total (mg/L)	0.00488	<0.00020			
	Selenium (Se)-Total (mg/L)	0.000164	<0.000050			
	Silicon (Si)-Total (mg/L)	4.63	<0.10			
	Silver (Ag)-Total (mg/L)	<0.000010	<0.000010			
	Sodium (Na)-Total (mg/L)	321	0.294			
	Strontium (Sr)-Total (mg/L)	1.29	0.00224			
	Sulfur (S)-Total (mg/L)	533	0.79			
	Tellurium (Te)-Total (mg/L)	<0.00020	<0.00020			
	Thallium (Tl)-Total (mg/L)	<0.000010	<0.000010			
	Thorium (Th)-Total (mg/L)	<0.00010	<0.00010			
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010			
	Titanium (Ti)-Total (mg/L)	<0.00030	<0.00030			
	Tungsten (W)-Total (mg/L)	0.00033	<0.00010			
	Uranium (U)-Total (mg/L)	0.00550	0.000011			
	Vanadium (V)-Total (mg/L)	<0.00050	0.00053			
	Zinc (Zn)-Total (mg/L)	<0.0030	<0.0030			
	Zirconium (Zr)-Total (mg/L)	<0.00020	<0.00020			
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD			
	Dissolved Metals Filtration Location	FIELD	FIELD			
	Aluminum (Al)-Dissolved (mg/L)	0.0015	0.0013			
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.00010			

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2506132-1	L2506132-2			
	Description	GROUNDWATER	WATER			
	Sampled Date	15-SEP-20	15-SEP-20			
	Sampled Time	17:45	16:00			
	Client ID	MW-16-01	FB20-02			
Grouping	**Analyte**					
WATER						
Dissolved Metals	Arsenic (As)-Dissolved (mg/L)	0.276	0.00011			
	Barium (Ba)-Dissolved (mg/L)	0.0264	<0.00010			
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010			
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050			
	Boron (B)-Dissolved (mg/L)	0.081	<0.010			
	Cadmium (Cd)-Dissolved (mg/L)	0.0000077	<0.0000050			
	Calcium (Ca)-Dissolved (mg/L)	269	<0.050			
	Cesium (Cs)-Dissolved (mg/L)	0.000279	0.000018			
	Chromium (Cr)-Dissolved (mg/L)	<0.00010	<0.00010			
	Cobalt (Co)-Dissolved (mg/L)	0.0165	<0.00010			
	Copper (Cu)-Dissolved (mg/L)	<0.00020	<0.00020			
	Iron (Fe)-Dissolved (mg/L)	6.26	<0.010			
	Lead (Pb)-Dissolved (mg/L)	<0.000050	<0.000050			
	Lithium (Li)-Dissolved (mg/L)	0.0111	<0.0010			
	Magnesium (Mg)-Dissolved (mg/L)	94.8	<0.0050			
	Manganese (Mn)-Dissolved (mg/L)	2.60	<0.00010			
	Mercury (Hg)-Dissolved (mg/L)	<0.000050 DLM	<0.0000050			
	Molybdenum (Mo)-Dissolved (mg/L)	0.0407	<0.000050			
	Nickel (Ni)-Dissolved (mg/L)	0.00165	<0.00050			
	Phosphorus (P)-Dissolved (mg/L)	0.033	<0.030			
	Potassium (K)-Dissolved (mg/L)	20.4	<0.050			
	Rubidium (Rb)-Dissolved (mg/L)	0.00489	<0.00020			
	Selenium (Se)-Dissolved (mg/L)	0.000158	<0.000050			
	Silicon (Si)-Dissolved (mg/L)	4.41	<0.050			
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010			
	Sodium (Na)-Dissolved (mg/L)	336	<0.050			
	Strontium (Sr)-Dissolved (mg/L)	1.26	<0.00010			
	Sulfur (S)-Dissolved (mg/L)	532	1.06			
	Tellurium (Te)-Dissolved (mg/L)	<0.00020	<0.00020			
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010			
	Thorium (Th)-Dissolved (mg/L)	<0.00010	<0.00010			
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010			
	Titanium (Ti)-Dissolved (mg/L)	<0.00030	<0.00030			
	Tungsten (W)-Dissolved (mg/L)	0.00032	<0.00010			
	Uranium (U)-Dissolved (mg/L)	0.00542	<0.000010			
	Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050			
	Zinc (Zn)-Dissolved (mg/L)	<0.0010	<0.0010			

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2506132-1	L2506132-2			
	Description	GROUNDWATER	WATER			
	Sampled Date	15-SEP-20	15-SEP-20			
	Sampled Time	17:45	16:00			
	Client ID	MW-16-01	FB20-02			
Grouping	**Analyte**					
WATER						
Dissolved Metals	Zirconium (Zr)-Dissolved (mg/L)	<0.00020	<0.00020			

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

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Method Blank	Cadmium (Cd)-Total	B	L2506132-2
Matrix Spike	Dissolved Organic Carbon	MS-B	L2506132-2
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L2506132-1, -2
Matrix Spike	Arsenic (As)-Total	MS-B	L2506132-1, -2
Matrix Spike	Barium (Ba)-Total	MS-B	L2506132-1, -2
Matrix Spike	Boron (B)-Total	MS-B	L2506132-1, -2
Matrix Spike	Calcium (Ca)-Total	MS-B	L2506132-1, -2
Matrix Spike	Cobalt (Co)-Total	MS-B	L2506132-1, -2
Matrix Spike	Iron (Fe)-Total	MS-B	L2506132-1, -2
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2506132-1, -2
Matrix Spike	Manganese (Mn)-Total	MS-B	L2506132-1, -2
Matrix Spike	Potassium (K)-Total	MS-B	L2506132-1, -2
Matrix Spike	Silicon (Si)-Total	MS-B	L2506132-1, -2
Matrix Spike	Sodium (Na)-Total	MS-B	L2506132-1, -2
Matrix Spike	Strontium (Sr)-Total	MS-B	L2506132-1, -2
Matrix Spike	Sulfur (S)-Total	MS-B	L2506132-1, -2
Matrix Spike	Phosphorus (P)-Total Dissolved	MS-B	L2506132-1, -2
Matrix Spike	Silica, Reactive (as SiO2)	MS-B	L2506132-1

Qualifiers for Individual Parameters Listed:

Qualifier	Description
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RRV	Reported Result Verified By Repeat Analysis

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-CO3CO3-CALC-WP	Water	Alkalinity, Carbonate	CALCULATION

The Alkalinity of water is a measure of its acid neutralizing capacity.Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by carbonate is calculated and reported as mg CO3 2-/L.

ALK-HCO3HCO3-CALC-WP	Water	Alkalinity, Bicarbonate	CALCULATION

The Alkalinity of water is a measure of its acid neutralizing capacity.Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by bicarbonate is calculated and reported as mg HCO3-/L

ALK-OHOH-CALC-WP	Water	Alkalinity, Hydroxide	CALCULATION

The Alkalinity of water is a measure of its acid neutralizing capacity.Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by hydroxide is calculated and reported as mg OH-/L.

ALK-TITR-WP	Water	Alkalinity, Total (as CaCO3)	APHA 2320B

The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. Total alkalinity is determined by titration with a strong standard mineral acid to the successive HCO3- and H2CO3 endpoints indicated electrometrically.

BR-IC-N-WP	Water	Bromide in Water by IC	EPA 300.1 (mod)

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

C-DOC-HTC-WP	Water	Dissolved Organic Carbon by Combustion	APHA 5310 B-WP

Filtered (0.45 um) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.

C-TOC-HTC-WP	Water	Total Organic Carbon by Combustion	APHA 5310 B-WP

Sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.

Reference Information

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

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

CN-FREE-L-CFA-WT	Water	Low Level 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-T-L-CFA-WT	Water	Low Level Total Cyanide in water by CFA	ISO 14403-2:2002

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, however it would be less than 1% and could be as low as zero.

CN-WAD-L-CFA-WT	Water	Low level WAD Cyanide in water by CFA	APHA 4500CN I-Weak acid Dist Colorimet

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-SCREEN-WP	Water	Conductivity Screen (Internal Use Only)	APHA 2510

Qualitative analysis of conductivity where required during preparation of other test eg. IC, TDS, TSS, etc

EC-WP	Water	Conductivity	APHA 2510B

Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.

ETL-N-TOT-ANY-WP	Water	Total Nitrogen Calculated	Calculated
F-IC-N-WP	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-WP	Water	Hardness Calculated	APHA 2340B

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

HG-D-CVAA-WP	Water	Mercury Dissolved	APHA 3030B/EPA 1631E (mod)

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

HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)

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

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

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

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

MET-T-CCMS-WP	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020B (mod.)

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

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

N-TOTKJ-WP	Water	Total Kjeldahl Nitrogen	APHA 4500 NorgD (modified)

Aqueous samples are digested in a block digester with sulfuric acid and copper sulfate as a catalyst. Total Kjeldahl Nitrogen is then analyzed using a discrete analyzer with colorimetric detection.

NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F

Reference Information

Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.

NO2+NO3-CALC-WP	Water	Nitrate+Nitrite	CALCULATION

NO2-IC-N-WP Water Nitrite in Water by IC EPA 300.1 (mod)

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

NO3-IC-N-WP Water Nitrate in Water by IC EPA 300.1 (mod)

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

P-T-COL-WP Water Phosphorus, Total APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapted from APHA METHOD 4500-P "Phosphorus". Total Phosphorus is determined colourmetrically after persulphate digestion of the sample.

P-TD-COL-WP Water Phosphorus, Total Dissolved APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapated from APHA METHOD 4500-P "Phosphorus". Total Phosphorous is determined colourmetricaly after persulphate digestion of a sample that has been lab or field filtered through a 0.45 micron membrane filter.

PH-WP Water pH APHA 4500H

The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.

PO4-DO-COL-WP Water Phosphate Ortho Dissolved in Water APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapated from APHA METHOD 4500-P " Phosphorus ". Dissolved Ortho Phosphorous is determined colourmetricaly on a sample that has been lab or field filtered through a 0.45 micron filter.

PO4-DO-L-COL-WP Water Phosphate Ortho Dissolved in Water APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter.

SIO2-COL-WP Water Reactive Silica by colour APHA 4500 SIO2

This analysis is carried out using procedures adapted from APHA Method 4500-SiO2 "Silica". Molybdate Reactive Silica is determined by analysis of the sample using the heteropoly blue colourimetric method.

SIO2-L-COL-WP Water Reactive Silica by colour APHA 4500 SIO2

This analysis is carried out using procedures adapted from APHA Method 4500-SiO2 "Silica". Molybdate Reactive Silica is determined by analysis of the sample using the heteropoly blue colourimetric method.

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

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

SOLIDS-TOTSUS-LR-WP Water Total Suspended Solids APHA 2540 D (modified)

Total suspended solids in aquesous matrices is determined gravimetrically after drying the residue at 103 105°C.

TDS-WP Water Total Dissolved Solids (TDS) APHA 2540 SOLIDS C,E

A well-mixed sample is filtered through a glass fiber filter paper. The filtrate is then evaportaed to dryness in a pre-weighed vial and dried at 180 – 2C. The increase in vial weight represents the total dissolved solids.

TURBIDITY-WP Water Turbidity APHA 2130B (modified)

Turbidity in aqueous matrices is determined by the nephelometric method.

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

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

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA

Chain of Custody Numbers:

Reference Information

GLOSSARY OF REPORT TERMS

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

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

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2506132-COFC

COC Number:

Report To	Contact and company name below will appear on the final report
Company:	Golder Associates
Contact:	Adrian Kowalchuk
Phone:	(204) 891-5372
	Company address below will appear on the final report
Street:	1931 Robertson Road,
City/Province:	Ottawa, Ontario
Postal Code:	K2H 5B7
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Agnico Eagle, Meadowbank Mine, Environment
Contact:	Robin Allard

Report Format / Distribution

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

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Adrian_Kowalchuk@Golder.com

Email 2: Valerie_Bertrand@Golder.com

Email 3:

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Robin.Allard@AgnicoEagle.com

Email 2:

Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐; 3 day [P3-25%] ☐; 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐; Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information

ALS Account # / Quote #: Q72802

Job #: 20148777-2000-2030

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:

Major/Minor Code: Routing Code:

Requisitioner:

Location: Meadowbank

ALS Lab Work Order # (lab use only):

ALS Contact: Heather McKenzie

Sampler: Gabrielle Klappstein

Analysis Request

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

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Cyanide (Total, Free, Weak Acid Dissociable) P	Hardness, pH, electrical conductivity, turbidity	Total and speciated alkalinity	General TDS TSS Routine	Dissolved metals and Mercury F/P	Total Metals and mercury P	Anions (Br, Cl, F, SO4)		NUT/TOC/COD/TKN/TN/TP/NH3 P	NUT/DOC/DKN/TDN/TDP/DNH3 F/P		RADIUM 226 P	Reactive Silica P		SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	MW-16-01	15-Sep-20	17:45	Groundwater	11	R	R	R	R	R	R	R		R	R		R	R			
	FB20-02	15-Sep-20	16:00	Water	11	R	R	R	R	R	R	R		R	R		R	R			

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

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				16.1			

SHIPMENT RELEASE (client use)

Released by: Gabrielle Klappstein Date: Sep. 16, 2020 Time: 0745

INITIAL SHIPMENT RECEPTION (lab use only)

Received by: Date: Time:

FINAL SHIPMENT RECEPTION (lab use only)

Received by: GC Date: Sept 22/2020 Time: 8:45 AM

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NOV 2018 FRONT

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 C-V Analytical Report No. L2507479

Monitoring Location	Golder Sample ID	Lab Sample ID
Stormwater Management Pond	SWMP	L2507479-1
Pit-E Seep-27 m	PIT E SEEP	L2507479-2

AGNICO-EAGLE MINES LTD.
ATTN: ADRIAN KOWALCHUK
1931 ROBERTSON ROAD

OTTAWA ON K2H 5B7

Date Received: 24-SEP-20
Report Date: 15-OCT-20 07:22 (MT)
Version: FINAL

Client Phone: 204-891-5372

Certificate of Analysis

Lab Work Order #: L2507479

Project P.O. #:	NOT SUBMITTED
Job Reference:	20148777-2000-2030
C of C Numbers:	
Legal Site Desc:	MEADOWBANK

Hua Wo
Chemistry Laboratory Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721
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www.alsglobal.com
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ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2507479-1	L2507479-2			
	Description	SURFACE WATE	GROUNDWATEF			
	Sampled Date	17-SEP-20	17-SEP-20			
	Sampled Time	16:30	15:00			
	Client ID	SWMP	PIT E SEEP			
Grouping	**Analyte**					
WATER						
Physical Tests	Conductivity (umhos/cm)	690	1340			
	Hardness (as CaCO3) (mg/L)	218	619			
	pH (pH units)	9.32	8.12			
	Total Suspended Solids (mg/L)	76.7	4.7			
	Total Dissolved Solids (mg/L)	541	988			
	Turbidity (NTU)	29.9	1.05			
Anions and Nutrients	Alkalinity, Total (as CaCO3) (mg/L)	87.0	96.4			
	Ammonia, Total (as N) (mg/L)	0.028	0.370			
	Bicarbonate (HCO3) (mg/L)	72.0	118			
	Bromide (Br) (mg/L)	0.80	0.58			
	Carbonate (CO3) (mg/L)	16.8	<0.60			
	Chloride (Cl) (mg/L)	110	84.3			
	Fluoride (F) (mg/L)	0.404	0.27			
	Hydroxide (OH) (mg/L)	<0.34	<0.34			
	Nitrate and Nitrite as N (mg/L)	<0.070	18.1			
	Nitrate (as N) (mg/L)	<0.020	18.0			
	Nitrite (as N) (mg/L)	<0.010	0.119			
	Total Kjeldahl Nitrogen (mg/L)	8.30	0.26 TKNI			
	Total Nitrogen (mg/L)	8.30	18.4			
	Orthophosphate-Dissolved (as P) (mg/L)	0.237	0.0043			
	Phosphorus (P)-Total Dissolved (mg/L)	0.184	<0.0030			
	Phosphorus (P)-Total (mg/L)	1.13	0.0035			
	Silica, Reactive (as SiO2) (mg/L)	3.5	6.8			
	Sulfate (SO4) (mg/L)	113	465			
Cyanides	Cyanide, Weak Acid Diss (mg/L)	<0.010 DLM	0.0012			
	Cyanide, Total (mg/L)	<0.010 DLM	0.0037			
	Cyanide, Free (mg/L)	<0.010 DLM	<0.0010			
Organic / Inorganic Carbon	Dissolved Organic Carbon (mg/L)	36.5	1.79			
	Total Organic Carbon (mg/L)	50.9	1.61			
Total Metals	Aluminum (Al)-Total (mg/L)	0.173	0.0502			
	Antimony (Sb)-Total (mg/L)	0.00046	0.00614			
	Arsenic (As)-Total (mg/L)	0.0161	0.181			
	Barium (Ba)-Total (mg/L)	0.0336	0.0221			
	Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010			
	Bismuth (Bi)-Total (mg/L)	<0.000050	<0.000050			
	Boron (B)-Total (mg/L)	0.141	0.144			

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2507479-1	L2507479-2			
	Description	SURFACE WATE	GROUNDWATEF			
	Sampled Date	17-SEP-20	17-SEP-20			
	Sampled Time	16:30	15:00			
	Client ID	SWMP	PIT E SEEP			
Grouping	**Analyte**					
WATER						
Total Metals	Cadmium (Cd)-Total (mg/L)	0.0000237	0.0000961			
	Calcium (Ca)-Total (mg/L)	60.9	153			
	Cesium (Cs)-Total (mg/L)	0.000202	0.00284			
	Chromium (Cr)-Total (mg/L)	0.00152	0.00085			
	Cobalt (Co)-Total (mg/L)	0.00235	0.0112			
	Copper (Cu)-Total (mg/L)	0.00287	0.00056			
	Iron (Fe)-Total (mg/L)	0.976	0.108			
	Lead (Pb)-Total (mg/L)	0.000605	0.000090			
	Lithium (Li)-Total (mg/L)	0.0157	0.0092			
	Magnesium (Mg)-Total (mg/L)	23.5	68.9			
	Manganese (Mn)-Total (mg/L)	0.676	0.145			
	Mercury (Hg)-Total (mg/L)	<0.0000050	<0.0000050			
	Molybdenum (Mo)-Total (mg/L)	0.00665	0.0255			
	Nickel (Ni)-Total (mg/L)	0.0180	0.122			
	Phosphorus (P)-Total (mg/L)	1.31	<0.030			
	Potassium (K)-Total (mg/L)	23.7	24.9			
	Rubidium (Rb)-Total (mg/L)	0.0184	0.0364			
	Selenium (Se)-Total (mg/L)	0.000195	0.00112			
	Silicon (Si)-Total (mg/L)	2.65	3.51			
	Silver (Ag)-Total (mg/L)	0.000011	<0.000010			
	Sodium (Na)-Total (mg/L)	45.9	42.7			
	Strontium (Sr)-Total (mg/L)	0.594	1.03			
	Sulfur (S)-Total (mg/L)	44.7	171			
	Tellurium (Te)-Total (mg/L)	<0.00020	<0.00020			
	Thallium (Tl)-Total (mg/L)	0.000012	0.000059			
	Thorium (Th)-Total (mg/L)	<0.00010	<0.00010			
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010			
	Titanium (Ti)-Total (mg/L)	0.00235	0.00078			
	Tungsten (W)-Total (mg/L)	0.00162	0.00020			
	Uranium (U)-Total (mg/L)	0.00356	0.0500			
	Vanadium (V)-Total (mg/L)	0.00113	0.00069			
	Zinc (Zn)-Total (mg/L)	0.0032	<0.0030			
	Zirconium (Zr)-Total (mg/L)	0.00021	<0.00020			
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD			
	Dissolved Metals Filtration Location	FIELD	FIELD			
	Aluminum (Al)-Dissolved (mg/L)	0.0039	0.0032			
	Antimony (Sb)-Dissolved (mg/L)	0.00048	0.00620			

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2507479-1	L2507479-2			
	Description	SURFACE WATE	GROUNDWATEF			
	Sampled Date	17-SEP-20	17-SEP-20			
	Sampled Time	16:30	15:00			
	Client ID	SWMP	PIT E SEEP			
Grouping	**Analyte**					
WATER						
Dissolved Metals	Arsenic (As)-Dissolved (mg/L)	0.0106	0.180			
	Barium (Ba)-Dissolved (mg/L)	0.0265	0.0216			
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010			
	Bismuth (Bi)-Dissolved (mg/L)	<0.000050	<0.000050			
	Boron (B)-Dissolved (mg/L)	0.135	0.143			
	Cadmium (Cd)-Dissolved (mg/L)	0.0000109	0.0000996			
	Calcium (Ca)-Dissolved (mg/L)	58.3	153			
	Cesium (Cs)-Dissolved (mg/L)	0.000182	0.00180			
	Chromium (Cr)-Dissolved (mg/L)	<0.00010	<0.00010			
	Cobalt (Co)-Dissolved (mg/L)	0.00145	0.00982			
	Copper (Cu)-Dissolved (mg/L)	0.00959 RRV	0.00051			
	Iron (Fe)-Dissolved (mg/L)	0.040	<0.010			
	Lead (Pb)-Dissolved (mg/L)	0.000117	<0.000050			
	Lithium (Li)-Dissolved (mg/L)	0.0139	0.0078			
	Magnesium (Mg)-Dissolved (mg/L)	17.5	57.5			
	Manganese (Mn)-Dissolved (mg/L)	0.0205	0.133			
	Mercury (Hg)-Dissolved (mg/L)	<0.0000050	<0.0000050			
	Molybdenum (Mo)-Dissolved (mg/L)	0.00611	0.0234			
	Nickel (Ni)-Dissolved (mg/L)	0.0113	0.109			
	Phosphorus (P)-Dissolved (mg/L)	0.165	<0.030			
	Potassium (K)-Dissolved (mg/L)	22.7	23.7			
	Rubidium (Rb)-Dissolved (mg/L)	0.0170	0.0347			
	Selenium (Se)-Dissolved (mg/L)	0.000152	0.00129			
	Silicon (Si)-Dissolved (mg/L)	1.53	3.23			
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010			
	Sodium (Na)-Dissolved (mg/L)	39.3	36.6			
	Strontium (Sr)-Dissolved (mg/L)	0.518	0.926			
	Sulfur (S)-Dissolved (mg/L)	40.3	158			
	Tellurium (Te)-Dissolved (mg/L)	<0.00020	<0.00020			
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	0.000053			
	Thorium (Th)-Dissolved (mg/L)	<0.00010	<0.00010			
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010			
	Titanium (Ti)-Dissolved (mg/L)	<0.00030	<0.00030			
	Tungsten (W)-Dissolved (mg/L)	0.00162	0.00017			
	Uranium (U)-Dissolved (mg/L)	0.00253	0.0471			
	Vanadium (V)-Dissolved (mg/L)	<0.00050	<0.00050			
	Zinc (Zn)-Dissolved (mg/L)	0.0036	0.0010			

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

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID	L2507479-1	L2507479-2			
	Description	SURFACE WATE	GROUNDWATEF			
	Sampled Date	17-SEP-20	17-SEP-20			
	Sampled Time	16:30	15:00			
	Client ID	SWMP	PIT E SEEP			
Grouping	**Analyte**					
WATER						
Dissolved Metals	Zirconium (Zr)-Dissolved (mg/L)	<0.00020	<0.00020			

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

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Method Blank	Cesium (Cs)-Dissolved	B	L2507479-2
Matrix Spike	Dissolved Organic Carbon	MS-B	L2507479-1
Matrix Spike	Barium (Ba)-Total	MS-B	L2507479-1, -2
Matrix Spike	Calcium (Ca)-Total	MS-B	L2507479-1, -2
Matrix Spike	Copper (Cu)-Total	MS-B	L2507479-1, -2
Matrix Spike	Magnesium (Mg)-Total	MS-B	L2507479-1, -2
Matrix Spike	Potassium (K)-Total	MS-B	L2507479-1, -2
Matrix Spike	Sodium (Na)-Total	MS-B	L2507479-1, -2
Matrix Spike	Strontium (Sr)-Total	MS-B	L2507479-1, -2
Matrix Spike	Sulfur (S)-Total	MS-B	L2507479-1, -2
Matrix Spike	Phosphorus (P)-Total	MS-B	L2507479-1, -2

Qualifiers for Individual Parameters Listed:

Qualifier	Description
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RRV	Reported Result Verified By Repeat Analysis
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate-N is > 10x TKN.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ALK-CO3CO3-CALC-WP	Water	Alkalinity, Carbonate	CALCULATION

The Alkalinity of water is a measure of its acid neutralizing capacity.Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by carbonate is calculated and reported as mg CO3 2-/L.

