Baseline Surface Water Monitoring Report

Nictaux Sand Pit Expansion Project

Shaw Group Limited

14 March 2025

The Power of Commitment

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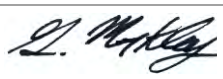
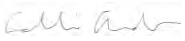
S4	02	Sadie Jacobs-Peters	Glen Merkley		Callie Andrews		14-Mar-2025

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1. Introduction

GHD Limited (GHD) was retained by the Shaw Group Limited (Shaw) to complete baseline surface water monitoring for the proposed Nictaux Sand Pit Expansion Project (the Project), an expansion of the existing Trimper Sand and Gravel Pit located near Nictaux, Annapolis County, Nova Scotia (NS). The Minister of Environment and Climate Change has granted consent to transfer the existing environmental assessment (EA) approval dated April 20, 2012, for the Trimper Sand and Gravel Pit Expansion Project originally issued to Ivan H. Trimper Construction Ltd. to 4389818 Nova Scotia Limited, a numbered company wholly owned by Shaw. Shaw intends to expand the Project Area (PA) authorized by this EA approval to include extraction of a sand resource located on parcels with the following premises identification numbers (PIDs): 05291448, 05291455, 05286976, 05286984, 05310834, 05286968, 05194030, 05313853, 05059688, and 05058334.

Shaw intends to operate the Project for the purpose of extracting commercial sand at a rate of approximately 475,000 tonnes per year. The proposed area of land disturbance, shown on Figure 1, is approximately 125 hectares (ha) in area. All sand extracted for the Project will be processed on-site via screening, washing, and classifying for commercial sale. Processing equipment will include screens, conveyors, and crushers. All on site equipment will be operated using electricity except mobile equipment (i.e., excavators, dozers, haul trucks), which will be diesel-fuelled. Shaw intend to extract sand from beneath the current water table as determined through baseline groundwater elevation monitoring.

1.1 Purpose of this Report

Surface water baseline monitoring was completed in support of the environmental assessment registration document (EARD) prepared for the Project. The objective of this report is to provide an understanding of the quality and quantity of surface water in the area and to evaluate the potential impacts of the Project on surface water resources. The following tasks were undertaken by GHD to establish baseline surface water conditions for the project:

– Quarterly water quality monitoring (grab sampling) and in-situ water quality measurements
– Quarterly discrete velocity measurements (flow monitoring)
– Continuous surface water elevation monitoring via installation of transducers (Solinst® Leveloggers and Baro-Loggers)

1.2 Scope and Limitations

This report: has been prepared by GHD for Shaw Group Limited and may only be used and relied on by Shaw Group Limited for the purpose agreed between GHD and Shaw Group Limited as set out in section 1.1 of this report.

GHD otherwise disclaims responsibility to any person other than Shaw Group Limited arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

2. Monitoring Locations

Surface water monitoring stations were selected to capture outputs of runoff into watercourses surrounding the PA and to provide geographic coverage within the PA. Locations were initially selected following a desktop review of watercourses, catchment areas, flow directions, and proposed Project discharge points. Table 1 summarizes the

surface water monitoring locations. Station SW-5 was first established in April 2024; stations SW-1 through SW-4 were established in August and October 2024 following revisions to Project design. A photolog depicting the surface water monitoring locations can be found in Appendix A. The locations detailed in Table 1 are additionally displayed in Figure 1, following text.

Table 1 Baseline Surface Water Monitoring Locations

Station	Coordinates (UTM 20N)		Date Established	Watercourse
	Northing	Easting		
SW-1	4976275	341836	August 29, 2024	Bald Hill Brook
SW-2	4976748	341996	August 29, 2024	Bald Hill Brook
SW-3	4976622	342016	August 29, 2024	Bald Hill Brook
SW-4	4976970	342198	October 31, 2024	Bald Hill Brook
SW-5	4975726	340523	April 26, 2024	Watercourse 1 (WC-1)

Initially, the baseline surface water monitoring program was exclusive to one newly installed station located on WC1 on April 26, 2024 (SW-5, formerly SW-1). On June 17, 2024, the NS Minister of Environment and Climate Change granted consent to transfer the existing EA approval dated April 20, 2012, for the Trimper Sand and Gravel Pit Expansion Project originally issued to Ivan H. Trimper Construction Ltd. to 4389818 Nova Scotia Limited, a numbered company wholly owned by Shaw. Stations SW-1 through SW-3 were established previously for the Trimper Sand and Gravel Pit, and SW-4 was installed by GHD on August 29, 2024 to capture potential impacts to Bald Hill Brook at the extent of the property. The addition of stations SW-1 through SW-4 necessitated the renaming of former station SW-1 to SW-5. This change is not reflected in the laboratory certificates of analysis provided in Appendix C.

3. Methodology

3.1 Surface Water Quality

Surface water samples were collected via grab sampling, which was conducted by dipping the sample container directly into the stream to collect surface water, unless the sample bottles contained preservatives. If the bottle contained preservatives, sterile unpreserved bottles were used to collect the sample and transfer the surface water to the preserved sample container. Samples were collected below the surface with the sample bottles completely submerged, preventing floating surface debris from entering the sample bottles and contaminating the sample. Field measurements of pH, conductivity, dissolved oxygen, and temperature were collected at each location using a handheld multiparameter meter (i.e., Horiba U-52).

Samples were transferred to coolers with ice immediately after they were collected and maintained in cool storage until delivery to Bureau Veritas Laboratories (BV) in Bedford, NS. Chain-of-custody (COC) forms were filled out with the sample ID, and date / time of sample collection, and were signed by field staff before being relinquished to the receiving laboratory. The surface water samples were submitted for analysis of general chemistry, total metals, and total suspended solids (TSS).

Quality assurance / quality control (QA/QC) protocols included the collection of field duplicate samples at a frequency of 10% of samples collected. The results of the QA/QC sampling were used to evaluate the reliability of the sampling and analysis methods. One surface water field duplicate was collected during the August and October field monitoring programs.

3.2 Surface Water Flow

Discrete water levels and discrete velocity measurements were monitored at all locations. Discrete velocity measurements were collected using either a handheld Marsh McBirney Flo-Mate 2000 or a HACH FH950 velocity meter. A transect was established at each monitoring location perpendicular to the direction of flow. The width of the stream was divided into intervals where velocity readings and water depth were measured. Velocities were measured at 60% of the depth below the water surface. A total flow was then calculated by computing the product of area and velocity using an average of the mean and mid flow calculation methods.

Staff gauges were installed at each monitoring location during their initial installation date (refer to Table 1) and were used for discrete surface water level measurements. In addition, continuous water level data was collected at 15-minute intervals using a Solinst® Levelogger installed at SW-5 from April 26, 2024 to November 8, 2024. The logger was downloaded during each surface water monitoring event, and compensated for barometric pressure, which was collected on-site using a Baro-Diver installed near groundwater well MW-05. Continuous surface water levels were corrected using the discrete water levels collected during the monitoring event.

4. Results

The following sections present the baseline surface water quality and quantity results collected for the Project in 2024.

4.1 Water Quality Analytical Results

Surface water quality samples were collected on April 26, August 29, and October 31, 2024. Surface water quality results were compared to the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines (WQGs) for the Protection of Fresh Water Aquatic Life (FWAL) and the Nova Scotia Tier 1 Environmental Quality Standards (EQS) for Surface Water.

Table 2, below, details the quality sampling schedule for all monitoring locations in 2024.

Table 2 2024 Water Quality Sampling Schedule

	SW-1	SW-2	SW-3	SW-4	SW-5
April 26, 2024	Not sampled; not yet added to monitoring program				Sampled
August 29, 2024	Sampled	Sampled (Duplicate collected)	Not sampled; dry	Not sampled; not yet added to monitoring program	Not sampled; dry
October 31, 2024	Sampled	Sampled	Sampled (Duplicate collected)	Sampled	Not sampled, stagnant water

Laboratory analytical certificates and tabulated results for baseline sampling events are provided in Appendices B and C, respectively.

SW-1

– Total aluminum concentrations exceeded the NS Tier 1 EQS during the August and October monitoring events, but were less than the CCME FWAL criterion, which is variable dependent on pH.

SW-2

- Total aluminum concentrations were above the NS Tier 1 EQS guidelines during the August and October monitoring events. Total aluminum also exceeded the variable CCME FWAL criterion during the August monitoring event.
- Total iron concentrations were above the CCME FWAL and the NS Tier 1 EQS guidelines during the August and October monitoring events.
- SW-DUP, a field duplicate of the August SW-2 quality sample, also had CCME FWAL and NS Tier 1 exceedances of both total aluminum and total iron concentrations.

SW-3

- Total aluminum concentrations were above the CCME FWAL and NS Tier 1 EQS guidelines during the October monitoring event.
- Total iron concentrations were above the CCME FWAL guidelines and the NS Tier 1 EQS guidelines during the October monitoring event.
- SW-DUP, a field duplicate of the October SW-3 quality sample, also had CCME FWAL and NS Tier 1 exceedances of total aluminum concentrations.

SW-4

- Total aluminum concentrations were above the CCME FWAL and NS Tier 1 EQS guidelines during the October monitoring event.

SW-5

- Total aluminum concentrations were above the NS Tier 1 EQS guidelines during the April monitoring event.

4.2 Water Quantity Results

Stream flow measurements taken at station SW-5 in 2024 ranged from 0 litres per second (L/s) (i.e., dry) on August 28, 2024 to 0.70 L/s on April 26, 2024. One flow monitoring event was conducted at SW-4 in 2024, on October 31, 2024, resulting in a calculated flow of 2.20 L/s. Discrete surface water flow monitoring results are presented below in Table 3.

Table 3 Manual Water Levels and Flow Recordings

Station	Date	Flow (L/s)	Staff Gauge Reading (m)	Water Level Elevation (masl[1])
SW-4	31-Oct-24	2.20	0.09	26.86
SW-5	26-Apr-24	0.70	0.255	43.66
	28-Aug-24	Not measured; dry		
	30-Oct-24	0.00	0.140	43.55

[1] masl: metres above sea level

In addition to discrete flow monitoring, a level logger was installed at monitoring station SW-5 (as per Section 3.2). The discrete flow monitoring completed to date does not provide sufficient information to develop a rating curve for each monitoring station to develop a continuous flow data set. Upon the collection of additional discrete flow measurements, a rating curve will be developed to support additional permit applications, if required.

A hydrograph of continuous elevation collected from the Solinst® Levelogger installed at SW-5 is provided in Appendix D. Monitored continuous water levels indicate this watercourse is ephemeral, with dry conditions observed during the summer and fall months and higher water levels during the spring freshet and following rainfall events.

While typically there would be an increase in precipitation during fall months, central NS experienced varying degrees of drought from September through December (Canadian Drought Monitor, 2024).

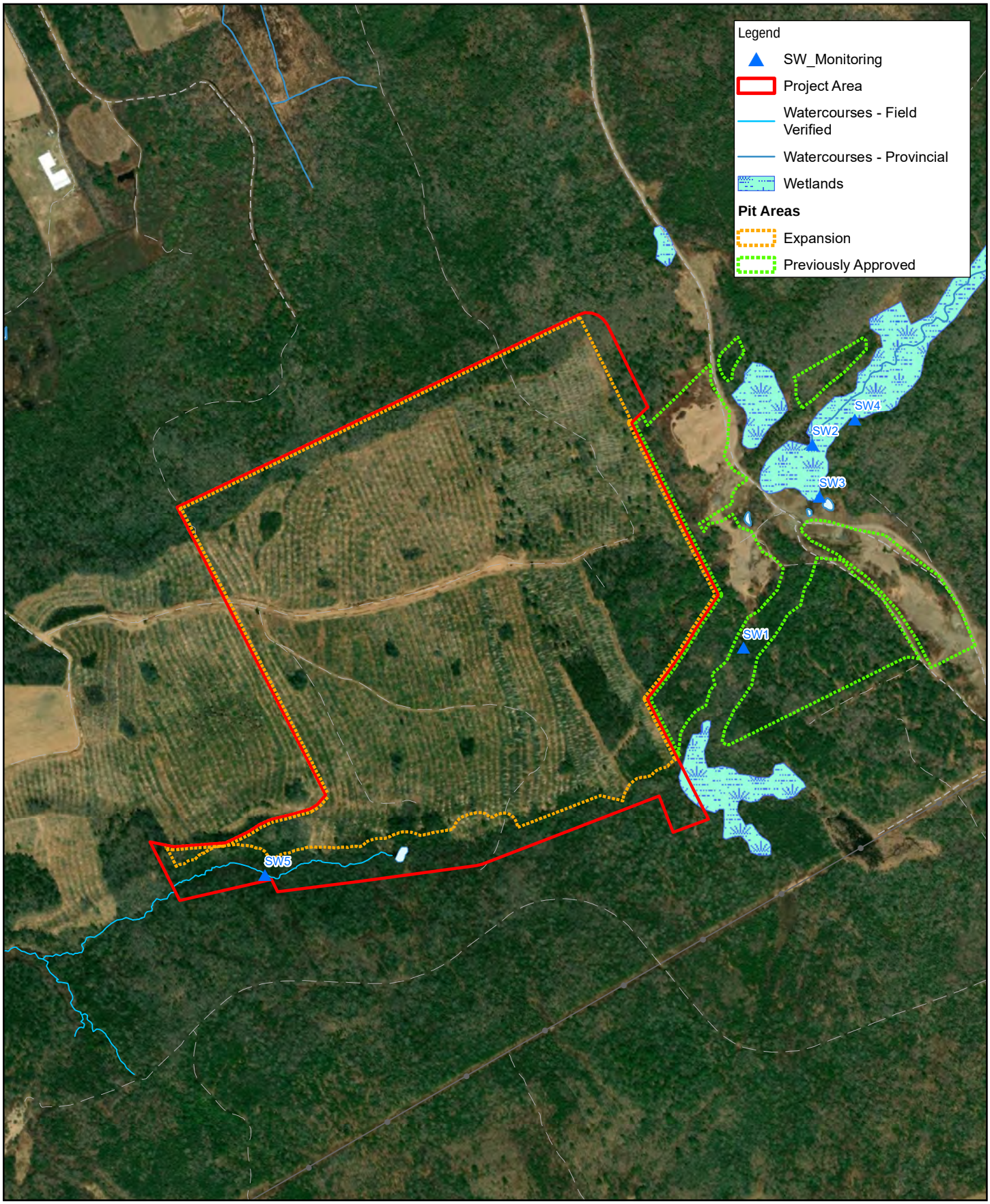
5. Conclusions

Surface water quality and quantity monitoring in 2024 was completed prior to any construction activity associated with the Project and is therefore considered representative of baseline conditions. As baseline surface water monitoring continues through to construction and long-term monitoring continues through the life of the Project, results will be compared against the baseline assessment to determine if Project related impacts are occurring. This report is provided as part of the technical and permitting services in support of the EARD prepared for the Project.

6. References

Canadian Drought Monitor. 2024. Conditions as of December 31, 2024. Accessed from: https://agriculture.canada.ca/atlas/data_donnees/canadianDroughtMonitor/maps_cartes/en/monthlyReport/2024/cdm_2412_mn_en.pdf

Nova Scotia Department of Natural Resources and Renewables (NSDNRR), 2016. A Review of Activities Related to the Occurrence of Arsenic in Nova Scotia Well Water. Retrieved: https://novascotia.ca/natr/meb/data/pubs/16ofr06/ofr_me_2016-006.pdf



Scale 1:12000

0 120 240 360

Metres

Map Projection: Transverse Mercator
Horizontal Datum: North American 1983 CSRS
Grid: NAD 1983 CSRS UTM Zone 20N

N

GHD

THE SHAW GROUP LIMITED
SOUTH FARMINGTON, ANNAPOLIS CO, NOVA SCOTIA
PROPOSED SAND PIT

BASELINE SURFACE WATER MONITORING LOCATIONS

Project No. 12586970
Revision No. -
Date Feb 27, 2025

FIGURE 1

Q:\GIS\PROJECTS\12586000s\12586970\GIS\Maps\Deliverables\202502_RPT004\12586970_001_RPT004.mxd
Print date: 27 Feb 2025 - 13:24

Appendices

Appendix A

Photolog

Site Photographs

Figure 1: View of stream station SW4 (October 30, 2024)

Figure 2: View of stream station SW5 (October 30, 2024)

Figure 3: View of stream station SW3 (October 30, 2024)

Appendix B

Analytical Results

Surface Water Results - General Chemistry
Nictaux Sand Pit Expansion Project

Parameters	Units	CCME FWAL	NSE Tier I EQS	SW-1		SW-2			SW-3		SW-4	SW-5
				SW-1	SW-1	SW-2	SWDUP (FD of SW-2)	SW-2	SW-3	SWDUP (FD of SW-3)	SW-4	SW-5
Date				29-Aug-24	31-Oct-24	29-Aug-24	29-Aug-24	31-Oct-24	31-Oct-24	31-Oct-24	31-Oct-24	26-Apr-24
Calculated Parameters												
Anion Sum	me/L	NV	NV	0.44	0.61	0.72	0.7	0.84	0.6	0.73	0.77	0.7
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	NV	NV	12	20	27	26	33	20	28	29	28
Calculated TDS	mg/L	NV	NV	36	44	53	52	57	44	52	57	42
Carb. Alkalinity (calc. as CaCO3)	mg/L	NV	NV	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cation Sum	me/L	NV	NV	0.49	0.71	0.8	0.81	0.85	0.67	0.82	0.92	0.8
Hardness (CaCO3)	mg/L	NV	NV	14	23	25	25	28	21	28	31	30
Ion Balance (% Difference)	%	NV	NV	5.38	7.58	5.26	7.28	0.59	5.51	5.81	8.88	6.67
Langelier Index (@ 20C)	N/A	NV	NV	-2.59	-1.96	-1.64	-1.66	-1.45	-1.97	-1.49	-1.6	-1.7
Langelier Index (@ 4C)	N/A	NV	NV	-2.84	-2.21	-1.9	-1.91	-1.7	-2.22	-1.74	-1.85	-1.96
Nitrate (N)	mg/L	see note(1)	13	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Saturation pH (@ 20C)	N/A	NV	NV	9.7	9.24	9.06	9.08	8.93	9.22	9	8.94	8.92
Saturation pH (@ 4C)	N/A	NV	NV	9.96	9.49	9.32	9.34	9.18	9.48	9.25	9.19	9.17
Inorganics												
Total Alkalinity (Total as CaCO3)	mg/L	NV	NV	12	20	27	26	33	20	28	29	28
Dissolved Chloride (Cl-)	mg/L	120	120	5.5	4.4	4.6	4.6	3.9	4	4	4.6	4.4
Colour	TCU	NV	NV	8.9	40	9.9	10	17	18	12	21	20
Nitrate + Nitrite (N)	mg/L	NV	NV	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Nitrite (N)	mg/L	0.06	0.06	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrogen (Ammonia Nitrogen)	mg/L	see note(1)	NV	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.17	<0.050
Total Organic Carbon (C)	mg/L	NV	NV	1.2	5.3	1.7	1.8	2.1	2.4	2.1	2.8	3.7
Orthophosphate (P)	mg/L	NV	NV	0.013	0.015	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.17
pH	pH	6.5-9.0	6.5-9.0	7.12	7.28	7.42	7.42	7.48	7.25	7.51	7.34	7.22
Reactive Silica (SiO2)	mg/L	NV	NV	10	9.2	13	13	13	10	13	14	4.4
Total Suspended Solids	mg/L	NV	NV	-	1.8	-	-	<1.0	1.4	<1.0	<1.0	-
Dissolved Sulphate (SO4)	mg/L	NV	NV	2.6	3.9	2.7	2.6	3.3	4	2.7	2.4	<2.0
Turbidity	NTU	NV	NV	0.39	1	5.3	7.7	1.9	1.7	1.6	0.87	6.9
Conductivity	uS/cm	NV	NV	51	70	77	76	81	66	82	86	85

Notes:
NV - No value; FWAL - Freshwater aquatic life; NC - not calculated
nd = non detect value. Detection limits were not reported
-- Not applicable
(1) Guideline references CCME Factsheet for the conversion of $NO_3^- \cdot L^{-1}$ to $NO_3^-\text{-}N \cdot L^{-1}$. The nitrate guideline in Table 2 within the factsheet was divided by 4.43 to present the guideline as "Nitrate (as N)".

Screening:

Shaded	indicates values are greater than CCME FWAL
Bold	Indicates values are greater than NS Tier 1 EQS

References:
Canadian Council of Ministers of the Environment (CCME), current to 2024. Canadian Water Quality Guidelines (WQGs) for the Protection of Aquatic Life (freshwater, long term

Surface Water Results - Total Metals
Nictaux Sand Pit Expansion Project

Parameters	Units	CCME FWAL	NSE Tier 1 EQS	SW-1		SW-2			SW-3		SW-4	SW-5
				SW-1	SW-1	SW-2	SWDUP (FD of SW-2)	SW-2	SW-3	SWDUP (FD of SW-3)	SW-4	SW-5
Date				29-Aug-24	31-Oct-24	29-Aug-24	29-Aug-24	31-Oct-24	31-Oct-24	31-Oct-24	31-Oct-24	26-Apr-24
Total Aluminum (Al)	ug/L	(see note)[a]	5	**22**	**71**	**200**	**210**	**22**	**27**	**21**	**20**	**280**
Total Antimony (Sb)	ug/L	NV	9	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Arsenic (As)	ug/L	5	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Barium (Ba)	ug/L	NV	1000	6.2	8.2	5.5	5.5	5.7	3.9	5.4	6.7	19
Total Beryllium (Be)	ug/L	NV	0.15	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Total Bismuth (Bi)	ug/L	NV	NV	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Total Boron (B)	ug/L	1500	1500	<50	<50	<50	<50	<50	<50	<50	<50	<50
Total Cadmium (Cd)	ug/L	(see note)[b]	0.09	<0.010	0.011	0.011	0.011	<0.010	<0.010	<0.010	<0.010	<0.010
Total Calcium (Ca)	ug/L	NV	NV	3400	5800	6600	6500	7400	5900	7300	8100	8600
Total Chromium (Cr)	ug/L	NV	8.9	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0
Total Cobalt (Co)	ug/L	NV	1	<0.40	<0.40	0.44	0.47	<0.40	<0.40	<0.40	<0.40	<0.40
Total Copper (Cu)	ug/L	(see note)[c]	2	<0.50	<0.50	0.63	0.69	<0.50	<0.50	<0.50	<0.50	<0.50
Total Iron (Fe)	ug/L	300	300	120	110	**1400**	**1600**	**340**	**500**	300	250	150
Total Lead (Pb)	ug/L	(see note)[d]	1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Total Magnesium (Mg)	ug/L	NV	NV	1200	2100	2100	2100	2400	1600	2300	2700	2000
Total Manganese (Mn)	ug/L	(see note)[e]	430	10	4.9	59	63	90	62	79	61	13
Total Molybdenum (Mo)	ug/L	73	73	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Total Nickel (Ni)	ug/L	(see note)[f]	25	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Total Phosphorus (P)	ug/L	NV	NV	<100	<100	<100	<100	<100	<100	<100	<100	<100
Total Potassium (K)	ug/L	NV	NV	730	810	780	810	760	1200	740	810	400
Total Selenium (Se)	ug/L	1	1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Total Silver (Ag)	ug/L	0.25	0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Total Sodium (Na)	ug/L	NV	NV	4600	5200	5300	5300	5700	4600	5400	5700	4400
Total Strontium (Sr)	ug/L	NV	21000	23	35	34	36	40	25	39	42	39
Total Thallium (Tl)	ug/L	0.8	0.8	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Total Tin (Sn)	ug/L	NV	NV	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Total Titanium (Ti)	ug/L	NV	NV	<2.0	2.1	6.4	6.6	<2.0	4.2	<2.0	<2.0	6
Total Uranium (U)	ug/L	15	15	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.13
Total Vanadium (V)	ug/L	NV	120	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Total Zinc (Zn)	ug/L	7	7	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

Notes:
NV - No value; FWAL - Freshwater aquatic life
-- Not applicable
nd = non detect value. Detection limits were not reported
a - Aluminum guideline for FWAL = 5 µg/L for pH <6.5 and 100 µg/L for pH ≥6.5.

b - Cadmium guideline for FWAL is 0.04 ug/L at hardness <17 mg/L, otherwise calculated as 10^(0.83[log(hardness)]-2.46)

c - Copper guideline = When water hardness is 0 to <82 mg/L, the guideline is 2 µg/L; when hardness is > 82 to < 180 mg/L equation: e 0.845[ln(hardness)] -1.465 X 0.2 µg/L is used to determine the copper guideline. At hardness >180 mg/L the guideline is 4 µg/L. Water hardness at all locations are <82 mg/L and as such, the guideline is 2 µg/L.

d - Lead guideline = When water hardness is 0 to <60 mg/L, the guideline is 1ug/L; when hardness is >60 to < 180 mg/L equation: e 1.273[ln(hardness)] -4.705 ug/L is used to determine the lead guideline. At hardness >180 mg/L the guideline is 7 ug/L.

e - Manganese guideline calculated using the Manganese - Canadian Water Quality Guideline and Benchmark Calculator provided in Appendix B of the Scientific Criteria Document for the Development of the Canadian Water Quality Guidelines for the Protection of Aquatic Life. Criteria for manganese was posted December 19, 2019. All results were compared to guidelines in effect at the time of sampling.

f - Nickel guideline = When water hardness is 0 to <60 mg/L, the guideline is 25 ug/L; when hardness is > 60 to < 180 mg/L equation: e 0.76[ln(hardness)] + 1.06 ug/L is used to determine the nickel guideline. At hardness >180 mg/L the guideline is 150 ug/L.

Screening:

Shaded	Indicates values are greater than CCME FWAL
Bold	Indicates values are greater than NS Tier 1 EQS

References:
Canadian Council of Ministers of the Environment (CCME), current to 2024.
Canadian Water Quality Guidelines (WQGs) for the Protection of Aquatic Life

Appendix C

Laboratory Certificates of Analyses

Your P.O. #: 735-009799
Your Project #: 12584960
Your C.O.C. #: N/A

Attention: Glen Merkley

GHD Limited
120 Western Parkway
Bedford, NS
CANADA B4B 0V2

Report Date: 2024/05/10
Report #: R8143468
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4D2991
Received: 2024/05/03, 16:35

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Carbonate, Bicarbonate and Hydroxide	1	N/A	2024/05/09	N/A	SM 24 4500-CO2 D
Alkalinity	1	N/A	2024/05/08	ATL SOP 00142	SM 24 2320 B
Chloride	1	N/A	2024/05/09	ATL SOP 00014	SM 24 4500-Cl- E m
Colour	1	N/A	2024/05/10	ATL SOP 00020	SM 24 2120C m
Conductance - water	1	N/A	2024/05/08	ATL SOP 00004	SM 24 2510B m
Hardness (calculated as CaCO3)	1	N/A	2024/05/08	ATL SOP 00048	Auto Calc
Metals Water Total MS	1	2024/05/07	2024/05/07	ATL SOP 00058	EPA 6020B R2 m
Ion Balance (% Difference)	1	N/A	2024/05/10	N/A	Auto Calc.
Anion and Cation Sum	1	N/A	2024/05/09	N/A	Auto Calc.
Nitrogen Ammonia - water	1	N/A	2024/05/08	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite	1	N/A	2024/05/09	ATL SOP 00016	USGS I-2547-11m
Nitrogen - Nitrite	1	N/A	2024/05/09	ATL SOP 00017	SM 24 4500-NO2- B m
Nitrogen - Nitrate (as N)	1	N/A	2024/05/10	ATL SOP 00018	ASTM D3867-16
pH (1)	1	N/A	2024/05/08	ATL SOP 00003	SM 24 4500-H+ B m
Phosphorus - ortho	1	N/A	2024/05/09	ATL SOP 00021	SM 24 4500-P E m
Sat. pH and Langelier Index (@ 20C)	1	N/A	2024/05/10	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C)	1	N/A	2024/05/10	ATL SOP 00049	Auto Calc.
Reactive Silica	1	N/A	2024/05/09	ATL SOP 00022	EPA 366.0 m
Sulphate	1	N/A	2024/05/09	ATL SOP 00023	ASTM D516-16 m
Total Dissolved Solids (TDS calc)	1	N/A	2024/05/10	N/A	Auto Calc.
Organic carbon - Total (TOC) (2)	1	N/A	2024/05/06	ATL SOP 00203	SM 24 5310B m
Turbidity	1	N/A	2024/05/08	ATL SOP 00011	EPA 180.1 R2 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Your P.O. #: 735-009799
Your Project #: 12584960
Your C.O.C. #: N/A

Attention: Glen Merkley

GHD Limited
120 Western Parkway
Bedford, NS
CANADA B4B 0V2

Report Date: 2024/05/10
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CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4D2991
Received: 2024/05/03, 16:35

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) The APHA Standard Method requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the APHA Standard Method holding time.
(2) TOC / DOC present in the sample should be considered as non-purgeable TOC / DOC.

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
10 May 2024 13:33:17

Please direct all questions regarding this Certificate of Analysis to:
Marie Muise, Key Account Specialist
Email: Marie.MUISE@bureauveritas.com
Phone# (902)420-0203 Ext:253

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This report has been generated and distributed using a secure automated process.
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Suzanne Rogers, General Manager responsible for Nova Scotia Environmental laboratory operations.