ALK-HCO3HCO3-CALC-WP	Water	Alkalinity, Bicarbonate	CALCULATION

The Alkalinity of water is a measure of its acid neutralizing capacity.Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by bicarbonate is calculated and reported as mg HCO3-/L

ALK-OHOH-CALC-WP	Water	Alkalinity, Hydroxide	CALCULATION

The Alkalinity of water is a measure of its acid neutralizing capacity.Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. The fraction of alkalinity contributed by hydroxide is calculated and reported as mg OH-/L.

ALK-TITR-WP	Water	Alkalinity, Total (as CaCO3)	APHA 2320B

The Alkalinity of water is a measure of its acid neutralizing capacity. Alkalinity is imparted by bicarbonate, carbonate and hydroxide components of water. Total alkalinity is determined by titration with a strong standard mineral acid to the successive HCO3- and H2CO3 endpoints indicated electrometrically.

BR-IC-N-WP	Water	Bromide in Water by IC	EPA 300.1 (mod)

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

C-DOC-HTC-WP	Water	Dissolved Organic Carbon by Combustion	APHA 5310 B-WP

Filtered (0.45 um) sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.

C-TOC-HTC-WP	Water	Total Organic Carbon by Combustion	APHA 5310 B-WP

Sample is acidified and purged to remove inorganic carbon, then injected into a heated reaction chamber where organic carbon is oxidized to CO2 which is then transported in the carrier gas stream and measured via a non-dispersive infrared analyzer.

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

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

CN-FREE-L-CFA-WT	Water	Low Level 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-T-L-CFA-WT	Water	Low Level Total Cyanide in water by CFA	ISO 14403-2:2002

Reference Information

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, however it would be less than 1% and could be as low as zero.

CN-WAD-L-CFA-WT	Water	Low level WAD Cyanide in water by CFA	APHA 4500CN I-Weak acid Dist Colorimet

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-SCREEN-WP	Water	Conductivity Screen (Internal Use Only)	APHA 2510

Qualitative analysis of conductivity where required during preparation of other test eg. IC, TDS, TSS, etc

EC-WP	Water	Conductivity	APHA 2510B

Conductivity of an aqueous solution refers to its ability to carry an electric current. Conductance of a solution is measured between two spatially fixed and chemically inert electrodes.

ETL-N-TOT-ANY-WP	Water	Total Nitrogen Calculated	Calculated
F-IC-N-WP	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-WP	Water	Hardness Calculated	APHA 2340B

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

HG-D-CVAA-WP	Water	Mercury Dissolved	APHA 3030B/EPA 1631E (mod)

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

HG-T-CVAA-WP	Water	Mercury Total	EPA 1631E (mod)

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

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

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

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

MET-T-CCMS-WP	Water	Total Metals in Water by CRC ICPMS	EPA 200.2/6020B (mod.)

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

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

N-TOTKJ-WP	Water	Total Kjeldahl Nitrogen	APHA 4500 NorgD (modified)

Aqueous samples are digested in a block digester with sulfuric acid and copper sulfate as a catalyst. Total Kjeldahl Nitrogen is then analyzed using a discrete analyzer with colorimetric detection.

NH3-COL-WP	Water	Ammonia by colour	APHA 4500 NH3 F

Ammonia in water samples forms indophenol when reacted with hypochlorite and phenol. The intensity is amplified by the addition of sodium nitroprusside and measured colourmetrically.

NO2+NO3-CALC-WP	Water	Nitrate+Nitrite	CALCULATION
NO2-IC-N-WP	Water	Nitrite in Water by IC	EPA 300.1 (mod)

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

NO3-IC-N-WP	Water	Nitrate in Water by IC	EPA 300.1 (mod)

Reference Information

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

P-T-COL-WP	Water	Phosphorus, Total	APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapted from APHA METHOD 4500-P "Phosphorus". Total Phosphorus is determined colourmetrically after persulphate digestion of the sample.

P-TD-COL-WP	Water	Phosphorus, Total Dissolved	APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapated from APHA METHOD 4500-P "Phosphorus". Total Phosphorous is determined colourmetricaly after persulphate digestion of a sample that has been lab or field filtered through a 0.45 micron membrane filter.

PH-WP	Water	pH	APHA 4500H

The pH of a sample is the determination of the activity of the hydrogen ions by potentiometric measurement using a standard hydrogen electrode and a reference electrode.

PO4-DO-COL-WP	Water	Phosphate Ortho Dissolved in Water	APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapated from APHA METHOD 4500-P " Phosphorus ". Dissolved Ortho Phosphorous is determined colourmetricaly on a sample that has been lab or field filtered through a 0.45 micron filter.

PO4-DO-L-COL-WP	Water	Phosphate Ortho Dissolved in Water	APHA 4500 P PHOSPHORUS-L

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter.

SIO2-COL-WP	Water	Reactive Silica by colour	APHA 4500 SIO2

This analysis is carried out using procedures adapted from APHA Method 4500-SiO2 "Silica". Molybdate Reactive Silica is determined by analysis of the sample using the heteropoly blue colourimetric method.

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

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

SOLIDS-TOTSUS-LR-WP	Water	Total Suspended Solids	APHA 2540 D (modified)

Total suspended solids in aquesous matrices is determined gravimetrically after drying the residue at 103 105°C.

TDS-WP	Water	Total Dissolved Solids (TDS)	APHA 2540 SOLIDS C,E

A well-mixed sample is filtered through a glass fiber filter paper. The filtrate is then evaportaed to dryness in a pre-weighed vial and dried at 180 – 2C. The increase in vial weight represents the total dissolved solids.

TURBIDITY-WP	Water	Turbidity	APHA 2130B (modified)

Turbidity in aqueous matrices is determined by the nephelometric method.

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

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

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA

Chain of Custody Numbers:

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

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2507479-COFC

COC Number:

Report To	Contact and company name below will appear on the final report
Company:	Golder Associates
Contact:	Adrian Kowalchuk
Phone:	(204) 891-5372
	Company address below will appear on the final report
Street:	1931 Robertson Road,
City/Province:	Ottawa, Ontario
Postal Code:	K2H 5B7
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Agnico Eagle, Meadowbank Mine, Environment
Contact:	Robin Allard

Report Format / Distribution

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

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Adrian_Kowalchuk@Golder.com

Email 2: Valerie_Bertrand@Golder.com

Email 3:

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Robin.Allard@AgnicoEagle.com

Email 2:

Project Information

ALS Account # / Quote #:	Q72802
Job #:	20148777-2000-2030
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#:
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	Meadowbank

ALS Lab Work Order # (lab use only):

ALS Contact: Heather McKenzie **Sampler:** Gabrielle Klappstein

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days)		EMERGENCY	
4 day [P4-20%]	☐	1 Business day [E - 100%]	☐
3 day [P3-25%]	☐	Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)]	☐
2 day [P2-50%]	☐		

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

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

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Cyanide (Total, Free, Weak Acid Dissociable) P	Hardness, pH, electrical conductivity, turbidity	Total and speciated alkalinity	General TDS TSS Routine	Dissolved metals and Mercury F	Total Metals and mercury	Anions (Br, Cl, F, SO4)		NUT/TOC/COD/TKN/TN/TP/NH3 P	NUT/DOC/DKN/TDN/TDP/DNH3 F/P			Reactive Silica P		SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	SWMP	17-Sep-20	16:30	Surface water	10	R	R	R	R	R	R	R		R	R			R			

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

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

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

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
			13				

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date: SEP 24 2020	Time: 8:45	Received by:	Date: SEP 24 2020	Time: 8:45

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

NOV 2016 FRONT

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.

Chain of Custody (COC) / Analytical Request Form

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2507479-COFC

COC Number:

Report To	Contact and company name below will appear on the final report
Company:	Golder Associates
Contact:	Adrian Kowalchuk
Phone:	(204) 891-5372
	Company address below will appear on the final report
Street:	1931 Robertson Road,
City/Province:	Ottawa, Ontario
Postal Code:	K2H 5B7
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☐ YES ☑ NO
Company:	Agnico Eagle, Meadowbank Mine, Environment
Contact:	Robin Allard

Report Format / Distribution

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

Quality Control (QC) Report with Report ☑ YES ☐ NO

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Adrian_Kowalchuk@Golder.com

Email 2: Valerie_Bertrand@Golder.com

Email 3:

Invoice Distribution

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

Email 1 or Fax: Robin.Allard@AgnicoEagle.com

Email 2:

Project Information

ALS Account # / Quote #: Q72802

Job #: 20148777-2000-2030

PO / AFE:

LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#:

Major/Minor Code: Routing Code:

Requisitioner:

Location: Meadowbank

ALS Lab Work Order # (lab use only):

ALS Contact: Heather McKenzie **Sampler:** Gabrielle Klappstein

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] ☑ Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] ☐; 3 day [P3-25%] ☐; 2 day [P2-50%] ☐

EMERGENCY: 1 Business day [E - 100%] ☐; Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Analysis Request

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

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Cyanide (Total, Free, Weak Acid Dissociable) P	Hardness, pH, electrical conductivity, turbidity	Total and speciated alkalinity	General TDS TSS Routine	Dissolved metals and Mercury F/P	Total Metals and mercury P	Anions (Br, Cl, F, SO4)		NUT/TOC/COD/TKN/TN/TP/NH3 P	NUT/DOC/DKN/TDN/TDP/DNH3 F/P			Reactive Silica P		SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
	PIT E SEEP	17-Sep-20	15:00	Groundwater	10	R	R	R	R	R	R	R		R	R			R			
	1 extra to keep																				

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

Are samples taken from a Regulated DW System? ☐ YES ☑ NO

Are samples for human consumption/ use? ☐ YES ☑ NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐ SIF Observations Yes ☐ No ☐

Ice Packs ☐ Ice Cubes ☐ Custody seal intact Yes ☐ No ☐

Cooling Initiated ☐

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
			7.3				

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date: SEP 24 2020	Time: 845	Received by:	Date: SEP 24 2020	Time: 845

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

NOV 2018 FRONT

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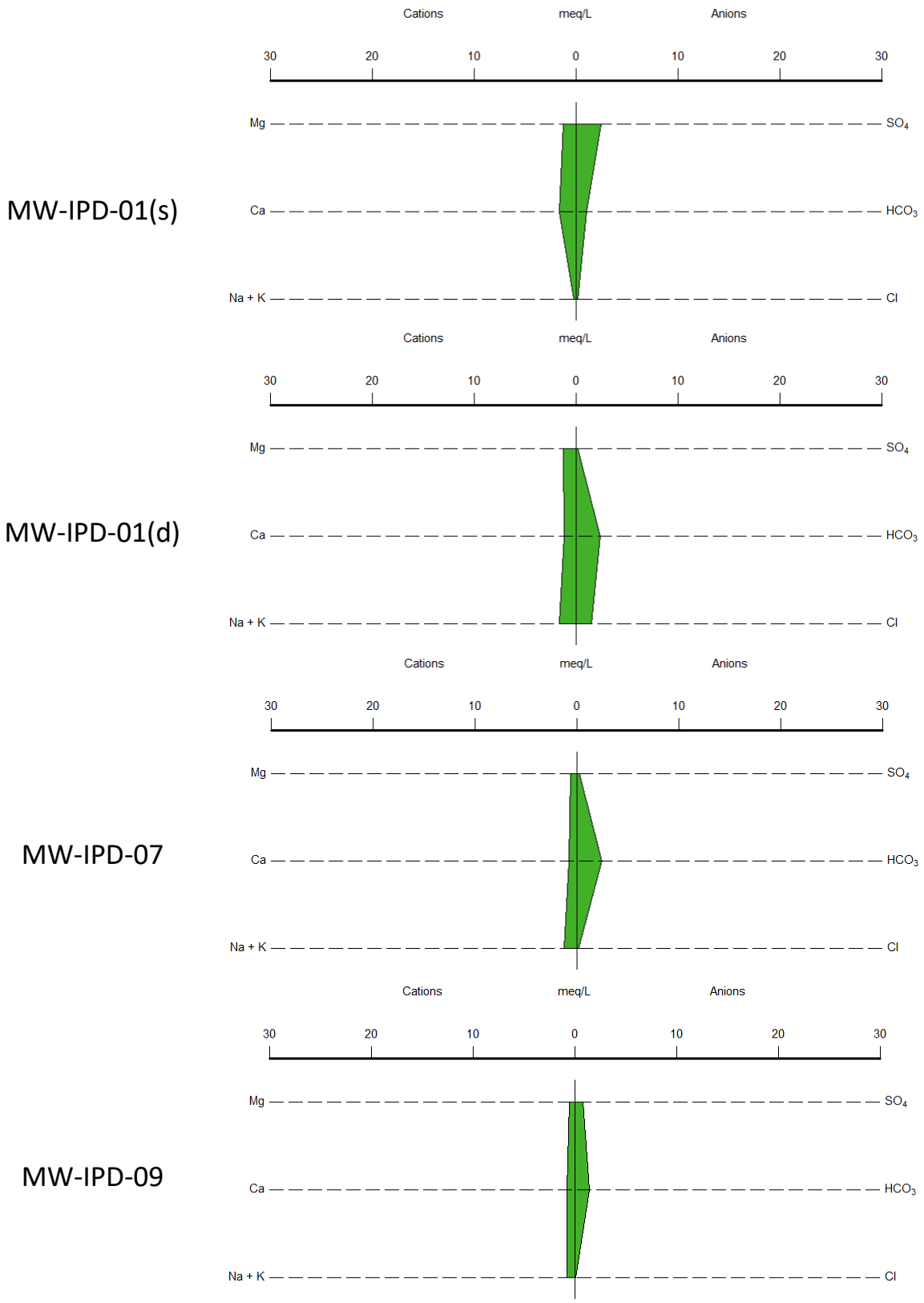
1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

APPENDIX D

2020 Stiff Diagrams



NOTE(S)

1. Average (sample + duplicate) results plotted for MW-IPD-07, MW-IPD-01(s) and MW-IPD-09
2. MW-IPD-01(d) sample collected on September 12, 2020

CLIENT
AGNICO EAGLE MINES LIMITED

AGNICO EAGLE

PROJECT
2020 MEADOWBANK GROUNDWATER MONITORING PROGRAM
MEADOWBANK MINE, NUNAVUT

CONSULTANT

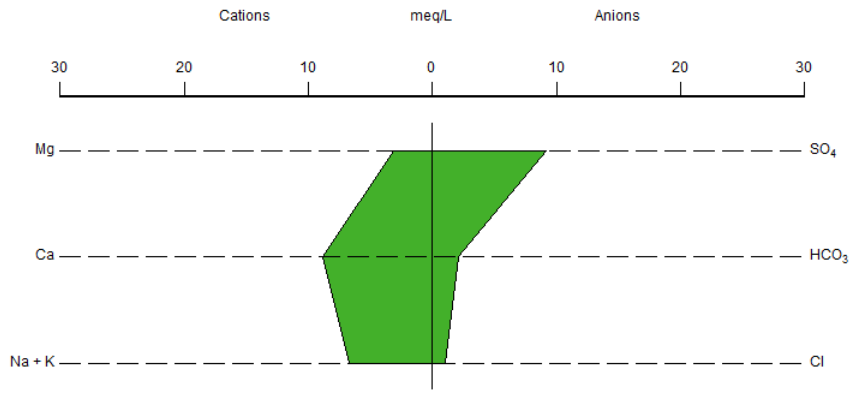
GOLDER

YYYY-MM-DD	2021-03-25
PREPARED	DH
DESIGNED	--
REVIEWED	VJB
APPROVED	VJB

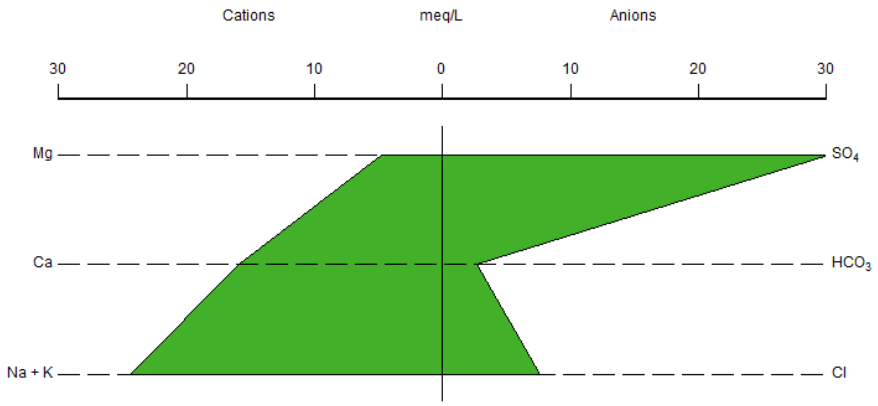
TITLE
2020 RESULTS FOR MONITORING LOCATIONS SHOWING NATURAL WATER SIGNATURE

PROJECT NO.	PHASE	REV.	FIGURE
20148777-504		0	D-1

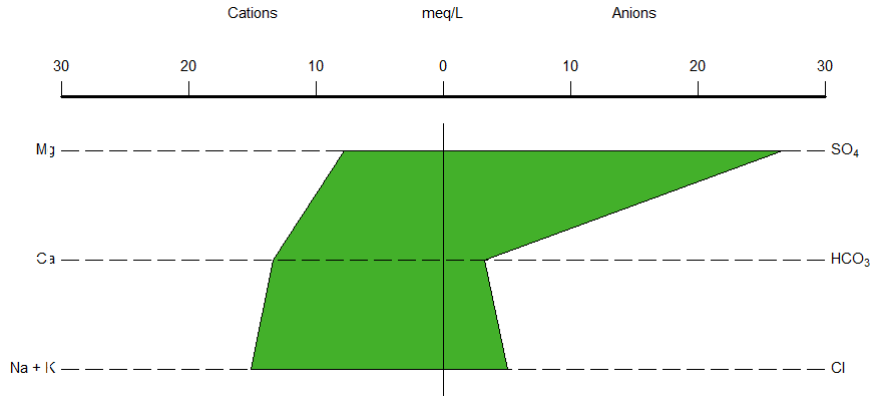
ST-21-South



ST-S-5



MW-16-01



NOTE(S)

1. ST-21-South sampled by Agnico Eagle on September 7, 2020
2. ST-S-5 sampled by Agnico Eagle on September 14, 2020
3. Total concentrations of major ions (Ca, Mg, K and Na) plotted for ST-21-South and ST-S-5

CLIENT
AGNICO EAGLE MINES LIMITED

AGNICO EAGLE

PROJECT
2020 MEADOWBANK GROUNDWATER MONITORING PROGRAM
MEADOWBANK MINE, NUNAVUT

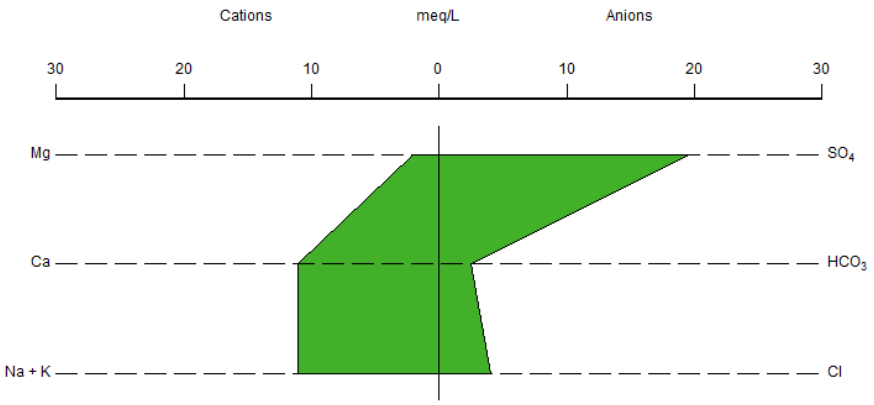
CONSULTANT
GOLDER

YYYY-MM-DD	2021-03-25
PREPARED	DH
DESIGNED	--
REVIEWED	VJB
APPROVED	VJB

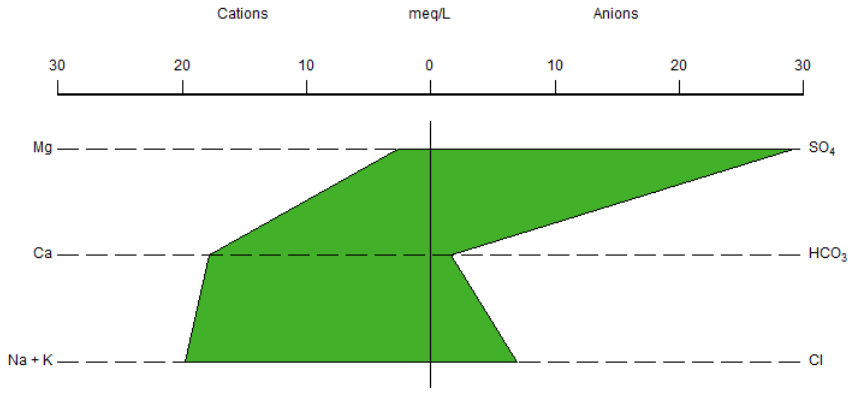
TITLE
2020 RESULTS FOR MONITORING LOCATIONS SHOWING RECLAIM WATER SIGNATURE

PROJECT NO.	PHASE	REV.	FIGURE
20148777-504		0	D-2

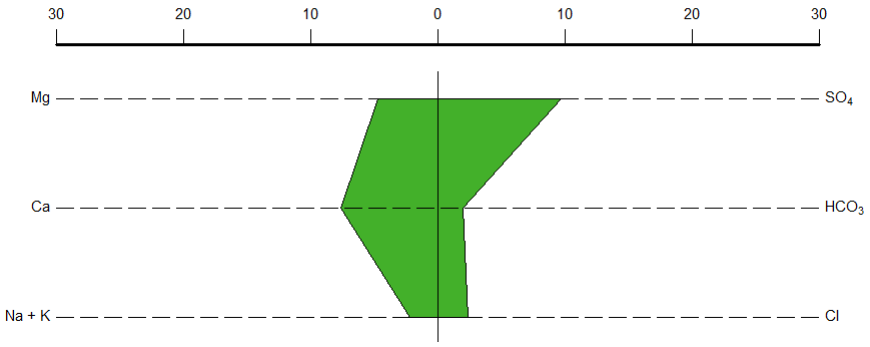
ST-17 Lake (Pit-A)



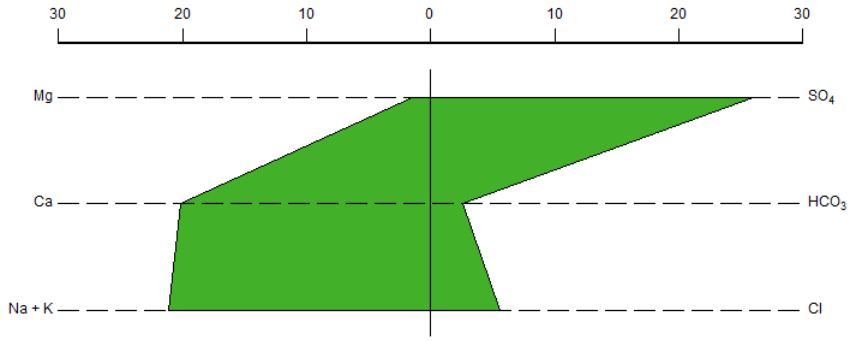
ST-19 Lake (Pit-E)



PIT-E Seep-27 m



ST-20 Lake (Goose Pit)



NOTE(S)

1. ST-17 Lake sampled by Agnico Eagle on July 8, 2020
2. ST-19 Lake sampled by Agnico Eagle on September 8, 2020
3. ST-20 Lake sampled by Agnico Eagle on September 10, 2020
4. Total concentrations of major ions (Ca, Mg, K and Na) plotted for ST-17 Lake, ST-19 Lake and ST-20 Lake

CLIENT
AGNICO EAGLE MINES LIMITED

AGNICO EAGLE

PROJECT
2020 MEADOWBANK GROUNDWATER MONITORING PROGRAM
MEADOWBANK MINE, NUNAVUT

CONSULTANT

GOLDER

YYYY-MM-DD	2021-03-25
PREPARED	DH
DESIGNED	--
REVIEWED	VJB
APPROVED	VJB

TITLE
2020 RESULTS FOR MONITORING LOCATIONS SHOWING RECLAIM WATER SIGNATURE

PROJECT NO.	PHASE	REV.	FIGURE
20148777-504		0	D-3

APPENDIX E

Historical Groundwater Monitoring Program Water Quality Data, 2003 to 2020

APPENDIX E
Historical Groundwater Monitoring Program Water Quality Data, 2003 to 2020
Agnico Eagle Mines Limited, Meadowbank Mine, Nunavut

		Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit
Station ID		BG lagoon	BG lagoon	BG lagoon	BG lagoon	BG lagoon	BG-Seepage-21m	BG-SEEP-21m	BG-Seepage-42m	BG-Seepage-42m	BG-Seepage-42m	BG-Seepage-80m	MW-03-01	MW-03-01	MW-03-01	MW-03-01	MW-03-01	MW-03-01	MW-03-02	MW-03-02	MW-03-02	MW-03-02	MW-06-05	MW-06-05	MW-06-05	MW-06-05	MW-06-05	MW-06-05	MW-06-05	MW-06-05	MW-06-05	MW-06-05	MW-06-06	MW-06-06	MW-11-01	MW-11-01	MW-IPD-07
Sampling Date		2017-11-04	2018-07-09	2018-07-19	2018-09-11	2019-07-11	2017-09-03	2018-07-16	2017-09-03	2018-07-16	2019-07-14	2017-09-03	2004-08-07	2003-09-07	2003-09-07	2006-08-08	2006-08-08	2006-08-14	2004-07-31	2004-07-31	2003-09-28	2006-08-08	2006-08-08	2006-08-14	2007-08-17	2007-08-17	2008-09-15	2008-09-15	2009-09-07	2009-09-07	2010-08-26	2006-08-24	2006-08-24	2011-09-29	2011-09-29	2018-07-08
Field Parameters	**Unit**																																			
Temperature	degC	-	-	-	-	15.4	3	2.5	3.5	6.2	9.9	7.6	8	11.7	11.7	7.7	-	9.9	12	-	3.5	-	-	9.9	6.7	-	1	-	5.4	-	3.1	12.4	-	-	-	-
pH	-	-	-	-	-	8.45	7.86	7.95	7.92	7.98	8.78	8.33	8.03	7.36	7.36	7.93	-	7.58	7.19	-	7.68	7.93	-	7.58	7.43	-	6.7	-	6.97	-	7.13	7.59	-	10.3	-	-
Conductivity	µS/cm	-	-	-	-	352.2	92.7	87.2	168.4	193.5	351.1	232	2500	1855	1855	382	-	538	1104	-	660	382	-	538	776	-	2100	-	2436	-	340	1306	-	3999	-	-
Oxygen Reduction Potential	mV	-	-	-	-	84.5	-188.2	-160.6	-174.2	-156.9	93.2	-60.7	119	-	-	-	-	-	32	-	8.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turbidity	NTU	-	-	-	-	-	3.49	1.57	2.3	4.79	-	2.74	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Salinity	PSU	-	-	-	-	0.17	-	-	-	-	0.17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Dissolved Solids	mg/l	-	-	-	-	229.45	-	-	-	-	228.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	%	-	-	-	-	84.94	-	-	-	-	3.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	mg/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
General																																				
Total Alkalinity	mg CaCO3/L	77	56	63	66	31	61	68	104	108	44	97	27.3	30	30	-	-	51	41.6	42.9	103	-	-	51	36.7	36.7	24	33	15	18	49	49.9	49.9	23	37	92
Bicarbonate Alkalinity HCO3	mg CaCO3/L	77	43	63	66	31	61	68	104	108	34	97	33.3	36.6	36.6	-	-	62.2	50.8	52.4	125	-	-	62.2	44.8	44.8	-	-	-	-	345	60.9	60.9	-	-	79
Carbonate Alkalinity CO3	mg CaCO3/L	<2	13	<2	<2	<2	<2	<2	<2	<2	10	<2	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	-	-	-	-	-	<0.5	<0.5	-	-	13
Reactive silica	mg/L	2.8	2.58	1.5	2.11	2.02	7.9	9.4	7.8	7.8	3.91	4.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.37
Sulphate (SO4)	mg SO4/L	127	103	95.7	158	103	12	21.1	4.4	9	89.4	25.3	15.9	15.6	15.8	42.8	43.1	51.1	38.4	38.2	263	42.8	43.1	51.1	46.5	46.3	6	5.7	3.9	3.6	87	65.1	56	29	30	32.4
Hardness (CaCO3)	mg CaCO3/L	173	120	133	168	117	46	54	75	101	113	95	385.5	290	327.5	78.95	79.45	149	310.5	-	303	78.95	79.45	149	111.5	110.5	310	320	450	440	77	335.5	331.5	13264	14759	73
Dissolved Organic Carbon	mg/L	6.1	-	5.1	3.5	2.5	2.6	3	4.2	4.3	1.6	3.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Organic Carbon	mg/L	6.1	4.2	5.1	4.1	2.4	2.6	3.2	4.2	4.3	1.6	3.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.7
Total Suspended Solids	mg/L	62	6	22	6	5	1	<1	2	1	2	6	13	-	-	-	-	4	96	90	-	-	-	4	2	3	5	7	-	-	-	16	28	-	-	100
Total Dissolved Solids	mg/L	317	263	255	276	219	106	106	194	212	205	238	1335	793	793	159	126	348.5	499	-	387	159	126	348.5	319	250	1100	-	1900	1900	-	619	678	14840	14620	172
Total Metals																																				
Total Aluminium	mg/L	0.729	0.108	0.27	0.117	0.022	-	0.011	0.01	-	0.008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.03
Total Antimony	mg/L	0.0014	0.0011	0.0015	0.0007	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	0.0003	0.0006	0.0004	<0.001	<0.001	<0.0002	<0.0002	<0.001	0.0003	-	<0.001	<0.0002	<0.0002	<0.001	<0.001	<0.001	-	-	-	-	-	<0.001	<0.001	-	-	<0.0001
Total Arsenic	mg/L	<0.0005	<0.0005	0.0012	<0.0005	<0.0001	0.0083	0.0023	<0.0005	<0.0005	0.0021	<0.0005	0.004	<0.001	0.017	0.0005	0.0006	0.002	0.0038	-	0.002	0.0005	0.0006	0.002	<0.001	<0.001	-	-	-	-	<0.002	0.003	0.003	0.128	0.142	0.0161
Total Barium	mg/L	0.0358	0.0228	0.0313	0.0351	<0.0001	0.0262	0.0215	0.0742	0.0756	0.0233	0.0295	0.301	0.18	0.2	0.027	0.028	0.052	0.096	-	0.028	0.027	0.028	0.052	0.053	0.052	-	-	-	-	<0.03	0.024	0.024	0.1484	0.1991	0.0059
Total Beryllium	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.001	<0.001	<0.0002	<0.0002	<0.001	<0.0002	-	<0.001	<0.0002	<0.0002	<0.001	<0.001	<0.001	-	-	-	-	-	<0.001	<0.001	-	-	<0.0005
Total Bismuth	mg/L	-	-	-	-	-	-	-	-	-	-	-	<0.0002	<0.001	<0.001	<0.0002	<0.0002	<0.001	<0.0002	-	<0.001	<0.0002	<0.0002	<0.001	<0.001	<0.001	-	-	-	-	-	<0.001	<0.001	-	-	-
Total Boron	mg/L	0.07	0.05	0.01	0.07	<0.0005	0.02	<0.01	0.07	0.08	<0.01	0.07	2.43	0.59	1.07	0.11	0.11	0.27	0.97	-	0.06	0.11	0.11	0.27	0.23	0.23	-	-	-	-	-	0.36	0.31	-	-	0.18
Total Cadmium	mg/L	0.00003	<0.00002	<0.00002	<0.00002	0.00006	<0.00002	0.00003	<0.00002	<0.00002	<0.00002	<0.00002	<0.00004	0.00024	0.00037	<0.00004	<0.00004	<0.0002	0.00018	-	<0.0002	<0.00004	<0.00004	<0.0002	<0.0002	<0.0002	-	-	-	-	<0.001	<0.0002	<0.0002	<0.00002	0.00009	<0.00002
Total Calcium	mg/L	42.6	29.1	30.9	39.7	28.7	10.7	12.5	17	23.4	27.8	21.2	95.4	72	87.1	19.1	19.1	33.4	74.7	-	68.3	19.1	19.1	33.4	26.1	25.1	73	-	-	-	21	89.3	86.1	5263	5857	15.1
Total Chromium	mg/L	0.0051	0.0006	0.0019	0.0008	0.0015	-	<0.0006	0.001	-	0.0008	-	0.004	0.049	0.32	0.0017	0.0021	<0.001	0.008	-	0.003	0.0017	0.0021	<0.001	<0.001	<0.001	-	-	-	-	-	<0.001	<0.001	-	-	0.0006
Total Cobalt	mg/L	-	-	-	-	-	-	-	-	-	-	-	0.0009	0.004	0.016	0.0005	0.0005	<0.001	0.0072	-	0.004	0.0005	0.0005	<0.001	<0.001	<0.001	-	-	-	-	-	0.002	0.002	-	-	-
Total Copper	mg/L	0.0055	0.0036	0.0033	0.0025	0.0022	<0.0005	0.0013	<0.0005	0.0023	0.0019	0.0058	0.0035	0.004	0.071	0.0022	0.002	<0.001	0.007	-	0.004	0.0022	0.002	<0.001	0.001	0.001	-	-	-	-	<0.003	0.001	0.005	0.0237	0.0357	<0.0005
Total Iron	mg/L	1.49	0.14	0.47	0.12	<0.01	0.76	0.83	0.58	0.84	<0.01	0.07	1.14	6.05	10.7	1.02	1.11	1.1	4.72	-	2.96	1.02	1.11	1.1	0.94	0.93	-	-	-	-	0.6	0.57	0.57	1.3	1.9	1.13
Total Lead	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.01	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.0025	0.013	0.03	0.0015	0.0013	<0.001	0.0035	-	0.002	0.0015	0.0013	<0.001	0.001	0.001	-	-	-	-	-	<0.001	<0.001	<0.0003	0.0031	<0.0003
Total Lithium	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	0.012	<0.005	0.005	0.04	0.025	0.031	0.0031	0.0032	0.006	0.021	-	0.021	0.0031	0.0032	0.006	<0.005	<0.005	-	-	-	-	-	0.029	0.028	-	-	0.01
Total Magnesium	mg/L	16.2	11.6	13.6	16.8	11.2	4.79	5.58	7.92	10.5	10.8	10.4	37.1	33.2	41.5	8.29	8.2	15.6	30.7	-	35.2	8.29	8.2	15.6	12.4	12.1	-	-	-	-	6.1	25	24.5	29.9	32.6	8.7
Total Manganese	mg/L	0.1027	0.0535	0.0956	0.1245	0.0491	0.0609	0.067	0.0462	0.0733	0.0019	0.0081	0.415	0.073	0.72	0.309	0.304	0.93	0.517	-	1.04	0.309	0.304	0.93	0.77	0.75	-	-	-	-	0.55	0.41	0.43	0.0433	0.05	0.0381
Total Mercury	mg/L	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.00027	0.00018	0.00032	0.00023	<0.00001	0.00002	<0.00002	-	-	<0.00002	<0.00002	<0.00002	<0.00002	-	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	-	-	-	-	<0.0001	<0.00002	<0.00002	0.00073	0.00077	<0.00001
Total Molybdenum	mg/L	0.0033	0.0044	0.0031	0.0023	0.0022	0.0103	0.0108	0.0084	0.0109	0.0054	0.0101	0.0083	<0.0005	0.011	0.013	0.013	0.012	0.015	-	0.022	0.013	0.013	0.012	0.0084	0.0084	-	-	-	-	<0.03	0.0087	0.009	<0.0005	<0.0005	0.0155
Total Nickel	mg/L	0.0113	0.0073	0.0106	0.0158	0.01	<0.0005	0.0006	<0.0005	0.002	0.0036	0.0342	0.0045	0.056	0.13	0.002	0.0022	<0.001	0.017	-	0.008	0.002	0.0022	<0.001	0.001	0.001	-	-	-	-	<0.01	0.007	0.01	0.2109	0.2269	0.0034
Total Potassium	mg/L	10.6	5.56	5.58	6.42	4.66	2.72	3.02	2.09	2.71	5.33	4.06	9.13	7.31	9.1	3.63	3.68	6.1	7.8	-	5.94	3.63	3.68	6.1	4.7	4.5	-	-	-	-	2.1	6.7	6.5	201	225	2.72
Total Selenium	mg/L	0.001	<0.001	<0.001	0.0008	<0.0005	<0.001	<0.001	0.001	0.001	<0.0005	0.001	<0.0002	<0.001	<0.001	<0.0002	<0.0002	<0.001	<0.0002	-	<0.001	<0.0002	<0.0002	<0.001	<0.001	<0.001	-	-	-	-	<0.001	<0.001	<0.001	0.564	0.594	<0.001
Total Silicon	mg/L	-	-	-	-	-	-	-	-	-	-	-	5.07	0.4	4.12	2.31	2.71	2.7	13.8	-	10.7	2.31	2.71	2.7	1.4	1.3	-	-	-	-	-	4.7	4.6	-	-	-
Total Silver	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.00028	0.0064	0.011	<0.00005	<0.00005	<0.00025	0.00067	-	<0.0001	<0.00005	<0.00005	<0.00025	<0.00025	<0.00025	-	-	-	-	0.0014	<0.00025	<0.00025	0.0123	0.0146	<0.0001
Total Sodium	mg/L	19	9.34	11.5	14.8	<0.0001	7.1	7.89	17.7	20	8.72	18.9	357	22	25	16	15.9	50.5	91.9	-	6.81	16	15.9	50.5	39.1	37.5	-	-	-	-	2.5	59	55.9	344	550	33.9
Total Strontium	mg/L	0.246	0.155	0.203	0.197	0.138	0.133	0.151	0.286	0.337	0.184	0.249	1.56	0.68	0.79	0.119	0.12	0.28	0.759	-	0.26	0.119	0.12	0.28	0.24	0.24	-	-	-	-	-	0.75	0.72	-	-	0.129
Total Tellurium	mg/L	-	-	-	-	-	-	-	-	-	-	-	<0.0002	<0.001	<0.001	<0.0002	<0.0002	<0.001	<0.0002	-	<0.001	<0.0002	<0.0002	<0.001	<0.001	<0.001	-	-	-	-	-	<0.001	<0.001	-	-	-
Total Thallium	mg/L	<0.0008	<0.0008	<0.0008	<0.0002	0.138	<0.0008	<0.0008	<0.0008	<0.0008	<0.0002	<0.0008	<0.00002	<0.0001	<0.0001	<0.00002	<0.00002	<0.0001	0.00006	-	<0.0001	<0.00002	<0.00002	<0.0001	<0.0001	<0.0001	-	-	-	-	<0.01	<0.0001	<0.0001	<0.005	<0.005	<0.0008
Total Thorium	mg/L	-	-	-	-	-	-	-	-	-	-	-	<0.0001	<0.0005	0.0038	0.0005	0.0006	<0.0005	<0.0001	-	0.0007	0.0005	0.0006	<0.0005	<0.0005	<0.0005	-	-	-	-	-	<0.0005	<0.0005	-	-	-
Total Tin	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0009	<0.001	0.002	<0.0002	<0.0002	<0.001	0.0003	-	<0.001	<0.0002	<0.0002	<0.001	<0.001	<0.001	-	-	-	-	-	<0.001	<0.001	-	-	<0.001
Total Titanium	mg/L	0.08	0.02	0.05	0.05	<0.01	0.01	0.01	0.01	0.01	<0.01	0.01	0.01	0.01	0.22	0.024	0.029	0.006	0.158	-	0.063	0.024	0.029	0.006	0.003	0.003	-	-	-	-	-	0.005	0.005	-	-	0.01
Total Uranium	mg/L	0.012	0.008	0.007	0.009	0.005	<0.001	<0.001	<0.001	<0.001	0.005	0.013	0.0003	0.0012	0.0017	0.0006	0.0006	<0.0005	0.002	-	0.0084	0.0006	0.0006	<0.0005	<0.0005	<0.0005	-	-	-	-	-	0.0018	0.0018	-	-	0.002
Total Vanadium	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.001	<0.0005	<0.0005	0.0004	<0.001	0.029	0.0007	0.0008	<0.001	0.0039	-	0.002	0.0007	0.0008	<0.001	<0.001	<0.001	-	-	-	-	-	0.002	0.002	-	-	0.0005
Total Zinc	mg/L	0.004	0.001	0.001	0.002	0.002	<0.001	<0.001	0.003	0.008	0.03	<0.001	0.007	0.063	0.087	0.005	0.005	<0.005	0.042	-	0.014	0.005	0.005	<0.005	0.009	0.009	-	-	-	-	0.009	<0.005	<0.005	0.038	0.091	0.009
Total Zirconium	mg/L	-	-	-	-	-	-	-	-	-	-	-	<0.002	<0.001	<0.001	<0.002	<0.002	<0.01	<0.002	-	<0.001	<0.002	<0.002	<0.01	<0.01	<0.01	-	-	-	-	-	<0.01	<0.01	-	-	-
Dissolved Metals																																				
Dissolved Aluminum	mg/L	0.008	0.053	<0.006	<0.005	0.01	-	0.006	<0.006	-	0.009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.006
Dissolved Antimony	mg/L	0.0018	0.0009	0.0011	0.0004	0.0004	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	0.0006	0.0002	<0.001	<0.001	<0.0002	<0.0002	<0.001	0.0003	-	<0.001	<0.0002	<0.0002	<0.001	<0.001	<0.001	-	-	-	-	-	<0.001	<0.001	-	-	<0.0001
Dissolved Arsenic	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0018	<0.0005	<0.0005	0.0033	<0.0005	0.0038	<0.001	0.003	0.0005	0.0005	0.003	0.002	-	0.002	0.0005	0.0005	0.003	<0.001	<0.001	0.0001	0.0001	<0.002	<0.002	<0.002	0.002	0.002	0.137	0.13	0.0139
Dissolved Barium	mg/L	0.0307	0.0233	0.0269	0.0341	0.0212	0.0203	0.0209	0.0707	0.0746	0.0279	0.0305	0.3	0.12	0.13	0.025	0.025	0.051	0.086	-	0.023	0.025	0.025	0.051	0.048	0.051	0.25	0.25	0.42	0.39	<0.03	0.018	0.019	0.13	0.136	<0.0005
Dissolved Beryllium	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	<0.0005	<0.0005	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005
Dissolved Bismuth	mg/L	-	-	-	-	-	-	-	-	-	-	-	<0.0002	<0.001	<0.001	<0.0002	<0.0002	<0.001	<0.0002	-	<0.001	<0.0002	<0.0002	<0.001	<0.001	<0.001	-	-	-	-	-	<0.001	<0.001	-	-	-
Dissolved Boron	mg/L	0.11	0.04	<0.01	0.08	<0.01	0.01	<0.01	0.07	0.04	<0.01	0.07	2.39	0.53	1.03	0.1	0.1	0.27	0.94	-	0.06	0.1	0.1	0.27	0.2	0.21	-	-	-	-	-	0.37	0.44	-	-	0.18
Dissolved Cadmium	mg/L	<0.00002	<0.00002	0.00004	<0.00002	0.00008	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00004	0.00007	0.00012	<0.00004	<0.00004	<0.0002	0.00016	-	<0.0002	<0.00004	<0.00004	<0.0002	<0.0002	<0.0002	0.0002	0.0002	<0.001	<0.001	<0.001	<0.0002	<0.0002	<0.005	<0.005	<0.00002
Dissolved Calcium	mg/L	39.9	32.9	31.7	39.2	28.8	9.93	12.4	16.4	22.7	30	20.6	94.2	65.6	67	17.6	17.9	33.7	73.5	-	63.1	17.6	17.9	33.7	24	24.5	73	75	100	99	18	87.1	85.3	5136	5099	11.2
Dissolved Chromium	mg/L	<0.0006	<0.0006	0.0007	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0012	0.0002	<0.001	<0.001	0.0012	0.0012	<0.001	0.0004	-	0.001	0.0012	0.0012	<0.001	<0.001	<0.001	-	-	-	-	-	<0.001	<0.001	-	-	<0.0006
Dissolved Cobalt	mg/L	-	-	-	-	-	-	-	-	-	-	-	0.0008	0.001	0.001	0.0004	0.0004	<0.001	0.006	-	0.004	0.0004	0.0004	<0.001	<0.001	<0.001	-	-	-	-	-	<0.001	<0.001	-	-	-
Dissolved Copper	mg/L	0.0024	0.0025	0.0021	0.0019	0.0023	<0.0005	<0.0005	<0.0005	<0.0005	0.0014	0.0047	0.0004	0.002	0.002	0.0016	0.0016	<0.001	0.0014	-	0.004	0.0016	0.0016	<0.001	<0.001	0.001	0.0015	0.0023	<0.003	<0.003	<0.003	0.001	<0.001	0.021	0.015	<0.0005
Dissolved Iron	mg/L	0.02	<0.01	0.01	<0.01	<0.01	0.27	0.81	0.03	0.69	<0.01	<0.01	0.08	<0.05	0.07	0.84	0.85	0.2	0.05	-	1.91	0.84	0.85	0.2	<0.05	<0.05	0.03	0.03	<0.1	<0.1	<0.1	<0.05	<0.05	1.3	0.97	<0.01
Dissolved Lead	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0002	<0.001	<0.001	0.0014	0.0012	<0.001	<0.0002	-	0.001	0.0014	0.0012	<0.001	<0.001	<0.001	0.00021	0.0002	<0.001	0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.0003
Dissolved Lithium	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	0.014	<0.005	<0.005	0.033	0.017	0.017	0.0028	0.0027	0.005	0.016	-	0.019	0.0028	0.0027	0.005	<0.005	<0.005	-	-	-	-	-	0.028	0.025	-	-	0.009
Dissolved Magnesium	mg/L	15.7	12.9	13.2	17.1	11.9	4.49	5.43	7.67	9.77	11.2	9.94	35.1	23.4	24.3	7.76	7.92	16.1	30.2	-	32.1	7.76	7.92	16.1	11.4	11.6	31	32	46	47	4.1	24	23.6	22.5	25.8	6.76
Dissolved Manganese	mg/L	0.0293	0.0516	0.1065	0.1215	0.0431	0.0569	0.0729	0.0458	0.0712	<0.0005	0.0059	0.381	0.06	0.28	0.286	0.293	0.98	0.492	-	0.96	0.286	0.293	0.98	0.7	0.72	0.43	0.44	0.22	0.22	0.36	0.006	0.003	0.029	0.029	0.0179
Dissolved Mercury	mg/L	<0.00001	<0.00001	<0.00001	<0.00001	0.00002	0.00029	0.00017	0.0003	0.00029	<0.00001	0.00007	<0.00002	-	-	<0.00002	<0.00002	<0.00002	<0.02	-	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00001	<0.00001	<0.0001	<0.0001	<0.0001	<0.00002	<0.00002	0.0006	0.0006	<0.00001
Dissolved Molybdenum	mg/L	0.0031	0.004	0.0033	0.0028	0.0027	0.011	0.0119	0.0089	0.0116	0.0056	0.0104	0.0076	<0.0005	0.0057	0.012	0.012	0.013	0.014	-	0.018	0.012	0.012	0.013	0.0079	0.0079	0.0082	0.0078	<0.03	<0.03	<0.03	0.0081	0.0069	<0.005	<0.005	0.0107
Dissolved Nickel	mg/L	0.0057	0.0068	0.0096	0.0158	0.0101	0.001	0.0006	<0.0005	0.002	0.0041	0.0334	0.0026	0.006	0.005	0.0019	0.0019	<0.001	0.012	-	0.007	0.0019	0.0019	<0.001	0.001	0.001	0.0015	0.0015	<0.01	<0.01	<0.01	0.005	0.004	0.179	0.171	0.0022
Dissolved Phosphorus	mg/L	-	-	-	-	-	-	-	-	-	-	-	0.04	0.1	0.15	<0.03	<0.03	<0.15	<0.03	-	0.16	<0.03	<0.03	<0.15	<0.15	<0.15	-	-	-	-	-	0.9	0.8	-	-	-
Dissolved Potassium	mg/L	9.84	6.08	5.82	7.04	5.02	2.58	3.37	2.07	2.74	5.53	3.92	8.56	5.71	5.95	3.27	3.28	6.1	7.43	-	5.36	3.27	3.28	6.1	4.3	4.4	8.4	8.5	11	11	1.5	6.6	5.8	183	192	2.44
Dissolved Selenium	mg/L	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.001	<0.001	<0.001	0.001	0.0008	0.001	<0.0002	<0.001	<0.001	<0.0002	<0.0002	<0.001	<0.0002	-	<0.001	<0.0002	<0.0002	<0.001	<0.001	<0.001	0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.637	0.606	<0.001
Dissolved Silicon	mg/L	-	-	-	-	-	-	-	-	-	-	-	3.89	0.32	3.27	1.96	1.98	2.5	5.88	-	7.98	1.96	1.98	2.5	1.2	1.2	-	-	-	-	-	4.1	3.8	-	-	-
Dissolved Silver	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00005	<0.0001	<0.0001	<0.00005	<0.00005	<0.00025	<0.00005	-	<0.0001	<0.00005	<0.00005	<0.00025	<0.00025	<0.00025	0.0001	0.0001	<0.0003	<0.0003	<0.0003	<0.00025	<0.00025