Bureau Veritas Job #: C4D2991
Report Date: 2024/05/10

GHD Limited
Client Project #: 12584960
Your P.O. #: 735-009799
Sampler Initials: RU

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		ZBP923			
Sampling Date		2024/04/26 18:15			
COC Number		N/A			
	UNITS	SW-1	RDL	MDL	QC Batch
Calculated Parameters					
Anion Sum	me/L	0.700	N/A	N/A	9374981
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	28	1.0	0.20	9374978
Calculated TDS	mg/L	42	1.0	0.20	9374986
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	0.20	9374978
Cation Sum	me/L	0.800	N/A	N/A	9374981
Hardness (CaCO3)	mg/L	30	1.0	1.0	9374979
Ion Balance (% Difference)	%	6.67	N/A	N/A	9374980
Langelier Index (@ 20C)	N/A	-1.70			9374984
Langelier Index (@ 4C)	N/A	-1.96			9374985
Nitrate (N)	mg/L	<0.050	0.050	N/A	9374982
Saturation pH (@ 20C)	N/A	8.92			9374984
Saturation pH (@ 4C)	N/A	9.17			9374985
Inorganics					
Total Alkalinity (Total as CaCO3)	mg/L	28	2.0	N/A	9379633
Dissolved Chloride (Cl-)	mg/L	4.4	1.0	N/A	9380124
Colour	TCU	20	5.0	N/A	9380150
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	N/A	9380154
Nitrite (N)	mg/L	<0.010	0.010	N/A	9380156
Nitrogen (Ammonia Nitrogen)	mg/L	<0.050	0.050	N/A	9379710
Total Organic Carbon (C)	mg/L	3.7	0.50	N/A	9375462
Orthophosphate (P)	mg/L	0.17	0.010	N/A	9380153
pH	pH	7.22			9379631
Reactive Silica (SiO2)	mg/L	4.4	0.50	N/A	9380139
Dissolved Sulphate (SO4)	mg/L	<2.0	2.0	N/A	9380137
Turbidity	NTU	6.9	0.10	0.10	9379656
Conductivity	uS/cm	85	1.0	N/A	9379632

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.bvna.com

ELEMENTS BY ICP/MS (WATER)

Bureau Veritas ID		ZBP923			
Sampling Date		2024/04/26 18:15			
COC Number		N/A			
	UNITS	SW-1	RDL	MDL	QC Batch
Metals					
Total Aluminum (Al)	ug/L	280	5.0	N/A	9377083
Total Antimony (Sb)	ug/L	<1.0	1.0	N/A	9377083
Total Arsenic (As)	ug/L	<1.0	1.0	N/A	9377083
Total Barium (Ba)	ug/L	19	1.0	N/A	9377083
Total Beryllium (Be)	ug/L	<0.10	0.10	N/A	9377083
Total Bismuth (Bi)	ug/L	<2.0	2.0	N/A	9377083
Total Boron (B)	ug/L	<50	50	N/A	9377083
Total Cadmium (Cd)	ug/L	<0.010	0.010	N/A	9377083
Total Calcium (Ca)	ug/L	8600	100	N/A	9377083
Total Chromium (Cr)	ug/L	<1.0	1.0	N/A	9377083
Total Cobalt (Co)	ug/L	<0.40	0.40	N/A	9377083
Total Copper (Cu)	ug/L	<0.50	0.50	N/A	9377083
Total Iron (Fe)	ug/L	150	50	N/A	9377083
Total Lead (Pb)	ug/L	<0.50	0.50	N/A	9377083
Total Magnesium (Mg)	ug/L	2000	100	N/A	9377083
Total Manganese (Mn)	ug/L	13	2.0	N/A	9377083
Total Molybdenum (Mo)	ug/L	<2.0	2.0	N/A	9377083
Total Nickel (Ni)	ug/L	<2.0	2.0	N/A	9377083
Total Phosphorus (P)	ug/L	<100	100	N/A	9377083
Total Potassium (K)	ug/L	400	100	N/A	9377083
Total Selenium (Se)	ug/L	<0.50	0.50	N/A	9377083
Total Silver (Ag)	ug/L	<0.10	0.10	N/A	9377083
Total Sodium (Na)	ug/L	4400	100	N/A	9377083
Total Strontium (Sr)	ug/L	39	2.0	N/A	9377083
Total Thallium (Tl)	ug/L	<0.10	0.10	N/A	9377083
Total Tin (Sn)	ug/L	<2.0	2.0	N/A	9377083
Total Titanium (Ti)	ug/L	6.0	2.0	N/A	9377083
Total Uranium (U)	ug/L	0.13	0.10	N/A	9377083
Total Vanadium (V)	ug/L	<2.0	2.0	N/A	9377083
Total Zinc (Zn)	ug/L	<5.0	5.0	N/A	9377083

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	5.7°C

Sample ZBP923 [SW-1] : ortho-Phosphate > Phosphorus: Both values fall within the method uncertainty for duplicates and are likely equivalent. RCAp Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Results relate only to the items tested.

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Bureau Veritas Job #: C4D2991
Report Date: 2024/05/10

GHD Limited
Client Project #: 12584960
Your P.O. #: 735-009799
Sampler Initials: RU

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9375462	CPP	Matrix Spike	Total Organic Carbon (C)	2024/05/06		96	%	85 - 115
9375462	CPP	Spiked Blank	Total Organic Carbon (C)	2024/05/06		96	%	80 - 120
9375462	CPP	Method Blank	Total Organic Carbon (C)	2024/05/06	<0.50		mg/L	
9375462	CPP	RPD	Total Organic Carbon (C)	2024/05/06	0.42		%	15
9377083	MOA	Matrix Spike	Total Aluminum (Al)	2024/05/07		94	%	80 - 120
			Total Antimony (Sb)	2024/05/07		103	%	80 - 120
			Total Arsenic (As)	2024/05/07		94	%	80 - 120
			Total Barium (Ba)	2024/05/07		91	%	80 - 120
			Total Beryllium (Be)	2024/05/07		88	%	80 - 120
			Total Bismuth (Bi)	2024/05/07		98	%	80 - 120
			Total Boron (B)	2024/05/07		89	%	80 - 120
			Total Cadmium (Cd)	2024/05/07		96	%	80 - 120
			Total Calcium (Ca)	2024/05/07		94	%	80 - 120
			Total Chromium (Cr)	2024/05/07		94	%	80 - 120
			Total Cobalt (Co)	2024/05/07		93	%	80 - 120
			Total Copper (Cu)	2024/05/07		92	%	80 - 120
			Total Iron (Fe)	2024/05/07		95	%	80 - 120
			Total Lead (Pb)	2024/05/07		98	%	80 - 120
			Total Magnesium (Mg)	2024/05/07		98	%	80 - 120
			Total Manganese (Mn)	2024/05/07		96	%	80 - 120
			Total Molybdenum (Mo)	2024/05/07		98	%	80 - 120
			Total Nickel (Ni)	2024/05/07		93	%	80 - 120
			Total Phosphorus (P)	2024/05/07		98	%	80 - 120
			Total Potassium (K)	2024/05/07		101	%	80 - 120
			Total Selenium (Se)	2024/05/07		94	%	80 - 120
			Total Silver (Ag)	2024/05/07		95	%	80 - 120
			Total Sodium (Na)	2024/05/07		94	%	80 - 120
			Total Strontium (Sr)	2024/05/07		97	%	80 - 120
			Total Thallium (Tl)	2024/05/07		99	%	80 - 120
			Total Tin (Sn)	2024/05/07		102	%	80 - 120
			Total Titanium (Ti)	2024/05/07		95	%	80 - 120
			Total Uranium (U)	2024/05/07		104	%	80 - 120
			Total Vanadium (V)	2024/05/07		95	%	80 - 120
			Total Zinc (Zn)	2024/05/07		93	%	80 - 120
9377083	MOA	Spiked Blank	Total Aluminum (Al)	2024/05/07		99	%	80 - 120
			Total Antimony (Sb)	2024/05/07		105	%	80 - 120
			Total Arsenic (As)	2024/05/07		97	%	80 - 120
			Total Barium (Ba)	2024/05/07		94	%	80 - 120
			Total Beryllium (Be)	2024/05/07		90	%	80 - 120
			Total Bismuth (Bi)	2024/05/07		101	%	80 - 120
			Total Boron (B)	2024/05/07		93	%	80 - 120
			Total Cadmium (Cd)	2024/05/07		100	%	80 - 120
			Total Calcium (Ca)	2024/05/07		98	%	80 - 120
			Total Chromium (Cr)	2024/05/07		97	%	80 - 120
			Total Cobalt (Co)	2024/05/07		96	%	80 - 120
			Total Copper (Cu)	2024/05/07		95	%	80 - 120
			Total Iron (Fe)	2024/05/07		100	%	80 - 120
			Total Lead (Pb)	2024/05/07		99	%	80 - 120
			Total Magnesium (Mg)	2024/05/07		101	%	80 - 120
			Total Manganese (Mn)	2024/05/07		98	%	80 - 120
			Total Molybdenum (Mo)	2024/05/07		103	%	80 - 120
			Total Nickel (Ni)	2024/05/07		96	%	80 - 120
			Total Phosphorus (P)	2024/05/07		101	%	80 - 120

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Potassium (K)	2024/05/07		103	%	80 - 120
			Total Selenium (Se)	2024/05/07		97	%	80 - 120
			Total Silver (Ag)	2024/05/07		97	%	80 - 120
			Total Sodium (Na)	2024/05/07		99	%	80 - 120
			Total Strontium (Sr)	2024/05/07		101	%	80 - 120
			Total Thallium (Tl)	2024/05/07		102	%	80 - 120
			Total Tin (Sn)	2024/05/07		103	%	80 - 120
			Total Titanium (Ti)	2024/05/07		99	%	80 - 120
			Total Uranium (U)	2024/05/07		104	%	80 - 120
			Total Vanadium (V)	2024/05/07		98	%	80 - 120
			Total Zinc (Zn)	2024/05/07		97	%	80 - 120
9377083	MOA	Method Blank	Total Aluminum (Al)	2024/05/07	<5.0		ug/L	
			Total Antimony (Sb)	2024/05/07	<1.0		ug/L	
			Total Arsenic (As)	2024/05/07	<1.0		ug/L	
			Total Barium (Ba)	2024/05/07	<1.0		ug/L	
			Total Beryllium (Be)	2024/05/07	<0.10		ug/L	
			Total Bismuth (Bi)	2024/05/07	<2.0		ug/L	
			Total Boron (B)	2024/05/07	<50		ug/L	
			Total Cadmium (Cd)	2024/05/07	<0.010		ug/L	
			Total Calcium (Ca)	2024/05/07	<100		ug/L	
			Total Chromium (Cr)	2024/05/07	<1.0		ug/L	
			Total Cobalt (Co)	2024/05/07	<0.40		ug/L	
			Total Copper (Cu)	2024/05/07	<0.50		ug/L	
			Total Iron (Fe)	2024/05/07	<50		ug/L	
			Total Lead (Pb)	2024/05/07	<0.50		ug/L	
			Total Magnesium (Mg)	2024/05/07	<100		ug/L	
			Total Manganese (Mn)	2024/05/07	<2.0		ug/L	
			Total Molybdenum (Mo)	2024/05/07	<2.0		ug/L	
			Total Nickel (Ni)	2024/05/07	<2.0		ug/L	
			Total Phosphorus (P)	2024/05/07	<100		ug/L	
			Total Potassium (K)	2024/05/07	<100		ug/L	
			Total Selenium (Se)	2024/05/07	<0.50		ug/L	
			Total Silver (Ag)	2024/05/07	<0.10		ug/L	
			Total Sodium (Na)	2024/05/07	<100		ug/L	
			Total Strontium (Sr)	2024/05/07	<2.0		ug/L	
			Total Thallium (Tl)	2024/05/07	<0.10		ug/L	
			Total Tin (Sn)	2024/05/07	<2.0		ug/L	
			Total Titanium (Ti)	2024/05/07	<2.0		ug/L	
			Total Uranium (U)	2024/05/07	<0.10		ug/L	
			Total Vanadium (V)	2024/05/07	<2.0		ug/L	
			Total Zinc (Zn)	2024/05/07	<5.0		ug/L	
9377083	MOA	RPD	Total Lead (Pb)	2024/05/07	1.8		%	20
9379631	LJV	Spiked Blank	pH	2024/05/08		100	%	97 - 103
9379631	LJV	RPD	pH	2024/05/08	0.31		%	N/A
9379632	LJV	Spiked Blank	Conductivity	2024/05/08		103	%	80 - 120
9379632	LJV	Method Blank	Conductivity	2024/05/08	<1.0		uS/cm	
9379632	LJV	RPD	Conductivity	2024/05/08	1.1		%	10
9379633	LJV	Spiked Blank	Total Alkalinity (Total as CaCO3)	2024/05/08		95	%	80 - 120
9379633	LJV	Method Blank	Total Alkalinity (Total as CaCO3)	2024/05/08	<2.0		mg/L	
9379633	LJV	RPD	Total Alkalinity (Total as CaCO3)	2024/05/08	1.0		%	20
9379656	LJV	QC Standard	Turbidity	2024/05/08		118	%	80 - 120
9379656	LJV	Spiked Blank	Turbidity	2024/05/08		105	%	80 - 120
9379656	LJV	Method Blank	Turbidity	2024/05/08	<0.10		NTU	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9379656	LJV	RPD	Turbidity	2024/05/08	15		%	20
9379710	MCN	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2024/05/08		NC	%	80 - 120
9379710	MCN	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2024/05/08		103	%	80 - 120
9379710	MCN	Method Blank	Nitrogen (Ammonia Nitrogen)	2024/05/08	<0.050		mg/L	
9379710	MCN	RPD	Nitrogen (Ammonia Nitrogen)	2024/05/08	2.1		%	20
9380124	EMT	Matrix Spike	Dissolved Chloride (Cl-)	2024/05/09		93	%	80 - 120
9380124	EMT	Spiked Blank	Dissolved Chloride (Cl-)	2024/05/09		97	%	80 - 120
9380124	EMT	Method Blank	Dissolved Chloride (Cl-)	2024/05/09	<1.0		mg/L	
9380124	EMT	RPD	Dissolved Chloride (Cl-)	2024/05/09	0.48		%	20
9380137	EMT	Matrix Spike	Dissolved Sulphate (SO4)	2024/05/09		103	%	80 - 120
9380137	EMT	Spiked Blank	Dissolved Sulphate (SO4)	2024/05/09		97	%	80 - 120
9380137	EMT	Method Blank	Dissolved Sulphate (SO4)	2024/05/09	<2.0		mg/L	
9380137	EMT	RPD	Dissolved Sulphate (SO4)	2024/05/09	8.5		%	20
9380139	EMT	Matrix Spike	Reactive Silica (SiO2)	2024/05/09		NC	%	80 - 120
9380139	EMT	Spiked Blank	Reactive Silica (SiO2)	2024/05/09		93	%	80 - 120
9380139	EMT	Method Blank	Reactive Silica (SiO2)	2024/05/09	<0.50		mg/L	
9380139	EMT	RPD	Reactive Silica (SiO2)	2024/05/09	0.55		%	20
9380150	EMT	Spiked Blank	Colour	2024/05/10		109	%	80 - 120
9380150	EMT	Method Blank	Colour	2024/05/10	<5.0		TCU	
9380150	EMT	RPD	Colour	2024/05/10	3.2		%	20
9380153	EMT	Matrix Spike	Orthophosphate (P)	2024/05/09		83	%	80 - 120
9380153	EMT	Spiked Blank	Orthophosphate (P)	2024/05/09		107	%	80 - 120
9380153	EMT	Method Blank	Orthophosphate (P)	2024/05/09	<0.010		mg/L	
9380153	EMT	RPD	Orthophosphate (P)	2024/05/09	16		%	20
9380154	EMT	Matrix Spike	Nitrate + Nitrite (N)	2024/05/09		99	%	80 - 120
9380154	EMT	Spiked Blank	Nitrate + Nitrite (N)	2024/05/09		104	%	80 - 120
9380154	EMT	Method Blank	Nitrate + Nitrite (N)	2024/05/09	<0.050		mg/L	
9380154	EMT	RPD	Nitrate + Nitrite (N)	2024/05/09	0.36		%	20
9380156	EMT	Matrix Spike	Nitrite (N)	2024/05/09		94	%	80 - 120
9380156	EMT	Spiked Blank	Nitrite (N)	2024/05/09		106	%	80 - 120
9380156	EMT	Method Blank	Nitrite (N)	2024/05/09	<0.010		mg/L	
9380156	EMT	RPD	Nitrite (N)	2024/05/09	NC		%	20

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

Bureau Veritas 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.bvna.com

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Automated Statchk

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Suzanne Rogers, General Manager responsible for Nova Scotia Environmental laboratory operations.

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www.BVNA.com

105-200 Bluewater Road, Bedford, NS B4B 1G9
49-55 Elizabeth Avenue, St John's, NL A1A 1W9
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Tel: 902-420-0203 Fax: 902-420-8612 Toll Free: 1-800-565-7227
Tel: 709-754-0203 Fax: 709-754-8612 Toll Free: 1-888-492-7227
Tel: 902-567-1255 Fax: 902-539-6504 Toll Free: 1-888-535-7770

CHAIN OF CUSTODY RECORD

ENV COC - 00016v3

Invoice Information		Report Information (if differs from invoice)		Project Information	
Invoice to (requires report) ☐					LAB USE ONLY - PLACE STICKER HERE
Company:	GHD	Company:		Quotation #:	
Contact Name:	Glen Merkley	Contact Name:		P.O. #/ AFE#:	735-009799
Street Address:	120 western parkway	Street Address:		Project #:	12584960
City: Bedford Prov: NS Postal Code:		City: Prov: Postal Code:		Site #:	
Phone:	(902)-802-4790	Phone:		Site Location:	Rush Confirmation #:
Email:	glen.merkley@ghd.com	Email:		Site Location Province:	
Copies:		Copies:		Sampled By:	R. Upward, S. Jackson

Regulatory Criteria

**Specify matrix for each regulation: surface water (SW)/groundwater (GW)/tap water/sewage/effluent/seawater/potable water/non-potable water/tissue/soil/sludge/metal	Regulation	**Matrix

SAMPLES MUST BE KEPT COOL (<10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

	Sample Identification	Date Sampled YY	MM	DD	Time (24hr) HH	MM	Matrix	1 FIELD FILTERED	2 FIELD PRESERVED	3 LAB FILTRATION REQUIRED	4 RCAp-MS (total metals) well / surface water	5 RCAp-MS (dissolved metals) - GW	6 Total metals (default) well/SW	7 Dissolved metals for ground water	8 Total mercury - water	9 Dissolved mercury - water	10 Metals/mercury default (acid ext.)	11 HWS boron (CCME ag/ly landfill)	12 RBCA HC (BTEX, C6-C32)	13 CCME HC (F1/BTEX, F2-F4)	14 PAHs (default for water/soil)	15 PCBs - default	16 PCBs - CCME sediment	17 VOCs	18 Total coliform/E.coli (presence/absence)	19 Total coliform/E.coli (count)	20 TSS	21 # OF CONTAINERS SUBMITTED	22 HOLD - DO NOT ANALYZE	Comments
1	SW-1	24	04	26	18	51	SW				X																X	4		
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

BEDF-2024-05-227

Regular Turnaround Time (TAT)

☐ 5 to 7 Day ☐ 10 Day

Rush Turnaround Time (TAT) Surcharges apply

☐ Same Day ☐ 1 Day ☐ 2 Day ☐ 3 Day ☐ 4 Day

Date Required: YY MM DD

*UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS AND CONDITIONS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/TERMS-AND-CONDITIONS OR BY CALLING THE LABORATORY LISTED ABOVE TO OBTAIN A COPY

LAB USE ONLY	Yes	No	°C	1	2	3
Seal present						
Seal intact						
Cooling media present	✓			5	6	6

LAB USE ONLY	Yes	No	°C	1	2	3
Seal present						
Seal intact						
Cooling media present						

LAB USE ONLY	Yes	No	°C	1	2	3
Seal present						
Seal intact						
Cooling media present						

Temperature reading by:

Relinquished by: (Signature/ Print)	Date YY	MM	DD	Time HH	MM	Received by: (Signature/ Print)	Date YY	MM	DD	Time HH	MM	Special instructions
1 R. Upward rebecca.Upward	24	05	02	16	21	1 Ramandeep Ark						2024 MAY 7 16:35
2 R. Upward rebecca.Upward	24	05	03	16	30	2						

Your P.O. #: 735-009799
Your Project #: 12584960
Site Location: Shaw-Proposed Sandpit Middleton
Your C.O.C. #: C#1007056-01-01

Attention: Glen Merkley

GHD Limited
120 Western Parkway
Bedford, NS
CANADA B4B 0V2

Report Date: 2024/09/09
Report #: R8311894
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4R0855
Received: 2024/08/30, 09:20

Sample Matrix: Ground Water
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Carbonate, Bicarbonate and Hydroxide	9	N/A	2024/09/06	N/A	SM 24 4500-CO2 D
Alkalinity	9	N/A	2024/09/05	ATL SOP 00142	SM 24 2320 B
Chloride	9	N/A	2024/09/05	ATL SOP 00014	SM 24 4500-Cl- E m
Colour	9	N/A	2024/09/05	ATL SOP 00020	SM 24 2120C m
Conductance - water	9	N/A	2024/09/05	ATL SOP 00004	SM 24 2510B m
Hardness (calculated as CaCO3)	3	N/A	2024/09/04	ATL SOP 00048	Auto Calc
Hardness (calculated as CaCO3)	2	N/A	2024/09/05	ATL SOP 00048	Auto Calc
Hardness (calculated as CaCO3)	4	N/A	2024/09/06	ATL SOP 00048	Auto Calc
Metals Water Diss. MS- Lab Filtered (1)	3	N/A	2024/09/04	ATL SOP 00058	EPA 6020B R2 m
Metals Water Diss. MS- Field Filtered	6	N/A	2024/09/05	ATL SOP 00058	EPA 6020B R2 m
Ion Balance (% Difference)	9	N/A	2024/09/06	N/A	Auto Calc.
Anion and Cation Sum	9	N/A	2024/09/06	N/A	Auto Calc.
Nitrogen Ammonia - water	9	N/A	2024/09/04	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite	9	N/A	2024/09/05	ATL SOP 00016	USGS I-2547-11m
Nitrogen - Nitrite	9	N/A	2024/09/05	ATL SOP 00017	SM 24 4500-NO2- B m
Nitrogen - Nitrate (as N)	9	N/A	2024/09/06	ATL SOP 00018	ASTM D3867-16
pH (2)	9	N/A	2024/09/05	ATL SOP 00003	SM 24 4500-H+ B m
Phosphorus - ortho	9	N/A	2024/09/05	ATL SOP 00021	SM 24 4500-P E m
Sat. pH and Langelier Index (@ 20C)	9	N/A	2024/09/06	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C)	9	N/A	2024/09/06	ATL SOP 00049	Auto Calc.
Reactive Silica	9	N/A	2024/09/05	ATL SOP 00022	EPA 366.0 m
Sulphate	9	N/A	2024/09/05	ATL SOP 00023	ASTM D516-16 m
Total Dissolved Solids (TDS calc)	9	N/A	2024/09/06	N/A	Auto Calc.
Organic carbon - Total (TOC) (3)	9	N/A	2024/09/04	ATL SOP 00203	SM 24 5310B m
Turbidity	2	N/A	2024/09/05	ATL SOP 00011	EPA 180.1 R2 m
Turbidity	7	N/A	2024/09/06	ATL SOP 00011	EPA 180.1 R2 m

Sample Matrix: Surface Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Carbonate, Bicarbonate and Hydroxide	3	N/A	2024/09/06	N/A	SM 24 4500-CO2 D
Alkalinity	3	N/A	2024/09/05	ATL SOP 00142	SM 24 2320 B

Your P.O. #: 735-009799
Your Project #: 12584960
Site Location: Shaw-Proposed Sandpit Middleton
Your C.O.C. #: C#1007056-01-01

Attention: Glen Merkley

GHD Limited
120 Western Parkway
Bedford, NS
CANADA B4B 0V2

Report Date: 2024/09/09
Report #: R8311894
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4R0855
Received: 2024/08/30, 09:20

Sample Matrix: Surface Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Chloride	3	N/A	2024/09/05	ATL SOP 00014	SM 24 4500-Cl- E m
Colour	3	N/A	2024/09/05	ATL SOP 00020	SM 24 2120C m
Conductance - water	3	N/A	2024/09/05	ATL SOP 00004	SM 24 2510B m
Hardness (calculated as CaCO3)	2	N/A	2024/09/05	ATL SOP 00048	Auto Calc
Hardness (calculated as CaCO3)	1	N/A	2024/09/06	ATL SOP 00048	Auto Calc
Metals Water Total MS	2	2024/09/03	2024/09/04	ATL SOP 00058	EPA 6020B R2 m
Metals Water Total MS	1	2024/09/03	2024/09/05	ATL SOP 00058	EPA 6020B R2 m
Ion Balance (% Difference)	3	N/A	2024/09/06	N/A	Auto Calc.
Anion and Cation Sum	3	N/A	2024/09/06	N/A	Auto Calc.
Nitrogen Ammonia - water	3	N/A	2024/09/04	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite	3	N/A	2024/09/05	ATL SOP 00016	USGS I-2547-11m
Nitrogen - Nitrite	3	N/A	2024/09/05	ATL SOP 00017	SM 24 4500-NO2- B m
Nitrogen - Nitrate (as N)	3	N/A	2024/09/06	ATL SOP 00018	ASTM D3867-16
pH (2)	3	N/A	2024/09/05	ATL SOP 00003	SM 24 4500-H+ B m
Phosphorus - ortho	3	N/A	2024/09/05	ATL SOP 00021	SM 24 4500-P E m
Sat. pH and Langelier Index (@ 20C)	3	N/A	2024/09/06	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C)	3	N/A	2024/09/06	ATL SOP 00049	Auto Calc.
Reactive Silica	3	N/A	2024/09/05	ATL SOP 00022	EPA 366.0 m
Sulphate	3	N/A	2024/09/05	ATL SOP 00023	ASTM D516-16 m
Total Dissolved Solids (TDS calc)	3	N/A	2024/09/06	N/A	Auto Calc.
Organic carbon - Total (TOC) (3)	3	N/A	2024/09/04	ATL SOP 00203	SM 24 5310B m
Total Suspended Solids	3	2024/09/04	2024/09/05	ATL SOP 00007	SM 24 2540D m
Turbidity	2	N/A	2024/09/05	ATL SOP 00011	EPA 180.1 R2 m
Turbidity	1	N/A	2024/09/09	ATL SOP 00011	EPA 180.1 R2 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement

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Your P.O. #: 735-009799
Your Project #: 12584960
Site Location: Shaw-Proposed Sandpit Middleton
Your C.O.C. #: C#1007056-01-01

Attention: Glen Merkley

GHD Limited
120 Western Parkway
Bedford, NS
CANADA B4B 0V2

Report Date: 2024/09/09
Report #: R8311894
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4R0855
Received: 2024/08/30, 09:20

Uncertainty has not been accounted for when stating conformity to the referenced standard.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Sample filtered in laboratory prior to analysis for dissolved metals.
(2) The APHA Standard Method requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the APHA Standard Method holding time.
(3) TOC / DOC present in the sample should be considered as non-purgeable TOC / DOC.

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
09 Sep 2024 16:10:35

Please direct all questions regarding this Certificate of Analysis to:
Marie Muise, Key Account Specialist
Email: Marie.MUISE@bureauveritas.com
Phone# (902)420-0203 Ext:253

==========

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Bureau Veritas Job #: C4R0855
Report Date: 2024/09/09

GHD Limited
Client Project #: 12584960
Site Location: Shaw-Proposed Sandpit Middleton
Your P.O. #: 735-009799

RESULTS OF ANALYSES OF GROUND WATER

Bureau Veritas ID		ABLU47		ABLU48		ABLU49			
Sampling Date		2024/08/29 15:15		2024/08/29 14:53		2024/08/29 14:32			
COC Number		C#1007056-01-01		C#1007056-01-01		C#1007056-01-01			
	UNITS	MW1	QC Batch	MW2	QC Batch	MW3	RDL	MDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	1.07	9610149	0.240	9610149	0.440	N/A	N/A	9610149
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	41	9610145	6.7	9610145	12	1.0	0.20	9610145
Calculated TDS	mg/L	72	9610154	23	9610154	33	1.0	0.20	9610154
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	9610145	<1.0	9610145	<1.0	1.0	0.20	9610145
Cation Sum	me/L	1.12	9610149	0.260	9610149	0.440	N/A	N/A	9610149
Hardness (CaCO3)	mg/L	33	9610147	6.6	9610147	12	1.0	1.0	9610147
Ion Balance (% Difference)	%	2.28	9610148	4.00	9610148	0.00	N/A	N/A	9610148
Langelier Index (@ 20C)	N/A	-0.808	9610151	-3.87	9610151	-3.15			9610151
Langelier Index (@ 4C)	N/A	-1.06	9610152	-4.13	9610152	-3.40			9610152
Nitrate (N)	mg/L	0.053	9610029	<0.050	9610029	<0.050	0.050	N/A	9610029
Saturation pH (@ 20C)	N/A	8.66	9610151	10.4	9610151	9.71			9610151
Saturation pH (@ 4C)	N/A	8.91	9610152	10.7	9610152	9.96			9610152
Inorganics									
Total Alkalinity (Total as CaCO3)	mg/L	41	9616598	6.7	9616598	12	2.0	N/A	9616544
Dissolved Chloride (Cl-)	mg/L	4.8	9615525	3.7	9615585	5.7	1.0	N/A	9615585
Colour	TCU	<5.0	9615531	<5.0	9615592	<5.0	5.0	N/A	9615592
Nitrate + Nitrite (N)	mg/L	0.053	9615533	<0.050	9615594	<0.050	0.050	N/A	9615594
Nitrite (N)	mg/L	<0.010	9615534	<0.010	9615597	<0.010	0.010	N/A	9615597
Nitrogen (Ammonia Nitrogen)	mg/L	<0.050	9616213	<0.050	9616225	<0.050	0.050	N/A	9616225
Total Organic Carbon (C)	mg/L	0.63	9615401	1.1	9615401	1.3	0.50	N/A	9615401
Orthophosphate (P)	mg/L	0.026	9615532	<0.010	9615593	0.029	0.010	N/A	9615593
pH	pH	7.85	9616578	6.54	9616578	6.56			9616540
Reactive Silica (SiO2)	mg/L	14	9615529	9.9	9615590	9.2	0.50	N/A	9615590
Dissolved Sulphate (SO4)	mg/L	5.3	9615528	<2.0	9615588	2.2	2.0	N/A	9615588
Turbidity	NTU	2.1	9622206	16	9619404	8.7	0.10	0.10	9622206
Conductivity	uS/cm	120	9616596	31	9616596	49	1.0	N/A	9616541

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.bvna.com

Bureau Veritas Job #: C4R0855
Report Date: 2024/09/09

GHD Limited
Client Project #: 12584960
Site Location: Shaw-Proposed Sandpit Middleton
Your P.O. #: 735-009799

RESULTS OF ANALYSES OF GROUND WATER

Bureau Veritas ID		ABLU50				ABLU51	ABLU52			
Sampling Date		2024/08/29 12:06				2024/08/29 13:02	2024/08/29 14:06			
COC Number		C#1007056-01-01				C#1007056-01-01	C#1007056-01-01			
	UNITS	MW4	RDL	MDL	QC Batch	MW5	MW6	RDL	MDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	1.06	N/A	N/A	9610149	0.450	0.790	N/A	N/A	9610149
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	42	1.0	0.20	9610145	13	27	1.0	0.20	9610145
Calculated TDS	mg/L	66	1.0	0.20	9610154	32	59	1.0	0.20	9610154
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	0.20	9610145	<1.0	<1.0	1.0	0.20	9610145
Cation Sum	me/L	1.07	N/A	N/A	9610149	0.460	0.990	N/A	N/A	9610149
Hardness (CaCO3)	mg/L	41	1.0	1.0	9610147	14	30	1.0	1.0	9610147
Ion Balance (% Difference)	%	0.470	N/A	N/A	9610148	1.10	11.2	N/A	N/A	9610148
Langelier Index (@ 20C)	N/A	-1.15			9610151	-2.81	-1.69			9610151
Langelier Index (@ 4C)	N/A	-1.40			9610152	-3.06	-1.95			9610152
Nitrate (N)	mg/L	0.066	0.050	N/A	9610029	<0.050	0.056	0.050	N/A	9610029
Saturation pH (@ 20C)	N/A	8.63			9610151	9.61	8.91			9610151
Saturation pH (@ 4C)	N/A	8.88			9610152	9.86	9.16			9610152
Inorganics										
Total Alkalinity (Total as CaCO3)	mg/L	43	2.0	N/A	9616598	13	27	2.0	N/A	9616567
Dissolved Chloride (Cl-)	mg/L	5.1	1.0	N/A	9615585	4.4	6.7	1.0	N/A	9615585
Colour	TCU	<5.0	5.0	N/A	9615592	<5.0	7.0	5.0	N/A	9615592
Nitrate + Nitrite (N)	mg/L	0.066	0.050	N/A	9615594	<0.050	0.056	0.050	N/A	9615594
Nitrite (N)	mg/L	<0.010	0.010	N/A	9615597	<0.010	<0.010	0.010	N/A	9615597
Nitrogen (Ammonia Nitrogen)	mg/L	0.058	0.050	N/A	9616225	0.060	0.19	0.050	N/A	9616225
Total Organic Carbon (C)	mg/L	0.94	0.50	N/A	9615401	<5.0 (1)	6.4 (1)	5.0	N/A	9615679
Orthophosphate (P)	mg/L	<0.010	0.010	N/A	9615593	0.065	<0.010	0.010	N/A	9615593
pH	pH	7.48			9616578	6.80	7.22			9616556
Reactive Silica (SiO2)	mg/L	11	0.50	N/A	9615590	7.3	12	0.50	N/A	9615590
Dissolved Sulphate (SO4)	mg/L	3.2	2.0	N/A	9615588	3.0	2.6	2.0	N/A	9615588
Turbidity	NTU	95	0.10	0.10	9622206	600	370	1.0	1.0	9622206
Conductivity	uS/cm	120	1.0	N/A	9616596	51	87	1.0	N/A	9616565

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated reporting limit due to turbidity.