APPENDIX E
Historical Groundwater Monitoring Program Water Quality Data, 2003 to 2020
Agnico Eagle Mines Limited, Meadowbank Mine, Nunavut

		Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	Goose Pit	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat
Station ID		MW-IPD-07 Dup	MW-IPD-07	MW-IPD-07	MW-IPD-07	MW-IPD-07	MW-IPD-07	MW-08-02	MW-08-02	MW-08-02	MW-08-02	MW-08-02	MW-08-02	MW-08-02	MW-08-02	MW-08-02	MW-08-02	MW-08-02	MW-08-02	MW-08-02	MW-08-02	MW-08-02	MW-08-02	MW-08-02	MW-08-02	MW-08-02	MW-08-02	MW-08-02	MW-08-03	MW-08-03	MW-08-03	ST-8-North	ST-8-North	ST-8-North	ST-8-North	ST-8-North	ST-8-North	ST-8-North
Sampling Date		2018-07-08	2018-09-11	2019-07-11	2019-10-09	2020-09-09	2020-09-09	2008-09-08	2008-09-08	2009-08-29	2009-08-29	2010-09-01	2011-09-21	2011-09-21	2012-07-23	2012-07-23	2013-08-28	2013-08-28	2014-08-20	2015-12-03	2015-12-04	2015-12-04	2015-12-04	2015-12-04	2016-09-18	2016-09-19	2017-09-03	2018-07-17	2018-07-18	2008-09-14	2008-09-14	2013-09-23	2017-09-04	2018-07-09	2018-07-19	2018-09-09	2019-07-12	2019-10-12	2019-10-12
Field Parameters	**Unit**																																					
Temperature	degC	-	-	18.3	17.9	17.6	-	7.3	-	4.6	-	9.2	8.6	-	20.5	-	-	-	-	-	-	-	-	-	-	-	1.6	3.4	2	5	-	9.6	9.4	-	8.1	-	7.1	-	2.2
pH	-	-	-	8.01	8.43	8.46	-	7.05	-	7.79	-	7.87	8.05	-	7.94	-	-	-	8.11	8.09	8.21	8.21	-	-	-	-	8.08	7.33	8	7.1	-	6.92	8.22	-	8.17	-	8.2	-	8.66
Conductivity	µS/cm	-	-	242.4	224.3	260	-	808	-	616	-	690	905	-	616	-	-	-	1006	94.8	109.4	109.4	-	-	-	-	323.4	41.6	311.3	366	-	644	68.9	-	90.3	-	80.7	-	87.6
Oxygen Reduction Potential	mV	-	-	-210.5	259	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-182.5	-9.2	-146.2	-	-	-	-46	-	-17.6	-	114.9	-	2.8
Turbidity	NTU	-	-	-	-	0.57	-	-	-	-	-	-	-	-	-	-	-	-	14.5	38.1	34.6	34.6	-	-	-	-	13.9	54	26.2	-	-	-	1.14	-	7.35	-	-	-	-
Salinity	PSU	-	-	0.12	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04	-	0.04
Total Dissolved Solids	mg/l	-	-	157.3	145.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52.65	-	56.55
Dissolved Oxygen	%	-	-	0.12	22.8	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52.12	-	120
Dissolved Oxygen	mg/l	-	-	-	-	1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
General																																						
Total Alkalinity	mg CaCO3/L	92	96	66	87	120	122	76	76	-	76	80	76	76	102	100	105	105	147	33	46	49	43	18	107	75	23	181	60	59	44	29	31	41	29	19	33	31
Bicarbonate Alkalinity HCO3	mg CaCO3/L	81	96	66	87	146	149	76	76	-	-	-	-	-	-	-	-	-	-	33	46	49	43	18	107	75	23	181	-	-	-	29	31	41	29	19	33	31
Carbonate Alkalinity CO3	mg CaCO3/L	11	<2	<2	87	<0.60	<0.60	<2	<2	-	-	-	-	-	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	-	-	<2	<2	<2	<2	<2	<5	<5
Reactive silica	mg/L	14.22	9.34	9.41	4.7	7.8	7.6	-	-	-	-	-	-	-	-	-	-	-	-	0.3	0.4	0.4	0.4	1.4	2.3	3.8	0.32	1.4	-	-	-	1.3	1.93	1.2	1.01	0.68	2.03	2.1
Sulphate (SO4)	mg SO4/L	32.8	26.6	22.7	24.5	10.7	11.2	2.5	2	3	2.9	-	4	8	5	3	5.8	6	12.9	5.5	11.5	11.8	11.2	29.7	11.6	2.5	11.1	5	56	51	3.4	15.2	5.5	8.7	16	6.8	13.9	12.1
Hardness (CaCO3)	mg CaCO3/L	57	62	54	79	68.9	74.4	240	230	240	850	220	317	305	170	178	324	310	299	24	46.5	47	46	47	251	160	25	190	180	180	2571	36	32	38	33	28	36	41
Dissolved Organic Carbon	mg/L	-	1.3	1	3.6	21.4	15.2	-	-	-	-	-	-	-	-	-	-	-	-	48.9	35.75	34.5	37	12.8	106	23.6	11.8	47.5	-	-	-	1.9	-	1.7	0.8	0.95	1.5	1.7
Total Organic Carbon	mg/L	1.2	3.1	0.93	1.3	2.08	2.07	-	-	-	-	-	-	-	-	-	-	-	-	52.1	37.4	38.4	36.4	15.4	106	23.6	11.8	47.5	-	-	-	2	1	2.4	1.3	0.85	1.1	1
Total Suspended Solids	mg/L	97	28	32	6	<1.0	<1.0	-	-	-	-	-	-	-	2	4	57	62	-	7	33	25	41	16	20	10	35	22	56	54	3	6	22	26	32	1	21	12
Total Dissolved Solids	mg/L	171	142	148	142	169	140	500	520	530	510	450	-	-	-	-	399	423	843	39	73.5	73	74	88	440	380	52	303	-	-	2408	65	54	68	60	48	54	54
Total Metals																																						
Total Aluminium	mg/L	0.772	0.322	<0.005	0.11	<0.0030	0.0033	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.019	0.252	0.307	<0.005	0.024	0.159	0.162
Total Antimony	mg/L	<0.0001	<0.0001	0.0003	<0.001	<0.00010	<0.00010	-	-	-	-	<0.006	-	-	-	-	-	-	-	0.0022	0.0012	0.0011	0.0013	0.0002	0.0003	0.0006	0.0077	0.0011	-	-	-	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Arsenic	mg/L	0.0138	0.0036	0.0032	0.0067	0.00296	0.00307	-	-	-	-	0.003	0.0023	0.002	<0.0005	<0.0005	-	-	0.0025	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0021	0.0035
Total Barium	mg/L	0.0066	0.0094	0.0115	0.012	0.0147	0.0146	-	-	-	-	0.03	0.043	0.037	0.0313	0.0311	-	-	-	0.0046	0.00765	0.0072	0.0081	0.0125	0.0337	0.0271	0.0085	0.0223	-	-	-	0.0101	0.0109	0.0123	0.0087	0.0051	0.0085	0.0106
Total Beryllium	mg/L	<0.0005	<0.0005	<0.0005	<0.002	<0.00010	<0.00010	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Total Bismuth	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Boron	mg/L	0.16	0.2	0.15	0.25	0.234	0.241	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	0.09	0.14	<0.01	0.12	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Cadmium	mg/L	<0.00002	<0.00002	<0.00002	<0.0002	0.0000104	<0.0000050	-	-	-	-	<0.001	<0.00002	<0.00002	<0.00002	<0.00002	-	-	-	0.00005	0.000155	0.00012	0.00019	<0.00002	<0.00002	<0.00002	0.00012	0.00004	-	-	-	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Total Calcium	mg/L	11.5	12.7	11.4	16	15.2	15.8	-	-	-	-	45	63.1	54.2	35.5	37.4	-	-	-	6.09	11.75	-	-	13.9	56	33.3	6.15	41.5	-	-	-	11.7	10.3	11.5	10.5	8.94	10.6	12.1
Total Chromium	mg/L	<0.0006	<0.0006	<0.0006	<0.005	<0.00010	<0.00010	-	-	-	-	0.03	-	-	-	-	-	-	-	0.0023	0.0102	0.0105	0.0099	0.0022	0.0058	-	-	-	-	-	-	<0.0006	0.0016	0.001	0.0009	0.0008	0.0017	0.0015
Total Cobalt	mg/L	-	-	-	-	-	-	-	-	-	-	<0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Copper	mg/L	<0.0005	<0.0005	<0.0005	<0.001	<0.00050	<0.00050	-	-	-	-	<0.003	0.0014	0.0008	<0.0005	<0.0005	-	-	0.0152	0.004	0.01	0.0095	0.0105	0.0049	0.0028	0.0028	0.0284	0.0214	-	-	-	0.0017	0.0015	0.0014	<0.0005	<0.0005	0.0018	0.0018
Total Iron	mg/L	1.02	1.5	<0.01	0.92	0.211	0.21	-	-	-	-	-	1.4	1.4	1.2	1.1	-	-	-	1.75	4.155	4.22	4.09	2.94	2.99	1.4	3.54	2.53	-	-	-	0.1	0.52	0.61	0.05	0.01	0.34	0.34
Total Lead	mg/L	<0.0003	<0.0003	<0.0003	<0.0005	<0.000050	<0.000050	-	-	-	-	<0.001	<0.0003	<0.0003	<0.0003	<0.0003	-	-	0.0019	<0.0003	0.00785	0.0101	0.0056	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	-	-	-	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.0005
Total Lithium	mg/L	0.013	<0.005	<0.005	<0.01	0.008	0.0085	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	0.011	0.007	<0.005	0.006	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Magnesium	mg/L	7.06	7.56	6.34	9.5	8.52	8.5	-	-	-	-	26	38.9	38	19.8	20.6	-	-	-	2.15	4.23	4.32	4.14	3.01	27.1	18.9	2.4	21.1	-	-	-	1.72	1.71	2.33	1.84	1.44	2.33	2.62
Total Manganese	mg/L	0.0347	0.0573	0.0725	0.07	0.0725	0.0714	-	-	-	-	0.042	0.1338	0.1213	0.133	0.1362	-	-	-	0.2974	0.1808	0.1834	0.1782	0.1318	0.1486	0.0805	0.1716	0.1057	-	-	-	0.0015	0.0109	0.0162	0.0011	0.0011	0.0066	0.0071
Total Mercury	mg/L	<0.00001	<0.00001	<0.00001	<0.0001	<0.0000050	<0.0000050	-	-	-	-	<0.0001	0.00009	0.0001	0.00012	0.00016	-	-	-	0.00002	0.00002	0.00001	0.00003	0.00005	0.00015	0.00019	0.00004	0.00017	-	-	-	0.00003	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Total Molybdenum	mg/L	0.0156	0.0077	0.0063	0.0091	0.00645	0.0066	-	-	-	-	0.05	0.0016	<0.0005	0.0522	0.053	-	-	-	0.0027	0.00725	0.0072	0.0073	0.0045	0.0481	0.0092	0.0028	0.0121	-	-	-	<0.0005	<0.0005	0.0008	0.0009	<0.0005	0.0013	0.0014
Total Nickel	mg/L	0.0037	0.0014	0.0009	<0.002	<0.00050	<0.00050	-	-	-	-	0.01	0.0046	0.0037	0.0017	0.002	-	-	0.0043	0.0015	0.0118	0.0115	0.0121	0.0046	0.0041	0.0012	0.0133	0.0052	-	-	-	<0.0005	0.0011	0.0035	<0.0005	<0.0005	0.0021	0.0024
Total Potassium	mg/L	2.22	1.98	1.72	2.4	2.1	2.08	-	-	-	-	-	2.1	2	2.5	2.6	-	-	-	0.98	1.62	1.69	1.55	0.97	5.78	1.6	0.95	2.29	-	-	-	1.27	0.96	0.99	1.07	0.79	1.05	1.13
Total Selenium	mg/L	<0.001	<0.0005	<0.0005	<0.003	0.000052	<0.000050	-	-	-	-	<0.001	0.005	0.005	0.004	0.006	-	-	-	<0.001	<0.001	<0.001	0.001	<0.001	0.004	0.005	<0.001	0.004	-	-	-	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005
Total Silicon	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Silver	mg/L	<0.0001	<0.0001	<0.0001	<0.001	<0.000010	<0.000010	-	-	-	-	<0.0003	<0.0002	<0.0002	<0.0002	<0.0002	-	-	-	-	-	-	-	-	-	<0.0001	0.0001	<0.0001	-	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Sodium	mg/L	26.7	26.8	22.3	26	28.3	28.8	-	-	-	-	32	43.3	48.8	26.8	29	-	-	-	2.01	4.815	5.01	4.62	1.55	28.4	23.9	2.28	26.1	-	-	-	1.55	0.94	1.21	1.43	1.1	1.78	1.98
Total Strontium	mg/L	0.135	0.133	0.124	0.15	0.147	0.143	-	-	-	-	-	-	-	-	-	-	-	-	0.042	0.0825	0.082	0.083	0.089	0.683	0.473	0.047	0.565	-	-	-	0.064	0.050	0.065	0.058	0.052	0.06	0.07
Total Tellurium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Thallium	mg/L	<0.0008	<0.0002	<0.0002	<0.002	<0.000010	<0.000010	-	-	-	-	-	0.005	0.005	<0.005	<0.005	-	-	-	<0.005	<0.005	<0.005	<0.005	0.0008	0.0008	<0.0008	<0.0008	<0.0008	-	-	-	<0.0008	<0.0008	<0.0008	<0.0002	<0.0002	<0.0002	<0.0002
Total Thorium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Tin	mg/L	<0.001	<0.001	<0.001	<0.002	<0.00010	<0.00010	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	0.001	0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	<0.001	<0.001	<0.001	0.003	<0.001	<0.001	<0.001
Total Titanium	mg/L	<0.01	0.01	<0.01	<0.01	<0.00030	<0.00030	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	0.03	0.03	0.03	<0.01	<0.01	0.02	0.01	0.03	-	-	-	0.01	0.02	0.03	0.01	<0.01	<0.01	<0.01
Total Uranium	mg/L	0.002	<0.001	<0.001	<0.001	0.000047	0.000045	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	-	-	-	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Total Vanadium	mg/L	0.0012	<0.0005	<0.0005	<0.002	<0.00050	<0.00050	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0027	<0.0005	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0051	0.0057
Total Zinc	mg/L	0.008	<0.001	<0.001	<0.007	<0.0030	<0.0030	-	-	-	-	0.01	0.01	0.375	0.005	0.004	-	-	0.045	0.502	0.8555	0.797	0.914	0.092	0.027	0.028	0.215	0.096	-	-	-	0.004	<0.001	<0.001	<0.001	0.009	0.001	0.003
Total Zirconium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Metals																																						
Dissolved Aluminum	mg/L	0.117	<0.005	<0.005	<0.03	<0.0010	<0.0010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.016	0.032	<0.006	<0.005	0.02	<0.005	0.004
Dissolved Antimony	mg/L	<0.0001	<0.0001	0.0003	<0.003	<0.00010	<0.00010	-	-	-	-	-	-	-	-	-	-	-	-	0.0016	0.0005	0.0005	0.0005	0.0001	0.0003	<0.0001	0.0041	0.0001	-	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Arsenic	mg/L	0.0131	0.0039	0.0032	0.0049	0.00306	0.00312	0.0035	0.0035	0.003	<0.002	-	<0.005	<0.005	<0.005	<0.005	<0.0005	-	0.0026	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.001	0.001	0.034	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.001	0.0009
Dissolved Barium	mg/L	<0.0005	0.0082	0.0115	<0.02	0.0146	0.014	0.045	0.043	0.04	<0.03	-	0.041	0.041	0.025	0.024	0.0418	-	0.0526	0.0023	0.0062	0.0063	0.0061	0.0069	0.0337	0.0241	0.004	0.0137	0.033	0.033	0.0579	0.0074	0.0067	0.0068	0.0089	0.0046	0.0104	0.0104
Dissolved Beryllium	mg/L	<0.0005	<0.0005	<0.0005	<0.002	<0.00010	<0.00010	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Bismuth	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Boron	mg/L	0.2	0.22	0.15	0.25	0.218	0.252	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	0.09	0.13	<0.01	0.07	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dissolved Cadmium	mg/L	<0.00002	<0.00002	<0.00002	<0.001	<0.0000050	<0.0000050	0.0002	0.0002	<0.001	<0.001	-	<0.005	<0.005	<0.005	<0.005	0.00004	-	0.00012	0.00005	0.000115	0.00012	0.00011	<0.00002	0.00002	<0.00002	<0.00002	0.00003	0.0002	0.0002	0.0007	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Dissolved Calcium	mg/L	12.7	14	11.4	17	15.1	15.7	50	48	51	340	-	59.9	61	39.1	36.9	-	-	-	-	-	11.8	11.7	-	-	31.4	6.07	27.7	46	46	-	11.7	9.32	10.4	11.1	9.07	10.4	10.3
Dissolved Chromium	mg/L	<0.0006	<0.0006	<0.0006	<0.005	<0.00010	<0.00010	-	-	-	-	-	-	-	-	-	-	-	-	0.0019	0.00655	0.0105	0.0026	0.0018	0.0051	<0.001	<0.005	0.0032	-	-	-	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Dissolved Cobalt	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Copper	mg/L	<0.0005	0.0012	<0.0005	<0.003	<0.00020	<0.00020	0.00056	0.0011	<0.003	<0.003	-	<0.005	<0.005	<0.005	<0.005	0.033	-	<0.0005	<0.0005	0.0057	0.007	0.0044	<0.0005	0.0005	<0.0005	<0.0005	0.002	0.003	0.0039	0.0287	<0.0005	<0.0005	0.0006	0.0005	0.0006	<0.0005	<0.0005
Dissolved Iron	mg/L	0.01	0.19	<0.01	<0.1	0.082	0.069	0.03	0.03	<0.1	<0.1	-	<0.05	<0.05	<0.05	<0.05	0.02	-	0.02	0.03	0.045	0.05	0.04	<0.01	<0.01	0.02	<0.01	1.47	0.03	0.03	<0.01	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dissolved Lead	mg/L	<0.0003	<0.0003	<0.0003	<0.001	<0.000050	<0.000050	0.0001	0.00027	<0.001	<0.001	-	<0.005	<0.005	<0.005	<0.005	0.0011	-	0.5625	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.00056	0.00027	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Dissolved Lithium	mg/L	0.008	0.006	<0.005	<0.1	0.0072	0.0082	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	0.007	0.006	<0.005	0.006	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Dissolved Magnesium	mg/L	6.79	8.34	6.34	9.4	7.6	8.56	27	27	27	<1	-	35.6	35.5	21.6	20.2	-	-	-	-	-	-	-	-	-	17.6	2.06	14.6	17	16	-	1.89	1.43	1.93	1.92	1.44	2.17	2.13
Dissolved Manganese	mg/L	0.0234	0.0524	0.0725	0.065	0.0682	0.0698	0.03	0.031	<0.003	<0.003	-	0.107	0.11	0.134	0.128	-	-	0.1526	0.2629	0.1618	0.1632	0.1604	0.1037	0.1417	0.0768	0.1569	0.0662	0.32	0.32	-	0.0016	0.0011	0.0035	0.0005	<0.0005	<0.0005	<0.0005
Dissolved Mercury	mg/L	0.00001	<0.00001	<0.00001	<0.0001	<0.0000050	<0.0000050	<0.00001	<0.00001	<0.0001	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	-	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.00013	<0.00001	0.00015	<0.00001	<0.00001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001	0.00018	<0.00001	<0.00001
Dissolved Molybdenum	mg/L	0.0166	0.0076	0.0063	<0.01	0.00651	0.00678	0.026	0.025	0.07	0.04	-	<0.005	<0.005	0.046	0.043	0.0186	-	0.0273	0.0028	0.0068	0.0068	0.0068	0.0034	0.0432	0.0091	0.0012	0.0094	0.14	0.14	0.0213	<0.0005	<0.0005	0.0009	0.0009	<0.0005	0.0012	0.0012
Dissolved Nickel	mg/L	0.0034	0.001	0.0009	<0.01	<0.00050	<0.00050	0.019	0.019	<0.01	<0.01	-	<0.005	<0.005	<0.005	<0.005	0.0054	-	0.0045	0.0015	0.00765	0.0078	0.0075	0.0027	0.0037	0.0009	0.0049	0.0012	0.001	0.0017	0.0563	<0.0005	<0.0005	0.0015	<0.0005	<0.0005	0.0005	0.0006
Dissolved Phosphorus	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Potassium	mg/L	2.54	2.13	1.72	2.3	2.19	2.28	1.8	1.5	2	1.3	-	2.3	2.4	2.1	1.9	-	-	-	-	-	-	-	-	-	1.41	0.86	1.75	4.4	4.5	-	1.22	0.76	0.89	1	0.81	0.93	0.92
Dissolved Selenium	mg/L	<0.001	<0.0005	<0.0005	<0.001	0.000104	<0.000050	0.001	0.001	<0.001	<0.001	-	0.005	0.005	<0.005	<0.005	0.006	-	0.011	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.003	<0.001	0.002	0.001	0.001	0.137	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Silicon	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Silver	mg/L	<0.0001	<0.0001	<0.0001	<0.0003	<0.000010	<0.000010	0.0001	0.0001	<0.0003	<0.0003	-	<0.005	<0.005	<0.005	<0.005	<0.0001	-	-	-	-	-	-	-	-	<0.0001	<0.0001	<0.0001	0.0001	0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Sodium	mg/L	32	27.4	22.3	26	26.9	29.8	-	-	36	24	-	44	44.2	25	23.3	-	-	-	-	-	-	-	-	-	22.2	2.3	17.5	-	-	-	1.61	0.88	1.13	1.46	1.11	1.66	1.66
Dissolved Strontium	mg/L	0.12	0.14	0.124	0.15	0.148	0.153	-	-	-	-	-	-	-	-	-	-	-	-	0.039	0.074	0.074	0.074	0.07	0.532	0.504	0.05	0.542	-	-	-	0.067	0.050	0.067	0.058	0.051	0.058	0.058
Dissolved Tellurium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Thallium	mg/L	<0.0008	<0.0002	<0.0002	<0.01	<0.000010	<0.000010	0.002	0.002	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008

APPENDIX E
Historical Groundwater Monitoring Program Water Quality Data, 2003 to 2020
Agnico Eagle Mines Limited, Meadowbank Mine, Nunavut

		East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	East Flat	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike
Station ID		ST-8-South	ST-8 South	ST-8-South	ST-8-South	ST-8-South	ST-8-South	ST-8-South	MW-IPD-01 (s)	MW-IPD-01 (s)	MW-IPD-01 (s)	MW-IPD-01 (s)	MW-IPD-01 (s)	MW-IPD-01 (s)	MW-IPD-01 (s)	MW-IPD-01 (s)	MW-IPD-01 (d) Dup	MW-IPD-01(d)	MW-IPD-01(d)	MW-IPD-01(d)	MW-IPD-01(d)	MW-IPD-01(d)	MW-IPD-01(d)	MW-IPD-01(d)	MW-IPD-01(d)	ST-S-1	BH-10-01	BH-10-01	MW-03-04	MW-06-07	MW-06-07
Sampling Date		2017-09-04	2018-07-09	2018-07-19	2018-09-09	2019-10-12	2019-07-13	2019-07-13	2018-07-08	2018-07-08	2018-09-11	2019-07-10	2019-10-12	2020-09-08	2020-09-08	2018-07-08	2018-07-08	2018-09-09	2018-09-09	2019-07-16	2019-07-16	2019-10-11	2020-09-07	2020-09-12	2020-09-07	2010-08-27	2010-08-27	2003-09-18	2006-08-30	2006-08-30
Field Parameters	**Unit**																														
Temperature	degC	8.8	-	7.3	-	7.7	-	4.5	-	-	-	26.6	22.4	-	-	-	-	-	-	-	22.9	18.1	18.3	19.61	-	3.9	-	3.3	5	5
pH	-	8.02	-	7.73	-	7.71	-	8.25	-	-	-	7.71	8.21	-	-	-	-	-	-	-	7.8	8.05	8.21	8.1	-	7.6	-	7.67	8	8
Conductivity	µS/cm	86.8	-	108.3	-	154.9	-	80.8	-	-	-	971	181.8	-	-	-	-	-	-	-	524.2	508	388	382	-	910	-	450	440	440
Oxygen Reduction Potential	mV	-49.4	-	-18.1	-	69.2	-	25.5	-	-	-	176.2	37.1	-	-	-	-	-	-	-	-199.3	-216.1	-	-241.6	-	-	-	-	-	-
Turbidity	NTU	1.45	-	4.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	14.2	-	-	-	-	-	-
Salinity	PSU	-	-	-	-	0.07	-	0.04	-	-	-	0.46	0.09	-	-	-	-	-	-	-	0.26	0.24	-	0.18	-	-	-	-	-	-
Total Dissolved Solids	mg/l	-	-	-	-	100.75	-	52.6	-	-	-	620	118.4	-	-	-	-	-	-	-	348.1	327.6	-	191	-	-	-	-	-	-
Dissolved Oxygen	%	-	-	-	-	46.97	-	99.4	-	-	-	64	14.4	-	-	-	-	-	-	-	0.19	4.2	19	24	-	-	-	-	-	-
Dissolved Oxygen	mg/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.9	2.4	-	-	-	-	-	-
General																															
Total Alkalinity	mg CaCO3/L	27	24	52	28	27	21	19	13	41	58	31	44	51.4	47.8	94	94	96	97	77	96	109	112	119	55	110	110	-	89	89
Bicarbonate Alkalinity HCO3	mg CaCO3/L	27	24	52	28	27	21	19	13	41	54	31	44	62.7	58.3	80	80	96	97	77	96	109	137	146	-	-	-	-	108	108
Carbonate Alkalinity CO3	mg CaCO3/L	<2	<2	<2	<2	<5	<2	<2	<2	<2	3	<2	<5	<0.60	<0.60	14	13	<2	<2	<2	<2	<5	<2.0	<0.60	-	-	-	-	<0.5	<0.5
Reactive silica	mg/L	2.1	1.35	1.6	1.14	1.46	1.41	1.42	6.51	6.5	5.26	2.02	9.4	6.6	6.5	8.25	8.33	6.75	6.7	20.7	22	25.2	7.41	7	-	-	-	-	-	-
Sulphate (SO4)	mg SO4/L	25.2	8.1	41.5	26.8	58.3	33.4	34.5	34.6	34.6	70.6	103	31.5	116	115	47.1	44.7	63.1	63.3	46.3	47.5	58.4	7.43	6.89	31.8	210	210	63.8	3.75	3.76
Hardness (CaCO3)	mg CaCO3/L	41	30	61	36	32	51	49	72	82	110	344	89	149	143	53	81	66	64	80	72	80	111	122	81	300	300	53	115	117.5
Dissolved Organic Carbon	mg/L	2.4	-	2.5	1.2	2.6	1.1	1.2	-	-	1.1	1.2	1.7	0.92	0.69	-	-	24.1	23.2	7.7	6.4	12	11.8	2.37	-	-	-	-	-	-
Total Organic Carbon	mg/L	2.4	1.3	2.9	1.5	1.2	1.2	1.1	1.5	2.5	2	1.3	0.82	0.72	0.77	21.4	20.8	24.1	23.7	7.3	7.7	9.3	1.91	1.79	-	-	-	-	-	-
Total Suspended Solids	mg/L	6	42	23	1	1	5	3	17	21	2	3	1	<1.0	<1.0	29	42	7	8	318	120	11	16.2	18	2	-	-	-	11	11
Total Dissolved Solids	mg/L	81	49	-	70	51	86	86	172	158	193	488	108	217	222	283	277	308	305	317	320	325	239	235	-	521.5	545.5	154	196	191
Total Metals																															
Total Aluminium	mg/L	0.022	0.249	-	0.04	0.021	0.014	0.013	0.287	0.18	0.01	<0.005	0.017	0.0057	0.0052	0.173	0.409	0.385	0.309	0.006	0.014	1.13	12.5	1.62	0.043	-	-	-	-	-
Total Antimony	mg/L	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0003	<0.0001	0.0002	0.00015	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	0.00011	-	-	-	-	<0.001	<0.001
Total Arsenic	mg/L	<0.0005	0.0096	0.0022	<0.0005	0.0024	0.0014	0.0016	0.0232	0.0272	<0.0005	0.0109	0.0526	0.0303	0.0312	0.0063	0.0104	<0.0005	<0.0005	0.0125	0.01	0.0071	0.0315	0.032	0.0027	0.018	0.018	-	0.001	0.002
Total Barium	mg/L	0.0048	0.0062	0.0078	0.0056	0.0098	0.0083	0.0081	<0.0005	<0.0005	0.0088	0.0187	0.0041	0.0103	0.0103	0.0049	0.0064	0.0154	0.0147	0.017	0.013	0.0207	0.0249	0.0245	0.0138	0.44	0.44	-	0.11	0.11
Total Beryllium	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00010	<0.00010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.00015	0.00016	-	-	-	-	<0.001	<0.001
Total Bismuth	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001
Total Boron	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.13	<0.01	0.079	0.078	0.11	0.13	0.17	0.18	0.09	0.06	0.09	0.18	0.198	-	-	-	-	<0.05	<0.05
Total Cadmium	mg/L	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.000113	0.000109	<0.00002	<0.00002	<0.00002	<0.00002	0.00003	0.00023	0.00003	<0.0000200	0.0000121	< 0.00002	<0.001	<0.001	-	<0.0002	<0.0002
Total Calcium	mg/L	12	8.63	16.5	10.5	9.58	14.5	13.6	17.6	19.3	27.4	71.5	20.7	35.3	34.4	10.4	16.4	13.7	13.4	16.8	15.8	16.7	22.9	24.1	23.3	71	69	-	34.9	36.4
Total Chromium	mg/L	<0.0006	0.0056	-	<0.0006	0.0009	0.0007	0.0008	<0.0006	0.0007	<0.0006	<0.0006	0.001	<0.00010	<0.00010	<0.0006	0.0009	<0.0006	<0.0006	0.0008	<0.0006	0.0011	0.00028	0.00017	< 0.0006	-	-	-	0.006	0.005
Total Cobalt	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.001	0.001
Total Copper	mg/L	0.003	0.0019	0.0011	<0.0005	0.0011	0.0008	0.0008	<0.0005	0.0005	0.0019	0.0012	0.0006	0.00973	0.00989	<0.0005	0.001	0.0011	0.002	<0.0005	0.0005	0.0007	<0.00050	<0.00050	0.0014	<0.003	<0.003	-	0.011	0.011
Total Iron	mg/L	0.37	0.81	0.17	0.09	0.04	<0.01	0.01	0.13	0.11	0.02	<0.01	0.1	0.02	0.019	0.15	0.21	0.23	0.21	0.22	0.23	1.33	2.9	0.672	0.08	3.1	3.1	-	1.5	1.58
Total Lead	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.0017	<0.0003	<0.0003	0.00006	<0.000050	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.0009	0.00176	0.00164	< 0.00017	<0.001	<0.001	-	0.001	0.001
Total Lithium	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.007	0.007	<0.005	<0.005	<0.005	0.0044	0.004	0.017	0.016	0.014	0.014	0.02	0.017	0.022	0.0102	0.0092	-	-	-	-	0.004	0.004
Total Magnesium	mg/L	2.74	2.19	4.96	2.58	2.01	3.8	3.82	6.96	8.31	10.2	40.5	9.23	17.5	16	6.75	9.95	7.79	7.65	9.28	8.06	9.38	15.5	16	5.69	30	30	-	8.81	9.04
Total Manganese	mg/L	0.0133	0.0571	0.0439	0.0119	0.0026	0.0833	0.0843	0.0606	0.0609	0.598	1.15	0.1734	0.916	0.875	0.0354	0.0486	0.1782	0.1806	0.2192	0.1973	0.2266	0.0716	0.0707	0.0296	0.17	0.17	-	0.073	0.074
Total Mercury	mg/L	0.00058	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.00002	0.0004	0.00002	<0.0000050	<0.0000050	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.00003	<0.0000050	<0.0000050	< 0.00001	<0.0001	<0.0001	-	<0.00002	<0.00002
Total Molybdenum	mg/L	<0.0005	<0.0005	0.0005	<0.0005	<0.0005	0.001	0.0008	0.0097	0.0087	0.0082	0.0102	0.0049	0.00392	0.00416	0.0155	0.017	0.0349	0.0351	0.0295	0.0245	0.0277	0.0112	0.0108	0.0029	<0.03	<0.03	-	0.005	0.0048
Total Nickel	mg/L	0.0028	0.0103	0.0085	0.0023	0.001	0.0149	0.0164	0.0057	0.0059	0.0121	0.0489	0.0083	0.0681	0.0661	0.0219	0.0257	0.0744	0.076	0.0054	0.0046	0.0023	0.0019	0.00146	0.003	0.05	0.04	-	0.005	0.005
Total Potassium	mg/L	1.61	0.87	1.57	1.34	0.91	1.34	1.32	2.62	3.05	3.35	6.53	2.94	3.36	3.28	0.8	1.28	1.09	1.09	1.4	1.21	1.37	1.46	1.31	-	7.7	7.7	-	2.7	2.8
Total Selenium	mg/L	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.0005	0.000175	0.000134	0.001	0.001	0.0022	0.0027	<0.0005	<0.0005	<0.0005	<0.000050	0.000057	< 0.001	<0.001	<0.001	-	<0.001	<0.001
Total Silicon	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.2	5
Total Silver	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.000010	<0.000010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.000032	0.000011	< 0.0001	<0.0003	<0.0003	-	0.0009	0.0009
Total Sodium	mg/L	1.77	1.02	1.76	1.3	1.74	1.36	1.38	13.9	15.5	6.84	4.89	5.5	3.8	3.77	49.8	76.4	77.8	78.3	82.8	75.7	96.3	33.5	34.6	-	58	58	-	8.85	9.12
Total Strontium	mg/L	0.063	0.039	0.088	0.052	0.055	0.067	0.068	0.146	0.146	0.172	0.36	0.128	0.159	0.163	0.243	0.224	0.18	0.181	0.246	0.222	0.249	0.318	0.321	-	-	-	-	0.23	0.24
Total Tellurium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001
Total Thallium	mg/L	<0.0008	<0.0008	<0.0008	<0.0002	<0.0002	<0.0002	<0.0002	<0.0008	<0.0008	<0.0002	<0.0002	<0.0002	0.000021	0.000014	<0.0008	<0.0008	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.000010	<0.000010	< 0.0002	<0.01	0.01	-	<0.0001	<0.0001
Total Thorium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	<0.0005
Total Tin	mg/L	<0.001	<0.001	<0.001	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.00010	<0.00010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.00078	0.00015	-	-	-	-	<0.001	<0.001
Total Titanium	mg/L	0.01	0.01	0.02	0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.03	<0.01	<0.01	<0.00030	<0.00030	<0.01	0.01	0.01	0.01	<0.01	<0.01	0.02	0.1	0.0138	-	-	-	-	0.032	0.031
Total Uranium	mg/L	0.001	<0.001	0.002	0.001	<0.001	0.001	0.001	0.007	0.008	0.003	0.005	0.004	0.00363	0.0041	0.002	0.003	<0.001	<0.001	0.003	0.002	<0.001	0.00215	0.00191	-	-	-	-	0.0095	0.0097
Total Vanadium	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	0.0046	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0059	<0.00050	0.00053	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0057	0.00052	<0.00050	-	-	-	-	0.002	0.002
Total Zinc	mg/L	0.001	0.009	<0.001	<0.001	0.005	0.006	0.007	0.003	0.002	<0.001	0.023	<0.001	0.0205	0.0196	0.002	0.006	0.004	0.002	0.012	0.144	0.004	0.0051	0.005	< 0.001	<0.003	0.005	-	0.006	0.006
Total Zirconium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01
Dissolved Metals																															
Dissolved Aluminum	mg/L	<0.006	0.025	-	0.014	0.0012	0.018	0.01	<0.006	<0.006	<0.005	<0.005	<0.0005	0.0037	0.0034	<0.006	<0.006	0.016	0.025	<0.0005	<0.005	<0.0005	0.0015	0.0147	-	-	-	-	-	-
Dissolved Antimony	mg/L	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0003	<0.0001	0.00011	0.0002	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	-	-	-	0.001	<0.001	<0.001
Dissolved Arsenic	mg/L	<0.0005	<0.0005	<0.0005	0.0015	0.0007	0.0016	0.0023	0.0243	0.0242	0.0008	0.0109	0.0399	0.0305	0.03	0.0103	0.0095	<0.0005	<0.0005	0.0062	0.007	0.0035	0.0312	0.0315	-	0.007	0.007	0.007	<0.001	0.001
Dissolved Barium	mg/L	0.0053	0.0052	0.0077	0.0058	0.0104	0.0091	0.0096	<0.0005	<0.0005	0.0079	0.0187	0.0065	0.00985	0.00978	<0.0005	<0.0005	0.01	0.0093	0.0122	0.0137	0.0135	0.0229	0.022	-	0.42	0.44	0.03	0.086	0.086
Dissolved Beryllium	mg/L	<0.0005	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00010	<0.00010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.000100	<0.00010	-	-	-	-	-	-
Dissolved Bismuth	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001
Dissolved Boron	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	0.13	<0.01	0.075	0.074	0.1	0.1	0.19	0.17	0.08	0.08	0.1	0.17	0.192	-	-	-	-	<0.05	<0.05
Dissolved Cadmium	mg/L	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.00006	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.000103	0.000102	<0.00002	<0.00002	0.00011	0.0001	0.00003	<0.00002	0.00003	<0.0000050	<0.0000050	-	<0.001	<0.001	<0.0002	<0.0002	<0.0002
Dissolved Calcium	mg/L	13.1	7.16	17.7	10.8	9.39	14.7	14	17.9	15.6	27.4	28.8	16.8	33.5	33.1	12.9	12.9	15	13.1	15.5	15.4	16.2	21.8	23.6	-	68	73	15	31.3	31.5
Dissolved Chromium	mg/L	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.00010	<0.00010	<0.0006	<0.0006	0.0013	<0.0006	<0.0006	<0.0006	<0.0006	<0.00010	<0.00010	-	-	-	<0.001	<0.001	<0.001
Dissolved Cobalt	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.003	<0.001	<0.001
Dissolved Copper	mg/L	0.0032	0.0006	0.001	<0.0005	0.0006	0.0008	0.0008	<0.0005	<0.0005	0.0022	0.0012	<0.0005	0.00872	0.00851	0.0005	<0.0005	0.0051	0.0014	<0.0005	<0.0005	<0.0005	<0.00020	<0.00020	-	<0.003	<0.003	0.006	0.005	0.008
Dissolved Iron	mg/L	0.05	0.1	0.02	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	<0.010	<0.01	<0.01	0.03	0.03	<0.01	<0.01	<0.01	0.063	0.037	-	0.2	0.2	0.55	<0.05	0.05
Dissolved Lead	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.000050	<0.000050	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.000050	<0.000050	-	<0.001	<0.001	0.006	<0.001	<0.001
Dissolved Lithium	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	0.006	0.006	<0.005	<0.005	0.0038	0.0035	0.016	0.015	0.017	0.015	0.018	0.018	0.021	0.0085	0.0085	-			0.015	0.002	0.002
Dissolved Magnesium	mg/L	3.04	1.75	5.29	2.52	1.92	3.92	3.8	7.53	6.5	10.3	11.9	7.32	15.8	14.8	7.69	8.01	8.76	7.66	8.04	8.42	8.94	13.8	15.3	-	30	31	3.81	6.83	6.92
Dissolved Manganese	mg/L	0.0104	0.0782	0.0451	0.0114	0.0021	0.0847	0.0791	0.0595	0.0588	0.5988	1.15	0.137	0.841	0.801	0.0349	0.0376	0.1904	0.1703	0.1829	0.192	0.21	0.06	0.065	-	0.18	0.18	0.049	0.032	0.032
Dissolved Mercury	mg/L	0.00004	<0.00001	<0.00001	<0.00001	<0.00001	0.00005	<0.00001	<0.00001	0.00001	<0.00001	0.00041	0.00002	<0.0000050	<0.0000050	0.00002	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.00003	<0.0000050	<0.0000050	-	<0.0001	<0.0001	<0.00002	<0.00002	<0.00002
Dissolved Molybdenum	mg/L	0.0005	<0.0005	0.0006	0.0008	0.0006	0.001	0.0008	0.0096	0.0101	0.0076	0.0102	0.004	0.00408	0.00409	0.014	0.0151	0.0376	0.0348	0.0231	0.0251	0.0265	0.0108	0.0108	-	<0.03	<0.03	0.024	0.004	0.0042
Dissolved Nickel	mg/L	0.0033	0.0107	0.0087	0.0022	0.0005	0.0159	0.0148	0.0057	0.0059	0.0109	0.0489	0.0064	0.0641	0.0607	0.0149	0.0202	0.0764	0.0688	0.0047	0.0046	0.0019	0.00058	0.00055	-	0.05	0.05	0.003	0.002	0.002
Dissolved Phosphorus	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.58	0.3	0.3
Dissolved Potassium	mg/L	1.59	0.69	1.74	1.23	0.86	1.41	1.32	2.74	2.61	3.48	5.02	2.39	3.28	3.09	1.07	1.12	1.34	1.18	1.21	1.21	1.26	1.33	1.38	-	7.8	8	5.44	2.3	2.3
Dissolved Selenium	mg/L	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.0005	0.0019	<0.001	<0.001	0.0008	<0.0005	<0.0005	0.00012	0.000121	0.001	0.003	0.0022	0.0025	<0.0005	<0.0005	<0.0005	0.00017	0.000137	-	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Silicon	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.2	2.7	2.7
Dissolved Silver	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.000010	<0.000010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.000010	<0.000010	-	<0.0003	<0.0003	<0.0001	<0.00025	<0.00025
Dissolved Sodium	mg/L	2.01	0.86	1.78	1.28	1.86	1.44	1.34	14.6	12.7	6.35	8.78	4.4	3.77	3.54	64.5	65.8	88.8	78.8	73	75.1	96.3	34.4	36.8	-	59	61	52.9	7.68	7.84
Dissolved Strontium	mg/L	0.085	0.036	0.086	0.056	0.052	0.07	0.064	0.150	0.147	0.167	0.36	0.103	0.164	0.157	0.234	0.226	0.204	0.183	0.216	0.225	0.237	0.312	0.324	-	-	-	0.14	0.19	0.2
Dissolved Tellurium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001
Dissolved Thallium	mg/L	<0.0008	<0.0008	<0.0008	<0.0002	<0.0002	<0.0002	<0.0002	<0.0008	<0.0008	<0.0002	<0.0002	<0.0002	0.000013	0.000033	<0.0008	<0.0008	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.000010	<0.000010	-	<0.01	<0.01	<0.0001	<0.0001	<0.0001
Dissolved Thorium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	<0.0005	<0.0005
Dissolved Tin	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.00010	<0.00010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.00010	<0.00010	-	-	-	<0.001	<0.001	<0.001
Dissolved Titanium	mg/L	0.01	<0.01	0.02	0.01	<0.01	<0.01	<0.01	0.02	0.01	0.03	<0.01	<0.01	<0.00030	<0.00030	0.01	0.01	0.01	0.01	<0.01	<0.01	<0.01	<0.00030	<0.00030	-	-	-	0.003	<0.001	<0.001
Dissolved Uranium	mg/L	0.001	<0.001	0.002	0.001	<0.001	0.001	0.001	0.007	0.007	0.002	0.005	0.003	0.0037	0.00395	0.002	0.002	<0.001	<0.001	0.002	0.002	<0.001	0.00156	0.00138	-	-	-	0.013	0.0079	0.008
Dissolved Vanadium	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0012	<0.00050	<0.00050	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	<0.00050	<0.00050	-	-	-	<0.001	<0.001	<0.001
Dissolved Zinc	mg/L	0.002	<0.001	<0.001	<0.001	0.002	0.004	0.008	0.005	0.006	<0.001	0.023	0.001	0.0205	0.02	0.001	0.005	0.007	0.001	0.002	0.004	0.002	0.0013	<0.0010	-	<0.005	0.012	0.022	<0.005	<0.005
Dissolved Zirconium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.01	<0.01
Anions																															
Bromide	mg/L	0.12	0.02	-	0.02	0.11	0.04