Bureau Veritas 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.bvna.com

Bureau Veritas Job #: C4R0855
Report Date: 2024/09/09

GHD Limited
Client Project #: 12584960
Site Location: Shaw-Proposed Sandpit Middleton
Your P.O. #: 735-009799

RESULTS OF ANALYSES OF GROUND WATER

Bureau Veritas ID		ABLU53				ABLU53			
Sampling Date		2024/08/29 00:00				2024/08/29 00:00			
COC Number		C#1007056-01-01				C#1007056-01-01			
	UNITS	MWDUP	RDL	MDL	QC Batch	MWDUP Lab-Dup	RDL	MDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	1.74	N/A	N/A	9610149				
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	78	1.0	0.20	9610145				
Calculated TDS	mg/L	87	1.0	0.20	9610154				
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	0.20	9610145				
Cation Sum	me/L	1.22	N/A	N/A	9610149				
Hardness (CaCO3)	mg/L	43	1.0	1.0	9610147				
Ion Balance (% Difference)	%	17.6	N/A	N/A	9610148				
Langelier Index (@ 20C)	N/A	-0.358			9610151				
Langelier Index (@ 4C)	N/A	-0.609			9610152				
Nitrate (N)	mg/L	<0.050	0.050	N/A	9610029				
Saturation pH (@ 20C)	N/A	8.29			9610151				
Saturation pH (@ 4C)	N/A	8.54			9610152				
Inorganics									
Total Alkalinity (Total as CaCO3)	mg/L	78	2.0	N/A	9616567				
Dissolved Chloride (Cl-)	mg/L	4.2	1.0	N/A	9615585				
Colour	TCU	<5.0	5.0	N/A	9615592				
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	N/A	9615594				
Nitrite (N)	mg/L	<0.010	0.010	N/A	9615597				
Nitrogen (Ammonia Nitrogen)	mg/L	0.061	0.050	N/A	9616225				
Total Organic Carbon (C)	mg/L	0.69	0.50	N/A	9615686				
Orthophosphate (P)	mg/L	0.022	0.010	N/A	9615593				
pH	pH	7.93			9616556				
Reactive Silica (SiO2)	mg/L	8.2	0.50	N/A	9615590				
Dissolved Sulphate (SO4)	mg/L	2.8	2.0	N/A	9615588				
Turbidity	NTU	280	1.0	1.0	9622195	280	1.0	1.0	9622195
Conductivity	uS/cm	160	1.0	N/A	9616565				

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

Bureau Veritas 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.bvna.com

RESULTS OF ANALYSES OF GROUND WATER

Bureau Veritas ID		ABLU54				ABLU55			
Sampling Date		2024/08/29 10:10				2024/08/29 11:09			
COC Number		C#1007056-01-01				C#1007056-01-01			
	UNITS	MW8	RDL	MDL	QC Batch	MW9	RDL	MDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	1.53	N/A	N/A	9610149	0.470	N/A	N/A	9610149
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	67	1.0	0.20	9610145	13	1.0	0.20	9610145
Calculated TDS	mg/L	81	1.0	0.20	9610154	36	1.0	0.20	9610154
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	0.20	9610145	<1.0	1.0	0.20	9610145
Cation Sum	me/L	1.23	N/A	N/A	9610149	0.490	N/A	N/A	9610149
Hardness (CaCO3)	mg/L	43	1.0	1.0	9610147	14	1.0	1.0	9610147
Ion Balance (% Difference)	%	10.9	N/A	N/A	9610148	2.08	N/A	N/A	9610148
Langelier Index (@ 20C)	N/A	-0.508			9610151	-2.45			9610151
Langelier Index (@ 4C)	N/A	-0.759			9610152	-2.70			9610152
Nitrate (N)	mg/L	<0.050	0.050	N/A	9610029	0.16	0.050	N/A	9610029
Saturation pH (@ 20C)	N/A	8.35			9610151	9.61			9610151
Saturation pH (@ 4C)	N/A	8.60			9610152	9.86			9610152
Inorganics									
Total Alkalinity (Total as CaCO3)	mg/L	68	2.0	N/A	9616567	13	2.0	N/A	9616567
Dissolved Chloride (Cl-)	mg/L	4.3	1.0	N/A	9615585	5.1	1.0	N/A	9615585
Colour	TCU	<5.0	5.0	N/A	9615592	<5.0	5.0	N/A	9615592
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	N/A	9615594	0.16	0.050	N/A	9615594
Nitrite (N)	mg/L	<0.010	0.010	N/A	9615597	<0.010	0.010	N/A	9615597
Nitrogen (Ammonia Nitrogen)	mg/L	0.096	0.050	N/A	9616213	0.056	0.050	N/A	9616225
Total Organic Carbon (C)	mg/L	0.69	0.50	N/A	9615686	0.66	0.50	N/A	9615672
Orthophosphate (P)	mg/L	0.021	0.010	N/A	9615593	0.015	0.010	N/A	9615593
pH	pH	7.84			9616556	7.16			9616556
Reactive Silica (SiO2)	mg/L	8.0	0.50	N/A	9615590	10	0.50	N/A	9615590
Dissolved Sulphate (SO4)	mg/L	2.8	2.0	N/A	9615588	2.6	2.0	N/A	9615588
Turbidity	NTU	320	1.0	1.0	9622206	66	0.10	0.10	9619404
Conductivity	uS/cm	160	1.0	N/A	9616565	55	1.0	N/A	9616565

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Bureau Veritas Job #: C4R0855
Report Date: 2024/09/09

GHD Limited
Client Project #: 12584960
Site Location: Shaw-Proposed Sandpit Middleton
Your P.O. #: 735-009799

RESULTS OF ANALYSES OF GROUND WATER

Bureau Veritas ID		ABLU55			
Sampling Date		2024/08/29 11:09			
COC Number		C#1007056-01-01			
	UNITS	MW9 Lab-Dup	RDL	MDL	QC Batch
Inorganics					
Turbidity	NTU	67	0.10	0.10	9619404

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate

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Bureau Veritas Job #: C4R0855
Report Date: 2024/09/09

GHD Limited
Client Project #: 12584960
Site Location: Shaw-Proposed Sandpit Middleton
Your P.O. #: 735-009799

ELEMENTS BY ICP/MS (GROUND WATER)

Bureau Veritas ID		ABLU47	ABLU48		ABLU49	ABLU50			
Sampling Date		2024/08/29 15:15	2024/08/29 14:53		2024/08/29 14:32	2024/08/29 12:06			
COC Number		C#1007056-01-01	C#1007056-01-01		C#1007056-01-01	C#1007056-01-01			
	UNITS	MW1	MW2	QC Batch	MW3	MW4	RDL	MDL	QC Batch
Metals									
Dissolved Aluminum (Al)	ug/L	<5.0	24	9618219	<5.0	<5.0	5.0	N/A	9618235
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	9618219	<1.0	<1.0	1.0	N/A	9618235
Dissolved Arsenic (As)	ug/L	12	<1.0	9618219	<1.0	<1.0	1.0	N/A	9618235
Dissolved Barium (Ba)	ug/L	9.2	6.8	9618219	3.4	91	1.0	N/A	9618235
Dissolved Beryllium (Be)	ug/L	<0.10	0.11	9618219	<0.10	<0.10	0.10	N/A	9618235
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	9618219	<2.0	<2.0	2.0	N/A	9618235
Dissolved Boron (B)	ug/L	<50	<50	9618219	<50	<50	50	N/A	9618235
Dissolved Cadmium (Cd)	ug/L	0.013	0.024	9618219	0.050	0.024	0.010	N/A	9618235
Dissolved Calcium (Ca)	ug/L	11000	1100	9618219	3200	12000	100	N/A	9618235
Dissolved Chromium (Cr)	ug/L	1.3	<1.0	9618219	<1.0	<1.0	1.0	N/A	9618235
Dissolved Cobalt (Co)	ug/L	<0.40	<0.40	9618219	<0.40	11	0.40	N/A	9618235
Dissolved Copper (Cu)	ug/L	<0.50	0.92	9618219	1.0	5.8	0.50	N/A	9618235
Dissolved Iron (Fe)	ug/L	<50	<50	9618219	<50	<50	50	N/A	9618235
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	9618219	<0.50	<0.50	0.50	N/A	9618235
Dissolved Magnesium (Mg)	ug/L	1100	920	9618219	890	2800	100	N/A	9618235
Dissolved Manganese (Mn)	ug/L	<2.0	50	9618219	4.0	260	2.0	N/A	9618235
Dissolved Molybdenum (Mo)	ug/L	<2.0	<2.0	9618219	<2.0	<2.0	2.0	N/A	9618235
Dissolved Nickel (Ni)	ug/L	<2.0	<2.0	9618219	<2.0	5.5	2.0	N/A	9618235
Dissolved Phosphorus (P)	ug/L	<100	<100	9618219	<100	<100	100	N/A	9618235
Dissolved Potassium (K)	ug/L	390	210	9618219	1000	690	100	N/A	9618235
Dissolved Selenium (Se)	ug/L	0.51	<0.50	9618219	<0.50	<0.50	0.50	N/A	9618235
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	9618219	<0.10	<0.10	0.10	N/A	9618235
Dissolved Sodium (Na)	ug/L	10000	2900	9618219	4100	5600	100	N/A	9618235
Dissolved Strontium (Sr)	ug/L	22	7.3	9618219	17	69	2.0	N/A	9618235
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	9618219	<0.10	<0.10	0.10	N/A	9618235
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	9618219	<2.0	<2.0	2.0	N/A	9618235
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	9618219	<2.0	<2.0	2.0	N/A	9618235
Dissolved Uranium (U)	ug/L	1.0	<0.10	9618219	<0.10	<0.10	0.10	N/A	9618235
Dissolved Vanadium (V)	ug/L	15	<2.0	9618219	<2.0	<2.0	2.0	N/A	9618235
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	9618219	8.2	30	5.0	N/A	9618235

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

Bureau Veritas 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.bvna.com

ELEMENTS BY ICP/MS (GROUND WATER)

Bureau Veritas ID		ABLU50	ABLU51		ABLU52	ABLU52			
Sampling Date		2024/08/29 12:06	2024/08/29 13:02		2024/08/29 14:06	2024/08/29 14:06			
COC Number		C#1007056-01-01	C#1007056-01-01		C#1007056-01-01	C#1007056-01-01			
	UNITS	MW4 Lab-Dup	MW5	QC Batch	MW6	MW6 Lab-Dup	RDL	MDL	QC Batch
Metals									
Dissolved Aluminum (Al)	ug/L	<5.0	12	9618235	62	69	5.0	N/A	9615523
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	9618235	<1.0	<1.0	1.0	N/A	9615523
Dissolved Arsenic (As)	ug/L	<1.0	<1.0	9618235	<1.0	<1.0	1.0	N/A	9615523
Dissolved Barium (Ba)	ug/L	92	10	9618235	27	28	1.0	N/A	9615523
Dissolved Beryllium (Be)	ug/L	<0.10	<0.10	9618235	<0.10	<0.10	0.10	N/A	9615523
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	9618235	<2.0	<2.0	2.0	N/A	9615523
Dissolved Boron (B)	ug/L	<50	<50	9618235	<50	<50	50	N/A	9615523
Dissolved Cadmium (Cd)	ug/L	0.026	0.018	9618235	0.085	0.085	0.010	N/A	9615523
Dissolved Calcium (Ca)	ug/L	12000	3800	9618235	9300	9100	100	N/A	9615523
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	9618235	<1.0	<1.0	1.0	N/A	9615523
Dissolved Cobalt (Co)	ug/L	11	1.1	9618235	1.3	1.4	0.40	N/A	9615523
Dissolved Copper (Cu)	ug/L	5.8	9.2	9618235	140	140	0.50	N/A	9615523
Dissolved Iron (Fe)	ug/L	<50	<50	9618235	800	820	50	N/A	9615523
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	9618235	<0.50	<0.50	0.50	N/A	9615523
Dissolved Magnesium (Mg)	ug/L	2900	1000	9618235	1600	1700	100	N/A	9615523
Dissolved Manganese (Mn)	ug/L	270	41	9618235	580	570	2.0	N/A	9615523
Dissolved Molybdenum (Mo)	ug/L	<2.0	<2.0	9618235	2.7	2.7	2.0	N/A	9615523
Dissolved Nickel (Ni)	ug/L	5.8	<2.0	9618235	3.8	3.6	2.0	N/A	9615523
Dissolved Phosphorus (P)	ug/L	<100	<100	9618235	<100	<100	100	N/A	9615523
Dissolved Potassium (K)	ug/L	690	920	9618235	2300	2300	100	N/A	9615523
Dissolved Selenium (Se)	ug/L	<0.50	<0.50	9618235	<0.50	<0.50	0.50	N/A	9615523
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	9618235	<0.10	<0.10	0.10	N/A	9615523
Dissolved Sodium (Na)	ug/L	5600	3800	9618235	6600	6400	100	N/A	9615523
Dissolved Strontium (Sr)	ug/L	71	14	9618235	33	34	2.0	N/A	9615523
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	9618235	<0.10	<0.10	0.10	N/A	9615523
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	9618235	6.7	6.7	2.0	N/A	9615523
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	9618235	<2.0	<2.0	2.0	N/A	9615523
Dissolved Uranium (U)	ug/L	<0.10	0.16	9618235	<0.10	<0.10	0.10	N/A	9615523
Dissolved Vanadium (V)	ug/L	<2.0	<2.0	9618235	<2.0	<2.0	2.0	N/A	9615523
Dissolved Zinc (Zn)	ug/L	30	10	9618235	19	20	5.0	N/A	9615523

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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ELEMENTS BY ICP/MS (GROUND WATER)

Bureau Veritas ID		ABLU53	ABLU54		ABLU55			
Sampling Date		2024/08/29 00:00	2024/08/29 10:10		2024/08/29 11:09			
COC Number		C#1007056-01-01	C#1007056-01-01		C#1007056-01-01			
	UNITS	MWDUP	MW8	QC Batch	MW9	RDL	MDL	QC Batch
Metals								
Dissolved Aluminum (Al)	ug/L	<5.0	<5.0	9615523	<5.0	5.0	N/A	9618235
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	9615523	<1.0	1.0	N/A	9618235
Dissolved Arsenic (As)	ug/L	1.5	1.5	9615523	<1.0	1.0	N/A	9618235
Dissolved Barium (Ba)	ug/L	9.1	8.6	9615523	4.4	1.0	N/A	9618235
Dissolved Beryllium (Be)	ug/L	<0.10	<0.10	9615523	<0.10	0.10	N/A	9618235
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	9615523	<2.0	2.0	N/A	9618235
Dissolved Boron (B)	ug/L	<50	<50	9615523	<50	50	N/A	9618235
Dissolved Cadmium (Cd)	ug/L	0.023	0.017	9615523	<0.010	0.010	N/A	9618235
Dissolved Calcium (Ca)	ug/L	14000	14000	9615523	3800	100	N/A	9618235
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	9615523	<1.0	1.0	N/A	9618235
Dissolved Cobalt (Co)	ug/L	<0.40	<0.40	9615523	<0.40	0.40	N/A	9618235
Dissolved Copper (Cu)	ug/L	<0.50	<0.50	9615523	<0.50	0.50	N/A	9618235
Dissolved Iron (Fe)	ug/L	<50	<50	9615523	<50	50	N/A	9618235
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	9615523	<0.50	0.50	N/A	9618235
Dissolved Magnesium (Mg)	ug/L	1800	1800	9615523	1100	100	N/A	9618235
Dissolved Manganese (Mn)	ug/L	130	130	9615523	<2.0	2.0	N/A	9618235
Dissolved Molybdenum (Mo)	ug/L	14	14	9615523	<2.0	2.0	N/A	9618235
Dissolved Nickel (Ni)	ug/L	<2.0	<2.0	9615523	<2.0	2.0	N/A	9618235
Dissolved Phosphorus (P)	ug/L	<100	<100	9615523	<100	100	N/A	9618235
Dissolved Potassium (K)	ug/L	1700	1700	9615523	680	100	N/A	9618235
Dissolved Selenium (Se)	ug/L	<0.50	<0.50	9615523	<0.50	0.50	N/A	9618235
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	9615523	<0.10	0.10	N/A	9618235
Dissolved Sodium (Na)	ug/L	7200	7400	9615523	4300	100	N/A	9618235
Dissolved Strontium (Sr)	ug/L	62	62	9615523	20	2.0	N/A	9618235
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	9615523	<0.10	0.10	N/A	9618235
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	9615523	<2.0	2.0	N/A	9618235
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	9615523	<2.0	2.0	N/A	9618235
Dissolved Uranium (U)	ug/L	0.54	0.54	9615523	<0.10	0.10	N/A	9618235
Dissolved Vanadium (V)	ug/L	<2.0	<2.0	9615523	<2.0	2.0	N/A	9618235
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	9615523	<5.0	5.0	N/A	9618235

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Bureau Veritas Job #: C4R0855
Report Date: 2024/09/09

GHD Limited
Client Project #: 12584960
Site Location: Shaw-Proposed Sandpit Middleton
Your P.O. #: 735-009799

RESULTS OF ANALYSES OF SURFACE WATER

Bureau Veritas ID		ABLU44				ABLU44			
Sampling Date		2024/08/29 15:58				2024/08/29 15:58			
COC Number		C#1007056-01-01				C#1007056-01-01			
	UNITS	SW1	RDL	MDL	QC Batch	SW1 Lab-Dup	RDL	MDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	0.440	N/A	N/A	9610149				
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	12	1.0	0.20	9610145				
Calculated TDS	mg/L	36	1.0	0.20	9610154				
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	0.20	9610145				
Cation Sum	me/L	0.490	N/A	N/A	9610149				
Hardness (CaCO3)	mg/L	14	1.0	1.0	9610147				
Ion Balance (% Difference)	%	5.38	N/A	N/A	9610148				
Langelier Index (@ 20C)	N/A	-2.59			9610151				
Langelier Index (@ 4C)	N/A	-2.84			9610152				
Nitrate (N)	mg/L	<0.050	0.050	N/A	9610029				
Saturation pH (@ 20C)	N/A	9.70			9610151				
Saturation pH (@ 4C)	N/A	9.96			9610152				
Inorganics									
Total Alkalinity (Total as CaCO3)	mg/L	12	2.0	N/A	9616598				
Dissolved Chloride (Cl-)	mg/L	5.5	1.0	N/A	9615525				
Colour	TCU	8.9	5.0	N/A	9615531				
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	N/A	9615533				
Nitrite (N)	mg/L	<0.010	0.010	N/A	9615534				
Nitrogen (Ammonia Nitrogen)	mg/L	<0.050	0.050	N/A	9616213				
Total Organic Carbon (C)	mg/L	1.2	0.50	N/A	9615401	1.2	0.50	N/A	9615401
Orthophosphate (P)	mg/L	0.013	0.010	N/A	9615532				
pH	pH	7.12			9616578				
Reactive Silica (SiO2)	mg/L	10	0.50	N/A	9615529				
Total Suspended Solids	mg/L	<1.0	1.0	N/A	9615361				
Dissolved Sulphate (SO4)	mg/L	2.6	2.0	N/A	9615528				
Turbidity	NTU	0.39	0.10	0.10	9625708				
Conductivity	uS/cm	51	1.0	N/A	9616596				

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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RESULTS OF ANALYSES OF SURFACE WATER

Bureau Veritas ID		ABLU45			ABLU46			
Sampling Date		2024/08/29 16:34			2024/08/29 00:00			
COC Number		C#1007056-01-01			C#1007056-01-01			
	UNITS	SW2	RDL	QC Batch	SW DUP	RDL	MDL	QC Batch
Calculated Parameters								
Anion Sum	me/L	0.720	N/A	9610149	0.700	N/A	N/A	9610149
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	27	1.0	9610145	26	1.0	0.20	9610145
Calculated TDS	mg/L	53	1.0	9610154	52	1.0	0.20	9610154
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	9610145	<1.0	1.0	0.20	9610145
Cation Sum	me/L	0.800	N/A	9610149	0.810	N/A	N/A	9610149
Hardness (CaCO3)	mg/L	25	1.0	9610147	25	1.0	1.0	9610147
Ion Balance (% Difference)	%	5.26	N/A	9610148	7.28	N/A	N/A	9610148
Langelier Index (@ 20C)	N/A	-1.64		9610151	-1.66			9610151
Langelier Index (@ 4C)	N/A	-1.90		9610152	-1.91			9610152
Nitrate (N)	mg/L	<0.050	0.050	9610029	<0.050	0.050	N/A	9610029
Saturation pH (@ 20C)	N/A	9.06		9610151	9.08			9610151
Saturation pH (@ 4C)	N/A	9.32		9610152	9.34			9610152
Inorganics								
Total Alkalinity (Total as CaCO3)	mg/L	27	2.0	9616567	26	2.0	N/A	9616598
Dissolved Chloride (Cl-)	mg/L	4.6	1.0	9615525	4.6	1.0	N/A	9615525
Colour	TCU	9.9	5.0	9615531	10	5.0	N/A	9615531
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	9615533	<0.050	0.050	N/A	9615533
Nitrite (N)	mg/L	<0.010	0.010	9615534	<0.010	0.010	N/A	9615534
Nitrogen (Ammonia Nitrogen)	mg/L	<0.050	0.050	9616213	<0.050	0.050	N/A	9616213
Total Organic Carbon (C)	mg/L	1.7	0.50	9615401	1.8	0.50	N/A	9615401
Orthophosphate (P)	mg/L	<0.010	0.010	9615532	<0.010	0.010	N/A	9615532
pH	pH	7.42		9616556	7.42			9616578
Reactive Silica (SiO2)	mg/L	13	0.50	9615529	13	0.50	N/A	9615529
Total Suspended Solids	mg/L	<2.0 (1)	2.0	9615361	<5.0 (1)	5.0	N/A	9615361
Dissolved Sulphate (SO4)	mg/L	2.7	2.0	9615528	2.6	2.0	N/A	9615528
Turbidity	NTU	5.3	0.10	9619404	7.7	0.10	0.10	9619404
Conductivity	uS/cm	77	1.0	9616565	76	1.0	N/A	9616596

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated DL due to sample matrix.

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GHD Limited
Client Project #: 12584960
Site Location: Shaw-Proposed Sandpit Middleton
Your P.O. #: 735-009799

RESULTS OF ANALYSES OF SURFACE WATER

Bureau Veritas ID		ABLU46			
Sampling Date		2024/08/29 00:00			
COC Number		C#1007056-01-01			
	UNITS	SW DUP Lab-Dup	RDL	MDL	QC Batch
Inorganics					
Total Alkalinity (Total as CaCO3)	mg/L	26	2.0	N/A	9616598
pH	pH	7.52			9616578
Conductivity	uS/cm	77	1.0	N/A	9616596

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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ELEMENTS BY ICP/MS (SURFACE WATER)

Bureau Veritas ID		ABLU44	ABLU45		ABLU46			
Sampling Date		2024/08/29 15:58	2024/08/29 16:34		2024/08/29 00:00			
COC Number		C#1007056-01-01	C#1007056-01-01		C#1007056-01-01			
	UNITS	SW1	SW2	QC Batch	SW DUP	RDL	MDL	QC Batch
Metals								
Total Aluminum (Al)	ug/L	22	200	9613615	210	5.0	N/A	9614016
Total Antimony (Sb)	ug/L	<1.0	<1.0	9613615	<1.0	1.0	N/A	9614016
Total Arsenic (As)	ug/L	<1.0	<1.0	9613615	<1.0	1.0	N/A	9614016
Total Barium (Ba)	ug/L	6.2	5.5	9613615	5.5	1.0	N/A	9614016
Total Beryllium (Be)	ug/L	<0.10	<0.10	9613615	<0.10	0.10	N/A	9614016
Total Bismuth (Bi)	ug/L	<2.0	<2.0	9613615	<2.0	2.0	N/A	9614016
Total Boron (B)	ug/L	<50	<50	9613615	<50	50	N/A	9614016
Total Cadmium (Cd)	ug/L	<0.010	0.011	9613615	0.011	0.010	N/A	9614016
Total Calcium (Ca)	ug/L	3400	6600	9613615	6500	100	N/A	9614016
Total Chromium (Cr)	ug/L	<1.0	<1.0	9613615	1.1	1.0	N/A	9614016
Total Cobalt (Co)	ug/L	<0.40	0.44	9613615	0.47	0.40	N/A	9614016
Total Copper (Cu)	ug/L	<0.50	0.63	9613615	0.69	0.50	N/A	9614016
Total Iron (Fe)	ug/L	120	1400	9613615	1600	50	N/A	9614016
Total Lead (Pb)	ug/L	<0.50	<0.50	9613615	<0.50	0.50	N/A	9614016
Total Magnesium (Mg)	ug/L	1200	2100	9613615	2100	100	N/A	9614016
Total Manganese (Mn)	ug/L	10	59	9613615	63	2.0	N/A	9614016
Total Molybdenum (Mo)	ug/L	<2.0	<2.0	9613615	<2.0	2.0	N/A	9614016
Total Nickel (Ni)	ug/L	<2.0	<2.0	9613615	<2.0	2.0	N/A	9614016
Total Phosphorus (P)	ug/L	<100	<100	9613615	<100	100	N/A	9614016
Total Potassium (K)	ug/L	730	780	9613615	810	100	N/A	9614016
Total Selenium (Se)	ug/L	<0.50	<0.50	9613615	<0.50	0.50	N/A	9614016
Total Silver (Ag)	ug/L	<0.10	<0.10	9613615	<0.10	0.10	N/A	9614016
Total Sodium (Na)	ug/L	4600	5300	9613615	5300	100	N/A	9614016
Total Strontium (Sr)	ug/L	23	34	9613615	36	2.0	N/A	9614016
Total Thallium (Tl)	ug/L	<0.10	<0.10	9613615	<0.10	0.10	N/A	9614016
Total Tin (Sn)	ug/L	<2.0	<2.0	9613615	<2.0	2.0	N/A	9614016
Total Titanium (Ti)	ug/L	<2.0	6.4	9613615	6.6	2.0	N/A	9614016
Total Uranium (U)	ug/L	<0.10	<0.10	9613615	<0.10	0.10	N/A	9614016
Total Vanadium (V)	ug/L	<2.0	<2.0	9613615	<2.0	2.0	N/A	9614016
Total Zinc (Zn)	ug/L	<5.0	<5.0	9613615	<5.0	5.0	N/A	9614016

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	3.3°C
Package 2	0.0°C

Sample ABLU44 [SW1] : ortho-Phosphate > Phosphorus: Both values fall within the method uncertainty for duplicates and are likely equivalent. RCAp Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample ABLU45 [SW2] : RCAp Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample ABLU46 [SW DUP] : RCAp Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample ABLU47 [MW1] : ortho-Phosphate > Phosphorus: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Sample ABLU49 [MW3] : ortho-Phosphate > Phosphorus: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Sample ABLU51 [MW5] : ortho-Phosphate > Phosphorus: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Sample ABLU52 [MW6] : RCAp Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample ABLU53 [MWDUP] : ortho-Phosphate > Phosphorus: Both values fall within the method uncertainty for duplicates and are likely equivalent. Poor RCAp Ion Balance due to sample matrix.

Sample ABLU54 [MW8] : ortho-Phosphate > Phosphorus: Both values fall within the method uncertainty for duplicates and are likely equivalent. Poor RCAp Ion Balance due to sample matrix.

Sample ABLU55 [MW9] : ortho-Phosphate > Phosphorus: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9613615	MTZ	Matrix Spike	Total Aluminum (Al)	2024/09/05		NC	%	80 - 120
			Total Antimony (Sb)	2024/09/05		101	%	80 - 120
			Total Arsenic (As)	2024/09/05		95	%	80 - 120
			Total Barium (Ba)	2024/09/05		92	%	80 - 120
			Total Beryllium (Be)	2024/09/05		96	%	80 - 120
			Total Bismuth (Bi)	2024/09/05		91	%	80 - 120
			Total Boron (B)	2024/09/05		90	%	80 - 120
			Total Cadmium (Cd)	2024/09/05		93	%	80 - 120
			Total Calcium (Ca)	2024/09/05		NC	%	80 - 120
			Total Chromium (Cr)	2024/09/05		93	%	80 - 120
			Total Cobalt (Co)	2024/09/05		91	%	80 - 120
			Total Copper (Cu)	2024/09/05		92	%	80 - 120
			Total Iron (Fe)	2024/09/05		NC	%	80 - 120
			Total Lead (Pb)	2024/09/05		91	%	80 - 120
			Total Magnesium (Mg)	2024/09/05		96	%	80 - 120
			Total Manganese (Mn)	2024/09/05		100	%	80 - 120
			Total Molybdenum (Mo)	2024/09/05		97	%	80 - 120
			Total Nickel (Ni)	2024/09/05		94	%	80 - 120
			Total Phosphorus (P)	2024/09/05		99	%	80 - 120
			Total Potassium (K)	2024/09/05		NC	%	80 - 120
			Total Selenium (Se)	2024/09/05		93	%	80 - 120
			Total Silver (Ag)	2024/09/05		91	%	80 - 120
			Total Sodium (Na)	2024/09/05		NC	%	80 - 120
			Total Strontium (Sr)	2024/09/05		NC	%	80 - 120
			Total Thallium (Tl)	2024/09/05		91	%	80 - 120
			Total Tin (Sn)	2024/09/05		95	%	80 - 120
			Total Titanium (Ti)	2024/09/05		97	%	80 - 120
			Total Uranium (U)	2024/09/05		96	%	80 - 120
			Total Vanadium (V)	2024/09/05		99	%	80 - 120
			Total Zinc (Zn)	2024/09/05		95	%	80 - 120
9613615	MTZ	Spiked Blank	Total Aluminum (Al)	2024/09/04		98	%	80 - 120
			Total Antimony (Sb)	2024/09/04		101	%	80 - 120
			Total Arsenic (As)	2024/09/04		97	%	80 - 120
			Total Barium (Ba)	2024/09/04		100	%	80 - 120
			Total Beryllium (Be)	2024/09/04		99	%	80 - 120
			Total Bismuth (Bi)	2024/09/04		100	%	80 - 120
			Total Boron (B)	2024/09/04		102	%	80 - 120
			Total Cadmium (Cd)	2024/09/04		102	%	80 - 120
			Total Calcium (Ca)	2024/09/04		99	%	80 - 120
			Total Chromium (Cr)	2024/09/04		98	%	80 - 120
			Total Cobalt (Co)	2024/09/04		98	%	80 - 120
			Total Copper (Cu)	2024/09/04		97	%	80 - 120
			Total Iron (Fe)	2024/09/04		100	%	80 - 120
			Total Lead (Pb)	2024/09/04		103	%	80 - 120
			Total Magnesium (Mg)	2024/09/04		102	%	80 - 120
			Total Manganese (Mn)	2024/09/04		100	%	80 - 120
			Total Molybdenum (Mo)	2024/09/04		103	%	80 - 120
			Total Nickel (Ni)	2024/09/04		98	%	80 - 120
			Total Phosphorus (P)	2024/09/04		101	%	80 - 120
			Total Potassium (K)	2024/09/04		98	%	80 - 120
			Total Selenium (Se)	2024/09/04		98	%	80 - 120
			Total Silver (Ag)	2024/09/04		97	%	80 - 120
			Total Sodium (Na)	2024/09/04		99	%	80 - 120

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Strontium (Sr)	2024/09/04		99	%	80 - 120
			Total Thallium (Tl)	2024/09/04		100	%	80 - 120
			Total Tin (Sn)	2024/09/04		101	%	80 - 120
			Total Titanium (Ti)	2024/09/04		99	%	80 - 120
			Total Uranium (U)	2024/09/04		106	%	80 - 120
			Total Vanadium (V)	2024/09/04		101	%	80 - 120
			Total Zinc (Zn)	2024/09/04		99	%	80 - 120
9613615	MTZ	Method Blank	Total Aluminum (Al)	2024/09/04	<5.0		ug/L	
			Total Antimony (Sb)	2024/09/04	<1.0		ug/L	
			Total Arsenic (As)	2024/09/04	<1.0		ug/L	
			Total Barium (Ba)	2024/09/04	<1.0		ug/L	
			Total Beryllium (Be)	2024/09/04	<0.10		ug/L	
			Total Bismuth (Bi)	2024/09/04	<2.0		ug/L	
			Total Boron (B)	2024/09/04	<50		ug/L	
			Total Cadmium (Cd)	2024/09/04	<0.010		ug/L	
			Total Calcium (Ca)	2024/09/04	<100		ug/L	
			Total Chromium (Cr)	2024/09/04	<1.0		ug/L	
			Total Cobalt (Co)	2024/09/04	<0.40		ug/L	
			Total Copper (Cu)	2024/09/04	<0.50		ug/L	
			Total Iron (Fe)	2024/09/04	<50		ug/L	
			Total Lead (Pb)	2024/09/04	<0.50		ug/L	
			Total Magnesium (Mg)	2024/09/04	<100		ug/L	
			Total Manganese (Mn)	2024/09/04	<2.0		ug/L	
			Total Molybdenum (Mo)	2024/09/04	<2.0		ug/L	
			Total Nickel (Ni)	2024/09/04	<2.0		ug/L	
			Total Phosphorus (P)	2024/09/04	<100		ug/L	
			Total Potassium (K)	2024/09/04	<100		ug/L	
			Total Selenium (Se)	2024/09/04	<0.50		ug/L	
			Total Silver (Ag)	2024/09/04	<0.10		ug/L	
			Total Sodium (Na)	2024/09/04	<100		ug/L	
			Total Strontium (Sr)	2024/09/04	<2.0		ug/L	
			Total Thallium (Tl)	2024/09/04	<0.10		ug/L	
			Total Tin (Sn)	2024/09/04	<2.0		ug/L	
			Total Titanium (Ti)	2024/09/04	<2.0		ug/L	
			Total Uranium (U)	2024/09/04	<0.10		ug/L	
			Total Vanadium (V)	2024/09/04	<2.0		ug/L	
			Total Zinc (Zn)	2024/09/04	<5.0		ug/L	
9613615	MTZ	RPD	Total Aluminum (Al)	2024/09/04	2.0		%	20
			Total Antimony (Sb)	2024/09/04	8.5		%	20
			Total Arsenic (As)	2024/09/04	1.7		%	20
			Total Barium (Ba)	2024/09/04	5.3		%	20
			Total Beryllium (Be)	2024/09/04	NC		%	20
			Total Bismuth (Bi)	2024/09/04	NC		%	20
			Total Boron (B)	2024/09/04	1.8		%	20
			Total Cadmium (Cd)	2024/09/04	2.6		%	20
			Total Calcium (Ca)	2024/09/04	4.2		%	20
			Total Chromium (Cr)	2024/09/04	NC		%	20
			Total Cobalt (Co)	2024/09/04	NC		%	20
			Total Copper (Cu)	2024/09/04	4.6		%	20
			Total Iron (Fe)	2024/09/04	7.7		%	20
			Total Lead (Pb)	2024/09/04	2.6		%	20
			Total Magnesium (Mg)	2024/09/04	2.5		%	20
			Total Manganese (Mn)	2024/09/04	2.7		%	20

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Molybdenum (Mo)	2024/09/04	3.8		%	20
			Total Nickel (Ni)	2024/09/04	NC		%	20
			Total Phosphorus (P)	2024/09/04	NC		%	20
			Total Potassium (K)	2024/09/04	4.1		%	20
			Total Selenium (Se)	2024/09/04	NC		%	20
			Total Silver (Ag)	2024/09/04	NC		%	20
			Total Sodium (Na)	2024/09/04	4.1		%	20
			Total Strontium (Sr)	2024/09/04	4.1		%	20
			Total Thallium (Tl)	2024/09/04	NC		%	20
			Total Tin (Sn)	2024/09/04	NC		%	20
			Total Titanium (Ti)	2024/09/04	10		%	20
			Total Uranium (U)	2024/09/04	5.8		%	20
			Total Vanadium (V)	2024/09/04	3.7		%	20
			Total Zinc (Zn)	2024/09/04	5.2		%	20
9614016	MOA	Matrix Spike [ABLU46-03]	Total Aluminum (Al)	2024/09/05		101	%	80 - 120
			Total Antimony (Sb)	2024/09/05		99	%	80 - 120
			Total Arsenic (As)	2024/09/05		98	%	80 - 120
			Total Barium (Ba)	2024/09/05		94	%	80 - 120
			Total Beryllium (Be)	2024/09/05		100	%	80 - 120
			Total Bismuth (Bi)	2024/09/05		98	%	80 - 120
			Total Boron (B)	2024/09/05		101	%	80 - 120
			Total Cadmium (Cd)	2024/09/05		98	%	80 - 120
			Total Calcium (Ca)	2024/09/05		99	%	80 - 120
			Total Chromium (Cr)	2024/09/05		97	%	80 - 120
			Total Cobalt (Co)	2024/09/05		98	%	80 - 120
			Total Copper (Cu)	2024/09/05		100	%	80 - 120
			Total Iron (Fe)	2024/09/05		NC	%	80 - 120
			Total Lead (Pb)	2024/09/05		97	%	80 - 120
			Total Magnesium (Mg)	2024/09/05		101	%	80 - 120
			Total Manganese (Mn)	2024/09/05		96	%	80 - 120
			Total Molybdenum (Mo)	2024/09/05		104	%	80 - 120
			Total Nickel (Ni)	2024/09/05		101	%	80 - 120
			Total Phosphorus (P)	2024/09/05		101	%	80 - 120
			Total Potassium (K)	2024/09/05		101	%	80 - 120
			Total Selenium (Se)	2024/09/05		99	%	80 - 120
			Total Silver (Ag)	2024/09/05		98	%	80 - 120
			Total Sodium (Na)	2024/09/05		96	%	80 - 120
			Total Strontium (Sr)	2024/09/05		99	%	80 - 120
			Total Thallium (Tl)	2024/09/05		98	%	80 - 120
			Total Tin (Sn)	2024/09/05		100	%	80 - 120
			Total Titanium (Ti)	2024/09/05		100	%	80 - 120
			Total Uranium (U)	2024/09/05		106	%	80 - 120
			Total Vanadium (V)	2024/09/05		99	%	80 - 120
			Total Zinc (Zn)	2024/09/05		100	%	80 - 120
9614016	MOA	Spiked Blank	Total Aluminum (Al)	2024/09/05		96	%	80 - 120
			Total Antimony (Sb)	2024/09/05		100	%	80 - 120
			Total Arsenic (As)	2024/09/05		100	%	80 - 120
			Total Barium (Ba)	2024/09/05		97	%	80 - 120
			Total Beryllium (Be)	2024/09/05		102	%	80 - 120
			Total Bismuth (Bi)	2024/09/05		101	%	80 - 120
			Total Boron (B)	2024/09/05		100	%	80 - 120
			Total Cadmium (Cd)	2024/09/05		98	%	80 - 120
			Total Calcium (Ca)	2024/09/05		98	%	80 - 120

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Chromium (Cr)	2024/09/05		102	%	80 - 120
			Total Cobalt (Co)	2024/09/05		101	%	80 - 120
			Total Copper (Cu)	2024/09/05		103	%	80 - 120
			Total Iron (Fe)	2024/09/05		103	%	80 - 120
			Total Lead (Pb)	2024/09/05		100	%	80 - 120
			Total Magnesium (Mg)	2024/09/05		102	%	80 - 120
			Total Manganese (Mn)	2024/09/05		102	%	80 - 120
			Total Molybdenum (Mo)	2024/09/05		102	%	80 - 120
			Total Nickel (Ni)	2024/09/05		104	%	80 - 120
			Total Phosphorus (P)	2024/09/05		101	%	80 - 120
			Total Potassium (K)	2024/09/05		103	%	80 - 120
			Total Selenium (Se)	2024/09/05		100	%	80 - 120
			Total Silver (Ag)	2024/09/05		98	%	80 - 120
			Total Sodium (Na)	2024/09/05		101	%	80 - 120
			Total Strontium (Sr)	2024/09/05		103	%	80 - 120
			Total Thallium (Tl)	2024/09/05		101	%	80 - 120
			Total Tin (Sn)	2024/09/05		99	%	80 - 120
			Total Titanium (Ti)	2024/09/05		102	%	80 - 120
			Total Uranium (U)	2024/09/05		107	%	80 - 120
			Total Vanadium (V)	2024/09/05		103	%	80 - 120
			Total Zinc (Zn)	2024/09/05		102	%	80 - 120
9614016	MOA	Method Blank	Total Aluminum (Al)	2024/09/05	<5.0		ug/L	
			Total Antimony (Sb)	2024/09/05	<1.0		ug/L	
			Total Arsenic (As)	2024/09/05	<1.0		ug/L	
			Total Barium (Ba)	2024/09/05	<1.0		ug/L	
			Total Beryllium (Be)	2024/09/05	<0.10		ug/L	
			Total Bismuth (Bi)	2024/09/05	<2.0		ug/L	
			Total Boron (B)	2024/09/05	<50		ug/L	
			Total Cadmium (Cd)	2024/09/05	<0.010		ug/L	
			Total Calcium (Ca)	2024/09/05	<100		ug/L	
			Total Chromium (Cr)	2024/09/05	<1.0		ug/L	
			Total Cobalt (Co)	2024/09/05	<0.40		ug/L	
			Total Copper (Cu)	2024/09/05	<0.50		ug/L	
			Total Iron (Fe)	2024/09/05	<50		ug/L	
			Total Lead (Pb)	2024/09/05	<0.50		ug/L	
			Total Magnesium (Mg)	2024/09/05	<100		ug/L	
			Total Manganese (Mn)	2024/09/05	<2.0		ug/L	
			Total Molybdenum (Mo)	2024/09/05	<2.0		ug/L	
			Total Nickel (Ni)	2024/09/05	<2.0		ug/L	
			Total Phosphorus (P)	2024/09/05	<100		ug/L	
			Total Potassium (K)	2024/09/05	<100		ug/L	
			Total Selenium (Se)	2024/09/05	<0.50		ug/L	
			Total Silver (Ag)	2024/09/05	<0.10		ug/L	
			Total Sodium (Na)	2024/09/05	<100		ug/L	
			Total Strontium (Sr)	2024/09/05	<2.0		ug/L	
			Total Thallium (Tl)	2024/09/05	<0.10		ug/L	
			Total Tin (Sn)	2024/09/05	<2.0		ug/L	
			Total Titanium (Ti)	2024/09/05	<2.0		ug/L	
			Total Uranium (U)	2024/09/05	<0.10		ug/L	
			Total Vanadium (V)	2024/09/05	<2.0		ug/L	
			Total Zinc (Zn)	2024/09/05	<5.0		ug/L	
9614016	MOA	RPD	Total Aluminum (Al)	2024/09/05	1.5		%	20
			Total Antimony (Sb)	2024/09/05	NC		%	20

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Arsenic (As)	2024/09/05	NC		%	20
			Total Barium (Ba)	2024/09/05	2.6		%	20
			Total Beryllium (Be)	2024/09/05	NC		%	20
			Total Bismuth (Bi)	2024/09/05	NC		%	20
			Total Boron (B)	2024/09/05	NC		%	20
			Total Cadmium (Cd)	2024/09/05	NC		%	20
			Total Calcium (Ca)	2024/09/05	4.6		%	20
			Total Chromium (Cr)	2024/09/05	NC		%	20
			Total Cobalt (Co)	2024/09/05	NC		%	20
			Total Copper (Cu)	2024/09/05	4.2		%	20
			Total Iron (Fe)	2024/09/05	NC		%	20
			Total Lead (Pb)	2024/09/05	5.8		%	20
			Total Magnesium (Mg)	2024/09/05	4.5		%	20
			Total Manganese (Mn)	2024/09/05	NC		%	20
			Total Molybdenum (Mo)	2024/09/05	NC		%	20
			Total Nickel (Ni)	2024/09/05	NC		%	20
			Total Phosphorus (P)	2024/09/05	NC		%	20
			Total Potassium (K)	2024/09/05	2.7		%	20
			Total Selenium (Se)	2024/09/05	NC		%	20
			Total Silver (Ag)	2024/09/05	NC		%	20
			Total Sodium (Na)	2024/09/05	3.6		%	20
			Total Strontium (Sr)	2024/09/05	3.9		%	20
			Total Thallium (Tl)	2024/09/05	NC		%	20
			Total Tin (Sn)	2024/09/05	NC		%	20
			Total Titanium (Ti)	2024/09/05	NC		%	20
			Total Uranium (U)	2024/09/05	4.5		%	20
			Total Vanadium (V)	2024/09/05	NC		%	20
			Total Zinc (Zn)	2024/09/05	3.8		%	20
9615361	ZZH	QC Standard	Total Suspended Solids	2024/09/05		97	%	80 - 120
9615361	ZZH	Method Blank	Total Suspended Solids	2024/09/05	<1.0		mg/L	
9615361	ZZH	RPD	Total Suspended Solids	2024/09/05	0		%	20
9615401	SSI	Matrix Spike [ABLU44-04]	Total Organic Carbon (C)	2024/09/04		100	%	85 - 115
9615401	SSI	Spiked Blank	Total Organic Carbon (C)	2024/09/04		99	%	80 - 120
9615401	SSI	Method Blank	Total Organic Carbon (C)	2024/09/04	<0.50		mg/L	
9615401	SSI	RPD [ABLU44-04]	Total Organic Carbon (C)	2024/09/04	1.6		%	15
9615523	MTZ	Matrix Spike [ABLU52-02]	Dissolved Aluminum (Al)	2024/09/04		98	%	80 - 120
			Dissolved Antimony (Sb)	2024/09/04		99	%	80 - 120
			Dissolved Arsenic (As)	2024/09/04		101	%	80 - 120
			Dissolved Barium (Ba)	2024/09/04		99	%	80 - 120
			Dissolved Beryllium (Be)	2024/09/04		102	%	80 - 120
			Dissolved Bismuth (Bi)	2024/09/04		98	%	80 - 120
			Dissolved Boron (B)	2024/09/04		96	%	80 - 120
			Dissolved Cadmium (Cd)	2024/09/04		103	%	80 - 120
			Dissolved Calcium (Ca)	2024/09/04		96	%	80 - 120
			Dissolved Chromium (Cr)	2024/09/04		100	%	80 - 120
			Dissolved Cobalt (Co)	2024/09/04		101	%	80 - 120
			Dissolved Copper (Cu)	2024/09/04		NC	%	80 - 120
			Dissolved Iron (Fe)	2024/09/04		92	%	80 - 120
			Dissolved Lead (Pb)	2024/09/04		102	%	80 - 120
			Dissolved Magnesium (Mg)	2024/09/04		103	%	80 - 120
			Dissolved Manganese (Mn)	2024/09/04		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/09/04		99	%	80 - 120
			Dissolved Nickel (Ni)	2024/09/04		102	%	80 - 120

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Phosphorus (P)	2024/09/04		104	%	80 - 120
			Dissolved Potassium (K)	2024/09/04		102	%	80 - 120
			Dissolved Selenium (Se)	2024/09/04		101	%	80 - 120
			Dissolved Silver (Ag)	2024/09/04		77 (1)	%	80 - 120
			Dissolved Sodium (Na)	2024/09/04		101	%	80 - 120
			Dissolved Strontium (Sr)	2024/09/04		98	%	80 - 120
			Dissolved Thallium (Tl)	2024/09/04		100	%	80 - 120
			Dissolved Tin (Sn)	2024/09/04		98	%	80 - 120
			Dissolved Titanium (Ti)	2024/09/04		103	%	80 - 120
			Dissolved Uranium (U)	2024/09/04		109	%	80 - 120
			Dissolved Vanadium (V)	2024/09/04		105	%	80 - 120
			Dissolved Zinc (Zn)	2024/09/04		101	%	80 - 120
9615523	MTZ	Spiked Blank	Dissolved Aluminum (Al)	2024/09/04		100	%	80 - 120
			Dissolved Antimony (Sb)	2024/09/04		98	%	80 - 120
			Dissolved Arsenic (As)	2024/09/04		102	%	80 - 120
			Dissolved Barium (Ba)	2024/09/04		101	%	80 - 120
			Dissolved Beryllium (Be)	2024/09/04		98	%	80 - 120
			Dissolved Bismuth (Bi)	2024/09/04		101	%	80 - 120
			Dissolved Boron (B)	2024/09/04		92	%	80 - 120
			Dissolved Cadmium (Cd)	2024/09/04		102	%	80 - 120
			Dissolved Calcium (Ca)	2024/09/04		99	%	80 - 120
			Dissolved Chromium (Cr)	2024/09/04		102	%	80 - 120
			Dissolved Cobalt (Co)	2024/09/04		102	%	80 - 120
			Dissolved Copper (Cu)	2024/09/04		103	%	80 - 120
			Dissolved Iron (Fe)	2024/09/04		102	%	80 - 120
			Dissolved Lead (Pb)	2024/09/04		103	%	80 - 120
			Dissolved Magnesium (Mg)	2024/09/04		102	%	80 - 120
			Dissolved Manganese (Mn)	2024/09/04		106	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/09/04		100	%	80 - 120
			Dissolved Nickel (Ni)	2024/09/04		104	%	80 - 120
			Dissolved Phosphorus (P)	2024/09/04		104	%	80 - 120
			Dissolved Potassium (K)	2024/09/04		102	%	80 - 120
			Dissolved Selenium (Se)	2024/09/04		101	%	80 - 120
			Dissolved Silver (Ag)	2024/09/04		98	%	80 - 120
			Dissolved Sodium (Na)	2024/09/04		101	%	80 - 120
			Dissolved Strontium (Sr)	2024/09/04		104	%	80 - 120
			Dissolved Thallium (Tl)	2024/09/04		100	%	80 - 120
			Dissolved Tin (Sn)	2024/09/04		100	%	80 - 120
			Dissolved Titanium (Ti)	2024/09/04		102	%	80 - 120
			Dissolved Uranium (U)	2024/09/04		109	%	80 - 120
			Dissolved Vanadium (V)	2024/09/04		106	%	80 - 120
			Dissolved Zinc (Zn)	2024/09/04		104	%	80 - 120
9615523	MTZ	Method Blank	Dissolved Aluminum (Al)	2024/09/04	<5.0		ug/L	
			Dissolved Antimony (Sb)	2024/09/04	<1.0		ug/L	
			Dissolved Arsenic (As)	2024/09/04	<1.0		ug/L	
			Dissolved Barium (Ba)	2024/09/04	<1.0		ug/L	
			Dissolved Beryllium (Be)	2024/09/04	<0.10		ug/L	
			Dissolved Bismuth (Bi)	2024/09/04	<2.0		ug/L	
			Dissolved Boron (B)	2024/09/04	<50		ug/L	
			Dissolved Cadmium (Cd)	2024/09/04	<0.010		ug/L	
			Dissolved Calcium (Ca)	2024/09/04	<100		ug/L	
			Dissolved Chromium (Cr)	2024/09/04	<1.0		ug/L	
			Dissolved Cobalt (Co)	2024/09/04	<0.40		ug/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Copper (Cu)	2024/09/04	<0.50		ug/L	
			Dissolved Iron (Fe)	2024/09/04	<50		ug/L	
			Dissolved Lead (Pb)	2024/09/04	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2024/09/04	<100		ug/L	
			Dissolved Manganese (Mn)	2024/09/04	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2024/09/04	<2.0		ug/L	
			Dissolved Nickel (Ni)	2024/09/04	<2.0		ug/L	
			Dissolved Phosphorus (P)	2024/09/04	<100		ug/L	
			Dissolved Potassium (K)	2024/09/04	<100		ug/L	
			Dissolved Selenium (Se)	2024/09/04	<0.50		ug/L	
			Dissolved Silver (Ag)	2024/09/04	<0.10		ug/L	
			Dissolved Sodium (Na)	2024/09/04	<100		ug/L	
			Dissolved Strontium (Sr)	2024/09/04	<2.0		ug/L	
			Dissolved Thallium (Tl)	2024/09/04	<0.10		ug/L	
			Dissolved Tin (Sn)	2024/09/04	<2.0		ug/L	
			Dissolved Titanium (Ti)	2024/09/04	<2.0		ug/L	
			Dissolved Uranium (U)	2024/09/04	<0.10		ug/L	
			Dissolved Vanadium (V)	2024/09/04	<2.0		ug/L	
			Dissolved Zinc (Zn)	2024/09/04	<5.0		ug/L	
9615523	MTZ	RPD [ABLU52-02]	Dissolved Aluminum (Al)	2024/09/04	11		%	20
			Dissolved Antimony (Sb)	2024/09/04	NC		%	20
			Dissolved Arsenic (As)	2024/09/04	NC		%	20
			Dissolved Barium (Ba)	2024/09/04	2.9		%	20
			Dissolved Beryllium (Be)	2024/09/04	NC		%	20
			Dissolved Bismuth (Bi)	2024/09/04	NC		%	20
			Dissolved Boron (B)	2024/09/04	NC		%	20
			Dissolved Cadmium (Cd)	2024/09/04	0.30		%	20
			Dissolved Calcium (Ca)	2024/09/04	1.6		%	20
			Dissolved Chromium (Cr)	2024/09/04	NC		%	20
			Dissolved Cobalt (Co)	2024/09/04	1.3		%	20
			Dissolved Copper (Cu)	2024/09/04	0.27		%	20
			Dissolved Iron (Fe)	2024/09/04	2.4		%	20
			Dissolved Lead (Pb)	2024/09/04	NC		%	20
			Dissolved Magnesium (Mg)	2024/09/04	0.86		%	20
			Dissolved Manganese (Mn)	2024/09/04	1.0		%	20
			Dissolved Molybdenum (Mo)	2024/09/04	0.75		%	20
			Dissolved Nickel (Ni)	2024/09/04	6.0		%	20
			Dissolved Phosphorus (P)	2024/09/04	NC		%	20
			Dissolved Potassium (K)	2024/09/04	0.079		%	20
			Dissolved Selenium (Se)	2024/09/04	NC		%	20
			Dissolved Silver (Ag)	2024/09/04	NC		%	20
			Dissolved Sodium (Na)	2024/09/04	2.8		%	20
			Dissolved Strontium (Sr)	2024/09/04	1.5		%	20
			Dissolved Thallium (Tl)	2024/09/04	NC		%	20
			Dissolved Tin (Sn)	2024/09/04	0.96		%	20
			Dissolved Titanium (Ti)	2024/09/04	NC		%	20
			Dissolved Uranium (U)	2024/09/04	NC		%	20
			Dissolved Vanadium (V)	2024/09/04	NC		%	20
			Dissolved Zinc (Zn)	2024/09/04	1.3		%	20
9615525	EMT	Matrix Spike	Dissolved Chloride (Cl-)	2024/09/05		89	%	80 - 120
9615525	EMT	Spiked Blank	Dissolved Chloride (Cl-)	2024/09/05		92	%	80 - 120
9615525	EMT	Method Blank	Dissolved Chloride (Cl-)	2024/09/05	<1.0		mg/L	
9615525	EMT	RPD	Dissolved Chloride (Cl-)	2024/09/05	0.10		%	20

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9615528	EMT	Matrix Spike	Dissolved Sulphate (SO4)	2024/09/05		NC	%	80 - 120
9615528	EMT	Spiked Blank	Dissolved Sulphate (SO4)	2024/09/05		94	%	80 - 120
9615528	EMT	Method Blank	Dissolved Sulphate (SO4)	2024/09/05	<2.0		mg/L	
9615528	EMT	RPD	Dissolved Sulphate (SO4)	2024/09/05	1.0		%	20
9615529	EMT	Matrix Spike	Reactive Silica (SiO2)	2024/09/05		83	%	80 - 120
9615529	EMT	Spiked Blank	Reactive Silica (SiO2)	2024/09/05		89	%	80 - 120
9615529	EMT	Method Blank	Reactive Silica (SiO2)	2024/09/05	<0.50		mg/L	
9615529	EMT	RPD	Reactive Silica (SiO2)	2024/09/05	1.9		%	20
9615531	EMT	Spiked Blank	Colour	2024/09/05		104	%	80 - 120
9615531	EMT	Method Blank	Colour	2024/09/05	<5.0		TCU	
9615531	EMT	RPD	Colour	2024/09/05	NC		%	20
9615532	EMT	Matrix Spike	Orthophosphate (P)	2024/09/05		90	%	80 - 120
9615532	EMT	Spiked Blank	Orthophosphate (P)	2024/09/05		89	%	80 - 120
9615532	EMT	Method Blank	Orthophosphate (P)	2024/09/05	<0.010		mg/L	
9615532	EMT	RPD	Orthophosphate (P)	2024/09/05	NC		%	20
9615533	EMT	Matrix Spike	Nitrate + Nitrite (N)	2024/09/05		97	%	80 - 120
9615533	EMT	Spiked Blank	Nitrate + Nitrite (N)	2024/09/05		99	%	80 - 120
9615533	EMT	Method Blank	Nitrate + Nitrite (N)	2024/09/05	<0.050		mg/L	
9615533	EMT	RPD	Nitrate + Nitrite (N)	2024/09/05	NC		%	20
9615534	EMT	Matrix Spike	Nitrite (N)	2024/09/05		94	%	80 - 120
9615534	EMT	Spiked Blank	Nitrite (N)	2024/09/05		99	%	80 - 120
9615534	EMT	Method Blank	Nitrite (N)	2024/09/05	<0.010		mg/L	
9615534	EMT	RPD	Nitrite (N)	2024/09/05	NC		%	20
9615585	EMT	Matrix Spike	Dissolved Chloride (Cl-)	2024/09/05		90	%	80 - 120
9615585	EMT	Spiked Blank	Dissolved Chloride (Cl-)	2024/09/05		91	%	80 - 120
9615585	EMT	Method Blank	Dissolved Chloride (Cl-)	2024/09/05	<1.0		mg/L	
9615585	EMT	RPD	Dissolved Chloride (Cl-)	2024/09/05	2.4		%	20
9615588	EMT	Matrix Spike	Dissolved Sulphate (SO4)	2024/09/05		NC	%	80 - 120
9615588	EMT	Spiked Blank	Dissolved Sulphate (SO4)	2024/09/05		94	%	80 - 120
9615588	EMT	Method Blank	Dissolved Sulphate (SO4)	2024/09/05	<2.0		mg/L	
9615588	EMT	RPD	Dissolved Sulphate (SO4)	2024/09/05	0.21		%	20
9615590	EMT	Matrix Spike	Reactive Silica (SiO2)	2024/09/05		85	%	80 - 120
9615590	EMT	Spiked Blank	Reactive Silica (SiO2)	2024/09/05		90	%	80 - 120
9615590	EMT	Method Blank	Reactive Silica (SiO2)	2024/09/05	<0.50		mg/L	
9615590	EMT	RPD	Reactive Silica (SiO2)	2024/09/05	3.5		%	20
9615592	EMT	Spiked Blank	Colour	2024/09/05		105	%	80 - 120
9615592	EMT	Method Blank	Colour	2024/09/05	<5.0		TCU	
9615592	EMT	RPD	Colour	2024/09/05	14		%	20
9615593	EMT	Matrix Spike	Orthophosphate (P)	2024/09/05		78 (2)	%	80 - 120
9615593	EMT	Spiked Blank	Orthophosphate (P)	2024/09/05		92	%	80 - 120
9615593	EMT	Method Blank	Orthophosphate (P)	2024/09/05	<0.010		mg/L	
9615593	EMT	RPD	Orthophosphate (P)	2024/09/05	NC		%	20
9615594	EMT	Matrix Spike	Nitrate + Nitrite (N)	2024/09/05		NC	%	80 - 120
9615594	EMT	Spiked Blank	Nitrate + Nitrite (N)	2024/09/05		97	%	80 - 120
9615594	EMT	Method Blank	Nitrate + Nitrite (N)	2024/09/05	<0.050		mg/L	
9615594	EMT	RPD	Nitrate + Nitrite (N)	2024/09/05	0.90		%	20
9615597	EMT	Matrix Spike	Nitrite (N)	2024/09/05		96	%	80 - 120
9615597	EMT	Spiked Blank	Nitrite (N)	2024/09/05		100	%	80 - 120
9615597	EMT	Method Blank	Nitrite (N)	2024/09/05	<0.010		mg/L	
9615597	EMT	RPD	Nitrite (N)	2024/09/05	NC		%	20
9615672	ACK	Matrix Spike	Total Organic Carbon (C)	2024/09/04		100	%	85 - 115
9615672	ACK	Spiked Blank	Total Organic Carbon (C)	2024/09/04		109	%	80 - 120
9615672	ACK	Method Blank	Total Organic Carbon (C)	2024/09/04	<0.50		mg/L	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9615672	ACK	RPD	Total Organic Carbon (C)	2024/09/04	NC		%	15
9615679	ACK	Matrix Spike	Total Organic Carbon (C)	2024/09/04		98	%	85 - 115
9615679	ACK	Spiked Blank	Total Organic Carbon (C)	2024/09/04		100	%	80 - 120
9615679	ACK	Method Blank	Total Organic Carbon (C)	2024/09/04	<0.50		mg/L	
9615679	ACK	RPD	Total Organic Carbon (C)	2024/09/04	0.33		%	15
9615686	ACK	Matrix Spike	Total Organic Carbon (C)	2024/09/04		99	%	85 - 115
9615686	ACK	Spiked Blank	Total Organic Carbon (C)	2024/09/04		101	%	80 - 120
9615686	ACK	Method Blank	Total Organic Carbon (C)	2024/09/04	<0.50		mg/L	
9615686	ACK	RPD	Total Organic Carbon (C)	2024/09/04	NC		%	15
9616213	MCN	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2024/09/04		82	%	80 - 120
9616213	MCN	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2024/09/04		96	%	80 - 120
9616213	MCN	Method Blank	Nitrogen (Ammonia Nitrogen)	2024/09/04	<0.050		mg/L	
9616213	MCN	RPD	Nitrogen (Ammonia Nitrogen)	2024/09/04	16		%	20
9616225	MCN	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2024/09/04		90	%	80 - 120
9616225	MCN	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2024/09/04		97	%	80 - 120
9616225	MCN	Method Blank	Nitrogen (Ammonia Nitrogen)	2024/09/04	<0.050		mg/L	
9616225	MCN	RPD	Nitrogen (Ammonia Nitrogen)	2024/09/04	NC		%	20
9616540	KMC	Spiked Blank	pH	2024/09/05		99	%	97 - 103
9616540	KMC	RPD	pH	2024/09/05	0.089		%	N/A
9616541	KMC	Spiked Blank	Conductivity	2024/09/05		95	%	80 - 120
9616541	KMC	Method Blank	Conductivity	2024/09/05	<1.0		uS/cm	
9616541	KMC	RPD	Conductivity	2024/09/05	0.23		%	10
9616544	KMC	Spiked Blank	Total Alkalinity (Total as CaCO3)	2024/09/05		100	%	80 - 120
9616544	KMC	Method Blank	Total Alkalinity (Total as CaCO3)	2024/09/05	<2.0		mg/L	
9616544	KMC	RPD	Total Alkalinity (Total as CaCO3)	2024/09/05	1.9		%	20
9616556	KMC	Spiked Blank	pH	2024/09/05		99	%	97 - 103
9616556	KMC	RPD	pH	2024/09/05	0.31		%	N/A
9616565	KMC	Spiked Blank	Conductivity	2024/09/05		95	%	80 - 120
9616565	KMC	Method Blank	Conductivity	2024/09/05	<1.0		uS/cm	
9616565	KMC	RPD	Conductivity	2024/09/05	2.0		%	10
9616567	KMC	Spiked Blank	Total Alkalinity (Total as CaCO3)	2024/09/05		99	%	80 - 120
9616567	KMC	Method Blank	Total Alkalinity (Total as CaCO3)	2024/09/05	<2.0		mg/L	
9616567	KMC	RPD	Total Alkalinity (Total as CaCO3)	2024/09/05	1.5		%	20
9616578	KMC	Spiked Blank	pH	2024/09/05		99	%	97 - 103
9616578	KMC	RPD [ABLU46-02]	pH	2024/09/05	1.3		%	N/A
9616596	KMC	Spiked Blank	Conductivity	2024/09/05		94	%	80 - 120
9616596	KMC	Method Blank	Conductivity	2024/09/05	<1.0		uS/cm	
9616596	KMC	RPD [ABLU46-02]	Conductivity	2024/09/05	0.65		%	10
9616598	KMC	Spiked Blank	Total Alkalinity (Total as CaCO3)	2024/09/05		99	%	80 - 120
9616598	KMC	Method Blank	Total Alkalinity (Total as CaCO3)	2024/09/05	<2.0		mg/L	
9616598	KMC	RPD [ABLU46-02]	Total Alkalinity (Total as CaCO3)	2024/09/05	1.6		%	20
9618219	JHY	Matrix Spike	Dissolved Aluminum (Al)	2024/09/05		NC	%	80 - 120
			Dissolved Antimony (Sb)	2024/09/05		98	%	80 - 120
			Dissolved Arsenic (As)	2024/09/05		97	%	80 - 120
			Dissolved Barium (Ba)	2024/09/05		90	%	80 - 120
			Dissolved Beryllium (Be)	2024/09/05		98	%	80 - 120
			Dissolved Bismuth (Bi)	2024/09/05		95	%	80 - 120
			Dissolved Boron (B)	2024/09/05		NC	%	80 - 120
			Dissolved Cadmium (Cd)	2024/09/05		100	%	80 - 120
			Dissolved Calcium (Ca)	2024/09/05		NC	%	80 - 120
			Dissolved Chromium (Cr)	2024/09/05		95	%	80 - 120
			Dissolved Cobalt (Co)	2024/09/05		93	%	80 - 120
			Dissolved Copper (Cu)	2024/09/05		92	%	80 - 120