APPENDIX E
Historical Groundwater Monitoring Program Water Quality Data, 2003 to 2020
Agnico Eagle Mines Limited, Meadowbank Mine, Nunavut

		South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike
Station ID		**MW-11-02**	**MW-11-02**	**MW-14-01**	**MW-14-01**	**MW-14-01**	**MW-14-01**	**MW-16-01**	**MW-16-01**	**MW-16-01-Deep**	**MW-16-01-Deep DUP**	**MW-16-01-SUR**	**MW-16-01**	**MW-16-01-D**	**MW-16-01-D - DUP**	**MW-16-01-Sur**	**MW-16-01-Sur-DUP**	**MW-16-01**	**MW-16-01**
Sampling Date		**2011-09-26**	**2011-09-26**	**2014-10-20**	**2014-10-20**	**2015-05-31**	**2015-08-26**	**2016-11-10**	**2016-11-14**	**2017-09-04**	**2017-09-04**	**2017-09-04**	**2018-07-09**	**2018-07-16**	**2018-07-16**	**2018-07-16**	**2018-07-16**	**2018-09-09**	**2019-07-13**
Field Parameters	**Unit**																		
Temperature	degC	8.9	-	-	-	-	-	13.9	0.2	-	-	-	-	-	-	-	-	-	13.6
pH	-	8.93	-	7.9	-	8.3	8.2	7.7	7.9	-	-	-	-	-	-	-	-	-	7.27
Conductivity	µS/cm	8.93	-	5030	-	1493	2140	1708	1673	-	-	-	-	-	-	-	-	-	2894
Oxygen Reduction Potential	mV	8.93	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53.1
Turbidity	NTU	-	-	16.69	-	14.8	21.6	32	33.4	-	-	-	-	-	-	-	-	-	-
Salinity	PSU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.51
Total Dissolved Solids	mg/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1886
Dissolved Oxygen	%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.9
Dissolved Oxygen	mg/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
General																			
Total Alkalinity	mg CaCO3/L	104	103	182	182	199	197	182	185.5	172	173	166	169	181	182	167	167	167	111
Bicarbonate Alkalinity HCO3	mg CaCO3/L	-	-	-	-	-	-	182	185.5	172	173	166	169	181	182	167	167	167	111
Carbonate Alkalinity CO3	mg CaCO3/L	-	-	-	-	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Reactive silica	mg/L	-	-	-	-	-	-	7.9	7.95	8	7.1	6.7	10.06	8.6	8.4	9.1	8.2	10.7	8.41
Sulphate (SO4)	mg SO4/L	42	41	450	470	507	703	707	756	1198	1234	679	1344	1375	1331	860	861	1254	1016
Hardness (CaCO3)	mg CaCO3/L	167	165	2358	2361	774	657	732	770.5	959	986	615	877	896	937	607	576	971	862
Dissolved Organic Carbon	mg/L	-	-	-	-	-	-	13.5	19.35	48	47.8	29	-	36.2	36.4	21.3	27.5	42.1	32
Total Organic Carbon	mg/L	-	-	-	-	-	-	25	19.35	48	47.8	29	49.1	36.2	36.4	29.9	27.5	44	56
Total Suspended Solids	mg/L	-	-	-	-	-	-	41	41	17	12	15	50	14	14	4	<1	21	5
Total Dissolved Solids	mg/L	193	191	3212	3092	1277	1209	1317	741	1962	1963	1258	1598	1971	1967	1198	1206	1660	1470
Total Metals																			
Total Aluminium	mg/L	-	-	-	-	-	-	-	-	<0.006	<0.006	<0.006	0.035	0.007	0.012	0.01	0.018	0.023	<0.005
Total Antimony	mg/L	-	-	-	-	-	-	<0.0001	0.0001	<0.0001	<0.0001	0.0005	<0.0001	<0.0001	<0.0001	0.0016	0.0018	<0.0001	<0.0001
Total Arsenic	mg/L	<0.0005	<0.0005	0.1521	0.1518	0.088	0.1185	0.1411	0.20665	0.2075	0.2141	0.0385	0.2378	0.2236	0.2364	0.0226	0.0205	0.2294	0.0647
Total Barium	mg/L	0.2297	0.2097	-	-	-	-	0.0621	0.05945	0.0305	0.0309	0.0353	0.0261	0.0318	0.0347	0.0379	0.0389	0.028	0.0262
Total Beryllium	mg/L	-	-	-	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Total Bismuth	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Boron	mg/L	-	-	-	-	-	-	0.09	0.055	0.03	0.04	0.02	0.06	0.04	0.04	0.03	0.03	0.08	0.02
Total Cadmium	mg/L	0.00004	<0.00002	-	-	-	-	0.00009	0.00005	0.00003	0.00002	0.00004	0.00007	0.00003	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Total Calcium	mg/L	49.7	49.2	-	-	-	-	172	185	251	258	149	220	225	239	140	133	238	210
Total Chromium	mg/L	-	-	-	-	-	-	0.0092	0.00165	<0.0006	<0.0006	<0.0006	0.0015	<0.0006	<0.0006	<0.0006	0.0025	0.0015	0.0008
Total Cobalt	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Copper	mg/L	0.032	0.0247	0.0172	0.0179	0.0036	0.0017	0.0128	0.00445	0.0037	0.0036	0.0052	0.0018	0.0036	0.0036	0.0033	0.003	0.0034	<0.0005
Total Iron	mg/L	1.9	0.9	-	-	-	-	6.28	6.275	6.51	9.29	4.45	8.53	6.5	6.77	2.35	2.31	6.98	0.37
Total Lead	mg/L	0.003	0.0039	<0.0003	0.0029	0.0005	0.0074	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Total Lithium	mg/L	-	-	-	-	-	-	0.011	0.015	0.015	0.014	0.011	0.011	0.01	0.01	0.008	0.007	0.014	0.012
Total Magnesium	mg/L	10.6	10.4	-	-	-	-	73.5	75.1	80.8	83.1	59	79.8	81.2	82.8	62.6	59.4	91.7	82.1
Total Manganese	mg/L	0.2274	0.1853	-	-	-	-	1.826	2.0135	2.531	2.615	1.524	2.416	2.257	2.439	1.469	1.408	2.575	2.091
Total Mercury	mg/L	0.00058	0.00064	-	-	-	-	0.00055	0.000075	<0.00001	<0.00001	0.00026	<0.00001	<0.00001	<0.00001	0.00025	0.00025	<0.00001	<0.00001
Total Molybdenum	mg/L	<0.0005	<0.0005	-	-	-	-	0.0244	0.0194	0.0213	0.0215	0.02	0.0229	0.0206	0.0218	0.0236	0.0228	0.023	0.0237
Total Nickel	mg/L	0.0087	0.0065	0.0415	0.0439	0.0185	0.0136	0.016	0.0152	0.0083	0.0087	0.0096	0.0088	0.0074	0.0074	0.0116	0.0112	0.0107	0.0245
Total Potassium	mg/L	1.9	2	-	-	-	-	10	9.705	20.8	21.6	10.8	16.5	16.4	17.4	8.3	7.99	17.5	15.8
Total Selenium	mg/L	<0.001	<0.001	-	-	-	-	0.006	0.0055	0.004	0.006	0.004	0.003	0.005	0.004	0.004	0.004	0.0086	0.0011
Total Silicon	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Silver	mg/L	0.0006	0.0002	-	-	-	-	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Sodium	mg/L	10.5	10.3	-	-	-	-	225	208	335	351	176	276	293	313	157	150	349	259
Total Strontium	mg/L	-	-	-	-	-	-	0.876	0.865	1.39	1.25	0.896	1.13	1.02	1.08	0.79	0.74	1.19	1.11
Total Tellurium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Thallium	mg/L	<0.005	<0.005	-	-	-	-	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0002	<0.0002
Total Thorium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Tin	mg/L	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Titanium	mg/L	-	-	-	-	-	-	0.21	0.26	0.25	0.24	0.15	0.18	0.27	0.31	0.16	0.15	0.34	<0.01
Total Uranium	mg/L	-	-	-	-	-	-	0.03	0.0205	0.004	0.004	0.018	0.004	0.004	0.004	0.022	0.021	0.004	0.017
Total Vanadium	mg/L	-	-	-	-	-	-	<0.0005	<0.0005	<0.0005	0.0005	<0.0005	<0.0005	0.0005	0.0005	0.0005	0.0031	<0.0005	<0.0005
Total Zinc	mg/L	0.024	0.019	0.049	0.051	0.001	0.003	0.007	0.0155	<0.001	<0.001	0.001	0.003	0.002	0.002	0.008	0.009	0.003	0.032
Total Zirconium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Metals																			
Dissolved Aluminum	mg/L	-	-	-	-	-	-	-	-	<0.006	<0.006	0.013	0.024	<0.006	<0.006	<0.006	<0.006	0.014	0.005
Dissolved Antimony	mg/L	-	-	-	-	-	-	<0.0001	0.0001	<0.0001	<0.0001	0.0003	<0.0001	<0.0001	<0.0001	0.0014	0.0015	<0.0001	<0.0001
Dissolved Arsenic	mg/L	<0.005	<0.005	0.0695	0.1075	0.0538	0.0868	0.0452	0.0802	0.1929	0.1976	0.0376	0.2446	0.2336	0.2349	0.0085	0.0039	0.2231	0.0576
Dissolved Barium	mg/L	0.16	0.167	0.6186	0.6034	0.0914	0.0875	0.0539	0.0497	0.0301	0.0307	0.0357	0.0263	0.0282	0.0298	0.0366	0.036	0.0266	0.0266
Dissolved Beryllium	mg/L	-	-	-	-	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Bismuth	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Boron	mg/L	-	-	-	-	-	-	0.08	0.055	0.03	0.04	0.03	0.05	0.01	0.01	<0.01	<0.01	0.06	<0.01
Dissolved Cadmium	mg/L	<0.005	<0.005	0.00003	0.00009	0.00003	0.00003	0.00005	0.00005	0.00004	0.00003	<0.00002	0.00005	<0.00002	<0.00002	<0.00002	<0.00002	0.00002	0.00005
Dissolved Calcium	mg/L	42.8	43.4	-	-	-	-	-	-	234	249	159	256	227	229	126	130	231	210
Dissolved Chromium	mg/L	-	-	-	-	-	-	0.0022	<0.00075	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Dissolved Cobalt	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Copper	mg/L	0.008	0.01	0.0161	0.0136	0.0037	0.0017	0.0032	0.00245	0.0023	0.0028	0.0015	0.0013	0.0026	0.003	0.0012	0.0011	0.0039	<0.0005
Dissolved Iron	mg/L	<0.05	<0.05	0.05	1.1	0.01	0.01	0.02	0.025	6.1	6.15	3.92	6.7	6.32	6.42	1.79	1.81	6.63	<0.01
Dissolved Lead	mg/L	<0.005	<0.005	0.0009	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Dissolved Lithium	mg/L	-	-	-	-	-	-	0.011	0.014	0.019	0.018	0.014	0.012	0.01	0.009	0.007	0.007	0.013	0.012
Dissolved Magnesium	mg/L	7.7	8	-	-	-	-	-	-	76.9	84	65.6	90.9	79.2	77.6	55.2	56.2	87.5	81.9
Dissolved Manganese	mg/L	0.145	0.148	1.744	-	1.867	1.581	1.74	1.958	2.495	2.545	1.617	2.674	2.287	2.384	1.375	1.436	2.522	2.135
Dissolved Mercury	mg/L	0.0011	0.001	<0.00001	0.0003	<0.00001	0.00001	0.0003	0.000065	<0.00001	<0.00001	0.00022	<0.00001	<0.00001	0.00002	0.00031	0.00029	<0.00001	<0.00001
Dissolved Molybdenum	mg/L	<0.005	<0.005	0.0144	0.0152	0.0171	0.0156	0.0241	0.01645	0.0222	0.0223	0.0205	0.0236	0.0192	0.0202	0.0228	0.0236	0.0219	0.0239
Dissolved Nickel	mg/L	<0.005	<0.005	0.0386	0.037	0.0182	0.0151	0.0128	0.0133	0.0089	0.0098	0.0099	0.0093	0.0073	0.0073	0.011	0.0111	0.0109	0.0242
Dissolved Phosphorus	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Potassium	mg/L	1.3	1.4	-	-	-	-	-	-	20.1	20.6	10.8	18.2	17.4	17.5	8.05	7.77	17.5	16
Dissolved Selenium	mg/L	<0.005	<0.005	0.059	0.055	0.006	0.008	0.006	0.004	0.004	0.004	0.002	0.003	0.004	0.005	0.004	0.004	0.008	0.001
Dissolved Silicon	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Silver	mg/L	<0.005	<0.005	<0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Sodium	mg/L	7.6	7.9	-	-	-	-	-	-	322	341	199	324	296	306	140	147	331	261
Dissolved Strontium	mg/L	-	-	-	-	-	-	0.873	0.81	1.76	1.69	1.23	1.29	1.02	1.02	0.808	0.719	1.19	1.13
Dissolved Tellurium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Thallium	mg/L	<0.01	<0.01	<0.005	<0.005	<0.005	<0.005	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0002	<0.0002
Dissolved Thorium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Tin	mg/L	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Titanium	mg/L	-	-	-	-	-	-	0.2	0.27	0.23	0.24	0.15	0.24	0.29	0.29	0.14	0.14	0.33	<0.01
Dissolved Uranium	mg/L	-	-	-	-	-	-	0.03	0.019	0.004	0.004	0.019	0.004	0.004	0.004	0.021	0.021	0.004	0.017
Dissolved Vanadium	mg/L	-	-	-	-	-	-	<0.0005	<0.0005	0.0008	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	0.0008	0.0008	<0.0005	<0.0005
Dissolved Zinc	mg/L	<0.005	0.013	0.033	0.054	0.002	0.004	<0.001	0.0035	0.003	0.003	0.004	<0.001	<0.001	0.001	0.005	0.004	0.004	0.012
Dissolved Zirconium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anions																			
Bromide	mg/L	-	-	-	-	-	-	-	-	1.83	1.69	1.14	2.01	1.44	1.5	1.01	0.99	2	1.75
Chloride	mg/L	20.9	20.7	1877	1677	272	361	229	230.5	294	292	200	294	290	300	159	156	354	269
Fluoride	mg/L	0.13	0.18	0.4	0.41	0.33	0.27	0.3	0.29	0.26	0.26	0.39	0.34	0.34	0.35	0.39	0.39	0.34	0.29
Nutrients																			
Ammonium (N-NH4)	mg N/L	-	-	-	-	-	-	-	-	7.25	6.94	3.99	8.61	4.26	4.2	3.08	3.02	7.11	-
Total Nitrogen	mg N/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35.2
Ammonia-Nitrogen (NH3-NH4)	mg N/L	-	-	-	-	-	-	-	-	7.3	7	4	8.8	4.32	4.28	3.14	3.08	7.21	6.62
Ammonia (NH3) (non-ionized)	mg N/L	-	-	0.02	-	-	0.02	0.01	0.065	0.05	0.06	0.01	0.18	0.06	0.08	0.06	0.06	0.1	0.1
Nitrate and Nitrite	mg N/L	1.72	1.73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg N/L	-	-	-	-	-	-	-	-	<0.01	0.02	<0.01	<0.01	0.07	0.05	0.05	0.07	0.02	<0.01
Nitrite	mg N/L	0.02	0.03	<0.01	-	<0.01	<0.01	0.02	0.02	0.01	0.02	<0.01	<0.01	0.02	0.03	0.01	0.01	0.01	0.01
Orthophosphate	mg P/L	-	-	-	-	-	-	0.07	0.05	0.05	0.05	0.04	0.06	0.01	0.01	0.01	0.01	0.05	<0.01
Total Kjeldahl Nitrogen	mg N/L	-	-	-	-	-	-	19.4	25.15	24	25	14	32.7	50.6	52.1	18.7	21.6	33.1	-
Total Phosphorus	mg P/L	-	-	-	-	-	-	0.11	0.095	0.07	0.07	0.04	0.05	0.07	0.06	0.05	0.04	0.027	0.03
Cyanide																			
Total Cyanide	mg/L	<0.005	-	0.191	0.101	0.117	0.093	0.027	0.0615	0.175	0.16	0.099	0.139	0.138	0.077	0.069	0.073	0.038	0.037
Free Cyanide	mg/L	<0.005	-	-	-	0.04	0.007	0.108	0.014	-	-	-	-	-	-	-	-	-	-
Weak Acid Dissociable Cyanide	mg/L	<0.005	-	-	-	-	-	0.027	0.0225	0.018	0.022	0.026	0.019	0.009	0.006	0.003	0.003	0.022	0.004

APPENDIX E
Historical Groundwater Monitoring Program Water Quality Data, 2003 to 2020
Agnico Eagle Mines Limited, Meadowbank Mine, Nunavut