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Iron (Fe)	2024/09/05		100	%	80 - 120
			Dissolved Lead (Pb)	2024/09/05		94	%	80 - 120
			Dissolved Magnesium (Mg)	2024/09/05		NC	%	80 - 120
			Dissolved Manganese (Mn)	2024/09/05		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/09/05		102	%	80 - 120
			Dissolved Nickel (Ni)	2024/09/05		95	%	80 - 120
			Dissolved Phosphorus (P)	2024/09/05		103	%	80 - 120
			Dissolved Potassium (K)	2024/09/05		101	%	80 - 120
			Dissolved Selenium (Se)	2024/09/05		99	%	80 - 120
			Dissolved Silver (Ag)	2024/09/05		87	%	80 - 120
			Dissolved Sodium (Na)	2024/09/05		NC	%	80 - 120
			Dissolved Strontium (Sr)	2024/09/05		NC	%	80 - 120
			Dissolved Thallium (Tl)	2024/09/05		96	%	80 - 120
			Dissolved Tin (Sn)	2024/09/05		98	%	80 - 120
			Dissolved Titanium (Ti)	2024/09/05		96	%	80 - 120
			Dissolved Uranium (U)	2024/09/05		101	%	80 - 120
			Dissolved Vanadium (V)	2024/09/05		98	%	80 - 120
			Dissolved Zinc (Zn)	2024/09/05		95	%	80 - 120
9618219	JHY	Spiked Blank	Dissolved Aluminum (Al)	2024/09/05		98	%	80 - 120
			Dissolved Antimony (Sb)	2024/09/05		99	%	80 - 120
			Dissolved Arsenic (As)	2024/09/05		98	%	80 - 120
			Dissolved Barium (Ba)	2024/09/05		99	%	80 - 120
			Dissolved Beryllium (Be)	2024/09/05		97	%	80 - 120
			Dissolved Bismuth (Bi)	2024/09/05		95	%	80 - 120
			Dissolved Boron (B)	2024/09/05		99	%	80 - 120
			Dissolved Cadmium (Cd)	2024/09/05		98	%	80 - 120
			Dissolved Calcium (Ca)	2024/09/05		101	%	80 - 120
			Dissolved Chromium (Cr)	2024/09/05		97	%	80 - 120
			Dissolved Cobalt (Co)	2024/09/05		96	%	80 - 120
			Dissolved Copper (Cu)	2024/09/05		97	%	80 - 120
			Dissolved Iron (Fe)	2024/09/05		103	%	80 - 120
			Dissolved Lead (Pb)	2024/09/05		96	%	80 - 120
			Dissolved Magnesium (Mg)	2024/09/05		104	%	80 - 120
			Dissolved Manganese (Mn)	2024/09/05		99	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/09/05		103	%	80 - 120
			Dissolved Nickel (Ni)	2024/09/05		98	%	80 - 120
			Dissolved Phosphorus (P)	2024/09/05		104	%	80 - 120
			Dissolved Potassium (K)	2024/09/05		104	%	80 - 120
			Dissolved Selenium (Se)	2024/09/05		100	%	80 - 120
			Dissolved Silver (Ag)	2024/09/05		95	%	80 - 120
			Dissolved Sodium (Na)	2024/09/05		106	%	80 - 120
			Dissolved Strontium (Sr)	2024/09/05		96	%	80 - 120
			Dissolved Thallium (Tl)	2024/09/05		96	%	80 - 120
			Dissolved Tin (Sn)	2024/09/05		98	%	80 - 120
			Dissolved Titanium (Ti)	2024/09/05		99	%	80 - 120
			Dissolved Uranium (U)	2024/09/05		99	%	80 - 120
			Dissolved Vanadium (V)	2024/09/05		101	%	80 - 120
			Dissolved Zinc (Zn)	2024/09/05		100	%	80 - 120
9618219	JHY	Method Blank	Dissolved Aluminum (Al)	2024/09/05	<5.0		ug/L	
			Dissolved Antimony (Sb)	2024/09/05	<1.0		ug/L	
			Dissolved Arsenic (As)	2024/09/05	<1.0		ug/L	
			Dissolved Barium (Ba)	2024/09/05	<1.0		ug/L	
			Dissolved Beryllium (Be)	2024/09/05	<0.10		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Bismuth (Bi)	2024/09/05	<2.0		ug/L	
			Dissolved Boron (B)	2024/09/05	<50		ug/L	
			Dissolved Cadmium (Cd)	2024/09/05	<0.010		ug/L	
			Dissolved Calcium (Ca)	2024/09/05	<100		ug/L	
			Dissolved Chromium (Cr)	2024/09/05	<1.0		ug/L	
			Dissolved Cobalt (Co)	2024/09/05	<0.40		ug/L	
			Dissolved Copper (Cu)	2024/09/05	<0.50		ug/L	
			Dissolved Iron (Fe)	2024/09/05	<50		ug/L	
			Dissolved Lead (Pb)	2024/09/05	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2024/09/05	<100		ug/L	
			Dissolved Manganese (Mn)	2024/09/05	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2024/09/05	<2.0		ug/L	
			Dissolved Nickel (Ni)	2024/09/05	<2.0		ug/L	
			Dissolved Phosphorus (P)	2024/09/05	<100		ug/L	
			Dissolved Potassium (K)	2024/09/05	<100		ug/L	
			Dissolved Selenium (Se)	2024/09/05	<0.50		ug/L	
			Dissolved Silver (Ag)	2024/09/05	<0.10		ug/L	
			Dissolved Sodium (Na)	2024/09/05	<100		ug/L	
			Dissolved Strontium (Sr)	2024/09/05	<2.0		ug/L	
			Dissolved Thallium (Tl)	2024/09/05	<0.10		ug/L	
			Dissolved Tin (Sn)	2024/09/05	<2.0		ug/L	
			Dissolved Titanium (Ti)	2024/09/05	<2.0		ug/L	
			Dissolved Uranium (U)	2024/09/05	<0.10		ug/L	
			Dissolved Vanadium (V)	2024/09/05	<2.0		ug/L	
			Dissolved Zinc (Zn)	2024/09/05	<5.0		ug/L	
9618219	JHY	RPD	Dissolved Aluminum (Al)	2024/09/05	1.2		%	20
			Dissolved Antimony (Sb)	2024/09/05	NC		%	20
			Dissolved Arsenic (As)	2024/09/05	1.3		%	20
			Dissolved Barium (Ba)	2024/09/05	2.1		%	20
			Dissolved Beryllium (Be)	2024/09/05	3.1		%	20
			Dissolved Bismuth (Bi)	2024/09/05	NC		%	20
			Dissolved Boron (B)	2024/09/05	0.78		%	20
			Dissolved Cadmium (Cd)	2024/09/05	0.86		%	20
			Dissolved Calcium (Ca)	2024/09/05	0.45		%	20
			Dissolved Chromium (Cr)	2024/09/05	NC		%	20
			Dissolved Cobalt (Co)	2024/09/05	3.3		%	20
			Dissolved Copper (Cu)	2024/09/05	2.0		%	20
			Dissolved Iron (Fe)	2024/09/05	0.19		%	20
			Dissolved Lead (Pb)	2024/09/05	NC		%	20
			Dissolved Magnesium (Mg)	2024/09/05	0.75		%	20
			Dissolved Manganese (Mn)	2024/09/05	0.83		%	20
			Dissolved Molybdenum (Mo)	2024/09/05	NC		%	20
			Dissolved Nickel (Ni)	2024/09/05	1.7		%	20
			Dissolved Phosphorus (P)	2024/09/05	NC		%	20
			Dissolved Potassium (K)	2024/09/05	0.58		%	20
			Dissolved Selenium (Se)	2024/09/05	NC		%	20
			Dissolved Silver (Ag)	2024/09/05	NC		%	20
			Dissolved Sodium (Na)	2024/09/05	2.4		%	20
			Dissolved Strontium (Sr)	2024/09/05	1.2		%	20
			Dissolved Thallium (Tl)	2024/09/05	NC		%	20
			Dissolved Tin (Sn)	2024/09/05	NC		%	20
			Dissolved Titanium (Ti)	2024/09/05	NC		%	20
			Dissolved Uranium (U)	2024/09/05	6.9		%	20

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Vanadium (V)	2024/09/05	NC		%	20
			Dissolved Zinc (Zn)	2024/09/05	0.32		%	20
9618235	MOA	Matrix Spike [ABLU50-02]	Dissolved Aluminum (Al)	2024/09/05		96	%	80 - 120
			Dissolved Antimony (Sb)	2024/09/05		101	%	80 - 120
			Dissolved Arsenic (As)	2024/09/05		98	%	80 - 120
			Dissolved Barium (Ba)	2024/09/05		94	%	80 - 120
			Dissolved Beryllium (Be)	2024/09/05		100	%	80 - 120
			Dissolved Bismuth (Bi)	2024/09/05		98	%	80 - 120
			Dissolved Boron (B)	2024/09/05		96	%	80 - 120
			Dissolved Cadmium (Cd)	2024/09/05		99	%	80 - 120
			Dissolved Calcium (Ca)	2024/09/05		98	%	80 - 120
			Dissolved Chromium (Cr)	2024/09/05		96	%	80 - 120
			Dissolved Cobalt (Co)	2024/09/05		96	%	80 - 120
			Dissolved Copper (Cu)	2024/09/05		98	%	80 - 120
			Dissolved Iron (Fe)	2024/09/05		98	%	80 - 120
			Dissolved Lead (Pb)	2024/09/05		97	%	80 - 120
			Dissolved Magnesium (Mg)	2024/09/05		100	%	80 - 120
			Dissolved Manganese (Mn)	2024/09/05		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/09/05		103	%	80 - 120
			Dissolved Nickel (Ni)	2024/09/05		98	%	80 - 120
			Dissolved Phosphorus (P)	2024/09/05		104	%	80 - 120
			Dissolved Potassium (K)	2024/09/05		103	%	80 - 120
			Dissolved Selenium (Se)	2024/09/05		98	%	80 - 120
			Dissolved Silver (Ag)	2024/09/05		98	%	80 - 120
			Dissolved Sodium (Na)	2024/09/05		98	%	80 - 120
			Dissolved Strontium (Sr)	2024/09/05		98	%	80 - 120
			Dissolved Thallium (Tl)	2024/09/05		99	%	80 - 120
			Dissolved Tin (Sn)	2024/09/05		99	%	80 - 120
			Dissolved Titanium (Ti)	2024/09/05		98	%	80 - 120
			Dissolved Uranium (U)	2024/09/05		106	%	80 - 120
			Dissolved Vanadium (V)	2024/09/05		99	%	80 - 120
			Dissolved Zinc (Zn)	2024/09/05		102	%	80 - 120
9618235	MOA	Spiked Blank	Dissolved Aluminum (Al)	2024/09/05		99	%	80 - 120
			Dissolved Antimony (Sb)	2024/09/05		100	%	80 - 120
			Dissolved Arsenic (As)	2024/09/05		98	%	80 - 120
			Dissolved Barium (Ba)	2024/09/05		97	%	80 - 120
			Dissolved Beryllium (Be)	2024/09/05		98	%	80 - 120
			Dissolved Bismuth (Bi)	2024/09/05		96	%	80 - 120
			Dissolved Boron (B)	2024/09/05		93	%	80 - 120
			Dissolved Cadmium (Cd)	2024/09/05		97	%	80 - 120
			Dissolved Calcium (Ca)	2024/09/05		100	%	80 - 120
			Dissolved Chromium (Cr)	2024/09/05		97	%	80 - 120
			Dissolved Cobalt (Co)	2024/09/05		97	%	80 - 120
			Dissolved Copper (Cu)	2024/09/05		99	%	80 - 120
			Dissolved Iron (Fe)	2024/09/05		103	%	80 - 120
			Dissolved Lead (Pb)	2024/09/05		97	%	80 - 120
			Dissolved Magnesium (Mg)	2024/09/05		103	%	80 - 120
			Dissolved Manganese (Mn)	2024/09/05		99	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/09/05		99	%	80 - 120
			Dissolved Nickel (Ni)	2024/09/05		99	%	80 - 120
			Dissolved Phosphorus (P)	2024/09/05		103	%	80 - 120
			Dissolved Potassium (K)	2024/09/05		104	%	80 - 120
			Dissolved Selenium (Se)	2024/09/05		97	%	80 - 120

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Silver (Ag)	2024/09/05		97	%	80 - 120
			Dissolved Sodium (Na)	2024/09/05		100	%	80 - 120
			Dissolved Strontium (Sr)	2024/09/05		100	%	80 - 120
			Dissolved Thallium (Tl)	2024/09/05		97	%	80 - 120
			Dissolved Tin (Sn)	2024/09/05		99	%	80 - 120
			Dissolved Titanium (Ti)	2024/09/05		103	%	80 - 120
			Dissolved Uranium (U)	2024/09/05		105	%	80 - 120
			Dissolved Vanadium (V)	2024/09/05		100	%	80 - 120
			Dissolved Zinc (Zn)	2024/09/05		100	%	80 - 120
9618235	MOA	Method Blank	Dissolved Aluminum (Al)	2024/09/05	<5.0		ug/L	
			Dissolved Antimony (Sb)	2024/09/05	<1.0		ug/L	
			Dissolved Arsenic (As)	2024/09/05	<1.0		ug/L	
			Dissolved Barium (Ba)	2024/09/05	<1.0		ug/L	
			Dissolved Beryllium (Be)	2024/09/05	<0.10		ug/L	
			Dissolved Bismuth (Bi)	2024/09/05	<2.0		ug/L	
			Dissolved Boron (B)	2024/09/05	<50		ug/L	
			Dissolved Cadmium (Cd)	2024/09/05	<0.010		ug/L	
			Dissolved Calcium (Ca)	2024/09/05	<100		ug/L	
			Dissolved Chromium (Cr)	2024/09/05	<1.0		ug/L	
			Dissolved Cobalt (Co)	2024/09/05	<0.40		ug/L	
			Dissolved Copper (Cu)	2024/09/05	<0.50		ug/L	
			Dissolved Iron (Fe)	2024/09/05	<50		ug/L	
			Dissolved Lead (Pb)	2024/09/05	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2024/09/05	<100		ug/L	
			Dissolved Manganese (Mn)	2024/09/05	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2024/09/05	<2.0		ug/L	
			Dissolved Nickel (Ni)	2024/09/05	<2.0		ug/L	
			Dissolved Phosphorus (P)	2024/09/05	<100		ug/L	
			Dissolved Potassium (K)	2024/09/05	<100		ug/L	
			Dissolved Selenium (Se)	2024/09/05	<0.50		ug/L	
			Dissolved Silver (Ag)	2024/09/05	<0.10		ug/L	
			Dissolved Sodium (Na)	2024/09/05	<100		ug/L	
			Dissolved Strontium (Sr)	2024/09/05	<2.0		ug/L	
			Dissolved Thallium (Tl)	2024/09/05	<0.10		ug/L	
			Dissolved Tin (Sn)	2024/09/05	<2.0		ug/L	
			Dissolved Titanium (Ti)	2024/09/05	<2.0		ug/L	
			Dissolved Uranium (U)	2024/09/05	<0.10		ug/L	
			Dissolved Vanadium (V)	2024/09/05	<2.0		ug/L	
			Dissolved Zinc (Zn)	2024/09/05	<5.0		ug/L	
9618235	MOA	RPD [ABLU50-02]	Dissolved Aluminum (Al)	2024/09/05	NC		%	20
			Dissolved Antimony (Sb)	2024/09/05	NC		%	20
			Dissolved Arsenic (As)	2024/09/05	NC		%	20
			Dissolved Barium (Ba)	2024/09/05	0.81		%	20
			Dissolved Beryllium (Be)	2024/09/05	NC		%	20
			Dissolved Bismuth (Bi)	2024/09/05	NC		%	20
			Dissolved Boron (B)	2024/09/05	NC		%	20
			Dissolved Cadmium (Cd)	2024/09/05	7.4		%	20
			Dissolved Calcium (Ca)	2024/09/05	0.81		%	20
			Dissolved Chromium (Cr)	2024/09/05	NC		%	20
			Dissolved Cobalt (Co)	2024/09/05	0.25		%	20
			Dissolved Copper (Cu)	2024/09/05	0.085		%	20
			Dissolved Iron (Fe)	2024/09/05	NC		%	20
			Dissolved Lead (Pb)	2024/09/05	NC		%	20

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Magnesium (Mg)	2024/09/05	1.5		%	20
			Dissolved Manganese (Mn)	2024/09/05	0.66		%	20
			Dissolved Molybdenum (Mo)	2024/09/05	NC		%	20
			Dissolved Nickel (Ni)	2024/09/05	5.2		%	20
			Dissolved Phosphorus (P)	2024/09/05	NC		%	20
			Dissolved Potassium (K)	2024/09/05	0.41		%	20
			Dissolved Selenium (Se)	2024/09/05	NC		%	20
			Dissolved Silver (Ag)	2024/09/05	NC		%	20
			Dissolved Sodium (Na)	2024/09/05	0.62		%	20
			Dissolved Strontium (Sr)	2024/09/05	2.8		%	20
			Dissolved Thallium (Tl)	2024/09/05	NC		%	20
			Dissolved Tin (Sn)	2024/09/05	NC		%	20
			Dissolved Titanium (Ti)	2024/09/05	NC		%	20
			Dissolved Uranium (U)	2024/09/05	NC		%	20
			Dissolved Vanadium (V)	2024/09/05	NC		%	20
			Dissolved Zinc (Zn)	2024/09/05	1.1		%	20
9619404	M2C	QC Standard	Turbidity	2024/09/05		99	%	80 - 120
9619404	M2C	Spiked Blank	Turbidity	2024/09/05		104	%	80 - 120
9619404	M2C	Method Blank	Turbidity	2024/09/05	<0.10		NTU	
9619404	M2C	RPD [ABLU55-01]	Turbidity	2024/09/05	2.3		%	20
9622195	M2C	QC Standard	Turbidity	2024/09/06		98	%	80 - 120
9622195	M2C	Spiked Blank	Turbidity	2024/09/06		102	%	80 - 120
9622195	M2C	Method Blank	Turbidity	2024/09/06	<0.10		NTU	
9622195	M2C	RPD [ABLU53-01]	Turbidity	2024/09/06	1.1		%	20
9622206	M2C	QC Standard	Turbidity	2024/09/06		95	%	80 - 120
9622206	M2C	Spiked Blank	Turbidity	2024/09/06		104	%	80 - 120
9622206	M2C	Method Blank	Turbidity	2024/09/06	<0.10		NTU	
9622206	M2C	RPD	Turbidity	2024/09/06	3.3		%	20
9625708	M2C	QC Standard	Turbidity	2024/09/09		109	%	80 - 120
9625708	M2C	Spiked Blank	Turbidity	2024/09/09		106	%	80 - 120
9625708	M2C	Method Blank	Turbidity	2024/09/09	<0.10		NTU	
9625708	M2C	RPD	Turbidity	2024/09/09	13		%	20

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery is within QC acceptance limits. < 10 % of compounds in multi-component analysis in violation.

(2) Poor spike recovery due to probable sample matrix interference.

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Bureau Veritas Job #: C4R0855
Report Date: 2024/09/09

GHD Limited
Client Project #: 12584960
Site Location: Shaw-Proposed Sandpit Middleton
Your P.O. #: 735-009799

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Ernlie Publicover, Scientific Specialist

Janah Rhyno, Scientific Specialist

Bureau Veritas Proprietary Software
Logiciel Propriétaire de Bureau Veritas

Automated Statchk

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Suzanne Rogers, General Manager responsible for Nova Scotia Environmental laboratory operations.

Bureau Veritas 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.bvna.com

C4R0855
2024/08/30 09:20

Bureau Veritas
200 Bluewater Road, Bedford, Nova Scotia Canada B4B 1G9 Tel: (902) 420-0203 Toll-free 800-563-6266 Fax (902) 420-8612 www.bvna.com

Chain Of Custody Record

INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name	#16276 GHD Limited	Company Name	GHD	Quotation #	C40091	Bureau Veritas Job #	Bottle Order #:
Contact Name	Accounts Payable	Contact Name	Glen Merkley/Sadie Jacobs-Peters	P.O. #	735-009799		1007056
Address	120 Western Parkway Bedford NS B4B 0V2	Address		Project #	12584960	Chain Of Custody Record	Project Manager
Phone	(902) 468-1248 Fax: (902) 468-2207	Phone	(902) 802-4790 Fax	Project Name	Shaw Sandpit	C#1007056-01-01	Maine Muise
Email	AccountsPayableCDN@ghd.com	Email	glen.merkley@ghd.com,Sadie.jacobs-peters@ghd.com	Site #			
				Sampled By	S. Manzoor / G. Perrine		

Regulatory Criteria

** Specify Matrix: Surface/Ground/Tapwater/Sewage/Effluent/Seawater Potable/Nonpotable/Tissue/Soil/Sludge/Metal

Special Instructions: "F" = Field Filtered

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered & Preserved	Lab Filtration Required	Atlantic RCAp-MS Total Metals in Water	Total Suspended Solids	At. RCAp-MS Dissolved (FieldFilt) in W	# of Bottles	Comments / Hazards / Other Required Analysis
1	SID#673497	SW1	29 Aug 24	1558	SW			X	X		5	
2	SID#673498	SW2	29 Aug 24	1634	SW			X	X		5	
3	SID#673499	SW3						X	X			
4	SID#673500	SW4						X	X			
5	SID#673501	SW5						X	X			
6	SID#673502	SW DUP	29 Aug 24	~~1515~~	SW			X	X		5	
7	SID#673503	MW1		1515	GW	X				X	4	
8	SID#673504	MW2		1453	GW	X				X		
9	SID#673505	MW3		1432	GW	X				X		
10	SID#673506	MW4		1209 ~~1307~~	GW	X				X		

BEDF-2024-08-1542

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT:
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (If applies to entire submission)
Date Required: Time Required:

RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Lab Use Only: Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
Saad Manzoor	24/08/29	1843						3.5.2 / 0.0.0	Yes / No

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

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2024/08/30 09:20

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Page 2 of 2

Chain Of Custody Record

INVOICE TO:		Report Information:		Project Information		Laboratory Use Only	
Company Name	#16276 GHD Limited	Company Name	GHD	Quotation #	C40091	Bureau Veritas Job #	Bottle Order #: 1007056
Contact Name	Accounts Payable	Contact Name	Glen Merkley/Sadie Jacobs-Peters	P.O. #	735-009799		
Address	120 Western Parkway Bedford NS B4B 0V2	Address		Project #	12584960	Chain Of Custody Record	Project Manager
				Project Name	Snow Sandpit	C#1007056-02-01	Marie Muise
Phone	(902) 468-1248 Fax (902) 468-2207	Phone	(902) 802-4790 Fax	Site #			
Email	AccountsPayableCDN@ghd.com	Email	glen.merkley@ghd.com,Sadie.jacobs-peters@ghd.com	Sampled By	S. Manzoor/G. Perrine		

Regulatory Criteria

** Specify Matrix: Surface/Ground/Tapwater/Sewage/Effluent/Seawater Potable/Nonpotable/Tissue/Soil/Sludge/Metal

Special Instructions

"F" = Field Filtered

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

#	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered & Preserved	Lab Filtration Required	Atlantic RCAp-MS Total Metals in Water	Total Suspended Solids	At. RCAp-MS Dissolved (FieldFilt) in W	# of Bottles	Comments / Hazards / Other Required Analysis
1	SID#673507	MW5	29Aug24	1302	GW	X				X	4	
2	SID#673508	MW6	" " "	1406	GW		X			X	4	
3	SID#673509	MW7								X		
4	SID#673510	MWDUP	29Aug24		GW		X			X	4	
5		mw8	" " "	1010	"		X			X	4	
6		mw9	" " "	1109	"	X				X	4	
7												
8												
9												
10												

Turnaround Time (TAT) Required

Please provide advance notice for rush projects

Regular (Standard) TAT:
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: Time Required:

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
Saad Manzoor	24/08/29	1843	[illegible]				☐	3,5,2/0,0,0	☐ Yes ☐ No

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

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Ice-yes

Bureau Veritas Canada (2019) Inc.

Your P.O. #: 735-009799
Your Project #: 12584960
Your C.O.C. #: C#1015035-01-01

Attention: Glen Merkley

GHD Limited
120 Western Parkway
Bedford, NS
CANADA B4B 0V2

Report Date: 2024/11/08
Report #: R8396754
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4Y5693
Received: 2024/11/01, 14:52

Sample Matrix: Ground Water
Samples Received: 13

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Carbonate, Bicarbonate and Hydroxide	13	N/A	2024/11/07	N/A	SM 24 4500-CO2 D
Alkalinity	13	N/A	2024/11/06	ATL SOP 00142	SM 24 2320 B
Chloride	13	N/A	2024/11/06	ATL SOP 00014	SM 24 4500-Cl- E m
Colour	13	N/A	2024/11/06	ATL SOP 00020	SM 24 2120C m
Conductance - water	13	N/A	2024/11/06	ATL SOP 00004	SM 24 2510B m
Hardness (calculated as CaCO3)	8	N/A	2024/11/06	ATL SOP 00048	Auto Calc
Hardness (calculated as CaCO3)	4	N/A	2024/11/07	ATL SOP 00048	Auto Calc
Hardness (calculated as CaCO3)	1	N/A	2024/11/08	ATL SOP 00048	Auto Calc
Metals Water Diss. MS- Field Filtered	4	N/A	2024/11/05	ATL SOP 00058	EPA 6020B R2 m
Metals Water Diss. MS- Field Filtered	4	N/A	2024/11/06	ATL SOP 00058	EPA 6020B R2 m
Metals Water Total MS	4	2024/11/05	2024/11/05	ATL SOP 00058	EPA 6020B R2 m
Metals Water Total MS	1	2024/11/07	2024/11/07	ATL SOP 00058	EPA 6020B R2 m
Ion Balance (% Difference)	13	N/A	2024/11/08	N/A	Auto Calc.
Anion and Cation Sum	13	N/A	2024/11/08	N/A	Auto Calc.
Nitrogen Ammonia - water	12	N/A	2024/11/07	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen Ammonia - water	1	N/A	2024/11/08	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite	13	N/A	2024/11/06	ATL SOP 00016	USGS I-2547-11m
Nitrogen - Nitrite	13	N/A	2024/11/06	ATL SOP 00017	SM 24 4500-NO2- B m
Nitrogen - Nitrate (as N)	13	N/A	2024/11/07	ATL SOP 00018	ASTM D3867-16
pH (1)	13	N/A	2024/11/06	ATL SOP 00003	SM 24 4500-H+ B m
Phosphorus - ortho	13	N/A	2024/11/06	ATL SOP 00021	SM 24 4500-P E m
Sat. pH and Langelier Index (@ 20C)	13	N/A	2024/11/08	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C)	13	N/A	2024/11/08	ATL SOP 00049	Auto Calc.
Reactive Silica	13	N/A	2024/11/06	ATL SOP 00022	EPA 366.0 m
Sulphate	13	N/A	2024/11/06	ATL SOP 00023	ASTM D516-16 m
Total Dissolved Solids (TDS calc)	13	N/A	2024/11/08	N/A	Auto Calc.
Organic carbon - Total (TOC) (2)	6	N/A	2024/11/06	ATL SOP 00203	SM 24 5310B m
Organic carbon - Total (TOC) (2)	7	N/A	2024/11/07	ATL SOP 00203	SM 24 5310B m
Total Suspended Solids	5	2024/11/05	2024/11/06	ATL SOP 00007	SM 24 2540D m
Turbidity	13	N/A	2024/11/07	ATL SOP 00011	EPA 180.1 R2 m

Remarks:

Your P.O. #: 735-009799
Your Project #: 12584960
Your C.O.C. #: C#1015035-01-01

Attention: Glen Merkley

GHD Limited
120 Western Parkway
Bedford, NS
CANADA B4B 0V2

Report Date: 2024/11/08
Report #: R8396754
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4Y5693
Received: 2024/11/01, 14:52

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) The APHA Standard Method requires pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the APHA Standard Method holding time.
(2) TOC / DOC present in the sample should be considered as non-purgeable TOC / DOC.

Encryption Key

Bureau Veritas
08 Nov 2024 15:54:19

Please direct all questions regarding this Certificate of Analysis to:
Marie Muise, Key Account Specialist
Email: Marie.MUISE@bureauveritas.com
Phone# (902)420-0203 Ext:253

==========

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RESULTS OF ANALYSES OF GROUND WATER

Bureau Veritas ID		AHTH99				AHTH99			
Sampling Date		2024/10/31 12:56				2024/10/31 12:56			
COC Number		C#1015035-01-01				C#1015035-01-01			
	UNITS	SW1	RDL	MDL	QC Batch	SW1 Lab-Dup	RDL	MDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	0.610	N/A	N/A	9743283				
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	20	1.0	0.20	9743276				
Calculated TDS	mg/L	44	1.0	0.20	9743290				
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	0.20	9743276				
Cation Sum	me/L	0.710	N/A	N/A	9743283				
Hardness (CaCO3)	mg/L	23	1.0	1.0	9743280				
Ion Balance (% Difference)	%	7.58	N/A	N/A	9743282				
Langelier Index (@ 20C)	N/A	-1.96			9743286				
Langelier Index (@ 4C)	N/A	-2.21			9743289				
Nitrate (N)	mg/L	<0.050	0.050	N/A	9743284				
Saturation pH (@ 20C)	N/A	9.24			9743286				
Saturation pH (@ 4C)	N/A	9.49			9743289				
Inorganics									
Total Alkalinity (Total as CaCO3)	mg/L	20	2.0	N/A	9748420	21	2.0	N/A	9748420
Dissolved Chloride (Cl-)	mg/L	4.4	1.0	N/A	9748090				
Colour	TCU	40	5.0	N/A	9748134				
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	N/A	9748136				
Nitrite (N)	mg/L	<0.010	0.010	N/A	9748137				
Nitrogen (Ammonia Nitrogen)	mg/L	<0.050	0.050	N/A	9751132				
Total Organic Carbon (C)	mg/L	5.3	0.50	N/A	9751321	4.9	0.50	N/A	9751321
Orthophosphate (P)	mg/L	0.015	0.010	N/A	9748135				
pH	pH	7.28			9748412	7.38			9748412
Reactive Silica (SiO2)	mg/L	9.2	0.50	N/A	9748133				
Total Suspended Solids	mg/L	1.8	1.0	N/A	9746030				
Dissolved Sulphate (SO4)	mg/L	3.9	2.0	N/A	9748132				
Turbidity	NTU	1.0	0.10	0.10	9751110				
Conductivity	uS/cm	70	1.0	N/A	9748418	70	1.0	N/A	9748418

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

Bureau Veritas 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.bvna.com

RESULTS OF ANALYSES OF GROUND WATER

Bureau Veritas ID		AHTI00		AHTI01		AHTI02			
Sampling Date		2024/10/31 13:18		2024/10/31 13:52		2024/10/31 14:33			
COC Number		C#1015035-01-01		C#1015035-01-01		C#1015035-01-01			
	UNITS	SW2	QC Batch	SW3	QC Batch	SW4	RDL	MDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	0.840	9743283	0.600	9743283	0.770	N/A	N/A	9743283
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	33	9743276	20	9743276	29	1.0	0.20	9743276
Calculated TDS	mg/L	57	9743290	44	9743290	57	1.0	0.20	9743290
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	9743276	<1.0	9743276	<1.0	1.0	0.20	9743276
Cation Sum	me/L	0.850	9743283	0.670	9743283	0.920	N/A	N/A	9743283
Hardness (CaCO3)	mg/L	28	9743280	21	9743280	31	1.0	1.0	9743280
Ion Balance (% Difference)	%	0.590	9743282	5.51	9743282	8.88	N/A	N/A	9743282
Langelier Index (@ 20C)	N/A	-1.45	9743286	-1.97	9743286	-1.60			9743286
Langelier Index (@ 4C)	N/A	-1.70	9743289	-2.22	9743289	-1.85			9743289
Nitrate (N)	mg/L	<0.050	9743284	<0.050	9743284	<0.050	0.050	N/A	9743337
Saturation pH (@ 20C)	N/A	8.93	9743286	9.22	9743286	8.94			9743286
Saturation pH (@ 4C)	N/A	9.18	9743289	9.48	9743289	9.19			9743289
Inorganics									
Total Alkalinity (Total as CaCO3)	mg/L	33	9748420	20	9748420	29	2.0	N/A	9748420
Dissolved Chloride (Cl-)	mg/L	3.9	9748090	4.0	9748090	4.6	1.0	N/A	9748090
Colour	TCU	17	9748134	18	9748134	21	5.0	N/A	9748134
Nitrate + Nitrite (N)	mg/L	<0.050	9748136	<0.050	9748136	<0.050	0.050	N/A	9748136
Nitrite (N)	mg/L	<0.010	9748137	<0.010	9748137	<0.010	0.010	N/A	9748137
Nitrogen (Ammonia Nitrogen)	mg/L	<0.050	9751132	<0.050	9751128	0.17	0.050	N/A	9751128
Total Organic Carbon (C)	mg/L	2.1	9749031	2.4	9749039	2.8	0.50	N/A	9749031
Orthophosphate (P)	mg/L	<0.010	9748135	<0.010	9748135	<0.010	0.010	N/A	9748135
pH	pH	7.48	9748412	7.25	9748412	7.34			9748412
Reactive Silica (SiO2)	mg/L	13	9748133	10	9748133	14	0.50	N/A	9748133
Total Suspended Solids	mg/L	<1.0 (1)	9746030	1.4	9746030	<1.0	1.0	N/A	9746030
Dissolved Sulphate (SO4)	mg/L	3.3	9748132	4.0	9748132	2.4	2.0	N/A	9748132
Turbidity	NTU	1.9	9751094	1.7	9751110	0.87	0.10	0.10	9751110
Conductivity	uS/cm	81	9748418	66	9748418	86	1.0	N/A	9748418

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Non-homogenous material excluded from sample.

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Bureau Veritas Job #: C4Y5693
Report Date: 2024/11/08

GHD Limited
Client Project #: 12584960
Your P.O. #: 735-009799

RESULTS OF ANALYSES OF GROUND WATER

Bureau Veritas ID		AHTI03				AHTI04			
Sampling Date		2024/10/31				2024/10/31 12:33			
COC Number		C#1015035-01-01				C#1015035-01-01			
	UNITS	SW DUP	RDL	MDL	QC Batch	MW1	RDL	MDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	0.730	N/A	N/A	9743283	1.04	N/A	N/A	9743283
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	28	1.0	0.20	9743276	39	1.0	0.20	9743276
Calculated TDS	mg/L	52	1.0	0.20	9743290	73	1.0	0.20	9743290
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	0.20	9743276	<1.0	1.0	0.20	9743276
Cation Sum	me/L	0.820	N/A	N/A	9743283	1.17	N/A	N/A	9743283
Hardness (CaCO3)	mg/L	28	1.0	1.0	9743336	35	1.0	1.0	9743280
Ion Balance (% Difference)	%	5.81	N/A	N/A	9743282	5.88	N/A	N/A	9743282
Langelier Index (@ 20C)	N/A	-1.49			9743286	-0.695			9743286
Langelier Index (@ 4C)	N/A	-1.74			9743289	-0.946			9743289
Nitrate (N)	mg/L	<0.050	0.050	N/A	9743337	0.069	0.050	N/A	9743284
Saturation pH (@ 20C)	N/A	9.00			9743286	8.65			9743286
Saturation pH (@ 4C)	N/A	9.25			9743289	8.90			9743289
Inorganics									
Total Alkalinity (Total as CaCO3)	mg/L	28	2.0	N/A	9748420	40	2.0	N/A	9748420
Dissolved Chloride (Cl-)	mg/L	4.0	1.0	N/A	9748090	3.9	1.0	N/A	9748090
Colour	TCU	12	5.0	N/A	9748134	<5.0	5.0	N/A	9748134
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	N/A	9748136	0.069	0.050	N/A	9748136
Nitrite (N)	mg/L	<0.010	0.010	N/A	9748137	<0.010	0.010	N/A	9748137
Nitrogen (Ammonia Nitrogen)	mg/L	<0.050	0.050	N/A	9751132	<0.050	0.050	N/A	9751132
Total Organic Carbon (C)	mg/L	2.1	0.50	N/A	9749039	<0.50	0.50	N/A	9749039
Orthophosphate (P)	mg/L	<0.010	0.010	N/A	9748135	0.035	0.010	N/A	9748135
pH	pH	7.51			9748412	7.96			9748412
Reactive Silica (SiO2)	mg/L	13	0.50	N/A	9748133	14	0.50	N/A	9748133
Total Suspended Solids	mg/L	<1.0	1.0	N/A	9746030				
Dissolved Sulphate (SO4)	mg/L	2.7	2.0	N/A	9748132	6.2	2.0	N/A	9748132
Turbidity	NTU	1.6	0.10	0.10	9751110	5.4	0.10	0.10	9751094
Conductivity	uS/cm	82	1.0	N/A	9748418	120	1.0	N/A	9748418

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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Bureau Veritas Job #: C4Y5693
Report Date: 2024/11/08

GHD Limited
Client Project #: 12584960
Your P.O. #: 735-009799

RESULTS OF ANALYSES OF GROUND WATER

Bureau Veritas ID		AHTI05		AHTI06		AHTI07			
Sampling Date		2024/10/31 12:16		2024/10/31 11:31		2024/10/31 10:38			
COC Number		C#1015035-01-01		C#1015035-01-01		C#1015035-01-01			
	UNITS	MW2	QC Batch	MW3	QC Batch	MW4	RDL	MDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	0.330	9743283	0.360	9743283	1.23	N/A	N/A	9743283
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	7.7	9743276	7.5	9743276	51	1.0	0.20	9743276
Calculated TDS	mg/L	30	9743290	31	9743290	77	1.0	0.20	9743290
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	9743276	<1.0	9743276	<1.0	1.0	0.20	9743276
Cation Sum	me/L	0.340	9743283	0.410	9743283	1.34	N/A	N/A	9743283
Hardness (CaCO3)	mg/L	9.0	9743280	11	9743280	52	1.0	1.0	9743280
Ion Balance (% Difference)	%	1.49	9743282	6.49	9743282	4.28	N/A	N/A	9743282
Langelier Index (@ 20C)	N/A	-3.69	9743286	-3.09	9743286	-0.898			9743286
Langelier Index (@ 4C)	N/A	-3.95	9743289	-3.34	9743289	-1.15			9743289
Nitrate (N)	mg/L	<0.050	9743284	<0.050	9743284	0.070	0.050	N/A	9743284
Saturation pH (@ 20C)	N/A	10.2	9743286	9.96	9743286	8.44			9743286
Saturation pH (@ 4C)	N/A	10.4	9743289	10.2	9743289	8.70			9743289
Inorganics									
Total Alkalinity (Total as CaCO3)	mg/L	7.7	9748420	7.5	9748420	51	2.0	N/A	9748420
Dissolved Chloride (Cl-)	mg/L	3.9	9748090	4.9	9748090	4.7	1.0	N/A	9748090
Colour	TCU	<5.0	9748134	<5.0	9748134	<5.0	5.0	N/A	9748134
Nitrate + Nitrite (N)	mg/L	<0.050	9748136	<0.050	9748136	0.070	0.050	N/A	9748136
Nitrite (N)	mg/L	<0.010	9748137	<0.010	9748137	<0.010	0.010	N/A	9748137
Nitrogen (Ammonia Nitrogen)	mg/L	<0.050	9751132	<0.050	9751132	<0.050	0.050	N/A	9751132
Total Organic Carbon (C)	mg/L	0.80	9749039	1.4	9749031	0.75	0.50	N/A	9749039
Orthophosphate (P)	mg/L	0.010	9748135	0.025	9748135	0.015	0.010	N/A	9748135
pH	pH	6.50	9748412	6.87	9748412	7.55			9748412
Reactive Silica (SiO2)	mg/L	11	9748133	9.5	9748133	12	0.50	N/A	9748133
Dissolved Sulphate (SO4)	mg/L	3.4	9748132	3.5	9748132	3.7	2.0	N/A	9748132
Turbidity	NTU	13	9751110	20	9751094	21	0.10	0.10	9751104
Conductivity	uS/cm	41	9748418	46	9748418	130	1.0	N/A	9748418

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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RESULTS OF ANALYSES OF GROUND WATER

Bureau Veritas ID		AHTI08				AHTI08			
Sampling Date		2024/10/31 11:08				2024/10/31 11:08			
COC Number		C#1015035-01-01				C#1015035-01-01			
	UNITS	MW5	RDL	MDL	QC Batch	MW5 Lab-Dup	RDL	MDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	0.270	N/A	N/A	9743283				
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	4.1	1.0	0.20	9743276				
Calculated TDS	mg/L	23	1.0	0.20	9743290				
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	0.20	9743276				
Cation Sum	me/L	0.290	N/A	N/A	9743283				
Hardness (CaCO3)	mg/L	6.0	1.0	1.0	9743280				
Ion Balance (% Difference)	%	3.57	N/A	N/A	9743282				
Langelier Index (@ 20C)	N/A	-4.20			9743286				
Langelier Index (@ 4C)	N/A	-4.45			9743289				
Nitrate (N)	mg/L	<0.050	0.050	N/A	9743284				
Saturation pH (@ 20C)	N/A	10.6			9743286				
Saturation pH (@ 4C)	N/A	10.8			9743289				
Inorganics									
Total Alkalinity (Total as CaCO3)	mg/L	4.1	2.0	N/A	9748433				
Dissolved Chloride (Cl-)	mg/L	4.4	1.0	N/A	9748090				
Colour	TCU	<5.0	5.0	N/A	9748134				
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	N/A	9748136				
Nitrite (N)	mg/L	<0.010	0.010	N/A	9748137				
Nitrogen (Ammonia Nitrogen)	mg/L	<0.050	0.050	N/A	9751132				
Total Organic Carbon (C)	mg/L	0.81	0.50	N/A	9749031	0.86	0.50	N/A	9749031
Orthophosphate (P)	mg/L	0.10	0.010	N/A	9748135				
pH	pH	6.39			9748423				
Reactive Silica (SiO2)	mg/L	6.4	0.50	N/A	9748133				
Dissolved Sulphate (SO4)	mg/L	2.9	2.0	N/A	9748132				
Turbidity	NTU	14	0.10	0.10	9751094				
Conductivity	uS/cm	36	1.0	N/A	9748427				

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Bureau Veritas Job #: C4Y5693
Report Date: 2024/11/08

GHD Limited
Client Project #: 12584960
Your P.O. #: 735-009799

RESULTS OF ANALYSES OF GROUND WATER

Bureau Veritas ID		AHTI09				AHTI10			
Sampling Date		2024/10/31				2024/10/31 09:44			
COC Number		C#1015035-01-01				C#1015035-01-01			
	UNITS	MWDUP	RDL	MDL	QC Batch	MW9	RDL	MDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	0.280	N/A	N/A	9743283	0.480	N/A	N/A	9743283
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	4.8	1.0	0.20	9743276	12	1.0	0.20	9743276
Calculated TDS	mg/L	28	1.0	0.20	9743290	38	1.0	0.20	9743290
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	0.20	9743276	<1.0	1.0	0.20	9743276
Cation Sum	me/L	0.410	N/A	N/A	9743283	0.510	N/A	N/A	9743283
Hardness (CaCO3)	mg/L	11	1.0	1.0	9743280	15	1.0	1.0	9743280
Ion Balance (% Difference)	%	18.8	N/A	N/A	9743282	3.03	N/A	N/A	9743282
Langelier Index (@ 20C)	N/A	-3.27			9743286	-2.55			9743286
Langelier Index (@ 4C)	N/A	-3.52			9743289	-2.80			9743289
Nitrate (N)	mg/L	<0.050	0.050	N/A	9743284	0.16	0.050	N/A	9743284
Saturation pH (@ 20C)	N/A	10.2			9743286	9.60			9743286
Saturation pH (@ 4C)	N/A	10.4			9743289	9.85			9743289
Inorganics									
Total Alkalinity (Total as CaCO3)	mg/L	4.8	2.0	N/A	9748420	12	2.0	N/A	9748420
Dissolved Chloride (Cl-)	mg/L	4.9	1.0	N/A	9748090	5.2	1.0	N/A	9748090
Colour	TCU	<5.0	5.0	N/A	9748134	<5.0	5.0	N/A	9748134
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	N/A	9748136	0.16	0.050	N/A	9748136
Nitrite (N)	mg/L	<0.010	0.010	N/A	9748137	<0.010	0.010	N/A	9748137
Nitrogen (Ammonia Nitrogen)	mg/L	<0.050	0.050	N/A	9751132	<0.050	0.050	N/A	9751132
Total Organic Carbon (C)	mg/L	1.2	0.50	N/A	9749039	<5.0 (1)	5.0	N/A	9749031
Orthophosphate (P)	mg/L	0.026	0.010	N/A	9748135	0.016	0.010	N/A	9748135
pH	pH	6.91			9748412	7.05			9748412
Reactive Silica (SiO2)	mg/L	9.3	0.50	N/A	9748133	10	0.50	N/A	9748133
Dissolved Sulphate (SO4)	mg/L	2.2	2.0	N/A	9748132	3.7	2.0	N/A	9748132
Turbidity	NTU	14	0.10	0.10	9751094	350	1.0	1.0	9751110
Conductivity	uS/cm	46	1.0	N/A	9748418	54	1.0	N/A	9748418

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) Elevated reporting limit due to turbidity.

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RESULTS OF ANALYSES OF GROUND WATER

Bureau Veritas ID		AHTI11			
Sampling Date		2024/10/31 10:10			
COC Number		C#1015035-01-01			
	UNITS	MW8	RDL	MDL	QC Batch
Calculated Parameters					
Anion Sum	me/L	1.02	N/A	N/A	9743283
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	41	1.0	0.20	9743276
Calculated TDS	mg/L	62	1.0	0.20	9743290
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	0.20	9743276
Cation Sum	me/L	1.02	N/A	N/A	9743283
Hardness (CaCO3)	mg/L	37	1.0	1.0	9743280
Ion Balance (% Difference)	%	0.00	N/A	N/A	9743282
Langelier Index (@ 20C)	N/A	-0.959			9743286
Langelier Index (@ 4C)	N/A	-1.21			9743289
Nitrate (N)	mg/L	<0.050	0.050	N/A	9743284
Saturation pH (@ 20C)	N/A	8.62			9743286
Saturation pH (@ 4C)	N/A	8.87			9743289
Inorganics					
Total Alkalinity (Total as CaCO3)	mg/L	41	2.0	N/A	9748420
Dissolved Chloride (Cl-)	mg/L	4.8	1.0	N/A	9748090
Colour	TCU	<5.0	5.0	N/A	9748134
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	N/A	9748136
Nitrite (N)	mg/L	<0.010	0.010	N/A	9748137
Nitrogen (Ammonia Nitrogen)	mg/L	<0.050	0.050	N/A	9751132
Total Organic Carbon (C)	mg/L	0.76	0.50	N/A	9749031
Orthophosphate (P)	mg/L	0.023	0.010	N/A	9748135
pH	pH	7.66			9748412
Reactive Silica (SiO2)	mg/L	8.8	0.50	N/A	9748133
Dissolved Sulphate (SO4)	mg/L	2.7	2.0	N/A	9748132
Turbidity	NTU	11	0.10	0.10	9751110
Conductivity	uS/cm	110	1.0	N/A	9748418

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable

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ELEMENTS BY ICP/MS (GROUND WATER)

Bureau Veritas ID		AHTH99		AHTI00		AHTI01			
Sampling Date		2024/10/31 12:56		2024/10/31 13:18		2024/10/31 13:52			
COC Number		C#1015035-01-01		C#1015035-01-01		C#1015035-01-01			
	UNITS	SW1	QC Batch	SW2	QC Batch	SW3	RDL	MDL	QC Batch
Metals									
Total Aluminum (Al)	ug/L	71	9745214	22	9751057	27	5.0	N/A	9745543
Total Antimony (Sb)	ug/L	<1.0	9745214	<1.0	9751057	<1.0	1.0	N/A	9745543
Total Arsenic (As)	ug/L	<1.0	9745214	<1.0	9751057	<1.0	1.0	N/A	9745543
Total Barium (Ba)	ug/L	8.2	9745214	5.7	9751057	3.9	1.0	N/A	9745543
Total Beryllium (Be)	ug/L	<0.10	9745214	<0.10	9751057	<0.10	0.10	N/A	9745543
Total Bismuth (Bi)	ug/L	<2.0	9745214	<2.0	9751057	<2.0	2.0	N/A	9745543
Total Boron (B)	ug/L	<50	9745214	<50	9751057	<50	50	N/A	9745543
Total Cadmium (Cd)	ug/L	0.011	9745214	<0.010	9751057	<0.010	0.010	N/A	9745543
Total Calcium (Ca)	ug/L	5800	9745214	7400	9751057	5900	100	N/A	9745543
Total Chromium (Cr)	ug/L	<1.0	9745214	<1.0	9751057	<1.0	1.0	N/A	9745543
Total Cobalt (Co)	ug/L	<0.40	9745214	<0.40	9751057	<0.40	0.40	N/A	9745543
Total Copper (Cu)	ug/L	<0.50	9745214	<0.50	9751057	<0.50	0.50	N/A	9745543
Total Iron (Fe)	ug/L	110	9745214	340	9751057	500	50	N/A	9745543
Total Lead (Pb)	ug/L	<0.50	9745214	<0.50	9751057	<0.50	0.50	N/A	9745543
Total Magnesium (Mg)	ug/L	2100	9745214	2400	9751057	1600	100	N/A	9745543
Total Manganese (Mn)	ug/L	4.9	9745214	90	9751057	62	2.0	N/A	9745543
Total Molybdenum (Mo)	ug/L	<2.0	9745214	<2.0	9751057	<2.0	2.0	N/A	9745543
Total Nickel (Ni)	ug/L	<2.0	9745214	<2.0	9751057	<2.0	2.0	N/A	9745543
Total Phosphorus (P)	ug/L	<100	9745214	<100	9751057	<100	100	N/A	9745543
Total Potassium (K)	ug/L	810	9745214	760	9751057	1200	100	N/A	9745543
Total Selenium (Se)	ug/L	<0.50	9745214	<0.50	9751057	<0.50	0.50	N/A	9745543
Total Silver (Ag)	ug/L	<0.10	9745214	<0.10	9751057	<0.10	0.10	N/A	9745543
Total Sodium (Na)	ug/L	5200	9745214	5700	9751057	4600	100	N/A	9745543
Total Strontium (Sr)	ug/L	35	9745214	40	9751057	25	2.0	N/A	9745543
Total Thallium (Tl)	ug/L	<0.10	9745214	<0.10	9751057	<0.10	0.10	N/A	9745543
Total Tin (Sn)	ug/L	<2.0	9745214	<2.0	9751057	<2.0	2.0	N/A	9745543
Total Titanium (Ti)	ug/L	2.1	9745214	<2.0	9751057	4.2	2.0	N/A	9745543
Total Uranium (U)	ug/L	<0.10	9745214	<0.10	9751057	<0.10	0.10	N/A	9745543
Total Vanadium (V)	ug/L	<2.0	9745214	<2.0	9751057	<2.0	2.0	N/A	9745543
Total Zinc (Zn)	ug/L	<5.0	9745214	<5.0	9751057	<5.0	5.0	N/A	9745543

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ELEMENTS BY ICP/MS (GROUND WATER)

Bureau Veritas ID		AHTI02		AHTI03			
Sampling Date		2024/10/31 14:33		2024/10/31			
COC Number		C#1015035-01-01		C#1015035-01-01			
	UNITS	SW4	QC Batch	SW DUP	RDL	MDL	QC Batch
Metals							
Total Aluminum (Al)	ug/L	20	9745214	21	5.0	N/A	9745543
Total Antimony (Sb)	ug/L	<1.0	9745214	<1.0	1.0	N/A	9745543
Total Arsenic (As)	ug/L	<1.0	9745214	<1.0	1.0	N/A	9745543
Total Barium (Ba)	ug/L	6.7	9745214	5.4	1.0	N/A	9745543
Total Beryllium (Be)	ug/L	<0.10	9745214	<0.10	0.10	N/A	9745543
Total Bismuth (Bi)	ug/L	<2.0	9745214	<2.0	2.0	N/A	9745543
Total Boron (B)	ug/L	<50	9745214	<50	50	N/A	9745543
Total Cadmium (Cd)	ug/L	<0.010	9745214	<0.010	0.010	N/A	9745543
Total Calcium (Ca)	ug/L	8100	9745214	7300	100	N/A	9745543
Total Chromium (Cr)	ug/L	<1.0	9745214	<1.0	1.0	N/A	9745543
Total Cobalt (Co)	ug/L	<0.40	9745214	<0.40	0.40	N/A	9745543
Total Copper (Cu)	ug/L	<0.50	9745214	<0.50	0.50	N/A	9745543
Total Iron (Fe)	ug/L	250	9745214	300	50	N/A	9745543
Total Lead (Pb)	ug/L	<0.50	9745214	<0.50	0.50	N/A	9745543
Total Magnesium (Mg)	ug/L	2700	9745214	2300	100	N/A	9745543
Total Manganese (Mn)	ug/L	61	9745214	79	2.0	N/A	9745543
Total Molybdenum (Mo)	ug/L	<2.0	9745214	<2.0	2.0	N/A	9745543
Total Nickel (Ni)	ug/L	<2.0	9745214	<2.0	2.0	N/A	9745543
Total Phosphorus (P)	ug/L	<100	9745214	<100	100	N/A	9745543
Total Potassium (K)	ug/L	810	9745214	740	100	N/A	9745543
Total Selenium (Se)	ug/L	<0.50	9745214	<0.50	0.50	N/A	9745543
Total Silver (Ag)	ug/L	<0.10	9745214	<0.10	0.10	N/A	9745543
Total Sodium (Na)	ug/L	5700	9745214	5400	100	N/A	9745543
Total Strontium (Sr)	ug/L	42	9745214	39	2.0	N/A	9745543
Total Thallium (Tl)	ug/L	<0.10	9745214	<0.10	0.10	N/A	9745543
Total Tin (Sn)	ug/L	<2.0	9745214	<2.0	2.0	N/A	9745543
Total Titanium (Ti)	ug/L	<2.0	9745214	<2.0	2.0	N/A	9745543
Total Uranium (U)	ug/L	<0.10	9745214	<0.10	0.10	N/A	9745543
Total Vanadium (V)	ug/L	<2.0	9745214	<2.0	2.0	N/A	9745543
Total Zinc (Zn)	ug/L	<5.0	9745214	<5.0	5.0	N/A	9745543

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ELEMENTS BY ICP/MS (GROUND WATER)

Bureau Veritas ID		AHTI04	AHTI05	AHTI06	AHTI07			
Sampling Date		2024/10/31 12:33	2024/10/31 12:16	2024/10/31 11:31	2024/10/31 10:38			
COC Number		C#1015035-01-01	C#1015035-01-01	C#1015035-01-01	C#1015035-01-01			
	UNITS	MW1	MW2	MW3	MW4	RDL	MDL	QC Batch
Metals								
Dissolved Aluminum (Al)	ug/L	<5.0	18	<5.0	<5.0	5.0	N/A	9745551
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	N/A	9745551
Dissolved Arsenic (As)	ug/L	13	<1.0	<1.0	<1.0	1.0	N/A	9745551
Dissolved Barium (Ba)	ug/L	9.3	7.7	3.3	140	1.0	N/A	9745551
Dissolved Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	N/A	9745551
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	N/A	9745551
Dissolved Boron (B)	ug/L	<50	<50	<50	<50	50	N/A	9745551
Dissolved Cadmium (Cd)	ug/L	<0.010	0.018	0.022	0.017	0.010	N/A	9745551
Dissolved Calcium (Ca)	ug/L	12000	1600	2800	15000	100	N/A	9745551
Dissolved Chromium (Cr)	ug/L	1.3	<1.0	<1.0	<1.0	1.0	N/A	9745551
Dissolved Cobalt (Co)	ug/L	<0.40	<0.40	<0.40	3.1	0.40	N/A	9745551
Dissolved Copper (Cu)	ug/L	<0.50	0.72	0.96	3.3	0.50	N/A	9745551
Dissolved Iron (Fe)	ug/L	<50	89	<50	<50	50	N/A	9745551
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	N/A	9745551
Dissolved Magnesium (Mg)	ug/L	1200	1200	970	3600	100	N/A	9745551
Dissolved Manganese (Mn)	ug/L	<2.0	32	3.5	160	2.0	N/A	9745551
Dissolved Molybdenum (Mo)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	N/A	9745551
Dissolved Nickel (Ni)	ug/L	<2.0	<2.0	<2.0	2.2	2.0	N/A	9745551
Dissolved Phosphorus (P)	ug/L	<100	<100	<100	<100	100	N/A	9745551
Dissolved Potassium (K)	ug/L	340	500	890	940	100	N/A	9745551
Dissolved Selenium (Se)	ug/L	0.52	<0.50	<0.50	<0.50	0.50	N/A	9745551
Dissolved Silver (Ag)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	N/A	9745551
Dissolved Sodium (Na)	ug/L	11000	3300	3800	6200	100	N/A	9745551
Dissolved Strontium (Sr)	ug/L	23	10	14	91	2.0	N/A	9745551
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	N/A	9745551
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	N/A	9745551
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	N/A	9745551
Dissolved Uranium (U)	ug/L	1.0	<0.10	<0.10	<0.10	0.10	N/A	9745551
Dissolved Vanadium (V)	ug/L	16	<2.0	<2.0	<2.0	2.0	N/A	9745551
Dissolved Zinc (Zn)	ug/L	<5.0	6.7	<5.0	12	5.0	N/A	9745551