		South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	South Cell / Central Dike	Portage Pit E	Portage Pit E	Portage Pit E	Portage Pit E	Portage Pit E
Station ID		MW-16-01	MW-16-01	ST-S-5 GW	ST-S-5	ST-S-5	ST-S-5 DUP	ST-S-5	ST-S-5	ST-S-5	ST-S-5	ST-21 South	ST-21 South	ST-21 South	ST-21-South	ST-21-South	ST-21-South	Pit E3-B2	Pit E3-B2	Pit E3-B6	Pit E3-B6	Pit E3-B7
Sampling Date		2019-10-10	2020-09-15	2017-11-04	2018-07-09	2018-07-19	2018-07-19	2018-09-09	2019-07-11	2019-10-10	2020-09-14	2017-11-03	2018-07-09	2018-09-10	2019-07-14	2019-10-12	2020-09-07	2015-12-13	2015-12-13	2015-12-17	2016-01-12	2016-07-03
Field Parameters	**Unit**																					
Temperature	degC	11.9	12.24	-	-	-	-	-	7.7	1.3	4.8	-	-	-	10.6	0.6	1.5	-	-	-	-	-
pH	-	7.37	7.73	-	-	-	-	-	7.86	7.8	7.79	-	-	-	8.26	8.2	7.81	7.66	7.66	7.71	8.14	7.71
Conductivity	µS/cm	2512	3098	-	-	-	-	-	3566	3783	3401	-	-	-	2647	1703	1366	307	307	300	1413	300
Oxygen Reduction Potential	mV	85.6	-208.6	-	-	-	-	-	46.6	-71.9	-	-	-	-	167.9	92.2	-	-	-	-	-	-
Turbidity	NTU	-	1.03	-	-	-	-	-	-	-	-	-	-	-	-	-	22.8	110.7	110.7	924	9.86	924
Salinity	PSU	1.27	1.63	-	-	-	-	-	1.82	1.96	-	-	-	-	1.38	0.84	-	-	-	-	-	-
Total Dissolved Solids	mg/l	1759	1548	-	-	-	-	-	2223	2457	-	-	-	-	1722	1111	-	-	-	-	-	-
Dissolved Oxygen	%	56.3	-	-	-	-	-	-	40.5	50.3	-	-	-	-	25.9	12.67	-	-	-	-	-	-
Dissolved Oxygen	mg/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.7	-	-	-	-	-
General																						
Total Alkalinity	mg CaCO3/L	118	162	121	111	122	122	109	67	71	133	127	111	117	71	79	105	102	102	105	90	74
Bicarbonate Alkalinity HCO3	mg CaCO3/L	118	198	121	111	122	122	109	67	71	-	127	111	117	71	79	-	102	102	105	90	74
Carbonate Alkalinity CO3	mg CaCO3/L	<5	<0.60	<2	<2	<2	<2	<2	<2	<5	-	<2	<2	<2	<2	<5	-	<2	<2	<2	<2	<2
Reactive silica	mg/L	14.6	7.8	6	7.32	7.7	6.8	7.76	5.72	11.1	-	5.1	5.29	5.45	4.19	6.97	-	6	6	10	6.9	7
Sulphate (SO4)	mg SO4/L	1197	1280	1368	1932	1731	1582	1976	1568	1489	1450	1772	1657	2121	983	639	439	9.5	9.5	13.3	15	89
Hardness (CaCO3)	mg CaCO3/L	1164	1060	871	1235	1026	995	904	767	951	1032	997	932	761	552	523	-	115	115	117	103	129
Dissolved Organic Carbon	mg/L	30.4	33.7	29.3	-	48.6	47.9	36.7	26	29.8	24.3	38.7	-	33.9	19	9.8	-	3.3	3.3	11.3	4.1	4.4
Total Organic Carbon	mg/L	29	32.8	29.3	44.4	48.6	48.6	38.1	28	29	-	38.7	40.4	34	19	5.4	-	51	51	10.1	3.6	4.4
Total Suspended Solids	mg/L	3	12.6	11	8	13	14	6	5	5	6	78	5	15	7	8	39	55	55	855	2	10
Total Dissolved Solids	mg/L	1514	2350	2112	2286	2664	2670	2282	1786	1984	-	2847	2151	2190	1356	936	-	55	55	185	260	271
Total Metals																						
Total Aluminium	mg/L	<0.005	0.0033	0.028	0.044	0.018	<0.006	<0.005	<0.005	0.028	0.008	0.157	0.151	0.112	0.013	0.055	0.52	-	-	-	-	-
Total Antimony	mg/L	0.0002	<0.00010	0.0002	<0.0001	0.0001	0.0002	<0.0001	0.001	<0.0001	-	0.0168	0.006	0.0019	0.0047	0.002	-	0.0012	0.0012	0.0014	0.0006	0.0007
Total Arsenic	mg/L	0.1441	0.263	0.0112	0.0342	0.0174	0.0285	0.032	0.0168	0.0623	0.0795	<0.0005	0.0172	0.0148	0.05	0.0135	0.0215	0.0673	0.0673	0.0044	<0.0005	0.0118
Total Barium	mg/L	0.0326	0.0263	0.0215	0.0258	0.0225	0.0237	0.0208	0.0247	0.0214	0.0224	0.0906	0.0612	0.0429	0.0361	0.0247	0.041	0.0137	0.0137	0.0087	0.0016	0.0154
Total Beryllium	mg/L	<0.0005	<0.00010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	0.0035	0.0035	0.0014	<0.0005	<0.0005
Total Bismuth	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Boron	mg/L	0.03	0.093	0.07	0.12	0.08	0.07	0.1	0.06	0.07	-	0.16	0.41	0.16	0.04	0.03	-	0.19	0.19	0.5	0.24	0.03
Total Cadmium	mg/L	0.00004	0.0000159	0.00065	0.00169	0.00105	0.00089	0.0008	<0.00002	0.00037	< 0.00002	0.00127	0.00224	0.00117	0.00007	0.00022	< 0.00002	0.00032	0.00032	0.00035	<0.00002	0.00007
Total Calcium	mg/L	282	272	271	385	326	311	275	247	294	319	347	322	262	194	165	178	23.7	23.7	27.4	23.8	29.1
Total Chromium	mg/L	0.0013	0.0002	<0.0006	0.0009	<0.0006	<0.0006	0.0007	0.0016	0.0014	0.0015	0.0007	0.0013	0.0011	0.0009	0.0011	0.0029	0.0571	0.0571	0.0355	<0.0006	0.002
Total Cobalt	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Copper	mg/L	0.0021	<0.00050	0.0045	0.0055	0.008	0.0072	0.005	0.0946	0.0036	< 0.0005	0.6471	1.26	0.1549	0.4018	0.0462	0.0727	0.017	0.017	0.0101	<0.0005	<0.0005
Total Iron	mg/L	1.91	6.44	1.72	1.02	1.02	1.23	1.26	0.02	1.95	2.4	0.03	0.43	0.42	<0.01	0.29	1.4	42.4	42.4	41.7	0.25	0.61
Total Lead	mg/L	<0.0003	0.000201	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.0003	< 0.00017	0.0008	<0.0003	<0.0003	<0.0003	0.0028	0.0041	0.0222	0.0222	0.0137	<0.0003	<0.0003
Total Lithium	mg/L	0.015	0.0129	0.007	0.006	<0.005	0.006	0.006	0.006	0.008	-	<0.005	<0.005	<0.005	<0.005	<0.005	-	0.019	0.019	0.02	<0.005	<0.005
Total Magnesium	mg/L	112	96.1	47.4	66.5	51.6	53.2	48.6	37	52.8	57.96	31.9	31.3	26	16.3	26.6	37.91	13.7	13.7	11.9	10.8	13.9
Total Manganese	mg/L	2.834	2.64	1.595	2.586	1.821	1.84	2.436	1.092	2.046	2.0480	0.1896	0.4469	0.5925	0.2035	0.3684	1.011	0.2411	0.2411	0.1908	0.018	0.0945
Total Mercury	mg/L	<0.00001	0.00005	0.00009	<0.00001	0.00006	<0.00001	<0.00001	<0.00001	<0.00001	< 0.00001	0.00046	<0.00001	<0.00001	<0.00001	<0.00001	< 0.00001	0.00019	0.00019	0.00011	0.00025	<0.0001
Total Molybdenum	mg/L	0.0329	0.0419	0.1995	0.3074	0.2753	0.3069	0.2676	0.213	0.2361	0.1778	0.4851	0.449	0.3144	0.2271	0.1112	0.0594	0.0537	0.0537	0.0654	0.0095	0.0254
Total Nickel	mg/L	0.0288	0.00196	0.0224	0.0297	0.0201	0.0178	0.0259	0.064	0.0233	0.0076	0.1616	0.1652	0.0617	0.1197	0.0429	0.0401	0.0484	0.0484	0.0397	0.0009	0.0345
Total Potassium	mg/L	21.1	20.7	71	89.9	68.7	66.4	79.5	66.2	78	82.50	94.3	113	78.3	62.1	44.7	37.6	3.16	3.16	1.42	1.32	6.24
Total Selenium	mg/L	0.0005	0.000164	0.007	0.013	0.011	0.009	0.0116	0.0028	0.0022	< 0.001	0.034	0.076	0.0572	0.006	0.0027	< 0.001	0.004	0.004	0.002	0.006	0.001
Total Silicon	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Silver	mg/L	<0.0001	<0.000010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	< 0.0001	0.0021	0.0005	<0.0001	0.0009	<0.0001	< 0.0001	-	-	-	-	-
Total Sodium	mg/L	210	321	342	591	451	440	556	375	335	512	429	623	593	247	183	132	19.4	19.4	20.9	27.9	16.7
Total Strontium	mg/L	1.5	1.29	1.17	1.41	1.29	1.34	1.26	1.08	1.29	-	1.98	1.25	1.12	0.799	0.772	-	0.203	0.203	0.204	0.219	0.239
Total Tellurium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Thallium	mg/L	<0.0002	<0.000010	<0.0008	<0.0008	<0.0008	<0.0008	<0.0002	<0.0002	<0.0002	< 0.0002	<0.0008	<0.0008	<0.0002	<0.0002	<0.0002	< 0.0002	<0.005	<0.005	<0.005	<0.005	<0.0008
Total Thorium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Tin	mg/L	<0.001	<0.00010	<0.001	<0.001	<0.001	<0.001	0.006	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001
Total Titanium	mg/L	<0.01	<0.00030	0.26	0.34	0.43	0.4	0.17	<0.01	<0.01	-	0.5	0.34	0.2	<0.01	<0.01	-	0.07	0.07	0.04	0.01	0.02
Total Uranium	mg/L	0.02	0.0055	0.028	0.029	0.026	0.027	0.022	0.016	0.018	-	0.027	0.014	0.013	0.008	0.008	-	0.018	0.018	0.007	<0.001	0.003
Total Vanadium	mg/L	0.0056	<0.00050	0.0014	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0048	-	<0.0005	<0.0005	<0.0005	<0.0005	0.0054	-	0.012	0.012	0.013	<0.0005	<0.0005
Total Zinc	mg/L	0.003	<0.0030	<0.001	0.001	0.003	<0.001	<0.001	<0.001	0.006	0.004	0.004	0.006	<0.001	0.007	0.009	0.008	0.016	0.016	0.015	<0.001	<0.001
Total Zirconium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Metals																						
Dissolved Aluminum	mg/L	<0.0005	0.0015	<0.006	0.025	<0.006	<0.006	<0.005	0.007	0.0141	-	0.122	0.048	0.009	0.011	<0.0005	-	-	-	-	-	-
Dissolved Antimony	mg/L	0.0003	<0.00010	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0016	0.0002	-	0.0193	0.0066	0.0018	0.0043	0.0021	-	0.0015	0.0015	0.0016	0.0007	0.0007
Dissolved Arsenic	mg/L	0.0803	0.276	<0.0005	0.0013	0.0083	0.0131	0.0159	0.0144	0.0169	0.0110	<0.0005	0.0118	0.0142	0.0479	0.0103	0.0102	0.0089	0.0089	<0.0005	<0.0005	0.0082
Dissolved Barium	mg/L	0.0319	0.0264	0.0216	0.0226	0.0222	0.0195	0.0213	0.0251	0.0221	0.0214	0.0874	0.0583	0.0429	0.0351	0.0262	0.0425	<0.0005	<0.0005	<0.0005	0.0018	0.0161
Dissolved Beryllium	mg/L	<0.0005	<0.00010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	-	-	-
Dissolved Bismuth	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Boron	mg/L	0.04	0.081	0.08	0.1	0.08	0.03	0.12	0.07	0.15	-	0.16	0.39	0.17	0.05	0.01	-	0.21	0.21	0.2	0.23	0.03
Dissolved Cadmium	mg/L	0.00005	0.0000077	0.00066	0.00143	0.00133	0.00075	0.00066	0.00009	0.00039	< 0.00002	0.00137	0.00231	0.00113	0.00004	0.0002	< 0.00002	0.00007	0.00007	0.00011	<0.00002	<0.00002
Dissolved Calcium	mg/L	281	269	288	363	306	294	301	249	350	-	347	304	264	196	163	-	-	-	-	-	-
Dissolved Chromium	mg/L	<0.0006	<0.00010	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	< 0.0006	<0.0006	<0.0006	0.0008	<0.0006	<0.0006	< 0.0006	<0.0006	<0.0006	0.0036	<0.0006	<0.0006
Dissolved Cobalt	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Copper	mg/L	0.0017	<0.00020	0.0037	0.0031	0.0073	0.0063	0.005	0.0794	0.003	< 0.0005	0.5703	1.059	0.1571	0.3937	0.0281	0.0055	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Iron	mg/L	0.08	6.26	0.05	0.04	0.15	0.2	0.18	<0.01	0.13	0.02	<0.01	<0.01	0.02	<0.01	0.07	< 0.01	<0.01	<0.01	<0.01	0.11	0.04
Dissolved Lead	mg/L	<0.0003	<0.000050	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	< 0.00017	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	< 0.00017	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Dissolved Lithium	mg/L	0.015	0.0111	0.008	0.006	0.005	0.006	0.006	0.006	0.01	-	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	0.005	<0.005
Dissolved Magnesium	mg/L	114	94.8	50	60.4	51.4	48.3	52.8	37.2	61.8	-	31.6	28.9	26.2	16.7	26.6	-	-	-	-	-	-
Dissolved Manganese	mg/L	2.943	2.6	1.669	2.401	1.773	1.784	2.648	1.141	2.392	1.8530	0.1831	0.4166	0.608	0.2079	0.3607	0.9095	0.0126	0.0126	0.014	0.0174	0.0945
Dissolved Mercury	mg/L	<0.00001	<0.000050	0.00011	<0.00001	0.0001	<0.00001	<0.00001	0.00009	<0.00001	< 0.00001	0.00052	<0.00001	<0.00001	0.0001	<0.00001	< 0.00001	0.00021	0.00021	0.00051	0.00023	<0.0001
Dissolved Molybdenum	mg/L	0.0336	0.0407	0.201	0.2721	0.3174	0.2731	0.2833	0.2244	0.2871	0.1720	0.4996	0.406	0.3291	0.2305	0.1131	0.0556	0.0386	0.0386	0.0354	0.0095	0.026
Dissolved Nickel	mg/L	0.0292	0.00165	0.0222	0.0279	0.0201	0.0168	0.0259	0.0656	0.0262	0.0060	0.1538	0.1569	0.0628	0.1225	0.0418	-	0.0122	0.0122	0.0067	0.0007	0.0311
Dissolved Phosphorus	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Potassium	mg/L	21.6	20.4	73.3	84.8	65.5	63.6	78.5	68.6	91.5	-	97.3	109	84.8	63.9	45.4	-	-	-	-	-	-
Dissolved Selenium	mg/L	0.0007	0.000158	0.008	0.019	0.014	0.01	0.0151	0.0014	0.0055	<0.001	0.038	0.075	0.0615	0.0045	0.0026	< 0.001	0.003	0.003	<0.001	<0.001	<0.001
Dissolved Silicon	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Silver	mg/L	<0.0001	<0.000010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0018	0.0003	<0.0001	0.0007	<0.0001	< 0.0001	-	-	-	-	-
Dissolved Sodium	mg/L	207	336	377	553	428	410	596	391	354	-	436	603	611	251	190	-	-	-	-	-	-
Dissolved Strontium	mg/L	1.54	1.26	1.65	1.55	1.31	1.3	1.41	1.11	1.52	-	1.71	1.27	1.22	0.831	0.779	-	0.169	0.169	0.157	0.22	0.188
Dissolved Tellurium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Thallium	mg/L	<0.0002	<0.000010	<0.0008	<0.0008	<0.0008	<0.0008	<0.0002	<0.0002	<0.0002	< 0.0002	<0.0008	<0.0008	<0.0002	<0.0002	<0.0002	< 0.0002	<0.005	<0.005	<0.005	<0.005	<0.0008
Dissolved Thorium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Tin	mg/L	<0.001	<0.00010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Titanium	mg/L	<0.01	<0.00030	0.28	0.35	0.37	0.37	0.15	<0.01	<0.01	-	0.54	0.3	0.18	<0.01	<0.01	-	0.01	0.01	0.01	0.01	0.02
Dissolved Uranium	mg/L	0.02	0.00542	0.028	0.025	0.026	0.025	0.024	0.016	0.021	-	0.028	0.012	0.013	0.008	0.008	-	0.011	0.011	0.007	<0.001	0.003
Dissolved Vanadium	mg/L	0.0015	<0.00050	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0012	-	<0.0005	<0.0005	<0.0005	<0.0005	0.0008	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Zinc	mg/L	0.003	<0.0010	0.003	<0.001	<0.001	0.001	0.001	0.002	0.002	< 0.001	<0.001	0.003	<0.001	0.004	0.006	0.005	<0.001	<0.001	<0.001	<0.001	<0.001
Dissolved Zirconium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anions																						
Bromide	mg/L	2.5	2.2	1.96	3.03	2.8	2.98	2.85	2.01	2.91	-	2.98	2.46	2.12	1.28	0.86	-	-	-	-	-	-
Chloride	mg/L	301	177	214	394	83.2	82.1	414	300	330	268.5	337	335	329	191	65.4	35.9	19.7	19.7	19.1	53.5	8.4
Fluoride	mg/L	0.31	<0.40	0.31	0.52	0.46	0.48	0.57	0.42	0.5	0.54	0.31	0.52	0.5	0.37	0.34	0.32	-	-	-	-	-
Nutrients																						
Ammonium (N-NH4)	mg N/L	-	-	24.8	38.1	29.1	28.9	28.9	-	-	26.46	43.6	44.9	32.7	-	-	-	-	-	-	-	-
Total Nitrogen	mg N/L	30.1	-	-	-	-	-	-	57.9	53.3	-	-	-	-	41.2	15.9	-	-	-	-	-	-
Ammonia-Nitrogen (NH3-NH4)	mg N/L	5.15	0.28	25	38.8	29.6	29.4	29.5	26.85	22.4	-	45	46.9	33.5	27.95	12.5	5.83	-	-	-	-	-
Ammonia (NH3) (non-ionized)	mg N/L	-	-	0.15	0.74	0.45	0.44	0.55	0.45	-	0.44	1.4	2	0.78	1.02	-	-	<0.01	<0.01	<0.01	<0.01	0.06
Nitrate and Nitrite	mg N/L	-	-	-	-	-	-	-	-	-	0.41	-	-	-	-	-	-	-	-	-	-	-
Nitrate	mg N/L	<0.01	<0.40	4.88	0.08	0.13	0.13	0.1	2.14	0.35	0.35	2.81	5.08	4.08	4.88	0.56	8.25	-	-	-	-	-
Nitrite	mg N/L	<0.01	<0.20	0.24	0.01	0.02	0.02	0.04	-	0.07	0.06	0.16	0.12	0.09	0.16	0.05	0.44	<0.01	<0.01	<0.01	0.01	0.3
Orthophosphate	mg P/L	0.02	<0.0010	0.02	<0.01	0.02	0.02	0.02	<0.01	0.03	-	0.03	0.05	0.01	0.01	0.05	-	<0.01	<0.01	<0.01	0.01	0.01
Total Kjeldahl Nitrogen	mg N/L	-	25.5	32	67.9	54.7	141	56.9	-	-	-	91.5	73.9	59.4	-	-	-	<0.05	<0.05	8.55	0.13	3.78
Total Phosphorus	mg P/L	0.02	0.0881	0.04	0.2	0.05	0.03	0.049	0.05	0.07	-	0.08	0.04	0.08	0.05	0.04	-	1.05	1.05	0.97	<0.01	0.14
Cyanide																						
Total Cyanide	mg/L	0.035	0.0285	0.043	0.124	0.246	0.316	0.154	0.075	0.037	0.050	0.552	0.173	0.028	0.048	0.02	0.017	<0.005	<0.005	<0.005	0.005	0.031
Free Cyanide	mg/L	-	0.008	-	-	-	-	-	-	-	0.006	-	-	-	-	-	0.003	<0.005	<0.005	<0.005	<0.005	-
Weak Acid Dissociable Cyanide	mg/L	0.011	0.0104	0.015	0.126	0.104	0.095	0.084	0.037	0.004	0.006	0.399	0.042	0.019	0.018	0.001	0.002	-	-	-	-	-

APPENDIX E
Historical Groundwater Monitoring Program Water Quality Data, 2003 to 2020
Agnico Eagle Mines Limited, Meadowbank Mine, Nunavut