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ELEMENTS BY ICP/MS (GROUND WATER)

Bureau Veritas ID		AHTI08	AHTI09	AHTI10	AHTI11			
Sampling Date		2024/10/31 11:08	2024/10/31	2024/10/31 09:44	2024/10/31 10:10			
COC Number		C#1015035-01-01	C#1015035-01-01	C#1015035-01-01	C#1015035-01-01			
	UNITS	MW5	MWDUP	MW9	MW8	RDL	MDL	QC Batch
Metals								
Dissolved Aluminum (Al)	ug/L	11	<5.0	<5.0	<5.0	5.0	N/A	9748292
Dissolved Antimony (Sb)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	N/A	9748292
Dissolved Arsenic (As)	ug/L	<1.0	<1.0	<1.0	1.1	1.0	N/A	9748292
Dissolved Barium (Ba)	ug/L	11	3.3	4.3	6.9	1.0	N/A	9748292
Dissolved Beryllium (Be)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	N/A	9748292
Dissolved Bismuth (Bi)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	N/A	9748292
Dissolved Boron (B)	ug/L	<50	<50	<50	<50	50	N/A	9748292
Dissolved Cadmium (Cd)	ug/L	0.012	0.032	<0.010	<0.010	0.010	N/A	9748292
Dissolved Calcium (Ca)	ug/L	1200	2700	4200	12000	100	N/A	9748292
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	<1.0	<1.0	1.0	N/A	9748292
Dissolved Cobalt (Co)	ug/L	<0.40	<0.40	<0.40	<0.40	0.40	N/A	9748292
Dissolved Copper (Cu)	ug/L	2.6	1.1	<0.50	<0.50	0.50	N/A	9748292
Dissolved Iron (Fe)	ug/L	<50	<50	<50	<50	50	N/A	9748292
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	N/A	9748292
Dissolved Magnesium (Mg)	ug/L	750	950	1200	1600	100	N/A	9748292
Dissolved Manganese (Mn)	ug/L	3.2	4.2	<2.0	71	2.0	N/A	9748292
Dissolved Molybdenum (Mo)	ug/L	<2.0	<2.0	<2.0	9.8	2.0	N/A	9748292
Dissolved Nickel (Ni)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	N/A	9748292
Dissolved Phosphorus (P)	ug/L	<100	<100	<100	<100	100	N/A	9748292
Dissolved Potassium (K)	ug/L	660	920	720	1600	100	N/A	9748292
Dissolved Selenium (Se)	ug/L	<0.50	<0.50	<0.50	<0.50	0.50	N/A	9748292
Dissolved Silver (Ag)	ug/L	0.15	<0.10	<0.10	<0.10	0.10	N/A	9748292
Dissolved Sodium (Na)	ug/L	3600	3900	4400	5700	100	N/A	9748292
Dissolved Strontium (Sr)	ug/L	7.0	15	20	58	2.0	N/A	9748292
Dissolved Thallium (Tl)	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	N/A	9748292
Dissolved Tin (Sn)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	N/A	9748292
Dissolved Titanium (Ti)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	N/A	9748292
Dissolved Uranium (U)	ug/L	<0.10	<0.10	<0.10	0.44	0.10	N/A	9748292
Dissolved Vanadium (V)	ug/L	<2.0	<2.0	<2.0	<2.0	2.0	N/A	9748292
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	6.8	<5.0	5.0	N/A	9748292

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	4.0°C
Package 2	2.3°C

Sample AHTH99 [SW1] : ortho-Phosphate > Phosphorus: Both values fall within the method uncertainty for duplicates and are likely equivalent. RCAp Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AHTI01 [SW3] : RCAp Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AHTI02 [SW4] : RCAp Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AHTI03 [SW DUP] : RCAp Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AHTI04 [MW1] : ortho-Phosphate > Phosphorus: Both values fall within the method uncertainty for duplicates and are likely equivalent. RCAp Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AHTI05 [MW2] : ortho-Phosphate > Phosphorus: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Sample AHTI06 [MW3] : ortho-Phosphate > Phosphorus: Both values fall within the method uncertainty for duplicates and are likely equivalent. RCAp Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AHTI07 [MW4] : ortho-Phosphate > Phosphorus: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Sample AHTI08 [MW5] : ortho-Phosphate > Phosphorus: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Sample AHTI09 [MWDUP] : ortho-Phosphate > Phosphorus: Both values fall within the method uncertainty for duplicates and are likely equivalent. RCAp Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample AHTI10 [MW9] : ortho-Phosphate > Phosphorus: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Sample AHTI11 [MW8] : ortho-Phosphate > Phosphorus: Both values fall within the method uncertainty for duplicates and are likely equivalent.

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9745214	MTZ	Matrix Spike	Total Aluminum (Al)	2024/11/05		101	%	80 - 120
			Total Antimony (Sb)	2024/11/05		100	%	80 - 120
			Total Arsenic (As)	2024/11/05		100	%	80 - 120
			Total Barium (Ba)	2024/11/05		94	%	80 - 120
			Total Beryllium (Be)	2024/11/05		94	%	80 - 120
			Total Bismuth (Bi)	2024/11/05		99	%	80 - 120
			Total Boron (B)	2024/11/05		93	%	80 - 120
			Total Cadmium (Cd)	2024/11/05		95	%	80 - 120
			Total Calcium (Ca)	2024/11/05		102	%	80 - 120
			Total Chromium (Cr)	2024/11/05		94	%	80 - 120
			Total Cobalt (Co)	2024/11/05		96	%	80 - 120
			Total Copper (Cu)	2024/11/05		95	%	80 - 120
			Total Iron (Fe)	2024/11/05		105	%	80 - 120
			Total Lead (Pb)	2024/11/05		NC	%	80 - 120
			Total Magnesium (Mg)	2024/11/05		110	%	80 - 120
			Total Manganese (Mn)	2024/11/05		100	%	80 - 120
			Total Molybdenum (Mo)	2024/11/05		101	%	80 - 120
			Total Nickel (Ni)	2024/11/05		100	%	80 - 120
			Total Phosphorus (P)	2024/11/05		108	%	80 - 120
			Total Potassium (K)	2024/11/05		98	%	80 - 120
			Total Selenium (Se)	2024/11/05		103	%	80 - 120
			Total Silver (Ag)	2024/11/05		99	%	80 - 120
			Total Sodium (Na)	2024/11/05		105	%	80 - 120
			Total Strontium (Sr)	2024/11/05		101	%	80 - 120
			Total Thallium (Tl)	2024/11/05		102	%	80 - 120
			Total Tin (Sn)	2024/11/05		103	%	80 - 120
			Total Titanium (Ti)	2024/11/05		94	%	80 - 120
			Total Uranium (U)	2024/11/05		101	%	80 - 120
			Total Vanadium (V)	2024/11/05		101	%	80 - 120
			Total Zinc (Zn)	2024/11/05		96	%	80 - 120
9745214	MTZ	Spiked Blank	Total Aluminum (Al)	2024/11/05		103	%	80 - 120
			Total Antimony (Sb)	2024/11/05		102	%	80 - 120
			Total Arsenic (As)	2024/11/05		100	%	80 - 120
			Total Barium (Ba)	2024/11/05		97	%	80 - 120
			Total Beryllium (Be)	2024/11/05		97	%	80 - 120
			Total Bismuth (Bi)	2024/11/05		104	%	80 - 120
			Total Boron (B)	2024/11/05		96	%	80 - 120
			Total Cadmium (Cd)	2024/11/05		95	%	80 - 120
			Total Calcium (Ca)	2024/11/05		102	%	80 - 120
			Total Chromium (Cr)	2024/11/05		96	%	80 - 120
			Total Cobalt (Co)	2024/11/05		96	%	80 - 120
			Total Copper (Cu)	2024/11/05		98	%	80 - 120
			Total Iron (Fe)	2024/11/05		107	%	80 - 120
			Total Lead (Pb)	2024/11/05		98	%	80 - 120
			Total Magnesium (Mg)	2024/11/05		111	%	80 - 120
			Total Manganese (Mn)	2024/11/05		102	%	80 - 120
			Total Molybdenum (Mo)	2024/11/05		102	%	80 - 120
			Total Nickel (Ni)	2024/11/05		102	%	80 - 120
			Total Phosphorus (P)	2024/11/05		108	%	80 - 120
			Total Potassium (K)	2024/11/05		98	%	80 - 120
			Total Selenium (Se)	2024/11/05		101	%	80 - 120
			Total Silver (Ag)	2024/11/05		97	%	80 - 120
			Total Sodium (Na)	2024/11/05		106	%	80 - 120
			Total Strontium (Sr)	2024/11/05		100	%	80 - 120

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Thallium (Tl)	2024/11/05		104	%	80 - 120
			Total Tin (Sn)	2024/11/05		103	%	80 - 120
			Total Titanium (Ti)	2024/11/05		99	%	80 - 120
			Total Uranium (U)	2024/11/05		104	%	80 - 120
			Total Vanadium (V)	2024/11/05		103	%	80 - 120
			Total Zinc (Zn)	2024/11/05		100	%	80 - 120
9745214	MTZ	Method Blank	Total Aluminum (Al)	2024/11/05	<5.0		ug/L	
			Total Antimony (Sb)	2024/11/05	<1.0		ug/L	
			Total Arsenic (As)	2024/11/05	<1.0		ug/L	
			Total Barium (Ba)	2024/11/05	<1.0		ug/L	
			Total Beryllium (Be)	2024/11/05	<0.10		ug/L	
			Total Bismuth (Bi)	2024/11/05	<2.0		ug/L	
			Total Boron (B)	2024/11/05	<50		ug/L	
			Total Cadmium (Cd)	2024/11/05	<0.010		ug/L	
			Total Calcium (Ca)	2024/11/05	<100		ug/L	
			Total Chromium (Cr)	2024/11/05	<1.0		ug/L	
			Total Cobalt (Co)	2024/11/05	<0.40		ug/L	
			Total Copper (Cu)	2024/11/05	<0.50		ug/L	
			Total Iron (Fe)	2024/11/05	<50		ug/L	
			Total Lead (Pb)	2024/11/05	<0.50		ug/L	
			Total Magnesium (Mg)	2024/11/05	<100		ug/L	
			Total Manganese (Mn)	2024/11/05	<2.0		ug/L	
			Total Molybdenum (Mo)	2024/11/05	<2.0		ug/L	
			Total Nickel (Ni)	2024/11/05	<2.0		ug/L	
			Total Phosphorus (P)	2024/11/05	<100		ug/L	
			Total Potassium (K)	2024/11/05	<100		ug/L	
			Total Selenium (Se)	2024/11/05	<0.50		ug/L	
			Total Silver (Ag)	2024/11/05	<0.10		ug/L	
			Total Sodium (Na)	2024/11/05	<100		ug/L	
			Total Strontium (Sr)	2024/11/05	<2.0		ug/L	
			Total Thallium (Tl)	2024/11/05	<0.10		ug/L	
			Total Tin (Sn)	2024/11/05	<2.0		ug/L	
			Total Titanium (Ti)	2024/11/05	<2.0		ug/L	
			Total Uranium (U)	2024/11/05	<0.10		ug/L	
			Total Vanadium (V)	2024/11/05	<2.0		ug/L	
			Total Zinc (Zn)	2024/11/05	<5.0		ug/L	
9745214	MTZ	RPD	Total Lead (Pb)	2024/11/05	0.21		%	20
9745543	MTZ	Matrix Spike	Total Aluminum (Al)	2024/11/05		NC	%	80 - 120
			Total Antimony (Sb)	2024/11/05		104	%	80 - 120
			Total Arsenic (As)	2024/11/05		100	%	80 - 120
			Total Barium (Ba)	2024/11/05		98	%	80 - 120
			Total Beryllium (Be)	2024/11/05		93	%	80 - 120
			Total Bismuth (Bi)	2024/11/05		100	%	80 - 120
			Total Boron (B)	2024/11/05		95	%	80 - 120
			Total Cadmium (Cd)	2024/11/05		100	%	80 - 120
			Total Calcium (Ca)	2024/11/05		101	%	80 - 120
			Total Chromium (Cr)	2024/11/05		118	%	80 - 120
			Total Cobalt (Co)	2024/11/05		99	%	80 - 120
			Total Copper (Cu)	2024/11/05		100	%	80 - 120
			Total Iron (Fe)	2024/11/05		NC	%	80 - 120
			Total Lead (Pb)	2024/11/05		97	%	80 - 120
			Total Magnesium (Mg)	2024/11/05		122 (1)	%	80 - 120
			Total Manganese (Mn)	2024/11/05		127 (1)	%	80 - 120
			Total Molybdenum (Mo)	2024/11/05		109	%	80 - 120

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Nickel (Ni)	2024/11/05		103	%	80 - 120
			Total Phosphorus (P)	2024/11/05		105	%	80 - 120
			Total Potassium (K)	2024/11/05		101	%	80 - 120
			Total Selenium (Se)	2024/11/05		100	%	80 - 120
			Total Silver (Ag)	2024/11/05		99	%	80 - 120
			Total Sodium (Na)	2024/11/05		NC	%	80 - 120
			Total Strontium (Sr)	2024/11/05		101	%	80 - 120
			Total Thallium (Tl)	2024/11/05		100	%	80 - 120
			Total Tin (Sn)	2024/11/05		111	%	80 - 120
			Total Titanium (Ti)	2024/11/05		133 (1)	%	80 - 120
			Total Uranium (U)	2024/11/05		107	%	80 - 120
			Total Vanadium (V)	2024/11/05		106	%	80 - 120
			Total Zinc (Zn)	2024/11/05		101	%	80 - 120
9745543	MTZ	Spiked Blank	Total Aluminum (Al)	2024/11/05		102	%	80 - 120
			Total Antimony (Sb)	2024/11/05		101	%	80 - 120
			Total Arsenic (As)	2024/11/05		99	%	80 - 120
			Total Barium (Ba)	2024/11/05		97	%	80 - 120
			Total Beryllium (Be)	2024/11/05		93	%	80 - 120
			Total Bismuth (Bi)	2024/11/05		100	%	80 - 120
			Total Boron (B)	2024/11/05		94	%	80 - 120
			Total Cadmium (Cd)	2024/11/05		101	%	80 - 120
			Total Calcium (Ca)	2024/11/05		101	%	80 - 120
			Total Chromium (Cr)	2024/11/05		98	%	80 - 120
			Total Cobalt (Co)	2024/11/05		100	%	80 - 120
			Total Copper (Cu)	2024/11/05		100	%	80 - 120
			Total Iron (Fe)	2024/11/05		105	%	80 - 120
			Total Lead (Pb)	2024/11/05		98	%	80 - 120
			Total Magnesium (Mg)	2024/11/05		107	%	80 - 120
			Total Manganese (Mn)	2024/11/05		99	%	80 - 120
			Total Molybdenum (Mo)	2024/11/05		103	%	80 - 120
			Total Nickel (Ni)	2024/11/05		101	%	80 - 120
			Total Phosphorus (P)	2024/11/05		105	%	80 - 120
			Total Potassium (K)	2024/11/05		101	%	80 - 120
			Total Selenium (Se)	2024/11/05		100	%	80 - 120
			Total Silver (Ag)	2024/11/05		100	%	80 - 120
			Total Sodium (Na)	2024/11/05		101	%	80 - 120
			Total Strontium (Sr)	2024/11/05		101	%	80 - 120
			Total Thallium (Tl)	2024/11/05		100	%	80 - 120
			Total Tin (Sn)	2024/11/05		102	%	80 - 120
			Total Titanium (Ti)	2024/11/05		97	%	80 - 120
			Total Uranium (U)	2024/11/05		107	%	80 - 120
			Total Vanadium (V)	2024/11/05		101	%	80 - 120
			Total Zinc (Zn)	2024/11/05		100	%	80 - 120
9745543	MTZ	Method Blank	Total Aluminum (Al)	2024/11/05	<5.0		ug/L	
			Total Antimony (Sb)	2024/11/05	<1.0		ug/L	
			Total Arsenic (As)	2024/11/05	<1.0		ug/L	
			Total Barium (Ba)	2024/11/05	<1.0		ug/L	
			Total Beryllium (Be)	2024/11/05	<0.10		ug/L	
			Total Bismuth (Bi)	2024/11/05	<2.0		ug/L	
			Total Boron (B)	2024/11/05	<50		ug/L	
			Total Cadmium (Cd)	2024/11/05	<0.010		ug/L	
			Total Calcium (Ca)	2024/11/05	<100		ug/L	
			Total Chromium (Cr)	2024/11/05	<1.0		ug/L	
			Total Cobalt (Co)	2024/11/05	<0.40		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Copper (Cu)	2024/11/05	<0.50		ug/L	
			Total Iron (Fe)	2024/11/05	<50		ug/L	
			Total Lead (Pb)	2024/11/05	<0.50		ug/L	
			Total Magnesium (Mg)	2024/11/05	<100		ug/L	
			Total Manganese (Mn)	2024/11/05	<2.0		ug/L	
			Total Molybdenum (Mo)	2024/11/05	<2.0		ug/L	
			Total Nickel (Ni)	2024/11/05	<2.0		ug/L	
			Total Phosphorus (P)	2024/11/05	<100		ug/L	
			Total Potassium (K)	2024/11/05	<100		ug/L	
			Total Selenium (Se)	2024/11/05	<0.50		ug/L	
			Total Silver (Ag)	2024/11/05	<0.10		ug/L	
			Total Sodium (Na)	2024/11/05	<100		ug/L	
			Total Strontium (Sr)	2024/11/05	<2.0		ug/L	
			Total Thallium (Tl)	2024/11/05	<0.10		ug/L	
			Total Tin (Sn)	2024/11/05	<2.0		ug/L	
			Total Titanium (Ti)	2024/11/05	<2.0		ug/L	
			Total Uranium (U)	2024/11/05	<0.10		ug/L	
			Total Vanadium (V)	2024/11/05	<2.0		ug/L	
			Total Zinc (Zn)	2024/11/05	<5.0		ug/L	
9745543	MTZ	RPD	Total Antimony (Sb)	2024/11/06	NC		%	20
			Total Arsenic (As)	2024/11/06	NC		%	20
			Total Barium (Ba)	2024/11/06	4.0		%	20
			Total Beryllium (Be)	2024/11/06	NC		%	20
			Total Bismuth (Bi)	2024/11/06	NC		%	20
			Total Boron (B)	2024/11/06	NC		%	20
			Total Cadmium (Cd)	2024/11/06	NC		%	20
			Total Calcium (Ca)	2024/11/06	0.96		%	20
			Total Chromium (Cr)	2024/11/06	NC		%	20
			Total Cobalt (Co)	2024/11/06	NC		%	20
			Total Copper (Cu)	2024/11/06	NC		%	20
			Total Lead (Pb)	2024/11/06	0.15		%	20
			Total Magnesium (Mg)	2024/11/06	3.7		%	20
			Total Manganese (Mn)	2024/11/06	2.2		%	20
			Total Molybdenum (Mo)	2024/11/06	2.4		%	20
			Total Nickel (Ni)	2024/11/06	NC		%	20
			Total Phosphorus (P)	2024/11/06	NC		%	20
			Total Potassium (K)	2024/11/06	2.1		%	20
			Total Selenium (Se)	2024/11/06	4.5		%	20
			Total Silver (Ag)	2024/11/06	NC		%	20
			Total Sodium (Na)	2024/11/06	1.6		%	20
			Total Strontium (Sr)	2024/11/06	4.0		%	20
			Total Thallium (Tl)	2024/11/06	NC		%	20
			Total Tin (Sn)	2024/11/06	NC		%	20
			Total Uranium (U)	2024/11/06	5.0		%	20
			Total Vanadium (V)	2024/11/06	NC		%	20
			Total Zinc (Zn)	2024/11/06	0.51		%	20
9745551	MTZ	Matrix Spike	Dissolved Aluminum (Al)	2024/11/05		106	%	80 - 120
			Dissolved Antimony (Sb)	2024/11/05		98	%	80 - 120
			Dissolved Arsenic (As)	2024/11/05		101	%	80 - 120
			Dissolved Barium (Ba)	2024/11/05		98	%	80 - 120
			Dissolved Beryllium (Be)	2024/11/05		101	%	80 - 120
			Dissolved Bismuth (Bi)	2024/11/05		97	%	80 - 120
			Dissolved Boron (B)	2024/11/05		95	%	80 - 120
			Dissolved Cadmium (Cd)	2024/11/05		99	%	80 - 120

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Calcium (Ca)	2024/11/05		NC	%	80 - 120
			Dissolved Chromium (Cr)	2024/11/05		95	%	80 - 120
			Dissolved Cobalt (Co)	2024/11/05		96	%	80 - 120
			Dissolved Copper (Cu)	2024/11/05		95	%	80 - 120
			Dissolved Iron (Fe)	2024/11/05		105	%	80 - 120
			Dissolved Lead (Pb)	2024/11/05		98	%	80 - 120
			Dissolved Magnesium (Mg)	2024/11/05		108	%	80 - 120
			Dissolved Manganese (Mn)	2024/11/05		96	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/11/05		100	%	80 - 120
			Dissolved Nickel (Ni)	2024/11/05		99	%	80 - 120
			Dissolved Phosphorus (P)	2024/11/05		110	%	80 - 120
			Dissolved Potassium (K)	2024/11/05		99	%	80 - 120
			Dissolved Selenium (Se)	2024/11/05		102	%	80 - 120
			Dissolved Silver (Ag)	2024/11/05		88	%	80 - 120
			Dissolved Sodium (Na)	2024/11/05		100	%	80 - 120
			Dissolved Strontium (Sr)	2024/11/05		NC	%	80 - 120
			Dissolved Thallium (Tl)	2024/11/05		100	%	80 - 120
			Dissolved Tin (Sn)	2024/11/05		101	%	80 - 120
			Dissolved Titanium (Ti)	2024/11/05		92	%	80 - 120
			Dissolved Uranium (U)	2024/11/05		108	%	80 - 120
			Dissolved Vanadium (V)	2024/11/05		100	%	80 - 120
			Dissolved Zinc (Zn)	2024/11/05		97	%	80 - 120
9745551	MTZ	Spiked Blank	Dissolved Aluminum (Al)	2024/11/05		104	%	80 - 120
			Dissolved Antimony (Sb)	2024/11/05		98	%	80 - 120
			Dissolved Arsenic (As)	2024/11/05		101	%	80 - 120
			Dissolved Barium (Ba)	2024/11/05		96	%	80 - 120
			Dissolved Beryllium (Be)	2024/11/05		99	%	80 - 120
			Dissolved Bismuth (Bi)	2024/11/05		101	%	80 - 120
			Dissolved Boron (B)	2024/11/05		94	%	80 - 120
			Dissolved Cadmium (Cd)	2024/11/05		97	%	80 - 120
			Dissolved Calcium (Ca)	2024/11/05		102	%	80 - 120
			Dissolved Chromium (Cr)	2024/11/05		96	%	80 - 120
			Dissolved Cobalt (Co)	2024/11/05		97	%	80 - 120
			Dissolved Copper (Cu)	2024/11/05		98	%	80 - 120
			Dissolved Iron (Fe)	2024/11/05		107	%	80 - 120
			Dissolved Lead (Pb)	2024/11/05		97	%	80 - 120
			Dissolved Magnesium (Mg)	2024/11/05		110	%	80 - 120
			Dissolved Manganese (Mn)	2024/11/05		102	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/11/05		99	%	80 - 120
			Dissolved Nickel (Ni)	2024/11/05		101	%	80 - 120
			Dissolved Phosphorus (P)	2024/11/05		109	%	80 - 120
			Dissolved Potassium (K)	2024/11/05		100	%	80 - 120
			Dissolved Selenium (Se)	2024/11/05		101	%	80 - 120
			Dissolved Silver (Ag)	2024/11/05		98	%	80 - 120
			Dissolved Sodium (Na)	2024/11/05		106	%	80 - 120
			Dissolved Strontium (Sr)	2024/11/05		99	%	80 - 120
			Dissolved Thallium (Tl)	2024/11/05		99	%	80 - 120
			Dissolved Tin (Sn)	2024/11/05		96	%	80 - 120
			Dissolved Titanium (Ti)	2024/11/05		102	%	80 - 120
			Dissolved Uranium (U)	2024/11/05		106	%	80 - 120
			Dissolved Vanadium (V)	2024/11/05		101	%	80 - 120
			Dissolved Zinc (Zn)	2024/11/05		101	%	80 - 120
9745551	MTZ	Method Blank	Dissolved Aluminum (Al)	2024/11/05	<5.0		ug/L	
			Dissolved Antimony (Sb)	2024/11/05	<1.0		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Arsenic (As)	2024/11/05	<1.0		ug/L	
			Dissolved Barium (Ba)	2024/11/05	<1.0		ug/L	
			Dissolved Beryllium (Be)	2024/11/05	<0.10		ug/L	
			Dissolved Bismuth (Bi)	2024/11/05	<2.0		ug/L	
			Dissolved Boron (B)	2024/11/05	<50		ug/L	
			Dissolved Cadmium (Cd)	2024/11/05	<0.010		ug/L	
			Dissolved Calcium (Ca)	2024/11/05	<100		ug/L	
			Dissolved Chromium (Cr)	2024/11/05	<1.0		ug/L	
			Dissolved Cobalt (Co)	2024/11/05	<0.40		ug/L	
			Dissolved Copper (Cu)	2024/11/05	<0.50		ug/L	
			Dissolved Iron (Fe)	2024/11/05	<50		ug/L	
			Dissolved Lead (Pb)	2024/11/05	<0.50		ug/L	
			Dissolved Magnesium (Mg)	2024/11/05	<100		ug/L	
			Dissolved Manganese (Mn)	2024/11/05	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2024/11/05	<2.0		ug/L	
			Dissolved Nickel (Ni)	2024/11/05	<2.0		ug/L	
			Dissolved Phosphorus (P)	2024/11/05	<100		ug/L	
			Dissolved Potassium (K)	2024/11/05	<100		ug/L	
			Dissolved Selenium (Se)	2024/11/05	<0.50		ug/L	
			Dissolved Silver (Ag)	2024/11/05	<0.10		ug/L	
			Dissolved Sodium (Na)	2024/11/05	<100		ug/L	
			Dissolved Strontium (Sr)	2024/11/05	<2.0		ug/L	
			Dissolved Thallium (Tl)	2024/11/05	<0.10		ug/L	
			Dissolved Tin (Sn)	2024/11/05	<2.0		ug/L	
			Dissolved Titanium (Ti)	2024/11/05	<2.0		ug/L	
			Dissolved Uranium (U)	2024/11/05	<0.10		ug/L	
			Dissolved Vanadium (V)	2024/11/05	<2.0		ug/L	
			Dissolved Zinc (Zn)	2024/11/05	<5.0		ug/L	
9745551	MTZ	RPD	Dissolved Aluminum (Al)	2024/11/05	NC		%	20
			Dissolved Antimony (Sb)	2024/11/05	NC		%	20
			Dissolved Arsenic (As)	2024/11/05	NC		%	20
			Dissolved Barium (Ba)	2024/11/05	10		%	20
			Dissolved Beryllium (Be)	2024/11/05	NC		%	20
			Dissolved Bismuth (Bi)	2024/11/05	NC		%	20
			Dissolved Boron (B)	2024/11/05	NC		%	20
			Dissolved Cadmium (Cd)	2024/11/05	NC		%	20
			Dissolved Calcium (Ca)	2024/11/05	1.8		%	20
			Dissolved Chromium (Cr)	2024/11/05	NC		%	20
			Dissolved Cobalt (Co)	2024/11/05	NC		%	20
			Dissolved Copper (Cu)	2024/11/05	NC		%	20
			Dissolved Iron (Fe)	2024/11/05	1.7		%	20
			Dissolved Lead (Pb)	2024/11/05	NC		%	20
			Dissolved Magnesium (Mg)	2024/11/05	2.0		%	20
			Dissolved Manganese (Mn)	2024/11/05	1.2		%	20
			Dissolved Molybdenum (Mo)	2024/11/05	4.6		%	20
			Dissolved Nickel (Ni)	2024/11/05	NC		%	20
			Dissolved Phosphorus (P)	2024/11/05	NC		%	20
			Dissolved Potassium (K)	2024/11/05	3.4		%	20
			Dissolved Selenium (Se)	2024/11/05	NC		%	20
			Dissolved Silver (Ag)	2024/11/05	NC		%	20
			Dissolved Sodium (Na)	2024/11/05	1.5		%	20
			Dissolved Strontium (Sr)	2024/11/05	1.8		%	20
			Dissolved Thallium (Tl)	2024/11/05	NC		%	20
			Dissolved Tin (Sn)	2024/11/05	NC		%	20