		Portage Pit E	Portage Pit E	Portage Pit E	Portage Pit E	Portage Pit E	Portage Pit E	Portage Pit E	Portage Pit E	Portage Pit E	Portage Pit E	Portage Pit E	Portage Pit E	Portage Pit E	Portage Pit E	Portage Pit E	Portage Pit E	Portage Pit E	Portage Pit E	Portage Pit E	Portage Pit A	Portage Pit A	Portage Pit A	Portage Pit A	Portage Pit A	Portage Pit A	Stormwater Management Pond		
Station ID		Pit E3-B7	Pit E4	Pit E seep	Pit E seep 40m	Pit E-SEEP-f	Pit-E-Seep-North	Pit-E-Seep-North	Pit-E seep-27m	Pit-E-Seep-North	Pit-E-Seep-SW	MW-IPD-09	MW-IPD-09 Dup	MW-IPD-09	MW-IPD-09	MW-IPD-09	MW-IPD-09	MW-IPD-09	MW-IPD-09	MW-IPD-09	MW-03-03	MW-03-03	MW-03-03	Pit A Seep E	Pit A-Seep-North	Pit-A-Seep-East	SWMP	SWMP	SWMP
Sampling Date		2016-03-01	2016-08-18	2017-11-05	2017-11-05	2018-07-18	2018-07-18	2019-07-15	2020-09-17	2017-09-05	2017-09-05	2018-07-08	2018-07-08	2019-07-12	2019-07-12	2018-09-10	2019-10-09	2019-10-09	2020-09-10	2020-09-10	2004-08-09	2004-08-09	2003-09-25	2017-11-05	2018-07-18	2019-07-16	2018-07-09	2019-07-15	2020-09-17
Field Parameters	**Unit**																												
Temperature	degC	-	-	-	-	-	5	14	8.13	5	8.6	-	-	-	-	-	-	-	17.35	-	10.3	-	2.2	-	-	18.6	-	-	10.22
pH	-	-	7.31	8.22	-	-	8.05	8.23	7.47	8.15	8.3	-	-	-	-	-	-	-	8.31	-	7.77	-	8.63	-	-	7.64	-	-	10.42
Conductivity	µS/cm	-	353	255	-	-	1066	1350	1371	1426	438.1	-	-	-	-	-	160	-	204	-	627	-	350	-	-	972	-	-	1377
Oxygen Reduction Potential	mV	-	-	-	-	-	-2.2	114.1	70.1	-68.3	-82.9	-	-	-	-	-	-222.6	-	-263.4	-	3	-	79.9	-	-	80.8	-	-	-1.6
Turbidity	NTU	-	8.16	9.77	-	-	7.31	-	1.32	2.4	1.88	-	-	-	-	-	-	-	2.04	-	-	-	-	-	-	-	-	-	71.5
Salinity	PSU	-	-	-	-	-	-	0.68	0.69	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-	-	-	0.48	-	-	0.7
Total Dissolved Solids	mg/l	-	-	-	-	-	-	877.57	685	-	-	-	-	-	-	-	125.45	-	101	-	-	-	-	-	-	630.5	-	-	689
Dissolved Oxygen	%	-	-	-	-	-	-	9.47	>100	-	-	-	-	-	-	-	35.1	-	21	-	-	-	-	-	-	2.57	-	-	>100
Dissolved Oxygen	mg/l	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.1	-	-	-	-	-	-	-	-	-	-
General																													
Total Alkalinity	mg CaCO3/L	91	78	152	94	90	90	73	96.4	152	94	66	66	30	50	64	54	49	70.1	71.6	133	-	93.8	86	83	24	129	74	87
Bicarbonate Alkalinity HCO3	mg CaCO3/L	91	78	152	94	90	90	73	118	152	94	66	66	30	50	64	54	49	85.5	87.4	162	-	114	86	83	24	<2	6	72
Carbonate Alkalinity CO3	mg CaCO3/L	<2	<2	<2	<2	<2	<2	<2	<0.60	<2	<2	<2	<2	<2	<2	<2	<2	49	<0.60	<0.60	<0.5	-	<0.5	<2	<2	<2	128	67	16.8
Reactive silica	mg/L	5.4	7.7	8.5	7.6	10	10	<0.02	6.8	8.5	7.6	11.23	11.01	10.9	10.9	10.4	6.3	6.7	9.5	9.4	-	-	-	4.6	5	5.5	13.52	7.56	3.5
Sulphate (SO4)	mg SO4/L	14.7	45.1	702	132	682	682	<0.6	465	702	132	38.9	39.2	33.1	33.5	25	29	28.8	34.8	36.4	6.2	-	26.6	226	615	447	30.2	37.1	113
Hardness (CaCO3)	mg CaCO3/L	114	96	1214	324	775	775	586	619	1214	324	49	71	52	55	46	68	72	65.4	73.6	213	-	140	557	692	464	134	113	218
Dissolved Organic Carbon	mg/L	0.3	0.3	4.8	4.5	4.6	4.6	7.9	1.79	4.8	4.5	-	-	0.96	0.99	0.8	1	2.4	1.11	1.39	-	-	-	3.1	5.2	0.81	-	26	36.5
Total Organic Carbon	mg/L	2.2	1.9	4.8	4.5	4.6	4.6	8.4	1.61	4.8	4.5	1.2	1.6	0.91	1.1	1.7	1.1	1	0.84	1.01	-	-	-	3.1	5.2	0.74	66.1	22	50.9
Total Suspended Solids	mg/L	<1	19	<1	<1	16	16	56	4.7	<1	<1	53	43	32	31	2	14	9	<1.0	<1.0	1	-	-	<1	4	2	28	37	76.7
Total Dissolved Solids	mg/L	-	180	1464	404	393	393	786	988	1464	404	131	132	131	120	108	114	115	143	122	239	-	254	602	1222	546	293	271	541
Total Metals																													
Total Aluminium	mg/L	-	-	0.041	0.245	0.081	-	0.013	0.0502	-	-	0.421	0.702	<0.005	<0.005	0.039	0.25	0.26	0.008	0.0078	-	-	-	0.095	0.084	0.021	0.229	0.038	0.173
Total Antimony	mg/L	<0.0001	0.0002	0.0023	0.0026	0.0038	0.0038	0.0003	0.00614	0.0023	0.0026	0.0004	0.0004	0.0001	<0.0001	<0.0001	<0.001	<0.001	<0.00010	0.00012	0.0002	-	0.002	0.0026	0.0045	0.0011	0.0002	<0.0001	0.00046
Total Arsenic	mg/L	<0.0005	0.0175	0.0296	<0.0005	0.0008	0.0008	0.0047	0.181	0.0296	<0.0005	0.0109	0.0174	0.0063	0.0063	0.0128	0.019	0.02	0.023	0.0233	0.015	-	0.004	<0.0005	<0.0005	<0.0005	0.004	0.0064	0.0161
Total Barium	mg/L	<0.0005	0.0063	0.0285	0.1065	0.0207	0.0207	0.0401	0.0221	0.0285	0.1065	<0.0005	<0.0005	0.0049	0.0057	0.0031	0.0031	0.0029	0.00218	0.00225	0.05	-	0.02	0.0215	0.0677	0.0108	0.0195	0.004	0.0336
Total Beryllium	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.002	<0.00010	<0.00010	<0.0002	-	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00010
Total Bismuth	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	<0.001	-	-	-	-	-	-
Total Boron	mg/L	0.27	0.09	0.23	<0.01	0.22	0.22	0.08	0.144	0.23	<0.01	0.02	0.03	0.02	0.01	0.03	0.12	0.12	0.087	0.089	0.19	-	0.09	<0.01	0.04	<0.01	0.03	<0.01	0.141
Total Cadmium	mg/L	0.00006	0.00002	0.00035	<0.00002	0.00029	0.00029	0.00003	0.0000961	0.00035	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.0002	<0.0002	<0.0000050	0.0000076	0.00006	-	<0.0002	0.00037	0.00135	<0.00002	<0.00002	<0.00002	0.0000237
Total Calcium	mg/L	24.8	21	257	76.8	166	166	156	153	257	76.8	10.8	16.7	13.3	13.7	10.2	15	16	16.5	17	47.7	-	28	128	152	112	37.2	30.4	60.9
Total Chromium	mg/L	0.0013	0.0015	<0.0006	0.0016	<0.0006	-	0.0007	0.00085	-	-	0.0014	0.0026	<0.0006	<0.0006	<0.0006	<0.005	0.0056	0.00019	0.0002	0.001	-	<0.001	0.0012	<0.0006	0.0009	0.0019	0.0008	0.00152
Total Cobalt	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0004	-	<0.001	-	-	-	-	-	-
Total Copper	mg/L	<0.0005	0.0006	0.0015	<0.0005	0.0012	0.0012	0.0057	0.00056	0.0015	<0.0005	0.0011	0.0016	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.00050	<0.00050	0.0014	-	<0.001	<0.0005	0.0008	0.0008	0.0034	0.0029	0.00287
Total Iron	mg/L	0.11	0.32	0.24	0.37	0.39	0.39	0.02	0.108	0.24	0.37	0.72	0.91	<0.01	<0.01	0.16	0.86	0.9	0.182	0.181	0.46	-	<0.05	0.27	0.18	<0.01	0.88	0.1	0.976
Total Lead	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.00009	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0005	<0.0005	<0.000050	0.000117	0.0006	-	0.001	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.000605
Total Lithium	mg/L	<0.005	0.031	0.008	0.005	0.005	0.005	0.015	0.0092	0.008	0.005	0.007	<0.005	<0.005	<0.005	<0.005	<0.01	<0.01	0.0024	0.0027	0.0092	-	0.007	<0.005	<0.005	0.006	0.008	0.007	0.0157
Total Magnesium	mg/L	-	10.7	139	32.3	87.7	87.7	47.9	68.9	139	32.3	5.41	7.35	4.74	5.24	5.06	7.5	8	7.3	7.49	23.5	-	18	57.8	76.1	45	10.2	9.11	23.5
Total Manganese	mg/L	0.0175	0.0681	0.2891	0.2214	0.091	0.091	0.1658	0.145	0.2891	0.2214	0.0654	0.0969	0.0721	0.084	0.0346	0.052	0.054	0.0465	0.0475	0.131	-	0.11	0.0253	0.0925	0.1601	0.4095	0.09	0.676
Total Mercury	mg/L	0.00018	0.00018	<0.00001	0.00002	<0.00001	<0.00001	<0.00001	<0.0000050	<0.00001	0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.0001	<0.0001	<0.0000050	<0.0000050	<0.00002	-	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.0000050
Total Molybdenum	mg/L	0.0097	0.0119	0.1158	0.0163	0.078	0.078	0.0245	0.0255	0.1158	0.0163	0.0105	0.0126	0.0087	0.0095	0.0091	0.013	0.014	0.0119	0.0125	0.093	-	0.056	0.1336	0.3287	0.0782	0.0036	0.0057	0.00665
Total Nickel	mg/L	0.0017	0.0269	0.1993	0.0337	0.0643	0.0643	0.0336	0.122	0.1993	0.0337	0.0141	0.018	0.0009	0.0008	0.0007	0.0024	0.0025	<0.00050	<0.00050	0.0024	-	0.003	0.0113	0.008	0.0379	0.0105	0.0074	0.018
Total Potassium	mg/L	0.77	2.17	56.6	11.8	26.5	26.5	23.2	24.9	56.6	11.8	1.2	1.77	0.97	1.13	0.8	1.1	1.2	0.933	0.966	2.65	-	3.51	14.7	12.1	11.6	14.8	11.8	23.7
Total Selenium	mg/L	0.002	<0.001	0.001	<0.001	0.013	0.013	<0.0005	0.00112	0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.0005	<0.003	<0.003	<0.00050	0.000054	<0.0002	-	<0.001	<0.001	0.006	0.0033	0.003	<0.0005	0.000195
Total Silicon	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.96	-	3.78	-	-	-	-	-	-
Total Silver	mg/L	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.000010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.001	<0.001	<0.000010	<0.000010	0.0001	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.000011
Total Sodium	mg/L	28.6	17	110	17.4	58.3	58.3	20.3	42.7	110	17.4	18.2	27.8	13.4	14.9	14.4	20	21	18	18.5	33.6	-	17.6	27.7	37.2	10.9	30.9	29	45.9
Total Strontium	mg/L	0.239	0.144	1.49	0.334	1.56	1.56	1.29	1.03	1.49	0.334	0.131	0.126	0.113	0.124	0.101	0.13	0.13	0.136	0.14	0.581	-	0.26	0.424	0.816	0.521	0.294	0.244	0.594
Total Tellurium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	<0.001	-	-	-	-	-	-
Total Thallium	mg/L	<0.002	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0002	0.000059	<0.0008	<0.0008	<0.0008	<0.0008	<0.0002	<0.0002	<0.0002	<0.002	<0.002	<0.000010	<0.000010	<0.00002	-	<0.0001	<0.0008	<0.0008	<0.0002	<0.0008	<0.0002	0.000012
Total Thorium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0001	-	<0.0005	-	-	-	-	-	-
Total Tin	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.00010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.00010	<0.00010	<0.0002	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.00010
Total Titanium	mg/L	-	0.01	0.21	0.05	0.17	0.17	<0.01	0.00078	0.21	0.05	<0.01	0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.00030	<0.00030	0.0045	-	<0.001	0.1	0.16	<0.01	0.03	<0.01	0.00235
Total Uranium	mg/L	0.001	0.001	0.229	0.028	0.08	0.08	0.059	0.05	0.229	0.028	0.002	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	0.000223	0.000224	0.0088	-	0.012	0.084	0.156	0.01	0.002	0.003	0.00356
Total Vanadium	mg/L	<0.0005	0.0023	<0.0005	0.0022	0.0008	0.0008	0.0006	0.00069	<0.0005	0.0022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.002	<0.00050	<0.00050	0.0002	-	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.00113
Total Zinc	mg/L	-	0.12	0.001	0.004	<0.001	<0.001	0.012	<0.0030	0.001	0.004	0.002	0.006	<0.001	<0.001	<0.001	<0.007	<0.007	<0.0030	<0.0030	0.006	-	<0.005	<0.001	<0.001	0.008	0.005	0.001	0.0032
Total Zirconium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.002	-	<0.001	-	-	-	-	-	-
Dissolved Metals																													
Dissolved Aluminum	mg/L	-	-	<0.006	<0.006	<0.006	-	0.007	0.0032	-	-	<0.006	<0.006	<0.005	<0.005	0.005	<0.03	<0.03	0.002	0.0017	-	-	-	<0.006	<0.006	0.011	0.027	0.026	0.0039
Dissolved Antimony	mg/L	-	<0.0001	0.002	0.0025	0.0026	0.0026	0.0003	0.0062	0.002	0.0025	0.0009	0.0008	0.0001	<0.0001	<0.0001	<0.003	<0.003	<0.00010	<0.00010	<0.0002	-	0.002	0.0021	0.004	0.0005	0.0002	<0.0001	0.00048
Dissolved Arsenic	mg/L	-	0.0076	0.023	0.008	<0.0005	<0.0005	-	0.18	0.023	0.008	0.0109	0.0124	0.0063	0.0063	0.0126	0.014	0.014	0.0217	0.0221	0.013	-	0.004	<0.0005	<0.0005	<0.0005	<0.0005	0.0057	0.0106
Dissolved Barium	mg/L	-	0.0048	0.0254	0.0906	0.013	0.013	0.0401	0.0216	0.0254	0.0906	<0.0005	<0.0005	0.0049	0.0057	0.002	<0.02	<0.02	0.0024	0.00242	0.048	-	0.018	0.0193	0.0585	0.0115	0.007	0.0041	0.0265
Dissolved Beryllium	mg/L	-	-	<0.0005	<0.0005	<0.0005	-	<0.0005	<0.00010	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.002	<0.00010	<0.00010	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00010
Dissolved Bismuth	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	<0.001	-	-	-	-	-	-
Dissolved Boron	mg/L	-	0.09	0.26	<0.01	0.15	0.15	0.06	0.143	0.26	<0.01	0.01	0.01	0.02	0.01	0.04	0.1	0.12	0.083	0.092	0.17	-	0.08	0.01	0.02	<0.01	0.03	<0.01	0.135
Dissolved Cadmium	mg/L	-	<0.00002	0.0003	<0.00002	0.00022	0.00022	<0.00002	0.0000996	0.0003	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.001	<0.001	<0.0000050	<0.0000050	0.00004	-	<0.0002	0.00037	0.00119	0.00003	<0.00002	<0.00002	0.0000109
Dissolved Calcium	mg/L	-	-	217	59.9	118	118	154	153	217	59.9	9.51	12.6	13.3	13.7	9.78	15	16	15.8	16.4	47.1	-	26.3	96.7	127	96.2	31.7	29.7	58.3
Dissolved Chromium	mg/L	-	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.00010	<0.0006	<0.0011	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.005	-	<0.00010	<0.00010	0.0003	-	<0.001	<0.0006	0.0011	<0.0006	<0.0006	<0.0006	<0.00010
Dissolved Cobalt	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0003	-	<0.001	-	-	-	-	-	-
Dissolved Copper	mg/L	-	<0.0005	0.0013	0.0017	0.0011	0.0011	0.0045	0.00051	0.0013	0.0017	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.003	<0.003	<0.00020	<0.00020	0.0002	-	<0.001	0.0006	0.0009	0.0008	0.0021	0.0023	0.00959
Dissolved Iron	mg/L	-	<0.01	0.1	0.01	0.05	0.05	<0.01	<0.010	0.1	0.01	<0.01	<0.01	<0.01	<0.01	0.1	<0.1	<0.1	0.083	0.096	<0.01	-	<0.05	0.01	0.02	<0.01	0.14	0.05	0.04
Dissolved Lead	mg/L	-	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.000050	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.001	<0.001	<0.000050	<0.000050	<0.0002	-	<0.001	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.000117
Dissolved Lithium	mg/L	-	<0.005	0.009	0.005	<0.005	<0.005	0.014	0.0078	0.009	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.1	<0.1	0.0021	0.0025	0.0081	-	0.007	<0.005	<0.005	0.005	0.009	0.006	0.0139
Dissolved Magnesium	mg/L	-	-	110	25.1	62.9	62.9	45.6	57.5	110	25.1	4.4	5.38	4.74	5.24	4.88	7.1	8	6.32	7.91	22.4	-	17.1	41	59.7	37.4	8.6	8.73	17.5
Dissolved Manganese	mg/L	-	0.0594	0.2469	0.1595	0.0607	0.0607	0.1519	0.133	0.2469	0.1595	0.0625	0.0786	0.0721	0.084	0.034	0.046	0.048	0.0451	0.0488	0.13	-	0.1	0.0151	0.075	0.1365	0.0713	0.0503	0.0205
Dissolved Mercury	mg/L	-	0.00019	<0.00001	0.00009	0.00001	0.00001	<0.00001	<0.0000050	<0.00001	0.00009	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.0001	<0.0001	<0.0000050	<0.0000050	<0.02	-	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.0000050
Dissolved Molybdenum	mg/L	-	0.0117	0.1027	0.0149	0.0544	0.0544	0.0213	0.0234	0.1027	0.0149	0.0115	0.0118	0.0087	0.0095	0.0095	0.012	0.013	0.012	0.0123	0.09	-	0.052	0.1089	0.2837	0.0638	0.0034	0.0048	0.00611
Dissolved Nickel	mg/L	-	0.0259	0.1699	0.0332	0.0444	0.0444	0.0315	0.109	0.1699	0.0332	0.0124	0.0134	0.0009	0.0008	0.0006	<0.01	<0.01	<0.00050	<0.00050	0.0018	-	0.003	0.0087	0.0054	0.0303	0.0087	0.0079	0.0113
Dissolved Phosphorus	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.03	-	0.07	-	-	-	-	-	-
Dissolved Potassium	mg/L	-	-	49.5	11.1	19	19	22.3	23.7	49.5	11.1	1.12	1.46	0.97	1.13	0.62	1.1	1.2	0.964	1.08	2.64	-	3.33	11.8	10	9.68	13.7	11.8	22.7
Dissolved Selenium	mg/L	-	<0.001	0.002	0.001	0.008	0.008	<0.0005	0.00129	0.002	0.001	<0.001	<0.001	<0.0005	<0.0005	<0.0005	<0.001	<0.001	0.000072	0.000092	<0.0002	-	<0.001	0.002	0.004	0.0028	<0.001	<0.0005	0.000152
Dissolved Silicon	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.7	-	3.62	-	-	-	-	-	-
Dissolved Silver	mg/L	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.000010	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0003	<0.0003	<0.000010	<0.000010	<0.00005	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.000010
Dissolved Sodium	mg/L	-	-	90.1	13.6	41.4	41.4	19.5	36.6	90.1	13.6	17	21.1	13.4	14.9	14.4	20	21	16.8	20.4	32	-	16.5	20.2	27.1	9.16	29.3	28.9	39.3
Dissolved Strontium	mg/L	-	0.138	1.55	0.371	1.39	1.39	1.19	0.926	1.55	0.371	0.113	0.121	0.113	0.124	0.098	0.13	0.13	0.141	0.149	0.556	-	0.24	0.446	0.768	0.427	0.285	0.223	0.518
Dissolved Tellurium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	<0.001	-	-	-	-	-	-
Dissolved Thallium	mg/L	-	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0002	0.000053	<0.0008	<0.0008	<0.0008	<0.0008	<0.0002	<0.0002	<0.0002	<0.01	<0.01	<0.000010	<0.000010	<0.00002	-	<0.0001	<0.0008	<0.0008	<0.0002	<0.0008	<0.0002	<0.000010
Dissolved Thorium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0001	-	<0.0005	-	-	-	-	-	-
Dissolved Tin	mg/L	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.00010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.05	<0.05	<0.00010	<0.00010	<0.0002	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.00010
Dissolved Titanium	mg/L	-	0.01	0.17	0.04	0.12	0.12	<0.01	<0.00030	0.17	0.04	<0.01	0.01	<0.01	<0.01	0.01	<0.05	0.01	<0.00030	<0.00030	0.0003	-	<0.001	0.07	0.13	<0.01	0.02	<0.01	<0.00030
Dissolved Uranium	mg/L	-	0.001	0.196	0.024	0.058	0.058	0.056	0.0471	0.196	0.024	0.001	0.001	<0.001	<0.001	<0.001	-	-	0.000201	0.000205	0.0087	-	0.012	0.068	0.134	0.009	0.002	0.002	0.00253
Dissolved Vanadium	mg/L	-	<0.0005	<0.0005	0.0008	<0.0005	<0.0005	0.0005	<0.00050	<0.0005	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.01	0.02	<0.00050	<0.00050	<0.0002	-	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00050
Dissolved Zinc	mg/L	-	0.098	<0.001	0.002	<0.001	<0.001	0.008	0.001	<0.001	0.002	<0.001	0.001	<0.001	<0.001	<0.001	<0.005	<0.005	0.0015	<0.0010	0.004	-	<0.005	0.003	<0.001	0.004	<0.001	<0.001	0.0036
Dissolved Zirconium	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.002	-	<0.001	-	-	-	-	-	-
Anions																													
Bromide	mg/L	-	-	1.66	0.34	0.92	-	0.89	0.58	-	-	0.04	0.04	0.02	<0.01	0.02	-	-	<0.10	<0.10	-	-	-	0.23	0.46	0.12	0.3	0.21	0.8
Chloride	mg/L	61	8.8	175	26.8	90.8	90.8	<0.5	84.3	175	26.8	2.5	2.8	1.8	2.1	1.8	1.8	1.7	1.52	1.62	121	-	50.4	12	60.1	5.8	52.2	44.1	110
Fluoride	mg/L	-	-	0.48	0.42	0.79	0.79	0.02	0.27	0.48	0.42	0.99	0.91	0.94	0.93	1.01	1.07	1.06	0.986	1.1	0.38	-	0.46	0.29	0.24	0.21	0.86	0.28	0.404
Nutrients																													
Ammonium (N-NH4)	mg N/L	-	-	6.45	0.13	1.63	1.63	-	-	6.45	0.13	-	-	-	-	0.04	-	-	-	-	-	-	-

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