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Titanium (Ti)	2024/11/05	NC		%	20
			Dissolved Uranium (U)	2024/11/05	0.93		%	20
			Dissolved Vanadium (V)	2024/11/05	NC		%	20
			Dissolved Zinc (Zn)	2024/11/05	NC		%	20
9746030	DME	QC Standard	Total Suspended Solids	2024/11/06		99	%	80 - 120
9746030	DME	Method Blank	Total Suspended Solids	2024/11/06	<1.0		mg/L	
9746030	DME	RPD	Total Suspended Solids	2024/11/06	4.0		%	20
9748090	EMT	Matrix Spike	Dissolved Chloride (Cl-)	2024/11/06		NC	%	80 - 120
9748090	EMT	Spiked Blank	Dissolved Chloride (Cl-)	2024/11/06		91	%	80 - 120
9748090	EMT	Method Blank	Dissolved Chloride (Cl-)	2024/11/06	<1.0		mg/L	
9748090	EMT	RPD	Dissolved Chloride (Cl-)	2024/11/06	0.024		%	20
9748132	EMT	Matrix Spike	Dissolved Sulphate (SO4)	2024/11/06		93	%	80 - 120
9748132	EMT	Spiked Blank	Dissolved Sulphate (SO4)	2024/11/06		95	%	80 - 120
9748132	EMT	Method Blank	Dissolved Sulphate (SO4)	2024/11/06	<2.0		mg/L	
9748132	EMT	RPD	Dissolved Sulphate (SO4)	2024/11/06	NC		%	20
9748133	EMT	Matrix Spike	Reactive Silica (SiO2)	2024/11/06		NC	%	80 - 120
9748133	EMT	Spiked Blank	Reactive Silica (SiO2)	2024/11/06		89	%	80 - 120
9748133	EMT	Method Blank	Reactive Silica (SiO2)	2024/11/06	<0.50		mg/L	
9748133	EMT	RPD	Reactive Silica (SiO2)	2024/11/06	0.76		%	20
9748134	EMT	Spiked Blank	Colour	2024/11/06		97	%	80 - 120
9748134	EMT	Method Blank	Colour	2024/11/06	<5.0		TCU	
9748134	EMT	RPD	Colour	2024/11/06	1.9		%	20
9748135	EMT	Matrix Spike	Orthophosphate (P)	2024/11/06		85	%	80 - 120
9748135	EMT	Spiked Blank	Orthophosphate (P)	2024/11/06		96	%	80 - 120
9748135	EMT	Method Blank	Orthophosphate (P)	2024/11/06	<0.010		mg/L	
9748135	EMT	RPD	Orthophosphate (P)	2024/11/06	NC		%	20
9748136	EMT	Matrix Spike	Nitrate + Nitrite (N)	2024/11/06		89	%	80 - 120
9748136	EMT	Spiked Blank	Nitrate + Nitrite (N)	2024/11/06		97	%	80 - 120
9748136	EMT	Method Blank	Nitrate + Nitrite (N)	2024/11/06	<0.050		mg/L	
9748136	EMT	RPD	Nitrate + Nitrite (N)	2024/11/06	NC		%	20
9748137	EMT	Matrix Spike	Nitrite (N)	2024/11/06		101	%	80 - 120
9748137	EMT	Spiked Blank	Nitrite (N)	2024/11/06		98	%	80 - 120
9748137	EMT	Method Blank	Nitrite (N)	2024/11/06	<0.010		mg/L	
9748137	EMT	RPD	Nitrite (N)	2024/11/06	NC		%	20
9748292	MTZ	Matrix Spike	Dissolved Aluminum (Al)	2024/11/06		103	%	80 - 120
			Dissolved Antimony (Sb)	2024/11/06		102	%	80 - 120
			Dissolved Arsenic (As)	2024/11/06		101	%	80 - 120
			Dissolved Barium (Ba)	2024/11/06		97	%	80 - 120
			Dissolved Beryllium (Be)	2024/11/06		104	%	80 - 120
			Dissolved Bismuth (Bi)	2024/11/06		97	%	80 - 120
			Dissolved Boron (B)	2024/11/06		103	%	80 - 120
			Dissolved Cadmium (Cd)	2024/11/06		106	%	80 - 120
			Dissolved Calcium (Ca)	2024/11/06		NC	%	80 - 120
			Dissolved Chromium (Cr)	2024/11/06		100	%	80 - 120
			Dissolved Cobalt (Co)	2024/11/06		95	%	80 - 120
			Dissolved Copper (Cu)	2024/11/06		93	%	80 - 120
			Dissolved Iron (Fe)	2024/11/06		101	%	80 - 120
			Dissolved Lead (Pb)	2024/11/06		97	%	80 - 120
			Dissolved Magnesium (Mg)	2024/11/06		NC	%	80 - 120
			Dissolved Manganese (Mn)	2024/11/06		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/11/06		107	%	80 - 120
			Dissolved Nickel (Ni)	2024/11/06		97	%	80 - 120
			Dissolved Phosphorus (P)	2024/11/06		107	%	80 - 120
			Dissolved Potassium (K)	2024/11/06		103	%	80 - 120

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Selenium (Se)	2024/11/06		102	%	80 - 120
			Dissolved Silver (Ag)	2024/11/06		100	%	80 - 120
			Dissolved Sodium (Na)	2024/11/06		NC	%	80 - 120
			Dissolved Strontium (Sr)	2024/11/06		NC	%	80 - 120
			Dissolved Thallium (Tl)	2024/11/06		99	%	80 - 120
			Dissolved Tin (Sn)	2024/11/06		103	%	80 - 120
			Dissolved Titanium (Ti)	2024/11/06		101	%	80 - 120
			Dissolved Uranium (U)	2024/11/06		107	%	80 - 120
			Dissolved Vanadium (V)	2024/11/06		104	%	80 - 120
			Dissolved Zinc (Zn)	2024/11/06		97	%	80 - 120
9748292	MTZ	Spiked Blank	Dissolved Aluminum (Al)	2024/11/06		105	%	80 - 120
			Dissolved Antimony (Sb)	2024/11/06		97	%	80 - 120
			Dissolved Arsenic (As)	2024/11/06		100	%	80 - 120
			Dissolved Barium (Ba)	2024/11/06		98	%	80 - 120
			Dissolved Beryllium (Be)	2024/11/06		101	%	80 - 120
			Dissolved Bismuth (Bi)	2024/11/06		99	%	80 - 120
			Dissolved Boron (B)	2024/11/06		101	%	80 - 120
			Dissolved Cadmium (Cd)	2024/11/06		105	%	80 - 120
			Dissolved Calcium (Ca)	2024/11/06		105	%	80 - 120
			Dissolved Chromium (Cr)	2024/11/06		101	%	80 - 120
			Dissolved Cobalt (Co)	2024/11/06		100	%	80 - 120
			Dissolved Copper (Cu)	2024/11/06		99	%	80 - 120
			Dissolved Iron (Fe)	2024/11/06		102	%	80 - 120
			Dissolved Lead (Pb)	2024/11/06		99	%	80 - 120
			Dissolved Magnesium (Mg)	2024/11/06		108	%	80 - 120
			Dissolved Manganese (Mn)	2024/11/06		101	%	80 - 120
			Dissolved Molybdenum (Mo)	2024/11/06		102	%	80 - 120
			Dissolved Nickel (Ni)	2024/11/06		101	%	80 - 120
			Dissolved Phosphorus (P)	2024/11/06		106	%	80 - 120
			Dissolved Potassium (K)	2024/11/06		102	%	80 - 120
			Dissolved Selenium (Se)	2024/11/06		101	%	80 - 120
			Dissolved Silver (Ag)	2024/11/06		98	%	80 - 120
			Dissolved Sodium (Na)	2024/11/06		103	%	80 - 120
			Dissolved Strontium (Sr)	2024/11/06		101	%	80 - 120
			Dissolved Thallium (Tl)	2024/11/06		99	%	80 - 120
			Dissolved Tin (Sn)	2024/11/06		101	%	80 - 120
			Dissolved Titanium (Ti)	2024/11/06		101	%	80 - 120
			Dissolved Uranium (U)	2024/11/06		104	%	80 - 120
			Dissolved Vanadium (V)	2024/11/06		103	%	80 - 120
			Dissolved Zinc (Zn)	2024/11/06		101	%	80 - 120
9748292	MTZ	Method Blank	Dissolved Aluminum (Al)	2024/11/06	<5.0		ug/L	
			Dissolved Antimony (Sb)	2024/11/06	<1.0		ug/L	
			Dissolved Arsenic (As)	2024/11/06	<1.0		ug/L	
			Dissolved Barium (Ba)	2024/11/06	<1.0		ug/L	
			Dissolved Beryllium (Be)	2024/11/06	<0.10		ug/L	
			Dissolved Bismuth (Bi)	2024/11/06	<2.0		ug/L	
			Dissolved Boron (B)	2024/11/06	<50		ug/L	
			Dissolved Cadmium (Cd)	2024/11/06	<0.010		ug/L	
			Dissolved Calcium (Ca)	2024/11/06	<100		ug/L	
			Dissolved Chromium (Cr)	2024/11/06	<1.0		ug/L	
			Dissolved Cobalt (Co)	2024/11/06	<0.40		ug/L	
			Dissolved Copper (Cu)	2024/11/06	<0.50		ug/L	
			Dissolved Iron (Fe)	2024/11/06	<50		ug/L	
			Dissolved Lead (Pb)	2024/11/06	<0.50		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Magnesium (Mg)	2024/11/06	<100		ug/L	
			Dissolved Manganese (Mn)	2024/11/06	<2.0		ug/L	
			Dissolved Molybdenum (Mo)	2024/11/06	<2.0		ug/L	
			Dissolved Nickel (Ni)	2024/11/06	<2.0		ug/L	
			Dissolved Phosphorus (P)	2024/11/06	<100		ug/L	
			Dissolved Potassium (K)	2024/11/06	<100		ug/L	
			Dissolved Selenium (Se)	2024/11/06	<0.50		ug/L	
			Dissolved Silver (Ag)	2024/11/06	<0.10		ug/L	
			Dissolved Sodium (Na)	2024/11/06	<100		ug/L	
			Dissolved Strontium (Sr)	2024/11/06	<2.0		ug/L	
			Dissolved Thallium (Tl)	2024/11/06	<0.10		ug/L	
			Dissolved Tin (Sn)	2024/11/06	<2.0		ug/L	
			Dissolved Titanium (Ti)	2024/11/06	<2.0		ug/L	
			Dissolved Uranium (U)	2024/11/06	<0.10		ug/L	
			Dissolved Vanadium (V)	2024/11/06	<2.0		ug/L	
			Dissolved Zinc (Zn)	2024/11/06	<5.0		ug/L	
9748292	MTZ	RPD	Dissolved Aluminum (Al)	2024/11/06	NC		%	20
			Dissolved Antimony (Sb)	2024/11/06	NC		%	20
			Dissolved Arsenic (As)	2024/11/06	NC		%	20
			Dissolved Barium (Ba)	2024/11/06	0.22		%	20
			Dissolved Beryllium (Be)	2024/11/06	NC		%	20
			Dissolved Bismuth (Bi)	2024/11/06	NC		%	20
			Dissolved Boron (B)	2024/11/06	NC		%	20
			Dissolved Cadmium (Cd)	2024/11/06	NC		%	20
			Dissolved Calcium (Ca)	2024/11/06	0.59		%	20
			Dissolved Chromium (Cr)	2024/11/06	NC		%	20
			Dissolved Cobalt (Co)	2024/11/06	NC		%	20
			Dissolved Copper (Cu)	2024/11/06	NC		%	20
			Dissolved Iron (Fe)	2024/11/06	NC		%	20
			Dissolved Lead (Pb)	2024/11/06	NC		%	20
			Dissolved Magnesium (Mg)	2024/11/06	0.032		%	20
			Dissolved Manganese (Mn)	2024/11/06	0.25		%	20
			Dissolved Molybdenum (Mo)	2024/11/06	NC		%	20
			Dissolved Nickel (Ni)	2024/11/06	NC		%	20
			Dissolved Phosphorus (P)	2024/11/06	NC		%	20
			Dissolved Potassium (K)	2024/11/06	2.2		%	20
			Dissolved Selenium (Se)	2024/11/06	NC		%	20
			Dissolved Silver (Ag)	2024/11/06	NC		%	20
			Dissolved Sodium (Na)	2024/11/06	0.0094		%	20
			Dissolved Strontium (Sr)	2024/11/06	0.45		%	20
			Dissolved Thallium (Tl)	2024/11/06	NC		%	20
			Dissolved Tin (Sn)	2024/11/06	NC		%	20
			Dissolved Titanium (Ti)	2024/11/06	NC		%	20
			Dissolved Uranium (U)	2024/11/06	4.2		%	20
			Dissolved Vanadium (V)	2024/11/06	NC		%	20
			Dissolved Zinc (Zn)	2024/11/06	NC		%	20
9748412	M2C	Spiked Blank	pH	2024/11/06		100	%	97 - 103
9748412	M2C	RPD [AHTH99-02]	pH	2024/11/06	1.5		%	N/A
9748418	M2C	Spiked Blank	Conductivity	2024/11/06		95	%	80 - 120
9748418	M2C	Method Blank	Conductivity	2024/11/06	<1.0		uS/cm	
9748418	M2C	RPD [AHTH99-02]	Conductivity	2024/11/06	0.15		%	10
9748420	M2C	Spiked Blank	Total Alkalinity (Total as CaCO3)	2024/11/06		96	%	80 - 120
9748420	M2C	Method Blank	Total Alkalinity (Total as CaCO3)	2024/11/06	<2.0		mg/L	
9748420	M2C	RPD [AHTH99-02]	Total Alkalinity (Total as CaCO3)	2024/11/06	1.5		%	20

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9748423	M2C	Spiked Blank	pH	2024/11/06		101	%	97 - 103
9748423	M2C	RPD	pH	2024/11/06	0.97		%	N/A
9748427	M2C	Spiked Blank	Conductivity	2024/11/06		94	%	80 - 120
9748427	M2C	Method Blank	Conductivity	2024/11/06	<1.0		uS/cm	
9748427	M2C	RPD	Conductivity	2024/11/06	1.1		%	10
9748433	M2C	Spiked Blank	Total Alkalinity (Total as CaCO3)	2024/11/06		96	%	80 - 120
9748433	M2C	Method Blank	Total Alkalinity (Total as CaCO3)	2024/11/06	<2.0		mg/L	
9748433	M2C	RPD	Total Alkalinity (Total as CaCO3)	2024/11/06	1.4		%	20
9749031	ACK	Matrix Spike [AHTI08-02]	Total Organic Carbon (C)	2024/11/06		100	%	85 - 115
9749031	ACK	Spiked Blank	Total Organic Carbon (C)	2024/11/06		101	%	80 - 120
9749031	ACK	Method Blank	Total Organic Carbon (C)	2024/11/06	<0.50		mg/L	
9749031	ACK	RPD [AHTI08-02]	Total Organic Carbon (C)	2024/11/06	6.5		%	15
9749039	ACK	Matrix Spike	Total Organic Carbon (C)	2024/11/07		101	%	85 - 115
9749039	ACK	Spiked Blank	Total Organic Carbon (C)	2024/11/06		101	%	80 - 120
9749039	ACK	Method Blank	Total Organic Carbon (C)	2024/11/06	<0.50		mg/L	
9749039	ACK	RPD	Total Organic Carbon (C)	2024/11/06	0.097		%	15
9751057	MTZ	Matrix Spike [AHTI00-04]	Total Aluminum (Al)	2024/11/07		96	%	80 - 120
			Total Antimony (Sb)	2024/11/07		100	%	80 - 120
			Total Arsenic (As)	2024/11/07		98	%	80 - 120
			Total Barium (Ba)	2024/11/07		96	%	80 - 120
			Total Beryllium (Be)	2024/11/07		98	%	80 - 120
			Total Bismuth (Bi)	2024/11/07		99	%	80 - 120
			Total Boron (B)	2024/11/07		96	%	80 - 120
			Total Cadmium (Cd)	2024/11/07		100	%	80 - 120
			Total Calcium (Ca)	2024/11/07		98	%	80 - 120
			Total Chromium (Cr)	2024/11/07		98	%	80 - 120
			Total Cobalt (Co)	2024/11/07		99	%	80 - 120
			Total Copper (Cu)	2024/11/07		98	%	80 - 120
			Total Iron (Fe)	2024/11/07		102	%	80 - 120
			Total Lead (Pb)	2024/11/07		97	%	80 - 120
			Total Magnesium (Mg)	2024/11/07		103	%	80 - 120
			Total Manganese (Mn)	2024/11/07		94	%	80 - 120
			Total Molybdenum (Mo)	2024/11/07		102	%	80 - 120
			Total Nickel (Ni)	2024/11/07		99	%	80 - 120
			Total Phosphorus (P)	2024/11/07		101	%	80 - 120
			Total Potassium (K)	2024/11/07		100	%	80 - 120
			Total Selenium (Se)	2024/11/07		99	%	80 - 120
			Total Silver (Ag)	2024/11/07		98	%	80 - 120
			Total Sodium (Na)	2024/11/07		98	%	80 - 120
			Total Strontium (Sr)	2024/11/07		98	%	80 - 120
			Total Thallium (Tl)	2024/11/07		99	%	80 - 120
			Total Tin (Sn)	2024/11/07		100	%	80 - 120
			Total Titanium (Ti)	2024/11/07		97	%	80 - 120
			Total Uranium (U)	2024/11/07		105	%	80 - 120
			Total Vanadium (V)	2024/11/07		101	%	80 - 120
			Total Zinc (Zn)	2024/11/07		99	%	80 - 120
9751057	MTZ	Spiked Blank	Total Aluminum (Al)	2024/11/07		99	%	80 - 120
			Total Antimony (Sb)	2024/11/07		102	%	80 - 120
			Total Arsenic (As)	2024/11/07		101	%	80 - 120
			Total Barium (Ba)	2024/11/07		100	%	80 - 120
			Total Beryllium (Be)	2024/11/07		100	%	80 - 120
			Total Bismuth (Bi)	2024/11/07		102	%	80 - 120
			Total Boron (B)	2024/11/07		98	%	80 - 120
			Total Cadmium (Cd)	2024/11/07		103	%	80 - 120

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Calcium (Ca)	2024/11/07		102	%	80 - 120
			Total Chromium (Cr)	2024/11/07		103	%	80 - 120
			Total Cobalt (Co)	2024/11/07		102	%	80 - 120
			Total Copper (Cu)	2024/11/07		102	%	80 - 120
			Total Iron (Fe)	2024/11/07		106	%	80 - 120
			Total Lead (Pb)	2024/11/07		100	%	80 - 120
			Total Magnesium (Mg)	2024/11/07		106	%	80 - 120
			Total Manganese (Mn)	2024/11/07		102	%	80 - 120
			Total Molybdenum (Mo)	2024/11/07		106	%	80 - 120
			Total Nickel (Ni)	2024/11/07		103	%	80 - 120
			Total Phosphorus (P)	2024/11/07		102	%	80 - 120
			Total Potassium (K)	2024/11/07		103	%	80 - 120
			Total Selenium (Se)	2024/11/07		99	%	80 - 120
			Total Silver (Ag)	2024/11/07		100	%	80 - 120
			Total Sodium (Na)	2024/11/07		103	%	80 - 120
			Total Strontium (Sr)	2024/11/07		102	%	80 - 120
			Total Thallium (Tl)	2024/11/07		102	%	80 - 120
			Total Tin (Sn)	2024/11/07		104	%	80 - 120
			Total Titanium (Ti)	2024/11/07		98	%	80 - 120
			Total Uranium (U)	2024/11/07		109	%	80 - 120
			Total Vanadium (V)	2024/11/07		103	%	80 - 120
			Total Zinc (Zn)	2024/11/07		102	%	80 - 120
9751057	MTZ	Method Blank	Total Aluminum (Al)	2024/11/07	<5.0		ug/L	
			Total Antimony (Sb)	2024/11/07	<1.0		ug/L	
			Total Arsenic (As)	2024/11/07	<1.0		ug/L	
			Total Barium (Ba)	2024/11/07	<1.0		ug/L	
			Total Beryllium (Be)	2024/11/07	<0.10		ug/L	
			Total Bismuth (Bi)	2024/11/07	<2.0		ug/L	
			Total Boron (B)	2024/11/07	<50		ug/L	
			Total Cadmium (Cd)	2024/11/07	<0.010		ug/L	
			Total Calcium (Ca)	2024/11/07	<100		ug/L	
			Total Chromium (Cr)	2024/11/07	<1.0		ug/L	
			Total Cobalt (Co)	2024/11/07	<0.40		ug/L	
			Total Copper (Cu)	2024/11/07	<0.50		ug/L	
			Total Iron (Fe)	2024/11/07	<50		ug/L	
			Total Lead (Pb)	2024/11/07	<0.50		ug/L	
			Total Magnesium (Mg)	2024/11/07	<100		ug/L	
			Total Manganese (Mn)	2024/11/07	<2.0		ug/L	
			Total Molybdenum (Mo)	2024/11/07	<2.0		ug/L	
			Total Nickel (Ni)	2024/11/07	<2.0		ug/L	
			Total Phosphorus (P)	2024/11/07	<100		ug/L	
			Total Potassium (K)	2024/11/07	<100		ug/L	
			Total Selenium (Se)	2024/11/07	<0.50		ug/L	
			Total Silver (Ag)	2024/11/07	<0.10		ug/L	
			Total Sodium (Na)	2024/11/07	<100		ug/L	
			Total Strontium (Sr)	2024/11/07	<2.0		ug/L	
			Total Thallium (Tl)	2024/11/07	<0.10		ug/L	
			Total Tin (Sn)	2024/11/07	<2.0		ug/L	
			Total Titanium (Ti)	2024/11/07	<2.0		ug/L	
			Total Uranium (U)	2024/11/07	<0.10		ug/L	
			Total Vanadium (V)	2024/11/07	<2.0		ug/L	
			Total Zinc (Zn)	2024/11/07	<5.0		ug/L	
9751057	MTZ	RPD	Total Lead (Pb)	2024/11/07	1.4		%	20
9751094	S6S	QC Standard	Turbidity	2024/11/07		107	%	80 - 120

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9751094	S6S	Spiked Blank	Turbidity	2024/11/07		101	%	80 - 120
9751094	S6S	Method Blank	Turbidity	2024/11/07	<0.10		NTU	
9751094	S6S	RPD	Turbidity	2024/11/07	2.2		%	20
9751104	S6S	QC Standard	Turbidity	2024/11/07		108	%	80 - 120
9751104	S6S	Spiked Blank	Turbidity	2024/11/07		100	%	80 - 120
9751104	S6S	Method Blank	Turbidity	2024/11/07	<0.10		NTU	
9751104	S6S	RPD	Turbidity	2024/11/07	1.3		%	20
9751110	M2C	QC Standard	Turbidity	2024/11/07		106	%	80 - 120
9751110	M2C	Spiked Blank	Turbidity	2024/11/07		100	%	80 - 120
9751110	M2C	Method Blank	Turbidity	2024/11/07	<0.10		NTU	
9751110	M2C	RPD	Turbidity	2024/11/07	0.62		%	20
9751128	MCN	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2024/11/07		99	%	80 - 120
9751128	MCN	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2024/11/07		93	%	80 - 120
9751128	MCN	Method Blank	Nitrogen (Ammonia Nitrogen)	2024/11/07	<0.050		mg/L	
9751128	MCN	RPD	Nitrogen (Ammonia Nitrogen)	2024/11/07	6.6		%	20
9751132	EMT	Matrix Spike	Nitrogen (Ammonia Nitrogen)	2024/11/07		93	%	80 - 120
9751132	EMT	Spiked Blank	Nitrogen (Ammonia Nitrogen)	2024/11/07		97	%	80 - 120
9751132	EMT	Method Blank	Nitrogen (Ammonia Nitrogen)	2024/11/07	<0.050		mg/L	
9751132	EMT	RPD	Nitrogen (Ammonia Nitrogen)	2024/11/07	4.1		%	20
9751321	ACK	Matrix Spike [AHTH99-03]	Total Organic Carbon (C)	2024/11/07		99	%	85 - 115
9751321	ACK	Spiked Blank	Total Organic Carbon (C)	2024/11/07		99	%	80 - 120
9751321	ACK	Method Blank	Total Organic Carbon (C)	2024/11/07	<0.50		mg/L	
9751321	ACK	RPD [AHTH99-03]	Total Organic Carbon (C)	2024/11/07	8.4		%	15

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Matrix Spike exceeds acceptance limits, probable matrix interference.

Bureau Veritas 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.bvna.com

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Ernlie Publicover, Scientific Specialist

Bureau Veritas Certified by Janah Rhyno, Scientific Specialist

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Suzanne Rogers, General Manager responsible for Nova Scotia Environmental laboratory operations.

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2024/11/01 14:52

Bureau Veritas
200 Bluewater Road, Bedford, Nova Scotia Canada B4B 1G9 Tel (902) 420-0203 Toll-free 800-563-6266 Fax (902) 420-8612 www.bvna.com

Chain Of Custody Record

INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name	#16276 GHD Limited	Company Name		Quotation #	C40091	Bureau Veritas Job #	Bottle Order #:
Contact Name	Accounts Payable 762	Contact Name	Glen Merkley/Sadie Jacobs-Peters	P.O. #	735-009799		1015035
Address	120 Western Parkway Bedford NS B4B 0V2	Address		Project #	12584960	Chain Of Custody Record	Project Manager
Phone	(902) 468-1248 Fax: (902) 468-2207	Phone	(902) 802-4790 Fax:	Project Name		C#1015035-01-01	Marie Muise
Email	AccountsPayableCDN@ghd.com	Email	glen.merkley@ghd.com,Sadie.jacobs-peters@ghd.com	Site #			
				Sampled By			

Regulatory Criteria:

** Specify Matrix: Surface/Ground/Tapwater/Sewage/Effluent/Seawater Potable/Nonpotable/Tissue/Soil/Sludge/Metal

Special Instructions:

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT:
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: Time Required:

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered & Preserved	Lab Filtration Required	Atlantic RCAp-MS Total Metals in Water	Total Suspended Solids	At. RCAp-MS Dissolved (FieldFilt) in W	# of Bottles	Comments / Hazards / Other Required Analysis
1		SW1	Oct 31, 2024	12:56	SW			X	X		5	
2		SW2	Oct 31, 2024	13:18	SW			X	X		5	
3		SW3	Oct 31, 2024	13:52	SW			X	X		5	
4		SW4	Oct 31, 2024	14:33	SW			X	X		5	
5		SW5	Not sampled	—	SW			X	X		0	
6		SW DUP	✓	✓	SW			X	X		5	
7		MW1	Oct 31, 2024	12:33	GW					X	4	
8		MW2	Oct 31, 2024	12:16	GW					X	4	
9		MW3	Oct 31, 2024	11:31	GW					X	4	
10		MW4	Oct 31, 2024	10:38	GW					X	4	

BEDF-2024-11-07

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Lab Use Only: Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
Gilles (Gilles Perron)	24/11/01	1445	Kayla Kappen				☐	3.5 4.1 3.3	☐ Yes ☐ No

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

ice - Yes

White: Bureau Veritas Yellow: Client

C4Y5693
2024/11/01 14:52

Bureau Veritas
200 Bluewater Road, Bedford, Nova Scotia Canada B4B 1G9 Tel:(902) 420-0203 Toll-free:800-563-6266 Fax:(902) 420-8612 www.bvna.com

Chain Of Custody Record

INVOICE TO:		Report Information		Project Information		Laboratory Use Only	
Company Name	#16276 GHD Limited	Company Name		Quotation #	C40091	Bureau Veritas Job #	Bottle Order #:
Contact Name	Accounts Payable 762	Contact Name	Glen Merkley/Sadie Jacobs-Peters	P.O. #	735-009799		1015035
Address	120 Western Parkway Bedford NS B4B 0V2	Address		Project #	12584960	Chain Of Custody Record	Project Manager
Phone	(902) 468-1248 Fax: (902) 468-2207	Phone	(902) 802-4790 Fax:	Project Name		C#1015035-02-01	Marie Muise
Email	AccountsPayableCDN@ghd.com	Email	glen.merkley@ghd.com,Sadie.jacobs-peters@ghd.com	Site #			
				Sampled By			

Regulatory Criteria:

** Specify Matrix: Surface/Ground/Tapwater/Sewage/Effluent/Seawater Potable/Nonpotable/Tissue/Soil/Sludge/Metal

Special Instructions

SAMPLES MUST BE KEPT COOL (< 10ºC) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT: ☑
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests..
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: Time Required: ☐

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered & Preserved	Lab Filtration Required	Atlantic RCAp-MS Total Metals in Water	Total Suspended Solids	At. RCAp-MS Dissolved (FieldFilt) in W	# of Bottles	Comments / Hazards / Other Required Analysis
1		MW5	Oct 31, 2024	11:08	GW					X	4	
2		MW6	Not sampled		GW					X	0	
3		MW7	Not sampled		GW					X	0	
4		MWDUP	✓	✓	GW					X	4	
5		MW9	Oct 31, 2024	9:44	GW						4	
6		MW8	Oct 31, 2024	10:10	GW						4	
7												
8												
9												
10												

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Lab Use Only: Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
Gilles Perron	24/11/01	1445					☐	3.9 4 / 4.3 5	☐ Yes ☐ No

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.

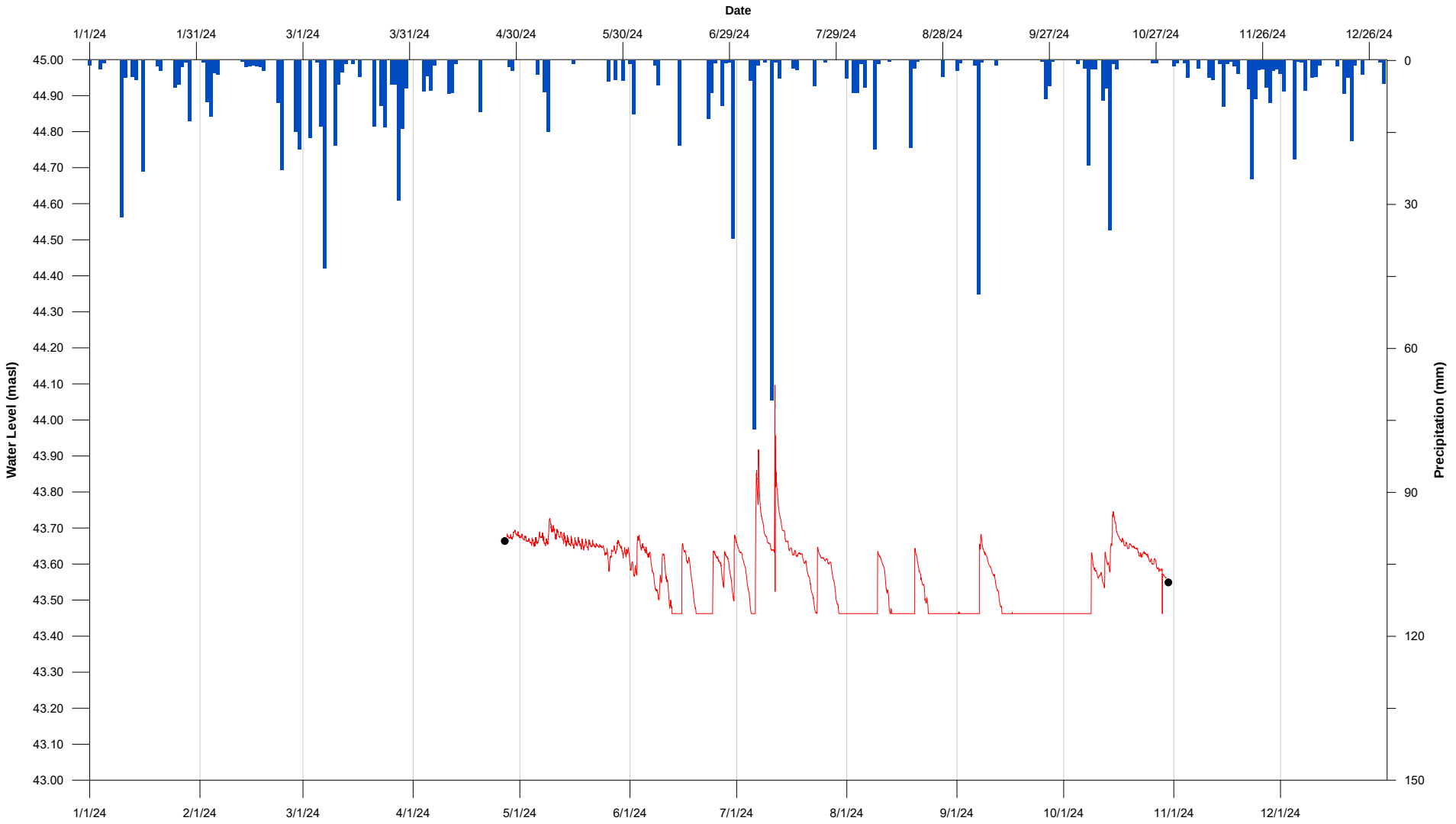
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

Ice - Yes

White: Bureau Veritas Yellow: Client

Appendix D

SW-5 Hydrograph



GHD

Precipitation (Greenwood A)
Continuous Water Level
Manual Water Level

SW-5
2024 Hydrograph
Nictaux Sand Pit Project
The Shaw Group Limited

ghd.com

→ The Power of Commitment